

Q. Describe Newfoundland Power's criteria for animal protection. Where are animal guards and other devices or designs installed? Explain the degree Newfoundland Power has complied with its criteria and any practices in place for improving animal protection.

A. Varmint protection against animals and birds on low voltage substation equipment and distribution transformers was adopted as a standard design criteria in the mid 2000's based on the success of other utilities in preventing outages using varmint protection measures. In Newfoundland Power's service territory the impact of animals on reliability performance has been minimal. In 2013 less than 1% of total customer interruptions were cause by animals and birds.¹

Occasionally birds and small animals cause short circuits in low voltage equipment such as distribution reclosers, metering tanks and station service transformers, often severely damaging the equipment.² Insulated coverings, guards and insulated leads have been effective in preventing damage and outages caused by small animals and birds. Varmint protection is one of the refurbishments completed under the annual Substation Refurbishment and Modernization capital project.³ Newfoundland Power will continue to install the necessary protective covers and insulated leads on all new installations and address any identified problem areas with the installation of varmint protection.

¹ See the response to Request for Information PUB-NP-288 for customer outage by code data which shows that based on 812,223 total customer outages only 3,863 total outages, or less than 1% were caused by animals and birds ($6,863/812,223 * 100\% = 0.84\%$).

² The distance between phase conductors for low voltage distribution equipment is small enough that the wingspan of some birds and the body length of some small animals is sufficient to span the distance between phase conductors.

³ Attachment B through Attachment F of the response to Request for Information PUB-NP-065 includes the Substation Refurbishment and Modernization project reports for the 2010 through 2014 capital budget application.