

**THE STATE OF NEW HAMPSHIRE
BEFORE THE
NEW HAMPSHIRE SITE EVALUATION COMMITTEE
DOCKET NO. 2015-06**

**SUPPLEMENTAL JOINT PRE-FILED TESTIMONY OF TERRENCE DEWAN
AND JESSICA KIMBALL**

**IN SUPPORT OF THE
APPLICATION OF NORTHERN PASS TRANSMISSION LLC
AND PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
D/B/A EVERSOURCE ENERGY
FOR A CERTIFICATE OF SITE AND FACILITY TO CONSTRUCT A NEW HIGH
VOLTAGE TRANSMISSION LINE AND RELATED FACILITIES IN NEW
HAMPSHIRE**

April 17, 2017

1 **I. PERSONAL BACKGROUND**

2 **Q. Please state your names, titles, and business address.**

3 A. My name is Terrence DeWan. I am the principal and founder of Terrence J.
4 DeWan & Associates (“TJD&A”), a landscape architecture and planning firm located at 121
5 West Main Street in Yarmouth, Maine.

6 My Name is Jessica Kimball. I am a planner and landscape architect at Terrence J.
7 DeWan & Associates.

8 **Q. What is the purpose of your supplemental pre-filed testimony?**

9 A. We provide supplemental information regarding the potential impact of the
10 Northern Pass Transmission Project (“Northern Pass” or the “Project”) as proposed by Northern
11 Pass Transmission LLC (“NPT”) and Public Service Company of New Hampshire d/b/a
12 Eversource Energy (“PSNH”) (collectively the “Applicants”) on aesthetics as initially described
13 in our October 2015 Visual Impact Assessment (“VIA”) and updated in February 2016. First,
14 we provide a description of the supplemental work that we have completed since filing our
15 October 2015 VIA and the February 2016 update. Second and third, we explain why the Visual
16 Impact Assessments prepared by TJ Boyle Associates (“TJ Boyle”), on behalf of Counsel for the
17 Public (“CFP”), and Dodson & Flicker (“D&F”), on behalf of the Society for the Protection of
18 New Hampshire Forests (“SPNHF”) and Appalachian Mountain Club (“AMC”), are inaccurate
19 and describe their significant flaws. Fourth, we respond to the additional claims and criticisms
20 made by the AMC in pre-filed testimony. Fifth, we describe how the pre-filed testimony
21 submitted by Beth Fenstermacher is inaccurate and suffers from many fundamental errors.

22 **II. SUPPLEMENTAL WORK**

23 **Q. Please describe any additional assessments that you have undertaken since**
24 **filing your Pre-Filed Direct Testimony and VIA in October 2015.**

25 A. We have completed several assessments since the submission of our Pre-Filed
26 Direct Testimony and the Project VIA in October 2015. First, we submitted additional
27 information in response to New Hampshire Site Evaluation Committee’s (“NHSEC” or
28 “Committee”) rules adopted on December 16, 2015. Second, we updated the Project VIA due to
29 engineering changes and additional avoidance, minimization and mitigation measures that
30 altered structure types and locations. Third, we performed additional assessments following the
31 review of reports and testimony from other parties, including but not limited to, CFP, SPNHF,

1 AMC, and the City of Concord. Specifically, we have completed the following additional
2 assessments:

- 3 • **SEC Supplement (submitted February 26, 2016)**: The February 2016 (App. Ex. 2)
4 submittal was completed to comply with the NHSEC’s newly adopted rules and included: an
5 updated viewshed map covering the vegetated landscape out to 10 miles in Attachment 6 to
6 meet NH Code Admin. R. Site 301.05(b)(4)(d)(2); identification and assessment of additional
7 scenic resources between 3 and 10 miles from the Project in Attachment 7 to meet Site
8 301.05(b)(5) and Site 301.05(b)(6); a sample of private property photosimulations in
9 Attachment 8 to meet Site 301.05(b)(7); photosimulations from scenic resources in leaf-off
10 conditions in Attachment 9 to meet Site 301.05(B)(7).
- 11 • **Updated photosimulations (submitted September 29, 2016)**: The updated
12 photosimulations submitted in September 2016 (App. Ex. 71) reflect the currently proposed
13 high voltage direct current (“HVDC”) structures. The HVDC structure redesign altered the
14 height of the cross-arms by approximately 3 feet. The structure types and heights remained
15 exactly the same. The updated photosimulations did not impact our visual impact ratings for
16 any scenic resource.
- 17 • **NHSEC Supplemental Report to Visual Impact Statement (submitted April 17, 2017)**
18 **(“Supplemental Report”), Attachment A:**
- 19 1. **Additional analysis of scenic resources with low cultural value ratings:** In
20 response to a critique by the experts retained by CFP, TJ Boyle, scenic resources with a
21 low cultural value rating were further analyzed for visual impact. While the original
22 methodology complied with the NHSEC rules and prior visual impact assessments
23 accepted by the NHSEC, the additional analysis provides the Subcommittee with
24 supplementary information on 171 resources and an evaluation of the possible visual
25 effect that the Project would have.
 - 26 2. **Additional identification and analysis of eligible historic resources:** An
27 unpublished database of eligible historic sites was obtained from the New Hampshire
28 Division of Historical Resources (“NHDHR”) and then manually digitized to determine if
29 they fell within the area of potential visual impact (“APVI”). This was completed in
30 order to consider sites eligible for the National Register of Historic Places that meet the
31 definition of a “scenic resource” under the NHSEC rules. Our review and spatial

1 mapping of the NHDHR database of eligible historic resources produced 282 resources
2 that are accessible to the public within a 10-mile radius of the above ground portion of
3 the Project. From this list, we identified 21 resources within the APVI that had not been
4 previously identified as scenic resources.

5 3. **Additional identification and analysis of sites identified by AMC:** In the pre-
6 filed testimony of Dr. Kenneth Kimball and Larry Garland testimony, AMC identified 82
7 sites ostensibly missed in the Project VIA. They claim that all 82 sites listed are “scenic
8 resources”; however, the overwhelming majority of these sites do not meet the definition
9 of scenic resource, as defined in Site 102.45. Their lack of research, lack of concern for
10 public access, inaccurate reading of the Project VIA, and use of the potentially eligible
11 historic resources submitted as part of the Section 106 process makes a large part of this
12 identification process flawed. Our Supplemental Report, Attachment A, includes a table
13 with a description of each of the 82 identified sites and explains why each is not a “scenic
14 resource”.

15 4. **Updated visibility analysis: 10-mile visibility radius for area 0–5 miles:** In the
16 10-mile viewshed map submitted in February 2016, the viewshed map was limited to
17 areas 5–10 miles from the Project. The viewshed analysis 0–5 miles from the Project
18 remained as a 5-mile visibility radius. This meant areas with visibility of structures 5–10
19 miles away, that are located within 5 miles of the Project, were not identified on the
20 viewshed map. The threshold for visibility in the wooded landscapes typical of New
21 Hampshire is 5± miles; at distances greater than five miles, transmission structures cease
22 to be seen as individual elements in the landscape. A cleared corridor may be slightly
23 visible from elevated viewpoints at distances of greater than five miles, but will not be a
24 dominant or prominent feature in the landscape (see p. 7-5 of Attachment 7, submitted
25 February 2015). While we maintain that visibility beyond 5 miles will not adversely
26 impact views from scenic resources, we have updated the viewshed map to identify
27 scenic resources within 5-miles of the Project that show potential visibility at distances
28 greater than 5-miles. Adding the 10-mile search distance increased the total viewshed
29 area by 4.23 sq. mi., which accounts for 0.28% of the 5-mile study area. We have
30 updated the viewshed map and identified 8 impacted scenic resources in our
31 Supplemental Report, Attachment A.

1 5. **Updated visibility analysis: altered landcover height for non-forested areas:**

2 Beyond the extent of the InterMap Data (1.5 to 2.7 miles away from the Project),
3 landcover heights were assigned based on the statistical mean height by subarea, as
4 determined in the New Hampshire Landcover Data (“NHLD”). The landcover heights
5 for non-forested areas assigned by statistical mean have been contested by TJ Boyle as
6 well as Dr. Kimball and Mr. Garland for the AMC. We maintain that using the statistical
7 mean provided us with an accurate digital surface model from which to calculate the
8 viewshed map beyond the extent of the InterMap data. However, we agree that the
9 statistical mean in some of the non-forested landcover types may have been influenced by
10 edge vegetation and a smaller sample size to produce less accurate landcover heights than
11 the forested areas. To account for this statistical inaccuracy, we have updated the
12 viewshed map to use a height of 0 feet for row crops, hay/pasture, and open wetlands. In
13 addition, in the original viewshed analysis, TJD&A inadvertently left off Alpine
14 (Krumholz) and Bedrock land cover types that exist only in the expanded 5-10 mile study
15 area. These two land cover types were added as a height of 0 feet. These changes
16 increased the overall viewshed area from 68.47 sq. mi. to 93.32 sq. mi. or 2.14% to
17 2.91% for the 10-mile study area. This change accounts for 0.77% of the entire study
18 area. We have updated the viewshed map and identified 24 impacted scenic resources in
19 our Supplemental Report, Attachment A.

20 6. **Evaluation of illuminated structures:** In order to meet FAA standards, 31
21 structures in the vicinity of the Concord Municipal Airport will have red obstruction
22 lights on top. This condition flows from a FAA approval received on November 22,
23 2016. We conducted an assessment to address the visual impact of the structures at night
24 to comply with Site 301.05(b)(9).

25 7. **Updated photosimulations:** We re-submitted four additional photosimulations
26 that were originally submitted with inaccuracies, or to reflect changes to the Project since
27 the initial Application submittal. The updated locations include Weeks State Park leaf-on
28 and leaf-off conditions, Turtle Pond, and Big Dummer Pond leaf-on.

29 8. **Comparison examples between TJD&A photosimulations and built**
30 **construction:** We address TJ Boyle’s critique of our photosimulation production below.
31 To support our position, we present a side-by-side comparison of photosimulations to

1 images of a project following construction. The photosimulations presented in this
2 supplement were completed for a project of similar scope, and were completed with the
3 same software and methodology used in the Project VIA. The side-by-side comparison
4 demonstrates the accuracy of our photosimulation work used here and in other visual
5 impact assessments.

6 9. **Bare-Earth Visibility Analysis:** The Project VIA did not rely on a bare-earth
7 visibility analysis because the NHSEC rules do not require a visibility analysis to include
8 bare-earth conditions. However, following criticisms about this approach, we completed
9 a bare-earth analysis and provided the raster files to the parties during discovery. The
10 results of the bare-earth visibility analysis are included in our Supplemental Report,
11 Attachment A. In addition, a further discussion about the ineffectiveness of this type of
12 visibility analysis is provided below.

13 **Q. Has the additional work you have completed since October 2015 changed**
14 **your assessments or conclusions contained in your testimony of October 2015 or in the**
15 **October 2015 Project VIA?**

16 A. As described above, we have completed additional assessments of the Project's
17 potential impacts to aesthetics since the Application was filed in October 2015. Specifically, we
18 have identified, mapped, and reviewed 21 new eligible historic locations located in the APVI that
19 are considered scenic resources; conducted additional review of scenic resources with low
20 cultural values; identified and reviewed 32 additional scenic resources discovered in viewshed
21 map alterations (15 of which were previously identified as scenic resources in the Project VIA);
22 evaluated illuminated structure tops in Concord, evaluated the slight adjustment to HVDC
23 structure design, and reviewed suggested avoidance, minimization, and mitigation measures
24 from other parties. The results of each of these additional investigations are presented in the
25 Supplemental Report, Attachment A.

26 In summary, the work we have performed since October 2015 has not altered our overall
27 conclusion that the Project will not have an unreasonable adverse effect on aesthetics.

1 **III. CLARIFICATION OF THE OCTOBER 2015 PROJECT VIA**

2 **Q. Interveners and experts hired by CFP have critiqued your methodology**
3 **during the discovery process and in their pre-filed testimony. Is there anything that you**
4 **would like to clarify about the October 2015 Project VIA to respond to their critiques?**

5 A. Yes. During the discovery process and in the pre-filed testimony, several parties
6 have raised concerns about the methodology we used to assess potential visual impacts that may
7 be caused by the construction of the Project. To respond to these critiques, we would like to
8 clarify several items regarding our Visual Impact Assessment work. The following is a summary
9 list of these items. We elaborate further on each issue below:

10 A. Provide clarity on why **the vegetated viewshed analysis is in line with the**
11 **NHSEC regulations** and an appropriate visibility tool to use for this Project;

12 B. Describe further **how we identified scenic resources**, and provide our
13 understanding of legal right of access;

14 C. Provide additional perspective on **the scenic significance rating system and why**
15 **it is appropriate to use** within the NHSEC rules;

16 D. Provide an understanding of **why no intercept surveys were used** to identify the
17 impact on continued use and enjoyment and expectations of a typical viewer;

18 E. Further describe the **process for selecting “representative key observation**
19 **points”** for creating photosimulations and discuss how these were used in our analysis of
20 scenic resources (we did not rely on a static viewpoints as TJ Boyle and D&F did).

21 F. Provide additional detail on the different types of **avoidance, minimization, and**
22 **mitigation efforts** suggested by the parties in this docket that the Applicants considered;

23 **A. VIEWSHED ANALYSIS**

24 **Q. During the discovery process and in the pre-filed testimony, parties argued**
25 **that the Project VIA does not comply with the NHSEC rules. Please explain why the**
26 **visibility analysis contained in the Project VIA is consistent with NHSEC regulations.**

27 A. The Project VIA did not rely on a bare-earth visibility analysis because the
28 NHSEC rules do not require a visibility analysis to include bare-earth conditions. A bare-earth
29 analysis is not required as part of the computer-based visibility analysis provided in Site
30 301.05(b)(4) or in the identification of scenic resources. A “visibility analysis” is defined in Site
31 102.55 as “a spatial analysis conducted using computer software to determine the potential

1 visibility of a proposed facility.” Site 305.05(b)(4) provides that the *only* technical requirement
2 in developing a computer-based visibility analysis is to cover an area 10 miles from the Project
3 to determine the APVI. The rules do not require a specific methodology for conducting a
4 visibility analysis and the rules regarding a visibility analysis do not reference either bare-earth
5 or vegetated conditions, either in the definition of visibility analysis contained in Site 102.55 or
6 the requirement to complete a visibility analysis, Site 305.05(b)(4).

7 In addition to there being no requirement in the NHSEC rules to produce or rely on a
8 bare-earth visibility analysis, our interpretation of the rules, which is consistent with visibility
9 analysis everywhere we have worked, is that the NHSEC is charged with evaluating the effects
10 of the Project in the landscape as it exists today. The NHSEC is not responsible for making
11 presumptions about potential development and future clearing that may occur over time. A bare-
12 earth visibility analysis is a representation of a world cleared of all vegetation and built
13 structures; it is not a representation of the current landscape. Bare earth modeling may be useful
14 to determine visibility for site-specific projects that are generally located in one particular area,
15 such as power plants, where vegetation in the immediate vicinity may be removed as part of the
16 development or at a later date as part of a defined long-range plan. However, the usefulness of a
17 bare earth analysis for linear projects, such as Northern Pass—where the Applicant does not own
18 the land abutting the corridor and the Project traverses parts of the state that are expected to
19 remain forested—is limited to only those areas where tree clearing is known to occur.

20 **Q. Does the ‘vegetated’ viewshed mapping methodology comply with generally**
21 **accepted professional standards for conducting a visibility analysis in the Northeastern**
22 **United States?**

23 A. Yes. Using vegetated viewshed mapping complies with generally accepted
24 professional standards for conducting a visibility analysis because it provides a more realistic
25 depiction of the potential areas of visual impact than a bare-earth viewshed analysis. The City of
26 Concord’s visibility analysis, D&F’s report, the resource identification conducted by Dr.
27 Kimball/ Mr. Garland for AMC, and TJ Boyle’s Draft Environmental Impact Statement
28 (“DEIS”) work for the United States Department of Energy (“USDOE”) relied heavily on the
29 results of the vegetated visibility analysis. The only professional utilizing bare-earth viewshed
30 mapping for this Project is TJ Boyle. The Project VIA relies on high quality data in the

1 development of the vegetative viewshed map. The Project VIA identification of scenic resources
2 is not limited by the viewshed map within 3 miles of the Project area.

3 The use of vegetated viewshed mapping is better suited for the Northeast for three
4 additional reasons:

5 • **A vegetated viewshed map provides a more realistic account of potential**
6 **visibility.** A vegetated visibility analysis takes into account elements in the landscape
7 (such as buildings and vegetation) that factor into screening on top of the terrain. The
8 New Hampshire landscape is heavily forested, so there is a realistic expectation that
9 vegetation will play an important role in visual screening of the Project across the greater
10 landscape. The alternative of a bare-earth visibility analysis excludes all features in the
11 landscape aside from terrain from consideration. This is not an accurate or reliable type
12 of analysis to show the APVI.

13 • **A vegetated viewshed map is based on high quality LiDAR data.** The data
14 used to develop the vegetated visibility analysis is higher quality than typical visibility
15 analyses. Most computer visibility analysis work relies on standard height assignments
16 based on landcover classifications. This visibility analysis has a more accurate Digital
17 Elevation Model (“DEM”) to rely on. The Project VIA utilized data purchased from
18 InterMap, which provided detailed DEM for an area 1.5 to 2.7 miles from the Project.
19 Beyond the extent of the InterMap data, we relied on landcover classifications to
20 determine the height of vegetation in the landscape. While the data outside of the
21 InterMap boundary was not as refined, the vegetated viewshed map provides a more
22 accurate depiction of potential visibility than a terrain-only analysis.

23 • **Identification of scenic resources is not limited by the visibility analysis**
24 **within 3 miles of the Project.** One of the purposes of a visibility analysis is the
25 identification of scenic resources. Section 301.05(b)(5) requires all scenic resources
26 within the APVI to be identified; the APVI is determined by the visibility analysis.
27 According to this rule, only scenic resources within the APVI are required to be
28 identified. Site 102.10 provides that the APVI is limited to the “geographic area from
29 which a proposed facility would be visible, and would result in potential visual impacts,
30 subject to the areal limitations specified in Site 301.05(b)(4).” The Project VIA went
31 above and beyond the NHSEC rules to be overly inclusive in the identification of scenic

1 resources and is entirely consistent with prior visual impact assessments submitted and
2 accepted by the Committee. We identified all scenic resources within 3 miles of the
3 Project, regardless of whether they would be considered visible. In a few instances we
4 went beyond the 3-mile study area to take into consideration higher elevation points (i.e.,
5 Milan Hill State Park and the Percy Peaks in the Nash Stream Forest). Beyond the 3-mile
6 mark, we followed the NHSEC rules by limiting identification to areas within the APVI
7 because the visual impact beyond this point would be far less (based on distance from the
8 Project). We agree that it is important to be as inclusive as possible and not rely only on
9 the vegetated visibility analysis when identifying scenic resources, particularly when
10 located within close proximity to the Project.

11 **Q. Please explain why ‘bare-earth’ visibility analysis grossly overstates visibility**
12 **and is not a helpful analysis tool to use for this type of project?**

13 A. Bare-earth visibility analysis is not a useful tool for this Project for two reasons.
14 First, a large extent of the existing landscape shows potential visibility in a bare-earth visibility
15 analysis, which is not helpful in filtering out scenic resources that will likely not have visibility
16 of the Project. Second, the 10-mile radius requirement of the visibility analysis already
17 exaggerates potential visibility; conducting a bare-earth visibility analysis would further
18 exaggerate potential visibility due to the lack of screening elements.

19 One of the purposes of a visibility analysis is to identify areas in the landscape that may
20 have potential views of a project. Without trees or structures to block the view, the bare-earth
21 viewshed covers 1,130 square miles in the 10-mile study area, which amounts to 35% of the total
22 land area within 10 miles of the Project. (The 10-mile study area is 3,207 square miles without
23 clipping to the New Hampshire border). Within 3 miles of the Project, the bare-earth visibility
24 map covers 616 square miles or 71% of the total land area with 3 miles. Since a large portion of
25 the land area shows potential visibility, the bare-earth viewshed model has limited value as a tool
26 to narrow down scenic resources that likely have visibility. If we were to rely on this tool, nearly
27 all scenic resources within 3 miles of the Project and a large portion beyond 3 miles would show
28 up as having potential visibility. We know from field investigations throughout the study area
29 this will not be the case.

30 The bare-earth visibility analysis indicates where the Project will not be visible by virtue
31 of intervening topography. However, the viewshed analysis includes data up to 10 miles away

1 where structures and conductors will not be visible to the naked eye. The analysis also counts as
2 visible structures where only the tops may rise above the topography but would not normally be
3 considered visible. Thus the use of bare-earth visibility analysis greatly exaggerates the potential
4 visibility of any project.

5 Anticipating a landscape devoid of trees and structures, such as what may occur as a
6 result of forest fires or insect infestation, is typically not the only visibility study that is included
7 in a visual impact assessment. A bare-earth visibility analysis may be helpful in certain types of
8 forested landscapes where ongoing harvesting activities may be expected as part of the visitor
9 experience. In these cases, e.g., in national forests, the management agency goes to great lengths
10 to determine the effect of cutting patterns on the scenic quality of the visible landscape. While a
11 certain amount of harvesting activity is to be expected in the vicinity of the Project, the majority
12 will be on private property with little to no regulation—at least as far as visual impact assessment
13 is concerned. To consider wholesale loss of tree cover in an evaluation of potential visual
14 impacts would be analogous to looking at landforms that now block views of a Project that could
15 be the subject of mountain top mining in the future, thus opening up areas of greater visibility.

