

**STATE OF VERMONT
PUBLIC UTILITY COMMISSION**

Joint Petition of NorthStar Decommissioning)
Holdings, LLC, NorthStar Nuclear Decommissioning)
Company, LLC, NorthStar Group Services, Inc., LVI)
Parent Corporation, NorthStar Group Holdings, LLC,)
Entergy Nuclear Vermont Investment Company, LLC,)
and Entergy Nuclear Operations, Inc., and any other)
necessary affiliated entities to transfer ownership of)
Entergy Nuclear Vermont Yankee, LLC and for)
certain ancillary approvals, pursuant to 30 V.S.A.)
§§ 107, 231, and 232)

Docket No. 8880

**RESPONSE OF THE DEPARTMENT OF PUBLIC SERVICE TO
JOINT PETITIONERS' FIRST SET OF DISCOVERY REQUESTS**

The Department of Public Service (“Department”) responds herein to the First Set of Discovery Requests 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 affiliated entities to transfer ownership of Entergy Nuclear Vermont Yankee, LLC (referenced collectively as “Joint Petitioners”). The Department will make reasonable efforts to respond to Joint Petitioners’ Requests, to the extent that no objection is made, as the Department understands and interprets each request. The Department reserves the right at any time to review, correct, add to, supplement, or clarify any of the responses contained herein. None of the Department’s objections or responses is an admission relative to the relevance or admissibility of any document or information, or to the truth or accuracy of any statement or characterization contained in any request, and shall not constitute a waiver of any rights or issues in any proceeding.

GENERAL OBJECTIONS

1. The Department objects to any request to the extent that it is overbroad or unduly burdensome, or imposes upon the Department any duty or obligation that is inconsistent with or in excess of those obligations that are imposed by the Vermont Public Utility Commission’s Rules of Practice, the Vermont Rules of Civil Procedure, or any other applicable rule.
2. The Department objects to any request to the extent that it calls for information not relevant to the petition in this docket or seeks information that is not reasonably calculated to lead to the discovery of admissible evidence.
3. The Department objects to any request to the extent that it seeks publicly available information or documents.

4. The Department objects to any request to the extent that it seeks information or documents that are already within Joint Petitioners' possession, custody, or control.
5. The Department objects to any request to the extent it seeks information or documents that are outside of the Department's possession, custody, and control.
6. The Department objects to any request to the extent that it seeks information protected from disclosure by the attorney-client privilege, the attorney work product doctrine, the joint defense or common interest privilege, or any other applicable privilege or immunity. The Department intends to and does claim all such protections and privileges. The inadvertent disclosure by the Department of information protected from disclosure by any privilege or doctrine shall not constitute a waiver by the Department of such objections or protections.
7. The Department objects to Joint Petitioner's definitions of "you" and "your(s)" as overbroad, unduly burdensome, and vague.
8. The Department objects to any request to the extent that it seeks information that the Department or its witnesses are under an obligation to a third party or a court order not to disclose. The Department will only produce responsive, non-privileged, non-proprietary information after receiving approval from the relevant third parties and/or entering into a protective agreement that would sufficiently protect the confidentiality of such information.
9. The Department objects to any request to the extent that it demands documents or information previously provided in any testimony, filing, or response.
10. The Department objects to any request to the extent that it employs an imprecise specification of the information sought, and will provide only that information which can reasonably be identified in response to the requests.
11. The Department objects to any request to the extent it seeks to require the Department to produce documents or information beyond what the Department is able to locate upon a reasonable inquiry.
12. The Department objects to any request to the extent that it is compound or contains subparts. Any response by the Department to one portion or subpart of a question shall not be deemed to be an admission, waiver of objection, or response to any other portion or subpart of the question or to the question as a whole.
13. The Department objects to any request to the extent that it calls for speculation or asks the Department or its witnesses to predict future actions over which they have no control or to opine upon the effects of any hypothetical future actions or conditions.
14. The Department objects to any request to the extent it seeks to require the Department or its witnesses to generate information or documents that do not already exist.

15. The Department objects to any request to the extent that it uses language incorporating or calling for a legal conclusion or making any statement of law. The Department's responses shall be as to matters of fact only and shall not be construed as stating, implying, or accepting any legal conclusions concerning the matters referred to in any request.
16. The Department objects to any request to the extent it requires the Department to draw a legal or expert conclusion to make a proper response.
17. Neither these General Objections nor the Specific Objections and Responses set forth below are an admission relative to the existence of any information sought, the relevance or admissibility of any response, or the truth or accuracy of any statement or characterization contained in any particular request.

Questions for Brian Winn

Q.JP:DPS.1-1: Identify, list, and produce all exhibits to be introduced or used at hearing in support of the prefiled testimony of Brian Winn in this proceeding.

A.JP:DPS.1-1: OBJECTION: The Department objects to this request to the extent it calls for speculation. At this time, the exhibit list includes those exhibits identified in and attached to Mr. Winn's prefiled testimony. However, the Department reserves its right to submit and utilize additional exhibits as warranted.

Without waiving the foregoing general and specific objections, the Department responds: The exhibits referenced in Mr. Winn's prefiled testimony were produced previously as Exhibits DPS-BEW-1 through DPS-BEW-5. To the extent Mr. Winn's testimony introduces the testimony of other Department witnesses, that testimony and the exhibits sponsored by those witnesses are also introduced and may be used at hearing in support of the prefiled testimony of Mr. Winn. *See* A.JP:DPS.1-15, A.JP:DPS.1-75, A.JP:DPS.1-87.

Individual Responsible for Response: Brian Winn

Date: September 27, 2017

Administrative Unit: Vermont Department of Public Service

Q.JP:DPS.1-2: Identify, list, and produce all documents, data compilations, electronically stored information, photographs, workpapers, or other tangible things provided to, exchanged with, prepared by, reviewed by, relied upon or used by Mr. Winn in developing his prefiled testimony and the opinion(s) underlying his prefiled testimony, including, but not limited to, all exhibits to his prefiled testimony, to the extent not already produced.

A.JP:DPS.1-2: OBJECTION: The Department objects to this request as overly broad and unduly burdensome to the extent it seeks the identification of “all” documentation. The Department further objects to the extent this request seeks information covered by the attorney-client privilege, the attorney work product doctrine, or Vermont Rule of Civ. P. 26(b)(5)(B)-(C). The Department also objects to the request to produce “all documents . . . reviewed by” Mr. Winn as overbroad and unduly burdensome. The Department further objects to this request as duplicative, and identifies in response to this request only documents not identified elsewhere in these responses or in the prefiled testimony submitted by the Department.

Without waiving the foregoing general and specific objections, the Department responds: Mr. Winn reviewed the Joint Petition; the testimony of the Joint Petitioners’ witnesses; discovery responses from the Joint Petitioners and their witnesses; the prefiled testimony of Daniel S. Dane, Warren K. Brewer, and Gregory A. Maret; and the Four Points Group Report, titled “Review of Proposed Transaction of Vermont Yankee to NorthStar and Plan for Subsequent Prompt Decommissioning,” and sponsored by Mr. Brewer and Mr. Maret in connection with their respective prefiled testimony as Exhibit DPS-WKB/GAM-2.

Individual Responsible for Response: Brian Winn
Date: September 27, 2017
Administrative Unit: Vermont Department of Public Service

Q.JP:DPS.1-3: Identify all assumptions, materials, inputs, data or information provided to Mr. Winn in connection with his preparation of prefiled testimony.

A.JP:DPS.1-3: OBJECTION: The Department objects to this request as overly broad and unduly burdensome to the extent it seeks “all” such information. The Department further objects to the extent this request seeks information covered by the attorney-client privilege, or the attorney work product doctrine. The Department further objects to this request as duplicative, particularly of Request Q:JP.DPS.1-2, and identifies in response to this request only documents not identified elsewhere in these responses or in the prefiled testimony submitted by the Department.

Without waiving the foregoing general and specific objections, the Department responds: see response A.JP:DPS.1-2.

Individual Responsible for Response: Brian Winn
Date: September 27, 2017
Administrative Unit: Vermont Department of Public Service

Q.JP:DPS.1-4: Identify and describe all previous work (include cost estimation and funding analysis) Mr. Winn has undertaken with regard to nuclear decommissioning, spent nuclear fuel management, and/or site restoration and produce all documents relating to all previous work Mr. Winn has undertaken with regard to nuclear decommissioning, spent nuclear fuel management, and/or site restoration projects.

- a. Identify all regulatory proceedings by jurisdiction, date, docket number, and name in which Mr. Winn has testified or provided consulting or expert support for witnesses testifying on nuclear decommissioning, spent nuclear fuel management, and/or site restoration projects.

A.JP:DPS.1-4: OBJECTION: The Department objects to this request as overly broad and unduly burdensome to the extent that it requests “all documents” relating to all previous work Mr. Winn has undertaken with regard to nuclear decommissioning. The Department further objects to this request to the extent it seeks information covered by the attorney-client privilege or the attorney work product doctrine.

Without waiving the foregoing general and specific objections, the Department responds: During his time at Edison International and/or Southern California Edison, Mr. Winn, or members of his staff at his direction, engaged in numerous projects and analyses relating to the San Onofre Nuclear Generating Station (San Onofre), including the following analyses, or types of analysis, listed below:

- A valuation of, and due diligence on, a hazardous waste company that possessed a proprietary method for reducing the volume of low level radioactive waste. The analysis included the potential market for decommissioning nuclear power plants, the potential volumes of waste, cost of disposal, and other factors relevant to the valuation of the company. This project also involved several visits to the company’s headquarters and meetings with its principal officers.
- Compiling the financial records and other documentation in support of litigation regarding the recovery of spent fuel storage costs from the Department of Energy.
- An analysis of the costs and benefits of constructing dry cask storage containers in house versus purchasing them from a vendor.
- An update of the decommissioning cost estimate in conjunction with the Edison and SDG&E 2012 Triennial Review of Nuclear Decommissioning Trust and Costs. This proceeding was intended to address costs associated with phase II of Unit 1 decommissioning and an updated decommissioning cost estimate for Units 2 & 3.
- Supported the scenario analysis to evaluate the repair and continued operation of San Onofre Units 2 and 3 compared to the alternatives of shutting down one or both of the units.

Mr. Winn does not possess documents responsive to this request.

a. None.

Individual Responsible for Response: Brian Winn
Date: September 27, 2017
Administrative Unit: Vermont Department of Public Service

Q.JP:DPS.1-5: Identify and describe all previous work Mr. Winn has undertaken relating to any of the Joint Petitioner parties, or related entities.

A.JP:DPS.1-5: OBJECTION: The Department objects to this request on the ground that the term “related entities” is vague and undefined, and the term “relating to” is overbroad in this context.

Without waiving the foregoing general and specific objections, the Department responds: To the best of his recollection, Mr. Winn has not undertaken work relating to any of the Joint Petitioner parties or related entities.

Individual Responsible for Response: Brian Winn
Date: September 27, 2017
Administrative Unit: Vermont Department of Public Service

Q.JP:DPS.1-6: Identify each communication the Department has had with any party to this proceeding concerning Joint Petitioners' petition for a Certificate of Public Good, including (1) the method of communication, (2) the date of the communication, (3) the parties to the communication, (4) any other parties who witnessed or heard the communication and (5) identify and produce all documents concerning such communications.

A.JP:DPS.1-6: OBJECTION: The Department objects to this request as overly broad and unduly burdensome to the extent it seeks the identification of "all" such communications. The Department further objects to this request to the extent it seeks information covered by the attorney-client privilege or the attorney work product doctrine.

Without waiving the foregoing general and specific objections, the Department responds: Mr. Winn has not had any responsive non-privileged communications.

Individual Responsible for Response: Brian Winn
Date: September 27, 2017
Administrative Unit: Vermont Department of Public Service

Q.JP:DPS.1-7: Identify each communication the Department has had with any non-party (including, without limitation, any federal or state agency, organization or entity), concerning Joint Petitioners' petition for a Certificate of Public Good, including (1) the method of communication, (2) the date of the communication, (3) the parties to the communication, (4) any other parties who witnessed or heard the communication and (5) identify and produce all documents concerning such communications.

A.JP:DPS.1-7: OBJECTION: The Department objects to this request as overly broad and unduly burdensome to the extent it seeks the identification of "all" such communications. The Department further objects to this request to the extent it seeks information covered by the attorney-client privilege or the attorney work product doctrine.

Without waiving the foregoing general and specific objections, the Department responds: Mr. Winn has not had any responsive non-privileged communications.

Individual Responsible for Response: Brian Winn
Date: September 27, 2017
Administrative Unit: Vermont Department of Public Service

Q.JP:DPS.1-8: Mr. Winn states that he was employed by Southern California Edison until January 2015. Exhibit DPS-BEW-1. Describe Mr. Winn’s knowledge of or involvement with the expense and duration of the decommissioning oversight contractor selection process at San Onofre Nuclear Generating Station (“SONGS”) or any other aspect of the SONGS decommissioning project.

- a. Explain whether and how the SONGS experience was used as the basis for assumptions specific to Mr. Winn’s testimony in this Docket.

A.JP:DPS.1-8: OBJECTION: The Department objects to this request on the ground that the request that Mr. Winn “describe [his] knowledge of or involvement” is vague and ambiguous and on the ground that the term “any other aspect” is vague and undefined.

Without waiving the foregoing general and specific objections, the Department responds: Mr. Winn had no direct involvement in, and only cursory knowledge of, the decommissioning oversight contractor selection process at San Onofre, which occurred after he left his assignment to the plant.

- a. Mr. Winn’s work experience and general knowledge of nuclear operations aided in his understanding of the analysis of the expert testimony and proposal presented in this Docket.

Individual Responsible for Response: Brian Winn
Date: September 27, 2017
Administrative Unit: Vermont Department of Public Service

Q.JP:DPS.1-9: As to Mr. Winn’s testimony that “[t]he Joint Petitioners have acknowledged that such consideration [of the Section 248 criteria] is appropriate,” Winn PFT at 6:11-13, admit that:

- a. The Joint Petition does not seek approval under Section 248.
- b. Joint Petitioners have explicitly advanced the position that Section 248 criteria need not be strictly satisfied in this proceeding, *see, e.g.*, A.DPS:JP.1-2.
- c. As to a and b, if denied, explain in detail the basis for your denial. If neither admitted nor denied, explain in detail the basis for your response.

A.JP:DPS.1-9: OBJECTION: The Department objects to this request on the ground that it mischaracterizes Mr. Winn’s prefiled testimony. The Department further objects to this request to the extent that it calls for a legal conclusion. Without waiving the foregoing general and specific objections, the Department responds:

- a. Admitted. As stated in Mr. Winn’s testimony, “[t]he Joint Petition invokes Sections 107, 231, and 232, **but not Section 248** (Docket No. 8880, Joint Petition, at 1).” Winn PFT at A12 (emphasis added). Mr. Winn further acknowledges that Joint Petitioners present evidence on Section 248 factors, including related to:

the effect of the proposed transaction on the orderly development of the region (see Section 248(b)(1)); the economic benefit to the State and its residents (see Section 248(b)(4)); the effect of the proposed transaction on aesthetics, historic sites, air and water purity, the natural environment, the use of natural resources, and public health and safety (see Section 248(b)(5)); and the proposed transaction’s consistency with the State’s Comprehensive Energy Plan (see Section 248(b)(7)).

Id.

- b. Admitted. See response to A.JP:DPS.1-9(a).
- c. Not applicable.

