

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

SUPPLEMENTAL PRE-FILED TESTIMONY OF DERRICK BRADSTREET

**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 **Q. Please state your name, title, and business address.**

2 A. My name is Derrick A. Bradstreet, P.E. I am a Project Manager for Burns &
3 McDonnell Engineering Inc. My current business address is 9400 Ward Parkway, Kansas City
4 MO 64114.

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

6 A. The purpose of my supplemental testimony is to describe updates to the overhead
7 design and related facilities, since the time my Pre-filed Direct Testimony was filed on October
8 16, 2015.

9 **Q. Has your role in the Project changed since your Pre-filed Direct Testimony**
10 **was submitted?**

11 A. As initially described in my Pre-Filed Direct Testimony, Burns and McDonnell
12 was hired by the Northern Pass Transmission Project (“Northern Pass” or the “Project”) as
13 proposed by Northern Pass Transmission LLC (“NPT”) and Public Service Company of New
14 Hampshire d/b/a Eversource Energy (“PSNH”) (collectively the “Applicants”) to be the lead
15 design engineer. Working for Burns and McDonnell, I was given the principal responsibilities of
16 overseeing the overhead design of the Project and overseeing the design of the high voltage
17 direct current (“HVDC”) converter terminal and other associated facilities. Since that time, my
18 specific duties have changed due to modifications in the contractual relationships between the
19 Applicants, Burns and McDonnell, and the Project’s lead contractor, PAR Electrical Contractors,
20 Inc. (“PAR”). Today, I remain the lead engineer involved in all of engineering scopes related to
21 this Project; I am primarily responsible for the overhead design.

22 My involvement in the other engineering scopes is related to the coordination and
23 direction of the various engineering support for the Project needs. As described by Mr. Kenneth
24 Bowes in his supplemental pre-filed testimony, Burns & McDonnell will be retained as the
25 Owner’s Engineer when the Project transitions from the siting and permitting phase to the
26 execution and construction phase of the Project. In the execution and construction phase, I will
27 support the Project as the lead engineer acting as the Owner’s Engineer to review the final
28 detailed design that will be prepared by PAR’s engineering sub-contractor.

1 **Q. Have there been any changes to the overhead design since your initial pre-**
2 **filed testimony was submitted in October 2015?**

3 A. Yes. The current design is almost identical to the Project design originally
4 submitted to the Site Evaluation Committee. However, since the initial filing, there have been
5 some modifications. Certain changes have been made due to feedback that the Project has
6 received during the siting and permitting process. Specifically, the location of thirteen structures
7 were shifted to further limit impacts to wetlands based on comments the Project received from
8 New Hampshire Department of Environmental Services (“NHDES”).

9 **Q. Are there other changes to the overhead design that the Applicants have**
10 **considered or are considering since your Pre-filed Direct Testimony was submitted?**

11 A. Yes. If additional changes are proposed during the siting process, the Applicants
12 will review potential design modifications to determine if any variation would adversely impact
13 another particular aspect of the permits. By way of example, there are certain structure locations
14 in Deerfield, at least two, where the Applicants may be able to make certain minor structure
15 shifts to avoid an area that has been identified by NHDES as a potential habitat for the small
16 footed bat. These two structure locations are in the process of being redesigned and reviewed by
17 other functional teams for consideration (environmental, aesthetics, etc.). The Applicants intend
18 to make this structure alteration with the NHSEC and NHDES to avoid potential impacts to this
19 habitat.

20 The Applicants have also reviewed and provided engineering feedback on potential
21 design alternatives in an effort to further avoid, minimize, and mitigate potential impacts to the
22 environment, aesthetics, and historic sites. These potential changes are discussed in more detail
23 in the supplemental pre-filed testimony of Kenneth Bowes, Victoria Bunker, Lee Carbonneau,
24 Sarah Barnum, and the joint pre-filed supplemental testimony of Terrence DeWan and Jessica
25 Kimball.

26 **Q. Has there been further confirmation related to the requirements of the**
27 **Project from the Federal Aviation Administration (“FAA”) since your pre-filed testimony?**

28 A. Yes. As of November 22, 2016, the Project has received all necessary approvals
29 from the FAA. The Project is not required to change structure heights or locations based upon
30 the final FAA approvals, but there are 31 structure locations that have a condition from the FAA

1 requiring they be lighted in accordance with FAA standards. For these structures, the FAA
2 requires the installation and use of red obstruction lights on the top of the structure.

