

**STATE OF NEW HAMPSHIRE  
SITE EVALUATION COMMITTEE**

**Docket No. 2015-06**

**Joint 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**

**SUPPLEMENTAL PREFILED DIRECT TESTIMONY OF KRIS PASTORIZA ON  
BEHALF OF THE EASTON CONSERVATION COMMITTEE**

**APRIL 17, 2017**

1 **Supplemental Testimony**

2 **Q. Would you like to supplement your testimony regarding burial of the line in**  
3 **Easton?**

4 A. Yes, and I want to clarify for the Committee that, although the Applicants claim  
5 that their plans for this Project are quite well-developed, there are still many, many unanswered  
6 questions about the underground construction. Proposed burial in Easton includes approximately  
7 one mile total of horizontal direction drilling of two 18" boreholes, and eight miles of trenching  
8 approximately seven feet deep with a 3' x 3' wall of fluidized thermal concrete replacing native  
9 soils which will be removed and dumped.

10 The fluidizer for the concrete contains proprietary ingredients the manufacturer will not reveal.  
11 Eight miles of fluidized thermal concrete in a wall underground, means 14,000 cubic yards of  
12 fluidized thermal concrete placed underground in Easton. This translates to 1,400 dump truck  
13 loads of concrete. This underground concrete wall would encase a total of two 8 mile lengths of  
14 4' diameter HVDC cable, encased in 8" PVC piping. At 23 lbs. per foot this is 1,940,000 pounds  
15 of cable. Another two 1 mile lengths of cable from the Horizontal Direction Drilling adds  
16 242,800 lbs of cable for a total of more than 2 million pounds of cable. The PVC conduit adds  
17 another 750,000 lbs of material in the Easton Valley.

18 A mile of HDD with two 18" boreholes would require 142,500 gallons of drilling slurry with  
19 chemical additives. A 5% slurry loss (industry estimate is 3-9%) would mean about 7,000  
20 gallons of slurry and additives flowing out underground through porous soils, cobble, gravel,  
21 fissures and local streams in the Easton Valley.

1 The added two feet depth required by DOT would decrease the heat dissipation capability of the  
2 thermal backfill. The analysis would have to be re-run to see if more thermal backfill is needed.  
3 Four feet of cover now puts the bottom of the trench seven feet deep average. By OSHA  
4 standards the trenching work now requires a method of continuous protection everywhere for  
5 worker safety. This would add to the cost and time of the proposed project. Trench protection  
6 means wider excavation and /or the introduction of shoring. There is possible additional clearing  
7 in and beyond the row; additional pumping of groundwater encountered; additional ledge  
8 removal by blasting and pneumatic or hydraulic ledge splitting. Excavation and backfill work has  
9 increased 40% (two feet), waste cubic yardage increases 40%, borrow yardage for backfill  
10 increases 40%. Compaction effort increases. Also DOT wants this utility below other existing  
11 ones if it is in the roadway. The deeper the excavation—the greater the cost. More excavation  
12 means more time. The requirement that all trenches be filled at the end of a workday means more  
13 time. More time means more overhead, manpower, equipment, and possible acceleration costs to  
14 maintain schedule. More time is more inspection costs.

15 Easton has recently passed two warrant articles related to these issues. The relevant articles  
16 passed this year are: Article 23–Blasting Ordinance, Article 24–Borehold Sealing Standard,  
17 Article 25–Horizontal Directional Drilling, and Article 26–Thermal Backfill. See Appendix A.

18 How is the Applicant addressing what naturally occurring elements will be in the boring cuttings  
19 and where this will be disposed? How will it be tested and monitored for reaction and re-  
20 introduction of detrimental compounds into the environment where it is stockpiled or wasted?  
21 These are questions the Applicants' testimony and reports simply do not answer.

1 The requirement for Schedule 80 conduit (60 miles minus the municipal road burial areas where  
2 NPT has no permission to bury) would add considerably to the cost of the project.