Individual Responsible for Response: Brian Winn

Date: September 27, 2017

Administrative Unit: Vermont Department of Public Service

Q.JP:DPS.1-10: Mr. Winn’s testimony states that “NorthStar ... has never taken the lead on a *nuclear* decommissioning project.” Winn PFT at 7:2-3 (emphasis in original).

- a. Admit that this statement is untrue given NorthStar’s work, *inter alia*, on the University of Illinois—Nuclear Reactor Lab, DOE Hanford, University at Buffalo, University of Arizona—Nuclear Reactor Lab, and University Of Washington—Nuclear Reactor projects. *See* State PFT at 7-8. If denied, explain in detail the basis for your denial. If neither admitted nor denied, explain in detail the basis for your response.
- b. Explain why Mr. Winn did not consider those projects.
- c. Explain why Mr. Winn did not consider the experience of AREVA, WCS, and Burns & McDonnell on prior nuclear projects.

A.JP:DPS.1-10:

- a. Denied. Refer to A.DPS:NS.2-3, included in Exhibit DPS-BEW- 2.
- b. *See* A.JP:DPS.1-10(a).
- c. Mr. Winn considered the information provided regarding the experience of proposed subcontractors AREVA, WCS, and Burns & McDonnell. However, the experience of those entities has no bearing on NorthStar’s past experience as the primary party responsible for a commercial nuclear decommissioning project at all relevant to the scale and scope of Vermont Yankee. Further, those entities would not be the owner/operator or licensee under the current proposal and therefore are not the lead, or primarily responsible, for the project.

Individual Responsible for Response: Brian Winn
Date: September 27, 2017
Administrative Unit: Vermont Department of Public Service

Q.JP:DPS.1-11: Admit that the “risks” claimed by Mr. Winn at Winn PFT at 7:16-8:4 are equally faced under the proposed transaction and under the status quo. If denied, explain in detail the basis for your denial. If neither admitted nor denied, explain in detail the basis for your response.

A.JP:DPS.1-11: Admitted in part, and denied in part. The proposal calls for decommissioning Vermont Yankee potentially decades sooner than the plan put forth by the current owner. The passage of time changes the nature of any risk. Mr. Winn discusses these “risks” in the course of introducing and summarizing the testimony of Department witnesses Warren K. Brewer, Gregory A. Maret, and Daniel S. Dane. Mr. Winn’s discussion of the “risks” is consistent with the more detailed discussion of them in those witnesses’ prefiled testimonies and the Four Points Group Report, Exhibit DPS-WKB/GAM-2.

Individual Responsible for Response: Brian Winn

Date: September 27, 2017

Administrative Unit: Vermont Department of Public Service

- Q.JP:DPS.1-12:** Define “industry practice” as used at Winn PFT at 8:14.
- a. Identify all nuclear sites that exemplify this “industry practice.” Produce all documents relied upon in your response.

A.JP:DPS.1-12: OBJECTION: The Department objects to this request as overly broad and unduly burdensome to the extent it seeks the identification of “all” such nuclear sites. The Department further objects to the request to produce “all documents relied upon” as overbroad and unduly burdensome and duplicative of other requests.

Without waiving the foregoing general and specific objections, the Department responds: The term “industry practice” is used in that portion of Mr. Winn’s testimony as a topic heading to describe a group of risks related to NorthStar’s proposed approaches to decommissioning in these areas. It is inherently not site-specific, but rather refers to practices across the industry. Mr. Winn uses the term “industry practice” in the course of introducing and summarizing the testimony of Department witnesses Warren K. Brewer and Gregory A. Maret, and uses the term consistent with its use and meaning in those witnesses’ prefiled testimonies and the Four Points Group Report, Exhibit DPS-WKB/GAM-2. *See also* A.JP:DPS.1-40.

- a. *See* A.JP:DPS.1-12.

Individual Responsible for Response: Brian Winn, Warren Brewer, Gregory Maret
Date: September 27, 2017
Administrative Unit: Vermont Department of Public Service; Four Points Group, Incorporated

Q.JP:DPS.1-13: Define “subsurface equipment” as used at Winn PFT at 8:15.

A.JP:DPS.1-13: Equipment that is below grade, including, by way of example, piping and cables. Mr. Winn uses the term “subsurface equipment” in the course of introducing and summarizing the testimony of Department witnesses Warren K. Brewer and Gregory A. Maret, and uses the term consistent with its use and meaning in those witnesses’ prefiled testimonies and the Four Points Group Report, Exhibit DPS-WKB/GAM-2

Individual Responsible for Response: Brian Winn, Warren Brewer, Gregory Maret

Date: September 27, 2017

Administrative Unit: Vermont Department of Public Service; Four Points Group, Incorporated

Q.JP:DPS.1-14: Define the “standard approach.” Winn PFT at 11:25.

- a. Identify all nuclear sites that exemplify this “standard approach.”
Produce all documents relied upon in your response.

A.JP:DPS.1-14: OBJECTION: The Department objects to this request as overly broad and unduly burdensome to the extent it seeks the identification of “all” such nuclear sites. The Department further objects to the request to produce “all documents relied upon” as overbroad and unduly burdensome and duplicative of other requests.

Without waiving the foregoing general and specific objections, the Department responds: See the Prefiled Testimony of Brian E. Winn at 11:25-12:4.

- a. *See* Winn PFT at 11:25-12:4. Drawing on Warren K. Brewer’s and Gregory A. Maret’s direct experience with decommissioning, decommissioning cost estimates, and decommissioning plans, the Department is unaware of any instance in which the owner or licensee removed or absorbed contingency funds during the pendency of decommissioning work, except to cover actual costs incurred. Messrs. Brewer and Maret’s direct experience with decommissioning activities at Yankee Rowe, Maine Yankee, Connecticut Yankee, San Onofre Unit 1, Trojan, and Zion is consistent with the “standard approach” of treating contingency as a project resource to fund cost overruns and unanticipated scope additions, as opposed to associating specific contingency amounts with each project activity and absorbing those amounts when each activity is completed.

Individual Responsible for Response: Brian Winn, Warren Brewer, Gregory Maret

Date: September 27, 2017

Administrative Unit: Vermont Department of Public Service; Four Points Group, Incorporated

Questions for Daniel Dane

Q.JP:DPS.1-15: Identify, list and produce all exhibits to be introduced or used at hearing in support of the prefiled testimony of Daniel S. Dane in this proceeding.

A.JP:DPS.1-15: OBJECTION: The Department objects to this request to the extent it calls for speculation. At this time, the exhibit list includes those exhibits identified in and attached to Mr. Dane's prefiled testimony. However, the Department reserves its right to submit and utilize additional exhibits as warranted.

Without waiving the foregoing general and specific objections, the Department responds: The exhibits referenced in Mr. Dane's testimony were produced previously as Exhibits DPS-DSD-1 through DPS-DSD-36.

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-16: Identify, list and produce all documents, data compilations, electronically stored information, photographs, workpapers or other tangible things provided to, exchanged with, prepared by, reviewed by, relied upon or used by Mr. Dane in developing his prefiled testimony and the opinion(s) underlying his prefiled testimony, including, but not limited to, all exhibits to his prefiled testimony, to the extent not already produced.

A.JP:DPS.1-16: OBJECTION: The Department objects to this request as overly broad and unduly burdensome to the extent it seeks the identification of “all” such documents and materials. The Department further objects to the extent this request seeks information covered by the attorney-client privilege, the attorney work product doctrine, or Vermont Rule of Civ. P. 26(b)(5)(B)-(C). The Department further objects to the request to produce “all documents . . . reviewed by” Mr. Dane as overbroad and unduly burdensome. The Department further objects to this request as duplicative of other requests, and identifies in response to this request only documents not identified elsewhere in these responses or in the prefiled testimony submitted by the Department.

Without waiving the foregoing general and specific objections, the Department responds: *See* A.JP:DPS.1-15 and the testimony, cited sources, and exhibits to the prefiled testimony of Mr. Dane. Mr. Dane provides the following Attachments A.JP:DPS.1-16.1 through A.JP:DPS.1-16.93 as responsive to this request. Finally, Mr. Dane reviewed the testimony filed by the Joint Petitioners and materials provided by the Joint Petitioners in the discovery process.

Individual Responsible for Response: Daniel Dane
Date: September 27, 2017
Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-17: Identify all assumptions, materials, inputs, data or information provided to Mr. Dane in connection with his preparation of prefiled testimony.

A.JP:DPS.1-17: OBJECTION: The Department objects to this request as overly broad and unduly burdensome to the extent it seeks “all” such information. The Department further objects to the extent this request seeks information covered by the attorney-client privilege or the attorney work product doctrine. The Department further objects to this request as duplicative of other requests, particularly of Request Q.JP:DPS.1-16, and identifies in response to this request only documents not identified elsewhere in these responses or in the prefiled testimony submitted by the Department. The Department further objects to this request on the ground that the term “provided to” is vague and undefined.

Without waiving the foregoing general and specific objections, the Department responds: *See* A.JP:DPS.1-16.

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-18: Identify and describe all previous work (including cost estimation and funding analysis) Mr. Dane has undertaken with regard to nuclear decommissioning, spent nuclear fuel management, and/or site restoration, and produce all documents relating to all previous work Mr. Dane has undertaken with regard to nuclear decommissioning, spent nuclear fuel management, and/or site restoration projects.

- a. Identify all regulatory proceedings by jurisdiction, date, docket number and name in which Mr. Dane has testified or provided consulting or expert support for witnesses testifying on nuclear decommissioning, spent nuclear fuel management, and/or site restoration projects.

A.JP:DPS.1-18: OBJECTION: The Department objects to this request as overly broad and unduly burdensome to the extent that it requests that the Department identify and describe “all previous work . . . Mr. Dane has undertaken with regard to nuclear decommissioning, spent nuclear fuel management, and/or site restoration” and requests “all documents relating to all previous work Mr. Dane has undertaken with regard to nuclear decommissioning.” The Department further objects to this request to the extent it seeks information covered by the attorney-client privilege, the attorney work product doctrine, or Vermont Rule of Civ. P. 26(b)(5)(B)-(C). The Department further objects to this request to the extent it seeks disclosure of confidential information that is subject to third party non-disclosure agreements.

Without waiving the foregoing general and specific objections, the Department responds: Mr. Dane has worked on consulting and financial advisory projects relating to the nuclear plants identified in his prefiled testimony at 4:9-12.

The following engagements involved the transfer of decommissioning and site restoration obligations: (1) the 2005 sale of the Duane Arnold Energy Center by Alliant Energy Corp. to FPL Energy Duane Arnold, LLC, an indirect subsidiary of FPL Group, now NextEra Energy, Inc.; (2) the 2006 sale of the Palisades Nuclear Plant and Big Rock Point by Consumers Energy Co. to Entergy Nuclear Palisades, LLC, an indirect subsidiary of Entergy Corp.; and (3) the 2007 sale of Point Beach 1 and 2 by Wisconsin Energy Corp. to FPL Energy Point Beach, LLC, an indirect subsidiary of FPL Group, now NextEra Energy, Inc.

Mr. Dane 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 San Onofre Nuclear Generating Station Units 2 and 3 (“SONGS”). Mr. Dane’s firm, Concentric Energy Advisors (“Concentric”), was retained by Mitsubishi Nuclear Energy Systems, Inc. and Mitsubishi Heavy Industries, Ltd. (together, “Mitsubishi”) to analyze claims made by the owners of SONGS for alleged damages related to the early shutdown of SONGS purportedly due to the failure of replacement steam generators supplied by Mitsubishi. The claims included decommissioning-related damages.

Mr. Dane has assisted Boston Edison Company and Consolidated Edison Company 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, in connection with those companies' sales of their nuclear ownership interests in the Pilgrim and Indian Point facilities, respectively, to Entergy. Mr. Dane had a minor role in Concentric's engagement to advise Vermont Yankee Nuclear Power Corporation regarding the impact on the sale value of Vermont Yankee of prolonged storage of SNF on site.

Mr. Dane has advised a confidential client in consideration of strategic options for its nuclear plant, including a potential sale. This work included the analysis of decommissioning funds that would transfer with a sale. Mr. Dane has advised a regulated utility on a confidential basis regarding the sufficiency of decommissioning related costs recovered through electricity rates to cover decommissioning obligations.

- a. The sales of the Duane Arnold Energy Center, Palisades and Big Rock Point, and Point Beach nuclear stations were approved by regulators in the jurisdictions in which the sellers operate. Mr. Dane did not testify in those cases but provided consulting support. The following are the relevant cases:
 - Duane Arnold Energy Center, Docket No. SPU-05-15, July 2005 (Iowa Utilities Board), and Docket No. E001/PA-05-1272, August 2005 (Minn. Public Utilities Comm'n).
 - Palisades and Big Rock Point, Case No. U-14992, August 2006 (Mich. Public Service Comm'n).
 - Point Beach, Docket No. 6630-EI-113, January 2007 (Wis. Public Service Comm'n).

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-19: Identify and describe all previous work Mr. Dane has undertaken relating to any of the Joint Petitioner parties, or related entities.

A.JP:DPS.1-19: OBJECTION: The Department objects to this request on the ground that the term “related entities” is vague and undefined.

Without waiving the foregoing general and specific objections, the Department responds: Mr. Dane has not performed work on behalf of the Joint Petitioners. Mr. Dane has worked on behalf of the seller of the Palisades and Big Rock Point nuclear facilities to Entergy. Mr. Dane has assisted Boston Edison Company and Consolidated Edison Company in litigation with the U.S. Department of Energy regarding the removal of spent nuclear fuel from nuclear stations, specifically by assessing the effect that prolonged storage of spent nuclear fuel at nuclear sites has had on nuclear plant valuations and decommissioning obligations, in connection with those companies’ sales of their nuclear ownership interests in the Pilgrim and Indian Point facilities, respectively, to Entergy. Mr. Dane had a minor role in Concentric’s engagement to advise Vermont Yankee Nuclear Power Corporation regarding the impact on the sale value of Vermont Yankee of prolonged storage of spent nuclear fuel on site.

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-20: Identify all of the projects listed at Dane PFT at 4:9-12 that involved the sale or transfer of a nuclear power plant or owner of a nuclear power plant.

- a. As to each such project, state whether the seller retained liability for radiological decommissioning, spent nuclear fuel management, and/or site restoration.
- b. As to each such project, state whether the transaction was subject to state regulatory approval and, if so, describe the nature of the approval process and whether approval was received.
- c. As to each such project, state whether Mr. Dane applied the same criteria (including without limitation the financial ratios discussed at Dane PFT at 19:9-22:15) his prefiled testimony applies to the instant transaction, and indicate how the project fared on each of the criteria.
- d. Provide all reports and documents produced by Mr. Dane or under his supervision relating to such projects.

A.JP:DPS.1-20: OBJECTION: The Department objects to this request to the extent that the term “transfer” is vague and undefined.

Without waiving the foregoing general and specific objections, the Department responds: The following projects listed at Dane PFT at 4:9-12 involved the sale or transfer of a nuclear power plant or owner of a nuclear power plant: Bellefonte; Duane Arnold; Palisades and Big Rock Point; and Point Beach.

- a. OBJECTION: The Department objects to this request to the extent that the term “retained liability” is vague and undefined.

Without waiving the foregoing general and specific objections, the Department responds: In those sales, the seller did not retain the liability for radiological decommissioning, spent nuclear fuel management, and/or site restoration.

