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 other necessary affiliates 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	)	Docket No. 8880

SUMMARY OF PREFILED TESTIMONY OF DANIEL S. DANE

Mr. Dane, a Vice President with Concentric Energy Advisors, was engaged by the Vermont Department of Public Service to prepare an assessment of the financial aspects of the proposed transfer of the Vermont Yankee nuclear station from Entergy Nuclear Vermont Investment Company, LLC, to NorthStar Decommissioning Company, LLC, including the financial assurances proposed by NorthStar if the transfer is approved and the financial capabilities of NorthStar to complete the decommissioning, site restoration, and spent nuclear fuel management at Vermont Yankee. Mr. Dane's testimony also addresses certain financial aspects of the "status quo" scenario, in which Entergy Nuclear Vermont Investment Company, LLC remains the owner of Vermont Yankee.

Mr. Dane sponsors the following exhibits:

Exhibit DPS-DSD-1	Curriculum Vitae and Testimony Listing of Daniel S. Dane
Exhibit DPS-DSD-2	Analysis of NorthStar Metrics [Confidential – Filed Under Seal]
Exhibit DPS-DSD-3	Deal Model Analysis [Confidential – Filed Under Seal]
Exhibit DPS-DSD-4	Vermont Yankee Nuclear Power Station Revised Post-Shutdown Decommissioning Activities Report, Prepared by NorthStar, April 6, 2017.

Exhibit DPS-DSD-5	Vermont Yankee Nuclear Power Station Post-Shutdown Decommissioning Activities Report, Prepared by TLG Services, December 2, 2014, at 8-9.
Exhibit DPS-DSD-6	NorthStar June 2017 Preliminary Recapitalization Balance Sheet [Confidential – Filed Under Seal]
Exhibit DPS-DSD-7	Attachment A.DPS.NS.1-24.21 [Confidential – Filed Under Seal]
Exhibit DPS-DSD-8	Discovery Response A.DPS:NS.2-1
Exhibit DPS-DSD-9	Discovery Response A.DPS:NS.2-21
Exhibit DPS-DSD-10	Attachment A.DPS:NS.2-21.3 [Confidential – Filed Under Seal]
Exhibit DPS-DSD-11	Discovery Response A.DPS:NS.1-34
Exhibit DPS-DSD-12	Attachment A.DPS.NS.2-21.5 [Confidential – Filed Under Seal]
Exhibit DPS-DSD-13	Entergy SEC Form 10-Q for the period ended June 30, 2017
Exhibit DPS-DSD-14	Attachment A.DPS:NS.1-24.12 [Confidential – Filed Under Seal]
Exhibit DPS-DSD-15	Attachment A.DPS.EN.1-14.18 [Confidential – Filed Under Seal]
Exhibit DPS-DSD-16	Discovery Response A.DPS:NS.2-27
Exhibit DPS-DSD-17	Discovery Response A.DPS:NS.2-23
Exhibit DPS-DSD-18	Attachment A.DPS.NS 1-57.2264 [Confidential – Filed Under Seal]
Exhibit DPS-DSD-19	Discovery Response A.DPS:NS.1-51
Exhibit DPS-DSD-20	Discovery Response A.DPS:NS.2-31
Exhibit DPS-DSD-21	Discovery Response A.DPS:NS.1-49
Exhibit DPS-DSD-22	A.DPS.NS.2DS-5 [Confidential – Filed Under Seal]
Exhibit DPS-DSD-23	Discovery Response A.DPS:NS.2-18
Exhibit DPS-DSD-24	Attachment A.DPS.EN.1-17.2 [Confidential – Filed Under Seal]
Exhibit DPS-DSD-25	Discovery Response A.DPS:NS.2-30
Exhibit DPS-DSD-26	Discovery Response A.ANR:NS.1-16
Exhibit DPS-DSD-27	Discovery Response A.DPS.NS.2-33

Exhibit DPS-DSD-28	Discovery Response A.DPS:NS.1-21
Exhibit DPS-DSD-29	Discovery Response A.DPS:NS.1-22
Exhibit DPS-DSD-30	Discovery Response A.DPS:NS.1-41
Exhibit DPS-DSD-31	Discovery Response A.DPS:NS.2DM-1
Exhibit DPS-DSD-32	Discovery Response A.DPS:NS.2DM-11 [Confidential – Filed Under Seal]
Exhibit DPS-DSD-33	Entergy News Release, Entergy Reports Fourth Quarter and Full Year Financial Results; Initiates 2017 Earnings Guidance, February 15, 2017
Exhibit DPS-DSD-34	S&P Global Ratings, "Research Update: Entergy Corp. And Subsidiaries Rating Outlook Revised To Positive On Settlement To Close Nuclear Plants
Exhibit DPS-DSD-35	Discovery Response A.DPS:EN.2-1
Exhibit DPS-DSD-36	Attachment A.DPS.NS.1-24.11

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PREFILED TESTIMONY OF DANIEL S. DANE

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Daniel S. Dane. My business address is 293 Boston Post Road West, Suite 500, Marlborough, Massachusetts 01752.

Q. BY WHOM ARE YOU EMPLOYED, AND IN WHAT POSITION?

A. I am a Vice President with Concentric Energy Advisors, Inc. ("Concentric"), and the Financial and Operations Principal of CE Capital, Inc., a FINRA-member subsidiary of Concentric.

Q. ON WHOSE BEHALF ARE YOU SUBMITTING THIS TESTIMONY?

A. This testimony is offered on behalf of the Vermont Department of Public Service (the "Department").

Q. PLEASE DESCRIBE CONCENTRIC.

A. Concentric is a management consulting and economic advisory firm focused on the North American energy and water industries. Concentric specializes in regulatory and litigation support, transaction-related financial advisory services, energy market strategies, market assessments, energy commodity contracting and procurement, economic feasibility studies, and capital market analyses and negotiations.

Q. PLEASE DESCRIBE YOUR EDUCATION AND PROFESSIONAL LICENSES.

A. I have a Master of Business Administration from Boston College in Chestnut Hill, Massachusetts, and a Bachelor of Arts in Economics from Colgate University in Hamilton, New York. I am a Certified Public Accountant and a licensed securities professional (FINRA series 7, 28, 63, 79, and 99 licenses). I have included my Curriculum Vitae as Exhibit DPS-DSD-1.

Q. PLEASE FURTHER DESCRIBE YOUR QUALIFICATIONS AS THEY RELATE TO THIS PROCEEDING.

A. My experience in the economics and finance of nuclear power plants and their associated decommissioning liabilities in North America derives from more than a dozen projects over my energy consulting career. I have provided consulting and financial advisory services on projects relating to many nuclear power plants in North America, including:

Bellefonte	Indian Point	Point Beach
Big Rock Point	Monticello	San Onofre
Bruce Power	Palo Verde	St. Lucie
Darlington	Palisades	Turkey Point
Duane Arnold	Pickering	Wolf Creek
Ginna	Pilgrim	

Many of my nuclear power consulting engagements have involved managing processes that have resulted in the purchase and sale of nuclear plants and decommissioning liabilities. The three most recent competitive sales of working nuclear plants in the United States were for Point Beach 1 and 2 (2007), Palisades and Big Rock Point (2006), and Duane Arnold (2005). In addition, the unfinished Bellefonte plant was sold in 2016. Concentric assisted and supported the seller in each of those four most recent sales, and I was a member of each sale team. My responsibilities on those transactions included producing offering materials, evaluating the financial qualifications of potential buyers, assisting potential buyers in their due diligence, developing commercial terms of sale, evaluating the economics of purchase bids, and assisting the seller with negotiations. I have also been involved in the commercial aspects of the development of new nuclear projects and major construction programs for nuclear refurbishments and upgrades. In addition, I have analyzed the market conditions and value for nuclear generation pursuant to claims made in the International Court of Arbitration related to the early retirement of a nuclear facility. Further, I have assisted clients in litigation with the U.S. Department of Energy regarding the removal of spent nuclear fuel ("SNF") from nuclear stations, specifically by assessing the effect that prolonged storage of SNF at nuclear sites has had on nuclear plant valuations and decommissioning obligations.

Q. HAVE YOU PREVIOUSLY PRESENTED EXPERT TESTIMONY BEFORE ANY REGULATORY AGENCY?

A. Yes. I have testified or presented evidence in proceedings before the Connecticut Public Utilities Regulatory Authority, the Illinois Commerce Commission, the New Hampshire Public Utilities Commission, the Public Utility Commission of Texas, the South Dakota Public Utilities Commission, and the Ontario Energy Board.

Q. PLEASE EXPLAIN THE NAMING CONVENTIONS THAT YOU WILL BE USING THROUGHOUT YOUR TESTIMONY.

A. Because of the number of entities to which I will refer throughout my testimony, I have summarized the naming conventions I will use for each entity in the table below.

Table 1: List of Company Acronyms

Acronym	Entity
AREVA	AREVA, Inc.
B&M	Burns & McDonnell
ENOI	Entergy Nuclear Operations
Entergy	Entergy Corporation
ENVIC	Entergy Nuclear Vermont Investment Company, LLC

ENVY	Entergy Nuclear Vermont Yankee, LLC
NorthStar	NorthStar Group Services, Inc.
NorthStar NDC	NorthStar Nuclear Decommissioning Company, LLC
NorthStar ND Holdings	NorthStar Nuclear Decommissioning Holdings, LLC
NorthStar VY	NorthStar Vermont Yankee, LLC
VY or the Station	Vermont Yankee Nuclear Power Station
VYARM	Vermont Yankee Asset Retirement Management, LLC
WCS	Waste Control Specialists

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to address certain financial and commercial aspects of the proposed ownership transfer of ENVY to NorthStar,[1] including the Station itself, all SNF, the nuclear decommissioning trust ("NDT") and site restoration trust ("SRT"), and the property on which the Station sits, from ENVIC (a subsidiary of Entergy) to NorthStar ND Holdings (a subsidiary of NorthStar). I refer to this potential transfer of ownership as the "Proposed Transaction" throughout my testimony. Specifically, my testimony summarizes the findings of Concentric's assessment of the financial aspects of the proposed transaction, including: (1) the financial capability of NorthStar and its subsidiaries to assume the obligations it proposes to acquire from Entergy, including NorthStar's financial capacity to complete all decommissioning, dismantlement, and site restoration activities necessary to release the VY site for use consistent with site restoration standards established by the State of Vermont Public Utility Commission (the "Commission"); (2) the financial capacity of Entergy and its subsidiaries to complete all decommissioning, dismantlement, and site restoration at VY (referred to herein as the "Status Quo"); and (3) the relative advantages and disadvantages, from a

[1] Upon the transfer, the name ENVY would immediately change to NorthStar VY.

financial assurance perspective, of the Proposed Transaction versus the Status Quo. Throughout my testimony, I refer to the activities of NorthStar and its subsidiaries to complete decommissioning, dismantlement and site restoration, as the "Project."

Q. PLEASE SUMMARIZE THE CURRENT STATE OF VY AS IT RELATES TO YOUR TESTIMONY.

A. VY is currently owned by ENVY. The Station ceased operation in December 2014, and ENVY elected, consistent with Nuclear Regulatory Commission ("NRC") rules, to place the plant into long-term safe storage ("SAFSTOR") for a period of time during which earnings can continue to accrue in the NDT and SRT fund accounts while radioactivity levels are reduced. The NDT had a balance of approximately $572 million as of February 2017.[2] Under ENVY's current plan for decommissioning, as provided in ENVY's 2014 Post Shutdown Decommissioning Activities Report ("PSDAR"), radiological decommissioning could start as late as 2068, with decommissioning estimated to be complete by 2073, and site restoration estimated to be complete by 2075.[3] In prefiled testimony in this proceeding, however, Entergy has stated that its current assumptions support beginning decommissioning in 2053, with decommissioning and site restoration completed by 2060.[4] ENVY and ENOI committed in a 2013 Settlement Agreement related to PUC Docket No. 7862 to make

[2] Exhibit DPS-DSD-4, Vermont Yankee Nuclear Power Station Revised Post-Shutdown Decommissioning Activities Report, Prepared by NorthStar, April 6, 2017.
[3] Exhibit DPS-DSD-5, Vermont Yankee Nuclear Power Station Post-Shutdown Decommissioning Activities Report, Prepared by TLG Services, December 2, 2014, at 8-9.
[4] Prefiled Testimony of Steven Scheurich, December 16, 2016, at 16:9-12.

appropriate filings with the NRC to begin decommissioning earlier if sufficient funds were present in the NDT. Specifically, the parties stipulated:

> Once Entergy VY receives either NRC approval of, or nonopposition to, its filings, Entergy VY shall promptly commence, pursue, and complete as soon as reasonably possible radiological decontamination and dismantling activities. Entergy VY shall provide to the [Vermont Public Service Department, or] PSD such additional explanatory or supporting information as the PSD reasonably may request relating to its evaluation of the adequacy of the NDT. [5]

Q. PLEASE SUMMARIZE THE ELEMENTS OF THE PROPOSED TRANSACTION THAT ARE SIGNIFICANT FOR YOUR ANALYSIS.

A. The Joint Petitioners entered into a Membership Interest Purchase and Sale Agreement ("MIPA") and are seeking Commissioning approval to transfer to NorthStar ND Holdings ownership of the Station and related decommissioning and site restoration obligations, along with the NDT and SRT. In addition, ENOI would transfer the VY operating license to NorthStar NDC. NorthStar NDC committed in the MIPA to begin decommissioning of VY by early 2021, and potentially sooner.[6] NorthStar NDC plans to complete radiological decommissioning and site restoration of VY, except for the Independent Spent Fuel Storage Installation ("ISFSI"), by the end of 2030 at the latest, and potentially by 2026.[7] NorthStar NDC and NorthStar VY plan to restore the site

[5] Exhibit DPS-DSD-5, Attachment 2.
[6] Exhibit JP-SES-SUPP-1, Attachment 1 at 4.
[7] *Id.*

based on site restoration standards established by the Commission in this proceeding. The MIPA requires that the NDT funds meet an established value at the time of the transfer, which NorthStar estimates will be sufficient to fully fund decommissioning of the Station.[8]

Q. PLEASE PROVIDE A SUMMARY OF YOUR CONCLUSIONS.

A. In summary, my conclusions are as follows:

1) Under both the Proposed Transaction and the Status Quo, the responsibility to decommission and restore the site will reside primarily with the legal entity with direct ownership of the Station (*i.e.*, NorthStar VY under the Proposed Transaction; ENVY under the Status Quo). Under both scenarios the direct owner will rely on the NDT and SRT to fund the Project. From this perspective, the two scenarios are equivalent.