16 **Q. In the Project VIA, you explain the limitations of a vegetated viewshed map.
17 Please clarify how you accounted for these limitations and why a bare-earth viewshed map
18 was not utilized?**

19 A. We recognize the limitations with a computer-based visibility analysis on page
20 M-7 of the Project VIA. The primary limitation of vegetated visibility analysis is that it does not
21 account for areas within a vegetated area looking out over open water, an open field, or a
22 mountain top looking over the landscape. The best way to make up for these limitations is
23 through field investigations, research into trail locations and public access at scenic resources,
24 and analysis of a 3D model. This is why the visibility analysis should be used as a preliminary
25 screening tool in coordination with additional investigations.

26 As noted in the response above, we identified all scenic resources within a 3-mile study
27 area. Through our research, analysis, and fieldwork at each scenic resource, we identified areas
28 that may have visibility that did not show up on the visibility analysis. This occurred in several
29 place, including the North Mountain Overlook in Pawtuckaway State Park, Inspiration Point in
30 the Slim Baker Conservation Area, Victor Head Cliff and the Percy Peaks in the Nash Stream
31 Forest, and East Overlook at Weeks State Park. If we relied on the vegetated visibility analysis

1 alone, we may not have identified these important viewpoints. This is why the visibility analysis
2 is used as a one tool in the analysis of visual impact and why we did not solely rely on the
3 vegetated visibility map in the identification of scenic resources within 3-miles of the Project.

4 The vegetated viewshed map was very helpful in identifying areas of potential visibility.
5 It is true that these areas would be present on the bare-earth visibility map. However, so would
6 1,130 square miles of additional area of visibility. The area on this map is so vast that it is not
7 useful in narrowing down these areas in a scenic resource as the additional investigations
8 described above. While AMC and TJ Boyle have criticized us for not utilizing the bare-earth
9 visibility map, neither party has identified any significant scenic resources that may have a view
10 of the Project that we did not identify and evaluate.

11 **Q. Have you completed a bare-earth visibility analysis for this Project?**

12 **A.** Yes, since filing the original Project VIA, certain parties raised concerns that a
13 bare-earth visibility analysis was not completed. While we are confident that such an analysis is
14 not required to comply with NHSEC rules and past practice, we have completed a visibility
15 analysis and submitted it to the NHSEC for review and consideration as included in our
16 Supplemental Filing dated April 17, 2017.

17 ***B. SCENIC RESOURCE IDENTIFICATION***

18 **Q. Certain parties have raised concerns about the methodology you used to**
19 **identify scenic resources. Please explain how you identified those resources and how that**
20 **process relates to the concerns that have been raised.**

21 **A.** We started the process of identifying scenic resources by reviewing both spatial
22 databases and published government and organizational material. The maintained geodatabases
23 are an excellent starting place; however, our assessment did not stop there. Additional research
24 and analysis work was required to determine if each resource was truly present, or there was an
25 error in the database. We took additional steps to determine if the features in the database are
26 accessible by the public and actively used for recreation and scenic purposes. We conducted the
27 following steps with identifying scenic resources:

- 28 1. We collected all data in the following geodatabases:
 - 29 a. ConsNH (GRANIT)
 - 30 b. Recreational Trails (GRANIT)
 - 31 c. Scenic Byway Map (GRANIT)

- 1 d. Water Data (GRANIT)
- 2 e. Snow Mobile Trails (purchased from State)
- 3 f. National Register of Historic Places (National Parks Service)
- 4 g. State Register of Historic Places (manually developed the spatial database)
- 5 h. GNIS points – digitized points from USGS map
- 6 i. State ATV Trail Map (manually digitized)
- 7 j. DHR eligible Historic Places (manually developed this spatial database in
- 8 our April 2017 eligible historic resource work)
- 9 2. We reviewed government and organizational materials, and material available on
- 10 the internet to assist us in sorting through the data points and by adding data not
- 11 available in the geodatabases. This work was done prior to the establishment of
- 12 the 10-mile APVI, so the work focused on 56 towns within the 3-mile boundary
- 13 of the above ground portion of the Project and ¼ mile boundary of the
- 14 underground portion of the Project. All of the sources used to identify scenic
- 15 resources within 3 miles of the Project are included in Appendix C of the Project
- 16 VIA. Some examples of this type of research included the review of the
- 17 following documents:
- 18 a. **Town Plans:** master plans, recreation plans, natural resource inventory
- 19 plans.
- 20 b. **Conservation commission and organizational planning documents**
- 21 **and websites:** documents such as the SPNHF list of forest reservations;
- 22 designated river management plans; scenic byways corridor management
- 23 plans.
- 24 c. **National Conservation Easement Database website:** information on
- 25 conservation easements held by national and regional conservation groups,
- 26 state and regional land trusts, and state and federal agencies.
- 27 d. **Town and State websites:** such as the New Hampshire Fish and Game
- 28 Department (“NHFGD”) public access table to determine what
- 29 waterbodies had managed public access; New Hampshire Division of
- 30 Parks and Recreation website to access information on the parks, trails,
- 31 and water access points; the Scenic and Cultural Byways Program of the

1 New Hampshire Department of Transportation for information on
2 designated scenic byways and overlooks; the New Hampshire Department
3 of Resources and Economic Development Lands Map for information on
4 state-owned and maintained properties; the New Hampshire Department
5 of Environmental Services (“NHDES”) Water Division for the Official
6 List of Public Waters.

7 e. **Internet Searches:** When no information was identified in any public
8 document about a database feature, we conducted an internet search for
9 data on public access and other features about the property. For example,
10 if a conservation easement did not show clear public access on the
11 National Conservation Easement Database or if the addresses on eligible
12 properties were incorrect, we would run a search to determine more
13 information about the resource or to verify its location.

14 f. **Study of aerial photographs and Google Streetview:** We used aerial
15 photographs and Streetview to determine if a conservation area was
16 forested or open, or if there were any public amenities such as a trail head
17 or parking area.

18 g. **Books** used were referenced in Appendix C of the report. One important
19 source was ‘50 Hikes North of the White Mountains’ by Kim Nilsen.
20 Several trails not included in the recreational trail database were identified
21 through use of this publication.

22 This review beyond the databases was important because it allowed us to
23 determine what sites were real and accessible, and to develop an understanding of
24 what type of use or access a resource may possess. This research allowed us to
25 separate private conservation easements that are held as private agricultural
26 farmland from conservation easements with public access for recreational
27 activities, such as Webster Farm. Another benefit of this research was the
28 identification of land used for public recreation that is not included in the
29 Conservation easement database (ConsNH), such as the Slim Baker recreation
30 area. This research also allowed us to identify points not included in any
31 database, such as North Mountain Overlook in Pawtuckaway State Park.

1 **Q. Other parties have taken a different approach to defining the public’s “legal**
2 **right of access” as contained in the definition of “scenic resources”. Please explain your**
3 **understanding of the public’s “legal right of access”?**

4 A. The NHSEC rules do not define “legal right of access.” The Project VIA
5 considered public access as having a way to both physically and legally access a property,
6 consistent with prior visual impact assessments submitted to the NHSEC. Through the research
7 described above, we were able to determine the accessibility of the public to a specific resource
8 on a site-by-site basis.

9 1. **Conservation lands:** National Conservation Easement Database provides
10 information on ownership and access. In addition, we used the resources described in the
11 previous response, such as examination of aerial photographs, use of Google Streetview,
12 field work, and internet search tools to determine public access.

13 2. **Waterbodies:** We used the Official List of Public Waters published by the
14 NHDES Water Division to identify all water features (lakes, ponds, and rivers). The
15 determination of public access to each waterbody was based on the NHFGD ‘Public-
16 access Boating and Fishing’ website. ([http://www.wildlife.state.nh.us/access/access-](http://www.wildlife.state.nh.us/access/access-sites.html)
17 [sites.html](http://www.wildlife.state.nh.us/access/access-sites.html)). All public access points identified by the State are listed in this table. Those
18 water features with known access point were considered publicly accessible.

19 3. **Scenic Roads and Byways:** It is assumed that all roads designated as scenic roads
20 or byways are publicly accessible.

21 4. **Trails** (recreational trail and snow mobile): We assumed trails on publicly held
22 land are public. Trails classified as “unknown trail” that were not present on a
23 conservation easements or identified through the research described above were not
24 included as publicly accessible scenic resources.

25 5. **Historic Locations:** Historic sites listed as homes, farms, homesteads, and camps
26 were considered to be private properties, not accessible by the general public. Remaining
27 historic locations with public access were typically cemeteries, open spaces, bridges, and
28 public buildings.

29 6. **Parks and Recreation Areas** (local and state): All parks and recreation areas
30 were considered to have public access. Trail maps and fieldwork were used to determine
31 areas of public accessibility.

1 **Q. Have you addressed the criticism raised by, TJ Boyle, on the adequacy of**
2 **your assessment of the potential visual effects on eligible historic sites out to 10 miles from**
3 **the Project?**

4 A. Yes. TJ Boyle asserts that the Project VIA did not adequately assess historic sites
5 that are “eligible for inclusion in the National Register of Historic Places (“National Register”)
6 maintained by the Secretary of the Interior” as the term “historic sites” are defined by Site
7 102.23. To respond to this claim—while an Applicant has never been required to conduct such
8 an assessment in conjunction with a visual impact assessment in prior NHSEC proceedings—the
9 Applicants contacted NHDHR to determine whether it maintains a list of historic sites that have
10 been deemed eligible for inclusion on the National Register. NHDHR does in fact maintain a
11 database that includes historic sites that have been deemed eligible for listing on the National
12 Register—the Applicants were also unaware that this unpublished data base existed. NHDHR
13 subsequently provided the Applicants with a database of over 2,000 properties within the 106
14 towns that fall within the 10-mile Project APE that are either state or federally listed or have
15 been determined eligible for listing by NHDHR or determined not eligible.

16 Upon receipt of this database, the Applicants removed those properties from the list that
17 were already on the National Register because the Project VIA already reviewed those specific
18 sites. The Applicants eliminated eligible sites that were reasonably assumed to be private
19 residences or farms, as those resources would not meet the definition of “scenic resource.” We
20 then attempted to georeference the remaining properties. Due to the inaccuracies in the
21 NHDHR’s locational information, we were able to locate and map 265 properties, which allowed
22 us to undertake an assessment of potential visual effect.

23 We understand that NHDR is continually updating the database with new properties as
24 they are determined eligible. After receiving the database downloaded from NHDHR, the
25 Applicant’s cultural resources coordinator provided us with a list of additional sites that had
26 subsequently been determined eligible for the National Register relating to this Project.

27 **Q. How did you winnow down the list and determine which eligible historic sites**
28 **qualified as scenic resources?**

29 A. The winnowing process of the NHDHR database was based on the following
30 steps:

- 1 1. Duplicate sites were removed. Several sites are listed twice because they are
2 eligible for both the State and National Registers.
- 3 2. Sites located in towns beyond 10 miles from the aboveground section of the
4 Project were removed.
- 5 3. Sites were removed from the database that were listed as ‘Not evaluated for
6 individual eligibility’ or ‘Not eligible for NR’ or ‘more information needed’ or those
7 resources not yet 50 years old.
- 8 4. Sites that were named as farms, houses, or homesteads were removed from the list
9 because they were considered to be private residences, not meeting the requirement of
10 public accessibility.
- 11 5. This winnowing process left a total of 344 properties to locate and map in a
12 geodatabase. Many sites did not have accurate addresses or had no addresses at all. The
13 inaccuracy of this database was identified by Tanya Krajcik at NHDHR in an August 19,
14 2016 email to Megan Turner at Heritage Landscapes (document found in discovery
15 process). We devoted a considerable amount of time to each eligible historic site in an
16 attempt to locate as many as possible. Research included Google searches and
17 exploration through Google Street view to accurately locate as many as possible. We
18 were able to locate and map 279 sites from the NHDHR database.
- 19 6. There are properties currently under review by the NHDHR as part of the Section
20 106 process that are not yet listed in the NHDHR database. As of the date of this written
21 testimony, we received a list of resources that have recently been determined as eligible
22 for the National Register. At the time of the filing of this testimony, we identified 3
23 publicly accessible eligible historic sites that were not included in the NHDHR database.
- 24 7. In total, we were able to map 282 sites. We determined which sites were located
25 in the 10-mile APVI, based on the computer-based visibility analysis completed by the
26 Applicant. A total of 30 properties were included in the viewshed area within 10 miles.
- 27 8. Of the 30 properties, five sites were already listed as scenic resources in the
28 Project VIA; one site was counted twice as a duplicate; three sites were found to no
29 longer exist; and one site was determined to be a private dwelling, not accessible by the
30 public. This left 21 publicly accessible eligible historic sites within the APVI that we
31 located in the NHDHR database.

1 More information is provided in the Supplemental Report, Attachment A.

2 **C. SCENIC SIGNIFICANCE**

3 **Q. During the discovery process and in pre-filed testimony submitted by TJ**

4 **Boyle and certain interveners, the Project VIA has been critiqued for using a filtration**
5 **method not authorized by the NHSEC rules. Please clarify the filtration method used in**
6 **the Project VIA and why it was used to determine which scenic resources to evaluate.**

7 A. We utilized a filtration method to determine which scenic resources would benefit
8 from a detailed visual impact assessment. Our initial identification of scenic resources exceeded
9 over 500 individual resources. Our subsequent analysis conducted in February 2016 to comply
10 with the new NHSEC rules identified an additional 97 resources and our further analysis to
11 respond to critiques in April 2017 identified an additional 38 resources. In order to focus our
12 analysis on the resources with the greatest significance, we rated each resource based on scenic
13 significance. As described in the Methodology section in the Project VIA, scenic significance
14 ratings were based on ratings for cultural value and visual quality for each scenic resource. The
15 two ratings were combined in an equally weighted matrix to obtain a composite rating of Scenic
16 Significance. The results provided a measure of the overall significance of each resource by
17 considering inherent scenic qualities and the value placed upon these resources by the public.
18 Those resources with at least a medium scenic significance rating were further evaluated for
19 visual impact.

20 Our methodology in determining Scenic Significance was to first assign a cultural value
21 to each resource. In conducting our fieldwork, we visited scenic resources of all cultural value
22 levels. All scenic resources with at least a medium cultural significance rating and potential
23 visibility were visited and formally evaluated for scenic quality. Scenic resources with a low
24 cultural value score were visited and photographed as well, however a complete Scenic Quality
25 assessment was not completed for all low cultural value resources because a rating of high scenic
26 quality would have been required to complete an individual visual impact assessment.

27 The definition we provided for High Scenic Quality includes “areas where landforms,
28 vegetation patterns, water bodies, rock formations, development patterns, or combinations of
29 these elements are of unusual or outstanding visual quality” (p. 11 of report). These generally
30 include areas with dramatic topography, expansive views, or waterbodies with complex
31 shorelines. We found through our extensive fieldwork and professional experience that scenic

1 resources with a low cultural value rating generally do not possess a high scenic quality by these
2 standards. There is an inherent correlation between scenic quality and cultural value, as the most
3 scenic locations tend to be recognized as such through their classification as resources with
4 national, state, or regional significance.

5 The single exception we found to this correlation between scenic quality and cultural
6 value was Diamond Pond Road. Diamond Pond Road is a local road with access to Coleman
7 State Park and the former location of one of the on-road portions of the Cohos Trail. We
8 classified this road as having low cultural value. Following a visit to the site, we determined that
9 one section of the road with an expansive view of the Project also had a high scenic quality. We
10 thus completed a Scenic Quality analysis and individual Visual Impact Assessment. This was
11 the only site we found through our fieldwork to have a low cultural value and high scenic
12 quality.

13 **Q. Please explain the origin of the scenic significance rating system and why it is**
14 **appropriate to use within the NHSEC rules:**

15 A. Site 301.14(a)(2) specifically provides that the NHSEC must consider the
16 “significance of the affected scenic resource.” For our analysis, and in our professional
17 experience, a local resource does not rise to the same level of significance as a highly-used
18 tourist destination of State-wide or National Significance such as the Rocks Estate, Weeks State
19 Park, or views of the Presidential Range from a designated scenic byway. While this filtration
20 system assisted us in determining which scenic resources required an individual impact
21 assessment—and similar methods have been used in prior NHSEC proceedings—our system
22 should also assist the NHSEC in their determination of significance. Moreover, as discussed
23 previously and to respond to the criticisms raised by parties in this docket, we completed an
24 additional analysis of scenic resources with low cultural value ratings, which is described in our
25 Supplemental Report, Attachment A.

1 **D. USER EXPECTATION AND CONTINUED USE AND ENJOYMENT**

2 **Q. During the discovery process and in the pre-filed testimony, many parties**
3 **have suggested that TJD&A should have conducted intercept surveys for the Project. Are**
4 **intercept surveys the only way to obtain information on user expectation, viewer**
5 **expectation, extent and nature and direction of use, and continued use enjoyment?**

6 A. While intercept surveys are a valid way to obtain information on viewer use
7 patterns, they are not the only procedure that is used by professionals in developing visual impact
8 assessments. An overview of professionally accepted methodologies is provided in the
9 publication “Evaluation of Methodologies for Visual Impact Assessments” that was prepared for
10 the Transportation Research Board of the National Academies (2013) by a group of researchers,
11 including James F. Palmer, currently with TJ Boyle. In this comprehensive review of current
12 VIA procedures, as practiced by departments of transportation in the United States and other
13 countries, the issue of public involvement in the VIA process is summarized by the following:

14 *“Each of the reviewed VIA procedures is based primarily on expert or professional*
15 *assessment of intrinsic landscape attributes thought to compose scenic quality. However, the*
16 *public is represented in these procedures in several ways.*

17 *The first way is that experts make judgments about public sensitivities as part of their*
18 *analysis. Judgments are based on assumptions about the importance of different types of places*
19 *(e.g., Interstate Highways are more important than local roads) and different groups’ concerns*
20 *for scenery (e.g., scenery is more important to people fishing than to people commuting).*

21 *The second way is that the public participates by submitting comments and testimony*
22 *during the review period or through litigation after a decision is made. This is how the public*
23 *can participate if they believe that their interests have not been represented in a decision.*
24 *Project costs can escalate dramatically through this form of public involvement, due to direct*
25 *legal fees, increasing costs of development over time, and failure to address the original*
26 *problem.*

27 *The third way is to actively involve the public as a partner during the planning and*
28 *design process through information meetings, workshops, and/or surveys. This approach moves*
29 *beyond the assumptions that public perceptions can be judged by experts, or based on*
30 *assumptions about the importance of scenery in different places or to different groups. This third*
31 *approach requires experts who focus on learning about public perceptions as a basis for finding*

1 *alternatives that are responsive to the public...*

2 *Some of the VIA procedures indicate that public involvement is important, but it is clearly*
3 *peripheral to the core process of conducting a VIA. In most cases it is difficult to see how the*
4 *public could significantly influence a VIA if one followed the process as written.” (P. 25)*

5 *“All of the procedures rely primarily **on professional judgment**, applying a system of*
6 *expert-determined criteria. In every procedure, a VIA can be completed **solely using expert***
7 ***assessments**. While these procedures acknowledge that different types of people engaged in*
8 *different types of activities may have different landscape perceptions and experiences, experts*
9 *still determine the level of concern or sensitivity, and there is no requirement to contact people*
10 *about their values or experience related to a particular place or potential project impact. The*
11 *assumption is that scenery is more important to people engaged in recreational activities that*
12 *require a natural setting (e.g., backpacking, hiking, fishing, canoeing, etc.) as compared to*
13 *activities that do not (e.g., commuting to work, playing a field sport, mowing the lawn, etc.). In*
14 *addition, it is assumed that places designated as historical sites, biological reserves, parks, and*
15 *so forth have higher scenic value and that nationally designated places are more sensitive than*
16 *locally designated ones. (Emphasis added.)*

17 *Where procedures for public involvement are discussed, these procedures are not*
18 *integral and are not required to complete the VIA. Where there is an apparent conflict between*
19 *expert and public values, experts are charged with their reconciliation.” (P. 26)*

20 The Project VIA relies primarily in the first category, namely, the use of experienced
21 professionals to make professional judgment regarding public sensitivities based upon research
22 and their experience in similar situations. This has been TJD&A’s standard practice for the
23 majority of our visual impact assessments over the past three decades. This includes the work
24 that we have completed for large-scale electrical transmission projects—such as the Maine
25 Power Reliability Program (“MPRP”), the 345 kV transmission tie line into Canada for Bangor
26 Hydro, and the generator lead line for the Oakfield wind project in Maine—as well as dozens of
27 other projects involving highways, liquefied natural gas facilities, community development
28 projects, electrical substations, and smaller transmission lines.

29 The public also participated, and continues to participate in multiple ways described in
30 the second and third categories, e.g., through public meetings, submission of written material to
31 the NHSEC, the intervener process, and working with CFP.