- b. OBJECTION: The Department objects to this request on the ground that the term “state regulatory approval” is vague and undefined and on the ground that the request that the respondent “describe the nature of the approval process” is vague and ambiguous. The Department further objects to this request to the extent that it calls for a legal conclusion or description of a legal process. The Department further objects that the “nature of the approval process” is set forth in relevant statutes, rules, or regulations, which speak for themselves.

Without waiving the foregoing general and specific objections, the Department responds: The sales of the Big Rock Point, Duane Arnold, Palisades, and Point Beach facilities were subject to approval by the relevant state regulatory bodies. The state regulatory docket numbers for each sale are provided in A.JP:DPS.1-18(a).

- c. OBJECTION: The Department objects to this request to the extent it seeks information covered by the attorney-client privilege, the attorney work product doctrine, or Vermont Rule of Civ. P. 26(b)(5)(B)-(C). The Department further objects to this request to the extent it seeks disclosure of confidential information that is subject to third party non-disclosure agreements. The Department further objects to this request to the extent it mischaracterizes Mr. Dane's prefiled testimony.

Without waiving the foregoing general and specific objections, the Department responds: In the Duane Arnold, Palisades and Big Rock Point, and Point Beach transactions, Mr. Dane and members of Concentric assessed the financial capability of the buyers to purchase a nuclear facility. In all three cases, the buyer provided a parent guaranty from an investment-grade parent company as security for its payment obligations under the transaction. Given that the parent companies of the purchasers were all publicly held companies with investment grade credit ratings, the specific financial ratios at Dane PFT at 19:9-22:15 were not applied by Concentric to each project. Since the Bellefonte plant is unfinished, the focus of the financial qualification process for that sale was on the potential buyers' ability to demonstrate the ability to close the transaction, not operate and decommission an operating nuclear plant. In that case, the buyer was required to prove its ability to fund the purchase price, either through cash on hand or a bank commitment.

- d. OBJECTION: The Department objects to this request as overly broad and unduly burdensome in that it requests "all reports and documents produced by Mr. Dane" in the course of seventeen separate consulting and financial advisory engagements. The Department further objects to this request to the extent it seeks information covered by the attorney-client privilege, the attorney work product doctrine, or Vermont Rule of Civ. P. 26(b)(5)(B)-(C). The Department further objects to this request to the extent it seeks disclosure of confidential information that is subject to third party non-disclosure agreements. Based upon the foregoing general and specific objections, the Department will not respond to this request.

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-21: Identify each case in which Mr. Dane has assisted clients in recovering spent nuclear fuel costs from DOE (whether through litigation or under a settlement agreement) pursuant to claims arising under the Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste.

- a. Describe in each case what percentage of the licensee's actual spent nuclear fuel costs were successfully recovered from DOE.
- b. Describe in each case the lag time between the client's expenditure of funds for spent nuclear fuel storage costs and the client's recovery of those costs from DOE.
- c. Describe in each case whether the claim involved costs for ISFSI operations and maintenance only.
- d. Provide all testimony and exhibits produced by Mr. Dane in such cases.
- e. Describe Mr. Dane's understanding of the percentage recovery rate for claims involving the VY Station.

A.JP:DPS.1-21: Mr. Dane has not assisted clients in recovering spent nuclear fuel costs from DOE (whether through litigation or under a settlement agreement) pursuant to claims arising under the Standard Contract for Disposal of Spent Nuclear Fuel and/or High-Level Radioactive Waste.

- a. **OBJECTION:** The Department objects to this request to the extent it seeks information covered by the attorney-client privilege, the attorney work product doctrine, or Vermont Rule of Civ. P. 26(b)(5)(B)-(C). The Department further objects to this request to the extent it seeks disclosure of confidential information that is subject to third party non-disclosure agreements.

Without waiving the foregoing general and specific objections, the Department responds: Not applicable.

- b. **OBJECTION:** The Department objects to this request on the ground that the meaning of "lag time" is vague and ambiguous. The Department further objects to this request to the extent it seeks information covered by the attorney-client privilege, the attorney work product doctrine, or Vermont Rule of Civ. P. 26(b)(5)(B)-(C). The Department further objects to this request to the extent it seeks disclosure of confidential information that is subject to third party non-disclosure agreements.

Without waiving the foregoing general and specific objections, the Department responds: Not applicable.

- c. OBJECTION: The Department objects to this request to the extent it seeks information covered by the attorney-client privilege, the attorney work product doctrine, and Vermont Rule of Civ. P. 26(b)(5)(B)-(C). The Department further objects to this request to the extent it seeks disclosure of confidential information that is subject to third party non-disclosure agreements. Without waiving the foregoing general and specific objections, the Department responds:

Not applicable.

- d. OBJECTION: The Department objects to this request to the extent it seeks information covered by the attorney-client privilege, the attorney work product doctrine, or Vermont Rule of Civ. P. 26(b)(5)(B)-(C). The Department further objects to this request to the extent it seeks disclosure of confidential information that is subject to third party non-disclosure agreements.

Without waiving the foregoing general and specific objections, the Department responds: Not applicable.

- e. OBJECTION: The Department objects to this request on the ground that it is hypothetical and calls for speculation. The Department further objects to this request to the extent that it calls for legal conclusions or legal conjecture.

Without waiving the foregoing general and specific objections, the Department responds: Mr. Dane is unaware of the percentage recovery for claims involving the Vermont Yankee station. However, in response to a discovery request made by the Conservation Law Foundation (A.CLF.JP.1-27) the Joint Petitioners indicate that “ENVY has recovered approximately \$66 million to date from DOE as damages for DOE’s breach of the contract.”

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-22: Regarding Dane PFT at 11:12-15 (“Specifically, there are significant risks to NorthStar’s decommissioning estimate that have been identified in the Four Points Group Report.”), state whether Mr. Dane exercised any independent judgment as to the correctness of the Four Points Group Report. If so, identify the matters he considered independently to evaluate the Four Points Group Report.

A.JP:DPS.1-22: OBJECTION: The Department objects to this request on the ground that the meaning of “independent judgement” is vague and ambiguous.

Without waiving the foregoing general and specific objections, the Department responds: Mr. Dane reviewed the Four Points Group Report, Exhibit DPS-WKB/GAM-2, in consultation with Mr. Brewer and Mr. Maret and concluded that it was reasonable to rely on for the purposes of his analysis.

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-23: State what Mr. Dane considers to be an acceptable turnover ratio for companies in NorthStar's industry, *i.e.*, the industry of demolition and abatement of nuclear and non-nuclear structures and sites. Explain the basis for the answer. Produce any documents relied upon.

A.JP:DPS.1-23: OBJECTION: The Department objects to this request on the grounds that it improperly assumes that that Mr. Dane considers a specific turnover ratio to be "acceptable . . . for companies in NorthStar's industry" and mischaracterizes Mr. Dane's prefiled testimony.

Without waiving the foregoing general and specific objections, the Department responds: The overall financial profile and performance of a company should be considered in conjunction with the inherent riskiness of the company's operations to make an assessment of a company's financial capacity and wherewithal. Accordingly, Mr. Dane does not consider any specific level of any specific financial metric to be "acceptable . . . for companies in NorthStar's industry." Instead, financial ratios provide information regarding a company's financial performance, financial capabilities, and risk.

The turnover ratio provides information on the speed with which sales are converted to cash and also on how a given company's sales and accounts receivable relationship has changed over time, providing insight into a company's collection cycle. A declining turnover metric indicates that collections have slowed, which may burden financial resources and potentially lead to greater financing costs associated with a timing mismatch of cash collections and cash outlays.

All else being equal, a higher turnover ratio represents a faster conversion of sales into cash and lower project risk, while a lower turnover ratio represents a slower conversion of sales into cash and higher project risk.

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-24: State what Mr. Dane considers to be an acceptable FFO/Debt ratio for companies in NorthStar’s industry. Explain the basis for the answer. Produce any documents relied upon.

A.JP:DPS.1-24: OBJECTION: The Department objects to this request on the grounds that it improperly assumes that that Mr. Dane considers a specific FFO/Debt ratio to be “acceptable . . . for companies in NorthStar’s industry” and mischaracterizes Mr. Dane’s prefiled testimony.

Without waiving the foregoing general and specific objections, the Department responds: The overall financial profile and performance of a company should be considered in conjunction with the inherent riskiness of the company’s operations to make an assessment of a company’s financial capacity and wherewithal. Accordingly, Mr. Dane does not consider any specific level of any specific financial metric to be “acceptable . . . for companies in NorthStar’s industry.” Instead, financial ratios provide information regarding a company’s financial performance, financial capabilities, and risk.

The Funds from Operations (“FFO”) / Debt ratio compares the cash flow from the operations of a company to its outstanding debt balance. It is a common metric used in financial analysis, and is one of two “core ratios” used by Standard and Poor’s to assess a company’s financial credit risk and to assess its ability to meet its debt obligations.

All else being equal, a lower FFO / Debt ratio, which indicates that a company is more highly leveraged, will mean that the company has less access to capital and has fewer financial resources to meet its existing debt obligations.

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-25: State the basis, including any past examples, for Mr. Dane's use of "standard" volatility (*see* Dane PFT at 20 n.36) for a company that owns a nuclear power plant that is being decommissioned. Produce any documents relied upon.

A.JP:DPS.1-25: OBJECTION: The Department objects to this request on the ground that it mischaracterizes Mr. Dane's prefiled testimony.

Without waiving the foregoing general and specific objections, the Department responds: Mr. Dane believes it is appropriate to use standard volatility for purposes of assessing NorthStar's credit ratios due to the significant potential unknowns in the decommissioning and site restoration process. In addition, NorthStar has displayed historical volatility in its financial performance, including the volatility of its net income and cash flows.

In addition, Standard & Poor's ("S&P") uses "standard volatility" as the relevant benchmark in its evaluation of most firms in the Environmental Services industry. NorthStar is not rated by S&P. S&P's rating of EnergySolutions (a NorthStar competitor in the nuclear decommissioning industry) as an Environmental Services firm, however, provides guidance as to how S&P might classify NorthStar.

See Attachment A.JP:DPS.1-25.1 (Key Credit Factors for The Environmental Services Industry (Standard & Poor's, February 12, 2014)).

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-26: State the basis, including any past examples, for Mr. Dane's use of "standard" volatility (*see* Dane PFT at 20 n.36) for a company that operates in NorthStar's industry. Produce any documents relied upon.

A.JP:DPS.1-26: OBJECTION: The Department objects to this request on the ground that it mischaracterizes Mr. Dane's prefiled testimony.

Without waiving the foregoing general and specific objections, the Department responds: *See* A.JP:DPS.1-25.

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-27: State what Mr. Dane considers to be an acceptable Debt/EBITDA ratio for companies in NorthStar's industry. Explain the basis for the answer. Produce any documents relied upon.

A.JP:DPS.1-27: OBJECTION: The Department objects to this request on the grounds that it improperly assumes that that Mr. Dane considers a specific Debt/EBITDA ratio to be "acceptable . . . for companies in NorthStar's industry" and mischaracterizes Mr. Dane's prefiled testimony.

Without waiving the foregoing general and specific objections, the Department responds: The overall financial profile and performance of a company should be considered in conjunction with the inherent riskiness of the company's operations to make an assessment of a company's financial capacity and wherewithal. Accordingly, Mr. Dane does not consider any specific level of any specific financial metric to be "acceptable . . . for companies in NorthStar's industry." Instead, financial ratios provide information regarding a company's financial performance, financial capabilities, and risk.

The Debt/EBITDA ratio compares the outstanding debt balance of a company to that company's earnings before accounting for interest, taxes, depreciation and amortization. It is common metric used in financial analysis, and is one of two "core ratios" used by Standard and Poor's to assess a company's financial credit risk and to assess its ability to meet its debt obligations.

All else being equal, a lower Debt/EBITDA ratio represents lower fixed obligations relative to EBITDA and so indicates that a company has a greater capacity to meet its debt obligations and to raise capital by assuming greater amounts of debt as necessary.

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-28: State what Mr. Dane considers to be an acceptable EBITDA/Interest ratio for companies in NorthStar's industry. Explain the basis for the answer. Produce any documents relied upon.

A.JP:DPS.1-28: OBJECTION: The Department objects to this request on the grounds that it improperly assumes that that Mr. Dane considers a specific EBITDA/Interest ratio to be "acceptable . . . for companies in NorthStar's industry" and mischaracterizes Mr. Dane's prefiled testimony.

Without waiving the foregoing general and specific objections, the Department responds: The overall financial profile and performance of a company should be considered in conjunction with the inherent riskiness of the company's operations to make an assessment of a company's financial capacity and wherewithal. Accordingly, Mr. Dane does not consider any specific level of any specific financial metric to be "acceptable . . . for companies in NorthStar's industry." Instead, financial ratios provide information regarding a company's financial performance, financial capabilities, and risk.

The EBITDA/Interest ratio compares a company's earnings before interest, taxes, depreciation and amortization to its interest expense. It is a common metric used in financial analysis, and is a supplementary coverage ratio used by Standard and Poor's to assess a company's financial credit risk and to assess its ability to meet its debt obligations.

All else being equal, a higher EBITDA/Interest ratio represents a greater capacity to cover interest payments with EBITDA, and so indicates that a company has a greater capacity to meet its debt obligations and to raise capital by assuming greater amounts of debt as necessary.

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-29: State what Mr. Dane considers to be an acceptable Altman Z score for companies in NorthStar's industry. Explain the basis for the answer. Produce any documents relied upon.

A.JP:DPS.1-29: OBJECTION: The Department objects to this request on the grounds that it improperly assumes that that Mr. Dane considers a specific Altman Z score to be "acceptable . . . for companies in NorthStar's industry" and mischaracterizes Mr. Dane's prefiled testimony.

Without waiving the foregoing general and specific objections, the Department responds: The overall financial profile and performance of a company should be considered in conjunction with the inherent riskiness of the company's operations to make an assessment of a company's financial capacity and wherewithal. Accordingly, Mr. Dane does not consider any specific level of any specific financial metric to be "acceptable . . . for companies in NorthStar's industry." Instead, financial ratios provide information regarding a company's financial performance, financial capabilities, and risk.

The Altman Z score measures the similarity between a subject company's financial metrics and those of companies experiencing financial distress and has been shown to be a strong predictor of whether a company is likely to experience financial distress in the future.

All else being equal, a higher Altman Z score indicates less similarity between the subject firm to the financial attributes of financially distressed firms and demonstrates a lower likelihood of future financial distress.

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-30: Explain Mr. Dane's basis for discounting NorthStar's sales forecasts for the remaining months of 2017. Produce any documents relied upon.

A.JP:DPS.1-30: OBJECTION: The Department objects to this request as vague and ambiguous, specifically because it does not identify any specific portion of Mr. Dane's prefiled testimony in which he "discount[s] NorthStar's sales forecasts for the remaining months of 2017." The Department further objects to this request on the ground that it mischaracterizes Mr. Dane's prefiled testimony.

Without waiving the foregoing general and specific objections, the Department responds: The basis for Mr. Dane's adjustment to the 2017 forecast was to incorporate NorthStar's historical performance to date with respect to meeting its 2017 forecast, based on the information provided by NorthStar in discovery. NorthStar's 2017 financial information was accumulated from available financial data provided by NorthStar in discovery. Assumptions were made to annualize partial year income statement data as described more fully in Exhibit DPS-DSD-2. First, Mr. Dane calculated the proportion of NorthStar's sales forecast through March 2017 (Attachment A.DPS:NS.1-24.12) that was achieved as reported in NorthStar's March 2017 income statement (Attachment A.DPS:NS.1-24.21). Second, Mr. Dane applied that proportion to NorthStar Group Holdings LLC's forecasted revenue for the period April through December 2017. In addition to performing this analysis, Mr. Dane discussed the credit metrics and Altman Z score that would result assuming no downward adjustment to the April through December 2017 forecast. *See* Dane PFT at 24:8-16 & n.42.