2) There are differing levels of financial assurance provided under the Proposed Transaction than under the Status Quo, both in form and in quantity. The most significant difference is the nature and enforceability of the parent company "backstop" provided in each scenario. Specifically, NorthStar proposes to put in place a $125 million Support Agreement between NorthStar and NorthStar VY,[9] whereas Entergy has committed to a contingent parent guarantee of up to $40 million for decommissioning[10] and a $20 million guarantee for site restoration.[11] As a package, therefore, NorthStar's backstop financial assurance offers a larger

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8 *Id.*, at 5.
9 Prefiled Testimony of Scott E. State, December 16, 2016, at 39.
10 Exhibit DPS-DSD-5, at 21.
11 *Id.*, at 5.

amount of absolute dollars that could cover a broader range of unforeseen cost overruns than does the Status Quo. The Support Agreement, however, is not structured as a parent guarantee, and poses enforceability and other risks.

3) While NorthStar offers financial assurances in a larger absolute dollar amount, the financial resources underlying the parental backstops are lower under the Proposed Transaction than under the Status Quo. In my opinion, this is one of the main financial assurance-related risks related to the Proposed Transaction. Entergy is a publicly-traded company that files regular financial disclosures with the U.S. Securities and Exchange Commission and has an independent credit rating. NorthStar is measurably smaller than Entergy from a financial perspective. To put that point in perspective, as of June 12, 2017, NorthStar's total assets were 2.7 times the $125 million Support Agreement limit,[12] whereas Entergy's total assets were 765 times the combined $60 million in guarantees.[13] In addition, although NorthStar was recapitalized on June 12, 2017, prior to that NorthStar was very thinly capitalized (*i.e.*, $7.6 million in equity compared to $246.5 million in debt as of December 31, 2016) and had less than $10 million of cash on its balance sheet.[14] Further, NorthStar has made no commitment to maintain its currently more balanced capital structure during the Project.

[12] Financial information provided from Exhibit DPS-DSD-6, which is a preliminary balance sheet submitted to the Department on August 24, 2017 by NorthStar to reflect the opening balance sheet as of the closing of the June 12, 2017 recapitalization transaction. 2.7 times is equal to $342.09 million in assets divided by the $125 million Support Agreement amount.

[13] Entergy SEC Form 10-K for the period ended December 31, 2016, at 49. 765 times is equal to $45.9 billion in total assets divided by $60 million.

[14] Exhibit DPS-DSD-7, First Supplemental Responses to the Department's Second Set of Information Requests, August 2, 2017, Attachment A.DPS.NS.1-24.21 at pdf p. 137.

In addition, even as of June 2017 (post-recapitalization), based on information provided, NorthStar does not appear to have sufficient funds available to satisfy the Support Agreement if it were called on in full. Significant additional borrowings by NorthStar to fund the Support Agreement would likely return the company closer to its pre-recapitalization status.

4) Based on Entergy's size and financial stability, Entergy appears to be capable of fulfilling its obligations under the commitments it has made to backstop financing for decommissioning.

5) In addition to the risks described above relating to NorthStar's ability to perform under the financial assurances it has offered, there are financial risks that are unique to the Proposed Transaction. Specifically, theret are significant risks to NorthStar's decommissioning estimate that have been identified in the Four Points Group Report. Further, while NorthStar proposes to use a fixed payment disbursement approach to avoid prematurely depleting the NDT and SRT, it has not committed to setting aside funds (including any savings achieved through cost underruns) to cover potential future cost overruns. The potential impact of the risks identified in the Four Points Group Report, along with the lack of commitment by NorthStar to set aside funds for overruns, indicates the need to further improve the financial assurances in the Proposed Transaction. The ability of the trust funds to cover the costs of decommissioning and site restoration is of primary importance to the success of the Project. My recommendations, below, are intended to protect those

resources by strengthening assurances that sufficient funding will be available in the event that budgeted costs are exceeded, the schedule is delayed, or both.

Q. IN LIGHT OF YOUR ASSESSMENT OF THE FINANCIAL RISKS, WHAT FURTHER ASSURANCES DO YOU BELIEVE, BASED ON PRESENT INFORMATION, WOULD BE NECESSARY TO ADDRESS THE RISKS YOU IDENTIFY?

A. The following mechanisms could address and serve to mitigate the financial risks I discuss herein. Specifically, a commitment by NorthStar to escrow contingency funds would help address the financial impact of cost overruns and unanticipated costs occurring later in the Project. Also, additional evidence (*e.g.*, formal commitments from lenders and/or equity owners) is required to demonstrate NorthStar's ability to fund the $125 million Support Agreement. There are other governance and reporting measures that could be considered to provide greater assurance regarding the availability of funds for decommissioning as well as the continuing financial capability of NorthStar to backstop the Project. For instance, such additional measures could include the installation of an independent member of the NorthStar VY board of directors/managers, with certain financial oversight responsibilities and the ability to make unilateral calls on the Support Agreement.

Q. ARE THERE ANY BOUNDS TO YOUR ANALYSIS YOU WOULD LIKE TO IDENTIFY?

A. Yes, there are. First, Concentric did not assess the likelihood that the NRC will approve the VY license transfer, nor did we assess the compliance of NorthStar's proposed decommissioning funding approach and financial assurances with NRC or other federal regulations. Second, Concentric did not assess NorthStar's or Entergy's technical capabilities to complete decommissioning or site restoration, nor did we assess the appropriateness of either decommissioning plan from a technical or engineering perspective. Finally, Concentric did not analyze or reach a conclusion on the reasonableness of any estimate of the costs to decommission and restore the VY site. Several of these areas, including the latter two, are covered in the Four Points Group Report.

Q. HOW IS THE REMAINDER OF YOUR TESTIMONY ORGANIZED?

A. In Section II, I discuss the financial capabilities that NorthStar would bring to the task of decommissioning and site restoration of VY. In Section III, I provide an overview of the current ownership structure of VY, as well as Entergy's financial capabilities to decommission the Station if the Proposed Transaction does not close. In Section IV, I compare the Status Quo and Proposed Transaction cases.

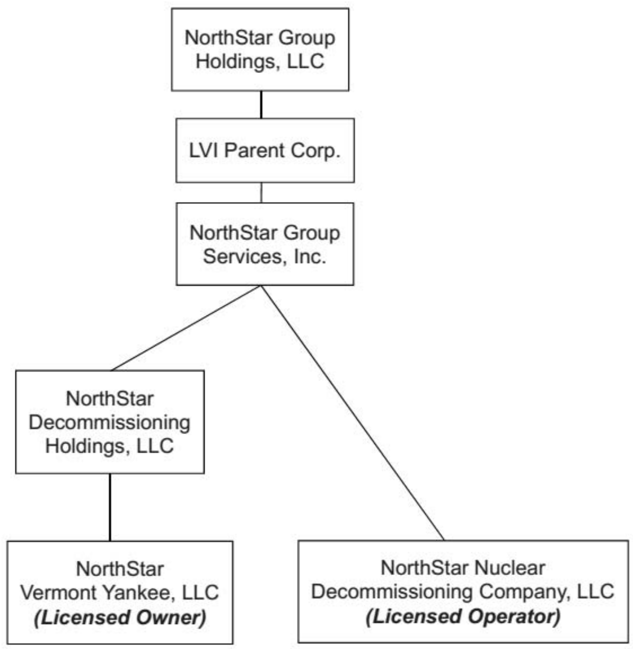
II. ANALYSIS OF NORTHSTAR'S FINANCIAL CAPABILITIES AND RISKS

A. OVERVIEW OF NORTHSTAR

Q. PLEASE DESCRIBE NORTHSTAR AND ITS AFFILIATE COMPANIES.

A. NorthStar is a privately-held company focused on large-scale decommissioning and environmental remediation. NorthStar is wholly-owned by LVI Parent Corporation, which is wholly-owned by NorthStar Group Holdings, LLC. Both LVI Parent Corporation and NorthStar Group Holdings, LLC are passive holding companies that hold only stock or membership interests in their subsidiaries, with no tangible assets.[15] NorthStar owns ND Holdings, LLC (the entity that would acquire ENVY) and NorthStar NDC, LLC (the entity that would be the licensed operator of VY).[16] The proposed organizational structure of NorthStar (post transfer) is shown below:

Figure 1: NorthStar Simplified Organization Chart (Post Transfer)[17]



Q. PLEASE DESCRIBE THE OWNERSHIP OF NORTHSTAR GROUP HOLDINGS, LLC.

A. NorthStar Group Holdings, LLC is owned by JFL-NGS Partners, LLC, which purchased the company on June 12, 2017 in what NorthStar refers to as the

15 Prefiled Testimony of Jeffrey P. Adix, December 16, 2016, at 1:7-9.
16 Prefiled Testimony of Scott E. State, December 16, 2016, at 9:11-16.
17 Exhibit JP-SES-SUPP-1, at Figure 2.

"Recapitalization Transaction."[18] Prior to the Recapitalization Transaction, NorthStar Group Holdings, LLC was owned primarily by four separate private equity interests.[19]

Q. WHAT WERE THE STATED REASONS FOR THE RECAPITALIZATION TRANSACTION?

A. According to NorthStar, the Recapitalization Transaction provided new equity to NorthStar and reduced the amount of debt on its balance sheet, along with renegotiating and extending NorthStar's credit agreement related to its remaining senior debt on more favorable terms.[20]

Q. WERE THERE OTHER CONTRIBUTORS TO THE NEED TO RECAPITALIZE NORTHSTAR?

A. Yes. As identified in NorthStar's recently re-issued audited financial statements, NorthStar defaulted under its loan agreements and its investors were unwilling to supply additional capital to the company, which "significantly constrained the Company's access to liquidity and capital."[21] The audited financial statements indicate that the Recapitalization Transaction, "address[ed] the prior liquidity issues and provid[ed] new capital to the business."[22]

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[18] *See* Exhibit DPS-DSD-8, Responses to the Department's Second Set of Information Requests, July 21, 2017, at A.DPS:NS.2-1.
[19] *Id.*
[20] Exhibit DPS-DSD-9.
[21] Exhibit DPS-DSD-10, Supplemental Responses to the Department's Second Set of Information Requests, August 2, 2017, at Attachment A.DPS:NS.2-21.3.
[22] *Id.*

Q. TO WHAT EXTENT DOES NORTHSTAR'S ORGANIZATIONAL STRUCTURE ALLOW NORTHSTAR VY TO CALL UPON ANY ASSETS OF OTHER COMPANIES IN THE NORTHSTAR GROUP?

A. All NorthStar companies proposed to be part of the VY ownership structure are limited liability companies ("LLCs") except for NorthStar and LVI Parent Corp., both of which are corporations.[23] The LLC structure limits the recourse NorthStar VY would have to its parents and affiliates and would also shield its member interests from being individually liable for the debts and obligations of NorthStar VY.

Q. GIVEN THE ORGANIZATIONAL STRUCTURE OF THE PROPOSED NORTHSTAR VY, ARE THE FINANCIAL CAPABILITIES OF NORTHSTAR VY'S PARENT COMPANY RELEVANT TO THIS PROCEEDING?

A. Yes. NorthStar is the immediate parent of NorthStar Decommissioning Holdings, LLC, which is acquiring VY. Under the Proposed Transaction, NorthStar will enter into a Support Agreement with NorthStar VY for up to $125 million.[24] That amount represents approximately 37% of NorthStar's total assets, as of the June 2017 balance sheet.[25] Thus, an analysis of NorthStar's financial capabilities is relevant to assess whether it will be able to provide financial support if called upon.

Q. PLEASE SUMMARIZE NORTHSTAR'S FINANCIAL CAPABILITIES.

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[23] *See* Exhibit JP-SES-SUPP-1, Attachment 1 at Enclosure 2.
[24] Prefiled Testimony of Scott E. State, December 16, 2016, at 19:5-8.
[25] Exhibit DPS-DSD-6.

