



September 28, 2018

Ms. Cheryl Mosher
Regulatory Services
Island Regulatory and Appeals Commission
PO Box 577
Charlottetown PE C1A 7L1



Dear Ms. Mosher:

***2019 Capital Budget Filing Docket UE20728
Response to Interrogatories from Roger King***

Please find attached the Company's response to the Interrogatories filed by Mr. Roger King with respect to the 2019 Capital Budget filing. An electronic copy will follow.

Yours truly,

MARITIME ELECTRIC

A handwritten signature in blue ink that reads "Gloria Crockett". The signature is fluid and cursive.

Gloria Crockett, CPA, CA
Manager, Regulatory &
Financial Planning

GCC06
Enclosure



Via email: randjking@pei.sympatico.ca

September 28, 2018

Mr. Roger King
519 Simpson Mill Rd
Hunter River PE C0A 1N0

Dear Mr. King:

**2019 Capital Budget Filing Docket UE20728
Response to Interrogatories**

Please find attached the Company's response to your Interrogatories with respect to the 2019 Capital Budget Application.

Yours truly,

MARITIME ELECTRIC

A handwritten signature in blue ink that reads "Gloria Crockett".

Gloria Crockett, CPA, CA
Manager, Regulatory &
Financial Planning

GCC07
Enclosure



INTERROGATORIES

**Responses to Interrogatories
from
Mr. Roger King**

**2019 Capital Budget Application
UE20728**

Submitted September 28, 2018

Expansion of Table 1 – Proposed 2019 Capital Expenditures

1. For the data shown please expand the table to show the breakdown of the individual expenditures into the six (6) Expenditure Classifications identified in Figure 2.

Response

Table 1 attached provides a breakdown of the amounts shown in Figure 2 of the Introduction to the Capital Budget Evidence into the six expenditure classifications identified in the Capital Expenditure Justification Criteria currently being developed in consultation with the Commission staff.

2. As part of this expanded table please show the percentage allocation of the applicable four (4) Expenditure Classifications for each of the totals identified as sections 4.0 to 7.0. (I note that two (2) of the Expenditure Classifications relate directly to sections 8.0 and 9.0)

Response

Table 1 attached also includes the percentage allocation of each sub-project of the total capital budget category for the four expenditure classifications; Generation, Distribution, Transmission and Corporate. For completion purposes, Capitalized General Expense, Interest During Construction and Customer Contributions have been included in the attachment as well.

Clarifications on the projects classified as “Justifiable”

1. As this particular classification (\$15.4M) constitutes 47% of the requested budget, please provide a separate table showing the individual projects categorized by the relevant section (4.0 to 7.0) with an added reference as to which justification appendix applies or for which the justification is included as part of the descriptive text.

Response

Table 1 attached includes a breakdown of the individual projects classified as justifiable as well as a reference column showing the corresponding page number of the project in the Capital Budget Evidence Application and where applicable, also references the related appendices. For completion purposes, referencing has been done for all proposed capital budget projects.

2. The justification appendix G related to section 5.5.b (Distribution Line Refurbishment) shows a series of photographs but does not explain the funds allocation between inspection and replaced equipment or any other expenditure included in the \$680,000. Please clarify.

Response

The Distribution Line Refurbishment program was initiated in 2017 to expand upon what was formerly known as the Pole for Pole Replacement program. At the core of the Distribution Line Refurbishment program is a six year inspection cycle whereby each year a number of distribution feeders are inspected for deficiencies in their entirety. Distribution system deficiencies that are identified through inspection are addressed on a prioritized basis to maximize or extend the lifespan of components, enhance safety and improve reliability by reducing the probability of failure.

The proposed \$680,000 budget provision for the Distribution Line Refurbishment program is based on the following allocation:

Inspection	\$	110,000
Refurbishment		<u>570,000</u>
	\$	<u><u>680,000</u></u>

The \$570,000 for refurbishment is provisional in nature based on past experience. The actual expenditure will be driven by the results of the inspection.

3. The overriding subjective justification (understandably) for this Expenditure Classification is risk mitigation. Did MECL adopt any form of objective justification that captured both the seriousness and probability of each particular risk that enabled a clear priority rating for each proposed project? If so, please share the methodology and results.

Response

Maritime Electric's process for determining the projects that make up the Capital Budget application does not involve a formal ranking methodology. All of the projects in the Company's Capital Budget application are considered necessary in order to continue to provide safe and reliable service to customers. The projects are based on the requirement to connect new customers to the electrical system, to replace equipment that has failed as a result of storm damage or other causes, to meet health, safety and environmental regulatory requirements or to strategically replace assets that have reached the end of their useful lives and are, therefore, at risk of failure or are considered a potential safety or environmental hazard.