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-31: Mr. Dane states that NorthStar “continues to have a high level of debt relative to its earnings.” Dane PFT at 23:16.

- a. State whether this assertion concerns the post-recapitalization NorthStar.
- b. In using the descriptor “high,” what benchmark is Mr. Dane using? Produce any documents relied upon.

A.JP:DPS.1-31:

- a. Yes, that statement concerns the post-recapitalization NorthStar.
- b. Mr. Dane is using the benchmarks discussed in his prefiled testimony for the earnings-related credit metric analyzed. Specifically, Standard & Poor’s considers any Debt/EBITDA multiple greater than 5.0x to indicate an entity that is “highly leveraged” per that metric, based on standard volatility. *See* Dane PFT at 20:17-21:1. In addition, S&P considers any EBITDA/Interest multiple below 2.0x to indicate an entity that is “highly leveraged” per that metric. *See* Dane PFT at 21:2-3.

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-32: As to each of the projects listed at Dane PFT at 4:9-12, state the percentage of “overhead allocations” (Dane PFT at 30:15) relative to the costs of the project.

A.JP:DPS.1-32: OBJECTION: The Department objects to this request to the extent it seeks disclosure of confidential information that is subject to third party non-disclosure agreements. The Department further objects to this request to the extent that it assumes that an analysis of “overhead allocations” was performed in connection with each project identified at Dane PFT 4:9-12 and so mischaracterizes Mr. Dane’s testimony. The Department further objects to this request on the ground that it seeks information that is not within the Department’s possession, custody, or control.

Without waiving the foregoing general and specific objections, the Department responds: Documentation of overhead allocation rates that apply to projects completed by Mr. Dane are generally subject to confidentiality agreements with the projects’ sponsors that remain in effect.

KPMG prepared a report relating to the Ontario Power Generation’s Darlington Refurbishment Project that was published in Docket EB-2016-0152. That report indicated that when “a program is a collection of projects executed in a single location such as the Darlington refurbishment (more similar to a large project than a program), corporate overhead costs should be in the region of 5-10% of overall costs as a rule of thumb in large infrastructure projects.” This report is produced as Attachment A.JP:DPS.1-32.1.

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-33: As to each of the projects listed at Dane PFT at 4:9-12, state the real rate of return that was assumed in the decommissioning funding or cash flow analysis.

A.JP:DPS.1-33: OBJECTION: The Department objects to this request to the extent that it seeks disclosure of confidential information that is subject to third party non-disclosure agreements. The Department further objects to this request to the extent that it assumes that an analysis requiring an assumed “real rate of return” was performed in connection with each project identified at Dane PFT at 4:9-12 and so mischaracterizes Mr. Dane’s testimony.

Without waiving the foregoing general and specific objections, the Department responds: In Mr. Dane’s experience, projects based in the United States use a 2 percent real rate of return for purposes of calculating the minimum decommissioning funding requirements under the NRC minimum decommissioning funding formula. Nuclear plant owners may, however, use different rates of return in their internal calculations or, if they are rate-regulated utilities, for the purposes of calculating the amount of decommissioning costs to be recovered through rates.

Ontario Power Generation (“OPG”), an Ontario Crown Corporation that owns the Darlington and Pickering facilities, has used a real rate return of 3.25 percent in its decommissioning funding assumptions, which is the target rate of return as used by the Ontario Financing Authority, which manages OPG’s segregated decommissioning and spent fuel funds. *See* Attachment A.JP:DPS.1-32.1.

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-34: Admit that Dane PFT at 36:22 should state “decommissioning and site restoration,” rather than “decommissioning.” If denied, explain in detail the basis for your denial. If neither admitted nor denied, explain in detail the basis for your response.

A.JP:DPS.1-34: Admitted.

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-35: State whether the “assumptions” that “appear unreasonable” (Dane PFT at 37:15-16) so appear to Mr. Dane, to Four Points Group, or to both.

A.JP:DPS.1-35: Mr. Dane is referring to the Four Points Group assessment of NorthStar’s planning assumptions. Mr. Dane reviewed the Four Points Group Report in consultation with Mr. Brewer and Mr. Maret and concluded that it was reasonable to rely on for the purposes of his analysis.

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-36: State the basis for Mr. Dane’s statement that “it is unclear whether NorthStar could obtain a bond with a face amount sufficient to cover its entire scope” (Dane PFT at 39:1-2), where “its entire scope” was previously defined by Mr. Dane to mean “the tasks to be performed by NorthStar” (Dane PFT at 38:20-21).

A.JP:DPS.1-36: Based on his review of the information provided by Joint Petitioners in this proceeding, Mr. Dane was unable to determine with sufficient specificity NorthStar’s plans to obtain performance bonds both in terms of the scope to be covered by such bonds and the limits of liability to be applied to such bonds.

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-37: State whether Mr. Dane believes that NorthStar must obtain a single bond, rather than multiple bonds (one for each task in the pay-item disbursement schedule), to cover the scope of the tasks to be performed by NorthStar. Explain the basis for the response.

- a. If Mr. Dane believes NorthStar must obtain a single bond, identify any examples where such a bond has been obtained on a decommissioning project and/or any basis for believing that such a bond is available on the market.

A.JP:DPS.1-37: Mr. Dane does not believe NorthStar must obtain a single bond. Based on a review of the evidence provided in this proceeding, Mr. Dane was unable to determine with sufficient specificity the number, scope to be covered, and limit of liability of the bond or bonds NorthStar plans to obtain.

- a. Not applicable.

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-38: State Mr. Dane's basis (Dane PFT at 44:2-3) for assuming that project costs increase by 25% over NorthStar's estimate.

- a. Identify all specific past decommissioning projects that Mr. Dane considers to have involved a 25% or greater cost increase.
- b. In all such projects, state whether and to what extent the cost increase concerned (i) radiological decommissioning expenses; (ii) site restoration expenses; and/or (iii) spent nuclear fuel-related expenses.

A.JP:DPS.1-38: OBJECTION: The Department objects to this request on the ground that this request mischaracterizes Mr. Dane's prefiled testimony in particular by implying that Mr. Dane has assumed in his analysis a 25% increase in project costs over NorthStar's estimates.

Without waiving the foregoing general and specific objections, the Department responds: The purpose of Mr. Dane's 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." Dane PFT at 43:13-18.

It is not uncommon for the cost and scope of capital projects in the nuclear industry to grow significantly as unknown and adverse conditions of physical components are discovered and other events unfold in the course of construction (or deconstruction) projects. Accordingly, it is reasonable to consider the cost implications of a combination of negative outcomes when evaluating radiological decommissioning or site restoration projects.

- a. OBJECTION: The Department objects to this request as overly broad and unduly burdensome to the extent it seeks the identification of "all" projects that "Mr. Dane considers to have experienced a 25% or greater cost increase." The Department further objects to this request on the ground that the term "25% or greater cost increase" is vague and ambiguous.

Without waiving the foregoing general and specific objections, the Department responds: Mr. Dane has not conducted a comprehensive analysis of the historical costs of decommissioning and site restoration projects, nor an analysis of the extent to which any changes in those costs concerned (i) radiological decommissioning expenses; (ii) site restoration expenses; and/or (iii) spent nuclear fuel-related expenses. However, examples of significant increases in nuclear decommissioning cost estimates include Big Rock Point, Maine Yankee, and Connecticut Yankee.

In 1998, Consumers Energy estimated that the cost to decommission Big Rock Point would be \$293.9 million. Consumers calculated that it incurred costs totaling \$472.8 million by the time decommissioning was complete in 2007. These figures are discussed in Michigan Public Service Commission Orders in Dockets U-11662 (*see* Attachment A.JP:DPS.1-38.2) and U-15611 (*see* Attachment A.JP:DPS.1-38.1).

In 1993, decommissioning costs for Maine Yankee were estimated to be \$316.6 million (*see* Attachment A.JP:DPS.1-38.3, a June 1997 report to the Office of the Massachusetts Attorney General by ABZ, Incorporated). By 2001, the estimate had grown to \$589 million (*see* Attachment A.JP:DPS.1-38.4, a February 2011 report to the California Public Utilities Commission by ABZ, TLG Services, and Lacy Consulting Group).

Decommissioning costs for Connecticut Yankee were estimated at \$426.7 million in 1996 (*see* Attachment A.JP:DPS.1-38.3). This figure was revised to \$965 million in 2003 (*see* Attachment A.JP:DPS.1-38.4).

The unique set of circumstances that apply to each plant make direct comparison of costs and cost increases challenging. However, those examples indicate that significant revisions to cost expectations do occur, and that these increases can be significantly greater than 25%.

- b. *See* A.JP:DPS.1-38(a).

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Q.JP:DPS.1-39: State Mr. Dane's basis (Dane PFT at 62:19-20) for stating that "NorthStar does not appear to be under any obligation to provide funds" if a request is made by NorthStar VY under the support agreement.

A.JP:DPS.1-39: OBJECTION: The Department objects to this request to the extent it mischaracterizes Mr. Dane's prefiled testimony. The Department further objects to this request to the extent that it calls for a legal conclusion.

Without waiving the foregoing general and specific objections, the Department responds: The basis for Mr. Dane's statement that "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," Dane PFT at 62:18-20, is that the Support Agreement is explicitly not a guarantee, and funding appears to be triggered under the Support Agreement only in instances in which NorthStar VY requests such funds.

Individual Responsible for Response: Daniel Dane

Date: September 27, 2017

Administrative Unit: Vice President with Concentric Energy Advisors, Inc.

Questions for The Four Points Group (Brewer/Maret) Report

Q.JP:DPS.1-40: Explain what “industry experience” is, as used at Report page 1.

A.JP:DPS.1-40: The term “industry experience” as used on page 1 of “Review of Proposed Transfer of Vermont Yankee to NorthStar and Plan for Subsequent Prompt Decommissioning” (hereinafter, “Four Points Group Report”) includes the approach employed and the experience and knowledge gained during execution of domestic commercial nuclear plant decommissioning projects, including the Yankee Rowe, Haddam Neck (Connecticut Yankee), Maine Yankee, Big Rock Point, Humboldt Bay, Zion, La Crosse, San Onofre, and Rancho Seco plants. Industry experience was obtained from personal involvement, review of published reports and presentations, performance and review of cost estimates, and project oversight.

Individual Responsible for Response: Gregory Maret, Warren Brewer

Date: September 27, 2017

Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-41: Explain the basis for the Report's assertion (at page 3, footnote 6) that, in the case of "rip and ship" decommissioning, "the cost for disposal of additional material as radioactive waste can easily exceed the savings in survey costs."

- a. Do Messrs. Brewer and Maret contend or conclude that NorthStar's cost for disposal for additional material as radioactive waste will exceed the savings in survey costs?
- b. If so, what is the basis for that contention or conclusion? Produce any documents relied upon.

A.JP:DPS.1-41: There are two general approaches to removing potentially radiologically contaminated material from a commercial nuclear plant site. These approaches are generally not used for an entire project, but each approach is used where conditions warrant.

The first approach is to survey waste material in a sufficient manner to delineate between waste that must be disposed of as radiologically contaminated and waste that can be released from the site as non-radiologically contaminated. Depending on the specific waste material, this survey can be difficult and costly to perform. For example, surveying the inside of piping or valves requires sufficient access to quantify the amount of radioactive material inside. Such access may or may not be readily achievable at reasonable cost.

The second approach is to treat all material as radiologically contaminated and dispose of that material at a licensed disposal site. No effort or cost is expended to separate the waste into different classes of waste. Instead, the entire waste stream is treated and disposed of as if all the waste was the most highly regulated class of waste present in the total waste stream. This approach is typically called "rip and ship." This approach eliminates the needs to survey material to release that material from Nuclear Regulatory Commission ("NRC") controls and to segregate the contaminated waste into various categories. However, the rip and ship approach increases the amount of material that is destined for a licensed waste burial site, and likely will result in higher per unit disposal costs due to treating large quantities of waste as the most highly regulated class. In addition, the material must still be characterized sufficiently for transportation and disposal, and, if any cost mitigation is to be obtained, surveyed and separated into various classes for disposal.

Thus, the trade-off is how much material must go to a licensed burial site versus how much material must be surveyed to be released as non-radiologically contaminated. To determine which approach is cheaper requires knowledge of the material being processed, waste disposal rates, and anticipated radiological conditions.

Given that disposal of waste at a facility licensed to accept radiologically contaminated material is more expensive than disposal of clean waste at a facility not so licensed, sending clean waste to a licensed facility adds costs which would otherwise not be incurred if sufficient surveying was performed to identify the clean material at the outset.

- a. No. It is not clear what costs NorthStar included in its cost estimate for disposal of radiologically contaminated waste or for surveying waste. Absent additional information, Messrs. Brewer and Maret cannot reach a conclusion as to whether a rip and ship approach would be more expensive than a more specific survey and release approach, only that the possibility exists that the rip and ship approach could be more expensive.
- b. Not applicable.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-42: Admit that in comparing disposal costs to survey costs, one has to consider not only the costs of conducting the surveys, but also the time added to the schedule to conduct the surveys because any delay in schedule will likely increase costs. If denied, explain in detail the basis for your denial. If neither admitted nor denied, explain in detail the basis for your response.

- a. If admitted, provide an estimate of the extra time and extra costs.
- b. If admitted, explain in detail whether and how these costs were factored into the Report's comparative analysis.

A.JP:DPS.1-42: Admitted in part, and denied in part. One has to consider the costs of surveys to release clean material. Whether such surveys cause the schedule to lengthen depends on many factors, including whether removal of the material in question is on the critical path, whether additional shifts can be used to survey material, the equipment being used to survey the material, the specific type of surveys required, and the amount and type of material being surveyed.

- a. **OBJECTION.** The Department objects to this request to the extent it calls for speculation based on information not within the Department's control.

Without waiving the foregoing general and specific objections, the Department responds: Sufficient information has not been provided by the Joint Petitioners to permit such an analysis. At a minimum, such an analysis would require a detailed characterization of the material in question, including volumetric contamination, costs of disposal, and costs of equipment and personnel to perform the surveys.

- b. **OBJECTION.** The Department objects to this request to the extent it mischaracterizes the Four Points Group Report as performing a "comparative analysis."

Without waiving the foregoing general and specific objections, the Department responds: Messrs. Brewer and Maret did not perform a comparative analysis of the costs for the rip and ship approach compared to a traditional survey and release approach. Sufficient information has not been provided by the Joint Petitioners to permit such an analysis. Instead, Messrs. Brewer and Maret identified the possibility that either approach could be more expensive depending on details that were not provided.

Individual Responsible for Response: Gregory Maret, Warren Brewer

Date: September 27, 2017

Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-43: Admit that, in determining the amount of time necessary to conduct detailed characterization, one has to consider (1) the up-front engineering to design the characterization study; (2) the sampling, (3) the analysis of samples, and (4) the reporting on the analysis. If denied, explain in detail the basis for your denial. If neither admitted nor denied, explain in detail the basis for your response.

- a. If admitted, provide an estimate of the extra time and extra costs.

A.JP:DPS.1-43: Admitted.

- a. OBJECTION. The Department objects to this request to the extent it requires the Department to perform new analysis.