1 **Q. What studies have been done relative to the effect of transmission lines on**
2 **viewer expectation and continued use enjoyment?**

3 A. There seems to be broad agreement that there have been no studies that examine
4 the possible effects that transmission lines have had on the continuous use and enjoyment of
5 scenic resources and recreational facilities. Please also refer to page 3 of the Pre-Filed Direct
6 Testimony of Mitch Nichols, dated October 16, 2015.

7 The 2015 DEIS, issued by the USDOE, evaluated the possible effects of the Project and
8 tourism and came to the following conclusion: *“No authoritative, peer-reviewed studies were*
9 *identified that address impacts to tourism as a result of the implementation of transmission lines,*
10 *and DOE did not attempt to develop such a study. An in-depth study of this nature would require*
11 *pre- and post-evaluation of similar projects located in similar settings over a multi-year period*
12 *in order to document the potential impacts of transmission lines on tourism. Additionally, as*
13 *discussed above, tourism is primarily responsive to macroeconomic conditions such as the*
14 *stability of the national economy or gasoline prices. Inclement weather also affects tourism on a*
15 *broad scale. As a result, these conditions could skew any impacts identified in a transmission*
16 *line tourism study, were one to be designed. For these reasons, a specific study of this topic, for*
17 *this project, was determined to be impractical. Thus, this analysis is based on anecdotal*
18 *evidence only.”* (p. 4-13.)

19 TJ Boyle’s VIA reached the same conclusion: *“There is relatively little research about*
20 *the relationship between scenery and recreation (or other) activities. Even less is known about*
21 *how visual impact might affect a typical viewer’s expectations, enjoyment and future use of a*
22 *scenic resource.”* (p. 82.)

23 To the extent that it may be a proxy for an electrical transmission project, it is instructive
24 to review the results of a recreational users survey of Maine’s Baskahegan Lake to determine if
25 the presence of the Stetson Mountain Wind Farm influences visitation to and enjoyment of the
26 lake. The Stetson wind project consists of 38 turbines, each 389 feet in height, along a 7-mile
27 ridgeline overlooking Baskahegan Lake in Washington County. The project, which is visible
28 from 90% of the lake, was approved by the Maine Land Use Regulation Commission in 2008.
29 FirstWind, the developers of the Stetson Mountain Wind Farm, commissioned the survey to
30 determine what affect the presence of the turbines have on continued use and enjoyment of the

1 lake. While the primary use of the lake is fishing, interviewees also mentioned scenery,
2 quietness, and camping as important attributes.

3 Results of the survey indicate that the Stetson Mountain Wind Farm has not had a
4 negative affect on visitation or enjoyment of the lake. Participants also noted that the lake usage,
5 primarily for fishing and boating, had either remained the same or had slightly increased
6 following the construction of the wind farm. Everyone interviewed said they were likely to
7 return to visit the lake in the future. Eighty-six percent of respondents are repeat visitors, who
8 have been visiting Baskahegan Lake for 21 years, and who return about 17 times each year.
9 They were visiting the lake prior to construction of the Stetson Wind Farm and they will
10 continue to visit in its presence. Eighty-five percent of respondents were aware of the wind farm
11 prior to visiting the lake and most (81%) said it has no effect or a positive effect on the scenic
12 value of Baskahegan Lake. Almost all respondents (93%) reported that the wind farm has no
13 effect or a positive effect on the overall quality of their recreational experience. In fact, 74%
14 gave the lake the highest scenic rating, and 93% rated the scenic quality of Baskahegan Lake as
15 better than the typical scenic value. These results indicate that the presence of the wind farm
16 does not negatively influence respondents' recreation experiences, nor does it detract negatively
17 from the scenic value of views around Baskahegan Lake.¹

18 **E. REPRESENTATIVE KEY OBSERVATION POINTS**

19 **Q. Parties in this docket have raised concerns about your assessment of Key**
20 **Observation Points (“KOP”). What is your understanding of Key Observation Points as**
21 **required in the NHSEC Rules?**

22 A. Site 102.25 defines “Key observation point” as “a viewpoint that receives regular
23 public use and from which the proposed facility would be prominently visible.” Key to the
24 understanding of what constitutes a KOP is the meaning of the word “observation.” In this
25 context, an observation is the act of carefully watching something; it is not a casual glance or a
26 brief encounter but rather a deliberate action to understand more about the physical landscape.
27 Indeed, the definition of “observation” according to the Merriam Webster Dictionary is “the act
28 of *careful* watching and listening or the activity of paying *close* attention to someone or
29 something in order to get information”; the definition of “observe” is to watch *carefully*

¹ Baskahegan Lake Users Survey. Prepared for First Wind. Kleinschmidt. Pittsfield, ME. October 2012

1 especially with attention to details or behavior for the purpose of arriving at a judgment.

2 KOPs are places where a project is likely to be observed on a regular basis by the general
3 public, a place where people can be expected to be seen. Prominent locations within scenic
4 resources, such as mountaintop trails, historic sites with a strong connection to the landscape,
5 and scenic byways are often used as KOP's. They should be representative of locations where
6 people are expected to congregate and enjoy the scenery.

7 The other defining element of a KOP is that a project should be prominently visible so
8 reviewers can understand the potential visual impact on the scenic resource. While the VIA
9 should include KOPs that show the worst case scenario (locations where the most number of
10 structures are seen or where they are most prominent in the landscape), other KOPs can be used
11 that show representative views throughout the study area.

12 The Project VIA selected KOPs from a variety of different viewpoints within the
13 foreground, middleground, and background viewing distances. These were selected to illustrate
14 the variety of viewing conditions, scenic resources, observer locations, viewing distances,
15 structure types, and other pertinent information about the Project. Views were provided in both
16 leaf-off and leaf-on conditions.

17 **Q. TJ Boyle asserts that the NHSEC requires a visual impact assessment to**
18 **include photosimulations from KOPs that are within the transmission corridor. Do you**
19 **agree?**

20 A. No. We disagree with the assertion by TJ Boyle that KOPs in the immediate
21 foreground (i.e., within the transmission corridor) are necessary. We recognize that the draft EIS
22 included a number of these types of photosimulations to illustrate the change within the corridor.
23 However, while the transmission structures will likely be visible within transmission corridors,
24 they do not meet the definition of a KOP. With few exceptions they do not receive regular
25 public use. Motorists, cyclist, and pedestrians may pass by them with regularity, but that should
26 not be equated with the type of used to be expected at a recognized scenic resource.
27 Transmission corridors are not places where people go to observe the landscape in the same way
28 that they may visit a scenic overlook.

1 **Q. TJ Boyle referenced your emphasis on road crossings in Central Maine**
2 **Power’s MPRP project. Can you explain why road crossings were evaluated in MPRP and**
3 **not in the Project VIA?**

4 A. TJ Boyle notes that the work that we did for the MPRP included a number of
5 photosimulations taken from roadways looking down transmission corridors. The intent of the
6 photosimulations for MPRP was to demonstrate to the Maine Department of Environmental
7 Protection (“MEDEP”) the visual quality at road crossings, and to determine where screening
8 should be installed. These images were not considered KOP’s but rather were provided to assist
9 the MEDEP in the evaluation of the roadside screening program. Many additional
10 photosimulations were prepared from key observation points to show the effect that the project
11 would have on scenic resources throughout the 437 miles that the project passed through.

12 **F. AVOIDANCE, MINIMIZATION, AND MITIGATION**

13 **Q. Has the Project considered and assessed additional minimization, avoidance,**
14 **and/or mitigation measures recommended by the parties to reduce potential impacts on**
15 **aesthetics since filing the Application in October 2015?**

16 A. Yes. TJ Boyle, acting as a reviewer for CFP, offered a number of suggestions
17 regarding modifications to the Project design that they felt should be considered to further avoid,
18 minimize, and/or mitigate potential impacts from the Project. These included suggestions on
19 structure placement, reducing structure heights, materials used for the structures, vegetative
20 screening, and treatment of the conductors to reduce reflectivity. The Applicants reviewed all
21 these measures, especially as they may affect the 19 locations that TJ Boyle determined would
22 have an unreasonable adverse effect.

23 As part of the analysis of these possible mitigation measures, the Applicants looked at
24 specific locations to determine whether adjustments could be made, and if so, what the
25 implications may be for other components of the Project. While it is easy to suggest that the
26 Project would benefit from relocating specific structures, a careful consideration of siting
27 parameters is necessary to avoid unintended consequences. For example, while moving a
28 structure back away from the roadway may make it less visible to passing motorists, this may
29 require a taller structure that would make it more visible in the surrounding landscape. Likewise,
30 all the structures have been sited to avoid sensitive environmental resources, such as wetlands

1 and vernal pools. Many of the structures are limited in that respect, unless the permitting
2 agencies are willing to increase the amount of impacts to these types of resources.

3 **Q. What additional minimization, avoidance, and/or mitigation measures have**
4 **the parties suggested and the Applicants considered?**

5 A. The following avoidance, minimization, and/or mitigation measures suggested by
6 the parties were considered by the Applicants:

- 7 • **The use of non-specular conductors.** The Applicants considered using non-
8 specular conductors (wire cables) in certain areas, including those identified by TJ Boyle,
9 to minimize reflectivity and decrease color contrast between the conductors and the
10 immediate background. Non-specular conductors are treated with either a chemical or
11 mechanical abrasion process to effectively reduce the amount of surface reflectivity
12 under certain lighting conditions. Please refer to the Supplemental Pre-filed Testimony
13 of Kenneth Bowes for a further discussion on the use of non-specular cables.
- 14 • **Roadside plantings and screenings.** TJ Boyle recommended several areas where
15 roadside plantings could create a visual buffer and serve as an effective mitigation
16 measure to reduce views down the transmission corridor and to screen transition stations
17 and other project elements. The Project VIA recognizes the value of plantings to
18 minimize views and to screen certain components of the Project. It also recognizes that
19 the Applicants do not own the underlying land and the installation and maintenance of
20 any plantings or other screening devices would have to be done with the full approval of
21 the underlying landowner. The Applicants are, however, willing to work with
22 landowners in those situations that have been recommended by TJ Boyle to install
23 plantings or implement other measures to minimize Project visibility. Please refer to the
24 Supplemental Pre-filed Testimony of Kenneth Bowes for a further discussion on roadside
25 plantings and screenings.
- 26 • **Change in structure type: lattice structures to monopole.** TJ Boyle
27 recommended several areas where lattice structures should be replaced with weathering
28 steel monopole structures, primarily to reduce their visibility from scenic resources.
29 Please refer to the Supplemental Pre-filed Testimony of Kenneth Bowes for a further
30 discussion of such structure modifications.

1 • **Change in structure type: lattice structures to monopole.** TJ Boyle has
2 suggested that lattice structures may be more appropriate in certain situations than the
3 weathering steel monopoles that are currently specified. Please refer to the Supplemental
4 Pre-filed Testimony of Kenneth Bowes for a further discussion of such structure
5 modifications.

6 • **Relocation of specific structures.** To address concerns relating to the location of
7 some of the structures relative to the edge of roadways the Applicants may consider
8 making certain structure adjustments to minimize impacts. Please refer to the
9 Supplemental Pre-filed Testimony of Kenneth Bowes at for a further discussion of such
10 structure relocations and potential locations. Such modifications would result in some
11 structures being less visible to passing motorists and others using the roads. However, in
12 some instances, the modification of structure locations may result in a slight increase in
13 the height of adjacent structures or some minor impacts (both temporary and permanent)
14 to wetlands in the immediate vicinity.

15 **Q. What additional minimization, avoidance, and/or mitigation measures were**
16 **considered but rejected by the Applicant?**

17 A. The Applicants considered additional minimization, avoidance, and mitigation
18 measures that were suggested by TJ Boyle, D&F, and other participating parties in this docket.
19 The following is a list of those measures:

20 • **Application of Natina.** During the technical hearing and in their visual impact
21 assessment, TJ Boyle suggested that the Applicants investigate the use of Natina as a
22 possible treatment for the lattice structures to reduce color contrast and to make them
23 blend into the background vegetation. The Applicants have investigated the possibility of
24 using Natina for this Project. As discussed in the Supplemental Pre-Filed Testimony of
25 Kenneth Bowes, the Applicants determined that such a modification is not practicable.

26 • **Changes to corridor alignment.** In several locations, especially where the
27 transmission line is located on hillsides, TJ Boyle recommended that alternative corridor
28 alignments be investigated to minimize Project views. However, the Applicants' ability
29 to make changes to the alignment was limited by the terms of the original right-of-way
30 agreement and their ability, or lack thereof, to acquire additional land outside the right-

1 of-way. Realignment is also constricted in many locations by resource and legal
2 considerations, such as deer wintering areas, wetlands, and land management plans.
3 Please refer to the Supplemental Pre-Filed Testimony of Kenneth Bowes.

4 • **Reductions in structure height and altering structure configuration.** The
5 Applicants considered reducing the height or the configuration of specific structures in
6 several locations to minimize Project visibility. However, this proved not to be
7 practicable as discussed in the Supplemental Pre-Filed Testimony of Kenneth Bowes.

8 • **Use of wood structures.** Eversource has standardized design protocols to use
9 steel poles for their transmission structures across its operating region. Wood poles are
10 generally not a practicable alternative for transmission line structures. Please refer to the
11 Pre-filed Testimony of Kenneth Bowes for a further discussion of why wooden poles are
12 not a viable option for this Project.

13 **IV. REVIEW OF TJ BOYLE REPORT**

14 **Q. Have you reviewed the Visual Impact Assessment Report Prepared by TJ**
15 **Boyle?**

16 A. Yes. We have reviewed and analyzed the TJ Boyle visual impact assessment (“TJ
17 Boyle VIA”) and the pre-filed testimony submitted by Michael Buscher, James Palmer, and
18 Jeremy Owens. We further had an opportunity to question TJ Boyle regarding the contents of
19 the report at a technical session on March 8, 2017.

20 ***A. TJ Boyle Visual Impact Methodology***

21 **Q. Based on your review of TJ Boyle’s work, did you identify any significant**
22 **issues with its visual impact assessment methodology?**

23 A. Yes, we have identified the following significant issues with TJ Boyle’s
24 methodology:

25 1. TJ Boyle’s identification of almost 19,000 scenic resources is over reaching,
26 unreasonable, and not consistent with the NHSEC rules and generally accepted
27 professional standards. Moreover, TJ Boyle suggests that there may be thousands of
28 additional scenic resources that could be added to the list.

29 2. TJ Boyle’s final conclusions regarding unreasonable impacts are not based on a
30 sound methodology. TJ Boyle does not explain why it selected 41 sites to analyze.
31 Further, TJ Boyle’s conclusion that 29 of the selected sites will have unreasonable

1 adverse impacts is not based on the NHSEC rules or generally accepted professional
2 standards (see below).

3 3. TJ Boyle's reliance on static photosimulations is an inappropriate way to assess
4 existing conditions and how the Project may affect the landscape. It is unclear as to how
5 much recent field work was performed for the preparation of the TJ Boyle VIA. Its
6 analyses are often void of context and operate within a vacuum as an academic exercise.

7 4. TJ Boyle's findings of unreasonable adverse impacts relative to mitigation
8 measures show a lack of understanding of the engineering and environmental
9 complexities involved in siting transmission corridors, structures, and related
10 infrastructure. The approach used in its evaluation seems highly academic and lacking an
11 understanding of context.

12 5. The visibility analysis that TJ Boyle relied on as the foundation of its analysis has
13 significant flaws. The Terrain Visibility column in its statistical summary is based upon
14 a bare-earth viewshed map, which greatly exaggerates the number of structures that
15 would be visible from each scenic resource. While these numbers also do not take into
16 account the screening value of trees and buildings, they also do not consider the effect of
17 distance and the limits of human visual acuity, all of which are significant factors in
18 determining visibility.

19 6. The Community Workshops were held and presented in such a way that produced
20 results that exaggerated the accessibility and significance of certain resources.

21 7. TJ Boyle's use of the New Hampshire Lake Study as a way to address continued
22 use and enjoyment is flawed. In relying on this study and the community workshops, it is
23 clear that TJ Boyle has not developed an alternative method for assessing continued use
24 and enjoyment that satisfies the NHSEC rules.

25 8. There is a significant conflict between TJ Boyle's work in the Draft EIS
26 Technical Report versus his analysis for CFP, which raises doubts about the quality and
27 consistency of the work TJ Boyle performed for CFP.

28 9. TJ Boyle's interpretation of the NHSEC rules is overbroad.

29 10. TJ Boyle does not take into account the effect of viewing distances in developing
30 the list of scenic resources. While the NHSEC rules require that a VIA use an area of
31 potential visual impact of 10 miles from a project, there is no recognition of the fact that

1 there is little potential for adverse visual impact for areas that are located 5 or more miles
2 distant from the Project.

3 **Q. Please explain why TJ Boyle’s process of scenic resource identification is**
4 **flawed, overreaching, and not consistent with the NHSEC rules or generally accepted**
5 **professional standards.**

6 A. TJ Boyle’s identification of scenic resources is severely exaggerated and flawed
7 for the following reasons: the methodology relies heavily on a bare-earth visibility analysis to
8 identify scenic resources, the vast majority of which will not have a view of the Project due to
9 existing tree cover or the presence of buildings in the landscape; the methodology incorrectly
10 uses an overreaching and imprecise definition of scenic resources that includes all public roads
11 and many private properties; the identification process excessively double counts the same scenic
12 resource in numerous situations; information from the databases was not thoroughly evaluated;
13 and the methodology does not account for the lack of public access for some resources.

14 1. **Overreliance on Bare Earth Viewshed Mapping:** As previously discussed,
15 using and heavily relying on a bare earth analysis grossly overstates visibility and
16 is inherently unreliable in properly analyzing a project of this scope in the
17 Northeast. TJ Boyle’s overreliance on the bare earth viewshed map is misplaced.

18 2. **Overreaching and imprecise definition of scenic resources:**

19 i. **Public roadways are not in and of themselves “scenic resources.”**

20 While we acknowledge that driving for pleasure is a recreational activity
21 for some people, such use of a public road, by itself, does not make every
22 road in every town a “scenic resource” as defined by the NHSEC’s rules.
23 TJ Boyle’s inclusion of all public roads within 10 miles of the Project is
24 entirely inconsistent with the standard set by the NHSEC rules. Requiring
25 an applicant to classify every road, street, lane, and highway as a scenic
26 resource is in direct contravention of the definition of a “scenic resource.”
27 In over three decades of experience assessing scenic resources, we have
28 never encountered a situation where a public agency requires an inventory
29 of all local roads. In our professional opinion, the common practice (e.g.,
30 in Maine, Vermont, and New York) requires the identification and
31 evaluation of roads that have been officially designated as scenic byways

1 by a local, state, or federal agency.

2 ii. **Assessments of individual road segments are not necessary and simply**
3 **add to the effort required to evaluate and review a project.**

4 Subdividing a linear resource into incremental physical units and calling
5 each a separate scenic resource has no justification in the rules or, for that
6 matter, in accepted professional practice. TJ Boyle included over 12,300
7 individual road segments – i.e., the length of road between intersections -
8 that it claims should be treated as scenic resources. This approach
9 exponentially increases the number of sites that would have to be
10 considered, while not providing significant amount of useful information.
11 The rules call for the evaluation of scenic resources (such as scenic drives)
12 as an entity, not component parts.

13 iii. **Private properties do not qualify as a “scenic resource” because they**
14 **are not publicly accessible.** TJ Boyle’s listing of scenic resources
15 contains many properties that do not qualify as scenic resources because
16 they lack the necessary public access. These include conservation
17 easements (to protect agricultural land where public access would run
18 counter to the intent of the easement), eligible historic properties (such as
19 private homes and farms not open to the public), and certain road
20 segments. For example, of the 12,300 individual road segments identified
21 by TJ Boyle, 3,260 segments were classified as non-public roads. At the
22 March 8, 2017 technical session, TJ Boyle confirmed they did not conduct
23 any research to determine if features they identified as scenic resources
24 were in fact publicly accessible.

25 iv. **Unnamed Brooks and Streams do not qualify as a “Scenic resource”**
26 **since they are not included in the definition in Site 102.45.** For
27 example, in the Town of Stark there are over three dozen brooks and
28 streams are included on the list, most of which do not have a formal name.
29 It is our experience in similar situations that unless the transmission line
30 crosses a stream, there would be no Project views due to the surrounding
31 riparian vegetation.

1 3. **Numerous resources are double counted:** The TJ Boyle VIA double counts
2 numerous scenic resources, either because they fall into different resource categories or
3 because they were subdivided into segments. For example, the Spear's Park trails in
4 Concord are counted 16 times and the Winant Park trails in Concord are counted 20
5 times. This practice greatly exaggerates the actual number of scenic resources within a
6 10-mile radius of the Project. The generally accepted professional practice is to treat
7 linear features, such as scenic byways or named trails, as either one resource and not to
8 count them multiple times, or to subdivide them into physiographic regions that
9 correspond to its visual identity. Scenic inventories will usually identify significant
10 viewpoints along linear resources, but will not evaluate the more common areas where
11 there is less visual interest or no project views.

12 4. **No research into public access or verification of scenic resource existence.**

13 The resources that came from the GRANIT database were accepted without further
14 evaluation. TJ Boyle did not conduct any research or field visits to determine whether a
15 scenic resource is publicly accessible or even if the resource still exists.