3 Let's assume a 3 rod ROW or 49.5 feet. Deduct 22' of paved travel lane and shoulder, and you  
4 now have 27.5' remaining. Assuming the row is centered with the travelled way, there is about  
5 thirteen feet to bury the line seven feet deep on average. A backhoe for this work will take up ten  
6 of the remaining thirteen feet and needs room to swing and work. DOT wants the construction  
7 off the road and as far to the edge of the row as possible. Trees, poles, stone walls, ditch lines,  
8 drainage structures, existing buried utilities, wetlands, etc. all are there. How about burying all  
9 construction trenching daily! Also construction only is to be allowed during six months of the  
10 year with no work on weekends and holidays. All these conditions must be met and final design  
11 plans reviewed and approved as meeting UAM standards prior to construction. Included in these  
12 plans must be documents showing how the traveling public will not be impeded and the public's  
13 safety insured. That's a tall order. Is NP up to this? I wonder if they will claim the right to cut  
14 property owners' trees along the row line saying that they will need this clearance to construct  
15 and will want to preserve this clearing work permanently? I will bet they will. That is going to be  
16 costly. Pumping of water is huge with the DOT and when will NP produce plans for this and  
17 documented easements to run piping along and through private property for discharge. Some  
18 temp piping could be more than a mile long. Not a small task. Is NP capable? This type of pipe  
19 can't be run in the way of the excavators and will most likely end up on private property.

20 One lane open all the time could put another severe speed bump in the way. This is the only safe  
21 way. This affects the route for EMT/Ambulance drivers and would cause people to have to be

1 taken around the Notch to get to Littleton. It also is a problem for fire fighters. This is another  
2 Seabrook in the making.

3 The Applicant should explain and elaborate on the impact of deeper burial of the NPT line below  
4 grade required by NHDOT guidelines. The average excavated trench changes from five to seven  
5 feet minimum. This is a 40% increase in the work. This will increase the project cost and project  
6 schedule. If excavated waste increases by 40%, as an example, the Applicant needs to consider  
7 this in their current planning and execution of the work. I do not believe that this work has been  
8 done.

9 Quantities of rock will be removed along some areas of NH116 in Easton. Have they discussed  
10 or considered alternative means to complete explosive or hydraulic splitting that could be  
11 employed in this area?

12 In Franconia, NPT is undertaking a significant subaqueous crossing of the Gale River. The  
13 boring pit is at or in the proximity of a heavily travelled intersection. The installation here will  
14 require the pit and structure to be thirty plus feet deep. Steel sheet piling installation, extensive  
15 dewatering equipment, large cranes, track backhoes, loaders, ten wheelers, possible blasting  
16 work, compaction work, the use of generators, control equipment for the boring, bentonite  
17 storage, mixing and recovery equipment, crew trucks, concrete mixers and pumps and other  
18 equipment will be all used here over several weeks.

19 **Q. Do you have any other unanswered questions for the Applicant?**

20 **A.** Yes. Please explain how NPT work here will not disrupt the orderly flow of  
21 traffic either at the entrance pit or receiving pit? How will NPT mitigate extreme noise here

1 from sheet piling work and similar operations? Where and how does NPT intend to discharge  
2 pumped groundwater from this site? How will NPT close this work site at night? NHDOT does  
3 not allow work in the ROW nights, weekends, and holidays. Sometimes this work requires 24/7  
4 shifting. Please explain how businesses here will be compensated for certain loses.  
5 It will be necessary to cut trees along NH116 to install the NPT line along the edge of the  
6 NHDOT ROW. In doing so does NPT intend to replace any trees cut? Will NPT require that no  
7 substantial tree growth be allowed in the ROW over the life of the line? Will NPT require that  
8 trees on private property be cut which might pose a danger to the underground facilities?

9 **Q. Do you have any corrections from your previously filed testimony?**

10 A. Yes. Where I refer to “one 36” borehole”, it should be “two 18 inch boreholes”.  
11 Also, the 50 foot permanent clearing over buried lines should be a 30 foot clearing.

12 **Q. Do you have any additional information to supplement your testimony?**

13 I have included two documents on PAR’s safety record. See Appendix B. I have also included a  
14 document on Eversource’s safety and environmental record, see Appendix C, and a DOT report  
15 on nitrate contamination of water from blasting, see Appendix D. Appendix E is about  
16 contaminants in fly ash, a product used in concrete. Please see <http://imgur.com/a/aCsRy> and  
17 <http://imgur.com/a/ojxIH> for IMGUR albums regarding NPT. Appendix F and Appendix G are  
18 maps of the wells in the Town of Easton. Has NPT considered the location of wells and the  
19 location of pipes from the wells to the locations they service? Appendix H shows Northern Pass  
20 proposed HDD drilling locations on Route 116 in central Easton and the aquifer underlying  
21 them. Appendix I is an aquifer map of Franconia; please note the purple dots at the top of the

1 map which represent the location of the “microtunnel” (36” borehole) proposed under the Gale  
2 River.

3 **Q. Does this end your testimony?**

4 **A. Yes.**