Without waiving the foregoing general and specific objections, the Department responds: Messrs. Brewer and Maret have not performed such an analysis.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-44: Regarding the “rip and ship” method:

- a. Identify any sites that have used the “rip and ship” method.
- b. Explain what involvement, if any, Messrs. Brewer and Maret had or have with the decommissioning and site restoration of those sites.
- c. State whether Messrs. Brewer or Maret have had any involvement with the decommissioning and site restoration of the Zion site.
- d. Explain the basis for the statement that “the cost of disposal of additional material as radioactive waste can easily exceed the savings in survey costs.” Report p. 3 n.6.
- e. For the sites that have used “rip and ship,” have incremental disposal costs been less than avoided survey costs?
 - i. If so, by how much at each such site?
 - ii. Have Messrs. Brewer and/or Maret studied whether those factors apply to the VY Station site? Explain your response.

A.JP:DPS.1-44:

- a. Two sites have described at least part of their approach to waste disposal as “rip and ship”: the Zion station, and the Maine Yankee plant (for the containment interior).
- b. Messrs. Brewer and Maret advised the owner of the Zion station regarding all decommissioning activities at that site. That advice focused on the cost, schedule, and risk associated with completion of those activities. In his role at the Yankee Rowe and Connecticut Yankee plants, Mr. Maret, at the direction of the Yankee Atomic Board of Directors, discussed with the personnel responsible for, and otherwise stayed informed about, decommissioning at Maine Yankee.
- c. *See* A.JP:DPS.1-44(b).
- d. *See* A.JP:DPS.1-41.
- e. **OBJECTION.** The Department objects to this request to the extent it calls for speculation and requires information not within the Department’s control to respond.

Without waiving the foregoing general and specific objections, the Department responds: Messrs. Brewer and Maret have not performed an analysis comparing the actual cost incurred under the rip and ship approach to the hypothetical cost of what would have been incurred to survey waste and categorize and dispose of waste as needed.

- i. Not applicable.
- ii. Not applicable.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-45: Regarding the Report's assertion that the decommissioning process "generally begins with a detailed characterization of the site" (Report p. 3 (emphasis added)):

- a. Explain whether there are any exceptions to this "general" approach.
- b. State whether "rip and ship" is one such exception.
- c. Identify all sites that were exceptions to this "general" approach.

A.JP:DPS.1-45:

- a. **OBJECTION.** The Department objects to this request as overly broad and unduly burdensome to the extent it requires knowledge of all decommissioning projects. The Department further objects to this request to the extent it requires the Department to perform new analysis.

Without waiving the foregoing general and specific objections, the Department responds: Messrs. Brewer and Maret are not aware of any case where the site was not characterized prior to starting dismantlement activities.

- b. No. Even with the rip and ship approach, the waste material should be characterized for non-radiological hazards, for shipment, and to ensure it meets the acceptance criteria of the disposal site.
- c. **OBJECTION.** The Department objects to this request as overly broad and unduly burdensome to the extent it requires knowledge of all decommissioning projects.

Without waiving the foregoing general and specific objections, the Department responds: Messrs. Brewer and Maret are not aware of any case where the site was not characterized prior to starting dismantlement activities.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-46: Regarding that same table at page 5 of the Report, admit that returning the site to productive use sooner is another advantage of DECON that is not listed in the table. If denied, explain in detail the basis for the denial. If neither admitted nor denied, explain in detail the basis for your response.

A.JP:DPS.1-46: Admitted

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-47: Explain the meaning of the proviso “if the estimates are based on consistent assumptions” (Report p. 7).

A.JP:DPS.1-47: This phrase is meant to illustrate that if certain assumptions unique to NorthStar’s cost estimate are applied to Entergy’s cost estimate, those estimates would be roughly comparable. The remainder of this section of the Four Points Group Report, concluding on page 9, demonstrates the close alignment between the total NorthStar estimated cost and the total Entergy estimated cost once the Entergy cost is adjusted consistent with three basic assumptions of the NorthStar estimate: (1) use of the DECON approach to decommissioning, (2) reliance on prompt recoveries from DOE to fund the vast majority of spent fuel related costs, and (3) reduction in the amount of contingency in the estimate to 10%. *See* Exhibit DPS-WKB/GAM-2, at 7-9.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-48: Do Messrs. Brewer and Maret contend that Entergy is capable of adopt[ing] the same assumptions NorthStar makes” (Report p. 9)?

- a. If so, explain the basis for that contention.

A.JP:DPS.1-48: Yes.

- a. Of the assumptions identified in A.JP:DPS.1-47, the assumption with the largest impact on the NorthStar cost estimate is NorthStar’s plan to rely on recoveries from DOE to fund spent fuel management costs. The NRC has been unwilling to date to count recoveries from continued litigation with DOE as providing funding assurance for spent fuel management costs. It is Messrs. Brewer and Maret’s understanding that NorthStar does not intend to continue with DOE litigation (as Entergy has done), but rather to enter into a settlement with the DOE. The planned reliance on settlement rather than litigation may be important to the NRC and may result in the NRC allowing a licensee to rely on recoveries from DOE to provide financial assurance for spent fuel related costs. Entergy is free to enter into a settlement arrangement with DOE just as NorthStar plans to do.

Since less NDT funding is needed under that approach, Entergy, just like NorthStar, would be free to pursue the DECON approach to decommissioning. That option would eliminate the substantial costs associated with plant maintenance for an extended SAFSTOR period.

Finally, the amount of contingency in an estimate is a reflection of perceived risk associated with the decommissioning work. Entergy conceivably could budget for the same 10 percent contingency as NorthStar did in its estimate for decommissioning the VY Station.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-49: Identify all prior projects and the contingencies each project assumed, that support the Report's statement that "the performance risk contingency typically included in decommissioning estimates ranges from approximately 15 percent to 25 percent." Report p. 10.

A.JP:DPS.1-49: OBJECTION. The Department objects to this request as overly broad and unduly burdensome to the extent it requires knowledge of all decommissioning projects.

Without waiving the foregoing general and specific objections, the Department responds: The cited statement is an approximate range based on Messrs. Brewer and Maret's collective experience over decades of work related to nuclear plant decommissioning including preparation of decommissioning cost estimates, reviewing decommissioning costs estimates, developing budgets for decommissioning work, and providing analysis of decommissioning plans. Lists of the work performed by Messrs. Brewer and Maret related to nuclear plant decommissioning is included in A.JP:DPS.1-90 and A.JP:DPS.1-78.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-50: Do Messrs. Brewer and Maret claim that unknown conditions similar to that described at “the Yankee Atomic site” will be found at VY?

- a. If so, identify the unknown conditions that were found at the Yankee Atomic site that provide the basis for the claim that similar conditions will be found at the VY Station site.
- b. Produce any documents relied upon.

A.JP:DPS.1-50: OBJECTION. The Department objects to this request to the extent it calls for speculation based on information not within the Department’s control.

Without waiving the foregoing general and specific objections, the Department responds: Messrs. Brewer and Maret contend that, like the Yankee Atomic site, the VY Station site was constructed during a period when the disposal of hazardous construction debris was not controlled. This debris includes material containing asbestos, lead, and polychlorinated biphenyls (“PCBs”). Messrs. Brewer and Maret do not contend that the conditions encountered at the Yankee Rowe site will necessarily be found at the VY Station site, but note that it is a possibility, and that—absent detailed characterization of the site—whether those conditions are present or will be encountered is unknown.

- a. The unknown conditions at Yankee Atomic primarily related to discovery of deep PCB paint contamination of soils from the original construction methods and the scope of the construction landfill on the site. While the existence of the landfill was known, the extent of the hazardous material was not known. As noted above, the VY Station was constructed at a similar time when similarly contaminated material could have been disposed of onsite. Absent a detailed characterization, it is not known whether conditions similar to those at the Yankee Rowe site will be present at the VY Station site.
- b. Not applicable.

Individual Responsible for Response: Gregory Maret, Warren Brewer

Date: September 27, 2017

Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-51: Identify any task or process for site characterization that has not yet been performed at the VY Station site but would be necessary to accomplish a “complete and thorough site characterization.” Report p. 12.

- a. Explain what task could be performed to “address the depth of contamination and hence the amount of material that would have to be removed in decommissioning.” Report p. 14.
- b. State how much such site characterization would cost and how long it would take to complete.

A.JP:DPS.1-51: Characterization generally involves a combination of historical reviews, surveys, sampling, and other forms of direct observation and measurement. Historical information could be used to inform the development of a comprehensive characterization plan. For radioactive contamination, that plan would define a process that includes radiation surveys supported by analysis of samples of site materials. The samples would include surface swipes as well as volumetric samples of material. Similarly, the characterization plan would include sampling for detection of non-radioactive contaminants. Finally, the characterization plan could include the use of ground penetrating radar to identify unknown subsurface materials. The end result of the performance of the characterization plan would be a more complete picture of the location, amount, and type of radiological and non-radiological contamination and other materials that need to be removed from the site. This understanding would reduce the risk of finding unknown conditions during the decommissioning itself.

- a. Taking volumetric samples such as core samples of plant structures would help establish an understanding of the depth of contamination. Additionally, an evaluation of past spills along with evaluation of the state of cracks or porosity of plant structure could be performed. This information could be used to develop a plan to physically excavate in the areas where contamination may have spread to determine further the depth of any contamination.
- b. **OBJECTION.** The Department objects to this request to the extent it calls for speculation based on information not within the Department’s control and to the extent it requires the Department to perform new analysis.

Without waiving the foregoing general and specific objections, the Department responds: The Department has not analyzed or evaluated the cost of site characterization of the VY Station.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-52: The VY Station completed radiological and non-radiological Historical Site Assessments in 2014, a conceptual site model report for groundwater, a non-radiological Phase I environmental assessment in 2017, and a Phase I/Phase II environmental assessment in 2001. How do these site assessment and characterization efforts compare to such efforts done early in the decommissioning process at Yankee Rowe?

A.JP:DPS.1-52: Messrs. Brewer and Maret understand that, other than the 2001 Phase I/Phase II environmental assessment, assessments have not included actual sampling. At Yankee Rowe, site assessments were used to develop survey plans that involved physical measurements. The Yankee Rowe surveys included a variety of actual measurements including radiation measurements of systems, structures, and components; samples of piping, components, paint, and concrete; and groundwater sampling. The Yankee Rowe site characterization is discussed in volume 2 of the Electric Power Research Institute report titled “Yankee Rowe Decommissioning Experience.” Exhibit DPS-WKB-11, at § 8.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-53: Regarding the quotations from the EPRI report at page 12 of the Four Points Group report, admit that the full quotation from the EPRI report reads: “In retrospect, the development of a thorough HSA aided the decommissioning greatly at CY as it helped locate sources of groundwater contamination and other areas where remediation was needed. It is recommended that a thorough site characterization be performed early in the decommissioning if not prior to permanent shutdown. The results of a site characterization may effect [sic.] how the decommissioning is conducted.” If denied, explain in detail the basis for the denial. If neither admitted nor denied, explain in detail the basis for the response.

A.JP:DPS.1-53: Admitted.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-54: Explain Messrs. Brewer's and Maret's basis for concluding that any of the four examples given at the top of page 15 of the Report are likely to occur at the VY Station.

A.JP:DPS.1-54: OBJECTION. The Department objects to this request to the extent it mischaracterizes the Four Points Group Report as "concluding that any of the four examples given at the top of page 15 of the [Four Points Group] Report are likely to occur at the VY Station."

Without waiving the foregoing general and specific objections, the Department responds: The Four Points Group Report identifies experiences at other facilities as examples of the type of unanticipated conditions that may be encountered in a decommissioning project but does not conclude that exact experience will be replicated at the VY Station site.

Individual Responsible for Response: Gregory Maret, Warren Brewer

Date: September 27, 2017

Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-55: Provide the increased cost associated with each of examples 2, 3, and 4 (Report p. 15).

A.JP:DPS.1-55: OBJECTION. The Department objects to this request to the extent it calls for speculation based on information not within the Department's control and to the extent it requires the Department to perform new analysis.

Without waiving the foregoing general and specific objections, the Department responds: Messrs. Brewer and Maret have not conducted an analysis that would provide the answer to this request.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-56: Identify when the Yankee Rowe and Connecticut Yankee decommissioning projects were completed, and identify when Four Points last had participation in these projects.

A.JP:DPS.1-56: OBJECTION. The Department objects to this request to the extent it implies that Four Points Group had any involvement in the Yankee Rowe and Connecticut Yankee decommissioning projects.

Without waiving the foregoing general and specific objections, the Department responds: The Yankee Rowe Part 50 license was reduced to the ISFSI footprint in 2007. The Connecticut Yankee Part 50 license was reduced to the ISFSI footprint in 2007. Mr. Maret's direct involvement with both Yankee Rowe and Connecticut Yankee ended in 2005. Mr. Brewer was involved in review of plans and activities at both Yankee Rowe and Connecticut Yankee with respect to spent fuel litigation; his last involvement in that capacity was in 2015.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-57: As to the Connecticut Yankee example discussed at page 17 of the Report:

- a. Explain Messrs. Brewer's and Maret's basis for claiming that the example on page 17 of the Report will occur and cause similar impact to decommissioning at the VY Station.
- b. Explain the cost increase associated with the example on page 17 of the Report at Connecticut Yankee.

A.JP:DPS.1-57:

- a. **OBJECTION.** The Department objects to this request to the extent it mischaracterizes the Four Points Group Report as "claiming that the example on page 17 of the [Four Points Group] Report will occur and cause similar impact to decommissioning at the VY Station."

Without waiving the foregoing general and specific objections, the Department responds: Messrs. Brewer and Maret do not claim that the situation encountered at the Connecticut Yankee site will necessarily occur at the VY Station site. The examples we have provided are intended to be illustrative of the types of challenges that have arisen in the course of other decommissioning projects and that potentially could arise at the VY Station site as well.

- b. **OBJECTION.** The Department objects to this request to the extent it calls for speculation based on information not within the Department's control and to the extent it requires the Department to perform new analysis.

Without waiving the foregoing general and specific objections, the Department responds: Messrs. Brewer and Maret have not conducted an analysis that would provide the answer to this request.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-58: As to the SONGS example at page 17 of the Report:

- a. Explain Messrs. Brewer's and Maret's basis for claiming that the example will occur and cause similar impact to decommissioning at the VY Station.
- b. Explain the cost increase associated with the example at SONGS.
Q.JP:DPS.1-59: As to the Yankee Atomic example at page 17-18 of the Report:

A.JP:DPS.1-58:

- a. **OBJECTION.** The Department objects to this request to the extent it mischaracterizes the Four Points Group Report as "claiming that the example will occur and cause similar impact to decommissioning at the VY Station."

Without waiving the foregoing general and specific objections, the Department responds: Messrs. Brewer and Maret do not claim that the situation encountered at the SONGS site will necessarily occur at the VY Station site. The examples provided are intended to be illustrative of the types of challenges that have arisen in the course of other decommissioning projects and that potentially could arise at the VY Station site as well.

- b. **OBJECTION.** The Department objects to this request to the extent it calls for speculation based on information not within the Department's control and to the extent it requires the Department to perform new analysis.

Without waiving the foregoing general and specific objections, the Department responds: Messrs. Brewer and Maret have not conducted an analysis that would provide the answer to this request.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-59: As to the Yankee Atomic example at page 17-18 of the Report:

- a. Explain Messrs. Brewer's and Maret's basis for claiming that the example will occur and cause similar impact to decommissioning at the VY Station.
- b. Explain the cost increase associated with the example at Yankee Atomic.