16 **Q. Please explain why TJ Boyle's final conclusions are based on an unsound**
17 **methodology.**

18 A. TJ Boyle does not explain how it selected and assessed 41 separate locations
19 along the Project route. TJ Boyle does not evaluate the scenic quality or significance of the
20 nearly 19,000 resources to determine which should receive a full assessment of potential
21 impacts. The locations evaluated in the Appendix F Addendum seem to have been chosen at
22 random, based perhaps on where photosimulations had been prepared. Site 301.14(a)(2) states
23 the NHSEC must consider the "significance of the affected scenic resource." The Project VIA
24 specifically relies on a scenic filtration method; the TJ Boyle VIA does not adequately assess the
25 significance of an affected resource, which is an underlying fault in its analysis. A relatively
26 little used local resource should generally not rise to the same level of significance as a heavily
27 visited tourist destination.

28 TJ Boyle's conclusion that 29 of the 41 locations result in unreasonable adverse effects is
29 not based on NHSEC rules. TJ Boyle often reaches its conclusions by citing a lack of avoidance,
30 minimization, and mitigation measures.

1 Appendix F provides Scenic Resource Evaluation Forms that show TJ Boyle's evaluation
2 for each of the required factors in Site 301.0 5(b)(6) and Site 301.14. What is not clear,
3 however, is how the final determination was made as to whether the Project would result in an
4 unreasonable adverse effect. For example, for the evaluation of the entrance to Coleman State
5 Park, the evaluation form concluded that the potential visual impact would be medium, and the
6 ratings for the 301.14 factors was mostly low to medium. However, the evaluation concluded
7 that the Project would result in an unreasonable adverse effect. The discussion and conclusion
8 included on the form is not supported by the evaluation ratings.

9 **Q. Please explain why TJ Boyle's reliance on static photosimulations is an**
10 **inappropriate way to assess the visual impact of the landscape.**

11 A. It is very important to provide reviewers a sense of the context of the
12 photosimulation so they can make an informed decision on the potential impact. The NHSEC
13 rules require that the VIA include a narrative and graphic description of the physiographic,
14 historical and cultural features of the landscape surrounding the proposed facility to provide a
15 context for evaluating any visual impacts. The Project VIA provides maps, context photographs,
16 and other information to address this requirement. The TJ Boyle VIA lacks this type of graphic
17 material that will help the viewer understand the context and complexities of each of the sites
18 that have been evaluated.

19 **Q. Please explain how TJ Boyle's findings of unreasonable adverse impacts**
20 **relative to mitigation disregard engineering and other restrictions.**

21 A. TJ Boyle provides many recommendations for alternative mitigation measures to
22 reduce adverse impacts of the Project. While many of these ideas are valid in the abstract, they
23 do not reflect the realities of working in an existing corridor in a rolling to mountainous
24 landscape where there are few if any alternatives. As we worked with the design team, we were
25 struck by the amount of information that was considered in the placement of each transmission
26 structure. Many alternative locations were considered to arrive at the present alignment, taking
27 into account factors such as wetlands, significant wildlife habitats, legal restrictions on the use of
28 the right-of-way, abutting land-use, as well as the potential for adverse visual impacts.

29 It is a relatively easy matter to devise or invent ways to redesign a project of this
30 magnitude; however, each recommendation must be thoroughly evaluated in terms of what
31 additional impacts or unintended consequences may result. For example, to suggest that the

1 corridor should be wider does not take into consideration one of the major objectives of the
2 Project, namely to minimize adverse effects on abutting properties and on the natural
3 environment. Similarly, the suggestion that portions of the line be put underground (an idea
4 advanced with photosimulations for both Loudon Road and Turtle Pond in Concord in Appendix
5 E) entirely ignores the need for additional transition stations that could have adverse effects on
6 local neighborhoods and communities, nor does the suggestion take into account the cost of
7 additional underground and whether such a re-design is economically feasible. Calling for
8 structures to be significantly lower in height (as was recommended for the area in the vicinity of
9 the Mountain View Grand Resort) does not consider the potential for increased impacts to
10 wetlands and other natural resources that would result from the additional number of structures
11 needed to lower the heights of all structures.

12 **Q. Please explain the inaccuracies in TJ Boyle’s visibility analysis.**

13 A. In addition to its overreliance on bare-earth viewshed mapping, the TJ Boyle’s
14 visibility analysis also has several other flaws in their viewshed analysis: (1) the clipping of high
15 quality data and substituted with lesser quality data; (2) the use of existing structures located
16 outside of the project corridor; and (3) the reliance on the less appropriate of two available land
17 cover datasets. These three points are described below:

18 **A. Clipping Intermap Data to a consistent 1.5 mile buffer:** TJ Boyle reduced the area
19 of high quality InterMap Data by unnecessarily clipping the data to a consistent 1.5-mile buffer.
20 The InterMap data is available in tiles covering the project corridor, extending 1.5 to 2.7 miles
21 from the corridor. This means that in some locations, the data was clipped by nearly 50 percent
22 and the Digital Surface Model (DSM) was substituted with a generic 40-foot tree height based on
23 nationally derived landcover data. It is not generally accepted practice to remove more accurate
24 data where available and substitute for less accurate data. On page 16 of TJ Boyle’s report, they
25 incorrectly assumed the Applicants limited the same data to this boundary. When asked why this
26 clipping was done at the March 8, 2017 technical session, Dr. Palmer indicated that this was
27 done for consistency. There is no technical reason to maintain a consistent line 1.5 miles from
28 the Project. The effect of this is to reduce the quality of the data beyond 1.5 miles from the
29 Project.

30 **B. Use of existing structures located outside of the project corridor.** In TJ Boyle’s
31 vegetated viewshed mapping, they included existing transmission structures from an above

1 ground corridor that is not part of the Project (a 52-mile line between Bethlehem and
2 Bridgewater). This means that the viewshed area in their vegetated analysis included features
3 not proposed or included in the Project. The effect of this error is an increase in the area of
4 potential visibility and an increase in the number of structures that would be visible.

5 **C. Use of National Land Cover data (“NLCD”) from 2011 to determine**
6 **vegetation height beyond 1.5 miles from the Project.** Beyond the 1.5-mile clipped boundary
7 of the InterMap data, TJ Boyle relied on the NCLD to assign land cover classifications for the
8 development of a DSM. In contrast, the Applicant relied on the New Hampshire Land Cover
9 Data (“NHLCD”). TJ Boyle’s use of the national data, as opposed to the New Hampshire data,
10 provided less accurate data from which to develop the DSM. The NHLCD is a more appropriate
11 dataset since it was developed specifically for the state of New Hampshire and is focused
12 primarily on forest and agricultural classifications. The NLCD, on the other hand, covers the
13 entire country, making the data less specific to the New Hampshire landscape and the data
14 verification less accurate. An example of the difference between these datasets is in the number
15 of classifications in each of the datasets: The NHLCD has 23 classifications, which includes 9
16 classifications of forested areas (including forested wetlands). By contrast, the NLCD is
17 designed to work nationwide and includes 16 land cover types (three of which are only found in
18 Alaska), with only three classifications of forest types. In a heavily forested state such as New
19 Hampshire, the locally derived data is a better choice for this type of application. Another
20 important aspect of the NHLCD is that it accounts for roads within forested areas and urban
21 landscapes, offering the ability to determine visibility along roads and within developed areas
22 (see the Supplemental Report for more information). TJ Boyle attempts to correct for this by
23 assigning a height of 0 feet to all developed areas. However, this does not account for rural
24 roadways through forested areas and overstates the impact on developed areas.

25 **Q. Were Counsel for the Public’s Community Workshops held and presented in**
26 **a way that produced biased results?**

27 A. Yes. The community workshops hosted by Counsel for the Public were held and
28 presented in a way that produced biased results for the following reasons:

29 1. Attendees may have participated in the workshops with an understanding that this
30 was an opportunity to provide information that could be used to oppose the Project. The
31 press release included the following statement: *Community members are invited to*

1 *participate in structured workshops to identify places and areas of beauty, use, history,*
2 *and tradition that are within ten miles of the proposed Northern Pass transmission*
3 *corridor that may be affected by the NP Project. There was no mention made about the*
4 *NHSEC definition of scenic resources or the need to restrict nominations to publicly*
5 *accessible places.*

6 2. There is no information provided regarding how participants were made aware of
7 the community workshops or whether the participants were a representative cross-section
8 of the entire community. It is likely that those who are opposed to the Project may have
9 been more motivated to attend than those who were either supporters or neutral.

10 3. The forms given out at the workshops were inherently biased in the wording of
11 two of the questions regarding selections of places to visit and enjoyment of activities.

12 4. The question on the form regarding scenic quality did not include any standard
13 scale of comparison for participants to benchmark its responses. The results showed a
14 disproportionate number of people considered the resources as having the highest scenic
15 value in New Hampshire.

16 5. The information provided by TJ Boyle did not include a script from the
17 workshops to establish that the workshops were conducted in an objective manner.

18 6. The workshop did not collect information from the individuals who participated.
19 It would have been very informative to ask the participants whether they supported, were
20 neutral, or opposed the Project; where they reside; and whether they were visitors or
21 year-round residents. TJ Boyle did not provide information summarizing the views and
22 beliefs of the participants; therefore, there is no manner to measure the level of
23 objectivity of workshop participants.

24 **Q. Is the information collected at the public workshops useful to make an**
25 **accurate determination of scenic resources?**

26 A. No. The information collected at the public workshops cannot be used to
27 accurately identify scenic resources for the following reasons:

- 28 • **No verification of scenic resources.** There is no indication that the participants
29 in the community workshops were told to limit its nominations to sites that are publicly
30 accessible, or met any of the other criteria in the NHSEC Rules that define scenic
31 resources. As a result, there are many resources listed that are on private property to

1 which it is doubtful that the general public has legal access. For example: John Wedick
2 Geological Conservation and Study Area in Bethlehem; private homes (e.g., 3237 River
3 Road in Bridgewater, the Johnson Private Home in Columbia); Private clubs (Concord
4 Country Club); industrial sites (Swenson Granite Quarry in Concord); wildlife resource
5 (heron rookery on Nottingham Road in Deerfield); Paleoindian Area in Jefferson; Percy
6 Summer Club in Stark; Potters Ledge Mountain overlook in Stark; site of future senior
7 housing in Whitefield.

8 • **Double counting of scenic resources already identified through database**
9 **process.** An informal review of one community (Stark) demonstrated that the majority of
10 the resources that were identified by participants in the community workshop had already
11 been included on TJ Boyle’s list, though often by a different name.

12 • **Lack of accurate locational data.** While the locations of some of the resources
13 seem to be quite accurate, many of them are either inaccurate or highly generalized,
14 making it very difficult to understand the intent of the person making the nomination.
15 The data is presented as simple dots on the viewshed maps for each community.

16 **Q. For the scenic resources reviewed in depth by TJ Boyle, are TJ Boyle’s**
17 **conclusions accurate?**

18 A. No. The conclusions reached by TJ Boyle, for the 29 resources identified as
19 having unreasonable impacts, are inaccurate for a number of reasons: the selected location does
20 not meet the definition of a “scenic resource” under the NHSEC rules; the conclusion regarding
21 whether the impact is unreasonable is not supported by the evidence presented; observations
22 included private property where the public does not have access; there is little support for its
23 predictions on continued use and enjoyment of the resource; the photosimulations used for the
24 evaluations are inaccurate; the Project would not affect a natural or cultural landscape of high
25 scenic quality; and the Project would not be viewed from a scenic resource of high-value or
26 sensitivity.

27 As we have noted in the Project VIA, scenic resources can be individual points, linear
28 systems, or extensive areas. In most locations scenic resources are more than single viewpoints.
29 There are many instances in the TJ Boyle VIA where the impact is judged to be unreasonable
30 when in fact the photo simulation represents a relatively small part of the overall scenic resource.
31 For example, TJ Boyle determined that the impact on Bear Brook State Park was unreasonable,

1 based upon the visibility of a handful of transmission structures from two overlooks on one
2 hiking trail. The Project VIA addresses this holistically by evaluating the effect of the Project on
3 the entire resource, and not just on a smaller component of it.

4 **Q. Have you reanalyzed the 29 locations that TJ Boyle alleges results in**
5 **unreasonable adverse impacts to aesthetics?**

6 A. Yes, we have. The following is a detailed evaluation of the 29 locations that TJ
7 Boyle found to result in unreasonable adverse impacts to aesthetics. This summary is presented
8 in the same order that appears in Appendix F, Scenic Resource Evaluation, provided by TJ
9 Boyle.

10 • **Route 26, Moose Path Scenic Byway, Millsfield.** We agree with the TJ Boyle
11 VIA that the potential visual impact of the Project at this location would be medium. The
12 structures will be seen in the middle ground ascending the hill on the north side of the
13 highway, and would not be against the sky when looking northwest. However, TJ Boyle
14 greatly exaggerates the amount of time that a driver would have contact with this view:
15 “The duration of use of the scenic resource would vary based on the mode of travel, but
16 would typically be longer than a few minutes and potentially several hours of driving
17 along this scenic roadway.” Appendix F Addendum p. 6. Based upon the photo
18 simulation included in the TJ Boyle VIA, its assertion that the transmission structures
19 would be “somewhat dominant and prominent” as seen from the scenic byway, is
20 misleading and inaccurate. By comparison the turbines of the Granite Reliable Wind
21 park, that was approved by the NHSEC in 2009, are more prominent due to their
22 ridgeline location on Dixville peak a distance of 4.8 miles.

23 • **Bear Brook State Park: Catamount Trail Overlook, Allenstown.** We agree
24 with the TJ Boyle assessment that the potential visual impact of the Project at this
25 location would be medium. Based upon the photo simulation included in the Project
26 VIA, the assertion that the three dark-colored transmission structures seen against a
27 wooded backdrop would be “relatively prominent,” especially when they are considered
28 “not regularly visible” by TJ Boyle, is inaccurate. TJ Boyle also states that the “corridor
29 clearing would be prominently visible in the views,” but does not provide any evidence
30 of that assertion. However, the additional clearing width (25± feet) will not make the
31 corridor anymore prominent when seen from the viewpoint in the photo simulation.

1 • **Big Dummer Pond, Dummer.** TJ Boyle’s conclusion that the Project would
2 have a negative effect on the future use and enjoyment of the pond is unfounded. User
3 expectation is influenced by many factors that are only minimally discussed in the
4 Appendix F Addendum and deserve greater attention in understanding the context of the
5 Project. Specifically, these factors include the visual quality of Dummer Pond Road, a
6 seasonal private road subject to closure²; the Granite Reliable Wind Park generator lead
7 line that parallels Dummer Pond Road throughout most of its length; the tops of the
8 generator lead line that are visible from the pond; the presence of the wind turbines; and
9 recent and current harvesting activities within view.

10 Fishing is one of the predominant recreational activities on Big Dummer Pond,
11 which is stocked with brook trout by the New Hampshire Fish and Game Department.
12 The presence of the transmission corridor is not expected to influence the use or
13 enjoyment of Big Dummer Pond as a fishing destination. In his 1999 investigation of the
14 relation between recreation activity and the perception of scenic impacts from
15 clearcutting, James Palmer found that people engaged in activities such as motor boating
16 and snowmobiling or fishing and hunting were less sensitive to scenic impacts when
17 compared to people who were camping and canoeing or studying nature.³ This finding
18 was also used in the DEIS Technical Report, in which TJ Boyle provides a table showing
19 the importance of scenery for a high quality experience. Fishing is described as having
20 moderate importance for a high-quality experience, noting that it often occurs in scenic
21 areas, but requires focused attention away from scenery. (DEIS Technical Report P. 38).
22 While people on Big Dummer Pond will have a view of the Project, based on Dr.
23 Palmer’s research, the sight of the structures on the hillside above the pond will not have
24 a significant effect on their desire to fish, nor will the Project have an unreasonable
25 adverse effect on aesthetics.

² http://www.wildlife.state.nh.us/maps/bathymetry/dummer_dummer.pdf

³ Palmer, J.F. 1999. Recreation participation and scenic value assessments of clearcuts. In *Proceedings of the 1998 Northeastern Recreation Research Symposium*, edited by H.G. Vogelsong. Gen. Tech. Rep. NE-255. Radnor, PA: USDA, Forest Service, Northeastern Forest Research Station. pp. 199-203.

1 • **Coleman State Park Entrance, Stewartstown.** It is difficult to understand the
2 rationale behind TJ Boyle’s conclusion that the Project would have an unreasonable
3 impact on the entrance to Coleman State Park. In the Appendix F Addendum, TJ Boyle
4 rated the potential visual impact on the entrance to the park as medium; it notes that
5 views generally would not focus on the Project, that surrounding vegetation helps to
6 reduce the prominence of the Project, and that visibility would be intermittent and varied
7 depending upon viewer location. While the entranceway area receives relatively high
8 visitor use, it is a relatively small part of the overall state park property, which
9 encompasses over 1,500 acres and is known for its extensive system of snowmobile
10 trails.

11 • **Diamond Pond Road, Colebrook.** We disagree with the TJ Boyle conclusion
12 that the Project would have an unreasonable impact on Diamond Pond Road. While this
13 particular viewpoint is noteworthy, Diamond Pond Road itself is not considered a scenic
14 road by the Town of Colebrook or the state. TJ Boyle states that the Project crossing the
15 ridgeline would “interfere with visibility of forested areas within Coleman State Park.”
16 As demonstrated in the photosimulations in the Project VIA, the monopole structures
17 would be somewhat visible from the road, but they would not block any views of the
18 state park. Furthermore the boundaries of the park are certainly not readily discernible
19 from any of the viewpoints along the road.

20 The area where the transmission line crosses Diamond Pond Road is characterized
21 by fairly typical second growth vegetation and rolling topography, a much more common
22 landscape than the view seen in the photosimulation. TJ Boyle criticizes the use of two
23 different structure types in this general location; however, it is doubtful that an observer
24 would ever see both a monopole and a lattice structure at the same time due to the
25 alignment of the road, topography, and intervening vegetation.

26 • **Mountain View Grand Resort, Whitefield.** TJ Boyle’s description of the visual
27 impact on the Mountain View Grand Resort is lacking in specificity. There is no
28 determination of how much of the structures would be visible, or the degree of contrast
29 that they would create against the wooded background. The photosimulations provided
30 in the Project VIA illustrate that the structures and conductors would be minimally
31 visible, and would not be seen against the sky. While there is no doubt that the Mountain

1 View Grand Resort is a significant scenic resource, the hotel rooms are generally not
2 open to the public, and are only accessible to the extent that a room is rented for one or
3 more nights. TJ Boyle offers no rationale for its conclusion that “the scenic degradation
4 will likely be sufficient to discourage some guests from returning.” This is speculative at
5 best considering the fact that there is an industrial scale wind turbine immediately
6 adjacent to the hotel. TJ Boyle asserts that guests participating in outdoor recreational
7 activities will have views of the Project. Again, this is a gross overstatement of future
8 conditions, since the majority of the outdoor activities are located below the hotel where
9 there will be little if any views of the Project. The structures at issue would be only
10 partially visible from the Mountain View Grand Resort, and would, at approximately 80
11 feet in height, fall within the shorter category of Project structures. There is no basis for
12 describing them as prominent; in Appendix F, TJ Boyle states that the Project would not
13 dominate the view towards the White Mountains.

14 • **Slim Baker Recreation Area and Inspiration Point, Bristol.** TJ Boyle asserts
15 that the Project would be visible over a horizontal arc of approximately 100°. The
16 Project VIA found that the Project would be seen in three separate segments: the first has
17 a horizontal arc of 16°; the second has an arc of 14°; the third, which is minimally visible
18 at a distance of 2.2 miles, has an arc of 3°. The existing transmission line and the Project
19 would not be seen as a continuous transmission corridor, but rather as a series of
20 segments that are divided by topography and vegetation.

21 • **Route 110, Woodland Heritage Scenic Byway, Stark.** TJ Boyle inaccurately
22 concludes that the Project would be prominently visible from Route 110. The
23 photosimulations in the Project VIA show that the tops of several of the structures would
24 be seen on the right side of the cone of vision for westbound motorists for
25 approximately 11 seconds. During leaf-off conditions additional structures would be
26 visible, most of which will be seen against a wooded background. The Project will
27 result in some minor amounts of visible corridor clearing, with a few structures seen
28 against the sky on the crest of a low hill. The TJ Boyle VIA gives a rating of noteworthy
29 (equivalent to moderate scenic quality) to the scenic attractiveness of this area and a
30 rating of moderate to high to its scenic interest. TJ Boyle found that the Project would be
31 “relatively prominent” and would potentially result in a high level of contrast with the

1 surrounding hillside. There is no justification given for its prediction that views of the
2 Project for up to 11 seconds from this location would have a negative effect on the future
3 use and enjoyment of the Byway.

4 • **Deerfield Road/Middle Road, Allenstown/Deerfield.** Deerfield Road/Middle
5 Road does not meet the definition of a “scenic resource” under the NHSEC rules. This
6 particular public road is in a landscape that is common to this area of New Hampshire.
7 The TJ Boyle VIA does not provide any justification for concluding that the natural or
8 cultural landscape is of high scenic quality, nor does its assessment provide any reasoning
9 that establishes that Deerfield Road is a resource of high value or sensitivity. The
10 photosimulation provided illustrates the effect of the Project on a private property as
11 required by Site 301.05(b)(7). As a private property, the public does not have a legal
12 right of access; therefore it cannot be considered a scenic resource under the NHSEC
13 rules. Furthermore, counting every road in every town as scenic resources goes well
14 beyond the standard set by the NHSEC rules and the concept of what is typically
15 regarded as a scenic resource. The property also is not a KOP because it is not a
16 recognized viewpoint that receives regular public use.