The Company's 2019 Capital Budget application follows the classification methodology contained in the draft Capital Expenditure Justification Criteria (CEJC) which is currently being developed in consultation with the Commission.

As stated in the draft CEJC:

"The purpose of the CEJC is to provide the framework required for Maritime Electric to develop a capital budget that aligns with the Company's mandate to provide safe and reliable electricity service for a reasonable cost to its customers. This framework will entail appropriate information required for the Commission to approve the annual Capital Budget application. Maritime Electric will utilize information available to provide economic, financial and technical criteria to justify proposed capital expenditures."

Within the CEJC, capital projects are classified using the following classification structure:

- Mandatory;
- Recurring;
- Justifiable;
- Work Support Services;
- Capitalized General Expense; and
- Allowance for Fund Used During Construction.

Justifiable capital expenditures are outlined in the draft CEJC as:

"expenditures that provide a positive customer reliability or system performance impact on Maritime Electric's operations or are economically justifiable when compared to the status quo. The guiding principle of justifiable capital expenditures is establishing the expenditure that yields the best value for Maritime Electric and its customers. To justify these capital expenditures, Maritime Electric shall provide the following information where appropriate:

- *Evidence showing that the expenditure is prudent and necessary to provide safe, adequate, and reasonable service to the customer and why the project is required and necessary in the proposed budget year*
- *Explanation of expected benefit to the customer, such as choosing least cost option or positive net present value of electrical losses analysis*
- *Analysis of alternatives or deferral considered*
- *Workforce Resource plan if proposed projects are not able to be completed by available workforce”*

The guiding framework used in capital project identification and selection is the Company's 2017 Integrated System Plan filed with IRAC on October 27, 2017. The Integrated System Plan reflects the results of a periodic exercise to identify the long term (10+ year planning horizon), medium term (5 year planning horizon) and a short term (1 year planning horizon) requirements based on a combination of historical system performance, load forecasting and engineering analysis. These plans are subject to change because of the uncertainty of various aspects of the business such as load growth, failure of equipment, weather-related events, and customer's needs for new or upgraded services. Only the projects that are considered necessary and prudent for the given year are included in the Company's capital budget application for that year.

Updates on PEI peak loads data and forecasts

1. As much of the capital budget is driven by actual and forecasted peak load growth please update the various tables provided in 2017 to show the PEI monthly net peak loads for 2016, 2017 and the to-date data for 2018.

Response

PEI Net Peak Load (MW)			
Month	2016	2017	2018
January	245.3	263.3	280.0
February	230.8	248.6	258.3
March	226.9	244.0	221.4
April	208.2	199.7	210.7
May	185.5	189.7	185.8
June	183.8	188.7	195.1
July	199.9	200.3	219.9
August	189.8	194.7	216.8
September	192.6	192.7	N/A
October	193.9	189.6	N/A
November	212.0	232.1	N/A
December	264.2	278.4	N/A

2. The 2017 Integrated System Plan has a section “3.0 Energy and Peak Demand Forecast”. Please update the tables 1 and 2 to include the actual data for 2017 and any revised forecasts for 2018 to 2026 (and perhaps beyond).

Response

The Integrated System Plan is a planning document that looks years into the future. It is updated periodically as system conditions change to the extent that the Company determines that an update is required.

An updated energy and demand forecast is currently in development and will be included as part of the Company’s General Rate Application filing that will be filed with the Commission later this Fall.

System Meters:

1. Noting that the dual objectives for the 2018 deployment of Bridge Meters was to understand the communications infrastructure and data management requirements in parallel to investigate the capability and functionality of these advanced meters please provide details on the current findings including the final customer groups selected for deployment.

Response

The Company ordered 100 Bridge Meters as a preliminary step and has deployed a number to test the data gathering and analysis functions. Manufacturer delivery was delayed, and as a result the Company is in the initial stages of determining the meters' capabilities. The Company has verified that these meters can be disconnected and reconnected remotely from Meter Reader vehicle, and 45 days of one hour interval data can be captured and retrieved from the meter reading vehicles using the Company's existing radio frequency (RF) meter interrogation technique. Development of the back end data analysis process is ongoing.

