Transmission

Q. Reference: "2024 Capital Budget Application," Newfoundland Power Inc., June 22, 2023, sch. B, Transmission Line 146L Rebuild, p. 82.

a) What CSA standard does Newfoundland Power use for the design of new 138 kV transmission lines? If CSA Standard 22.3 No.1: Overhead Systems and/or CSA Standard 22.3 No. 60826: Design Criteria of Overhead Transmission Lines were used, please explain why. If not, why not?

b) Please explain why a full upgrade of transmission line 146L is required instead of like-for-like replacement under maintenance procedures.

A. a) Newfoundland Power designs transmission lines to meet Canadian Standards Association ("CSA") standards and guidelines outlined in *CSA standard C22.3 – Overhead Systems*. This standard designates Newfoundland Power's service territory as either severe or heavy weather loading areas.

In addition, *CSA Standard C22.3 – Overhead Systems* cautions that consideration should be given to local areas that have higher icing and/or wind forces than the severe and heavy weather design loading indicated above. Newfoundland Power designs to additional loads derived from data obtained from historical major weather events experienced within its service territory. In severe loading regions, transmission lines are designed to withstand a weather load of 40 mm of ice with no wind, and 176 km/h of wind with no ice. In heavy loading regions, transmission lines are designed to withstand 25.4 mm of ice with no wind, and 153 km/h of wind with no ice.

Newfoundland Power's transmission design criteria ensures its transmission lines are adequately designed and constructed to provide reliable service to its customers, including the consideration of historical major weather events experienced within its service territory.

b) Newfoundland Power considered the like-for-like replacement under maintenance procedures as Alternative 1 in the assessment of alternatives included in the *2024 Capital Budget Application,* report *3.1 2024 Transmission Line Rebuild* (the "Report"). The Report includes the explanation and justification as to why the full upgrade of Transmission Line 146L is the least-cost alternative instead of like-for-like replacement of deteriorated components as presented in Alternative 1.