17 • **Halls Stream Road, Pittsburg.** Hall Stream Road does not meet the definition
18 of a “scenic resource” under the NHSEC rules. Similar to Deerfield Road, this is a
19 relatively common landscape in Northern New Hampshire. TJ Boyle does not offer any
20 justification for considering it as a natural or cultural landscape of high scenic quality, or
21 considering Hall Stream Road as a resource of high value or sensitivity. The
22 photosimulation provided by the Applicants in Attachment 8 illustrates the effect of the
23 Project on a private property as required by Site 301.05(b)(7). As noted elsewhere,
24 counting every road in every town as scenic goes well beyond the standard set by the
25 NHSEC rules, and the concept of what is typically regarded as a scenic resource. Not
26 even the participants in the community workshops identified Hall Stream Road as a
27 scenic resource.

28 • **Route 3, Connecticut River Byway (near Howland Road), Clarksville.** TJ
29 Boyle rated this relatively short section of the Connecticut River Scenic Byway as
30 ordinary for scenic attractiveness and low to moderate for scenery interest. The
31 transmission line would be seen on a middle ground hill over a group of relatively new

1 homes and commercial buildings in a field adjacent to the highway. Based upon our
2 photosimulation that was prepared to illustrate views from private property, we do not
3 agree with TJ Boyle’s conclusion that the structures would be dominant and prominent.

4 TJ Boyle predicts that the use of the scenic resource would “typically be longer
5 than a few minutes and potentially several hours of driving along this scenic roadway.
6 The duration of visibility would vary based on mode of travel, but would potentially be a
7 significant portion of the total length of the Byway as it traverses the town of
8 Clarksville.” The Project will only be visible to northbound traffic on Route 3 for a few
9 seconds as it passes by Howland Road, and intermittently at a few other locations. It is
10 inconceivable that the person driving along the scenic byway will be exposed to the line
11 for “several hours,” or that the visual impact of the Project, which TJ Boyle describes as
12 medium, would have a significant effect on the future use or enjoyment of the 500-mile
13 long Connecticut River Scenic Byway.

14 • **North Road, Lancaster.** North Road does not meet the definition of a “scenic
15 resource” under the NHSEC rules. North Road is not a locally designated scenic road,
16 according to the Town’s master plan. North Road is an example of a utilitarian landscape
17 characterized by a diversity of mostly agricultural related uses. TJ Boyle rates the scenic
18 attractiveness of the road as noteworthy, which it defines as “may be common. Nice,
19 pleasant, appealing often some visual diversity.” (DEIS Technical Report, P. 45). There
20 is no evidence that this is a ‘Central or cultural landscape of high scenic quality’ or that
21 North Road is a scenic resource of high value or sensitivity.

22 • **Northside Road, Stark.** Northside Road does not meet the definition of a
23 “scenic resource” under the NHSEC rules. TJ Boyle rates the scenic attractiveness of the
24 road as noteworthy, which it has defined as “may be common. Nice, pleasant, appealing
25 often some visual diversity” (DEIS Technical Report, P. 45), and the scenery interest as
26 moderate. There is no evidence that this is a “natural or cultural landscape of high scenic
27 quality.”

28 TJ Boyle does not provide an adequate description of the Upper Ammonoosuc
29 River (a segment of the Northern Forest Canoe Trail) in the vicinity of the transmission
30 line crossing. The Project VIA states that filtered views of the transmission structures
31 first appear approximately ¼ mile from the corridor at a pronounced bend in the river.

1 Paddlers will have occasional views of the transmission line through openings in the
2 riparian vegetation as the river winds through a series of reverse curves. Views of the
3 structures on the west side of the river will be blocked by forest vegetation until the point
4 where the corridor crosses the river. Moving these structures even farther back from the
5 river may minimize paddlers' visual contact with the structures. The momentary view of
6 the transmission corridor should have a slight effect on the use and enjoyment of the 740-
7 mile Northern Forest Canoe Trail.

8 • **Route 28, Pembroke Road / Suncook Valley Highway, Pembroke.** Route 28
9 does not meet the definition of a "scenic resource" under the NHSEC rules. In the
10 Appendix F Addendum TJ Boyle describes its scenic attractiveness as noteworthy (i.e., it
11 may be common, nice, pleasant, appealing often some visual diversity) and its scenery
12 interest as moderate to high.

13 While the Montminy Farm and Country Store are potentially eligible for inclusion
14 on the National Register, there is no indication that the public has a legal right of access
15 to the property. The Country Store, which was built in 1948, is now closed. The land has
16 remained in the Montminy family and is currently used as a private residence. The site,
17 however, does not meet the definition of a scenic resource under the NHSEC rules
18 because the public does not have a legal right to access the property.

19 TJ Boyle exaggerates the potential visibility of the new structures by asserting
20 that they will be visible along a 2 mile stretch of the highway. While this might be the
21 case if there were no vegetation (i.e., based on bare earth viewshed analysis), the large
22 mature trees in the general vicinity restrict views beyond ½ mile from the crossing.
23 There will be virtually no views of the structures to southbound travelers until they are at
24 the crossing.

25 • **Route 302, Presidential Range Trail Scenic Byway, Bethlehem.** TJ Boyle
26 overstates the significance of the scenic resources and the effect that the proposed
27 transition station would have on these resources. Route 302 is a scenic resource under
28 the NHSEC rules; this section of the highway is currently designated as both the
29 Presidential Range Scenic Byway and the River Heritage Trail. However, this may
30 change in the future since the North Country Scenic Byway Council has recommended
31 that the portion of Route 302 between Littleton and Twin Mountain be de-designated as

1 part of the scenic byways system. If this section of the highway was considered to be a
2 high value scenic resource, it is highly unlikely that it would be considered for de-
3 designation.

4 Another change to the immediate area is the potential for an 80 room Homewood
5 Suites that has been proposed on the adjacent land former occupied by the Baker Brook
6 cabins and motel. As planned, the building would be 75 feet in height, which is 35 feet
7 taller than typically allowed in this zone. TJ Boyle rated the scenic attractiveness of the
8 area as noteworthy and the scenery interest as moderate.

9 Miller Pond (also known as Baker Brook Pond) is located on the opposite side of
10 Route 302 from the transition station. The viewshed of the pond includes an existing
11 transmission line, the Route 302 roadway, and abandoned buildings that were part of an
12 earlier motel complex. TJ Boyle speculates that the pond is used for boating, fishing,
13 swimming, and other recreational activities, but provides no evidence as to the extent,
14 nature, or duration of public use. We have encountered no information that describes any
15 recreational use of Miller Pond (e.g., for fishing, boating, or swimming). There is no
16 parking area for the pond either along the road or adjacent to the water body; there are no
17 visible trails around the pond; there are no picnic tables or signs indicating that the pond
18 is used by the public. Aerial photographs of Miller Pond show considerable areas of
19 algae bloom (i.e., eutrophication) throughout the pond, which will detract from its scenic
20 and recreational value.

21 There is no justification for considering the area surrounding Route 302 as a
22 natural or cultural landscape of high scenic quality, or considering either Route 302 or
23 Miller Pond as a resource of high value or sensitivity.

24 • **Route 116, Presidential Range Trail Scenic Byway / Ammonoosuc River,**
25 **Bethlehem.** We disagree with TJ Boyle’s underlying assumptions that Route 116 is part
26 of the Presidential Range Trail Scenic Byway. Route 116 is not a scenic byway,
27 according to the Management Plan that was adopted in 2015⁴. The Management Plan
28 clearly states that the “Trail was formally designated in 1994 by the NH Scenic &

⁴ Presidential Range Trail Corridor Management Plan. Prepared by the North Country Council in partnership with the North Country Scenic Byways Council. Adopted April 23, 2015.

1 Cultural Byways Council. The original route is shown in green in the map,” which does
2 not include this section of Route 116 between Littleton and Whitefield. The Plan does
3 recommend that a portion of Route 116 between Whitefield and Jefferson be added to the
4 Byway, but there is no recommendation for this section of Route 116. The Annual
5 Report of the NH Scenic & Cultural Byways Council for the years 2013-2015⁵ lists the
6 following roads as part of the Presidential Range Trail Scenic Byway: NH16, US302,
7 US2, NH115, US3, NH135. Route 116 is not included in this listing.

8 In the Appendix F Addendum, TJ Boyle describes the scenic attractiveness of the
9 area in the vicinity of the roadway crossing as ‘Noteworthy’ (medium), its scenery
10 interest as ‘Moderate to High,’ with a medium expectation for scenery. TJ Boyle
11 describes the surrounding river valley as being “mostly forested with scattered
12 development.” However, there is no mention of the Gilbert Block Co. manufacturing
13 plant immediately adjacent to the crossing (northeast side), plus a large mill operation
14 and other industrial development west of the line. These industrial developments are
15 highly visible from Route 116 in the vicinity of the transmission line crossing.

16 • **Boyce Road, Canterbury.** Boyce Road does not meet the definition of a “scenic
17 resource” under the NHSEC rules. In the Appendix F Addendum, TJ Boyle describes its
18 scenic attractiveness as ‘ordinary and its scenery interest as ‘Moderate.’ The area in the
19 vicinity of the transmission line crossing is a relatively common residential landscape.
20 There is no justification for considering it as a natural or cultural landscape of high scenic
21 quality, or considering Boyce Road as a resource of high value or sensitivity.

22 • **Loudon Road, Concord.** Loudon Road does not meet the definition of a “scenic
23 resource” under the NHSEC rules. In the Appendix F Addendum, TJ Boyle describes its
24 scenic attractiveness as indistinctive and its scenery interest as low to moderate. In an
25 interview on the American Society of Landscape Architecture website, James Palmer
26 makes the following observation regarding scenic quality, using a photograph of the
27 Shaw’s Shopping Center on Loudon Road to illustrate his point: “*The landscape also*
28 *has intrinsic qualities, such as topographic relief and land cover. These qualities can be*
29 *used to predict visual quality. For example, this first image below is a landscape most*

⁵ <https://www.nh.gov/dot/programs/scbp/documents/20132014biennialreport.pdf>

1 *Americans would agree is not scenic: an open field of asphalt visually enclosed by a*
2 *shopping center, transmission lines, and trees.”⁶*

3 By referring to Loudon Road as a scenic resource, TJ Boyle reverses its position
4 in the DEIS Technical Report, where it used Loudon Road as one of the 15 Key
5 Observation Points (KOPs). There TJ Boyle stated “These existing character indicators
6 suggest that the existing view from this KOP is of low quality, without any special
7 scenery interest or intrinsic character. *This road is not a designated scenic resource*, but
8 the visual exposure from vehicles is substantial.” DEIS Technical Report p. 289.
9 *Emphasis added.*

10 TJ Boyle states that the Project is “highly visible to the large number of people on
11 Loudon Road, living in the area and shopping at the retail businesses.” In reality, there
12 are very few people who live in this part of Loudon Road, and shopping is not an activity
13 that is dependent upon the quality of the scenery. The area surrounding Loudon Road is
14 not a natural or cultural landscape of high scenic quality, nor is Loudon Road a scenic
15 resource of high-value or sensitivity.

16 The Gateway Performance District has been established by the city as a zoning
17 overlay District. There is no evidence that Loudon Road in its current state is
18 characterized by high scenic quality.

19 • **Pembroke Road, Concord.** Pembroke Road does not meet the definition of a
20 “scenic resource” under the NHSEC rules. In the Appendix F Addendum, TJ Boyle
21 describes its scenic attractiveness as ‘ordinary’ and its scenery interest as ‘Low.’ The
22 area in the vicinity of the transmission line is a relatively common residential landscape.
23 There is no justification for considering it as a natural or cultural landscape of high scenic
24 quality, or considering Pembroke Road as a resource of high value or sensitivity.

25 • **Turtle Pond, Concord.** Fishing and wildlife observation are some of the most
26 popular activities at Turtle Pond. As noted earlier, TJ Boyle provides a table in the DEIS
27 Technical Report showing the importance of scenery for a high quality experience.
28 Fishing is described as having moderate importance for a high-quality experience, noting

⁶ <https://dirt.asla.org/2015/12/01/interview-with-dr-james-f-palmer-fasla-on-the-state-of-scenic-america/>

1 that fishing often occurs in scenic areas, but requires focused attention away from scenery
2 (DEIS Technical Report P. 38). The presence of the existing 115kV transmission lines
3 does not seem to have had an effect on the popularity of Turtle Pond as a fishing
4 destination. The Pond even has its own informal Facebook page that prominently
5 features people fishing (often with great success, it appears). Given the continued use
6 and enjoyment of the pond in its current condition, the additional transmission structures
7 should not have an unreasonable effect on people's desire to fish at Turtle Pond,

8 The major focus of the views from the accessible fishing pier at Turtle Pond is
9 due east toward the open water. The existing transmission corridor occupies the view to
10 the south, where it is seen in context with the existing tree line. While the existing
11 transmission structures are quite prominent, their presence is offset by the highly textural
12 waterfront vegetation in the immediate foreground, where ducks and other forms of
13 wildlife are often found.

14 TJ Boyle notes that the structures are generally taller than the adjacent tree
15 canopy. However, it is unclear whether this is a reference to the existing structures or the
16 proposed structures, which appear about the same relative height based upon the
17 photosimulations. We disagree with TJ Boyle's assertion that there will be a medium to
18 high change in scope and scale. The existing transmission lines are already highly visible
19 in a well-defined corridor. The structures used for the proposed 345kV line will echo the
20 form and lines of the existing H-frame structures. While the change will be noticeable, it
21 will be a reasonable addition to the corridor, given the types of structures that already
22 characterize this end of Turtle Pond.

23 In Appendix E of the TJ Boyle VIA, a recommendation was made to put both the
24 existing and proposed transmission corridors underground as they pass Turtle Pond in
25 Concord. Setting aside the issue of whether the Applicants have the property rights
26 needed to bury the Project at this location, and leaving aside the issue of the cost of doing
27 so, given the nature of the existing environment in this area, it is our understanding that
28 burial in this location would involve considerable disturbance to wetlands and a high
29 value wildlife habitat, in addition to requiring the installation of two transition stations.
30 This is an example of TJ Boyle's lack of attention to context and engineering constraints.

1 • **Nottingham Road, Deerfield.** Nottingham Road does not meet the definition of
2 a “scenic resource” under the NHSEC rules. In its 1997 master plan Deerfield identified
3 a total of 10 scenic roads (which are also listed on the town’s website⁷): Meetinghouse
4 Hill Road, Whittier Road, Perry Road, Harvey Road, Cate Road, Bean Hill Road,
5 Coffeetown Road, Candia Road, Cole Road and Gulf Road.⁸ Nottingham Road was not
6 included in this designation, nor is it included in the recently designated Upper Lamprey
7 River Scenic Byway.

8 Nottingham Road is primarily an access road for a low-density residential
9 development. Views to the unnamed pond and the transmission line are limited to the
10 width of the corridor. TJ Boyle considers the scenic attractiveness of this location to be
11 noteworthy, which is equivalent to medium scenic quality. There is no basis for
12 considering it a natural or cultural landscape of high scenic quality, or considering
13 Nottingham Road as a resource of high value or sensitivity.

14 • **Deerfield Center, Deerfield.** We disagree with the TJ Boyle conclusion that the
15 Project would have unreasonable impacts on Deerfield Center Historic District. In the
16 Appendix F Addendum, TJ Boyle describes its scenic attractiveness as noteworthy
17 (defined as “may be common. Nice, pleasant, appealing often some visual diversity”) and
18 its scenery interest as moderate. The Project will result in a portion of one weathering
19 steel monopole structure visible above the roofline of the Deerfield Community Church
20 from one specific location in the historic district. TJ Boyle rates the potential visual
21 impact as medium. TJ Boyle notes that the structure would appear co-dominant with the
22 white steeple of the church; later it describes the Project as a dominant feature.

23 It is important to evaluate Deerfield Center as a whole. While there is one limited
24 area where the transmission structure will be visible (i.e., in front of the Deerfield Town
25 Hall), the majority of Deerfield Center and its historic resources will not be affected.

⁷) http://www.townofdeerfieldnh.com/Pages/DeerfieldNH_Webdocs/aboutdf/roads

⁸ Town of Deerfield, New Hampshire Completed CTAP Community Planning Assessment Summary Report and Questionnaire. Southern New Hampshire Planning Commission.
<http://www.nhctap.com/documents/ctap/products/Deerfield/Community%20Planning%20Assessment%20Report.pdf>

1 • **Little Dummer Pond, Dummer.** The DEIS Technical Report contain several
2 statements that are at odds with TJ Boyle’s commentary in the Appendix F Addendum.
3 In it, TJ Boyle notes that Little Dummer Pond is not a designated scenic resource (DEIS
4 Technical Report P. 91). It also concludes that the view is not considered highly
5 sensitive to scenic impact by the landscape assessment, but the noticeable decrease in
6 scenic quality under Alternative 2 would be a perceptible change from the existing
7 conditions at this crossing. (DEIS Technical Report P. 268.)

8 The photosimulation referenced in the TJ Boyle report overstates the potential
9 visual impact of the proposed transmission corridor. It was prepared as part of the Draft
10 EIS Technical Report, using a photograph that was taken on October 1, 2013. The DEIS
11 Technical Report notes that photosimulations are provided to illustrate “how the
12 proposed Project might appear after approximately five growing seasons.” (VIA
13 Technical Report P. 331.) The timetable for the construction of the Project calls for an
14 operational in-service date of 2019, if the DOE and NHSEC issue the necessary permits.
15 Five growing seasons beyond that date would be 2024, or 11 years after the existing
16 conditions photograph was taken.

17 The simulation shows close to 1,000 feet of cleared transmission corridor that
18 creates a horizontal line of contrasting color and texture, visually connecting the three
19 lattice structures and giving them a greater presence on the hillside. While the simulation
20 may represent the appearance of the line if it were to be constructed in 2013, it should
21 really show what the scene would look like five years after installation. At that point
22 (assuming 2024), the trees on the downslope side of the hill would have gained
23 considerable height and the visible line would be significantly diminished, if not gone
24 altogether, thus greatly reducing the visual impact.

25 User expectation is influenced by many factors that are minimally discussed in the
26 Appendix F Addendum, i.e., the visual quality of the approach road, which may not be
27 accessible at all times (reference); the generator lead line that parallels the gravel access
28 road throughout most of its length; the tops of the generator lead line that are visible from
29 the pond; the presence of wind turbines; and recent and current harvesting activities
30 within view. It is difficult to believe that the “public would describe the landscape
31 character as wild,” as claimed by TJ Boyle in the Appendix F Addendum.

1 Fishing is one of the predominant recreational activities on Little Dummer Pond.
2 In the DEIS Technical Report, TJ Boyle provides a table showing the importance of
3 scenery for a high quality experience. Fishing is described as having moderate
4 importance for a high-quality experience, noting that fishing often occurs in scenic areas,
5 but requires focused attention away from scenery. (DEIS Technical Report P. 38).
6 While people on Little Dummer Pond will have a view of the Project from the surface of
7 the water, the sight of several structures on the hillside above the pond should not have an
8 unreasonable effect on their desire to fish.

9 • **Pontook Reservoir / Route 16 Moose Path Scenic Byway, Dummer.** We
10 disagree with the TJ Boyle conclusion that the Project would have unreasonable impacts
11 on the Pontook Reservoir and Moose Path Trail Scenic Byway. The transmission
12 structures at the end of the reservoir are seen at distances of up to 2.5 miles. At these
13 distances the weathering steel monopole structures will appear as relatively small dark
14 objects in a landscape that already contains views of the Granite Reliable WindPark.
15 Views of the Project will last for a few seconds as people cross over the causeway
16 heading south. The structures on the hill above the roadway would disappear once the
17 traveler is halfway across the causeway. Viewer expectation is tempered by the presence
18 of the roadway, the Pontook Dam, and the surrounding infrastructure.

19 TJ Boyle considers the scope and scale of change to be medium, and the potential
20 visual impact to the Pontook Reservoir and this portion of the Moose Path Trail Scenic
21 Byway to be medium. The simulation that was referenced (i.e., DU-2 prepared for the
22 DOE) as a source of information about this location shows lattice structures at the end of
23 the Pontook Reservoir. However, this is not correct, since the Project specifies the use of
24 weathering steel monopole structures in this location to avoid the type of contrast
25 discussed in the Appendix F Addendum to the TJ Boyle VIA. This error in structure type
26 was corrected in the photosimulation of viewpoint DU-2 that was provided in Appendix
27 F. While the revised photosimulation correctly shows weathering steel monopoles, they
28 are rendered too dark and do not show the effect of atmospheric perspective (haze) that
29 will decrease their contrast with the surrounding landscape.

30 • **Interstate 93 (mile 72), New Hampton.** Interstate 93 does not meet the
31 definition of a “scenic resource” under the NHSEC rules. The term “White Mountain

1 Trails Southern Loop” is not a reference to a New Hampshire scenic byway designation
2 but rather part of a campaign sponsored by White Mountains New Hampshire, a tourism
3 promotional organization.