A. NorthStar is privately held, and as such there is limited financial information available on the company. NorthStar is not rated by any credit rating agencies,[26] and, thus there are no third-party credit rating reports available regarding the financial health of the company. As such, analysis of NorthStar's financial capabilities necessarily relies on the Joint Petitioners' testimonies and discovery responses in this proceeding.

For purposes of this analysis, Concentric focused on NorthStar's financial performance from 2013 through the most recent information available through discovery, which includes certain partial financial data after the recent recapitalization of NorthStar. The Recapitalization Transaction appears to have removed approximately $100 million of debt from NorthStar's balance sheet, and added $52.4 million of preferred equity and $54.5 million of additional paid in equity.[27] Accordingly, I have removed the same proportion of interest expense from the recapitalized figures to estimate post-recapitalization interest expense.

The following Table 2 summarizes the cash balances, working capital,[28] total assets, capital structure, revenues, operating income, EBITDA (earnings before interest, taxes, depreciation and amortization), and net income for NorthStar for each

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[26] Exhibit DPS-DSD-11, Responses to the Department's First Set of Information Requests, April 26, 2017, at A.DPS:NS.1-34.

[27] Exhibit DPS-DSD-12, Supplemental Responses to the Department's Second Set of Information Requests, August 2, 2017, at Attachment A.DPS.NS.2-21.5.

[28] Working capital is the difference between current assets and current liabilities and is often relied upon to assess a firm's liquidity or ability to meet current obligations.

of the last four years and the current year, along with key financial ratios.[29] Exhibit DPS-DSD-2 contains the calculations and assumptions underpinning Table 2.

Table 2: NorthStar Key Financial Metrics 2013 to 2017E[30]

($ thousands)	Unaudited 2017E	Unaudited 2016	Audited 2015	Audited 2014	Audited 2013	CAGR[31]
Cash and cash equivalents	$8,717	$2,294	$838	$1,379	$5,629	12%
Working capital	56,138	44,217	(183,840)	15,697	30,327	17%
Total assets	342,089	369,005	402,728	405,003	214,130	12%
Total debt	143,559	246,452	242,990	237,249	106,375	8%
Shareholders' equity	89,865	7,634	21,779	21,995	9,922	73%
Total capital	233,424	254,086	264,769	259,244	116,297	19%
Revenues	448,437	572,913	652,326	473,240	371,803	5%
Operating income	18,395	36,898	40,330	6,080	24,850	-7%
EBITDA	17,863	35,599	39,639	5,982	24,514	-8%
Net income	$(21,205)	$(14,145)	$(216)	$(12,638)	$5,767	NMF
Current ratio	1.53	1.35	0.50	1.10	1.34	

[29] 2017 financial information was accumulated from available financial data provided by NorthStar in discovery. The most recent balance sheet information was from a different period (June 12, 2017 post recapitalization) than the income statement information (March 2017 pre-recapitalization). All recent financial statements were unaudited. Assumptions have been made to annualize partial year income statement data as described more fully in Exhibit DPS-DSD-2. Accordingly, the analyses provided are estimates only.

[30] Balance Sheet amounts shown for 2017 are per Exhibit DPS-DSD-6. The remaining 2013-2016 balances are per Exhibit DPS-DSD-7.

[31] Compound annual growth rate for the period represented.

Quick ratio	1.49	1.32	0.49	1.06	1.29	
Accounts receivable T/O (x)	1.31x	1.55x	1.62x	1.17x	1.74x	
Return on assets (%)	-6.20%	-3.83%	-0.05%	-3.12%	2.69%	
Debt/Capital	61.50%	97.00%	91.77%	91.52%	91.47%	
FFO/Debt (%)	26.00%	5.82%	4.59%	-4.31%	21.03%	
Debt/EBITDA (x)	8.04x	6.92x	6.13x	39.66x	4.34x	
EBITDA/Interest (x)	1.33x	1.52x	2.04x	0.45x	3.13x	
Altman Z Score	1.1235	1.4190	1.1650	0.8765	1.6500	

Q. PLEASE DESCRIBE NORTHSTAR'S FINANCIAL RATIOS.

A. The current ratio and the quick ratio reflect the capability of a company to meet its current obligations. A score below 1.0 indicates there is insufficient short-term liquidity to meet a company's current obligations. NorthStar's current and quick ratios have been consistently above 1.0 during the period reviewed, except for 2015. In that year, both ratios were well below 1.0, and per NorthStar's audited financial statements, NorthStar did not meet financial statement disclosure requirements in its debt covenants and all long-term debt was reclassified by its auditors to current debt outstanding and payable immediately. That event caused NorthStar's auditors to express substantial doubt about the company's ability to continue as a "going concern," as discussed further below.[32]

The accounts receivable turnover ratio indicates how efficiently a company is collecting its receivable balances and how many times during the year it collects its full balance in receivables. The turnover ratio indicates that NorthStar collects its

[32] Exhibit DPS-DSD-7. Note that, in a subsequent post-recapitalization reissuance of NorthStar's financial statements, those obligations were reclassified again as long-term obligations. *See* Exhibit DPS-DSD-10.

receivable balance between 1.2 and 1.7 times per year.[33] For comparison's sake, Entergy's turnover ratio, based on its most recently filed quarterly financial statements, was 4.6 times.[34] The return on assets ratio indicates how efficiently a company can manage its assets to produce profits during the period. As the table indicates, all returns have been negative since 2014, since NorthStar has been operating at a loss for that period, indicating that deployed assets have not led to positive earnings.

The next three ratios, Funds from Operations ("FFO")/Debt, Debt/EBITDA and EBITDA/Interest are used by the credit rating agency Standard & Poor's ("S&P") to assess a company's financial credit risk and assess its ability to meet its debt obligations. The FFO/Debt ratio is a leverage ratio that compares the cash flows of a company to its outstanding debt balance.[35] S&P's Corporate Credit Rating Methodology provides assessment levels that progress from "minimal," "modest," "intermediate," "significant," "aggressive," to "highly leveraged," dependent on specified metric thresholds. For the FFO/Debt ratio, assuming standard volatility,[36] any value below 12% categorizes the entity as "highly leveraged."[37] For the

[33] For purposes of this calculation I have assumed that the company's sales performance through the first three months of 2017 will continue through the remainder of the year. For the first three months of 2017, the Company achieved 72% of its sales forecast and 73% of its forecast cost of sales. I have applied those ratios to the 2017 forecast to estimate 2017 sales and cost of sales.

[34] Exhibit DPS-DSD-13, Entergy SEC Form 10-Q for the period ended June 30, 2017.

[35] Though there are distinctions between funds flow from operations and operating cash flows, for purposes of Concentric's analysis, and given the lack of financial detail available, I am considering funds flow from operations and operating cash flows to be the same. I have used the "Cash flow provided by operations" line item from the cash flow statement of NorthStar's financial statements for these calculations. For post-recapitalization FFO, I also made an upward adjustment to FFO to reflect my estimate of lower interest expense.

[36] S&P indicates a different set of assessment levels for businesses with "standard", "medial" or "low" volatility. Although "standard" volatility is the highest of the three volatility levels, I believe it is appropriate for a nuclear decommissioning project, with significant potential unknowns, and substantial dollars at stake.

[37] S&P Global Ratings, Ratings Direct, Corporate Methodology, November 19, 2013, at 25 (Table 17).

Debt/EBITDA multiple, S&P considers any multiple greater than 5.0x to also indicate "highly leveraged."[38] Lastly, for the EBITDA/Interest multiple, S&P considers any value below 2.0x to indicate an assessment of "highly-leveraged." Based on the analysis provided above of NorthStar's financial statements, NorthStar's FFO/Debt metric has risen above 12.0% (currently estimated at 26.00%) for the first time since 2013, due to the Company's recent recapitalization. Its Debt/EBITDA ratio, however, remains greater than 5x (currently estimated at 8.04x), and the EBITDA/Interest ratio remains at or below 2.0x (currently estimated at 1.33x) since 2013. NorthStar's financial metrics, therefore, mostly place it in the "highly leveraged" category for the period reviewed pursuant to the S&P criteria, with the FFO/Debt metric for 2017 improving two categories to the "significant" category, and credit metrics in 2013 falling into the relatively more risky "aggressive" category. "Highly leveraged" means NorthStar has been significantly capitalized with debt, indicating its fixed obligations are relatively high, which could place the company at risk of financial distress depending on its future profitability and other fixed obligations (such as, potentially, the financial assurances it has offered in this proceeding). While those ratios have been improved by the recapitalization of NorthStar, the earnings based ratios (Debt/EBITA and EBITDA/Interest) indicate the Company remains highly leveraged for its current level of income.

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[38] *Id.*

The final ratio, the Altman Z score measures how closely a firm's financial attributes resemble those of financially distressed companies.[39] In the case of a privately held firm, a score above 2.9 is determined to be a "safe" score, between 1.23 and 2.9 can be considered a cautionary score, and scores below 1.23 indicate a strong similarity to the financial attributes of financial distressed firms. I have calculated NorthStar's Altman Z score currently to be currently 1.12 and, as shown in Exhibit DPS-DSD-2, its pre-capitalization Altman Z score from March 2017 was 0.88.

Focusing on the debt-related metrics in the table above, it is clear that, post-recapitalization, NorthStar has significantly less debt as a percentage of its overall capital structure, and its FFO/Debt ratio has significantly improved. The company's Debt/EBITDA and EBITDA/Interest ratios, however, remain in the "highly leveraged" category even post-recapitalization, and the Altman Z Score remains indicative of a high similarity to the financial attributes of distressed companies.

Q. WHAT CONCERNS DID NORTHSTAR'S AUDITORS IDENTIFY ABOUT THE COMPANY'S FINANCIAL STABILITY?

A. According to NorthStar's 2015 audited financial statements (which were issued April 7, 2017 and then updated July 17, 2017), an investor dispute delayed NorthStar's delivery of audited 2015 and 2016 financials to its lenders, causing the company to be

[39] The Altman Z score was developed by NYU professor Edward I. Altman. The score was initially found to be 72% accurate in predicting bankruptcy two years prior to the event, and was later found to be 80-90% in predicting bankruptcy one year prior to the event. *See The Altman Z-Score: Is it possible to predict corporate bankruptcy using a formula?*, BUSINESS INSIDER, *available at* http://www.businessinsider.com/the-altman-z-score-is-it-possible-to-predict-corporate-bankruptcy-using-a-formula-2011-4 (last visited August 29, 2017).

in default of its loan agreements.[40] The auditors reclassified $222 million of long term debt to current (*i.e.*, payable within one year) obligations in 2015, since holders of the company's debt obligations had the option to call on debt due and payable immediately. Further, auditors noted that the investors' dispute impacted the company's ability to bid on certain job opportunities, which led to underperformance in 2016 and beyond. That caused the company to "breach" the financial ratios specified in its credit agreements.[41] Those issues contributed to the need to recapitalize the firm in June 2017, as discussed earlier in my testimony.

Q. ARE THOSE PAST FINANCIAL ISSUES INDICATIVE OF NORTHSTAR'S FUTURE FINANCIAL CAPABILITIES?

A. Not necessarily. Insufficient time has passed since the Recapitalization Transaction to determine whether NorthStar will be able to maintain access to liquidity and its more balanced capital structure. NorthStar's current financial picture continues to display certain weaknesses, and it continues to have a high level of debt relative to its earnings. Because of NorthStar's financial history, strengthening of financial assurances included in the Proposed Transaction would help to protect against reversion to conditions that could threaten completion or otherwise negatively impact the Project.

Q. YOU STATED ABOVE THAT YOU MADE CERTAIN ASSUMPTIONS REGARDING NORTHSTAR'S PERFORMANCE FOR THE REMAINDER OF

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40 Exhibit DPS-DSD-7, at pdf p. 106.
41 *Id.*

2017. HOW WOULD CHANGES FROM YOUR ASSUMED PERFORMANCE AFFECT THE COMPANY'S FINANCIAL STATUS?

A. As stated above, I compiled NorthStar's 2017 financial information to date from data provided by NorthStar in the discovery process, and I made assumptions to annualize partial year income statement data as described more fully in Exhibit DPS-DSD-2. NorthStar's actual performance for the remainder of the year could improve upon or worsen the financial picture provided in Table 2. For instance, if I were to assume that sales for the remainder of the year are consistent with NorthStar Group Holdings, LLC's forecast for the remaining months of the year (April through December of 2017), thereby achieving an annual sales level for 2017 of $579,983,000,[42] all metrics improve dramatically such that the leverage ratios and coverage ratios move up two notches from "highly leveraged" to "aggressive" and the Altman Z score moves into the less risky "cautionary area" at 1.81. Conversely, worse performance than I have assumed would result in deterioration of the company's leverage ratios.

Q. HOW WOULD YOU DESCRIBE NORTHSTAR'S FINANCIAL CAPABILITIES?

A. The company's recapitalization to 61.5% debt has substantially improved its financial profile by reducing debt, improving the company's financing flexibility. While liquidity ratios indicate adequate resources to meet current commitments, there is little buffer to absorb unforeseen costs, including the need to potentially provide support to NorthStar VY under the Support Agreement. In addition, NorthStar has made no

[42] Calculated as the actual sales amount reported on the income statement (found in Exhibit DPS-DSD-7, at pdf p. 142) added to each monthly forecast amount found in in Exhibit DPS-DSD-14, Responses to the Department's First Set of Information Requests, April 26, 2017, Attachment A.DPS.NS.1-24.12.

commitment in this proceeding to maintain its currently more balanced capitalization structure during the Project.