3 **Q. Are there other analyses that have advanced related to the overhead design**
4 **since your pre-filed testimony?**

5 A. Yes. While still underway, the Applicants have advanced a preliminary
6 assessment of the potential electrical interactions the project may have on the Portland Natural
7 Gas Transmission System (“PNGTS”) for the approximately twelve miles of parallelism. This
8 assessment is still ongoing and will be used to discuss any potential interactions with the pipeline
9 owner. As is common with a project of this nature, a detailed assessment will be completed
10 during the execution phase where design changes or mitigation requirements will be finalized
11 with the pipeline owner. During this phase, it is not anticipated that the changes or mitigation
12 requirements will affect the Project design.

13 **Q. Have there been any changes to the nine site development packages related to**
14 **the converter terminal, transition stations and substation portions of the Project since your**
15 **October 2015 pre-filed testimony was submitted?**

16 A. Yes. All nine site development packages have been revised and resubmitted to
17 address comments from the Alteration of Terrain Bureau of NHDES pertaining to stormwater
18 management. Please see the Applicant’s submittals to NHDES on December 14, 2016 and
19 January 25, 2016 available on the SEC website. In particular, NHDES asked the Applicants to
20 confirm the original stormwater management system design assumptions by completing a
21 detailed geotechnical study. The Applicant subsequently obtained geotechnical information at
22 all nine sites. That information resulted in some changes to the designs which were re-submitted
23 to NHDES. All other comments or questions from NHDES were also addressed in the revised
24 plans and are reflected in the NHDES Final Decision, dated March 1, 2017.

25 **Q. Did the July 19, 2016 ISO-NE I.3.9 Determination of No Adverse Effect**
26 **change any of the Project requirements?**

27 A. Yes. The reactive power components required at both Deerfield Substation and
28 Scobie Pond Substation were modified in the approved I.3.9 requirements. At the Deerfield
29 Substation, the rating of the static var compensator (“SVC”) has been revised, which has
30 changed the overall footprint of the proposed SVC. Additionally, at Deerfield, the rating of the
31 switched capacitor banks has been revised, which changes the arrangement of the equipment in

1 the new yard at Deerfield. Changes associated with these reactive elements can occur within the
2 originally submitted fence line of the new yard at Deerfield. The approved I.3.9 also had revised
3 ratings for the switched capacitor banks at Scobie Pond. The changes to the reactive elements at
4 Scobie Pond can also occur within the originally submitted fence line of the Scobie Pond
5 expansion area.

6 **Q. Have there been any changes to the proposed design of the Deerfield**
7 **Substation since filing the Application in October 2015?**

8 A. Yes. The design of the substation has been advanced following the ISO-NE I.3.9
9 approval, which listed some changes in the size of the SVC and the size of the switched capacitor
10 banks at Deerfield. The changes to the equipment at the substation result in revisions related to
11 the physical arrangement of the existing Deerfield Substation. The overall footprint of the new
12 yard has not been modified from the initial documentation provided in the permit application.
13 However, the arrangement of the equipment in the new yard is somewhat modified. The
14 modifications to the arrangement and the equipment in the new yard require that one breaker,
15 originally proposed to be in the new yard, to be located in the existing yard. Locating this
16 breaker in the existing yard will require a minor modification to the fence line of the northwest
17 corner of the existing Deerfield Substation in the vicinity of the access road that is proposed to
18 connect the existing yard to the new yard. This change impacts areas that are already disturbed
19 as part of the other site work that should avoid additional impacts to wetlands or other natural
20 resources.

21 **Q. Have you reviewed the Dewberry Overhead Line Review report, dated**
22 **November 15, 2016? Do you have any comments to make at this time?**

23 A. Yes. The Dewberry Overhead Line Review report mostly discusses temporary
24 and permanent impacts due to the construction of the overhead transmission line. Almost all of
25 the temporary impacts discussed in the Dewberry report are common and expected during
26 construction of a high-voltage transmission line. There are measures in place to limit the impacts
27 during construction and the construction team will have oversight to ensure that the proper
28 measures are used throughout the project area. Short term and long term impacts from the
29 transmission line will be handled with permit approvals and conditions placed on the Project
30 approval, including those conditions placed on the Project by NHDES and the New Hampshire
31 Department of Transportation.

- 1 **Q. Does this conclude your supplemental pre-filed testimony?**
- 2 A. Yes, it does.