4 TJ Boyle makes the claim that the view from mile marker 72 is representative of
5 views from a 3.5 mile stretch of the interstate. However, the open view selected for the
6 photosimulation is the exception rather than the rule for this section of the highway.
7 Throughout most of its length where the transmission corridor parallels the Interstate, it is
8 separated by a dense stand of mostly evergreen vegetation. Views of the existing
9 transmission structures are intermittent at best. There is no evidence to support its
10 statement that the exposure would last approximately 30 seconds. Our evaluation of the
11 aerial photographs indicates that the opening would be less than 800 linear feet, which
12 would expose motorists to the view of the transmission corridor for approximately eight
13 seconds.

14 TJ Boyle rates the scenic attractiveness of this section of the Interstate as ordinary
15 and the scenery interest as low to moderate. At this location the Interstate does not pass
16 through a natural or cultural landscape of high scenic quality, nor is it a scenic resource
17 of high value or sensitivity.

18 • **Cross Country Road, Pembroke.** Cross Country Road does not meet the
19 definition of a “scenic resource” under the NHSEC rules. In the Appendix F Addendum,
20 TJ Boyle describes its scenic attractiveness as ‘ordinary,’ its scenery interest as
21 ‘Moderate to High,’ and the duration of view to be a matter of seconds. The area in the
22 vicinity of the transmission line is a relatively common rural residential landscape. There
23 is no basis for considering it as a natural or cultural landscape of high scenic quality, or
24 considering Cross Country Road as a resource of high value or sensitivity.

25 • **Little Diamond Pond, Stewartstown.** The visual arc of the proposed structures,
26 as seen from the surface of Little Diamond Pond, is approximately 22.5°. This amounts
27 to just over 6% of the 360° view that a boater or fisherman would have from the pond.
28 Fly fishing is one of the predominant recreational activities on Little Diamond Pond,
29 which is stocked with brook trout and rainbow trout by the New Hampshire Fish and
30 Game Department. As noted above, TJ Boyle provides a table in the DEIS Technical
31 Report showing the importance of scenery for a high quality experience. Fishing is

1 described as having moderate importance for a high-quality experience, noting that
2 fishing often occurs in scenic areas, but requires focused attention away from scenery
3 (DEIS Technical Report P. 38). While people on the pond will have a view of the Project
4 when looking in one direction, the sight of several structures on the hillside should not
5 have an unreasonable effect on their desire to fish on Little Diamond Pond. The Project
6 will also have no effect on people on the shoreline near the parking lot and visitor center,
7 since it will be behind the viewer and not visible.

8 • **Cohos Trail, Stark.** It is important to understand the context of where the
9 existing transmission corridor intersects with the Cohos Trail, east of the village of Percy.
10 While the intersection is in a forested landscape, it is also immediately adjacent to roads
11 and other features that may influence user expectation. TJ Boyle considers the scenic
12 attractiveness of the Trail at the point of crossing to be ordinary and the scenic interest to
13 be moderate to high. The Trail enters Nash Stream Forest approximately 1 mile
14 northwest of where it crosses Route 110. Within that mile the Cohos Trail is located
15 entirely on local roads, crossing a bridge over the Upper Ammonoosuc River as well as
16 crossing a railroad line. Once it enters the woods, the trail follows an old logging road
17 for approximately 275 feet north of Percy Road until it reaches the transmission corridor,
18 which is approximately 150 feet in width. A person walking 3 mph would be in the
19 corridor for about 34 seconds. Since hikers will have just come through an open area, it
20 is highly unlikely that they would be inclined to stop within the corridor, as was
21 suggested in the TJ Boyle Appendix F Addendum narrative.

22 • **Peaked Hill Road, Bristol.** The primary visual impact is at the point where the
23 existing transmission corridor crosses Peaked Hill Road. At this location, open views of
24 the transmission line to passing motorists would last for several seconds. South of the
25 crossing, intermittent views from Peaked Hill Road continue for an additional 1,600'±.
26 Moderate to heavy vegetation is found along the road, with occasional gaps that provide
27 limited visibility. A significant stone wall that parallels the road also partially blocks
28 views of the corridor.

29 The most scenic portion of the road is to the east of the transmission line crossing,
30 where there are panoramic views to the south, as shown on pp 8-34 – 8-39 in Attachment

1 B: Private Property views. As noted in the photosimulation included in the Project VIA,
2 this view would not be affected by the Project.

3 ***B. TJ Boyle’s Critique of the Project VIA***

4 **Q. Are there areas where TJ Boyle is incorrect in its criticisms of the Project**
5 **VIA?**

6 A. Yes, TJ Boyle’s analysis is flawed in the following areas:

7 1. TJ Boyle incorrectly criticizes the Project VIA Scenic Resource Identification
8 process.

9 2. TJ Boyle improperly disparages the Project VIA’s approach to identifying public
10 access at scenic resources.

11 3. TJ Boyle erroneously criticizes of the Project VIA ratings of expectations of the
12 Typical Viewer and the Effect on Future Use and Enjoyment.

13 4. TJ Boyle inaccurately attacks the Applicants' photosimulations. The simulations
14 provided in the Project VIA are completed in a professional manner and are consistent
15 with all visualizations completed by TJD&A.

16 5. TJ Boyle conflates the variations in the viewshed mapping processes between the
17 Project VIA viewshed mapping and TJ Boyle’s Viewshed Mapping.

18 **Q. Please explain how TJ Boyle’s critique of the Project VIA scenic resource**
19 **identification process is inaccurate.**

20 A. TJ Boyle states that the Project VIA fails to identify non-designated scenic
21 resources. While those scenic resources that have been designated by local, regional, state, or
22 federal authorities are well documented, the inventory of such resources is not exclusive to
23 “designated” resources. Examination of the scenic resource tables for each community shows
24 that we have identified conservation lands, lakes, ponds, rivers, parks, scenic drives, tourism
25 destinations, recreation trails, parks, historic sites, in town and village centers in compliance with
26 the requirements of Site 102.45. For a more detailed response to our identification of scenic
27 resources, please refer to the supplemental portion of this testimony.

28 **Q. Please explain how TJ Boyle’s criticism of the Project VIA’s approach to**
29 **identifying public access at scenic resources is unfounded.**

30 A. TJ Boyle states that the Project VIA fails to define the term “publicly accessible
31 places”. While we did not define the term in the Project VIA, neither do the NHSEC rules.

1 When we research the scenic resources, we look for an indication of whether or not the public
2 has the ability, right, or permission to enter and use the resource on a regular basis. Page 10 of
3 the TJ Boyle VIA states that TJD&A’s interpretation of whether the public has a right of access
4 came down to a “gut feeling whether you were welcome or invited”. This comment was made at
5 the technical session by TJD&A in response to a question from TJ Boyle regarding a specific
6 situation along a riverbank where there were no obvious signs either inviting or excluding the
7 public. For a more detailed response to our assessment of public access please refer to the
8 supplemental portion of this testimony.

9 **Q. Please explain how TJ Boyle’s criticism of the Project VIA photosimulations**
10 **is mistaken .**

11 A. The photosimulations produced for the Project VIA are consistent with previous
12 photosimulations produced by TJD&A. Dr. James Palmer with TJ Boyle and others have peer
13 reviewed⁹ our photosimulations on many occasions and have found the work to comply with
14 generally accepted professional standards and representative of post-construction conditions. In
15 addition, TJ Boyle also relied on many of our photosimulations in its evaluation of the scenic
16 resources in the Appendix F Addendum of the TJ Boyle VIA. For its part, D&F noted the
17 professional quality of the Project VIA photosimulations when it stated “with a few exceptions
18 the visual simulations [in the Project VIA] are very professional and well crafted” (see on p. 2 of
19 Appendix C of the D&F Report).

20 The following points respond to TJ Boyle and demonstrate why their criticism is
21 unsupported by the evidence:

- 22 • **Google Earth software is unfounded and not supported by the NHSEC rules.**
23 We have worked with Google Earth for many years, and found that through the use of
24 various control points a clean alignment between the photograph and the terrain can be
25 achieved. The more control points one can create between the photo and the model, the
26 more accurate the alignment. The alignment of the photograph to the terrain is based on
27 the use of multiple vertical control points, including features in the immediate foreground

⁹ Dr. James Palmer, along with Terrence DeWan and David Raphael, are designated peer reviewers for windpower project for the Maine Department of Environmental Protection. As such Dr. Palmer and Mr. Raphael have performed 10 peer reviews of TJD&A’s work over the past decade.

1 to hilltops in the far background. In many locations, the alignment was based on existing
2 transmission structures at known points, which facilitated the alignment of the new
3 structures in the computer model with the existing structures in both the model and the
4 photograph. We have tested this process and software many times and are confident in
5 the production of our photosimulations.

6 • **Some photosimulations are not in the APVI.** All photosimulations are located
7 within the APVI based on the computer visibility analysis. Catamount Pond in Bear
8 Brook State Park in Allenstown and Veteran's Memorial Park in Hill are places where
9 the viewshed analysis showed potential visibility. However, upon further analysis
10 (through cross sections and overlaying the photography and the 3D model) we
11 determined that the trees in the foreground at both locations would block visibility of the
12 structures. We decided to use these images in the Project VIA as examples of where the
13 viewshed analysis indicated potential visibility to sensitive scenic resources, which
14 required additional analysis to determine whether or not there would be views of the
15 Project.

16 • **Objects in the foreground.** Ideally photographs used for the photosimulations
17 should avoid objects such as trees in the immediate foreground. TJ Boyle uses the Victor
18 Head Cliff photosimulation to note the presence of a tree in the foreground. The
19 photosimulations produced by the Applicant are representative of the panoramic view
20 from the cliff, which has a very limited viewing area. The image provided on page 30 of
21 the TJ Boyle VIA is one-half of the panoramic view from Victor Head Cliff. It would
22 have been impossible to create this panorama without including the tree, given the nature
23 of the site. The two halves of the panorama provide a more complete and extensive
24 representation of the extent of the visible transmission line and its context in the
25 landscape than TJ Boyle's single image.

26 • **Misalignment of rendered structures to the PLSCadd model.** The location,
27 height, and scale of the structures is accurately represented in our photosimulations. In
28 the example of Big Dummer Pond cited on page 43 of the TJ Boyle VIA, the image is
29 blown up to exaggerate the subtle misalignment of the structure seen at a viewing
30 distance of 0.75 mile. Those structures in close proximity to the viewpoint, such as North
31 Road in Lancaster, the Pemigewasset River crossing in New Hampton, and Halls Stream

1 Road in Pittsburg were precisely aligned because the structures are clearly visible and
2 this level of detail is required at that distance.

3 • **Use of panoramic images.** TJD&A typically produces panoramic views as well
4 as single frame photosimulations in our visual impact assessments. The majority of the
5 VIAs that we completed for wind energy projects (and that were peer reviewed by James
6 Palmer) have included panoramic views to provide the reviewer with a greater sense of
7 the landscape that is being assessed. We stitch photographs together manually so we can
8 maintain the projection of the original photograph as much as possible. The D&F report
9 also relies on panoramic images stitched together as a way to provide context.

10 **V. REVIEW OF DODSON AND FLINKER REPORT**

11 **Q. Have you reviewed the Visual Impact Assessment Report Prepared by D&F?**

12 A. Yes. We have read the report prepared by Dodson and Flinker (“D&F”) and
13 discussed the contents of the report with Mr. Dodson at a technical session on March 23, 2017.

14 **Q. Have you identified areas where D&F agrees with your methodology?**

15 A. Yes, there are several areas where D&F agrees with our methodology and
16 approach.

17 1. **Viewshed Mapping.** D&F relied on the viewshed maps developed for the
18 Project VIA to identify viewpoints and scenic resources.

19 2. **Photosimulation Methodology.** The viewpoints from roadways are not limited
20 to roadway crossings. We both use the panoramic viewpoints. Our photosimulations are
21 also produced to the size and ratio required by the NHSEC guidelines, but we both see
22 value in using panoramic view to provide context to the photosimulation.

23 3. **Division by region.** Both the Project VIA and the D&F report divide the
24 landscape into regional segments in order to characterize the regional landscape and
25 provide context for the scenic resources and to develop an overall analysis of each region.

26 4. **Using matrices and rating charts.** D&F agrees with our method of developing
27 scored quantitative matrices to guide the evaluation of scenic resources.

28 5. **Evaluating based on cultural value and scenic quality.** Scenic significance is
29 defined by a combination of cultural value and scenic quality (or what D&F refers to as
30 Aesthetic Quality).

1 **6. Evaluation of each of the resources as a whole, not only the photosimulation.**

2 In the technical session, D&F emphasized the importance of looking at the landscape as a
3 whole, and not relying on KOPs or photosimulations as static viewpoints.

4 **Q. Does that mean by extension D&F serves to highlight the shortcomings of the**
5 **approach taken by T.J. Boyle, Ms. Fenstermacher for the City of Concord, and**
6 **Kimball/Garland for the AMC?**

7 A. Yes, there are several areas where others are in conflict with D&F.

8 1. **Cultural Value:** Dr. Kimball and Mr. Garland claim cultural value should not be
9 considered at all. Both D&F and TJD&A agree that the scenic significance should in part
10 be supported by cultural value.

11 2. **Photosimulations:** TJ Boyle criticizes the Project photosimulations because of
12 the use of the panoramic view. D&F limits its photosimulations to the panoramic form.
13 D&F has stated in its report and through its testimony that the photosimulations appear to
14 be accurate and professionally produced.

15 3. **Scenic Resource Identification:** TJ Boyle identifies close to 19,000 scenic
16 resources, D&F identifies 93 viewpoints, AMC identifies 247, Fenstermacher identifies 7
17 within the City of Concord. In D&F's Appendix E, it identified viewpoints instead of
18 scenic resources.

19 **Q. Based on your review of D&F's work, did you identify any significant issues**
20 **with their visual impact assessment methodology?**

21 A. Yes, there are several problems with D&F's methodology. The following is a list
22 of material flaws with D&F's methodology:

23 1. **D&F's Scenic Resource Identification process is unreliable and not**
24 **replicable.**

25 a. **Expanded definition of scenic resources.** D&F modified the Project VIA
26 methodology to include two types of scenic resource that would qualify as high
27 cultural value: (1) "Sites or areas representative of classic New Hampshire
28 scenery" and (2) "Sites of special meaning or significance." It is not clear how
29 one would go about identifying these areas. There is no database or listing of
30 these places, making it impossible to locate such places. In addition, it does not
31 supply a clear definition for sites or areas "representative of classic New

1 Hampshire scenery” or “special meaning or significance.” A specific site may
2 have personal significance to an individual’s life; however, this significance
3 cannot be identified and cataloged. By this understanding of what constitutes a
4 scenic resource, these additional classifications could open the *entire* state to be
5 defined as a scenic resource, in much the same way that TJ Boyle considers
6 virtually all roads to be scenic resources. In the tech session on March 23, D&F
7 identified the photograph in Figure 14 on page 9 – which depicts a farmstead set
8 against a backdrop of a low mountain – as an example of classic New
9 Hampshire scenery. When asked about the boundary of this scenic resource,
10 Mr. Dodson said it was all landscape in view. D&F was unable to distinguish
11 between the farmhouse, the mountains, or the Route 110 Scenic Byway.

- 12 b. There **is no filtering system** used to determine which scenic resources should be
13 further evaluated. It is not clear why some viewpoints were identified and
14 visited and others were not.
- 15 c. It is **not clear why so many roadways are included in the list of scenic**
16 **resources**. Of the 60 viewpoints identified by D&F, 47 of them are on public
17 roadways not designated as scenic byways or local scenic roadways. This may
18 have resulted from the winter conditions when D&F did its fieldwork, limiting
19 him to viewpoints on or near public roadways.

20 **2. D&F’s Rating System is not clear and therefore not reproducible.**

- 21 a. **Cultural Value ratings** are identified as high, medium, and low. In Appendix
22 F, the rating system is applied through a numerical expression. However, it is
23 not clear how the high/medium/low rating system relates to the numbers
24 assigned. For example, Bear Brook State Park and the North Mountain
25 Overlook in Pawtuckaway State Park received the score of a 3. However, on
26 page 3 in Appendix D the state parks are listed in the high cultural value
27 category. It is not clear why both state parks received a cultural value of 3.
- 28 b. For the most part, the **Aesthetic Quality rating system** aligns with our
29 approach. D&F has added a ‘Meaning’ category to this system that relies on an
30 evaluation of the meaning or symbolism in the landscape. A definition of
31 symbolism is not included in its report and it does not provide a guide for how to

1 consider the role of meaning or symbolism in the evaluation of the landscape.
2 Without a definition of “meaning” or “symbolism in the landscape,” it is
3 impossible to assess a resource for these characteristics. The Aesthetic Quality
4 Evaluation Chart (Appendix D, p. 2) offers no way to differentiate among
5 landscapes with high, medium, or low meaning, other than to say they have
6 different levels of significance.

7 c. **Aesthetic Impact rating system** is based on four factors: (1) Viewing Distance;
8 (2) Extent, Nature, and Duration of Use; (3) Scope and Scale of Changes; and
9 (4) Dominance and Prominence of Project in View. Aside from Viewing
10 Distance (that lists distance zones to consider), there is no method provided for
11 evaluating the other three categories. It is not clear what makes an impact high,
12 medium, or low. When this rating system is applied in Appendix F, it is not
13 clear what criteria were used to assign each number.

14 d. **Overall Visual Impact Rating** is similar to our approach, but the relationship
15 between the quantitative and qualitative ratings are not clear. The Overall
16 Visual Impact Rating chart in Appendix D page 4 functions entirely with
17 qualitative ratings. However, in Appendix F, the numerical score of the Scenic
18 Significance rating and the Aesthetic Impact rating are averaged to determine
19 the overall Visual Impact rating. It is not clear how the numerical score and the
20 qualitative expression relate to one another. For example, Bear Brook State Park
21 received a 3 in all categories and a medium Overall Visual Impact rating, but the
22 Overall Impact score was a 4. In another example, Route 28 in Pembroke
23 received an Overall Impact rating of a 3, and was assigned a Medium-High.
24 Since the relationship between the qualitative and quantitative scores is not
25 spelled out in the methodology, it is difficult to use Appendix F to understand
26 the scoring system.

27 3. **D&F did not use all available tools to determine where the Project would be**
28 **visible prior to conducting field work.** The 3D model is an important tool in
29 determining where the Project will be visible in the landscape, particularly in the northern
30 section where the corridor does not currently exist. At the Technical Session on March
31 23, 2017, D&F indicated that a map of the Project and the viewshed map were used to

1 determine visibility. The 3D model was not used until the development of the
2 photosimulation. A map will show the location of the Project, and if terrain is included
3 on the maps, it will provide some idea of how it fits into the landscape. The viewshed
4 map will only indicate where it is or is not likely to be visible (not which direction to
5 look). Without the use of a model, it is impossible to determine the scope and scale of
6 the structures in relation to the landscape before visiting a site. Since all locations
7 evaluated by D&F had photosimulations produced, this information became evident after
8 the site visits.

9 **Q. Have you found D&F's stated methodology is consistently and accurately**
10 **applied to its visual assessment of the Project?**

11 A. No. D&F does not consistently apply its own methodology in the review of the
12 Project. D&F criticizes our approach with an amended methodology, but then fails to apply its
13 own methods in the assessment. This makes it difficult, and at times impossible, to understand
14 how its recommended amendments to the Project VIA methodology would produce different
15 results. D&F's inability to follow a consistent approach demonstrates the flaws within the
16 methodology itself.

17 1. **Scenic Resource List is incomplete.** There is no comprehensive list or systematic
18 identification of scenic resources. On pages D-3 and D-4, it spells out the scenic
19 resources that should be included, but then fails to apply its definitions (as discussed
20 above) in its identification of resources. Appendix E lists 93 scenic resources visited and
21 evaluated by D&F, however this list is under inclusive and is not limited to scenic
22 resources. Of the 93 resources identified, 60 are identified as exclusive to the work done
23 by D&F (3 are identified as having no visibility, reducing the number of additional
24 resources to 57). Of these 60 resources, 10 are scenic resources already identified in the
25 Project VIA, 47 resources are on roads not designated as scenic roads or byways, one
26 resource is an airport, and one is a condominium association.

27 2. **Identification of Scenic Resources does not follow the expanded definition.**
28 On page 9 of the report, D&F states "D&F considered all town and village centers, farms,
29 historic structures, local scenic roads, trails, historic landscapes, accessible natural areas,
30 and waterways to be important components of the cultural landscape of New
31 Hampshire." However, in Appendix E, D&F has not listed any of these features beyond

1 what was listed in the Project VIA. The only additional resources are public roads
2 without any justification of their scenic or cultural quality. This tells us that D&F did not
3 follow its own stated methodology.

4 3. D&F breaks down the Project into state tourist regions in an effort to examine the
5 impact at a regional scale. However, this **regional analysis is not accurate or complete**.
6 Within each tourist region, it reviews 2 to 5 scenic resources (all of which have already
7 been evaluated by the Applicants), and then states that “many other sites not evaluated in
8 this study have similar problems.” This claim is not supported in its work and is
9 inaccurate. Without evaluating the sites, it is not clear how it can make the claim that
10 others will have similar problems.