Q. DID ENTERGY PERFORM A CREDIT ASSESSMENT ON NORTHSTAR PRIOR TO NEGOTIATING ITS AGREEMENT TO SELL ENVY TO NORTHSTAR?

A. Yes. It appears that Entergy performed an internal credit assessment of NorthStar's financial capabilities by reviewing LVI's audited financial statements from 2011-2013 and NorthStar's unaudited financial information for 2014. Entergy's assessment gave NorthStar a "b-" rating (which, in credit terms, indicates a sub-investment grade company), and identified several concerns with respect to business and financial risk, which Entergy characterized as "fair to weak" and "highly leveraged," respectively.[43] Regarding business risk, Entergy's assessment pointed to low organic growth and a high concentration of credit risk (two customers made up greater than 10% of accounts receivable). With respect to financial risk, Entergy's assessment discussed the company's negative tangible net worth and raised concerns over liquidity, noting the company had fully utilized its borrowing capacity, and that the lenders of its loans had a security interest in substantially all of the assets of the company and its subsidiaries. Entergy's assessment expressed concern over whether NorthStar would be able to repay its loans when due.[44]

Q. COULD NORTHSTAR FUND THE FULL AMOUNT OF THE SUPPORT AGREEMENT?

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[43] Exhibit DPS-DSD-15, Responses to the Department's First Set of Information Requests, April 26, 2017, Attachment A.DPS.EN.1-14.18.

[44] *Id.*

A. Based on its current financial status, discussed above, NorthStar could not fund the full amount of the $125 million Support Agreement from existing resources, and would need to either borrow or receive an equity infusion to do so.

B. NORTHSTAR'S DECOMMISSIONING PLAN

Q. PLEASE DESCRIBE NORTHSTAR'S PROPOSED DECOMMISSIONING PLAN.

A. Under the Proposed Transaction, Entergy would continue to move SNF to dry cask storage, with the expectation that the construction of a new storage pad and the transfer of all SNF to dry cask storage on the ISFSI will be completed by the end of 2018[45] — such that NorthStar would acquire the plant with all spent fuel already transferred to the ISFSI.[46] The costs associated with the SNF transfer are currently being financed by Entergy under two separate credit facilities, which would remain with Entergy post-closing. At closing, NorthStar VY would issue a note to Entergy for the full amount of the balance in the credit facilities. Payment on the note would be due upon completion of decommissioning and site restoration and release of all portions of the site (other than the ISFSI).[47] NorthStar has stated that it anticipates it will recover the costs being funded by the credit facilities from the DOE, allowing it to repay the note. Any shortfall between the amount of the note and the DOE recovery would be funded by NorthStar VY.[48]

Upon closing the Proposed Transaction, NorthStar would promptly begin

45 Exhibit JP-SES-SUPP-1, Application for Order Consenting to Direct and Indirect Transfers, at 3.
46 Prefiled Testimony of Scott E. State, December 16, 2016, at 20:7-12.
47 Responses to the Department's Second Set of Information Requests, July 21, 2017, at A.DPS:NS.2-27.
48 *Id.*

decommissioning activities and would plan to complete radiological decommissioning and site restoration (of the non-ISFSI portions of the site) simultaneously by 2030.[49] NorthStar has provided cost estimates for various aspects of this work, the reasonableness of which are assessed in the Four Points Group Report.

NorthStar suggests that completion of this work within the estimates is reasonable to assume because: (1) it will do the majority of the work itself; (2) it will limit recoveries of funds from the NDT and SRT to those amounts identified in a "pay-item disbursement schedule"; and (3) work not conducted by NorthStar directly will be performed by contractors under negotiated fixed price contracts, subject to performance bonds.[50]

Q. PLEASE DESCRIBE NORTHSTAR'S PROPOSAL FOR REIMBURSEMENTS FROM THE NDT AND SRT.

A. NorthStar commits to only withdraw funds from the NDT and SRT according to the pay-item disbursement schedule. NorthStar asserts that schedule fixes the cost of each individual decommissioning, site restoration, and SNF management activity. Each item in the pay disbursement schedule includes a 10% premium that NorthStar indicates will cover both contingency and potential profit margin.[51] Per NorthStar, if a task ends up costing more than the assigned contingency, NorthStar VY will be responsible for the shortfall out of its own funds, and any shortfall will not impact funds remaining in

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49 Exhibit JP-SES-SUPP-1, Application for Order Consenting to Direct and Indirect Transfers, at 3.

50 Prefiled Testimony of Scott E. State, December 16, 2016, at 38:2-39:5. NorthStar has also stated that, in lieu of performance bonds, it may use insurance "where appropriate."

51 *See id.* at 38:11-20; *see also* Exhibit DPS-DSD-17, Responses to the Department's Second Set of Information Requests, July 21, 2017, at A.DPS:NS.2-23.

the NDT for the completion of other tasks.[52] Withdrawals from the SRT would be subject to the requirements of Section 4.01 of the Site Restoration Trust Agreement, which dictate the process that must be followed for accessing SRT funds and limit the use of those funds to site restoration costs and administrative expenses.[53]

Q. WHAT DOES NORTHSTAR ANTICIPATE DECOMMISSIONING AND SITE RESTORATION TO COST AT VY?

A. Table 3 provides a summary of NorthStar's decommissioning estimate, broken down by major cost type from 2016-2052. The table incorporates pre-closing costs that will be borne by Entergy, in addition to costs that will be borne by NorthStar.

Table 3: NorthStar's Estimate of Decommissioning and Site Restoration Costs (2016 to 2052):[54]

($,000s)	NorthStar VY	Entergy VY	Total
Decommissioning	$539,071	$86,534	$625,605
SNF	$287,802	$148,274	$436,076
Site Restoration	$25,272	-0-	$25,272
Taxes on Unrealized NDT Gains	$25,460	-0-	$25,460
DOE Litigation Costs	$2,750	-0-	$2,750
Total	$880,354	$234,808	$1,115,162

Q. WHAT PORTION OF THE DECOMMISSIONING WORK WILL BE PERFORMED EXCLUSIVELY BY NORTHSTAR?

52 Entergy License Transfer Application, Docket Nos. 50-271 and 72-59, February 9, 2017, at 3.

53 Prefiled Testimony of Scott E. State, December 16, 2016, at 23:18-22; *see* Exhibit JP-SES-2 (ENVY Site Restoration Trust Agreement for Vermont Yankee Nuclear Power Station, Section 4.01).

54 Exhibit DPS-DSD-18, Responses to the Department's First Set of Information Requests, April 26, 2017, Attachment A.DPS.NS 1-57.2264.

A. NorthStar has indicated that it plans to operate as owner, program manager, general contractor, and demolition contractor for the decommissioning. In other words, NorthStar will perform the majority of the work itself. NorthStar asserts that it will utilize performance-bonded, firm fixed-price and/or fixed-unit rate contracts with its contractors to control sub-contracted project costs and mitigate project risks. Payments to subcontractors are expected by NorthStar to make up less than 25% of total project disbursements.[55]

Q. PLEASE DESCRIBE HOW NORTHSTAR INTENDS TO USE ITS SUBCONTRACTORS.

A. NorthStar will rely on three primary subcontractors, AREVA, WCS, and B&M. AREVA will perform the segmentation of the VY reactor vessel and internals. AREVA will also support long-term SNF management and oversee fuel transfer to the DOE when the DOE is ready to accept it.[56] While AREVA will perform both the reactor vessel/reactor vessel internals work and SNF management work, NorthStar has only entered into a contract with AREVA for the reactor vessel/reactor vessel internals work to date.[57] WCS will provide waste disposal at its site in Texas for low level radioactive waste, hazardous waste, and lower-activity radioactive waste. B&M will provide consulting support in engineering, decommissioning, deconstruction and termination of the NRC license.[58]

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[55] Exhibit DPS-DSD-19, Responses to the Department's First Set of Information Requests, April 26, 2017, at A.DPS:NS.1-51.

[56] Prefiled Testimony of Scott E. State, December 16, 2016, at 14:16-21.

[57] Exhibit DPS-DSD-20, Responses to the Department's Second Set of Information Requests, July 21, 2017, at A.DPS:NS.2-31.

[58] Prefiled Testimony of Scott E. State, December 16, 2016, at 12:3-20.

Q. PLEASE DESCRIBE THE RELATIONSHIPS BETWEEN NORTHSTAR AND THESE THREE SUBCONTRACTORS (AREVA, WCS, AND B&M).

A. Currently, the relationships between NorthStar and WCS and B&M are general contractor/subcontractor relationships.[59] NorthStar and AREVA have recently formed the joint venture Accelerated Decommissioning Partners ("ADP").[60] ADP is reportedly in discussions with Entergy about the possible sale of the Pilgrim and Palisades plants after they shut down.[61] NorthStar will remain the acquirer of VY, however, and not ADP.[62]

Q. HAS NORTHSTAR INCLUDED AN ALLOCATION OF ITS OWN OVERHEAD TO ITS CONTRACTORS' COSTS?

A. Yes. Per NorthStar, it applied "direct overheads, general and administrative expenses, indirect project expenses, and contingency" to its estimates of amounts to be paid to subcontractors.[63] Those overhead allocations appear to be in the 34-35% range. However, it is unclear from the information provided by NorthStar to date whether those allocations are supported by NorthStar's forecast of its actual overhead costs, or whether the contingency is in addition to the 10% already applied across all of NorthStar's costs.

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[59] *See id.* at 10:18-12:7.
[60] Exhibit DPS-DSD-21, Responses to the Department's First Set of Information Requests, April 26, 2017, at A.DPS:NS.1-49.
[61] *Id.*
[62] *Id.*
[63] Exhibit DPS-DSD-22, Responses to the Department's Highly Confidential Discovery Requests regarding Disbursement Schedule, August 3, 2017, at A.DPS.NS.2DS-5.

Q. IN YOUR OPINION, DOES NORTHSTAR'S RELIANCE ON SUBCONTRACTORS EXPOSE THE PROJECT TO PERFORMANCE OR FINANCIAL RISK?

A. Yes. The subcontractors could run into financial difficulties and be unable to complete their scopes of work, or disputes could arise between NorthStar and its vendors with regard to change orders or other contract administration issues. The manifestation of those risks could lead to additional costs, a longer completion schedule, or both. Those risks are not unique to NorthStar, however, and they exist under Entergy's model as well. In fact, due to NorthStar's plan to self-perform a majority of the work, its risk related to subcontractors is more contained, and should be mitigated, at least in part, by the performance bonds.

Q. HOW DOES NORTHSTAR EXPECT TO PROFIT UNDER ITS PROPOSED APPROACH?

A. NorthStar applies a 10% premium (which NorthStar refers to as the "profit/contingency") to each line item in its work schedule. In the event NorthStar exceeds the projected budget on a task, the 10% premium is used to fund the overruns on that task (and that task alone). For those tasks that NorthStar fails to complete at or below budget, its profit is therefore reduced – or even eliminated – by the amount necessary to fund cost overruns. To the extent that NorthStar is able to achieve its forecast for a given task, it proposes to retain the associated 10% premium as profit. NorthStar clarified in discovery that it does not commit to ensure those funds are available to cover cost overruns on other tasks, and affirmed that no "restrictions" will apply to NorthStar's use of those profits, but that it plans to take a percentage of those funds and preserve them as working capital or for other purposes in connection with performing the NorthStar VY project.[64]

Q. PLEASE PROVIDE A BRIEF OVERVIEW OF THE NORTHSTAR "DEAL MODEL."

A. NorthStar's Deal Model reflects the economics of the Proposed Transaction from NorthStar's perspective. The Deal Model begins with an assumed $538 million NDT/SRT trust fund balance that will be transferred at the close of the Proposed Transaction. It further assumes that ENVY will transfer all spent fuel to the ISFSI prior to closing the Proposed Transaction. The Deal Model projects annual expenditures from 2016–2052, broken down into the following periods: (1) 2016–2018 is the pre-close period; (2) 2019–2027 is the Decontamination (radiological) & Decommissioning and Site Restoration period; and (3) 2027–2052 is the ISFSI management period, which includes the assumption that all fuel will be transferred to the DOE by 2052. The Deal Model factors assumed annual DOE recoveries from 2023–2053 into the modeling of funds available for decommissioning and assumes 2% net annual real growth[65] on qualified and non-qualified trust fund balances.