The Company expects that these Bridge Meters will be fully integrated into the Company's meter reading and billing systems in early Q4 2018. At that point, the Company will purchase and deploy the remaining Bridge Meters that were budgeted in 2018.

The Company has determined that the meters can be used to assist the Company to undertake a residential and general service customer class load study. Since the last load study on these rate classes was performed in 1992-93, the Company has concluded that it requires updated load data given the changes in customer usage over the past two decades. The Bridge Meters will provide the necessary interval energy and demand data that is required in the load study. Load study data is used in the cost allocation process that the Company undertakes periodically and the data gathered from these Bridge Meters will be used in the next cost allocation study (2021 timeframe).

2. With the expanded objective for the 2019 deployment of Bridge Meters to collect hourly load data for sampled Residential and General Service customers the \$100,000 request appears low to enable a statistically proven conclusion. Should this be increased?

Response

A stratified random sampling method was used to determine the number of customers required to provide statistically relevant data for the residential (rate classes 110 and 130) and general service (rate class 232) load study. 573 meters are required – 171 meters for residential customers and 402 meters for general service customers – to provide results with an accuracy of +/- 5%, 19 times out of 20.

The \$50,000 for 2018 was capable of purchasing approximately 200 Bridge Meters. While the 2019 Capital Budget application suggested a purchase of 400 meters – bringing the total number of Bridge Meters to 600 – additional analysis since its submission has refined the overall number of meters required by the load study to 573. Some of the general service customers require meters that are more expensive than the standard meter. The \$100,000 budgeted for 2019 is sufficient to purchase the remaining, approximately 375 Bridge Meters, required to carry out the load study.

**Table 1
Proposed 2019 Capital Expenditures**

	Mandatory	Justifiable	Recurring	Work Support Services	Capitalized General Expense	Interest During Construction	TOTAL	% of Total Category Proposed	Capital Budget Evidence Reference
4.0 Generation									
4.1 Charlottetown Plant Buildings and Services Projects									
a. Energy Control Centre SCADA Simulator		121,000							<i>p. 11 - 12 & App B</i>
b. Refurbish Energy Control Centre Roof		25,000							<i>p. 12</i>
c. Charlottetown Plant Miscellaneous Buildings and Services			25,000						<i>p. 13</i>
	-	146,000	25,000	-	-	-	\$ 171,000	9.8%	
4.2 Charlottetown Plant Boiler Projects									
a. Miscellaneous Boiler Projects			8,000				8,000	0.5%	<i>p. 14</i>
4.3 Charlottetown Plant Turbine-Generator Projects									
a. Combustion Turbine 3 Turbo-Generator Overhaul		1,235,000							<i>p. 15 & App C</i>
b. Combustion Turbine Improvements and Spare Parts			189,000						<i>p. 15</i>
	-	1,235,000	189,000	-	-	-	1,424,000	81.6%	
4.4 Borden Plant Projects									
a. Miscellaneous Combustion Turbine Improvements			117,000						<i>p. 16</i>
b. Miscellaneous Buildings and Services Improvements			26,000						<i>p. 16</i>
	-	-	143,000	-	-	-	143,000	8.2%	
	-	1,381,000	365,000	-	-	-	1,746,000	100.0%	
% of Total Category Proposed	0.0%	79.1%	20.9%	0.0%	0.0%	0.0%		100.0%	

