

STATE OF VERMONT

PUBLIC UTILITY COMMISSION

Joint Petition of NorthStar Decommissioning )  
Holdings, LLC, NorthStar Nuclear )  
Decommissioning Company, LLC, NorthStar )  
Group Services, Inc., LVI Parent Corp., )  
NorthStar Group Holdings, LLC, Entergy )  
Nuclear Vermont Investment Company, LLC, )  
and Entergy Nuclear Operations, Inc., and any ) Docket No. 8880  
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 PREFILED REBUTTAL TESTIMONY OF SCOTT E. STATE**

Mr. State reports on NorthStar’s recent and promising effort to accommodate concerns of the Elnu Abenaki and Missisquoi Abenaki Tribes; rebuts prefiled testimony of Department of Public Service witness Daniel S. Dane, including by explaining that Mr. Dane does not identify the probability that three separate events will occur together (*i.e.*, that project costs will increase by 25%, Department of Energy Recoveries will decrease by 11%, and the real annual growth rate of the Nuclear Decommissioning Trust and Site Restoration Trust will decrease by 50% (from 2% to 1%)); rebuts the report submitted by Department of Public Service witnesses Warren K. Brewer and Gregory A. Maret, including by explaining that they rely on past examples that are inapposite to Vermont Yankee; and rebuts prefiled testimony of Agency of Natural Resources (“ANR”) witnesses Gerald Noyes and Chuck Schwer concerning the alleged inadequacy of site characterization and ANR’s proposed site restoration standards.

Mr. State sponsors the following exhibits:

JP-SES-5	The Vertical Cask Transporter Design Evolution Reaches the Plateau of Maturity & Versatility, Holtec Int’l, Mar. 31, 2014, <a href="https://holtecinternational.com/2014/03/31/the-vertical-cask-transporter-design-evolution-reaches-the-plateau-of-maturity-versatility/">https://holtecinternational.com/2014/03/31/the-vertical-cask-transporter-design-evolution-reaches-the-plateau-of-maturity-versatility/</a>
JP-SES-6	Letter from Environmental Resources Management to Massachusetts Department of Environmental Protection, dated Nov. 6, 2006
JP-SES-7	Transportation of Radioactive Material, ZionSolutions, LLC, <a href="http://0313157.netsolhost.com/Zion/wp-content/uploads/2013/03/Transportation_of_Radioactive_Material.pdf">http://0313157.netsolhost.com/Zion/wp-content/uploads/2013/03/Transportation_of_Radioactive_Material.pdf</a> (last accessed on Oct. 17, 2017)
JP-SES-8	Memorandum of Understanding in Docket 6545
JP-SES-9	Prefiled Testimony of Thomas LaGuardia in Docket 6545

JP-SES-10	TLG Decommissioning Cost Estimate, dated March 1994
JP-SES-11	TLG Decommissioning Cost Estimate, dated Sept. 2001

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**PREFILED REBUTTAL TESTIMONY OF SCOTT E. STATE**

- 1 Q1. **Please state your name for the record.**
- 2 A1. Scott E. State.
- 3 Q2. **Are you the same Scott E. State who submitted opening prefiled testimony on**  
4 **December 16, 2016 and supplemental prefiled testimony on March 10, 2017 in this**  
5 **proceeding?**
- 6 A2. Yes.
- 7 Q3. **Have you reviewed the prefiled testimony submitted by the various non-petitioners?**
- 8 A3. Yes.
- 9 Q4. **Is there anything to which you wish to respond in that testimony?**
- 10 A4. Yes. I will begin with a short response and update concerning testimony submitted by  
11 the Elnu Abenaki Tribe. I will then focus on responding to testimony submitted by the  
12 witnesses for the Department of Public Service (“Department” or “DPS”) and the Agency

1 of Natural Resources (“ANR”). For example, the Department’s witnesses Brewer and  
2 Maret assert that “NorthStar proposes to explosively demolish a potentially contaminated  
3 structure following application of a fixative.” Exhibit DPS-WKB/GAM-2 at 34. That is  
4 absolutely not the case. In fact, NorthStar will not use any explosives. The  
5 Brewer/Maret assertion appears to be based on a very early worksheet tab within  
6 NorthStar’s Deal Model (which sets forth the timing of cash flows needed to accomplish  
7 the project) that was left over from a prior project and has no relevance to the VY  
8 Station; the tab was available to the Department only because NorthStar produced the  
9 document in its native (excel) format, Attachment A.DPS.NS.1-57.2264, which contained  
10 many obsolete tabs/worksheets that have nothing to do with the final Deal Model or  
11 project plan.

12  
13 **Response to Elnu Abenaki Tribe Witness Richard Holschuh**

14 **Q5. Mr. Holschuh’s testimony expresses a request for the project to be undertaken with**  
15 **sensitivity to not disturbing previously undisturbed portions of the site, since the site**  
16 **is considered sacred to the Elnu Abenaki tribe and may contain burial remains and**  
17 **other important cultural artifacts. Does NorthStar have a response to this request?**

18 **A5.** I appreciate Mr. Holschuh’s view and recently met with him and the Chief of the Elnu  
19 Abenaki and Missisquoi Abenaki. NorthStar will continue a dialogue with the tribes and  
20 has committed to them that NorthStar will engage a cultural expert to advise as a  
21 consultant on the project (the costs of which will not impact the Nuclear

1 Decommissioning Trust (“NDT”) or the Site Restoration Trust, and instead will be borne  
2 solely by NorthStar).

3  
4 **Mr. Dane’s Allegations of “Inconsistencies” in The Deal Model**

5 Q6. **Mr. Dane states that there is an “apparent inconsistenc[y]” (Dane PFT 44:23) in the**  
6 **Deal Model because “NorthStar represents that the majority of the dollar values in**  
7 **the Deal Model are in *nominal* dollars while it assumes *real* growth in the trust**  
8 **funds” (Dane PFT 44:25-45:2) (emphasis in original; footnotes omitted).<sup>1</sup> Please**  
9 **address this assertion.**

10 A6. There is no inconsistency. Mr. Dane appears to be confused because the word “nominal”  
11 is often associated with escalating dollars to account for inflation. But inflation is not,  
12 and need not be, accounted for in NorthStar’s Deal Model because all of the cost  
13 estimates are already in dollars as of the period of performance (known as “period of  
14 performance dollars”). For example, NorthStar’s contract with Waste Control Specialists  
15 (“WCS”) to accept waste is at fixed-unit prices that are already negotiated for the future  
16 dates when the waste will be shipped to WCS. If the waste is shipped as expected, there  
17 is no escalation factor for inflation in the WCS contract and thus there is no need for such  
18 a factor in the Deal Model. The same is true for all of NorthStar’s other cost estimates  
19 comprising the project. And NorthStar has not been inconsistent concerning the growth  
20 rate of the fund. The 2% rate that NorthStar uses is a *real* rate of return that likewise  
21 does not include any escalation for inflation.

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<sup>1</sup> All citations of the Dane PFT herein use the pagination in the confidential version of that PFT.

1 Q7. **Mr. Dane more specifically criticizes the spent nuclear fuel management costs**  
2 **(“ISFSI Caretaker Spent Plan”) as remaining the same between 2027 and 2052**  
3 **“with no apparent application of any inflation to escalate them to nominal dollars”**  
4 **(Dane PFT 45 n.86). What is your response?**

5 A7. These numbers are far into the future and concern spent fuel management after the non-  
6 ISFSI portions of the site have been completely decontaminated and cleaned to NRC and  
7 Vermont standards. Because they are far into the future, they are not as specific in terms  
8 of exact period of performance dollars as the active project costs (in the years 2019 to  
9 2026) discussed in my previous answer are. Instead, they represent a simplification of  
10 the costs, and that simplification indeed did not use an escalation factor for inflation. But  
11 even if an escalation factor were employed, which would lead to the annual cost figure  
12 increasing slightly over time, there would be no impact on the Deal Model because that  
13 escalation factor applied to NorthStar’s spent fuel management expenses would apply  
14 equally to NorthStar’s *recoveries* of those expenses from DOE.