11 4. On Page 9 of D&F’s report, it states that it has amended the Project VIA
12 methodology to include “*1) a greater recognition of important regional and local*
13 *landscape values; 2) a recognition of the distinct character of each of New Hampshire’s*
14 *tourism areas; and 3) a more extensive discussion of the characteristics of the project*
15 *and its impacts to the resources and landscapes as outlined in SEC rules.” Its*
16 amendments to the Project VIA Methodology do not achieve any of the above objectives.
17 Rather, it emphasizes qualitative factors that are difficult to assess (e.g., meaning and
18 symbolism).

19 **Q. Are there areas where D&F is incorrect in its criticisms of your VIA report?**

20 A. Yes. There are several places where D&F inaccurately criticizes our VIA report.

21 1. D&F falsely claims that the **Project VIA subareas are not based on existing**
22 **landscape character** (p.7). The use of subareas is not required by the NHSEC rules, but
23 is helpful in breaking down a project of this scale. The Project VIA describes the
24 existing landscape at the scale of six regional subareas, based on Physical Characteristics,
25 Cultural Development Patterns, and Recreation and Tourism. For each town located
26 within 3 miles of the Project, we describe the existing character of the landscape and
27 provide a detailed description of the physical features and land use in the vicinity of the
28 Project corridor.

29 2. D&F wrongly claims the **Project VIA discounts the role of silhouetting and**
30 **under represents this in our photosimulations** (p.3). A discussion of silhouetting is
31 not mentioned in the NHSEC rules, but is identified and considered throughout the

1 Project VIA. The silhouetting of structures is directly considered in the Line section of
2 the Landscape Compatibility criteria used to evaluate the visual effect of the Project (see
3 page M-14 of the Project VIA). The term ‘silhouetted’ generally refers to when
4 structures stand above the tree line or ridgeline and are visible against the sky. Examples
5 include the structures at Little Diamond Pond on Sugar Hill and the structures above the
6 ridgeline at Big Dummer Pond. D&F has taken this definition a step further to include
7 viewpoints within the cleared corridor, where structures always appear against the sky
8 due to the removal of vegetation.

9 3. D&F **inaccurately criticizes the Project VIA photosimulations.** For example,
10 at the **Rocks Estate** in Bethlehem the D&F red-lined comments state that the lattice
11 towers and the cleared corridor should be more visible. In reality, the corridor will not be
12 any more visible than it currently exists, since no additional clearing is required to install
13 the proposed structures. The lattice structures and conductors are seen in the midground
14 in the Project VIA; however, their prominence will be lessened by the effects of
15 atmospheric perspective (distance). D&F also states that the ‘wires should be more
16 visible.’ The photosimulation in the Project VIA matched the visibility of the existing
17 conductors, which are clearly seen.

18 At the **Route 2 Overlook** in Lancaster the D&K red-lined comments state that the towers
19 should be lighter and more visible, without giving any rationale for this statement.
20 Weathering steel monopoles have been selected for these types of situations for their
21 ability to blend into forested landscapes and minimize color contrasts. D&F also state
22 that the ‘cleared corridor should be more visible.’ However, only spot clearing will be
23 required in this location to install the proposed structures, which will not result in
24 significant changes in the appearance of the existing cleared corridor from the Route 2
25 overlook.

26 4. D&F criticizes our cultural value and scenic quality ratings through redline **edits**
27 **to our Town Scenic Resource Tables.** It is not clear if D&F visited all of the locations
28 it highlighted. It has not provided a clear methodology to justify how it arrived at its own
29 ratings.

30 5. D&F mistakenly claims **we missed the identification of 57 additional scenic**
31 **resources.** This list of 57 is not of scenic resources, but of viewpoints, with several

1 points included at the same scenic resource. Of the 57 viewpoints, 11 points were
2 included in the Project VIA. The remaining viewpoints are from public roadways, one
3 private property, and the Concord Airport. In reading D&F's methodology, we do not
4 see where its methodology accounts for the inclusion of these additional viewpoints.
5 D&F failed to identify additional scenic resources not already accounted for in the
6 Project VIA.

7 6. At the technical session on March 23, 2017, D&F criticized the Project VIA for
8 only **relying on single KOPs or viewpoints and for not taking into consideration the**
9 **total experience of the landscape**. This directly conflicts with the approach spelled out
10 in our methodology and used in the Project VIA. In our description of KOPs on page M-
11 10 of the Project VIA, we state, "Linear resources often offer a sequential opportunity to
12 experience the landscape from several viewpoints along a physical or cultural feature
13 (such as a river or road)" and "Scenic areas, especially waterbodies, offer multiple
14 vantage points to experience the landscape." In practice, we frequently rely on several
15 viewpoints to make an overall assessment of scenic quality and overall visual impact.
16 For example, our assessment of Route 145 in Clarksville (beginning on p. 1-14 of the
17 Project VIA), we mapped where the Project will be visible along the section of the road.
18 We also include two photosimulations from points along the roadway to demonstrate
19 potential visibility from various angles. The Project VIA did the same things for multiple
20 viewpoints at Coleman State Park and Bear Brook State Park. TJD&A does not rely
21 solely on a single photosimulation to perform the assessment. We typically include
22 several photographs at the evaluated resource to provide a comprehensive understanding
23 of the landscape context and the considerations that are taken into account to determine
24 level of impact.

25 **Q. D&F states that the Project VIA does not comply with the NHSEC rules. Is**
26 **D&F correct in its assertions that the NHSEC rules were not followed in your VIA?**

27 A. No, D&F is incorrect. When questioned about this at a Technical Session on
28 March 23, 2017, Mr. Dodson summarized the critique by claiming we did not evaluate the
29 Project based on "prominence and dominance, scope and scale of change, or presence of
30 intervening topography."

- 1 1. **Reliance on KOPs:** D&F claimed we were not in compliance with the NHSEC
2 rules because of our reliance on KOPs. This critique is misguided, since the NHSEC
3 rules specifically require the use of KOPs in the evaluation of potential visual impacts.
4 Site 102.25.
- 5 2. D&F mistakenly claims that our determination of **Cultural Value is not based on**
6 **NHSEC criteria** (p.7). While the NHSEC does not define cultural value per se, it is
7 inherent in our determination of significance, which is a requirement under the NHSEC
8 rules. D&F has altered the definition of cultural value provided in the Project VIA, but it
9 has not demonstrated how its definition has resulted in a greater inclusion of scenic
10 resources.
- 11 3. The **Project VIA is not directly based on the NHSEC criteria** (p.7). This is not
12 true. For every site that received a visual impact assessment, the resource was evaluated
13 for scenic significance; viewing distance; the extent, nature, and duration of use; scope
14 and scale of change; dominance and prominence of the proposed changes to the
15 landscape; all of which are required by Site 301.14 and Site 301.05(b)(6).
- 16 4. At the March 23, 2017 technical session, D&F stressed the importance of
17 **cumulative impact assessment, and claimed this was missing from the Project VIA.**
18 In the NHSEC rules, consideration of cumulative visual impacts only applies to wind
19 power projects. Although the Project VIA is not required to look at cumulative impacts
20 for a transmission line project, our VIA went above and beyond the NHSEC requirement
21 and summarized the impacts at a regional scale. D&F's criticism of our VIA
22 demonstrates a lack of understanding of the NHSEC rules.

1 **Q. With respect to what the Subcommittee must consider in making a finding as**
2 **to whether an energy facility will have unreasonable adverse effects on aesthetics, does the**
3 **D&F VIA or Pre-Filed Testimony use the NHSEC rules for making its determination?**

4 A. No, the D&F VIA does not use the NHSEC rules to determine whether a project will
5 have an unreasonable adverse visual impact on aesthetics. D&F claims the Project has
6 unreasonable adverse effects for four reasons: (1) high number of sites with significant aesthetic
7 impacts, (2) project scope, (3) project scale, and (4) features silhouetted against the sky. None of
8 these are appropriate unto themselves to reach a determination that the Project will result in an
9 unreasonable adverse impact to aesthetics. (see p. 2-3; 89 of D&F's report):

10 1. **High Number of Sites with Significant Aesthetic Impacts:** D&F note that
11 multiple experts indicate an extensive overall impact: 10 photosimulations by LandWorks
12 / 200 resources with visibility by TJD&A / 60 private properties with visibility by
13 TJD&A / 65 KOPS in DOE EIS / 57 Sites by D&F). D&F claims that the total number
14 of sites analyzed is an indicator of how extensive the Project will be. However, the
15 number of sites evaluated is a function of both the length of the Project and the NHSEC
16 requirements to provide photosimulations and evaluations of scenic resources. The
17 number of sites evaluated should be seen as a testament to the thoroughness of the
18 evaluation and review process, and not an indication of unreasonableness.

19 2. **Project Scope:** The project scope – i.e., its overall length and the number of
20 structures – is a way of describing the physical characteristics of the Project and is not an
21 appropriate factor by itself in the determination of visual impact. Site 301.14(a)(4)
22 requires that the scope and scale of the change in the landscape *visible from affected*
23 *scenic resources* be considered by the NHSEC (emphasis added).

24 3. **Project Scale:** The Project scale – i.e., the size of the transmission towers,
25 cleared corridors, transition stations, and other pieces of infrastructure – is a way of
26 describing the relative size of its component parts and is not an appropriate factor by
27 itself in a determination of visual impact. As noted above for Project scope, Site
28 301.14(a)(4) requires that the scope and scale of the change in the landscape *visible from*
29 *affected scenic resources* be considered by the NHSEC (emphasis added). The Project
30 VIA provides photosimulations that facilitate the review of the Project's scale from Key
31 Observation Points and other viewpoints that may be affected.

1 4. **Features Silhouetted Against the Sky:** D&F notes that the Project's
2 transmission towers and conductors will be seen against the sky in 32 locations on high
3 hills or ridges (p.89). However, D&F does not identify where these occur, their
4 relationship to scenic resources, or the context under which the structures would be
5 visible. Silhouetting is an inevitable part of any transmission corridor and is not a factor
6 that is mentioned in the NHSEC rules. The Project VIA recognizes that there are
7 instances where the conductors and structures are seen in silhouette, and accounts for this
8 phenomenon wherever it occurs and fully describes the visual effect that it would have on
9 scenic resources.

10 **Q. Does the D&F VIA or Pre-Filed Testimony provide the necessary**
11 **information to the Subcommittee to make that determination?**

12 A. No. The D&F report does not analyze the Project using the criteria in Site 301.14
13 Criteria Relative to Findings of Unreasonable Adverse Effects. While two of the four criteria
14 used by D&F are included in Site 301.14, the determination of an unreasonable adverse effect on
15 aesthetics must be based upon the accepted criteria in the NHSEC Rules.

16 **Q. For the scenic resources studied in depth, please describe why D&F's**
17 **conclusions are inaccurate.**

18 A. D&F's description of the potential impacts to the Route 2 Overlook in Lancaster
19 is used as an example of their approach and inaccurate conclusion. Their analysis is based upon
20 one of TJD&A's photosimulations from the Project VIA (two were provided to give the reviewer
21 a better sense of the extent of the landscape seen from this viewpoint). The D&F narrative does
22 not provide contextual information on the surrounding land uses that affects viewer expectation,
23 i.e., a commercial campground and a highly visible garage facing the overlook. D&F claims that
24 the scope and scale of the Project will result in a high level of change, that the Project would be
25 moderately dominant, and that the conductors will prominently affect southbound views of the
26 White Mountains. These statements are not born out by the photosimulation, which clearly
27 shows the Project elements against a wooded backdrop where they blend into the landscape
28 without blocking views. D&F's high rating of overall visual impact is not supported by either
29 the photosimulation or their analysis of potential impacts.

1 **Q. Is D&F’s approach to avoidance, minimization, and mitigation reasonable?**

2 A. No. D&F does not consider mitigation in its evaluation of individual scenic
3 resources, and does not mention mitigation efforts in its statements regarding the unreasonable
4 adverse visual impact of the Project.

5 The D&F report claims the scale of the Project is so large that no mitigation measure
6 except burial would offset the visual impact. By ‘scale’ they are referring to totality of the
7 Project– number of structure, length, and general structure heights. This is evident in the
8 following statement from page C-5 of the report: “The Applicant has taken mitigation measures
9 to offset these impacts but the project’s scale is so large that specific, small scale mitigation
10 measures fail to offset its major aesthetic impacts. For example, weathering steel monopoles
11 reduce aesthetic impacts when seen against a backdrop of forest but increase impacts when
12 viewed silhouetted against the sky. By far the most effective aesthetic impact mitigation measure
13 for Subarea 1 as well as for the entire project would be to completely bury the transmission
14 line”. D&F’s conclusion that there is nothing that can be done short of full burial does not
15 recognize any of the significant mitigation measures that have been incorporated into the
16 planning and design of the Project, such as the use of weathering steel monopoles, co-location in
17 an existing transmission corridor for the majority of the line, and siting individual structures to
18 minimize adverse effects.

19 **Q. Are there other concerns or comments you have with regard to the D&F’s**
20 **VIA or its testimony as they relate to the NHSEC rules?**

21 A. Yes. Throughout the D&F VIA, there are unsupported claims that falsely exaggerate
22 the visual impact of the Project.

23 1. D&F’s report falsely exaggerates the visual impact of the Project with misleading
24 statements such as this: “*Simulations of specific scenes often represent the many other*
25 *views that will be available across a wide area in the larger landscape. The aesthetic*
26 *impacts of the project will thus be greater than those shown in a simulation from a*
27 *particular point because many other views of the scene will be possible across the wider*
28 *area depicted in the viewshed maps”.* (p. D-2). Photosimulations have been prepared
29 from a wide range of viewing conditions and distances to give the reviewer an accurate
30 depiction of the scope and scale of the Project throughout its 132-mile above-ground

1 route. The locations selected for photosimulations show anticipated changes at specific
2 locations, and are not meant to be representative of views from other areas.

3 2. The D&F report exaggerates the impact that structures will have on the greater
4 landscape without evidence to support the claim. In the review of the structures visible
5 from Route 145, D&F states “*The project will have a significant visual presence on the*
6 *byways, not only in Clarksville but in other communities, resulting in a high overall*
7 *visual impact*” (p.15). The Project crosses the Moose Path Scenic Byways in two
8 locations substantially far from one another. D&F’s statement that the Project will have a
9 high overall impact on the 98-mile long byway is highly exaggerated and not supported
10 by evidence in their VIA.

11 **Q. Appendix E and F of the D&F report provide a list of scenic resources and a list of**
12 **those that were evaluated. Why are these tables an incomplete listing of scenic resources**
13 **and does it represent a break from the stated methodology? Why is this table not an**
14 **acceptable summation or conclusion of a proper visual assessment?**

15 A. Appendix E is a listing of 102 resources that were visited by D&F; the majority
16 were also visited and analyzed by TJD&A as part of the Project VIA. It is apparent why D&F
17 selected the additional sites, which tend to be along roadways that are not scenic resources.

18 Appendix F is a matrix that provides D&F’s assessment of 29 resources. The evaluation
19 of aesthetic impacts is based upon the Aesthetic Impacts Evaluation Chart on page 3 of
20 Appendix D. Numerical scores are assigned to each situation based upon the evaluation of
21 extent, nature, and duration of use; scope and scale; and dominance and prominence. However
22 there is no indication in the evaluation chart as how to make the distinction between a high,
23 medium, or low impact. There is no way that another reviewer could arrive at the same
24 determinations, given the lack of illustrations or directions.

25 **Q. Does D&F’s definition of cultural value make the identification of specific**
26 **scenic resources impossible?**

27 A. Yes. On page 9 D&F defines high cultural value to include “Landscapes shaped
28 by humans that have a positive effect on the aesthetic character of the land. Historical,
29 agricultural, recreational, transportation, village and town resources of high scenic value.” As
30 part of their expanded methodology, D&F defines High Cultural Value areas to include ‘Sites or
31 areas representative of classic New Hampshire scenery’ and ‘Sites of special meaning or

1 significance.’ However, there is no indication as to how to recognize these sites, or the threshold
2 between a high, medium, or low cultural value rating. Special meaning or significance is a very
3 broad concept that would logically include historical resources, which would not necessarily be
4 considered as scenic resources under the NHSEC rules.

5 **VI. REVIEW OF DR. KIMBALL & MR. GARLAND’S PRE-FILED**
6 **TESTIMONY**

7 **Q. Have you reviewed the testimony provided by Mr. Kimball and Mr. Garland**
8 **on behalf of the AMC?**

9 A. Yes, we have. Their work is not presented as a complete Visual Impact
10 Assessment and they have not presented themselves as aesthetic experts. They have simply
11 stated their testimony supplements the testimony filed by D&F on behalf of the AMC and
12 SPNHF.

13 **Q. What is your overall impression of their testimony?**

14 A. We found their criticisms of the Project VIA to be unsupported and inaccurate.
15 There are areas of their testimony that directly conflict with the work submitted by their own
16 visual expert, D&F. We have also found their method for identifying additional scenic resource
17 flawed and incomplete.

18 **Q. Dr. Kimball and Mr. Garland claim that the Project VIA cultural value**
19 **rating system is inconsistent with similar and more appropriate rating systems, such as the**
20 **NH Fish and Game’s Wildlife Action Plan (WAP). Is this an accurate critique and in line**
21 **with the D&F report?**

22 A. The New Hampshire Fish and Game’s Wildlife Action Plan (“WAP”) is based on
23 the endangered species and heritage rankings of species and habitats of concerns specific to the
24 State of New Hampshire. As such the WAP is a blueprint for conserving Species of Greatest
25 Conservation Need and their habitats in New Hampshire. This is not at all related to an
26 evaluation of cultural resources.

27 Kimball and Garland are incorrect in their reading of our methodology to determine
28 cultural significance. They seem to be under the impression that in order to be ranked high a
29 resource had to have a national designation. In their pre-filed testimony they claim “for a
30 cultural value to rank ‘High’ by TJD’s definition, it had to be, with few exceptions, of national
31 significance, i.e. a National Forest, National Scenic Byway, National Scenic Trail, or the like.”

1 (p. 7). This is not at all the case. It is clear in our methodology that resources of state
2 significance can be rated as high cultural value. Such resources include “resources of national or
3 state significance that are designated, protected, or noteworthy due to the quality of the
4 surrounding scenery that is intrinsic to their designation” (Emphasis added). Examples of high
5 cultural values sites include (but are not limited to): National Scenic Byways (e.g., the
6 Connecticut River Scenic Byway); State parks (e.g., Bear brook State Park, Pawtuckaway State
7 Park, Weeks State Park); New Hampshire Department of Transportation (“NHDOT”) scenic
8 overlooks (e.g., Route 2 Lancaster Overlook); conservation areas with high visual quality (e.g.,
9 Christine Lake, Nash Stream Forest, Pondicherry Unit of the Silvio O. Conte National Fish and
10 Wildlife Refuge, Franklin Falls reservoir); National Register properties that derive their
11 significance from the landscape setting (e.g., Mountain View Grand Resort, Deerfield Center).

12 Dr. Kimball and Mr. Garland’s criticism conflicts with the D&F Report submitted on the
13 AMC’s behalf. The D&F report follows a cultural value rating system in its analysis of scenic
14 resources that is very similar to the approach taken in the Project VIA. Our explanation of why
15 this is an appropriate rating system is found in the supplemental portion of this testimony under
16 the ‘Scenic Significance’ heading.

17 Not only does our approach to cultural resources relate very closely to the D&F report,
18 our approach is very similar to the methodology used in prior visual assessments submitted to the
19 NHSEC.

20 **Q. Dr. Kimball & Mr. Garland claim the overall visual impact was dominated**
21 **by a single individual and lacked objective rigor. Can you speak to this?**

22 A. TJD&A has been involved in visual impact assessments for major infrastructure
23 projects in New England for the past three decades. For most of these assignments Mr. DeWan
24 has served as the principal investigator and primary author of the VIA. TJD&A’s professional
25 staff is typically involved in the preparation of support material, fieldwork, photo simulations,
26 and assessment of visual impacts. Ten of our recent wind power projects in Maine have been
27 peer reviewed by Dr. James Palmer of TJ Boyle as part of the permitting process before the
28 Maine Department of Environmental Protection, and he has not taken issue with this approach.

29 As he has done in prior VIAs, Mr. DeWan was the primary investigator and principle
30 author of the Project VIA, working closely with his staff throughout the inventory and analysis
31 process. D&F followed a similar procedure in that Mr. Dodson collaborated with a team within

1 his office to collect data, inventory scenic resources, and evaluate sites. In their attempt to find
2 fault with the Project VIA, Kimball and Garland are in conflict with their own expert.

3 **Q. Are there portions of Kimball and Garland’s testimony that are**
4 **overreaching and unsupported?**

5 A. Yes, there are several places in Dr. Kimball and Mr. Garland’s testimony that are
6 overreaching and unsupported. Dr. Kimball and Mr. Garland claim (on p. 7 of their prefiled
7 testimony) that Mount Monadnock would have received a medium rating for cultural value under
8 our rating system. However, on p. M-8 of the Project VIA we clearly state that a State Park that
9 is noteworthy for the quality of its scenic resources (such as Monadnock State Park) would be
10 rated high.

