

Comment on Eversource's claimed clearance requirement between OPGW and conductors DE-24-087 and SEC 2024-02

Eversource claims the required clearance between the OPGW and conductors is 15', but a 2010 river crossing [document](#) for the C-196 states *"In addition, the **minimum distance requirement between the phase conductors and the OPGW cable, according to NESC Table 235-6-2a, is 57.3 inches (4.8 feet) when corrected for 115kV operation. PSNH calculates that the minimum distance between the phase conductors and OPGW cable is 3.0 feet vertically and 4 feet, 10 inches horizontally (5.7 feet) when the phase conductors are at 30 degrees F without ice, and the OPGW cable is at 30 degrees F with 1 inch of radial ice [the structure was taller than 60'].** As designed, all clearances exceed NESC requirements"* **This would lower structures by 10'.**

In the same document Eversource claims: "The new OPGW cable will be a 72-fiber conductor, tensioned to a maximum of 6,500 pounds, and **sagged to National Electrical Safety Code (NESC) and American National Standards Institute (ANSI) C2-2007 Heavy Load Conditions (0 degrees F, 4 pounds per square foot wind loading, and ½ inch radial ice)**"

"Rule 250D was introduced in 2007 and currently requires that transmission lines in this area of New Hampshire be designed to withstand 1-inch of radial ice with 40 mile-per-hour winds."

(Eversource exhibit 11 DE-24-087 p. 61)

Are structures taller than 60' required to be designed to maintain clearances and withstand loads when conductors and OPGW are covered with ½" or 1" of radial ice?

For what conditions/conductors is Eversource actually designing the X-178 structures? (What is the maximum load and amperage (not the same as conductor weight) they could carry?)

Where is Eversource's data on the structure failures, if any, on the X-178 and does this data support the use of metal rather than wood structures?

"Some utilities are adopting NESC Grade B loading for lines serving critical infrastructure as a "hardening" activity. Others are changing from wood to alternate material poles on these "hardened" lines. However, it should be clear that moving to non- wood poles is a mistake. The failures they are trying to prevent are not failures that occur at or below the design loads. Instead, they are trying to prevent those failures that cause severe long-term outages following ice storms or hurricanes, and those failures occur because some system components experienced loads substantially above their design loads. In those situations, wood poles are the far superior choice because of their unique overload capacity.)

(Disclosure: this [article](#) was written by the American Wood Pole Council.)

During Northern Pass, Eversource witness Robert B. Andrew stated that the only “upgrade” on the X-178 was in 1985:

Exhibit B -Testimony of Robert D. Andrew
Petition for Approval of Lease Agreement Between Public Service Company of New Hampshire
d/b/a Eversource Energy and Northern Pass Transmission LLC
Docket No. DE 15-xxx
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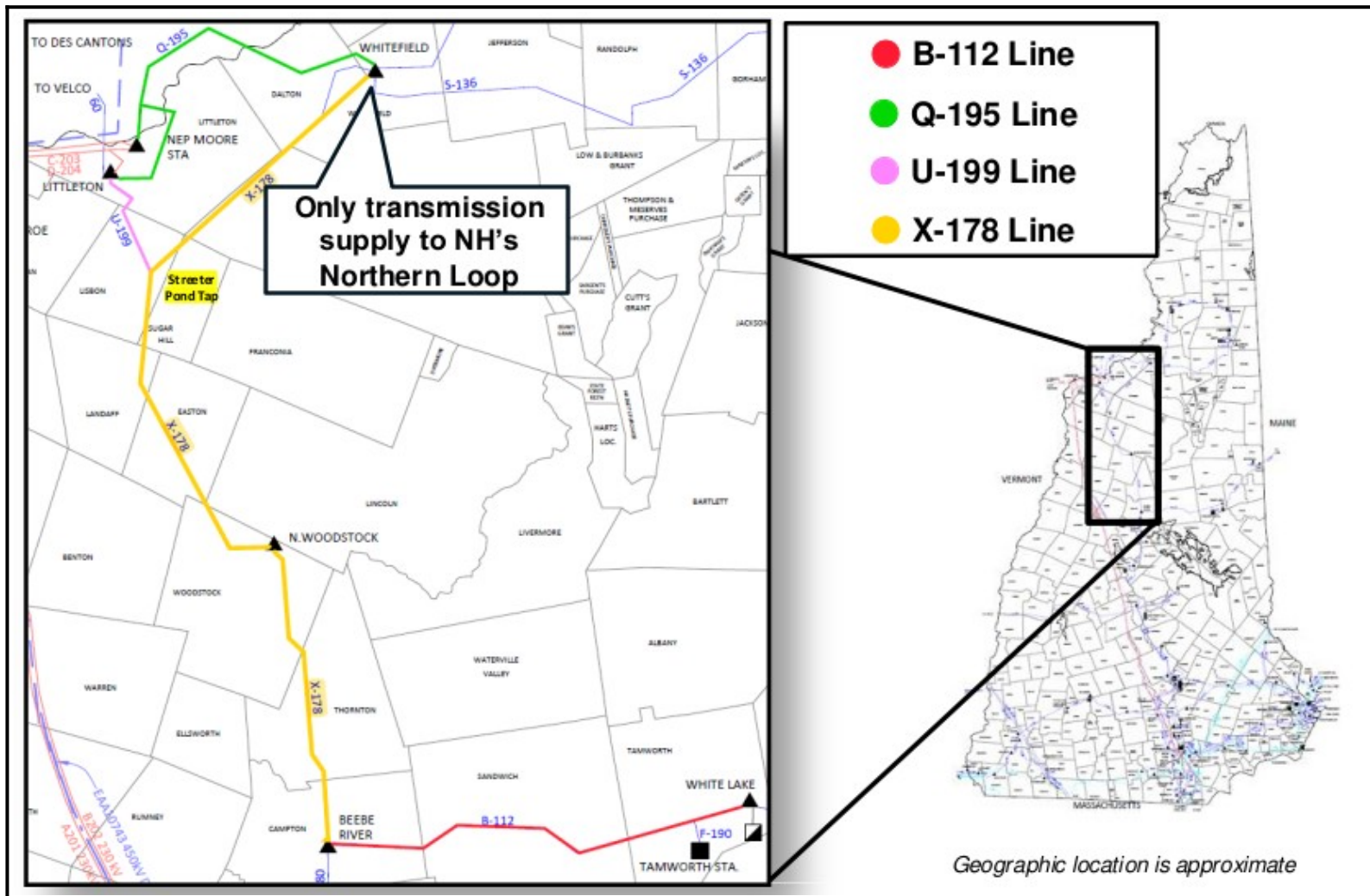
1 Moore dam facilities. PSNH acquired the rights for this ROW during the late 1940’s and built
2 the X178 line in that corridor in approximately 1948. Since 1948, PSNH has not installed any
3 additional transmission lines in this ROW. The lines have changed very little since the initial
4 installation, with the exception of a segment of the X178 line that was rebuilt in 1986 with a
5 larger conductor in order to facilitate the interconnection of the Hydro Québec DC line, Phase
6 1. The rebuild of the X178 line did not require the acquisition of additional ROW as it was
7 placed off center within the existing ROW, leaving space for future use of the ROW. The load
8 in this area has not required the upgrade of the remaining sections of the X178.

Eversource now claims that the X-178 (3) was built in 1969 with 795 ASCR. Forest Service documents indicate the whole X-178 was built in 1948 and the X-178 (3) was either reconducted or rebuilt with 795 ASCR in 1969.

Is the testimony above incorrect? Where is Eversource’s documentation showing that the X-178 (3) was completely rebuilt in 1969?

Eversource’s October 22, 2024 presentation to the PAC (it couldn’t be bothered to correct its map) claimed the X-178 asset condition project is of vital importance because the X-178 is the “only transmission supply to NH’s Northern Loop.”

The same map, however, shows that the Coos Loop is connected to the grid via the X-178 (1 & 2) → U-199 → Q-195, and the X-178 (3) → U-199, and the Q-195 from the Moore/Comerford, Vermont.



During the Northern Pass hearings, Bill Quinlan was asked:

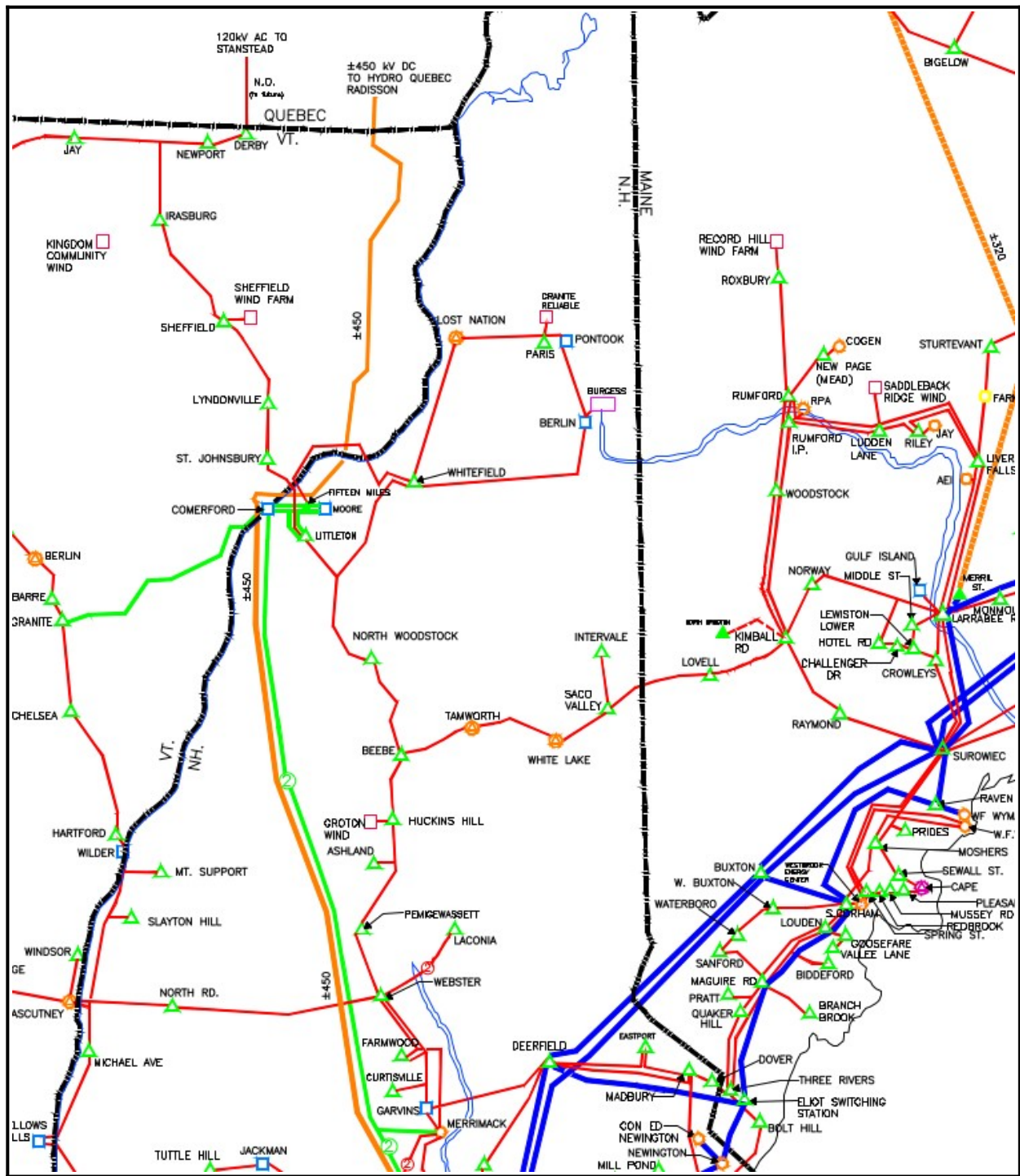
“And, in order for power from the Coos Loop to get to the New England power grid, it has to go out of one of two paths, is that right? if you look at this exhibit, you can see both paths lead out of Whitefield towards the grid, correct?”

A. Yes...**There's a westerly path into Vermont** and a southerly path into southern New Hampshire.

{SEC 2015-06} [Morning Session ONLY] {04-13-17 pgs. 83-84

If one looks at the complete grid map and not just Eversource's map, it appears likely that Eversource will construct a line from the Coos Loop east to Maine and north/northwest, to Hydro-Quebec.

Eversource had reasons for rebuilding the whole Coos Loop with the same structures, OPGW and 1272 conductor it plans for the X-178, U-199 and Q-195:



The Coos Loop runs from Lost Nation – Pontook – Berlin - Whitefield. It consists of four lines: the D-142 (\$53 m.) O-154, (\$35 m. somehow reduced from \$50 m. during construction), W-179 (\$64.5 m.) and S-136 (\$165 m., in-construction.)

Eversource’s costs per structure for these “asset condition” complete rebuilds:

W-179 (\$.38 m.) 2024
U-199 (\$.45 m. estimated)
S-136 (\$.47 m. estimated)
Q-195 (\$.45 m. estimated)
O-154 (\$.25 m.) 2024
D-142 (\$.25 m.) 2023

For Eversource’s “asset condition” complete rebuilds that connect to the X-178 from the south:

E-115 (\$.36 m.) 2023
B-112 (\$.38 m.) 2024
A-111 (\$.26 m.) 2022
Z-180 (\$.38 m.) 2023
P-145 (\$.32 m.) 2023
J-125 (\$.35 m.) 2024
D-118 (\$.14 m.) This was a 2015 reliability upgrade with all new structures and 1272 ACSS conductor, scrutinized for planning and costs.

X-178 (\$.65 m.) This assumes the \$384.61 M (-50/ +200%) does not increase or decrease.