15 Q8. **Mr. Dane asserts a second inconsistency, interpreting the Deal Model to allow for**  
16 **“\$10 million in interest on the note payable to Entergy for pre-closing dry fuel**  
17 **storage costs” (Dane PFT 45:12-13) when the “DFS Credit Facility’ tab” shows**  
18 **interest as “\$20.2 million” (Dane PFT 45 n.89). How do you respond?**

19 A8. There is no inconsistency. The DFS Credit Facility tab reflected a calculation that was  
20 performed before the terms of the Membership Interests Purchase Agreement and  
21 associated Decommissioning Completion Assurance Agreement were finalized. The \$10  
22 million in interest set forth in the final Deal Model reflects those final terms.

1 Q9. **Concerning that promissory note, is it irresponsible for NorthStar to be assuming a**  
2 **\$145 million liability as part of this transaction?**

3 A9. No. The \$145 million was funds that Entergy Nuclear Vermont Yankee, LLC (“ENVY”)  
4 borrowed from an external source (not from the NDT) to finance the construction of the  
5 independent spent fuel storage installation (“ISFSI”) and movement of spent fuel from  
6 the spent fuel pool to the ISFSI. Those expenses would not have been incurred had DOE  
7 not breached its contract with ENVY to timely remove spent fuel from the site. It was  
8 DOE’s breach that forced ENVY to pay for this storage (in lieu of transfer to DOE)  
9 solution. Other plants have been highly successful in recovering these costs as damages  
10 from DOE in an action for breach of the standard contract that DOE has with all  
11 commercial nuclear plants. Accordingly, while NorthStar is taking on a \$145 million  
12 liability, NorthStar is also taking on a receivable (expected recovery from DOE) that is  
13 expected to offset that liability.

14 Q10. **But is there any possibility that the receivable (*i.e.*, NorthStar’s recovery from DOE)**  
15 **may be less than the \$145 million liability NorthStar will owe to Entergy?**

16 A10. Yes.

17 Q11. **Will NorthStar Vermont Yankee, LLC’s (“NorthStar VY”) obligation to repay the**  
18 **remainder of the note take priority over, or interfere with, NorthStar VY’s financial**  
19 **ability to pay for decommissioning and site restoration?**

20 A11. No. As Entergy’s Steven Scheurich explains in his rebuttal testimony, under the terms of  
21 the Decommissioning Completion Assurance Agreement, Entergy is not entitled to  
22 repayment of that amount until *after* NorthStar’s completion of decommissioning (to

1 NRC standards) and site restoration (to Vermont standards) as to all portions of the site  
2 other than the ISFSI area.

3  
4 **Mr. Dane's Downside Risk Analysis**

5 Q12. **Mr. Dane provided a "Deal Model downside risk analysis" that modifies three Deal**  
6 **Model Assumptions (Dane PFT 42-50) as part of his testimony: (1) increasing the**  
7 **"NorthStar Spend Plan" column in the Deal Model for the years 2019 through 2052**  
8 **by 25%; (2) reducing the "NDT Spend Recovered from DOE" column in the Deal**  
9 **Model by 11%; and (3) reducing the real annual growth rate of the NDT/SRT by**  
10 **50% (from 2% to 1%). Do you have any overall comments on the approach used?**

11 A12. Yes. As an initial matter, Mr. Dane errs in effectively assuming that all three events will  
12 occur at the same time. Mr. Dane makes no effort to identify the probability that any one  
13 of the three events will occur, much less that all three will occur at the same time. A  
14 reasonable company or regulator would take into account not only the monetary impact  
15 of a risk, but also the probability that the risk will come to pass. Mr. Dane entirely fails  
16 to do so. His analysis therefore appears arbitrary.

17 Q13. **Do you agree with Mr. Dane's increase of the cost of the project (the "NorthStar**  
18 **Spend Plan" column) by 25%?**

19 A13. No. *First*, as just noted, Mr. Dane does not even attempt to identify the probability that  
20 the costs will increase by this amount, and instead effectively assumes that the probability  
21 is 100%.



1        *Second*, I believe that the approach of applying a single 25% cost overrun to the entire  
2        project is simplistic and does not match the way that NorthStar has designed the project  
3        execution. As opposed to a single multi-hundred million dollar project, the total plant  
4        decommissioning is expected to be a series of approximately 900 smaller coordinated  
5        projects over multiple years. These range from more technically complex work  
6        completed by a bonded subcontractor, to the straight-forward demolition of outlying  
7        support buildings. NorthStar manages thousands of projects each year, and to assume  
8        that all projects associated with the VY Station decommissioning move unfavorably by  
9        the same flat 25% is inconsistent with both the Company's experience and the VY  
10       Station decommissioning program design.

11       *Third*, Mr. Dane applies the 25% increase to the wrong base amount. As explained in my  
12       opening prefiled testimony, NorthStar's Pay Item Disbursement Schedule (and Deal  
13       Model) assigns dollar amounts that consist of NorthStar's estimated costs *plus* a 10%  
14       contingency amount. For example, if a task is estimated to cost \$10, NorthStar assigns  
15       \$11 (the cost estimate plus a 10% contingency, or \$1). A 25% escalation of NorthStar's  
16       estimated cost should thus be applied only to the \$10, not to the \$11. But Mr. Dane  
17       applies it to the \$11. This results in Mr. Dane calculating a total cost (after his  
18       application of the 25% increase) of \$705,687,000, rather than \$692,856,000.

19       *Fourth*, it is inappropriate for Mr. Dane to allow his escalation of the "NorthStar Spend  
20       Plan" column to be run through the Deal Model and have implications for other values.  
21       This is because the Pay Item Disbursement Schedule restricts NorthStar from  
22       withdrawing from the NDT/SRT any more than the amount for each task in the schedule,

1 which again consists of the estimated cost plus 10%. If the actual cost exceeds that  
2 amount, it by definition cannot affect the Deal Model and instead is funded from  
3 NorthStar's separate resources.

4 **Q14. Do you agree with Mr. Dane's decrease in the "NDT Spend Recovered from DOE"**  
5 **column by 11%?**

6 A14. No. Mr. Dane appears to believe that NorthStar is assuming 100% recovery (the "NDT  
7 Spend Recovered from DOE" column) of its expenses (the "ISFSI Caretaker Spend Plan"  
8 column). Mr. Dane believes he needs to adjust that recovery downward by 11%: 10%  
9 because NorthStar is supposedly including a contingency amount that the DOE will not  
10 reimburse at all, and another 1% because NorthStar is being too optimistic in how much  
11 of its actual hard costs it will recover. Neither premise is correct. NorthStar does not  
12 include a contingency amount of 10% for its spent fuel management costs; those do not  
13 appear in the Pay Item Disbursement Schedule (where the 10% is applied to every task  
14 across the board). NorthStar does include in its actual spent fuel management costs an  
15 amount for overhead, but such overhead costs have been successfully recovered in  
16 litigation against DOE and/or settlements with DOE. Additionally, NorthStar is  
17 conservative in assuming that it will recover only 90% of its actual spent fuel  
18 management costs. This discounting from 100% to 90% does not appear in the Deal  
19 Model because NorthStar has entered as a cost (the "ISFSI Caretaker Spend Plan") only  
20 90% of its cost, not 100%. The remaining 10% does not show up at all on the Deal  
21 Model; for purposes of analyzing the project finances, NorthStar conservatively assumes  
22 it will pay that amount out of its own pocket (although NorthStar will in fact submit a

1 claim for the entire 100% to DOE). Accordingly, when one looks at the “NDT Spend  
2 Recovered from DOE” column and finds the same amount as the amount that appeared in  
3 the “ISFSI Caretaker Spend Plan” column the previous year, the discount to 90% has  
4 already been reflected in both columns.

5 **Q15. Do you agree with Mr. Dane’s reduction of the real annual growth rate of the**  
6 **NDT/SRT from 2% to 1%?**

7 A15. No. The NRC allows licensees to assume a 2% real growth rate, and for good reason: It  
8 is a conservative estimate based on historical precedent. NorthStar intends to invest the  
9 fund in safe, fixed-income investments given the short time frame of its project. Even if  
10 the real growth rate could potentially fall slightly below 2% in a given year, that decline  
11 would likely be offset by an increase above 2% in other years. In any event, Mr. Dane  
12 certainly offers no historical precedent for an assumption that the growth rate would fall  
13 all the way to 1% for the entire duration of the project. That assumption appears entirely  
14 arbitrary. And, as noted, Mr. Dane identifies no probability that such a decline would  
15 occur. Instead, he effectively assumes that it is 100% likely to occur.