Q. PLEASE PROVIDE AN OVERVIEW OF THE KEY ASSUMPTIONS IN THE DEAL MODEL.

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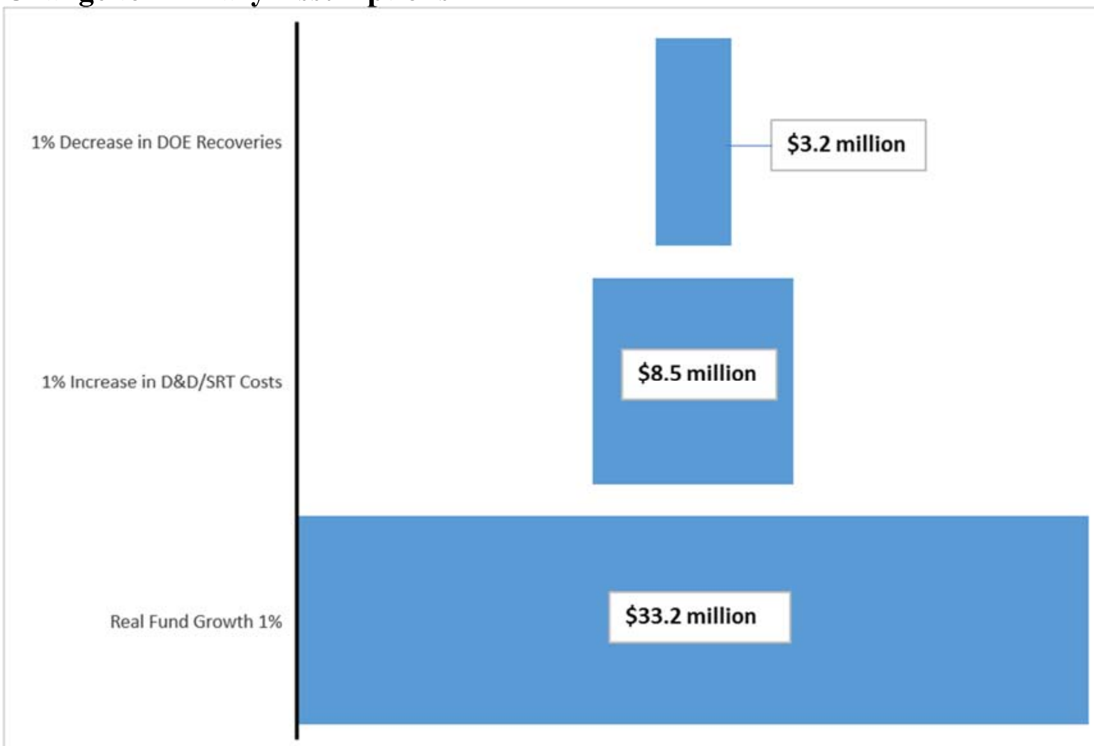
[64] Exhibit DPS-DSD-23, Responses to the Department's Second Set of Information Requests, July 21, 2017, at A.DPS:NS.2-18.

[65] Per the Prefiled Testimony of Scott E. State, December 16, 2016, at 41:15-16, 2% net annual growth is "the real rate allowed by the NRC for these purposes."

A. NorthStar's key assumptions in estimating the costs of the Project, and its assumptions regarding recovery from the DOE for certain of those costs, are discussed in the Four Points Group Report. The Four Group Report also identifies and quantifies risks related to both: (1) unanticipated costs; and (2) circumstances in which NorthStar's assumptions are questionable and should be subject to increased scrutiny. In addition to assumptions regarding costs, another key assumption is NorthStar's estimate of growth in the trust funds (*i.e.*, 2%).[66] Growth greater than that amount will result in more funds available for the Project, while lower growth will result in fewer funds, all else being equal. To illustrate how closely NorthStar's assumptions are tied to its ability to complete the Project within the financial parameters it proposes, the figure below shows the sensitivity of the Deal Model to changes in key model inputs, such as Project costs, recoveries from the DOE, and fund growth. Each of those inputs have been modified in isolation by 1.0% (*i.e.*, overall costs have been increased by 1.0%, DOE recoveries have been reduced to 99.0%, and the real interest rate has been reduced from 2.00% to 1.00%). As the figure shows, the model is highly sensitive to those three inputs, with each small change in inputs significantly impacting the overall economics of decommissioning VY.

[66] *Id.*

Figure 2: Impact on Ending Fund Balance in the Deal Model of 1% Negative Change to Primary Assumptions



Q. DOES THE DEAL MODEL QUANTIFY OR OTHERWISE ACCOUNT FOR THE FINANCIAL IMPACT IF PROJECT COSTS EXCEED BUDGETS (INCLUSIVE OF PROFIT/CONTINGENCY) AND NORTHSTAR MUST PROVIDE FUNDS TO NORTHSTAR VY UNDER THE SUPPORT AGREEMENT, OR OTHER FINANCIAL RISKS?

A. No. The Deal Model represents a "base case" that assumes the Project goes as planned and all Deal Model assumptions are upheld. It does not present scenarios around potential risks. As described above, however, cost overruns that are borne by NorthStar VY or NorthStar (via the Support Agreement) could significantly strain the financial health of NorthStar. I present analyses below that further test the sensitivity of certain assumptions in the Deal Model.

C. NORTHSTAR'S FINANCIAL ASSURANCES

Q. WHAT SOURCES OF FUNDING AND FINANCIAL ASSURANCES HAVE NORTHSTAR PROVIDED FOR THE DECOMMISSIONING AND SITE RESTORATION OF VY?

A. NorthStar identified the following sources of funding and financial assurances for the Project:[67] (1) the funds in the NDT and SRT along with associated earnings on those funds, combined with NorthStar's use of the pay-item disbursement schedule to fix the costs of each Project; (2) performance bonds obtained by its contractors for their work and for work performed by NorthStar; (3) a Support Agreement between NorthStar VY and NorthStar in the amount of $125 million, to act as a source of funds if the combined NDT and SRT are insufficient to fund decommissioning and site restoration activities; and (4) a contingent letter of credit of $25 million, payable to a secondary decommissioning completion trust in the event NorthStar does not begin decommissioning work on or before January 21, 2021, or complete radiological decommissioning and site restoration other than ISFSI storage by December 31, 2030.[68] I discuss each of those financial assurances and their associated risks below.

1. **<u>The Trust Funds and NorthStar's Pay-Item Disbursement Schedule</u>**

Q. IF THE PROPOSED TRANSACTION IS APPROVED, WHAT IS NORTHSTAR'S PRIMARY SOURCE FOR FUNDING THE PROJECT?

A. As described above, NorthStar plans to use the NDT and the SRT, combined with

[67] *See id.* at 38:3-39:5.
[68] *Id.* at 18:20-19:5.

recoveries from the DOE related to SNF expenses, to cover the cost of decommissioning VY and restoring the site for other productive uses. NorthStar is seeking approval for Entergy to transfer at closing the funds in the SRT into a separate segregated sub-account within the NDT, with one trustee for both funds.[69] NorthStar will allocate its costs between decommissioning and site restoration and will seek to withdraw the allocated amounts from each respective fund (NDT or SRT/sub-account), with the overage on any task (above the 10% profit/contingency) to be paid by NorthStar VY.

Q. ARE THOSE FUNDS ADEQUATE TO MEET THE EXPECTED DECOMMISSIONING AND SITE RESTORATION OBLIGATIONS?

A. NorthStar estimates a transfer at closing of $538.15 million in the NDT and SRT,[70] and the Deal Model relies on that assumption. According to the Deal Model this forecasted closing balance is sufficient to cover NorthStar's estimates of the costs to decommission VY and restore the site, pay applicable taxes on unrealized gains on the transfer of the NDT, and cover the costs to manage spent fuel on the ISFSI until it is accepted by the DOE, with the interim deficit expected to be made up by DOE recoveries and growth in the funds in the trust until they are expended. Accounting for forecasted growth in the NDT/SRT funds, NorthStar projects a surplus in the funds of $17 million after decommissioning is completed.[71]

Q. IS THERE A RISK THAT THE TRUST FUNDS WILL BE INSUFFICIENT TO

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69 Prefiled Testimony of Scott E. State, December 16, 2016, at 23:14-18.
70 *Id.*, at 34:17.
71 *Id.* at 25:15-16.

COVER THE COSTS OF DECOMMISSIONING?

A. Yes. The funds could grow more slowly than predicted by NorthStar, which could result in a shortfall. In addition, in any large construction or demolition project, especially in the nuclear arena, there is a risk that costs will exceed budgeted amounts. In fact, Entergy quantified over $350 million in risks under the Status Quo, including: (1) $100 million in risks related to site restoration standards; (2) $50 million in state and political intervention risks; (3) $50 million in project/performance cost risks; (4) $50 million in DOE/fund performance/other; (5) $50 million in risks related to regulatory/NRC changes; and (6) $50 million of risk related to environmental law changes.[72] While those specific risks were quantified in reference to the Status Quo,[73] the nature of those risks would be present under either scenario.

Further, the Four Points Group Report discusses certain of NorthStar's planning assumptions contained in the pay-item disbursement schedule and Deal Model that appear unreasonable. If Project activities exceed planned amounts, or the Deal Model assumptions are not realized such that additional funds are needed, NorthStar has stated that it will make up for any shortfalls using its own resources, potentially drawing on the Support Agreement if needed.[74]

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[72] Exhibit DPS-DSD-24, Responses to the Department's First Set of Information Requests, April 26, 2017, Attachment A.DPS.EN.1-17.2

[73] As identified by in the Four Points Group Report, the length of the SAFSTOR period under the Status Quo has disadvantages associated with greater risks of regulatory change and cost increases.

[74] Exhibit DPS-DSD-24, Responses to the Department's Second Set of Information Requests, July 21, 2017, at A.DPS:NS.2-30.

2. **Performance Bonds**

Q. WHAT ARE NORTHSTAR'S PLANS REGARDING PERFORMANCE BONDING?

A. NorthStar has committed to provide performance bonds issued by Treasury-rated surety companies to guarantee performance of tasks.[75] Per NorthStar, "if NorthStar VY is unable to complete the task using the funds allocated to the task under the NDT and/or SRT, then a third-party company [*i.e.*, the entity that issues the performance bond] will provide the funding necessary to complete the task."[76] Further per NorthStar, "[t]he bonding company will have the option to perform the task or to furnish any amount up to the face amount of the task (per the disbursement schedule) above the amount (if any) that had already been spent on the task prior to default."[77] NorthStar estimates that approximately $300 million of its total projected cost of $523 million will be bonded "or otherwise guaranteed."[78] It determines that amount by backing out items that will not be bonded from the total, such as: pre-closing work of $30 million, waste disposal costs paid to WCS of $100 million, and project management fees of $100 million.[79] Per NorthStar, AREVA will secure a bond for 100% of its pre-closing and post-closing work, and will be bound to a fixed-price agreement. For the tasks to be performed by NorthStar, NorthStar will be responsible

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[75] Prefiled Testimony of Scott E. State, December 16, 2016, at 38:21-39:2.
[76] Exhibit DPS-DSD-26, Responses to the Vermont Agency of Natural Resources' First Set of Information Requests, April 26, 2017, at A.ANR:NS.1-16.
[77] Exhibit DPS-DSD-27, Responses to the Department's Second Set of Information Requests, July 21, 2017, at A.DPS.NS.2-33.
[78] *Id.*
[79] *Id.*

for obtaining the bond, although it is unclear whether NorthStar could obtain a bond with a face amount sufficient to cover its entire scope. Claims under the performance bonds may be made prior to exhaustion of the $125 million support agreement.[80]

Q. DO THOSE PERFORMANCE BONDS PROVIDE ADDITIONAL ASSURANCES RELATED TO NORTHSTAR'S PERFORMANCE OF THE PROJECT?

A. Yes, the bonds provide additional assurance—for the scope covered and up to the limits of liability established in each bond. It is important to keep in mind, however, that if claims are made under such bonds it is likely that: (a) a major contractor or NorthStar has failed to perform; (b) funds in the NDT and SRT have proven insufficient; and/or (c) NorthStar or its subcontractors are in financial trouble. In addition, depending on how the bonds are structured, the risk exists that, in the case of NorthStar's bond, the surety company could make a claim against NorthStar for any amounts paid out under the bond. As such, the performance bonds can be viewed as providers of last resort of financial assurance, and, if the Project is incomplete at the time that any claims are made under the bonds, the prospects for eventual completion by NorthStar VY would be significantly weakened.

3. <u>The Support Agreement</u>

Q. PLEASE DESCRIBE THE $125 MILLION SUPPORT AGREEMENT AND UNDER WHAT CONDITIONS NORTHSTAR VY WOULD RELY ON THE SUPPORT AGREEMENT.

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80 *Id.*

A. The Support Agreement between NorthStar VY and NorthStar provides up to $125 million in funds, upon the request of NorthStar VY, to pay operating costs and meet NRC requirements associated with the Project. The agreement specifically states that it is not to be construed as a direct or indirect "guarantee" of payment of operating costs or of any liability or obligation of NorthStar VY, but that it may be relied upon by the NRC in determining the financial qualifications of NorthStar VY to hold the NRC license.[81]

As proposed, the Support Agreement is between two entities within the same corporate organization. That is, there would be common ownership between NorthStar VY, the entity that would initiate request funds under the Support Agreement, and NorthStar, the entity that would be responsible for supplying the funds. NorthStar has not identified any internal controls that would be put in place to ensure that NorthStar VY maintains its independence in deciding when and under what circumstances to call on the Support Agreement. The Support Agreement automatically terminates if NorthStar ceases to own VY, or upon termination of the NRC license for all areas of the VY site. To the extent the NRC license terminates prior to the completion of site restoration, however, the Support Agreement would appear to terminate prior to the completion of the entire Project.

Q. IF THE NDT/SRT FUNDS, SUPPORT AGREEMENT, AND BONDS ARE INSUFFICIENT, WILL NORTHSTAR VY BE ABLE TO DRAW FUNDS FROM NORTHSTAR?

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[81] Exhibit JP-SES-Supp-1, Attachment 1 at Enclosure 6.