A.JP:DPS.1-59:

- a. OBJECTION. The Department objects to this request to the extent it mischaracterizes the Four Points Group Report as "claiming that the example will occur and cause similar impact to decommissioning at the VY Station."

Without waiving the foregoing general and specific objections, the Department responds: Messrs. Brewer and Maret do not claim that the situation encountered at the Yankee Atomic site will necessarily occur at the VY Station site. The examples provided are intended to be illustrative of the types of challenges that have arisen in the course of other decommissioning projects and that potentially could arise at the VY Station site as well.

- b. OBJECTION. The Department objects to this request to the extent it calls for speculation based on information not within the Department's control and to the extent it requires the Department to perform new analysis.

Without waiving the foregoing general and specific objections, the Department responds: Messrs. Brewer and Maret have not conducted an analysis that would provide the answer to this request.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-60: Identify all prior sites where “some sort of fuel handling event while loading or transferring spent fuel to the ISFSI” (Report p. 18) has occurred.

A.JP:DPS.1-60: OBJECTION. The Department objects to this request as overly broad and unduly burdensome to the extent it requires knowledge of “all prior sites.”

Without waiving the foregoing general and specific objections, the Department responds: Messrs. Brewer and Maret are unaware of fuel handling events that have occurred in the specific act of handling fuel while loading or transferring fuel to the ISFSI. However, drops of fuel assemblies have occurred at other plants. In particular, Messrs. Brewer and Maret are aware of events at the Indian Point 2 and North Anna plants that occurred while personnel were handling fuel assemblies for activities related to loading fuel for dry storage. Handling the fuel assemblies is conducted the same way whether it is being done for cask loading or for other purposes. Therefore, there is nothing unique about the spent fuel drop events at Indian Point 2 and North Anna that would have prevented the same from happening during cask loading.

The NRC considers a fuel drop event to be a credible event that must be considered in the operation of a commercial nuclear plant. There is nothing that would make such an event more or less likely when handling an assembly for cask loading as compared to handling an assembly for any other purpose.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-61: What do Messrs. Brewer and Maret propose so that NorthStar's decommissioning plan and cost estimate adequately takes into account "Unanticipated Costs From Changing Conditions" (Report p. 18)? Explain the basis for the answer.

A.JP:DPS.1-61: The methods to account adequately for unanticipated costs from changing conditions are the same as those used to account for risks of other types. First, a listing of all credible risks should be created. This is commonly referred to as a risk register. An estimate or range of estimated cost associated with each risk should be developed along with an assessment of the probability of occurrence of each risk. The cost could be the cost of dealing with the risk should it come to be a reality, the cost of actions to eliminate the possibility of the risk, or some combination of risk avoidance activities and risk mitigation actions.

The probability is usually not an absolute value, but a qualitative or relative risk. Ideally, one would create a probability distribution function showing probability over the range of cost impacts. However, this level of specificity is often not possible, and instead the range of costs could be represented by low, high, and most likely values. The costs and relative probabilities can be used to create weighted combined costs with a low, high, and most likely value.

The total risk costs would be added to the base project estimated cost to establish a range (low, high, and most likely) of the resources needed to complete the project. A value for the total risk costs from the risk register analysis would be incorporated into the project cost estimate. Generally, that value would be at least equal to the most likely total cost of risks. The risk costs could be ultimately reflected in the project estimate by the inclusion of additional contingency, inclusion of discrete line item allowances, or an accommodation of both.

Ultimately, however the risk costs are incorporated into the project estimate, the essential process is to compare the total project costs with the available financial resources. If the financial resources are not sufficient to fund the total project costs, additional financial resources would need to be developed to cover all costs.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-62: Explain Messrs. Brewer's and Maret's basis for claiming that the cost increase at Humboldt Bay (Report p. 19) will occur and cause similar impact to decommissioning at the VY Station.

- a. Identify any characteristics of Humboldt Bay (including without limitation the location of the reactor vessel underground and below sea level) that made Humboldt Bay a more costly decommissioning project relative to the VY Station.

A.JP:DPS.1-62: OBJECTION. The Department objects to this request to the extent it mischaracterizes the Four Points Group Report as "claiming that the cost increase at Humboldt Bay ([Four Points Group] Report p. 19) will occur and cause similar impact to decommissioning at the VY Station."

Without waiving the foregoing general and specific objections, the Department responds: Messrs. Brewer and Maret do not claim that the specific cost increase seen at Humboldt Bay will occur in the course of decommissioning the VY Station. This example was provided to illustrate the types of unanticipated circumstances that may arise in a decommissioning project.

- a. OBJECTION. The Department objects to this request to the extent it requires the Department to perform new analysis.

Without waiving the foregoing general and specific objections, the Department responds: Messrs. Brewer and Maret have not conducted an analysis that would provide the answer to this request.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-63: Regarding the Four Points Group Report's statement that "[s]ome of the costs for repackaging will be costs identified in the Standard Contract as being the responsibility of the plant licensee" (Report p. 21), explain with specificity which costs will be the responsibility of the plant licensee and which costs will be the responsibility of DOE.

A.JP:DPS.1-63: OBJECTION. The Department objects to this request to the extent it calls for a legal conclusion.

Without waiving the foregoing general and specific objections, the Department responds: The contract for acceptance of spent fuel from the VY Station site identifies the purchaser's responsibilities in Article IV. In part, these responsibilities include (in Article IV.A.2.(a)):

The purchaser shall arrange for, and provide, all preparation, packaging, required inspections, and loading activities necessary for the transportation of SNF and/or HLW to the DOE facility.

If, as Entergy and others have argued and the courts have found, the loaded SNF canisters must be unloaded, then it is reasonable to expect that the subsequent loading of that fuel into DOE casks would be a purchaser obligation per the standard contract. Such costs would not be the same as the cost for canister transfer included in the NorthStar estimate. Which costs are ultimately purchaser liabilities will be determined by DOE, the purchaser, and the courts. *See* 10 C.F.R. § 961.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-64: Identify all licensees of which Messrs. Brewer or Maret are aware that have planned for repackaging in their irradiated fuel management plan filings with the NRC that are required by 10 CFR § 50.54(bb).

A.JP:DPS.1-64: Such costs have not been included in any irradiated fuel management plan reviewed by Messrs. Brewer or Maret.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-65: Admit that the NRC-approved December 19, 2014 irradiated fuel management plan for the VY Station reflects the same cost assumptions regarding cask transfer as NorthStar's assumptions. If denied, explain in detail the basis for the denial. If neither admitted nor denied, explain in detail the basis for the response.

A.JP:DPS.1-65: Denied. Entergy assumed, for the purpose of its decommissioning cost estimate ("DCE") only, that there were no additional costs associated with DOE's acceptance of canistered fuel, and, if there were additional costs, that DOE would have liability for those costs. The costs provided by Entergy were in 2014 dollars. NorthStar uses the same costs, but in 2016 dollars, so the NorthStar costs are less by two years of inflation.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-66: State whether Messrs. Brewer's and Maret's estimates of time lags before a licensee receives spent nuclear fuel cost recoveries from DOE are based on actual experience under a DOE settlement agreement that is already in place, or instead are based on experience with litigation. Identify all examples and produce all documents relied upon.

A.JP:DPS.1-66: The statement concerning the time lag is not related to experience in litigation; it is based on knowledge of the claims process as part of a settlement agreement, including claim preparation and submittal, issuance of Requests for Additional Information ("RAIs") on claims, and response to those RAIs. Messrs. Brewer and Maret's estimate of six months was based on a reasonable time to compile the claimed costs and for DOE to review the claimed costs. That estimate of six months is consistent with NorthStar's understanding that settlements typically take between six to nine months after submission of a claim. *See* A.DPS:NS.2-26.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-67: State the estimated amount of “added costs related to the timing of expenses compared to recovery from DOE even if the actual costs were 100 percent recoverable.” Report p. 22. Produce any documents relied upon.

A.JP:DPS.1-67: OBJECTION. The Department objects to this request to the extent it requires the Department to perform new analysis.

Without waiving the foregoing general and specific objections, the Department responds: Messrs. Brewer and Maret have not calculated the potential added costs due to the timing of the recovery of costs related to a dry transfer facility in this proceeding.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-68: Identify any examples of other nuclear plant licensees' decommissioning cost estimates that take into account the costs discussed on pages 20 to 28 of the Report.

A.JP:DPS.1-68: OBJECTION. The Department objects to this request as overly broad and unduly burdensome to the extent it requires knowledge of all decommissioning projects.

Without waiving the foregoing general and specific objections, the Department responds: The decommissioning cost estimates reviewed by Messrs. Brewer and Maret do not rely on recovery of costs from DOE to demonstrate assurance of sufficient funds for spent fuel storage and management. Several licensees are still collecting funds for decommissioning to mitigate some of the issues, like continued storage of spent fuel, identified in pages 20 to 28 of the Four Points Group Report. Licensees also account for these types of risks with added contingency or through mechanisms that are part of the funding and funding assurance analysis and are separate from the decommissioning cost estimate.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-69: State what percentage of recovery of spent fuel costs from DOE Messrs. Brewer and Maret believe to be reasonable.

- a. State what percentage other licensees have assumed in Messrs. Brewer's and Maret's experience. Identify those licensees and produce any documents relied upon.

A.JP:DPS.1-69: OBJECTION. The Department objects to this request to the extent it requires the Department to perform new analysis.

Without waiving the foregoing general and specific objections, the Department responds: Messrs. Brewer and Maret have not performed an analysis in this proceeding to determine what percentage recovery of costs from DOE would be reasonable. Such a calculation would depend on the specific costs that a licensee sought to recover from DOE.

- a. OBJECTION. The Department objects to this request to the extent it calls for speculation based on information not within the Department's control.

Without waiving the foregoing general and specific objections, the Department responds: Messrs. Brewer and Maret are not aware of all assumptions other licensees have made regarding recoveries from settlements with DOE. With one exception, Messrs. Brewer and Maret are unaware of any other licensee who is relying on DOE recoveries at all to provide financial assurance. For the one exception—the Duane Arnold Energy Center—it is Messrs. Brewer and Maret's understanding that the reliance on DOE recoveries applied only before license renewal was granted. *See Attachment A.JP:DPS.1-69.1.*

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-70: Define “contaminated material” as used at page 29 of the Report.

A.JP:DPS.1-70: As used on that page, the phrase “contaminated material” refers to material with detectable radiological contamination above background levels associated with plant operation.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-71: Estimate the cost associated with “[s]preading contamination” (Report p. 31), including measures to mitigate or to avoid such cost.

A.JP:DPS.1-71: OBJECTION. The Department objects to this request to the extent it requires the Department to perform new analysis.

Without waiving the foregoing general and specific objections, the Department responds: Messrs. Brewer and Maret did not evaluate the potential costs associated with implosion of structures.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-72: State the basis for Messrs. Brewer's and Maret's assertion that NorthStar plans to leave "subsurface equipment" (Report p. 35) other than piping in place.

A.JP:DPS.1-72: OBJECTION. The Department objects to this request to the extent it mischaracterizes the Four Points Group Report as "asserti[ng] that NorthStar plans to leave 'subsurface equipment' ([Four Points Group] Report p. 35) other than piping in place."

Without waiving the foregoing general and specific objections, the Department responds: The Four Points Group Report discusses NorthStar's stated assumption that material below 4 feet below grade will be allowed to remain in place without any explicit definition of the limitations on the types of equipment that could be left in place.

In particular, that discussion is based on the prefiled testimony of Mr. State. *See* Prefiled Testimony of Scott E. State at 31:4-32:10. There is nothing in Mr. State's testimony that limits what equipment or material may be left below 4 feet below grade.

Messrs. Brewer and Maret found nothing else in the testimony, documents, or discovery responses provided by Joint Petitioners that identifies any limit on the type of equipment that can be allowed to remain at depths greater than 4 feet below grade.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-73: State what Messrs. Brewer and Maret would deem a reasonable estimate of the costs for GTCC waste disposal. Produce any supporting workpapers and/or documentation.

A.JP:DPS.1-73: Based on prior work for other facilities, Messrs. Brewer and Maret would expect the cost to be in the range of \$1.5 to \$2 million. In other projects, Messrs. Brewer and Maret determined the cost for GTCC disposal by calculating the cost per cask of spent fuel. This calculation is done by using fuel discharge information to identify the number of fuel assemblies permanently discharged over a period of time as well as the period of time during which these assemblies were in the reactor core. From that information and information on the capacity factor over the subject time frame, the spent fuel disposal cost based on the one mil per kilowatt hour fee can be calculated. This total cost is divided by the number of casks needed to store the number of fuel assemblies in the sample to arrive at a cost per cask. The cost for GTCC disposal is then calculated by multiplying the number of casks needed for GTCC by this cost per cask.

Messrs. Brewer and Maret are aware that other cost estimators, such as TLG Services, calculate the GTCC cost somewhat differently and therefore may arrive at a somewhat different cost. The cost estimate included in the Entergy PSDAR for VY was produced by TLG Services and included a cost of about \$1.6 million, including contingency, for the disposal of GTCC waste.

Documents responsive to this request are being produced as Attachments A.JP:DPS.1-73.1 through A.JP:DPS.1-73.4.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-74: Identify the other plants relied on to support the assertion (Report p. 38) that “the total contingency is normally between 15 and 20 percent with some estimates going as high as 25 percent.”

- a. State in each case whether the estimate was based on a DECON, delayed DECON, or SAFSTOR approach.
- b. State whether the contingency in each case was “for performance risk is expected to be expended over the course of decommissioning” (p. 10).

A.JP:DPS.1-74: *See* A.JP:DPS.1-49.

- a. *See* A.JP:DPS.1-49.
- b. *See* A.JP:DPS.1-49.

Individual Responsible for Response: Gregory Maret, Warren Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Questions for Gregory Maret

Q.JP:DPS.1-75: Identify, list and produce all exhibits to be introduced or used at hearing in support of the prefiled testimony of Gregory A. Maret in this proceeding.

A.JP:DPS.1-75: OBJECTION: The Department objects to this request to the extent it calls for speculation. At this time, the exhibit list includes those exhibits identified in and attached to Mr. Maret's prefiled testimony. However, the Department reserves its right to submit and utilize additional exhibits as warranted.

Without waiving the foregoing general and specific objections, the Department responds: The exhibits referenced in Mr. Maret's prefiled testimony were produced previously as Exhibit DPS-GAM-1 and Exhibit DPS-WKB/GAM-2.

Individual Responsible for Response: Gregory Maret
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-76: Identify, list and produce all documents, data compilations, electronically stored information, photographs, workpapers or other tangible things provided to, exchanged with, prepared by, reviewed by, relied upon or used by Mr. Maret in developing his prefiled testimony and the opinion(s) underlying his prefiled testimony, including but not limited to, all exhibits to his prefiled testimony, to the extent not already produced.

A.JP:DPS.1-76: OBJECTION: The Department objects to this request as overly broad and unduly burdensome to the extent it seeks the identification of “all” such documents and materials. The Department further objects to the extent this request seeks information covered by the attorney-client privilege, the attorney work product doctrine, or Vermont Rule of Civ. P. 26(b)(5)(B)-(C). The Department further objects to the request to produce “all documents . . . reviewed by” Mr. Maret as overbroad and unduly burdensome. The Department further objects to this request as duplicative of other requests, and identifies in response to this request only documents not identified elsewhere in these responses or in the prefiled testimony submitted by the Department.