16  
17 **Mr. Dane’s Proposals For Further Assurances**

18 **Q16. Did you review Mr. Dane’s proposals for how NorthStar might provide more**  
19 **assurance that NorthStar Group Services, Inc. will be able to fund the \$125 million**  
20 **support agreement, if called upon to do so?**

21 A16. Yes.

1 Q17. **Do you have a reaction to Mr. Dane’s proposal that NorthStar should make “a**  
2 **commitment ... to escrow unused contingency funds [to] help ensure that sufficient**  
3 **funds are available to protect against cost overruns and unanticipated costs later in**  
4 **the Project” (Dane PFT 65:1-3)?**

5 A17. By way of background, this proposal concerns the 10% contingency portion of each line  
6 item in NorthStar’s pay item disbursement schedule. That schedule breaks the project  
7 into approximately 900 discrete tasks, and each of them has a monetary amount assigned.  
8 That amount reflects NorthStar’s estimate of the cost, which already generally includes  
9 certain conservatisms, such as assuming a larger rather than smaller amount of material to  
10 be disposed of, and then adds 10% of that cost. So, for example, if NorthStar estimated a  
11 task to cost \$100,000, then NorthStar would enter 1.10x of that amount, or \$110,000, in  
12 the pay item disbursement schedule. Once NorthStar completes that task, if it does so  
13 within its cost estimate of \$100,000, NorthStar will have collected the entire \$110,000  
14 listed in the pay item disbursement schedule, and the remaining \$10,000 will change hats  
15 from contingency into NorthStar’s profit. Mr. Dane’s proposal is that NorthStar take  
16 these collected profit funds and deposit them in a separate “escrow” account that would  
17 be available to deal with any unexpected cost overruns (above and beyond the cost of a  
18 task plus the 10% contingency amount) on tasks later in the project.

19 NorthStar has considered this concept for some time internally, but has not yet made a  
20 formal commitment to implement the concept. NorthStar is willing to consider making a  
21 formal commitment, although not necessarily the entire amount of the collected profit,

1 and with the possibilities that the amount of the “escrow” fund could be capped and the  
2 cap lowered as the project nears completion.

3 **Q18. On the subject of the NorthStar \$125 million parent support agreement, can you**  
4 **please clarify how long it will remain in place?**

5 A18. It will remain in place until the NRC grants release of the entire site (including the ISFSI  
6 area), which NorthStar estimates will occur in approximately 2053.<sup>2</sup> By that time,  
7 radiological decommissioning of the entire site will have been completed, site restoration  
8 of the entire site except for the ISFSI area will have been completed, and very little  
9 expense will remain. Indeed, for both radiological decommissioning and site restoration  
10 of the ISFSI area, NorthStar estimates less than \$5 million.

11 **Q19. Can you please clarify whether the \$125 million parent support agreement can be**  
12 **used to fund site restoration activities that are required to meet Vermont standards,**  
13 **but are not required to meet NRC standards?**

14 A19. Yes. The terms of the support agreement limit use of that amount to tasks that are tied to  
15 NRC requirements—*i.e.*, “to pay the Operating Costs and meet the NRC Requirements,”  
16 where “Operating Costs” is defined as “expenses of maintaining and decommissioning  
17 VYNPS safely and protecting the public health and safety.” Attachment A.DPS.JP.1-  
18 12.1, at EN-VYND 0002312. However, NorthStar’s method for doing the work  
19 required by NRC generally involves disassembling whole contaminated structures,  
20 breaking them down, and shipping them off site. Thus, NorthStar accomplishes NRC-

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<sup>2</sup> It is possible that the NRC may allow the amount of the parent support agreement to be reduced after partial site release (*i.e.*, release of all portions of the site other than the ISFSI area).

1 required decommissioning *and* Vermont-required site restoration concurrently through  
2 the same work and efforts. Because of this project plan, and because the support  
3 agreement can fund achievement of NRC requirements, the agreement can likewise help  
4 achieve Vermont-required site restoration. And, as noted in my previous answer, the  
5 agreement remains in place until the NRC grants release of the entire site, *i.e.*,  
6 approximately 2053, well beyond the estimated completion of active work (including site  
7 restoration) on the non-ISFSI areas in 2026.

8 **Q20. Do you have a response to Mr. Dane’s proposal that NorthStar Group Services, Inc.**  
9 **demonstrate “formal commitments from lenders and/or equity owners” to show**  
10 **NorthStar Group Services, Inc.’s ability to fund the \$125 million Support**  
11 **Agreement (Dane PFT at 65:4-5)?**

12 A20. NorthStar Group Services, Inc. does not see a method of doing more in this regard,  
13 beyond showing, as it already has, that under its amended credit agreement NorthStar  
14 Group Services, Inc. has access to substantial revolving credit. In terms of a formal  
15 commitment from equity owners (*i.e.*, those that own the ultimate parent NorthStar  
16 Group Holdings, LLC), such formal commitments are not customarily given by private  
17 equity investors such as these.

18 **Q21. Do you have a response to Mr. Dane’s proposal to “instal[l] ... an independent**  
19 **member of the NorthStar VY board of directors/managers, with certain financial**  
20 **oversight responsibilities and the ability to make unilateral calls on the Support**  
21 **Agreement” (Dane PFT 65:9-10)?**

1 A21. That proposal is unacceptable to NorthStar. As an initial matter, NorthStar VY will not  
2 have a board of directors. Instead it is an LLC that is managed by its sole owner,  
3 NorthStar Decommissioning Holdings, LLC. Personnel from other NorthStar entities  
4 (e.g., NorthStar Decommissioning Holdings, LLC and NorthStar Group Services, Inc.)  
5 will be managing NorthStar VY. But that circumstance does not mean that NorthStar VY  
6 will effectively decline to request funds under the support agreement from its upstream  
7 parent NorthStar Group Services, Inc. It is important to remember that the parent support  
8 agreement is part of the proposal made to the NRC seeking approval of the license  
9 transfer, and NRC would expect and demand that the agreement be used if necessary.

10

11 **Rebuttal of Department Witnesses Warren K. Brewer and Gregory A. Maret**

12 Q22. **Do you disagree with any assertions in the joint report filed by Messrs. Brewer and**  
13 **Maret, Exhibit DPS-WKB/GAM-2 (“Report”)?**

14 A22. Yes. I also disagree with much of the prefiled testimony submitted by Messrs. Brewer  
15 and Maret. However, for efficiency, I will focus my rebuttal on the Report, which I  
16 understand to capture all points that are included in the prefiled testimony of Messrs.  
17 Brewer and Maret.

18 Q23. **Do you see any overarching problems with the Report?**

19 A23. Yes. The Report purports to identify a number of supposedly possible events that, if they  
20 occurred, could cause the costs of the project to increase beyond NorthStar’s estimate.  
21 As discussed below, many of these are not possible at all or have already been accounted  
22 for in NorthStar’s cost estimate. Some are possible but extremely unlikely, and as to

1 those, the Report makes no attempt to ascertain a probability that the event or condition  
2 will occur. Instead, like Mr. Dane's prefiled testimony, the Report effectively assumes  
3 that the event or condition is 100% likely to occur and provides an estimate of the  
4 monetary impact. If the Report had taken into account the probability of the event or  
5 condition occurring, that probability would be well under 100% and thus the estimate of  
6 the monetary impact would be severely discounted.

7 **Q24. Are there any other overarching problems in the Report?**

8 A24. Yes. The Report appears to assume that all discrete tasks and costs in NorthStar's plan  
9 are set forth in the Deal Model and/or worksheet tabs in the Deal Model, Attachment  
10 A.DPS.NS.1-57.2264. *See, e.g.*, Report at 36-37 & nn.95-96 (incorrectly referring to this  
11 document as "Attachment A.DPS.NS:1-57.2664") (emphasis added). That is not the  
12 case. A separate document, the detailed Pay Item Disbursement Schedule, Attachment  
13 A.DPS.NS.1-57.2265, provides the most detailed and specific breakdown of tasks and  
14 their costs. The Deal Model then reflects these costs, but at a higher and more aggregated  
15 level without the detailed and specific breakdown. Notably, the Report does not cite or  
16 discuss the Pay Item Disbursement Schedule.

