Q. Please provide a comparison of the weather-related risk to reliability on the Island to a jurisdiction such as the state of Virginia which experiences earthquakes, severe thunder storms, hurricanes, derechos (severe prolonged thunder storm such as that experienced in northern Virginia in 2012), snow, hail and ice storms, salt contamination, and all in an area with mature, fast-growing trees that can create havoc during high-wind weather-related incidents.

A. Electric utilities in both Canada and the United States are required to build their infrastructure in accordance with national standards. In Canada, the standards are set by the Canadian Standards Association ("CSA"). In the United States, the requirements are set by the National Electric Safety Code ("NESC").

CSA has established 3 climatic loading zones in Canada; medium, heavy and severe. Similarly, the NESC has divided the United States into 3 climatic loading zones: light, medium and heavy. The climatic loading zones in both Canada and the United States are based on an assessment of risk with classifications established based on local experience and weather records.

The standard to which infrastructure must be built is based on climatic loading zones. While earthquakes and lightning can cause damage to an electrical grid, the standards set by both CSA and NESC clearly establish wind and ice loading as the biggest risk to electrical system infrastructure. Both CSA and NESC standards require that trees in proximity to power lines be pruned. Pruning requirements would be determined by tree growth rates. Damage caused by trees during severe weather will be minimized if trees are pruned in accordance with the standard.

The majority of the state of Virginia is designated as a *medium loading zone* by NESC.[1] Medium loading zones in the United States are defined by 6.4mm ice loading and 64km/h winds. The Avalon and Bonavista peninsulas on the island of Newfoundland are designated as *severe loading zones* by CSA.[2] Severe loading zones in Canada are defined by 19mm ice loading combined with 90km/h winds. The standards set by CSA and NESC would suggest that climatic conditions (wind, snow, sleet, hail, etc.), on average, are more severe and pose a greater risk to electrical system infrastructure in Newfoundland than in the state of Virginia.

[1] The remainder of the state is designated as heavy loading zone by NESC. Heaving loading zones in the United States are defined by 12.5mm ice loading combined with 64km/h winds.

[2] The remainder of the Company's service territory is designated as a heavy loading zone by CSA. Heavy loading zones in Canada are defined by 12.5mm ice loading combined with 90km/h winds.

The largest electric utility in Virginia is Virginia Electric & Power Company. It provides service throughout the state of Virginia to over 2,400,000 customers. The average duration of customer outages for the past 3 years for both Virginia Electric & Power Company and Newfoundland Power is provided in Table 1.

Table 1
SAIDI
Newfoundland Power vs. Virginia Electric & Power Company[3]
(2015 to 2017)

	2015	**2016**	**2017**	**Average**
(Excluding Significant Events)				
Virginia Electric & Power Company	2.00	2.30	1.96	2.09
Newfoundland Power	2.36	2.24	2.28	2.29
(Including Significant Events)				
Virginia Electric & Power Company	3.05	3.33	2.78	3.05
Newfoundland Power	2.36	2.69	5.62	3.56

Table 1 shows that the reliability experienced by customers is similar for the two utilities, both including and excluding significant events. Reliability performance for Virginia Electric & Power Company is slightly better than that provided by Newfoundland Power. The information suggests that both Companies operate well maintained, reliable electrical systems.

[3] Reliability information relating to Virginia Electric & Power Company was sourced from the U.S. Energy Information Administration ("EIA").