Without waiving the foregoing general and specific objections, the Department responds: Mr. Maret relied primarily on information and documentation provided in the Joint Petitioners’ petition, the prefiled testimony of witnesses sponsored by the Joint Petitioners, and documents produced by the Joint Petitioners as exhibits to prefiled testimony or in discovery. Other responsive documents and information are produced as Attachments A.JP:DPS.1-76.1 through A.JP:DPS.1-76.10. *See also* Exhibit DPS-WKB-6; Exhibit DPS-WKB-8; Exhibit DPS-WKB-9; Exhibit DPS-WKB-10; Exhibit DPS-WKB-11; Exhibit DPS-WKB-13; Exhibit DPS-WKB-14; Exhibit DPS-WKB-20; Exhibit DPS-WKB-21.

Individual Responsible for Response: Gregory Maret
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-77: Identify all assumptions, materials, inputs, data or information provided to Mr. Maret in connection with his preparation of prefiled testimony.

A.JP:DPS.1-77: OBJECTION. The Department objects to this request as overly broad and unduly burdensome to the extent it seeks “all” such information. The Department further objects to the extent this request seeks information covered by the attorney-client privilege or the attorney work product doctrine. The Department further objects to this request as duplicative of other requests, particularly of Request Q.JP:DPS.1-76, and identifies in response to this request only documents not identified elsewhere in these responses or in the prefiled testimony submitted by the Department. The Department further objects to this request on the ground that the term “provided to” is vague and undefined.

Without waiving the foregoing general and specific objections, the Department responds: None, other than the Joint Petitioners’ petition, the prefiled testimony of witnesses sponsored by the Joint Petitioners, and documents produced by the Joint Petitioners as exhibits to prefiled testimony or in discovery. *See* A.JP:DPS.1-76.

Individual Responsible for Response: Gregory Maret
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-78: Identify and describe all previous work (including cost estimation and funding analysis) Mr. Maret has undertaken with regard to nuclear decommissioning, spent nuclear fuel management, and/or site restoration and produce all documents relating to all previous work Mr. Maret has undertaken with regard to nuclear decommissioning, spent nuclear fuel management, and/or site restoration projects.

- a. Identify all regulatory proceedings by jurisdiction, date, docket number, and name in which Mr. Maret has testified or provided consulting or expert support for witnesses testifying on nuclear decommissioning, spent nuclear fuel management and/or site restoration projects.

A.JP:DPS.1-78: OBJECTION. The Department objects to this request as overly broad and unduly burdensome to the extent that it requests “all documents” relating to “all previous work” Mr. Maret has undertaken with regard to nuclear decommissioning, spent fuel management, and/or site restoration projects. The Department further objects to this request to the extent it seeks information covered by the attorney-client privilege, the attorney work product doctrine, or Vermont Rule of Civ. P. 26(b)(5)(B)-(C). The Department further objects to this request to the extent it seeks disclosure of confidential information that is subject to third party non-disclosure agreements. The Department further objects to this request to the extent it calls for the production of documents that are subject to a protective order issued by another court that prohibits their disclosure.

Without waiving the foregoing general and specific objections, the Department responds: Mr. Maret has reviewed and analyzed decommissioning cost estimates for the Yankee Nuclear Power Station (“YNPS,” also known as Yankee Rowe) and the Vermont Yankee Nuclear Power Station (“VY Station”). He has been directly responsible for management of spent nuclear fuel at both Yankee Rowe and the VY Station. He has been responsible for budgeting for spent nuclear fuel management, including both wet and dry storage. He has been directly responsible for all aspects of the site implementation of the component removal project at Yankee Rowe including staffing, budgeting, cost control, and risk management. Mr. Maret was responsible for decommissioning and site restoration at Yankee Rowe.

Mr. Maret provided consulting services for decommissioning planning activities for the San Onofre Nuclear Generating Station (“SONGS”) addressing multiple aspects of decommissioning, but focusing on risk associated with contaminated soil and waste handling.

Mr. Maret consulted for Energy Capital Partners (“ECP”) in support of its risk and cost analysis for the Zion decommissioning project as part of its due diligence in acquiring Energy Solutions, Inc. Mr. Maret continued to consult with ECP on the ongoing decommissioning project, identifying risks associated with the proposed decommissioning approach.

Mr. Maret consulted for the Connecticut Yankee Atomic Power Company (Connecticut Yankee) in support of spent fuel management and decommissioning.

Mr. Maret provided expert testimony and evaluation, including on specific decommissioning issues, in the following spent fuel cases:

- *Dairyland Power Cooperative v. The United States*, Case No. 12-902C, 2010 (Fed. Cl.).
- *Carolina Power & Light Company, and Florida Power Corporation v. The United States*, Case No. 04-0037C, 2008 (Fed. Cl.).
- *Arizona Public Service Company v. The United States*, Cas No. 03-0037C, 2008 (Fed. Cl.).
- *Arizona Public Service Company v. The United States*, Case No. 03-2832C, 2010 (Fed. Cl.).
- *Consumers Energy Company v. The United States*, Case No. 02-1894C, 2011 (Fed. Cl.).
- *Sacramento Municipal Utility District v. The United States*, Case No. 09-587C, 2013 (Fed. Cl.).
- *Northern States Power v. The United States*, Case No. 07-608C, 2011 (Fed. Cl.).
- *Pacific Gas & Electric Company v. The United States, on remand*, Case No. 04-74C, into which has been consolidated, Case No. 04-75C, 2010 (Fed. Cl.).
- *Pacific Gas & Electric Company v. The United States*, Case No. 10-508C, 2011 (Fed. Cl.).
- *Southern Nuclear Operating Company, Alabama Power Company, Georgia Power Company v. The United States*, Case No. 98-614C, 2007 (Fed. Cl.).
- *Alabama Power Company, Georgia Power Company, and Southern Nuclear Operating Company v. The United States*, Case No. 08-237C, 2014 (Fed. Cl.).
- *System Fuels, Inc. and Entergy Arkansas, Inc. v. The United States, on remand*, Case No. 03-2623C, 2013 (Fed. Cl.).
- *Carolina Power & Light Company, et al v. The United States*, Case No. 11-869C, 2014 (Fed. Cl.).
- *System Fuels, Inc., Entergy Louisiana, Inc., and Entergy Louisiana, LLC v. The United States*, Case No. 03-2621C, 2016 (Fed. Cl.).
- *Entergy Nuclear Palisades LLC v. The United States*, Case No. 12-641C, 2015 (Fed. Cl.).
- *Duke Energy Progress, Inc. and Duke Energy Florida, Inc. v. The United States*, Case No. 14-1001C (Fed. Cl.).
- State of Vermont Public Service Board, Docket No. 7862, Petition for Amendment of Certificate of Public Good for Vermont Yankee Nuclear Power Station, 2013.

Documents responsive to this request are produced as Attachments A.JP:DSP.1-78.1 through A.JP:DSP.1-78.43.

- a. See A.JP:DPS.1-78. In addition, Mr. Maret consulted for Yankee Atomic Electric Company and assisted in settlement negotiations with the Federal Energy Regulatory Commission in 2003.

Individual Responsible for Response: Gregory Maret
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-79: Identify and describe all previous work Mr. Maret has undertaken relating to any of the Joint Petitioner parties, or related entities.

A.JP:DPS.1-79: OBJECTION. The Department objects on the basis that the scope of the term “related entities” is vague and ambiguous.

Without waiving the foregoing general and specific objections, the Department responds: Mr. Maret provided expert testimony and analysis for the following spent fuel cases involving Joint Petitioner parties or related entities:

- *SFI Arkansas, Inc.*, Case No. 03-2623C;
- *Entergy Louisiana, Inc. (System Fuels, Inc.)*, Case No. 03-2621C; and
- *Entergy Nuclear Palisades, LLC*, Case No. 12-641C.

Mr. Maret also provided expert testimony and analysis on behalf of the Department in Docket No. 7862.

Individual Responsible for Response: Gregory Maret
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-80: State the basis for Mr. Maret's conclusions that NorthStar "relies on decontamination for more than is typical" and "anticipates those [decontamination] activities would reduce the amount of contaminated material that must be packaged, shipped to, and disposed of at a licensed facility." Maret PFT at 5:13-15.

A.JP:DPS.1-80: The information provided by NorthStar suggests that it is relying on decontamination to reduce contamination of systems and structures. [REDACTED]

Thus, there appears to be no disposal cost included for other types of waste generated by those activities, from which waste would typically be generated. Mr. Maret concludes that the absence of such costs is the result of a reliance on decontamination activities to reduce the amount of contaminated systems and structures that must be disposed of at a licensed facility.

Individual Responsible for Response: Gregory Maret
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-81: State the basis for Mr. Maret's conclusion that NorthStar "relies on use of fixatives to reduce the amount of contaminated material that must be disposed of at a licensed facility." Maret PFT at 5:19-20.

A.JP:DPS.1-81: The information provided by NorthStar suggests that it is relying on fixatives to reduce the amount of material that must be disposed of at a licensed facility. [REDACTED]

[REDACTED]

Thus, there appears to be no disposal cost included for other types of waste generated by those activities, from which waste would typically be generated. Mr. Maret concludes that the absence of such costs is the result of a reliance on fixatives to reduce the amount of contaminated systems and structures that must be disposed of at a licensed facility.

Individual Responsible for Response: Gregory Maret
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-82: State the basis for Mr. Maret's suggestion (Maret PFT at 7:16-18) that issues encountered at Connecticut Yankee will be encountered at the VY Station.

A.JP:DPS.1-82: OBJECTION. The Department objects to this request to the extent it mischaracterizes Mr. Maret's testimony as suggesting "that issues encountered at Connecticut Yankee will be encountered at the VY Station."

Without waiving the foregoing general and specific objections, the Department responds: Mr. Maret cites the experience at Connecticut Yankee as an example of delay in a projected decommissioning schedule.

Individual Responsible for Response: Gregory Maret
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-83: State the basis for Mr. Maret's suggestion (Maret PFT at 8:16-9:5) that "scope risk[s]" encountered at Connecticut Yankee, Southern California Edison, and Yankee Atomic will be encountered at the VY Station.

A.JP:DPS.1-83: OBJECTION. The Department objects to this request to the extent it mischaracterizes Mr. Maret's testimony as suggesting "that 'scope risk[s]' encountered at Connecticut Yankee, Southern California Edison, and Yankee Atomic will be encountered at the VY Station."

Without waiving the foregoing general and specific objections, the Department responds: Mr. Maret cites the experiences at Connecticut Yankee, Southern California Edison, and Yankee Atomic as examples of decommissionings in which costs increased due to discovery of unknown conditions.

Individual Responsible for Response: Gregory Maret
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-84: State Mr. Maret's understanding of what NorthStar assumes regarding the volume of contaminated concrete and soil that will be removed to complete decommissioning as he defines that term.

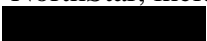
- a. State Mr. Maret's understanding of what NorthStar assumes regarding the cost of removing such concrete and soil.

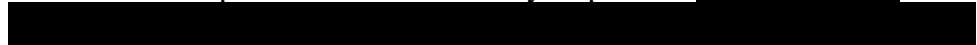
A.JP:DPS.1-84: OBJECTION. The Department objects to this request to the extent it calls for speculation based on information not within the Department's control. The Department further objects to the request on the basis that the scope of the term "removed" is vague and ambiguous.

Without waiving the foregoing general and specific objections, the Department responds: 



- a. OBJECTION. The Department objects to this request to the extent it calls for speculation based on information not within the Department's control. The Department further objects to the request on the basis that the scope of the term "removing" is vague and ambiguous.

Without waiving the foregoing general and specific objections, the Department responds: Mr. Maret's understanding of NorthStar's assumptions is limited to the information provided by NorthStar, including the deal model spreadsheet and discovery responses. 



Individual Responsible for Response: Gregory Maret
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-85: State Mr. Maret's basis for concluding that NorthStar's "approach involve[s] use of decontamination services, use of fixatives, and use of explosives in demolition activities." Maret PFT at 13:16-18.

- a. State Mr. Maret's understanding of where, how, under what circumstances, and with what protections NorthStar intends to proceed with these approaches.

A.JP:DPS.1-85: Mr. Maret's basis for concluding that NorthStar intends to use decontamination services, fixatives, and explosives includes the deal model spreadsheet and discovery responses from the Joint Petitioners. [REDACTED]

[REDACTED] Discovery responses from the Joint Petitioners provide additional bases for Mr. Maret's conclusions regarding decontamination services, fixatives, and explosives. *See, e.g.*, A.DPS:NS.2DS-12; A.DPS:NS.2DS-13.

- a. **OBJECTION.** The Department objects to this request to the extent it calls for speculation based on information not within the Department's control.

Without waiving the foregoing general and specific objections, the Department responds: Beyond the sources identified in A.JP:DPS.1-85, Mr. Maret is not aware of information provided by NorthStar that describes its intended use of those services.

Individual Responsible for Response: Gregory Maret
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-86: Identify each source of information and the location within such source that form the basis for Mr. Maret's determination of "NorthStar's assumptions relate[d] to ... waste burial rates." Maret PFT at 13:18-19.

A.JP:DPS.1-86: Mr. Maret relied on information provided by Joint Petitioners, including the deal model spreadsheet, Attachment A.DPS:NS.1-57.2264 (*see, e.g.*, Attachment A.DPS:NS.1-57.2264, tab "T&D," at cell H10 and cell H316); and discovery responses A.DPS:NS.2DM-27, A.DPS:NS.2DM-28, A.DPS:NS.2DM-29, and A.DPS:NS.2DM-30, in assessing NorthStar's assumptions regarding waste burial rates.

Individual Responsible for Response: Gregory Maret
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Questions for Warren K. Brewer

Q.JP:DPS.1-87: Identify, list and produce all exhibits to be introduced or used at hearing in support of the prefiled testimony of Warren K. Brewer in this proceeding.

A.JP:DPS.1-87: OBJECTION: The Department objects to this request to the extent it calls for speculation. At this time, the exhibit list includes those exhibits identified in and attached to Mr. Brewer's prefiled testimony. However, the Department reserves its right to submit and utilize additional exhibits as warranted.

Without waiving the foregoing general and specific objections, the Department responds: The exhibits referenced in Mr. Brewer's prefiled testimony were produced previously as Exhibit DPS-WKB-1; Exhibit DPS-WKB/GAM-2; and Exhibits DPS-WKB-3 through DPS-WKB-26.

Individual Responsible for Response: Warren K. Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-88: Identify, list and produce all documents, data compilations, electronically stored information, photographs, workpapers or other tangible things provided to, exchanged with, prepared by, reviewed by, relied upon or used by Mr. Brewer in developing his prefiled testimony and the opinion(s) underlying his prefiled testimony, including, but not limited to, all exhibits to his prefiled testimony, to the extent not already produced.

A.JP:DPS.1-88: OBJECTION: The Department objects to this request as overly broad and unduly burdensome to the extent it seeks the identification of “all” such documents and materials. The Department further objects to the extent this request seeks information covered by the attorney-client privilege, the attorney work product doctrine, or Vermont Rule of Civ. P. 26(b)(5)(B)-(C). The Department further objects to the request to produce “all documents . . . reviewed by” Mr. Brewer as overbroad and unduly burdensome. The Department further objects to this request as duplicative of other requests, and identifies in response to this request only documents not identified elsewhere in these responses or in the prefiled testimony submitted by the Department.