17 **Q25. The Report (at 12-19) provides examples of several past nuclear decommissioning**  
18 **projects that allegedly encountered unexpected conditions and associated increases**  
19 **in the original cost estimates of the projects. Do you expect that those unexpected**  
20 **conditions will be found at the VY Station site, too?**

21 A25. I do not expect that those conditions will be found at the VY Station. Both I and several  
22 project managers for NorthStar have extensive knowledge of the experiences of other



1 decommissioned nuclear power plants. To the extent the conditions the Report identifies  
2 might be found, they will not materially impact NorthStar's cost estimate. I will discuss  
3 them in turn:

4 Yankee Rowe (aka Yankee Atomic): The Report (at 11) references that "an additional  
5 100 million pounds of contaminated soil was discovered and had to be treated or  
6 removed." Report at 11. But that condition derived from a feature unique to Yankee  
7 Rowe. Specifically, the reactor was housed in an elevated spherical structure resembling  
8 a large golf ball. As I recall, the structure had been painted with contaminated paint, and  
9 over the years much of that paint flaked off and spread into the surrounding soil, causing  
10 contamination that had to be remediated. The VY Station does not have any similar  
11 structures, and so no such contaminated soil is expected. Even if there is more  
12 contaminated soil than is expected, NorthStar could tolerate a substantial increase without  
13 materially impacting its cost estimate, because NorthStar has a low cost for disposal of  
14 such soil within containers of debris that will be sent to WCS in any event.<sup>3</sup>

15 As to another aspect of Yankee Rowe described in the Report (at 16), there is no concern  
16 of a cost increase due to inability to reuse certain concrete because NorthStar's cost  
17 estimate already assumes that all demolished concrete at the site will be shipped off-site.

18 Connecticut Yankee: The Report (at 12-13) discusses unanticipated work at Connecticut  
19 Yankee but does not elaborate on what was unanticipated. In fact as I understand it,  
20 much of the added cost had to do with contamination of groundwater extenuated by the

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<sup>3</sup> The other issue mentioned in the Report (at 15) concerning Yankee Rowe, a "cost increase" regarding "respiratory protection," was a negligible amount and in any event has already been priced into NorthStar's cost estimate.

1 fractured bedrock underlying the site. At the VY Station, the geology is different from  
2 Connecticut Yankee, and importantly there has been extensive groundwater monitoring  
3 for several years that shows no such contamination. Accordingly, the Connecticut  
4 Yankee experience is not expected here.

5 Humboldt Bay: The Report (at 15) discusses the unexpected need at Humboldt Bay “to  
6 remove the entire caisson structure” (instead of just removing it to 3 feet below grade)  
7 including the portions below the level of the adjacent Pacific Ocean, but Humboldt Bay is  
8 entirely dissimilar to the VY Station. Humboldt Bay was an experimental reactor that  
9 had a different design and was shut down 30-40 years ago.

10 San Onofre Nuclear Generating Station (“SONGS”): SONGS (discussed at Report 17),  
11 like Connecticut Yankee, involved tritium in groundwater. No such condition is expected  
12 at the VY Station because, as noted above, there is extensive monitoring already and no  
13 elevated tritium above action levels has been reported for many years.

14 **Q26. The Report discusses not only tritium, but also Carbon 14. You responded**  
15 **regarding tritium in the context of the Connecticut Yankee and SONGS examples**  
16 **above, but what about Carbon 14?**

17 **A26.** As the Report recognizes (at 16), Carbon 14 is in a gaseous state, and in my experience it  
18 would not make its way into the soil. As to the possibility of Carbon 14 being found in  
19 concrete, I already explained that NorthStar’s estimate assumes that all demolished  
20 concrete at the site will be disposed of off site at WCS, so there is no risk to NorthStar’s  
21 cost estimate from Carbon 14.

1 Q27. **The Report suggests (at 18) that there might be “some sort of fuel handling event**  
2 **while loading or transferring spent fuel to the ISFSI” that causes “unexpected**  
3 **cleanup costs.” Would such an event impact NorthStar’s cost estimate?**

4 A27. No, because such an event either would or would not have occurred before the time came  
5 to close the transaction. The conditions to closing include that all spent nuclear fuel has  
6 been moved to the ISFSI and that no other material changes have occurred. If there were  
7 a fuel handling event, it would occur before the time for closing the transaction. If there  
8 were a costly cleanup, Entergy would have to pay for it in order for the transaction to  
9 have the possibility of moving forward. Otherwise, NorthStar would not close the  
10 transaction. I highly doubt that there will be a fuel handling event, however.

11 Q28. **The Report suggests (at 19-20) that NorthStar will encounter “cascading costs” if**  
12 **certain tasks are delayed beyond the scheduled completion date. Do you agree?**

13 A28. No. As to AREVA, any delay regarding its tasks of reactor vessel segmentation and  
14 reactor internals segmentation would impact its ability to make a profit and thus is  
15 unlikely to occur. Even if AREVA were to delay twelve to eighteen months, it would not  
16 affect NorthStar’s overall targeted completion date.

17 More generally, NorthStar is very adept at avoiding wasted costs from employees or  
18 contractors sitting at a site unable to commence work due to delayed completion of  
19 another task. For one, many of the tasks in the project need not occur in a particular  
20 order; in other words, there is not just one possible critical path to completion, but  
21 multiple paths. This means that delay in any one task will not necessarily affect progress  
22 on other tasks. In addition, NorthStar (unlike a utility) has employees that can be

1 deployed to NorthStar's other projects around the country. Accordingly, there is no  
2 possibility that NorthStar employees or contractors will be sitting at the VY Station site  
3 for an extended time with no work to do given the delay in completing some prior task.  
4 NorthStar instead would reshuffle those employees to its other projects temporarily so  
5 that their cost would go to those other projects rather than to the VY Station project.

6 **Q29. The Report asserts (at 20) that NorthStar may not be able to use ENVY's NRC-**  
7 **granted exemption to use the NDT for spent fuel management costs as well as license**  
8 **termination costs. If NRC denies NorthStar this ability, will that affect NorthStar's**  
9 **cost estimate and deal model?**

10 A29. NorthStar fully expects that the exemption will carry over to NorthStar, including a new  
11 limitation (to which ENVY is not subject) that NorthStar can withdraw at most \$20  
12 million at any one time for spent fuel management costs. But in any event, the NRC will  
13 grant the license transfer application only if it finds that NorthStar's financial plan,  
14 including its treatment of spent fuel management costs, provides adequate financial  
15 assurance that it can complete license termination activities. The NRC's decision will  
16 almost certainly be known before the Commission decides on the petition in this Docket  
17 8880. As such, this issue will either be resolved in NorthStar's favor or, if it is not,  
18 NorthStar will then be able to decide whether the denial is a material change that would  
19 prevent NorthStar from closing on the transaction.

20 **Q30. The Report claims (at 20-22) that NorthStar's cost estimate has not taken into**  
21 **account the supposed need to repackage the spent fuel in order to prepare it for**  
22 **acceptance by DOE. How do you respond?**

1 A30. The Report does not address the technology of “overpack,” which NorthStar believes is  
2 nearly certain to be allowed by both DOE and NRC. The overpack involves taking the  
3 existing metal canister from the ISFSI pad and placing it within a larger “overpack” cask  
4 that is appropriate for shipment. The facilities discussed in the Report (at 21) instead  
5 assume that the contents of the existing canister must be *removed* (describing need for  
6 “spent fuel canisters to be opened,” *id.*) and placed in a different container; I agree that  
7 doing so would be more costly, but again such costs need not be incurred when using the  
8 overpack method.

9 NorthStar’s cost estimate is based on the overpack method and amounts to approximately  
10 \$14.5 million over the entire course of the fuel transfer campaign, which is assumed in  
11 the deal model to occur between 2025 and 2052.