Proposed 2019 Capital Expenditures

	Mandatory	Justifiable	Recurring	Work Support Services	Capitalized General Expense	Interest During Construction	TOTAL	% of Total Category Proposed	Capital Budget Evidence Reference
5.0 Distribution									
5.1 Replacements due to Storms, Collisions, Fire and Road Alterations									
a. Replacements due to Storms, Fire and Collisions			891,000						<i>p. 17</i>
b. Replacements due to Road Alterations			527,000						<i>p. 18</i>
	-	-	1,418,000	-	-	-	1,418,000	6.6%	
5.2 Distribution Transformers									
a. Polemount and Padmount Transformer Equipment			3,368,000						<i>p. 19</i>
b. Pre-1982 Polemount Transformers Life Extension	800,000								<i>p. 19 - 20</i>
	800,000	-	3,368,000	-	-	-	4,168,000	19.4%	
5.3 Services and Street Lighting									
a. New Overhead and Underground Services			3,595,000						<i>p. 21</i>
b. Street and Area Lighting		780,000							<i>p. 21</i>
	-	780,000	3,595,000	-	-	-	4,375,000	20.4%	
5.4 Line Extensions									
a. Customer Driven Line Extensions			1,623,000						<i>p. 22 & App E</i>
b. Reliability Driven Line Extensions		1,305,000							<i>p. 22 & App E</i>
	-	1,305,000	1,623,000	-	-	-	2,928,000	13.6%	
5.5 Line Rebuilds									
a. Single Phase and Three Phase Rebuilds		2,115,000							<i>p. 23 - 24 & App F</i>
b. Distribution Line Refurbishment		680,000							<i>p. 24 - 25 & App G</i>
c. Accelerated Distribution Component Replacement									
i. Porcelain Cutout Replacement Program		300,000							<i>p. 25 - 26</i>
ii. Eastern Cedar Pole Replacement Program		1,150,000							<i>p. 26 - 27</i>
	-	4,245,000	-	-	-	-	4,245,000	19.8%	
5.6 System Meters									
a. Watt-hour Meters			263,000						<i>p. 28</i>
b. Combination Meters			144,000						<i>p. 28 - 29</i>
c. Miscellaneous Metering Equipment			34,000						<i>p. 29</i>
d. Outdoor Metering Tanks			114,000						<i>p. 29</i>
e. Bridge Meters for Load Research		100,000							<i>p. 29 - 30</i>
	-	100,000	555,000	-	-	-	655,000	3.1%	
5.7 Distribution Equipment									
a. System Equipment			1,809,000						<i>p. 31 - 37 & App I - K</i>
b. Line Equipment		224,000							<i>p. 37</i>
	-	224,000	1,809,000	-	-	-	2,033,000	9.5%	
5.8 Transportation Equipment				1,642,000			1,642,000	7.7%	<i>p. 38 & App L</i>
	800,000	6,654,000	12,368,000	1,642,000	-	-	21,464,000	100.0%	
% of Total Category Proposed	3.7%	31.0%	57.6%	7.7%	0.0%	0.0%		100.0%	

Proposed 2019 Capital Expenditures

	Mandatory	Justifiable	Recurring	Work Support Services	Capitalized General Expense	Interest During Construction	TOTAL	% of Total Category Proposed	Capital Budget Evidence Reference
6.0 Transmission									
6.1 Substation Projects									
a. Lorne Valley 69 kV Switching Station Expansion		2,820,000							p. 39 - 41 & App M
b. 15/20 MVA Airport Power Transformer Replacement		1,100,000							p. 41 - 42 & App N
c. Substation Engineering and Environmental Assessment		263,000							p. 42 - 43
d. Substation Modernization Program		685,000							p. 43 - 45
e. 138 kV Breaker Replacement Program		134,000							p. 45
	-	5,002,000	-	-	-	-	5,002,000	68.3%	
6.2 Transmission Projects									
a. 69 kV and 138 kV Switch Program		515,000							p. 46
b. Transmission Line Refurbishment		865,000							p. 46 - 47
c. T-3 Rebuild		945,000							p. 47 & App O
	-	2,325,000	-	-	-	-	2,325,000	31.7%	
	-	7,327,000	-	-	-	-	7,327,000	100.0%	
% of Total Category Proposed	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%		100.0%	
7.0 Corporate									
7.1 Corporate Services									
a. Recurring Annual Capital Requirements				271,000					p. 48
b. 180 Kent Street Office Building Elevator – Phase 1				226,000					p. 48 - 49 & App P
c. Forklift at West Royalty Service Centre				76,000					p. 49
	-	-	-	573,000	-	-	573,000	32.1%	
7.2 Information Technology									
a. Hardware Acquisitions				289,000					p. 50
b. Purchased Software and Upgrades				380,000					p. 51
c. Network Access Control				80,000					p. 52
d. Customer Self Service				187,000					p. 52 - 53
e. Security Enhancements SCADA Network				120,000					p. 53 - 54
f. Contractor Line Truck Technology				80,000					p. 54
g. Internal Audit Compliance Software				75,000					p. 54
	-	-	-	1,211,000	-	-	1,211,000	67.9%	
	-	-	-	1,784,000	-	-	1,784,000	100.0%	
% of Total Category Proposed	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%		100.0%	
Sub-total	800,000	15,362,000	12,733,000	3,426,000	-	-	32,321,000		
% of Total Proposed	2.5%	47.5%	39.4%	10.6%	0.0%	0.0%		100.0%	
8.0 Capitalized General Expense					527,000		527,000		p. 55
9.0 Interest During Construction						429,000	429,000		p. 56
Less: Customer Contributions							(400,000)		
TOTAL							\$ 32,877,000		