Without waiving the foregoing general and specific objections, the Department responds: Mr. Brewer relied primarily on information and documentation provided in the Joint Petitioners’ petition, the prefiled testimony of witnesses sponsored by the Joint Petitioners, and documents produced by the Joint Petitioners as exhibits to prefiled testimony or in discovery. Other documents, data compilations, electronically stored information, photographs, workpapers, or other tangible things provided to, exchanged with, prepared by, reviewed by, relied upon, or used by Mr. Brewer are being produced in response to this request. Those documents include, at Attachments A.JP:DPS.1-88.1 through A.JP:DPS.1-88.4, materials prepared by Mr. Brewer that are based on materials produced by Joint Petitioners in responding to the Department’s discovery requests in this proceeding. *See* Attachment A.JP:DPS.1-76.1 through A.JP:DPS.1-76.10; Attachment A.JP:DPS.1-88.1 through A.JP:DPS.1-88.4. *See also* Exhibit DPS-WKB-6; Exhibit DPS-WKB-8; Exhibit DPS-WKB-9; Exhibit DPS-WKB-10; Exhibit DPS-WKB-11; Exhibit DPS-WKB-13; Exhibit DPS-WKB-14; Exhibit DPS-WKB-20; Exhibit DPS-WKB-21.

Individual Responsible for Response: Warren K. Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-89: Identify all assumptions, materials, inputs, data or information provided to Mr. Brewer in connection with his preparation of prefiled testimony.

A.JP:DPS.1-89: OBJECTION. The Department objects to this request as overly broad and unduly burdensome to the extent it seeks “all” such information. The Department further objects to the extent this request seeks information covered by the attorney-client privilege or the attorney work product doctrine. The Department further objects to this request as duplicative of other requests, particularly of Request Q.JP:DPS.1-88, and identifies in response to this request only documents not identified elsewhere in these responses or in the prefiled testimony submitted by the Department. The Department further objects to this request on the ground that the term “provided to” is vague and undefined.

Without waiving the foregoing general and specific objections, the Department responds: None, other than the Joint Petitioners’ petition, the prefiled testimony of witnesses sponsored by the Joint Petitioners, and documents produced by the Joint Petitioners as exhibits to prefiled testimony or in discovery.

Individual Responsible for Response: Warren K. Brewer
Date: September 27, 2017
Administrative Unit: Four Points Group, Incorporated

Q.JP:DPS.1-90: Identify and describe all previous work (including cost estimation and funding analysis) Mr. Brewer has undertaken with regard to nuclear decommissioning, spent nuclear fuel management, and/or site restoration and produce all documents relating to all previous work Mr. Brewer has undertaken with regard to nuclear decommissioning, spent nuclear fuel management, and/or site restoration projects.

- a. Identify all regulatory proceedings by jurisdiction, date, docket number and name in which Mr. Brewer has testified or provided consulting or expert support for witnesses testifying on nuclear decommissioning, spent nuclear fuel management and/or site restoration projects.

A.JP:DPS.1-90: OBJECTION. The Department objects to this request as overly broad and unduly burdensome to the extent that it requests “all documents” relating to “all previous work” Mr. Brewer has undertaken with regard to nuclear decommissioning, spent fuel management, and/or site restoration projects. The Department further objects to this request to the extent it seeks information covered by the attorney-client privilege, the attorney work product doctrine, or Vermont Rule of Civ. P. 26(b)(5)(B)-(C). The Department further objects to this request to the extent it seeks disclosure of confidential information that is subject to third party non-disclosure agreements. The Department further objects to this request to the extent it calls for the production of documents that are subject to a protective order issued by another court that prohibits their disclosure.

Without waiving the foregoing general and specific objections, the Department responds:

Decommissioning Projects

All projects include all phases of decommissioning and consideration of financial planning. The following chart summarizes all decommissioning projects with which Mr. Brewer has been involved. Following the chart, additional detail is provided regarding some of the projects identified.

Project	Client	No. Of Plants	No. of Studies	E-Evaluations C-Cost Estimate Creation L-Litigation Support
Vermont Yankee	VYNPC	1	1	C
Vermont Yankee	Vermont Public Service Board	1	1	E, L
Bruce A and B	Torys	8	2	E, L
Nine Mile Point	NMPC	2	1	C

Project	Client	No. Of Plants	No. of Studies	E-Evaluations C-Cost Estimate Creation L-Litigation Support
Nine Mile Point	New York PSC	2	1	E - support of potential sale of units
Shoreham	LIPA	1	2	C, E
Calvert Cliffs	BG&E	2	2	C
Calvert Cliffs	BG&E	2	1	E – long term cost escalation
SONGS 2&3	SCE	2	5	C
SONGS 2&3, Diablo Canyon 1&2 and Palo Verde 1,2&3	California PUC	7	1	E, L
SONGS (TLG)	SCE	3	1	E
SONGS 1	SCE	1	2	E – project oversight and lessons learned for application to Units 2 and 3.
Industry Study of Decommissioning	OTA	1	2	E
Seabrook	NHPSC	1	1	E
Trojan	Martin Marietta	1	1	E
Trojan	PGE	1	1	E
Indian Point	NYSPSC	3	1	E
Oyster Creek	BNFL	1	1	C
New England Plants – CY, MY, YR, Millstone 1,2&3, Pilgrim, Seabrook, VY	Massachusetts Attorney General	9	1	E
Turkey Point 3&4, St Lucie 1&2, Crystal River	Florida PSC	5	2	E
Duane Arnold	Alliant	1	4	C

Project	Client	No. Of Plants	No. of Studies	E-Evaluations C-Cost Estimate Creation L-Litigation Support
Zion 1&2	Energy Capital Partners/Energy Solutions	2	2	E – support of due diligence in acquisition of Energy Solutions and oversight after acquisition
Indian Point 2	USDOJ	1	1	E,L
Pilgrim	USDOJ	1	1	E,L
Pilgrim	IRS	1	1	E,L
Plumbrook Reactor	NASA	1	2	C,E
	Taiwan Power Company	n/a	1	E – development of infrastructure and organizational structure for decommissioning cost estimating and performance of decommissioning

Training for Florida Public Service Commission – Provided instruction for about 20 members of the Florida Public Service Commission staff on decommissioning and costs associated with decommissioning. This course also discussed specific findings from the review of the decommissioning estimates for the Turkey Point, St. Lucie, and Crystal River Units.

Shoreham Decommissioning – In addition to reviewing a decommissioning estimate prepared by a third party, Mr. Brewer contributed to the preparation of an independent decommissioning cost estimate for the Long Island Power Authority. In addition to the cost estimating work, Mr. Brewer was part of the team that provided on-site oversight of decommissioning planning and progress. Mr. Brewer also evaluated bids for selection of the decommissioning general contractor and evaluated options for dealing with the spent fuel at Shoreham.

Evaluation of Decommissioning Plans for Plants in the Northeast United States – Mr. Brewer prepared a report for the Massachusetts Attorney General’s Office concerning the decommissioning estimates and plans for nine nuclear plants in the Northeast U.S. This report focused on the cost of radioactive waste disposal and costs associated with spent fuel management. Because of the history of high rate of cost escalation in the cost of waste disposal at the time of that

report, the report also included consideration of the appropriate waste cost assumptions based on other financial planning factors.

Zion Decommissioning – Mr. Brewer was part of a team that assessed the EnergySolutions plans and cost estimate for decommissioning the Zion Unit 1 and Unit 2 plants. This review was done to support the due diligence of a group considering the purchase of EnergySolutions that would include taking ownership of the Zion decommissioning project and associated liabilities. The evaluation included identification of risks for added costs including evaluation and recommendation of the added costs that should be included in the financial planning. After the purchase of EnergySolutions, the team continued to provide analysis of the progress of the decommissioning project to the new owners.

Electric Power Research Institute (EPRI) Report on Life Cycle Cost Decisions – Mr. Brewer, with others from ABZ, Inc., provided a decommissioning cost estimate report based on a plant-specific cost estimate. The report included discussion of the generic applicability of the estimate's elements and approach. The ABZ team provided input to EPRI on managing the decommissioning decisions in the context of plant life cycle management.

Evaluation of Decommissioning Unit Cost Factors and Reactor Vessel Disposal Options – Mr. Brewer evaluated decommissioning unit cost factors for Mitsubishi Material Corporation. The evaluation included cost factors used in a number of recent decommissioning cost estimates. Mr. Brewer evaluated the disposal options for the reactor vessel including shipment of the vessel to a waste disposal site as its own container.

Three Mile Island Unit 2 (TMI-2) Decontamination Study – Mr. Brewer analyzed the cost to decontaminate the GPU Service, Inc. (GPU) assets of TMI-2 in the event of contamination due to a severe reactor accident at TMI-1. The cleanup costs were based on two isotopic releases provided by GPU. For each of the releases, Mr. Brewer determined the costs for three different scenarios based on different amounts of released contamination being present on the TMI-2 buildings and structures at the time of the cleanup effort. While strictly not a decommissioning study, Mr. Brewer based this study on techniques that would be used in decommissioning but modified them to accommodate the much more severe radiation environment in the cleanup being evaluated.

Testimony

All cases listed included decommissioning issues, site restoration issues, and/or spent fuel management issues.

- State of New Hampshire Decommissioning Finance Committee hearing on the Seabrook Nuclear Power Plant decommissioning funding, 1994.
- *Tennessee Valley Authority v. United States of America*, Case No. 01-249C, July 2005 (Fed. Cl.).
- *SFI Mississippi v. United States of America*, Case No. 03-2624C, September 2006 (Fed. Cl.).

- *Boston Edison v. United States of America*, Case No. 99-447C and 03-2626C, June 2007 (Fed. Cl.).
- *Wisconsin Electric v. United States of America*, Case No. 00-697C, September 2007 (Fed. Cl.).
- *Dairyland Power Cooperative v. United States of America*, Case No. 04-0106C, July 2008 (Fed. Cl.).
- *Entergy Corporation and Affiliated Subsidiary Companies v. Commissioner of Internal Revenue*, Docket No. 10557-08, June 2008 (U.S.T.C.).
- *Consolidated Edison Company of New York, Inc. v. United States of America*, Case No. 04-33C, June 2009 (Fed. Cl.).
- *Entergy Nuclear Indian Point 2, LLC v. United States of America*, Case No. 03-2622C, June 2009 (Fed. Cl.).
- *Entergy Nuclear Generation Company v. United States of America*, Case No. 03-2626C, September and October 2009 (Fed. Cl.).
- *Entergy Nuclear Vermont Yankee, LLC v. United States of America*, Case No. 02-898C, March and April 2010 (Fed. Cl.).
- *Portland General Electric, the City of Eugene Oregon, and PacifiCorp v. United States of America*, Case No. 04-0009C, November 2011 (Fed. Cl.).
- *System Fuels, Inc. and Entergy Arkansas, Inc. v. United States*, Case No. 03-2623C, October and November, 2012 (Fed. Cl.).
- Petition for Amendment of Certificate of Public Good for Vermont Yankee Nuclear Power Station, Docket No. 7862, 2013 (Vt. P.S.B.).
- *System Fuels, Inc. and Entergy Arkansas, Inc. v. United States*, Case No. 12-389C, July 2014 (Fed. Cl.).
- *System Fuels Inc., System Energy Resources, Inc., and South Mississippi Electric Power Association v. United States*, Case No. 11-511C, October 2014 (Fed. Cl.).
- *Entergy Gulf States, Inc. and Entergy Gulf States Louisiana, LLC. v. United States*, Case No. 03-2625C, May 2015 (Fed. Cl.).
- *Entergy Nuclear FitzPatrick, LLC., Entergy Nuclear Indian Point 3, LLC., and Entergy Nuclear Operations, Inc. v. United States*, Case No. 03-2627C, August 2015 (Fed. Cl.).
- *Entergy Nuclear Indian Point 2, LLC v. United States*, Case No. 13-19C, April 2016 (Fed. Cl.).
- *Sacramento Utility District v. United States*, Case No. 15-577C, October 2016 (Fed. Cl.).

Severe Reactor Accident Cost Analysis

Mr. Brewer, as part of ABZ, Inc., supported utilities in evaluating the damage resulting from a severe reactor accident and the necessary work and associated costs for recovery and cleanup following such an accident. Such evaluations are important for utilities in determining the level of nuclear property insurance to purchase. For the companies providing such insurance, these studies are important for understanding the potential liability and cash flow resulting from claims against such policies.

Mr. Brewer was one of the primary developers of the methodology used by ABZ in this work including development of a proprietary computer model for performing these evaluations. The severe accident cost analysis includes considerations of spent fuel management and includes applications of cleanup processes necessary to return the plant to a condition consistent with what would normally be expected at the beginning of plant decommissioning.

Severe accident cost analyses have been performed for numerous commercial nuclear power plants both in the U.S. and abroad as well as for the insurers providing nuclear property insurance. For a time, the ABZ proprietary program and methodology was licensed to one of the two companies providing nuclear property insurance. Either directly or by the licensed insurance provided, ABZ severe cost analysis studies have been conducted for most of the plants in the United States.

Today only one insurer remains. Mr. Brewer, with other ABZ personnel, performed an analysis of potential severe accident costs across the entire U.S. industry and select European utilities on behalf of that insurer. This study evaluated baseline costs for a range of possible accidents, and evaluated and applied a probabilistic based analysis for potential variations in costs ultimately developing a probability weighted claims cash flow. The insurer used the ABZ study to support marketing of reinsurance.

Documents responsive to this request are produced as Attachments A.JP:DSP.1-90.1 through A.JP:DSP.1-90.70.

- a. *See* A.JP:DPS.1-90.

Individual Responsible for Response: Warren K. Brewer
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Q.JP:DPS.1-91: Identify and describe all previous work Mr. Brewer has undertaken relating to any of the Joint Petitioner parties, or related entities.

A.JP:DPS.1-91: OBJECTION. The Department objects on the basis that the scope of the term “related entities” is vague and ambiguous.

Without waiving the foregoing general and specific objections, the Department responds: *See* A.JP:DPS.1-90 for litigation involving Entergy. In addition, Mr. Brewer performed severe accident cost analysis for the Waterford, Grand Gulf, Arkansas Nuclear One, and Palisades plants during the period of ownership by an Entergy affiliate. Mr. Brewer also performed training on fluid flow analysis at the Grand Gulf and Arkansas Nuclear One plants.

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Q.JP:DPS.1-92: Provide the exact amount paraphrased as “hundreds of millions of dollars.” Brewer PFT at 8:21-22. Explain how this amount was calculated.

A.JP:DPS.1-92: The total cost for spent fuel management in the Entergy estimate is \$368.347 million. *See* Exhibit DPS-DSD-5, Post Shutdown Decommissioning Activities Report (PSDAR), at tbl. 2.2 (Dec. 19, 2014). If Entergy were to rely on prompt recoveries from DOE rather than money from the NDT for spent fuel management, the needed resources would be reduced by about this amount. Mr. Brewer acknowledges that, consistent with the NorthStar approach, some small amount might be taken from the NDT on a rolling basis, but the reduction in the necessary funding from the NDT would still be reduced by hundreds of millions of dollars.

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Q.JP:DPS.1-93: Provide the citation for the source quoted at Brewer PFT at 41:4-6.

A.JP:DPS.1-93: Exhibit DPS-WKB-21, Letter from Mike Gorski, Massachusetts Department of Environmental Protection, to Joseph Lynch, Yankee Atomic Electric Company, Re: Beneficial Use Determination; Yankee Nuclear Power Station (July 29, 2005). *See also* Exhibit DPS-WKB/GAM-2, at 29 n.77.

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Dated at Montpelier, Vermont, this 27th day of September 2017.

Respectfully submitted,

VERMONT DEPARTMENT OF PUBLIC SERVICE

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