12 Q31. **The Report asserts (at 22-23) that NorthStar might incur increased spent fuel**  
13 **storage costs if the DOE does not complete its acceptance of spent nuclear fuel from**  
14 **the VY Station by 2052, as the Deal Model assumes. How do you respond?**

15 A31. There would be additional storage costs for each year of delay. But such costs are not  
16 that large per year (less than \$10 million), and they are clearly recoverable from DOE.  
17 Put another way, DOE’s breach of contract would just be longer for each year of delay,  
18 and its damages owed to NorthStar would increase accordingly. In the unlikely event  
19 that the costs are larger due to the need to *re-pack* (instead of overpack) the existing  
20 canisters into new storage canisters, that cost would likewise be recoverable from DOE  
21 because it would result directly from DOE’s breach of the standard contract. Even if  
22 there were some problem in funding these up-front costs before receiving recovery from

1 DOE, it would have no impact on the non-ISFSI portion of the site, which already would  
2 have been decommissioned and site-restored many years prior.

3 **Q32. The Report criticizes (at 23-24) the NorthStar Deal Model's assumptions regarding**  
4 **the costs for transferring fuel from the ISFSI to the DOE. As an initial matter, are**  
5 **those costs expected to be recovered from DOE?**

6 A32. Probably not, because the cost of transferring fuel to DOE (from the spent fuel pool  
7 rather than from the ISFSI) would have been incurred even if DOE had not breached.  
8 Under the standard contract, the plant owner has the obligation to load the cask onto  
9 DOE's transport vehicle, and DOE is responsible for all remaining costs. DOE is also  
10 generally responsible for storage costs because there would have been no need for storage  
11 had DOE's transport vehicle arrived on the timetable to which DOE committed in the  
12 standard contract. NorthStar's model is clear in assuming that the ISFSI to DOE transfer  
13 costs are not recovered from DOE. However, NorthStar also assumes that these costs  
14 may be paid for from the NDT funds after license termination and site restoration  
15 activities of all areas of the site other than the ISFSI area have been completed.

16 **Q33. How do you respond to the Report's criticism of the cost estimate for ISFSI to DOE**  
17 **transfer?**

18 A33. Initially, the Report mistakenly asserts that NorthStar will need to rent or purchase a  
19 crane. In fact, NorthStar already owns the needed resources to load the canisters on a  
20 DOE supplied vehicle. Further, NorthStar has a plan that supports the cost estimates,  
21 including the initial cost in 2025 to mobilize personnel and equipment.

1 The Report refers (at 24) to a facility at Arkansas Nuclear One, but that facility is not  
2 analogous. It was constructed, as I understand it, because the refueling building floor  
3 was too weak, and had numerous other features that likely will not be necessary to move  
4 casks at the VY Station from the ISFSI pad to rail cars.

5 As to seismic concerns, these can be handled through the design of the crane and/or  
6 forklift used to accomplish the transfer. *See, e.g.,*  
7 [https://holtecinternational.com/2014/03/31/the-vertical-cask-transporter-design-](https://holtecinternational.com/2014/03/31/the-vertical-cask-transporter-design-evolution-reaches-the-plateau-of-maturity-versatility/)  
8 [evolution-reaches-the-plateau-of-maturity-versatility/](https://holtecinternational.com/2014/03/31/the-vertical-cask-transporter-design-evolution-reaches-the-plateau-of-maturity-versatility/) (Exhibit JP-SES-5). They do not  
9 require building an expensive new structure at the site.

10 **Q34. The Report (at 25) argues that NorthStar has not addressed the possibility that**  
11 **there will be an offset against its recoveries against DOE, with the offset being one to**  
12 **account for costs that NorthStar VY (or that same entity under its prior name**  
13 **ENVY) would have incurred for loading ISFSI for transport by DOE if DOE had**  
14 **timely performed. How do you respond?**

15 **A34.** It is important to distinguish an offset from an affirmative claim. An offset would not  
16 require NorthStar VY affirmatively to pay money to DOE, rather it would reduce the  
17 recovery amount to which NorthStar VY is otherwise entitled from DOE. Potentially,  
18 such offsets during the 2027-52 years could mean that the NDT has fewer funds than  
19 NorthStar assumes. The effect of that would potentially, in the extreme (and probably  
20 only closer to 2052), mean that there are not enough funds in the NDT for NorthStar to  
21 use NDT monies as working capital to pay for spent nuclear fuel management expenses,

1 and NorthStar would need to go into its own pocket to pay those expenses. Notably,  
2 ENVY is subject to the same risk under the status quo.

3 **Q35. The Report contends (at 25-26) that NorthStar is wrongly assuming that it recovers**  
4 **on January 1 of the next year all of the costs incurred in the previous calendar year,**  
5 **when in fact there will be a lag in recovery. How do you respond?**

6 A35. Indeed, NorthStar has made the simplifying assumption that it will recover the costs  
7 immediately on the first day of the next year, when in fact there will be some time  
8 (probably a few months) for preparation of the claim and payment of it by DOE. But this  
9 simplifying assumption cannot be examined on its own; it is offset by another simplifying  
10 assumption that NorthStar incurred the previous year's costs entirely on January 1 of that  
11 previous year, when in fact NorthStar will have incurred those costs (and withdrawn  
12 monies from the NDT to pay them) on an ongoing basis throughout the year, such that  
13 some funds remained in the NDT and earned income for some months of the previous  
14 year. Taking these two assumptions together, NorthStar is being conservative in its  
15 estimation. In any event, the Report (at 26) acknowledges that the income of any  
16 supposed error by NorthStar is *de minimis*, "\$2 million."

17 **Q36. The Report (at 27) says that "[i]t is not clear whether NorthStar assumes recovery**  
18 **from DOE of the contingency/profit premium it incorporates into line items in the**  
19 **disbursement schedule." Can you please clarify that issue?**

20 A36. NorthStar does not assume or seek a contingency/profit premium for spent nuclear fuel  
21 management costs. NorthStar does assume and seek an overhead cost (which is a hard  
22 cost, not a contingency/profit issue as employed with the pay items in the pay item



1 disbursement schedule), consistent with what NorthStar understands has been allowed by  
2 DOE in settlements of litigation for breach of the standard contract. But again NorthStar  
3 is being conservative by inputting as a cost in the “ISFSI Caretaker Spend Plan” only  
4 90% of NorthStar’s total cost (including overhead).

5 **Q37. The Report (at 27) claims that you improperly state that you will recover \$1.36**  
6 **million from DOE, which is the sum of litigation costs and the costs of transferring**  
7 **fuel from ISFSI to DOE that you have not assumed to be recovered from DOE in**  
8 **other years. How do you respond?**

9 A37. The Report is correct in this respect. That line of the Deal Model (for the year 2052)  
10 includes the error they identify. The impact is *de minimis*, however. Taking away that  
11 \$1.36 million in recovery simply means that, in 2053, the recovery from DOE will be  
12 \$12,398,000 rather than \$13,761,000, and the final amount in the NDT at the end of 2053  
13 will be \$16,173,000 rather than \$17,536,000. By that point all the spent fuel will have  
14 been removed and all portions of the site including the ISFSI area will have been  
15 decommissioned and site-restored, with \$16,173,000 left over for distribution according  
16 to the 45/55 split between owner and the VYNPC’s stakeholders as set forth in Docket  
17 6545.

18 **Q38. The Report (at 27) asserts that NorthStar may actually recover its costs from DOE**  
19 **only every four years, not every year. Initially, the Report said that this would**  
20 **impact growth of the NDT to the tune of \$15 million over the course of the project.**  
21 **A subsequent letter from the Department dated September 12, 2017, stated that this**

1 **figure was incorrect and instead the correct figure is \$5 million. How do you**  
2 **respond?**

3 A38. NorthStar assumes for modelling purposes, based on industry experience, that NorthStar  
4 and DOE will reach a settlement once every four years, and that claims will be presented  
5 and paid under that settlement in each year between settlements. This means a recovery  
6 every year, not every four years as the Report suggests. For example, NorthStar assumes  
7 that it reaches a settlement with DOE in 2029. Doing so is assumed to cost NorthStar  
8 \$250,000 in litigation expenses that are not recoverable from DOE. NorthStar then  
9 assumes that, under that 2029 settlement, NorthStar submits claims in each of 2030,  
10 2031, 2032, and 2033. Whereas the settlement cost \$250,000 to negotiate, the cost of  
11 submitting claims is assumed to be *de minimis*, *i.e.*, \$0. NorthStar would then reach  
12 another settlement in 2033, and so on.

