

1 Q. Reference: CAN/CSA-C22.3 No. 60826-10, Design Criteria of Overhead Transmission
2 Lines

3 The referenced standard CAN/CSA-C22.3 No. 60826-10 states in Section 6.2.1 on
4 page 43:

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6 *“...the effects of acceleration due to funneling between hills or due to sloping
7 grounds are not covered and may require specific studies to assess such influences.”*

8 Were amplification factors for topography and wind funneling applied in the
9 assessment of whether or not the design of the Labrador Island Link met the
10 CAN/CSA-C22.3 No. 60826-10 standard for 1:150 and 1:500 year return periods? If
11 so, please provide the amplification factors. If not, why not?

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14 A. Section 6.2.1 of the standard states:

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16 Although this subclause applies in principle to any overhead line, it
17 is most accurately defined for the following conditions:

- 18 • Span lengths between 200 m and 800 m. Calculations of the
19 various coefficients (in particular for gusty winds) have to be
20 checked for span lengths outside this range. However, for span
21 lengths greater than 800 m, a gust coefficient corresponding to
22 800 m span could be safely chosen. For span lengths less than
23 200 m, the values applicable to 200 m span can be applied.
- 24 • Height of supports less than 60 m. Taller supports could be
25 designed following the same principles, but the calculated wind
26 actions would need to be checked. In particular, the eigen

1 frequency of structures above 60 m will often increase the gust
2 response factor.

- 3 • Altitude of crossed areas not exceeding 1 300 m above the
4 average level of the topographic environment, except where
5 specific study results are available
- 6 • Terrain without local topographical features whose size and
7 shape are likely to significantly affect the wind profile of the
8 region under consideration.

9 It is important to note that requirements for winds associated with
10 localized events such as tornadoes are not specifically covered in
11 this standard. These winds can cause serious damage to
12 transmission lines either directly (due to wind forces) or indirectly
13 (due to impact of wind carried objects). Furthermore, the effects of
14 acceleration due to funnelling between hills or due to sloping
15 grounds are not covered and may require specific studies to assess
16 such influences.

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18 The Labrador-Island Transmission Link (LITL) conforms to the general conditions
19 summarized above, and no locations along the route for the LITL where funnelling
20 between hills or due to sloping grounds would be expected have been identified.

21 As a result, additional amplification factors were not applied beyond those provided
22 for general application in the standard.