A. According to NorthStar, NorthStar VY will have no recourse against NorthStar or any other entity within the NorthStar organizational structure, beyond the $125 million Support Agreement.[82]

Q. DOES THE SUPPORT AGREEMENT PROVIDE ADDITIONAL FINANCIAL ASSURANCE?

A. Yes. At $125 million, the Support Agreement represents approximately 14% of NorthStar's total decommissioning cost projection, including site restoration and SNF management.[83] However, as discussed above, draws on the Support Agreement could significantly affect the financial health of NorthStar. The Support Agreement is only as strong as the counterparty providing the financial support (*i.e.*, NorthStar). In other words, the Support Agreement will provide little or no financial assurance if NorthStar is ultimately unable to fund the agreement.

4. <u>The Contingent Letter of Credit</u>

Q. PLEASE DESCRIBE THE $25 MILLION CONTINGENT LETTER OF CREDIT AND UNDER WHAT CONDITIONS NORTHSTAR VY WOULD ACCESS IT.

A. NorthStar has committed to obtain a $25 million contingent letter of credit payable to a secondary decommissioning completion trust to be formed by NorthStar VY if either: (1) decommissioning activities do not begin by January 1, 2021, or (2) complete

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[82] Exhibit DPS-DSD-28 and Exhibit DPS-DSD-29, Responses to the Department's First Set of Information Requests, April 26, 2017, at A.DPS:NS.1-21 and A.DPS:NS.1-22.

[83] Equal to $125 million divided by $880.4 million.

radiological decommissioning and site restoration (other than the ISFSI) are not completed by December 31, 2030.[84]

Q. DOES THE CONTINGENT LETTER OF CREDIT PROVIDE ADDITIONAL FINANCIAL ASSURANCE?

A. Yes. The $25 million letter of credit would presumably offset, at least to some extent, additional costs incurred by NorthStar VY in the event of delayed or extended decommissioning. However, like the Support Agreement, the addition of an incremental credit facility would further burden NorthStar, over and above the financial health risks I identified above. In isolation, the letter of credit, if required, may allow NorthStar to maintain a reasonable capitalization and not overly weaken its credit metrics. In combination with the Support Agreement, however, any need to draw upon the letter of credit would further the concern regarding NorthStar's ability to fund its performance obligations.

D. DEAL MODEL DOWNSIDE RISK ANALYSIS

Q. WHAT ANALYSIS HAVE YOU PERFORMED TO ASSESS WHETHER NORTHSTAR'S FINANCIAL ASSURANCES ARE ADEQUATE TO MITIGATE RISK IN KEY DEAL MODEL ASSUMPTIONS?

A. As stated above, the Deal Model does not present scenarios regarding potential risks. The Four Points Group Report identified risks related to unanticipated costs and/or divergences from NorthStar's assumptions. The Four Group Report quantifies those

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[84] Exhibit DPS-DSD-30, Responses to the Department's First Set of Information Requests, April 26, 2017, at A.DPS:NS.1-41.

risks as amounting to a few million dollars in certain circumstances to hundreds of millions in others, all on an isolated basis. There is also risk related to the level of earnings in the trust funds. To test the impact on the Deal Model results of those risks, I have made changes within the Deal Model to: (1) decommissioning costs; (2) DOE recoveries; and (3) fund growth.

Q. WHAT IS THE PURPOSE OF THIS ANALYSIS?

A. The purpose of this Deal Model downside risk analysis is to understand the downside impact of the manifestation of multiple risks and then compare that impact to the financial assurances proposed by NorthStar. To be clear, the Deal Model downside risk analysis is not an alternative base case or an expectation regarding what will occur, nor is it a worst-case scenario. Rather, it is a test of the sufficiency of NorthStar's financial assurances if a combination of negative outcomes come to fruition.

Q. PLEASE DESCRIBE THE ANALYSIS.

A. The analysis involves flowing a modified set of assumptions through the Deal Model and then identifying their dollar impact on the Project. I then compare that impact to: (1) the trust fund surplus that NorthStar currently estimates will exist at the end of the Project; plus (2) the other proposed financial assurances.[85]

Q. WHAT DEAL MODEL ASSUMPTIONS DID YOU MODIFY?

[85] For purposes of this analysis, I have allowed the trust fund balances to become negative in those years in which expenses exceed the remaining fund amounts. Those negative balances effectively represent the funds that NorthStar VY would need to source from its own resources and/or the Support Agreement. I have not, however, included additional borrowing costs that NorthStar VY and/or NorthStar could incur to fund the Project from their own resources and/or additional borrowings. Those borrowing costs, however, could be significant. For instance, even assuming the same 1% interest rate included in the Deal Model downside scenario, those borrowing costs would total $36.2 million, after tax.

A. I made the following modifications:

1) NorthStar's forecasted decommissioning and site restoration costs for the period 2019 through 2052 (excluding SNF management costs) increase by 25%. That results in a net impact on the Deal Model of approximately $151.8 million;
2) NorthStar only recovers 89% of the amounts it has assumed it will recover from the DOE, and NorthStar recovers funds from the DOE based on a pattern of filing for recovery every four years and receiving funds six months after that; and
3) Real growth in the trust funds of 1% (as opposed to NorthStar's assumed 2%).

Q. ARE THOSE ASSUMPTIONS REASONABLE?

A. Yes. Based on my review of the Four Points Group Report, I believe the changed assumptions regarding an increase in forecasted decommissioning and site restoration costs, as well as in the pattern and amounts of recoveries from the DOE, are within the bounds of reasonableness for a downside scenario. To that point, the 89% I modeled for DOE recoveries represents: (1) no recovery of NorthStar's profit/contingency on SNF management costs; and (2) a further 1% of costs that are determined to be unrecoverable. In addition, while 2% real growth is consistent with NRC guidance, there is still the risk that actual growth in the trust funds will differ (in either direction).

Q. ARE THERE OTHER ASSUMPTIONS IN THE DEAL MODEL THAT YOU QUESTION?

A. Yes. There are apparent inconsistencies that are either contained in the Deal Model or that were disclosed in discovery in this case that either require further clarification or suggest additional financial risks. First, NorthStar represents that the majority of the dollar values in the Deal Model are in *nominal* dollars[86] while it assumes *real* growth in the trust funds.[87] That suggests that there is a mismatch in the comparison of the decommissioning costs and the funds that will cover them. It is further complicated by the fact that the costs NorthStar states are presented in nominal dollars in the Deal Model are equal to the costs labeled as "2016 dollars" in NorthStar's Post-Shutdown Decommissioning Activities Report.[88] For purposes of my analysis I have assumed that all dollars are presented in the same vintage, and I have not made any further allowance for escalation (or deflation) to reconcile this apparent mismatch. I do believe, however, that this is an issue NorthStar could clarify in this proceeding.

Second, there are inconsistencies between assumptions made within the Deal Model itself. For instance, the Deal Model allows for $10 million in interest on the note payable to Entergy for pre-closing dry fuel storage costs, even though other analyses within the Deal Model indicate the amount of interest could be at least twice that.[89] That type of inconsistency highlights the risk to NorthStar VY related to flawed assumptions that could lead to shortfalls in funds for the Project. Those shortfalls

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[86] Exhibit DPS-DSD-31, Responses to the Department's Confidential Discovery Requests Regarding the Deal Model, August 3, 2017, at DPS:NS.2DM-1. Further, cost estimates that the company has confirmed are in 2014 dollars can be directly traced to the Deal Model (which NorthStar states is presented in nominal dollars), with no apparent application of any inflation to escalate them to nominal dollars. In addition, NorthStar makes this assertion even though certain costs in the Deal Model, such as the "ISFSI Caretaker Spend Plan,' remain constant over 25 years.

[87] In the Prefiled Testimony of Scott E. State, December 16, 2016, at 41:15, Mr. State describes NorthStar's assumed trust fund growth rate as "2% net annual growth," which he says "is the *real* rate allowed by the NRC…"

[88] Exhibit DPS-DSD-4, Attachment 1.

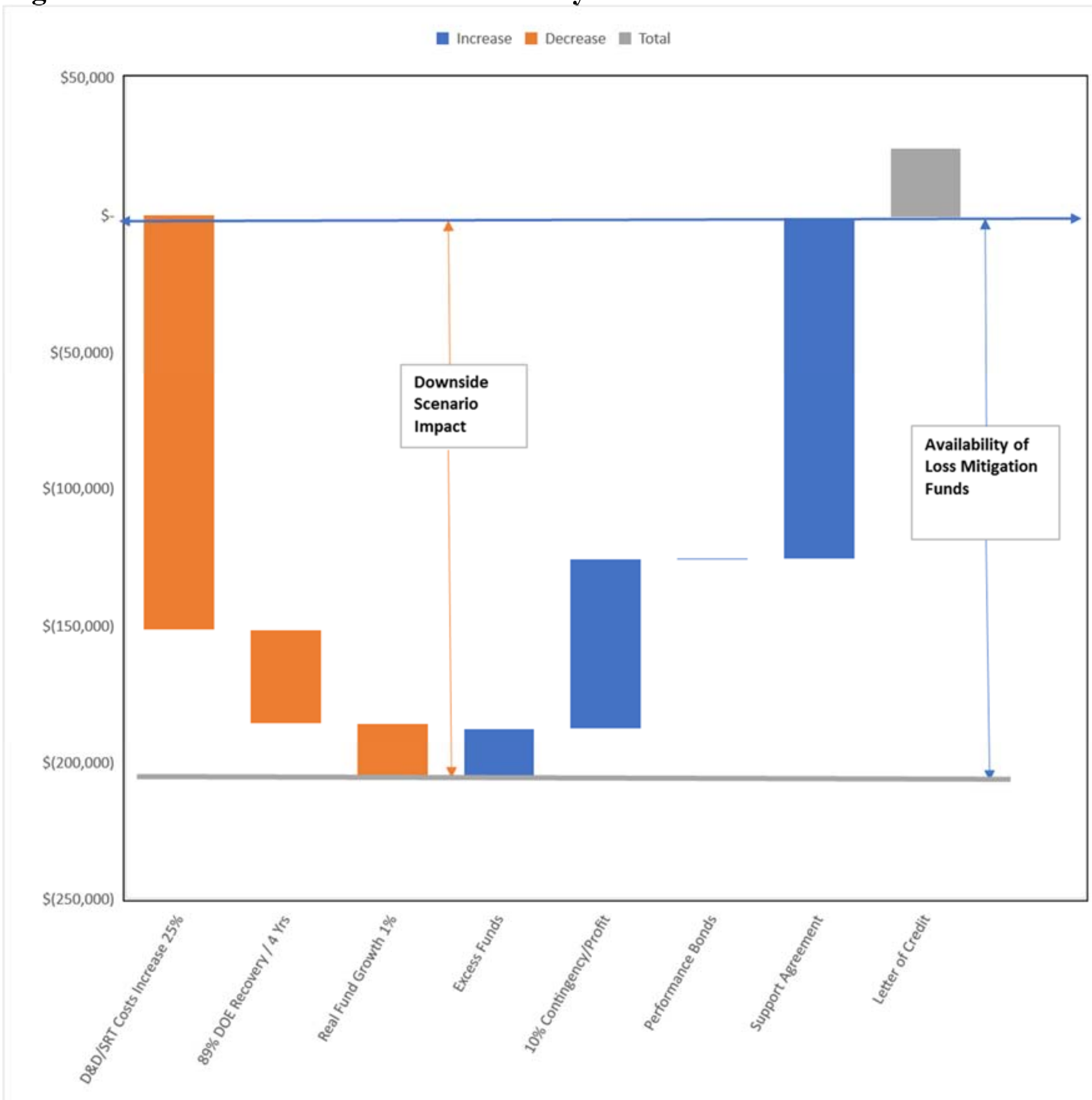
[89] *See* Exhibit DPS-DSD-18, specifically the "DFS Credit Facility" tab, in which interest expense is calculated as $20.2 million through 2023, the year in which NorthStar anticipates recovery of the "Third Round DOE Claim," per Responses to the Department's Confidential Discovery Requests Regarding the Deal Model, August 3, 2017. Exhibit DPS-DSD-32, DPS:NS2DM-11.

would presumably have to be paid by NorthStar VY from its own funds or by NorthStar under the Support Agreement, reducing the funds available to pay for other unforeseen costs. I have not, however, considered those inconsistencies in my analysis described above.

Q. WHAT WERE THE RESULTS OF YOUR ANALYSIS?

A. The results of my analysis are provided in Figure 3.

Figure 3: Deal Model Downside Risk Analysis



As shown in the figure, the combined effect of the above-described modifications to certain Deal Model assumptions result in approximately $205 million in additional funds that would be required to complete the Project. Sources of additional funding that could be used to cover that increase would be the following: (1) the approximately $17 million combined balance of the NDT and SRT that NorthStar anticipates to exist at the end of the Project; (2) the 10% profit/contingency that is embedded in

NorthStar's cost estimates, excluding the ISFSI-related costs that may not be recoverable by the DOE; and (3) the Support Agreement of $125 million. In total, those financial assurances effectively offset the downside scenario impact, before any consideration of additional borrowing costs NorthStar could incur in funding the Support Agreement. In other words, if NorthStar VY is to meet its proposed schedule *and* the Project were to be impacted by the assumptions modeled in the Deal Model downside scenario analysis, NorthStar VY would need to rely on the entirety of the $125 million Support Agreement.