13 Q39. **As a final spent fuel-related critique, the Report (at 28) questions how NorthStar**  
14 **can be confident that it will recover \$30 million in 2023 from DOE litigation. Can**  
15 **you explain why NorthStar is confident?**

16 A39. NorthStar is confident because the part of the Third Round DOE claim covering costs to  
17 manage spent nuclear fuel incurred between 2014 and 2018 will be well over \$30 million,  
18 and even at a conservative recovery rate, the recovery will be over \$30 million. Under  
19 NorthStar's contract with Entergy (the Decommissioning Completion Assurance  
20 Agreement ("DCAA")), NorthStar is entitled to the first \$30 million of the recovery.  
21 Any excess amount (which will likely be substantial) will go toward repaying the  
22 promissory note that NorthStar will have signed in favor of Entergy (specifically the

1 VYARM entity). *See* DCAA Section 1.1(d), (f) (Attachment A.DPS.JP.1-12.1, at EN-  
2 VYNDC0002252-53).

3 **Q40. Turning to site restoration standards, the Report says (at 28) that a requirement**  
4 **that NorthStar remove all foundations (rather than allowing foundations to be left**  
5 **to the extent they are 4 feet below grade) would increase costs by as much as \$100**  
6 **million. How do you respond?**

7 A40. That would clearly be a material change because it would drastically escalate the costs of  
8 the project, it would be known before closing of the transaction, and it would lead  
9 NorthStar not to close on the transaction. Accordingly there is no basis for the Report to  
10 portray this as a possible unexpected cost to NorthStar during the term of the project.

11 **Q41. On the question of rubbleization and reuse of material, the Report asserts (at 29) that**  
12 **Yankee Rowe “was ultimately permitted to use only clean concrete (with no**  
13 **distinguishable plant-related radioactivity above background) as on-site fill.” Do**  
14 **you agree?**

15 A41. Yes. But the term “no distinguishable plant-related radioactivity above background” is  
16 not self-defining. It was in fact defined in the case of Yankee Rowe as follows:

17 ***3.1.2 Radiological Characterization***

18 The following Materials Reuse Protocols were developed by YAEC in coordination with  
19 the Massachusetts DPH and subsequently approved by the Department in September  
20 2005. The Materials Reuse Protocols are being utilized for determination of above and  
21 below grade processed concrete debris that would qualify for purposes of reuse as  
22 backfill (including grading material). Note that these protocols apply only to above and  
23 below grade processed concrete debris for use as fill and do not apply to existing  
24 subsurface slabs/structures and asphalt. The Materials Reuse Protocols demonstrate  
25 compliance with the BUD criterion of “no distinguishable plant-related radioactivity  
26 above background levels” for radionuclides in substructures and materials suitable for  
27 backfill in the BUD fill area and include:

1  
2 1. For gamma emitting radionuclides, the analysis system sensitivity was established to  
3 ensure the environmental lower limit of detection (LLD) of 0.18 picoCuries/ gram (pCi/  
4 g) for Cs-137 are met. Given this level of system sensitivity, any gamma emitting  
5 radionuclides that have positive radioactivity identified above their respective minimum  
6 detectable activity (MDA) were considered to be distinguishable above background and  
7 therefore would not be considered acceptable for re-use as backfill.  
8

9 2. The minimum detection limits (MDLs) for Hard-to-Detect (HTD) radionuclides  
10 tritium (H-3), Carbon 14 (C-14), and Strontium 90 (Sr-90) are 5 pCi/g, 2 pCi/g, and 2  
11 pCi/g, respectively.  
12

13 3. Averaging of Tritium, C-14 and Sr-90 levels within individual subsurface concrete  
14 structures (or rubble piles) for comparison to the individual MDLs outlined above.  
15

16 4. The establishment of maximum, Upper Limit (UL) values for Tritium, C-14 and Sr-90  
17 at three times the MDLs, or 15 pCi/g (Tritium), 6 pCi/ g (C-14) and 6 pCi/ g (Sr-90) for  
18 any concrete “hotspots” in subsurface structures or rubble piles. Existing subsurface  
19 structures reused under the BUD, including below grade concrete structures, concrete  
20 slabs (fractured and/ or perforated) and asphalt will meet release criteria described above.  
21 In addition, excavated soils to be used as backfill within the BUD area will also meet the  
22 10 mrem/yr DCGL criteria. The YNPS License Termination Plan (LTP) includes the  
23 applicable Derived Concentration Guideline Limits (DCGLs) that are being applied to the  
24 site. It should be noted that the DPH site release criteria (10 mrem/yr) is more  
25 conservative than the NRC criteria (25 mrem/yr) and as such, the DCGLs found in the  
26 LTP will be adjusted to reflect the Massachusetts Department of Public Health (DPH)  
27 criteria.  
28

29 Letter from Environmental Resources Management to Massachusetts Department of  
30 Environmental Protection dated Nov. 6, 2006 (Exhibit JP-SES-6). NorthStar would  
31 potentially be willing to consider a similar standard.

32 Another potential approach would be to identify certain specific structures that are both  
33 unlikely to contain contamination *and* consist of a very large volume of concrete. An  
34 example is the cooling towers. That structure could be surveyed and sampled both before  
35 and after demolition and confirmed to be appropriate for reuse.

1 Q42. **More generally, is NorthStar insisting on the ability to use rubblization and reuse of**  
2 **concrete at the VY Station?**

3 A42. No. NorthStar thinks that rubblization and reuse of concrete should be considered  
4 because it may make sense both from a cost and a public-safety perspective; the exact  
5 protocols would have to be agreed to as well. The cost issue is whether the increased cost  
6 to sample and size the rubble to a finer level (as needed for fill but not disposal), and the  
7 cost of characterizing to ensure compliance with the agreed-to protocols, outweighs the  
8 cost that otherwise would have had to be incurred to ship the rubble away and bring in  
9 new rubble to use as fill. The public-safety issue is that reuse will avoid numerous truck  
10 trips and thus decrease the likelihood of vehicle-related accidents impacting the public.  
11 NorthStar's current cost estimate actually assumes for simplicity that no re-use will be  
12 done (*i.e.*, that all demolished concrete at the site will be taken away from the site for  
13 disposal).

14 Q43. **The Report (at 29-30) asserts that NorthStar's estimated site restoration costs are**  
15 **much lower than Entergy's estimate of "about \$57 million"? Does this mean that**  
16 **NorthStar's estimate is too low?**

17 A43. No. The Entergy estimate was based on an entirely different assumption and approach.  
18 Specifically, the Entergy estimate is based on a plan to decontaminate all structures at the  
19 site from radioactivity (allowing NRC to terminate the license with those structures in  
20 place) *before* the structures are removed. On that assumption, the demolition and  
21 disposal of the structures would be a significant expense and it would all be in the  
22 category of "site restoration." NorthStar's approach is different. NorthStar does not

1 decontaminate the structures for free release before demolishing and removing them but  
2 rather prepares them for demolition and disposal with any contamination fixed so as not  
3 to be released into the environment. NorthStar's approach is accomplished mainly using  
4 funds from the NDT, and the activities are considered to be NRC license termination  
5 activities. Accordingly, there is no reason for NorthStar to expect to spend \$57 million  
6 on pure site restoration. In short, the Report's criticism in this regard rests on a  
7 fundamental misunderstanding of the difference between NorthStar's approach and  
8 Entergy's approach.

9 **Q44. The Report claims (at 30-31) that NorthStar's plan for concurrent license**  
10 **termination and site restoration work is unprecedented at "any other commercial**  
11 **nuclear power plant" and "may present technical and project management**  
12 **challenges"?**

13 **A44.** This assertion demonstrates the Report authors' lack of familiarity with how actual  
14 decommissioning projects are performed. Projects routinely involve demolition and  
15 disposal off site of materials that are radioactively contaminated with loose  
16 contamination fixed to the structures so that it does not spread during demolition. *See,*  
17 *e.g.,* [http://0313157.netsolhost.com/Zion/wp-](http://0313157.netsolhost.com/Zion/wp-content/uploads/2013/03/Transportation_of_Radioactive_Material.pdf)  
18 [content/uploads/2013/03/Transportation\\_of\\_Radioactive\\_Material.pdf](http://0313157.netsolhost.com/Zion/wp-content/uploads/2013/03/Transportation_of_Radioactive_Material.pdf) (Exhibit JP-SES-  
19 7) ("Most of the ... building demolition debris from the Zion Station decommissioning  
20 project will be loaded and transported by rail to EnergySolutions' licensed disposal  
21 facility in Clive, Utah. This type of waste is classified as Class A low-level radioactive

1 waste (LLRW), the lowest and most benign category.”). That is the same concurrent  
2 performance of license termination and site restoration that NorthStar proposes here.