11 Dr. Kimball and Mr. Garland claim (on p. 7 of their pre-filed testimony) that the Project
12 VIA cultural rating system fails to acknowledge or under ranks many scenic resources in which
13 the State, towns, organizations, and its citizens have invested considerable financial and human
14 resources for their protection. Examples given include the 13-Mile Woods corridor along the
15 Androscoggin River, White Park in Concord, and four town-designated scenic roads in
16 Deerfield. The Project VIA did recognize all of these resources. The 13-Mile Woods
17 Community Forest (a working forest along the Androscoggin River) is shown on the 10-mile
18 viewshed maps in Attachment 6 and described in more detail in Attachment 7 to the Project VIA.
19 White Park in Concord (2.9 miles from the corridor) is described on page 5-14 of the Project
20 VIA.¹⁰ The 9 locally designated scenic roads in Deerfield are described on page 6-22 of the
21 Project VIA. Additional detail is also provided in the Supplemental Report, Attachment A.

22 Dr. Kimball and Mr. Garland claim (on p. 12 of their pre-filed testimony) that the Project
23 VIA excluded North Percy Peak for consideration due to the use of vegetative screening.
24 However, North Percy Peak is clearly shown on the map on page I-97 of the VIA, along with a
25 photograph of the Project from North Percy Peak, along with a visual impact assessment of the
26 effect of the Project on Nash Stream Forest. The viewshed mapping is not the defining source in
27 determining project visibility; in this case, the viewshed maps included in the Project VIA did

¹⁰ Because White Park is located in a defined Urban Cluster in Concord, the SEC Rules require that the area of potential visual impact extend out to a 2-mile radius from the Project. Site 301.05(b)(4)(c). Therefore, the potential visual impact of the Project on White Park would not be subject to review under the SEC process. US Census Bureau. 2010 Census – Urban Cluster Reference Map: Concord NH.

1 not indicate that the project would be visible from the Percy Peaks. However, based upon our
2 research into Nash Stream Forest and the surrounding area we were able to identify specific
3 points of visibility that were included in our field work.

4 **Q. Dr. Kimball & Mr. Garland’s testimony claims you used the National**
5 **Conservation Easement Database to eliminate conservation areas as not having scenic**
6 **quality if the easement area was not classified as “open space”. Is this true?**

7 A. This claim is completely false. TJD&A did not eliminate any conservation areas
8 based on their lack of scenic quality if the conservation area was not classified as “open space”
9 in the National Conservation Easement Database (“NCED”). The NCED was used to learn more
10 about each conservation easement, determine ownership, and serve as an indicator of public
11 access. The classification of “open space” is located under the “conservation purpose” category,
12 which was not used to determine scenic quality or accessibility. No conservation lands were
13 eliminated based solely on any findings in the database.

14 **Q. Dr. Kimball and Mr. Garland claim the Project VIA delta viewshed maps**
15 **did not utilize viewshed data to provide a clear “intensity”. Can you explain what they**
16 **mean by this and why it is not possible to develop the type of map they envision?**

17 A. The development of an existing visibility analysis or delta viewshed map is not
18 required by NHSEC regulations. Site 102.55 requires that the visibility analysis include only the
19 “visibility of the proposed facility”. A visibility analysis was completed for both existing and
20 proposed structures because the majority of the Project is located in an existing corridor; it was
21 helpful to determine where there is currently visibility versus where there will be visibility in the
22 future.

23 The Project VIA includes three types of viewshed maps: *Existing Structure Visibility*
24 (which show the range of existing visible structures), *Proposed Structure Visibility* (which show
25 the range of existing and proposed visible structures), and the *Increased Areas with Structure*
26 *Visibility* (which show the delta between areas of existing and proposed visibility and
27 demonstrates those areas in the landscape where there is currently no visibility of the structures
28 that will have visibility following Project construction). The production of these three maps
29 demonstrates both the increase in the number of visible structures and the areas where structures
30 will be visible in the future in comparison to the current area of visibility.

1 At line 19 on page 15 of their testimony, Dr. Kimball and Mr. Garland wrongfully
2 criticize the Project VIA visibility analysis because the delta maps do not demonstrate the
3 increase in the number of visible structures. The delta maps are clearly intended to show the area
4 of visibility, and it is impossible to clearly map both the change in the number of visible
5 structures as well as the change in the area of visibility on a single map. The existing and
6 proposed maps demonstrate the increase in the number of visible structures, as the reader flips
7 back and forth between the existing and proposed visibility maps. At the Technical Session on
8 March 23, 2016, Mr. Garland was asked if the change in structure intensity (or increased number
9 of visible structures) could be represented on a map showing the area of increased structure
10 visibility. He agreed that it is not possible to show both the area of increased visibility and the
11 increase in the number of visible structure on the same map.

12 At line 21 on page 15, they state that the Project VIA delta maps “also fail to account for
13 the additional height or size of towers exposed to view”. A computer visibility analysis is
14 conducted by determining where the top of each structure is visible across the landscape. Each
15 raster in the landscape is exposed to a varying amount of structures. There is no reasonable way
16 to develop a map such as Kimball and Garland are suggesting. This is not a failure of the Project
17 VIA. It is a failure of Kimball and Garland to understand the technical aspects of this type of
18 computer analysis.

19 The Project VIA goes above and beyond the visibility analysis required under the
20 NHSEC rules by examining both existing and proposed structure visibility.

21 **Q. Dr. Kimball and Mr. Garland utilized the visibility analyses completed by**
22 **the Applicant to determine potential visibility from scenic resources. Did their**
23 **methodology align with generally accepted professional standards and NHSEC**
24 **regulations?**

25 A. No, their methodology did not. Dr. Kimball and Mr. Garland used the Project
26 VIA visibility analysis raster to determine what scenic resources would have visibility of the
27 Project. Instead of treating the viewshed area as the APVI, as required by the NHSEC, they took
28 an alternate approach to determining potential visibility. They employed what Dr. Kimball
29 referred to at the March 23, 2017 technical session as ‘caveats’ to attempt to assess what would
30 be visible to the ‘naked eye’ from various scenic resources. This approach to determining
31 visibility was arbitrary, not supported by any credible research, not supported by field

1 investigations, and is not replicable. It also is not in compliance with NHSEC rules, which states
2 that the APVI is based on a computer-based visibility analysis (Site 301.05(b)(4)).

3 As we understand their work, they determined potential visual impact on scenic resources
4 based on the number of structures theoretically visible from various distance zones. In order to
5 be counted in the immediate foreground, at least 1 structure would have to be visible within 300
6 feet from the Project; in order to be counted in the foreground, at least 2 structures would have to
7 be visible between 300 feet and 0.5 mile from the Project; in order to be counted in the
8 midground, at least 6 structures would have to be visible between 0.5 mile and 3 miles from the
9 Project; and in order to be counted in the background, at least 11 structures would have to be
10 visible between 3 miles and 10 miles from the Project. The chart in Appendix 1 in their pre-filed
11 testimony has column labeled “Total Units Impacted,” which is a sum of the number of units
12 (acres, miles, or points) that would be affected, displayed by resource categories. This is an
13 approach that we have never encountered before. Without illustrations to explain the
14 relationship between the numbers on the chart and potential Project visibility, it is difficult to
15 understand its significance.

16 When asked about this approach at the March 23, 2017 technical session, they indicated
17 that this approach was used in an effort to be conservative and determine what is likely visible to
18 the ‘naked eye’ as opposed to the way the way the computer treats ‘visibility’. We agree that the
19 computer visibility analysis is not an accurate representation of ‘visibility’; however, the only
20 way to determine true visibility is through field testing and further analysis through 3D models.
21 Dr. Kimball and Mr. Garland’s approach was under inclusive, unsupported and inaccurate. This
22 is evident in their identification of only 240 resources within the 10-mile APVI on either side of
23 the Project.

24 **Q. Dr. Kimball and Mr. Garland identified 82 additional scenic resources they**
25 **claim were missed by the Applicant. What is your response to this?**

26 A. Dr. Kimball and Mr. Garland utilized many of the same databases that were the
27 foundation of our work; however, their lack of research to learn more about each resource, their
28 lack of concern for public access, and use of the potentially eligible historic resources submitted
29 as part of the Section 106 process makes a large part of this identification process flawed. In
30 addition, there are several locations listed as missed in the Project VIA, when in fact the items

1 were referenced in the Project VIA. Below is a summary of the 82 resources identified by
2 Kimball and Garland:

- 3 • 51 are potentially eligible historic resources submitted as part of the Section 106 process.

4 These 51 resources are not considered eligible for the National Register until they are
5 reviewed by the NHDHR. The overwhelming majority of these locations are private
6 homes with no known public access. Of the 51 potentially eligible historic resources
7 identified by Dr. Kimball and Mr. Garland:

- 8 ○ NHDHR determined that 34 did not require further survey in the Section 106
9 process, and are therefore not considered eligible for listing in the National
10 Register of Historic Places.
- 11 ○ NHDHR found 1 was ineligible.
- 12 ○ NHDHR determined 6 are eligible, but all are private homes.
- 13 ○ NHDHR has not yet reviewed 7 properties, but all of these are private homes. In
14 addition, these 7 have been evaluated by the Applicants' historic consultants and
15 found through viewshed mapping and/or field survey, to have very isolated,
16 limited, or minimal views of the Project (or views unrelated to the property's
17 significance). (Note: A total of 16 properties listed by Kimball and Garland were
18 found by the Project's historic consultants to have little to no views based on
19 viewshed mapping and their field verification.)
- 20 ○ 2 were included in the Project VIA: Veteran's Memorial Park in Hill received a
21 complete individual assessment. Green Grove Cemetery received an evaluation
22 in Attachment 8 Private Property Photosimulations, submitted February 2016.
23 Neither location will have visibility of the Project.
- 24 ○ 1 eligible location is the Merrimack County Farm, County Jail, and State Nursing
25 Home property, which is addressed in the eligible historic properties section of
26 this Supplemental Report.
- 27 • 31 resources remain that were not taken from the list of potentially eligible historic
28 resources:
 - 29 ○ 10 were already listed as scenic resources in the Project VIA, either as unique
30 resources or in the description of larger other resources (e.g., Spears Park in
31 Concord).

- 1 ○ 2 are listed as ‘unknown lake’. These lakes are not listed in the NH Public Waters
2 document or the NHF&G public access website. Without public access these
3 waterbodies do not qualify as scenic resources under Site 102.45.
- 4 ○ 2 of the resources are bike routes listed by NHDOT. It is unclear what is meant
5 by Northern and Southern regions on the AMC listing, since the NH Bicycle
6 Route Maps are presented by Tourism Regions. The NHDOT website notes “the
7 bicycle route mapping is designed to provide cyclists information on
8 transportation routes through New Hampshire.” For the most part the routes
9 follow public roadways and are not scenic resources unto themselves, according
10 to AMC. These routes are not designated for their scenic quality and therefore do
11 not meet the definition of scenic resources in Site 102.45.
- 12 ○ 1 (Burns Campground) is a commercial campground, which does not meet the
13 definition of scenic resource. Two publicly accessible scenic resources are near
14 the campground, i.e., Burns Pond and Forest Lake State Park, and are included in
15 the Project VIA.
- 16 ○ 11 are conservation easements on private or town-owned property without any
17 known public access. For example, the Percy Summer Club in Stark is private
18 property with a gate at the entrance blocking access. Others are conservation
19 easements surrounding private homes with no identifiable public access, are
20 agriculture lands without any private trails or evidence of public access, or town-
21 owned properties held in conservation for a water district.
- 22 ○ 1 (Blossom Hill and Calvary Cemeteries) is a historic site located in the defined
23 Urban Cluster in Concord. The SEC Rules require that the area of potential visual
24 impact extend out to a 2-mile radius from the Project per Site 301.05(b)(4)(c).
25 Therefore the potential visual impact of the Project would not be subject to review
26 under the SEC process.¹¹
- 27 ○ 1 (Phillips Brook) is a canoe trail identified because of its apparent citation in the
28 *AMC River Guide New Hampshire Vermont (4th ed.)* published in 2007.
29 However, based upon an extensive Internet search, we found no mention of a

¹¹ US Census Bureau. 2010 Census – Urban Cluster Reference Map: Concord NH

1 canoe trail or any type of public recreation on Phillips Brook. Neither the brook
2 nor the trail is listed in the NH Official List of Public Waters document published
3 by New Hampshire Department of Environmental Services Water Division, July
4 2016.¹² The National Park Service notes that the brook is characterized as a
5 "Wild Corridor and surrounding watersheds are virtually undeveloped and
6 remote," but does not reference any recreational use of the brook, nor does it list
7 scenery, recreation, or fishing as "ORVs" (outstandingly remarkable values).¹³
8 There is no mention of the canoe trail in the 2010 Delorme New Hampshire and
9 Gazetteer listing of Paddling Locations.

- 10 ○ 1 (Ride the Wilds) is an ATV trail network. This network aligns in large part
11 with the State ATV trails and State Snowmobile corridors. ATV users generally
12 benefits from transmission line corridors where allowed by the underlying
13 landowner. The Project VIA evaluated 44 snowmobile and ATV trails; none had
14 a concern regarding potential visual impact.
- 15 ○ The single identified resource with public access not accounted for is the Fernald
16 et al conservation easement (or the Mulligan Forest) in Nottingham, located
17 approximately 1.5 miles northwest of the Deerfield substation. The property is
18 bisected by an existing transmission corridor (not related to the Project). The only
19 part of the easement with potential visibility is in the existing transmission
20 corridor, where several of the Project structures may be seen in the vicinity of the
21 enlarged substation at a distance of 1.9 miles.

22 The resources identified by the AMC either are not scenic resources as defined under the
23 NHSEC rule, or have already been evaluated in the Project VIA. For a detailed
24 description of each of the above sites, see Table 3 in the Supplemental Report.

¹² <https://www.des.nh.gov/organization/commissioner/pip/publications/wd/documents/olpw.pdf>

¹³ <https://www.nps.gov/ncrc/programs/rtca/nri/states/nh.html>

VII. REVIEW OF CITY OF CONCORD VIEWSHED ASSESSMENT

Q. Have you reviewed the Visual Impact Assessment Report Prepared by Beth Fenstermacher for the City of Concord?

A. Yes, Ms. Fenstermacher's approach to visual impact assessment does not relate to the NHSEC rules or any generally accepted professional practices for visual impact assessments. The methodology used by the City is not replicable and it is not based on a review of scenic resources as defined in the NHSEC rules.

Q. Please briefly describe why the methodology employed by Beth Fenstermacher is flawed.

A. The report prepared by Beth Fenstermacher is not a visual impact assessment but rather an inventory and description of the changes that she believes would be seen from specific residential and commercial properties adjacent to the transmission corridor located within the City of Concord. The visual assessment is flawed to the extent it purports to be a visual assessment under the SEC rules because of its emphasis on private residential and commercial properties instead of publically accessible scenic resources. The analysis uses a rating system to determine whether the Project would have a high, medium, or low impact on properties. However, there is no indication of how the results of the evaluation were translated into the assigned ratings. The assessment is flawed because it is not grounded in modeling or photographic evidence, and its use of undefined terms. There are no photosimulations or other visualizations to illustrate what may be expected upon construction of the Project.

Q. Please describe why Ms. Fenstermacher's assessment does not comply with NHSEC rules and generally accepted professional visual impact assessment procedures.

A. Ms. Fenstermacher's methodology lacks consideration of scenic resources. The emphasis in her report is on residential and commercial properties immediately adjacent to the corridor, instead of potential visual impacts on scenic resources. The NHSEC rules and generally accepted professional methodologies are based on visual impacts to scenic resources. Ms. Fenstermacher does not provide an inventory description of any scenic resources in Concord, nor does she analyze the visual impact on any specific scenic resources.

In Appendix E, Ms. Fenstermacher provides a viewshed map with 8 locations identified on the map, but does not identify these locations as scenic resources, does not provide any description of the areas, and does not provide a visual assessment for these areas. In her pre-

1 filed testimony she identifies four “significant heritage landscape properties,” i.e., Carter Hill
2 Orchard, Diamond Hill Farm, Blood Farm, and buildings in downtown Concord. However, Ms.
3 Fenstermacher provides no description or analysis for these four properties, nor does she define
4 what is meant by the term “significant heritage landscape properties.”

5 Ms. Fenstermacher does not reference designated scenic roads or byways in her
6 testimony, probably because Concord has not officially designated any road as scenic.
7 (Canterbury Shaker Village Scenic Byway is the only roadway in the City that is designated, and
8 this is a state designation.) Nevertheless, Ms. Fenstermacher states “The Northern Pass travels
9 along and over scenic roads that lend to the rural character of West Concord. The cycling
10 community uses these roads often because of the scenic character.”

11 **Q. Please describe why her analysis is flawed.**

12 A. The analysis conducted by Ms. Fenstermacher is primarily limited to field work at
13 private properties immediately adjacent to the Project corridor. Field work consisted of the City
14 Planner and City Surveyor driving and walking the neighborhoods adjacent to the corridor, and
15 driving roadways that cross the Project corridor or are adjacent to the corridor. The only visual
16 representation they used in their analysis were the Map Sheets submitted by the Applicants with
17 the height of each structure written on each map.

18 There is no evidence that the viewshed maps or 3D models were used to identify
19 properties with potential visibility. Without the use of a 3D model, she was unable to determine
20 essential information needed to accurately determine views from allegedly affected properties.
21 She was unable to determine the exact location of each structure, the scale of each structure in
22 relation to other visible elements in the landscape, or to know with certainty whether certain trees
23 would be removed. Without a demarcation of the corridor ROW, it is unclear how she
24 determined the extent of vegetation clearing. Aside from visiting the site and reviewing the
25 Project maps, there is no graphic representation or method of analysis described. As noted in
26 Appendix C, the impact assessments are opinions of the City Planner, based on visiting the
27 properties that abut the transmission corridor.

28 **Q. Please describe why Ms. Fenstermacher’s rating system is flawed.**

29 A. Private residential and commercial properties were assigned a visual impact rating
30 of high, medium, or low. Ms. Fenstermacher does not identify how she assigns the ratings and
31 she fails to provide any evidence to support her opinions. Criteria used to rate each property

1 includes: close proximity to the Project; existing view of structures; extent of vegetation
2 removal; increased structure heights; increased clear view of structures; impacts during
3 construction. In addition to not providing any visual evidence of the impacts, it is not clear how
4 these criteria were used to assign a rating. Without an understanding of how the criteria relates
5 to the assigned rating, the rating is not justified or defensible.

6 Ms. Fenstermacher includes anticipated impacts to business operations during
7 construction in the visual impact criteria for commercial properties. This is not related in any
8 way to visual impacts and demonstrates a lack of understanding of visual impact assessment
9 methodology.

10 The description provided for each property is limited to terms that are not clearly defined
11 or provided in the testimony. For example, “More Impact from pole ht. increase” and “Higher
12 visual impact from pole ht. increase” are phrases used to describe the visual impact. However,
13 these terms are not defined and it is unclear what the specific impact would be on these
14 properties.

15 **Q. Please briefly describe why the viewshed mapping completed by Chesapeake**
16 **Conservancy is not helpful in providing additional visual impact information.**

17 A. The viewshed mapping completed by Chesapeake Conservancy included in
18 Appendix D of the testimony is based upon available data and provides a representation of
19 viewshed areas in Concord. However, there is no correlation between this detailed viewshed
20 analysis and the assessment of visibility from private properties or the potential impact on
21 properties listed in Appendix C. As is the case with all viewshed maps, it is intended to be an
22 indicator of potential visibility. The value of this map is to use it as a tool in the first step of a
23 visual impact assessment to determine areas of potential visibility. The viewshed analysis is not
24 used in coordination with fieldwork to support the rest of the impact assessment, and therefore, is
25 ultimately unhelpful.

26 **Q. Is the inclusion of buildings in the Chesapeake Conservancy visibility**
27 **assessment an accurate and appropriate exercise for this type of impact analysis?**

28 A. No, the visibility analysis from buildings is neither relevant nor accurately
29 portrayed in the visibility analysis. Since the focus is on publicly accessible scenic resources, the
30 focus should be on potential views from the landscape, not from within buildings. Most
31 commercial buildings, and certainly the upper floors of these buildings, are generally not public

1 places. In addition, no effort was made to determine if the points in the buildings where the
2 analysis was conducted are publicly accessible, or if there are windows from those floors. This
3 analysis cannot be used to determine visibility from scenic resources.

4 The way in which visibility from the buildings was calculated overstates the impact from
5 within the buildings. As described in a data request following the March 16, 2017 technical
6 session, the represented range of visibility from each building is based on the raster with the
7 highest number of theoretically visible structures. It is possible that the only place in the
8 building with visibility is the top floor, where there may be no publicly accessible viewpoint.
9 That building may be represented by the number assigned to a single raster, which is misleading
10 and over exaggerated.

11 **Q. Since Chesapeake Conservancy visibility analysis used a higher quality DSM**
12 **available for the city of Concord, how do the results compare to your visibility analysis?**

13 A. With the exception of building footprints and other subtle differences, the results
14 of both of our viewshed maps were very similar. Considering we used different data and a
15 slightly different approach, this confirms that the data and approach used in the Applicants'
16 visibility analysis is an accurate representation of potential visibility.

17 **VIII. CONCLUSIONS**

18 **Q. Have your conclusions regarding the visual impact of the Project changed**
19 **since you filed your Pre-filed Direct Testimony in October 2015?**

20 A. No. After reviewing and analyzing all of the critiques and criticisms on the
21 Project VIA, filed by Counsel for the Public and opponents to the Project, our conclusion that the
22 Project will not result in an unreasonable adverse effect on aesthetics remains the same.

23 **Q. Does this conclude your joint supplemental pre-filed testimony?**

24 A. Yes, it does.