Q. ***Re: Tab 4.2- Feeder Additions for Load Growth- Relocate SJM-07***

Has Newfoundland Power ever had any issues with duct banks failing over the last ten (10) years? If so, please provide details of same.

A. Over the past ten (10) years a number of duct banks have failed along Water Street due to blocked or collapsed ducts within the underground system.[1]

In 2011 during the McBride's Hill oil switch failure, collapsed ducts in the duct bank between manhole #7 and manhole #8 on Water Street could not be used in restoration efforts. The Company has also determined that ducts in the duct bank between Manhole #3 and Manhole #4 on Water Street are collapsed.

The underground infrastructure beneath Water Street utilizes 47 year old 100 mm diameter fibre ducts encased in concrete and buried under the street. Over the years, the fibre duct material has swollen due to absorbed moisture. The swollen fibre ducts make the removal of existing cable or installation of new cable extremely difficult and, in some cases, impossible.[2]

It is likely that more of the original 47 year old fibre ducts will fail in the future.

[1] In Order No. P. U. 19 (2008) the Board approved the installation of underground civil infrastructure for utility power cables in Water Street and Harbour Drive areas of St. John's. The report accompanying the application titled *Water Street Underground Distribution Project: Installation of Civil Infrastructure* identifies duct bank failures going back to 2002.

[2] The new duct banks installed during the Harbour Interceptor Sewer Project are constructed using poly-vinyl chloride or PVC ducts with a larger diameter than the original ducts. The PVC ducts will not deteriorate in the presence of moisture like the original fibre lined ducts.