3 As to the Report’s three specific critiques (at 31), I disagree:

4 *First*, the Report says that “demolition of building and structures before they have been  
5 decontaminated creates the potential to spread contamination and generate unanticipated  
6 work.” Report at 31; *see also id.* at 33, 34 (similar). NorthStar is absolutely aware of this  
7 issue and has planned to use fixatives to bind such contamination to the structure so the  
8 contamination does not spread during demolition. NorthStar also plans to use certain  
9 other methods during demolition to trap and segregate contaminated debris. And as to  
10 certain structures, NorthStar will indeed decontaminate before demolishing. NorthStar’s  
11 cost estimate already accounts for all of this.

12 *Second*, the Report says that, “if the structure is demolished without first decontaminating  
13 it, there is one waste stream,” which is a “larger” and more costly stream. NorthStar  
14 again has fully accounted for this in estimating waste quantities. NorthStar will dispose  
15 of the waste appropriately (including as low level radioactive waste), and has adequately  
16 projected the costs to do so using WCS.

17 *Third*, the Report raises a project management concern in that a concurrent approach to  
18 license termination and site restoration has no “temporal or physical distinction in the two  
19 cost streams.” NorthStar acknowledges that some judgment and discretion is involved in  
20 taking the cost of a task that accomplishes both radiological decommissioning and site  
21 restoration, and allocating the cost of the task in part to one category and in part to the  
22 other category. NorthStar has made its best effort to do so, as explained in my

1 supplemental prefiled testimony submitted on March 10, 2017. This issue is a result  
2 mainly of the fact that there is a separate NDT and SRT. NorthStar has proposed that the  
3 SRT be maintained as a separate sub-account within the NDT, but NorthStar alternatively  
4 would be amenable to combining the two as one single account, which would avoid any  
5 need to allocate the cost of a task as between the two categories, and would also ensure  
6 that any amount remaining at the end, including any remaining proceeds from Entergy's  
7 contributions to the SRT (NorthStar estimates approximately \$16 million) will go 55% to  
8 the stakeholders of the entity that sold the VY Station to Entergy.

9 **Q45. The Report (at 34-35) claims that NorthStar plans to use explosives as part of the**  
10 **demolition. Is that correct?**

11 A45. No, it is absolutely incorrect, as I explained earlier in this rebuttal testimony. The authors  
12 of the Report are relying on an outdated tab of the Deal Model that was a very early  
13 workup of a cost estimate and appears to have been borrowed from another project where  
14 implosion could have been appropriate. NorthStar recognizes, of course, that implosion  
15 of a radioactive structure is not generally done.

16 **Q46. The Report (at 35) says that NorthStar proposes to leave "equipment and not just**  
17 **foundations and building structure to remain in place" and hence "creates concerns**  
18 **with the mechanical process of filling the subsurface void." How do you respond?**

19 A46. That misunderstands NorthStar's plan. NorthStar will excavate and remove all  
20 equipment to the bottom of the foundations of the buildings, although the foundation  
21 walls will (if consistent with radiological and non-radiological standards) remain in place  
22 below 4 feet below grade. Once all of that material is removed from the foundation, the



1 hole will be filled with back fill. So, NorthStar plans to use exactly the same “common  
2 approach” of removing all equipment and creating “large void spaces” that will be filled.  
3 Report at 35. Accordingly, there are no unanticipated “cost[s] ... to determine what can  
4 be left, to select what needs to be filled with concrete or other material, [or] to actually  
5 fill such equipment compared to the cost of simply removing all of the equipment.” *Id.*  
6 The Report’s authors may be confused because NorthStar mentioned that certain large  
7 pipes *outside the four corners of a building foundation footprint* are below 4 feet below  
8 grade. If consistent with radiological and non-radiological standards, those pipes will be  
9 left in place and filled with grout or similar material as necessary so that the ground  
10 above is stable.

11 **Q47. The Report (at 36) asserts that “[t]here is significant uncertainty about the waste**  
12 **disposal rates used in the NorthStar estimate,” especially because published rates**  
13 **“range from \$100 to \$180 per cubic foot” and NorthStar appears to assume much**  
14 **lower rates. How do you respond?**

15 **A47.** The Report is confused on this point in part because it looks at obsolete tabs of the Deal  
16 Model. For example, the prices per volume referenced in the Report were merely  
17 placeholders in an early tab/worksheet and have since been replaced in the final workup  
18 with several different rates depending upon the specific waste stream. NorthStar can also  
19 access the WCS exempt waste cell that is available now but might not be available under  
20 the status quo if Entergy begins decommissioning in several decades. Access to this cell,  
21 along with NorthStar’s entitlement to Vermont compact rates, gives NorthStar the benefit  
22 of very attractive waste disposal rates. The disposal rates have been agreed to between

1 NorthStar and WCS, although they are not yet formalized in a written contract that has  
2 been produced. NorthStar's waste disposal cost estimate is based upon those rates and  
3 NorthStar's conservative estimates of waste volumes.

4 **Q48. The Report (at 37) complains that NorthStar underestimated the cost to dispose of**  
5 **Greater-Than-Class-C waste, which ENVY estimated at \$1.4 million. How do you**  
6 **respond?**

7 A48. The Report (at 37 n.97) misconstrues NorthStar's discovery response, A.DPS.NS.2DS-  
8 15. NorthStar there explained that it did not estimate a waste disposal cost for GTCC  
9 waste because waste disposal is DOE's responsibility under the standard contract. The  
10 discovery response did not address (and hence did not deny) the cost of transferring  
11 GTCC waste from the ISFSI area to DOE. NorthStar understands that it may have to  
12 bear that cost (just as with the cost of transferring spent nuclear fuel from the ISFSI area  
13 to DOE), and NorthStar has accounted for that cost.

14 **Q49. The Report (at 38, 39-40) criticizes NorthStar for not setting aside some or all of**  
15 **contingency that it collects as profit as it completes tasks on budget, so that such**  
16 **amounts will be set aside for possible overruns on later tasks. How do you respond?**

17 A49. As discussed earlier in this rebuttal testimony concerning Mr. Dane's identical point,  
18 NorthStar has considered such a set aside and may be amenable to some variation of such  
19 an approach.

20 **Q50. The Report (at 38) complains that NorthStar's 10% contingency amount is too low**  
21 **and is lower than the contingency amounts used by others, including ENVY. How**  
22 **do you respond?**

1 A50. It is improper to compare ENVY's contingency to NorthStar's for several reasons. *First*,  
2 and most notably, ENVY's plan involves decommissioning commencing only many  
3 years in the future, which means there is more uncertainty and a consequent need for  
4 more contingency. As Mr. Dane explains: "As identified by in [sic.] the Four Points  
5 Group Report, the length of the SAFSTOR period under the Status Quo has  
6 disadvantages associated with greater risks of regulatory change and cost increases."  
7 Dane PFT at 37 n.73. *Second*, NorthStar's estimate, before even adding the 10%  
8 contingency, includes certain "conservatisms," such as estimating a volume of waste to  
9 be at the larger rather than smaller end of a range, that perform a similar function to  
10 contingency. Because of those conservatisms, and because of NorthStar's confidence in  
11 its estimating ability, in large part through use of fixed-price or fixed-unit contracts,  
12 NorthStar does *not* expect to spend the 10% contingency, unlike licensees such as ENVY  
13 that do expect to spend their contingency.<sup>4</sup> For these reasons, the Report is incorrect to  
14 suggest NorthStar should increase its contingency to 15% or 17.3%, rather than the 10%  
15 it employs.

16

17 **Rebuttal of ANR witness Chuck Schwer**

18 Q51. **Mr. Schwer argues that all foundations and below-ground pipes should be removed,**  
19 **regardless of how far below grade they may be, in order to ensure that the site can**

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<sup>4</sup> ENVY's decommissioning cost estimate accompanying its PSDAR states on page xii:  
"Contingency funds, by contrast, are expected to be fully expended throughout the program."