Q. DID YOU REFLECT THE $25 MILLION LETTER OF CREDIT PROPOSED BY NORTHSTAR IN YOUR ANALYSIS?

A. No. While the $25 million letter of credit would provide a further source of funding to NorthStar VY, it would only be available if NorthStar VY misses certain decommissioning milestones. In a scenario in which the letter of credit is triggered, however, it would become an additional source of funds. For that reason, I have shown the impact of the letter of credit (in gray) in the figure above, as well. There are likely additional effects of a delayed scenario, as well, including impacts to fund earnings and the potential for increased costs (as discussed in the Four Group Report), but I have not reflected those in the above analysis.

Q. WHAT DID YOU REFLECT IN THE DEAL MODEL DOWNSIDE RISK ANALYSIS WITH REGARD TO PERFORMANCE BOND COVERAGE OF THE COST OVERAGES YOU ANALYZED?

A. I reflected no coverage from the performance bonds for the cost overages I have modeled in the above analysis. There are three main reasons for this. First, as discussed in the Four Group Report, there are risks due to unanticipated costs, including those from increased regulatory requirements, that could impact the Project. According to NorthStar, the performance bonds will cover the scope of work in its contracts,[90] but those bonds presumably would not cover expansions of scope due to unanticipated findings or regulatory action. Second, the performance bonds will cover up to the dollar amount delineated in the pay-item disbursement schedule,[91] which would not cover cost overages. Third, the Four Group Report identifies risks related to waste handling costs, which NorthStar has stated will not be bonded.[92]

Q. WHAT DO YOU CONCLUDE BASED ON YOUR ANALYSIS?

A. I have two main conclusions. First, the financial assurances provided by NorthStar would be fully required to meet the additional funding requirements if the downside scenario modeled above were to occur. This conclusion, however, is premised on the assumptions that: (1) profit/contingency funds will be escrowed and available for loss mitigation; (2) NorthStar is able to fully fund the $125 million Support Agreement; and (3) those funds will be available for use either on decommissioning or site restoration operations. Second, this analysis further demonstrates the importance of having a strong and dependable financial backstop for the Project. The recommendations

[90] Exhibit DPS-DSD-27.
[91] *Id.*
[92] *Id.*

provided in this testimony are intended to further strengthen financial assurances in that regard.

III. ANALYSIS OF ENTERGY'S FINANCIAL CAPABILITIES AND RISKS

A. OVERVIEW OF ENTERGY

Q. PLEASE DESCRIBE THE ENTERGY CORPORATE ORGANIZATION.

A. Entergy operates primarily through two business segments: (1) its Utility business segment; and (2) its Entergy Wholesale Commodities business segment. The Utility business segment includes rate-regulated generation, transmission, distribution, and the sale of electric power, as well as a small natural gas distribution business. The Utility business segment operates in the states of Arkansas, Louisiana, Mississippi, and Texas. The Utility business segment, in addition to its other power and gas businesses, owns four nuclear plants in the Southeast United States.

The Entergy Wholesale Commodities business segment includes the ownership, operation and decommissioning of nuclear power plants located in the northern United States and the sale of power by its power plants. Entergy Wholesale Commodities also owns interests in non-nuclear power plants, and it sells the power from its nuclear and non-nuclear generating assets on a contracted or "merchant" basis. ENVY, the direct owner of VY, is part of the Entergy Wholesale Commodities segment.[93]

Figure 4, below, presents a simplified organizational chart outlining Entergy's corporate structure of affiliates involved in nuclear operations. The subsidiaries that

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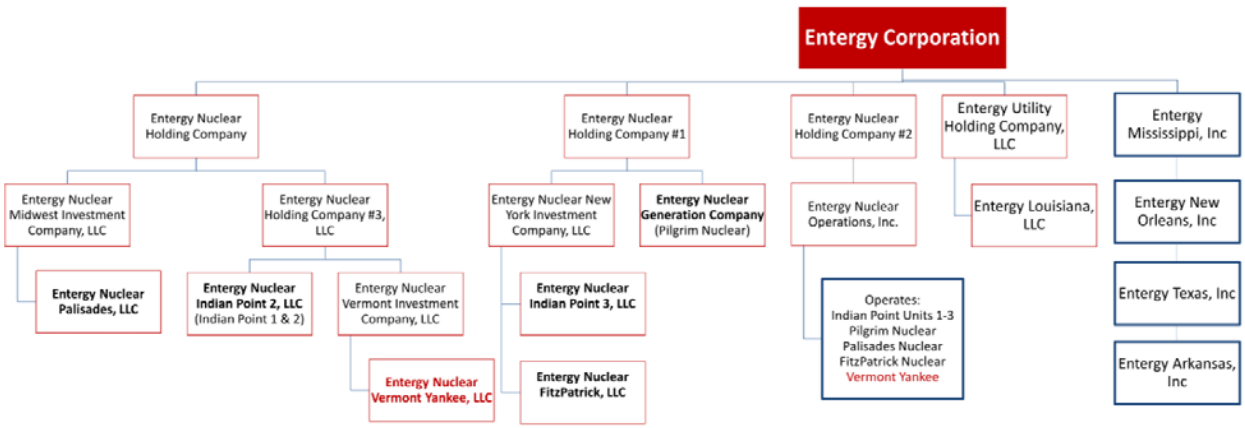
93 Entergy SEC Form 10-K for the period ended December 31, 2016, at viii.

own nuclear facilities are shown in bold font. Financial data quantifying assets and liabilities are not publicly available for the non-regulated Entergy subsidiaries shown in Figure 4.

Figure 4: Nuclear-Oriented Affiliates in the Entergy Corporation Organizational Structure[94]



Q. DESCRIBE VY'S OWNERSHIP AND OPERATIONAL STRUCTURE.

A. As Figure 4 illustrates, ENVY (at the bottom of the chart) and the subsidiaries that own the other Entergy nuclear stations are separated from one another within the Entergy corporate structure. As discussed previously, ENVY currently owns VY, but operations are handled by ENOI, the Entergy subsidiary that manages the operations of Entergy's entire unregulated fleet.

B. ENTERGY'S FINANCIAL STATUS

Q. PLEASE DESCRIBE THE FINANCIAL CAPABILITIES OF ENTERGY.

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94 Entergy's SEC Form 10-K for the period ended December 31, 2016. Note that Figure 6 represents only one portion of the Entergy corporate organization. For instance, it omits all regulated and wholesale trading operations.

A. At the end of 2016 Entergy had $45.9 billion in assets, and a market capitalization of $13.75 billion.[95] The company possesses a wide variety of energy subsidiaries, which limits financial risk to the overall corporation through diversification. S&P has assigned Entergy Corp. a credit rating of BBB+, and Moody's rates it at Baa3. Those ratings are considered "investment grade," meaning the risk of default on Entergy's debt is considered relatively low, indicative of financial stability.

Q. ARE THE FINANCIAL CAPABILITIES OF ENTERGY RELEVANT TO THIS PROCEEDING?

A. Yes, because Entergy has provided certain financial assurances regarding decommissioning and site restoration at VY. I discuss Entergy's ability to fulfill its obligations related to VY below.

Q. HAVE YOU PERFORMED A FINANCIAL STATEMENT AND CREDIT METRIC RATIO ANALYSIS ON ENTERGY SIMILAR TO THAT YOU PERFORMED ON NORTHSTAR?

A. No. Because Entergy regularly files audited financial statements and is independently rated by credit ratings agencies, an independent financial analysis of the company was not required to assess its financial strength. I did, however, review S&P's most recent full ratings report for the company, as well as a research update that S&P published on January 9, 2017. In those reports, S&P found:

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[95] Exhibit DPS-DSD-33, Entergy News Release, *Entergy Reports Fourth Quarter and Full Year Financial Results; Initiates 2017 Earnings Guidance*, February 15, 2017, *available at* http://www.prnewswire.com /news-releases/entergy-reports-fourth-quarter-and-full-year-financial-results-initiates-2017-earnings-guidance-300407785.html (last visited August 26, 2017). Market capitalization as reported by Yahoo! Finance on August 8, 2017.

- In January 2017, that S&P would revise its ratings outlook on Entergy and its subsidiaries to positive from stable reflecting, "management's strategic focus to become a fully rate-regulated utility by successively shrinking the size of its higher-risk merchant nuclear generation business through asset sales and plant closures, and investing heavily in its rate-regulated utility businesses."[96]
- A "strong" business risk profile and a "significant" financial risk profile (*i.e.*, less risky than "aggressive" or "highly leveraged").[97] S&P's supporting analyses included the following credit metrics:
  - Expected FFO/Debt "will consistently be in the 16%-20% range."[98]
  - Debt/EBITDA for 2013 to 2016 of between 3.3x to 3.9x.[99]
  - EBITDA/Interest for 2013 to 2016 of between 3.9x to 4.3x.[100]
  - Debt/Capital for 2013 to 2016 of between to 60% to 67%.[101]

Because of their strong business risk profiles, underpinned by rate-regulated utility revenues, U.S. utilities, including Entergy, are typically afforded higher credit ratings than they would be if they operated in competitive markets, even if utilities have "significant" or "aggressive" financial risk profiles. In fact, S&P stated that it, "assess[es] Entergy's financial risk profile with more liberal benchmarks than [S&P] use[s] with the typical corporate issuer, reflecting the company's more stable regulated utility businesses."[102] It

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[96] Exhibit DPS-DSD-34, S&P Global Ratings, "Research Update: Entergy Corp. And Subsidiaries Rating Outlook Revised To Positive On Settlement To Close Nuclear Plants," January 9, 2017, at 2.
[97] Standard & Poor's Ratings Services, "Entergy Corp." July 9, 2014, at 2.
[98] Exhibit DPS-DSD-34.
[99] Entergy Corporation Credit Stats Direct Financials, downloaded August 9, 2017.
[100] *Id.*
[101] *Id.*
[102] Exhibit DPS-DSD-34.

is important to note that the metrics and analyses discussed above provide a picture of Entergy's financial viability today and in the near-term, not over 35 years from now, when Entergy has indicated it could begin decommissioning.

C. ENTERGY'S DECOMMISSIONING PLAN

Q. WHAT DECOMMISSIONING-RELATED COMMITMENTS WERE MADE AT THE TIME OF THE VY ACQUISITION?

A. As part of its acquisition of VY in 2002, Entergy agreed to a variety of commitments, with a focus on the decommissioning of the Station. Those include commitments by ENVY to assume all decommissioning liabilities, completely restore the site (unless it planned to reuse it), and to be responsible for any funding shortfall for decommissioning.[103]

Q. WHAT IS ENTERGY'S PLAN FOR DECOMMISSIONING VY?

A. Currently ENVY is holding VY in SAFSTOR until it determines sufficient decommissioning funds have accumulated in the NDT.[104] As discussed earlier in my testimony, Entergy has said that its current assumptions support beginning decommissioning in 2053, with decommissioning and site restoration completed by 2060. Entergy has estimated that decommissioning and site restoration costs under its planned approach would total approximately $874 million (in 2014 dollars), with an additional $368 million of costs related to spent fuel management.[105]

[103] Vermont Docket No. 6545, Investigation into General Order No. 45 Notice filed by Vermont Yankee Nuclear Power Corporation re: Proposed sale of Vermont Yankee Nuclear Power Station to Entergy Nuclear Vermont Yankee, LLC, and related transactions, June 13, 2002.
[104] Exhibit DPS-DSD-5, at 13.
[105] *Id.* at Table 2.

If the NRC requires additional financial assurance beyond that which is available in the decommissioning fund, ENVY has committed to provide a parent company guarantee equal to either 10% of the trust fund balance at the time this requirement becomes binding or $40 million, whichever is less. Table 4 illustrates the remaining schedule for decommissioning and site restoration under Entergy's existing plans.[106]

Table 4: Entergy's Current VY Decommissioning Time Table

Decommissioning Activities/Plant Status	Start	End	Duration (Yrs)
Dormancy w/ wet fuel storage	2016	2020	4.2
Dormancy w/ dry fuel storage	2020	2052	32.5
Dormancy w/ no fuel storage	2053	2067	15
Prep. For Dismantling & Decommissioning	2068	2069	1.5
D&D Large Component Removal	2069	2070	1.3
Plant Systems Removal & Building Decontamination	2070	2073	2.5
License Termination	2073	2073	0.7
Site Restoration	2073	2075	1.5
Total from Shutdown to Completion of License Termination			**59**

Q. PLEASE DESCRIBE ENTERGY'S FINANCIAL COMMITMENTS RELATED TO SPENT FUEL.

A. ENVY established two credit lines, totaling $145 million, to facilitate the transfer of SNF to dry storage, which in turn reduces the funding requirements of the NDT.[107]

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[106] *Id.* at Table 2.1.
[107] Prefiled Testimony of T. Michael Twomey, December 16, 2016, at 9:12-17.

Those credit facilities are supported by a guarantee of the full amount of borrowing under those credit lines, issued by Entergy.[108] As of June 30, 2017, there was approximately $70.5 million in outstanding borrowings under those credit facilities.[109] Those credit facilities will remain with Entergy until NorthStar VY is able to repay them.

