Q. Substations - Replacements Due to In-Service Failures. At page 19 of 96 it states, "The increase in expenditures is largely attributable to the effects of inflation on utility construction materials, and an increase in the number of failures experienced." Please elaborate on this statement and include the inflationary and frequency of failures data relied upon in making this statement.

A. The Replacements Due to In-Service Failures project is necessary to replace substation equipment that has been retired due to storm damage, lightning strikes, vandalism, electrical or mechanical failure, corrosion damage and failure during maintenance testing. Substation equipment that fails in-service requires immediate attention as it is essential to the integrity and reliability of the electrical supply to customers.

The increase in expenditure for the Replacements Due to In-Service Failures project since 2006 is largely attributable to inflation and an increase in the number of relatively more costly failures experienced.

Inflation

The Substations - Replacements Due to In-Service Failures project is budgeted based on inflation adjusted actual expenditures for the previous three years.[1] These expenditures are adjusted for past inflation and then the three year average expenditure is calculated. Finally future price escalation is applied to determine the estimated expenditure for future years.

Actual expenditures are adjusted to 2009 dollars by using the Electric Utility Construction Price Index published by Statistics Canada. The Electric Utility Construction Price Index for non-labour costs for the years 2006, 2007 and 2008 is included in Table 1.

Table 1
Electric Utility Construction Price Index
Annual Increases (%)

	2006	**2007**	**2008**
Non-Labour	6.6	4.5	2.7

Labour costs are adjusted to 2009 dollars using increases of 3.0% in wages for 2006, 2007 and 2008.[2]

[1] Three year average based upon 2006, 2007 and 2008 actual expenditures.
[2] Based on union contract wage rate increases for each year.

The Replacements Due to In-Service Failures 2010 project budget incorporates inflation by applying the factors in Table 2 to the average of the adjusted actual expenditures.

Table 2
Inflation Factors 2010 - 2014

Year		2010	2011	2012	2013	2014
Non-Labour[3]	Annual (%)	-0.7	2.0	2.0	1.9	2.0
	Cumulative (%)	-0.7	1.3	3.3	5.3	7.4
Labour[4]	Annual (%)	4.0	4.0	4.0	3.0	3.0
	Cumulative (%)	4.0	8.2	12.5	15.9	19.3

Increase in the Number of Failures Experienced
Expenditure associated with Replacement Due to In-Service Failures covers equipment that has either failed or is in imminent danger of failing. Costs can vary significantly depending on the number of and type of failures experienced. Since 2006 there has been an increase in frequency of more costly failures.

The increase in expenditures for 2007 was principally due to the failure of power transformers at Lockston plant ($253,000), Broad Cove substation ($244,000), Pierre's Brook plant ($191,000) and Morris plant ($126,000).

The increase in expenditures for 2008 was principally due to the failure of the power transformers at Morris plant ($146,000), radiators on 4 power transformers ($230,000) and various breakers and reclosers ($510,000).

The increase in expenditures for 2009 year to date was principally due to the failure of radiators on the power transformers at Webber's Cove ($170,000) and Stamp's Lane ($54,000) and various breakers and reclosers ($140,000).

Concluding
Inflation and the increase in the number of more costly failures have resulted in the actual expenditures for 2007and 2008 being greater than budgeted. In addition, the 2009 forecast is above budget for similar reasons. The increase in forecast expenditures for 2010 is largely attributable to the effects of inflation on utility construction and an increase in the number of more costly failures experienced over the 2007 to 2009 period.

[3] Non-labour inflation uses the GDP Deflator for Canada published by the Conference Board of Canada
[4] Labour inflation reflects Newfoundland Power labour contract salary increases for 2010 to 2013. The 2014 salary increase is assumed to be the same as 2013.