1           **be released to environmental standards that can support residential reuse (Schwer**  
2           **PFT 8:15-10:11). How do you respond?**

3   A51. NorthStar’s proposal and its cost estimate are based upon a standard of removal of  
4           foundations and below-ground pipes to four feet below grade, not a lower level. As  
5           discussed in an earlier Q&A, removal to a level lower than four feet below grade would  
6           cause serious cost escalation for the decommissioning and restoration of the VY Station  
7           site. Indeed, it would cause ENVY or NorthStar to determine that there will not be  
8           enough money in the NDT to undertake decommissioning until far into the future,  
9           rendering decades of SAFSTOR the only possibility for the site.

10          Similarly, the requirement that the site be released to a residential standard is not only  
11          cost-inefficient, it is plainly inappropriate. Given the DOE’s breach of its obligations to  
12          remove the spent fuel, spent nuclear fuel could remain on the ISFSI pads for decades or  
13          even longer. To believe that a residential community could develop within sight of the  
14          ISFSI pads is just not credible, and so release to residential standards is unnecessary. Nor  
15          was such a standard assumed in Docket 6545, when ENVY purchased the VY Station.

16          To the contrary, the Docket 6545 Memorandum of Understanding (“MOU”)  
17          contemplated that the site could be used “for nuclear purposes” (which would include  
18          storage of spent nuclear fuel) or for “industrial or similar uses consistent with the orderly  
19          development of the property.” Docket 6545 MOU ¶ 3 (Exhibit JP-SES-8). The Docket  
20          7862 MOU did not change that understanding, and indeed expressly recognized that the  
21          site might be “used solely for industrial ... uses.” Docket 7862 MOU ¶ 6.

1 Furthermore, in its estimates dating back to 1994, ENVY and its predecessor Vermont  
2 Yankee Nuclear Power Corporation have assumed that during decommissioning and site  
3 restoration, structures would be removed to a level of only three feet below grade (one  
4 foot less deep than NorthStar proposes). This is the standard that has been assumed in  
5 estimating the costs of decommissioning, and it is the standard that was used in seeking  
6 monies for the NDT. *See* Prefiled Testimony of Thomas LaGuardia in Docket 6545 at  
7 24:6-9 (Exhibit JP-SES-9) (“Period 3 - Site Restoration - This period begins once license  
8 termination activities have concluded and involves the demolition of all remaining  
9 structures, typically to a depth of three feet below grade. Clean rubble would be used on-  
10 site for fill and additional soil would be used to cover each subgrade structure.”); TLG  
11 Decommissioning Cost Estimate, dated March 1994, at 3-7 (Exhibit JP-SES-10)  
12 (“Although not required for license termination, upon completion of the primary  
13 decommissioning operations, site restoration activities may begin. Building foundations  
14 and portions of structures three feet below grade and lower are abandoned in place. The  
15 clean fill from above grade structure demolition can be used to backfill voids created by  
16 the demolition process.”); TLG Decommissioning Cost Estimate, dated Sept. 2001, at xxi  
17 (Exhibit JP-SES-11) (“Consequently, this study assumes that site structures will be  
18 removed to a nominal depth of three feet below the local grade level whenever  
19 possible.”).

1 **Rebuttal of ANR witness Gerald Noyes**

2 **Q52. In his prefiled testimony, Mr. Noyes outlines the “procedures and requirements for**  
3 **a site investigation as set forth in the Investigation and Remediation of**  
4 **Contaminated Properties Rule” (Noyes PFT 5:11-12) (“IROCPP”). Does**  
5 **NorthStar commit to abide by these standards?**

6 A52. NorthStar understandably did not base its cost estimate or its opening prefiled testimony  
7 on the July 27, 2017 version of the IROCPP because it had not yet been adopted. I am  
8 not an attorney and do not know whether the new standards will apply to environmental  
9 conditions that existed already as of the date of adoption of the standards. That being  
10 said, NorthStar and its environmental consultant Haley & Aldrich are currently  
11 comparing the new standards to the prior ones so that NorthStar can promptly determine  
12 whether it can comply with the new standards. NorthStar has not yet completed that  
13 analysis, but will provide an update either through supplemental testimony or discovery  
14 responses as promptly as possible in advance of non-petitioners’ due date for prefiled  
15 surrebuttal testimony.

16 **Q53. Mr. Noyes claims that “the minimal site investigation and characterization of the**  
17 **Vermont Yankee Site conducted to date is inadequate and does not provide**  
18 **sufficient information about the scope and extent of non-radiological contamination**  
19 **at the Site” (Noyes PFT 3:15-17). What is your response?**

20 A53. It is a normal and expected part of the cost estimating process that perfect and complete  
21 information is not always available. NorthStar factors risk into its decommissioning cost  
22 estimate and applies conservatism in an appropriate manner consistent with industry

1 practice. In addition, NorthStar adds another layer of contingency or potential profit to  
2 ensure that there are layers of risk mitigation built into the cost estimate. NorthStar  
3 reviewed the available characterization and historical site assessment data as part of its  
4 due diligence.

5 NorthStar considered all of the identified recognized environmental conditions and areas  
6 of concern (“AOCs”) on and around the site in evaluating the risk associated with  
7 unknown contamination. Taking into account the identified areas, and the possibility that  
8 contamination could have spread or exist away from the identified areas, NorthStar is  
9 comfortable with the cost estimate it produced. Waste disposal costs are a large driver of  
10 the costs of decontaminating the VY Site, and NorthStar has secured preferential waste  
11 disposal rates that make NorthStar confident that even if the soil and materials that  
12 require remediation exceed NorthStar’s estimate by ten times, the decommissioning will  
13 not be delayed or require any additional monies.

14 NorthStar is comfortable that (1) AOCs had been identified and verified/validated, (2)  
15 available information and data sources were complete and accurate, (3) Entergy  
16 personnel on the site had a comprehensive understanding about AOCs and potential  
17 AOCs, (4) NorthStar had enough information to make a reasonable, informed, and  
18 conservative estimate, and (5) NorthStar had enough data to evaluate the information it  
19 still needed to gather post-closing and make a determination that the level of information  
20 available was appropriate.

21 **Q54. Does NorthStar’s contract with Entergy restrict NorthStar from performing site**  
22 **characterization prior to the closing?**

1 A54. It is a process provision but not a prohibition. Specifically, the Membership Interests  
2 Purchase Agreement provides in Section 6.3(a): “Notwithstanding anything in this  
3 Agreement to the contrary, during the Interim Period, Purchaser and its Representatives  
4 shall not have the right to perform or conduct any environmental sampling or testing at,  
5 in, on or underneath the Site without the prior written consent of Seller (which consent  
6 shall not be unreasonably withheld, conditioned or delayed).” Exhibit JP-SES-Supp-1 at  
7 page 76 of the pdf.

8 As context for this provision, NorthStar did understand that Entergy might be reluctant  
9 under this provision to allow certain sampling/characterization because of the  
10 radiological nature of certain areas such as the Turbine Building. The absence of such  
11 sampling/characterization does not undermine NorthStar’s confidence in its cost estimate,  
12 however, because, as explained above, NorthStar had the benefit of substantial ongoing  
13 and prior characterization and written reports and schematics, including groundwater  
14 monitoring wells, and NorthStar is very familiar with industrial sites of a similar vintage  
15 in terms of the non-radiological substances that are present. It also should be emphasized  
16 that NorthStar conducted several in-person walk-throughs of the site as part of its  
17 estimating process, and NorthStar and its environmental consultant have be on-site for  
18 some time doing pre-closing work.

19 Q55. **Mr. Noyes also argues that “[a]dditional investigation, including sampling of**  
20 **environmental media, at the Site is required to understand the scope and extent of**  
21 **non-radiological contamination and the corrective actions that are required to**



1           **protect public health and the environment and restore the Vermont Yankee site”**

2           **(Noyes PFT 3:17-21). What is your response?**

3    A55. NorthStar is committed to providing to the State sampling and characterization data that  
4           NorthStar develops as part of the decommissioning process.

5    Q56. **Does that conclude your testimony?**

6    A56. Yes, at this time.