Q. WHAT ARE THE MAJOR COMPONENTS OF ENTERGY'S DECOMMISSIONING COST ESTIMATE?

A. Entergy's 2014 estimate (in 2014 dollars) of total decommissioning and site restoration costs of $1.242 billion was composed of the following components:

- Termination of the NRC operating license ($817 million);
- Spent fuel management ($368 million); and
- Site restoration ($57 million).[110]

Those estimates were premised on the schedule provided in Table 4.

Q. DOES SAFSTOR IMPOSE FINANCIAL RISKS ON THE PROJECT?

A. Yes. Risks are inherent when forecasting future costs. As the forecasting period lengthens, so does the exposure to risk. Given that SAFSTOR requires forecasting costs over a period of nearly 50 years, there are several factors that may fluctuate and negatively impact Entergy's ability to fully decommission the Station. For instance,

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[108] *Id.* at 9:17-10:1 ("At or before closing of the proposed transaction, the ENVY credit facilities will be assumed by, or transferred from ENVY to, another Entergy affiliate named Vermont Yankee Asset Retirement Management, LLC ('VYARM'). VYARM will be formed as a subsidiary of Entergy Nuclear Vermont Investment Company, LLC to facilitate the transfer of ENVY to NorthStar.").

[109] Exhibit DPS-DSD-35, Responses to the Department's Second Set of Information Requests, July 21, 2017, at A.DPS:EN.2-1.

[110] Exhibit DPS-DSD-5, at Table 2.2

there is the risk that the trust funds will not grow at a rate that is sufficient to complete decommissioning by 2075. Also, costs can vary depending on market conditions and the rate of radioactive decline. In addition, while a facility is held in SAFSTOR it still must be kept under surveillance and monitored closely, which adds additional costs.

D. ENTERGY'S FINANCIAL ASSURANCES

Q. WHAT AGREEMENTS DID ENTERGY MAKE WITH THE STATE OF VERMONT WITH RESPECT TO THE SHUTDOWN OF VY?

A. In Entergy's original agreement to purchase VY in 2002, ENVY assumed all risk for decommissioning the facility.[111] In addition, as part of a December 2013 agreement reached between Entergy and agencies of the State of Vermont,[112] the parties agreed to a $25 million SRT, which was to be funded by ENVY with $10 million in 2014 and $5 million per year from 2015 to 2017.

None of the previous funding commitments were to be drawn from the decommissioning trust or impact any financial assurance or existing guarantee with respect to VY. In addition, Entergy provided a $20 million parent guarantee for the SRT, which can be eliminated if the balance in the SRT exceeds $60 million.[113] The agreement also provided that, should Entergy expend funds for spent fuel management activities, Entergy should pursue all available reimbursement from the federal

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[111] Vermont Docket No. 6545, Investigation into General Order No. 45 Notice filed by Vermont Yankee Nuclear Power Corporation re: Proposed sale of Vermont Yankee Nuclear Power Station to Entergy Nuclear Vermont Yankee, LLC, and related transactions, June 13, 2002, at 8.

[112] Exhibit DPS-DSD-5, Attachment 2.

[113] Prefiled Testimony of T. Michael Twomey, December 16, 2016, at 9:1-4.

government and should deposit proceeds to the decommissioning trust or another trust created to meet the decommissioning and site restoration obligations of ENVY.

Q. WHAT IS THE CURRENT BALANCE IN ENVY'S NDT?

A. The balance as of February 2017 was approximately $572 million.[114]

Q. DOES ENTERGY ESTIMATE THAT THIS AMOUNT IS SUFFICIENT TO DECOMMISSION VY UNDER THE STATUS QUO?

A. Not at this time. However, Entergy expects that the current balance is sufficient to grow in magnitude through earnings on its investments to a level that will support decommissioning and site restoration within the timeframe during which the company is obligated to complete this work. As discussed earlier, ENVY and ENOI have committed to make appropriate filings with the NRC to begin decommissioning when sufficient funds are present in the NDT.

Q. WHAT ARE YOUR CONCLUSIONS REGARDING ENTERGY'S CAPABILITIES TO FULFILL ITS POTENTIAL OBLIGATIONS UNDER THE STATUS QUO?

A. In summary, Entergy's obligations related to VY under the Status Quo include a guarantee of the $145 million credit line to facilitate the transfer of irradiated fuel to dry storage, a $20 million parent guarantee of the SRT, and a commitment to provide a parent company guarantee equal to either 10% of the remaining trust fund balance, or $40 million (whichever is less), should the NRC require it.[115] Based on the corporation's size and financial stability, Entergy appears to be capable of meeting the

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[114] Exhibit JP-SES-SUPP-1, Attachment 1 at 19.
[115] The NRC also could require Entergy to provide additional funding sources to complete license termination activities.

commitments it has made to backstop financing for decommissioning. For instance, as of June 30, 2017, Entergy had $934.5 million in cash and cash equivalents on its balance sheet.[116]

E. RISKS TO ENTERGY'S APPROACH

Q. WHAT ARE THE MAJOR RISKS ASSOCIATED WITH ENTERGY'S APPROACH TO DECOMMISSIONING?

A. From a financial assurance perspective, the major risks under the Status Quo are similar in nature to those that apply to NorthStar. Specifically, those risks include: (1) the funds set aside for decommissioning, SNF expenses and site restoration are ultimately insufficient; (2) if ENVY, due to a shortage of funds, is forced to rely on the contingent corporate guarantee for purposes of completing the project, that Entergy is unable to fulfill its obligations under the guarantee; and (3) the complete package of financial assurances provided by Entergy do not cover the entire cost of decommissioning, SNF management, and site restoration at VY. I will discuss those risks, and mitigating factors, below, where I compare the Proposed Transaction and Status Quo scenarios. In addition, the Four Points Group Report discusses the relative advantages and disadvantages of DECON versus SAFSTOR from a technical perspective and considers the time-related risks that differ between the two approaches.

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[116] Entergy SEC Form 10-Q for the period ended June 30, 2017.

IV. COMPARISON OF APPROACHES

Q. PLEASE SUMMARIZE THE KEY COMMERCIAL FEATURES OF THE STATUS QUO AND PROPOSED TRANSACTION SCENARIOS.

A. Table 5, below, describes the key features and distinguishing characteristics of the two scenarios.

Table 5: Summary Comparison of Status Quo (Entergy) and Proposed Transaction (NorthStar) Approaches to Decommissioning and Site Restoration (all figures in $2016 unless otherwise specified)

	Entergy	NorthStar
Estimate of Costs ($2016):[117]		
License Termination	$817.2 million	$615.6 million
Spent Fuel Management	$368.3 million	$436.1 million
Site Restoration	$57.1 million	$25.3 million
Total	**$1,243 million**	**$1,077 million**
Corporate Structure	LLC	LLC
Project Funding		
Source of Decommissioning and Site Restoration Funding	NDT, SRT	Combined NDT and SRT

[117] *See* Exhibit DPS-DSD-4, Attachment 1 at Table 1.

	Entergy	**NorthStar**
Other Sources of Funding	• Parent company contingent guarantee equal to the lesser of 10% of the remaining trust fund balance, or $40 million • $145 million in revolving credit facilities for fuel transfer, guaranteed by Entergy[118] • $20 million parent guarantee for the SRT • Anticipated DOE reimbursement of a significant portion of SNF expenses	• $125 million (Support Agreement) • Performance bonds for major contracts • Revolving $20 million funding from NDT for fuel transfer costs • $25 million contingent letter of credit tied to project initiation and completion • Anticipated DOE reimbursement of a significant portion of SNF expenses
Decommissioning and Site Restoration Plans		
Contracting approach	*Not specified*	Fixed price contracts with performance bonds
Decommissioning Completion	2058 (or sooner/later depending on fund growth)	2030 (or sooner)
Site restoration complete	2060 (or sooner/later depending on fund growth)	2026 (simultaneous)
Disposition of remaining trust funds	NDT: 55% to customers, 45% to Entergy Entergy to retain excess SRT funds	NDT: 55% to customers, 45% to NorthStar NorthStar to retain excess SRT funds

Q. ARE THERE KEY DIFFERENCES BETWEEN THE BUSINESS STRUCTURES OF THE PROPOSED TRANSACTION AND STATUS QUO?

A. No. The two scenarios are equivalent from that perspective. Specifically, both ENVY and NorthStar VY (as proposed) are separated from their affiliates due to their LLC structures.

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[118] As of June 30, 2017, there was approximately $70.5 million of outstanding borrowings under those lines of credit. *See* Exhibit DPS-DSD-35.

Q. WHAT DIFFERENCES EXIST REGARDING FINANCIAL ASSURANCES UNDER BOTH SCENARIOS?

A. There are two key distinctions between the two approaches. First, the overall amount of financial assurance provided under the Proposed Transaction is greater, in absolute dollars, than under the Status Quo. NorthStar proposes to put in place a $125 million Support Agreement between NorthStar and NorthStar VY, whereas Entergy has committed to a contingent parent guarantee of up to $40 million for decommissioning and a further $20 million guarantee for site restoration. In addition, NorthStar has pledged that it will secure performance bonds for significant portions of the work that will be completed by contractors. As a package, the NorthStar set of financial assurances has greater potential than the Status Quo to absorb a range of unforeseen cost overruns and performance issues.

Second, there are differences between the forms of financial assurance of the Proposed Transaction and the Status Quo. Entergy has committed a parent guarantee for up to $40 million, if required by the NRC, whereas NorthStar explicitly states that its Support Agreement is not a guarantee. Further, the Support Agreement relies on NorthStar VY to request funding from its parent, but NorthStar does not appear to be under any obligation to provide funds, particularly if no request is made. NorthStar has offered little information on how NorthStar VY would request and receive funds under the Support Agreement, or on the circumstances that would justify disbursement. Those issues raise questions about the agreement's enforceability, which I believe could be addressed in part by the governance and reporting measures identified in my testimony.

Q. WHAT IS YOUR ASSESSMENT OF THE DIFFERENCES IN THE FINANCIAL RESOURCES UNDERLYING THE SUPPORT AGREEMENT VERSUS ENTERGY'S CONTINGENT GUARANTEE AND SITE RESTORATION GUARANTEE?

A. The parental "backstops" that support the financial assurances under the two options are significantly different. NorthStar is prepared to commit financial assurances that offer coverage exceeding the Status Quo approach in magnitude, but Entergy's financial resources are significantly greater than those of NorthStar. Thus, while NorthStar's financial assurances are greater than Entergy's in terms of absolute dollars, the risk that NorthStar might not be able to fulfill its obligations under the financial assurances is greater.

Entergy is a publicly-traded company that files regular financial disclosures with the U.S. Securities and Exchange Commission and has an independent investment grade credit rating. NorthStar, on the other hand, does not make its financial data publicly-available, nor is its credit independently rated. Further, NorthStar is measurably smaller than Entergy from a financial perspective. In addition, as of December 31, 2016, NorthStar was very thinly capitalized (*i.e.*, $13.0 million in equity compared to $226.3 million in debt) and had only $2.9 million of cash on its balance sheet. While NorthStar was recapitalized on June 12, 2017, the details of that recapitalization are limited, and there is no post-recapitalization track record by

NorthStar of maintaining its more balanced capitalization. As such, ability of the parent company to provide financial backing represents a significant risk of the Proposed Transaction related to financial assurance.

Q. FROM A FINANCIAL ASSURANCE PERSPECTIVE, ARE MANY OF THE DECOMMISSIONING AND SITE RESTORATION RISKS COMMON AMONG THE TWO APPROACHES?

A. Yes. There are a number of risks, including those related to performance by contractors, DOE recoveries, and the performance of markets over time, that apply to both approaches. There are also risks that relate specifically to the NorthStar proposal. I have tested the potential impact of certain of those risks on NorthStar's Deal Model in Section II.

Other risks are more challenging to quantify. For example, while NorthStar proposes to use a fixed payment disbursement approach to avoid prematurely depleting the NDT and SRT, it has not committed to setting aside any cost underruns to cover potential future cost overruns. This removes a standard tool for absorbing the effects of unforeseeable events that often materialize on projects of this scale.

Q. IN LIGHT OF YOUR ASSESSMENT OF THE FINANCIAL RISKS, WHAT FURTHER ASSURANCES DO YOU BELIEVE, BASED ON PRESENT INFORMATION, WOULD BE NECESSARY TO ADDRESS THE RISKS YOU IDENTIFY?

A. In light of the financial risks that I discuss herein, I recommend that additional assurances be considered to mitigate the financial risks in the Proposed Transaction.

Specifically, a commitment by NorthStar to escrow unused contingency funds would help ensure that sufficient funds are available to protect against cost overruns and unanticipated costs later in the Project. In addition, I believe additional evidence (*e.g.*, formal commitments from lenders and/or equity owners) is required to demonstrate NorthStar's ability to fund the $125 million Support Agreement. Absent those commitments, there are other governance and reporting measures that could be considered for further financial protection of NorthStar VY. For instance, such additional measures could include the installation of an independent member of the NorthStar VY board of directors/managers, with certain financial oversight responsibilities and the ability to make unilateral calls on the Support Agreement. I believe those additional commitments would provide greater assurance regarding the availability of funds for decommissioning as well as the continuing financial capability of NorthStar to backstop the Project.

V. <u>CONCLUSION</u>

Q. DOES THAT COMPLETE YOUR DIRECT TESTIMONY?

A. Yes, at this time.