Q-1 In Section 3, "Generation", it is stated on page 3–1 that, "The Generation Capital Budget is made up of projects required to keep the generating facilities in a state of readiness to meet operating consideration and reliability requirements as set out in the Company's Energy Purchase Agreement with NB Power . . . . . ". Please describe the operating conditions and reliability requirements as set out in the Company's Energy Purchase Agreement with NB Power.

Response:

Q-1 Articles 1.2, 1.5, 1.22, 1.25, 4.1b, 4.2a and 4.3a in the Energy Purchase Agreement (EPA) with NB Power describe the requirements for Maritime Electric's on Island generation fleet.

The Secure and Assured Energy products in the EPA are energy only and do not include capacity as capacity must be supplied by Maritime Electric. These Energy products are intended to minimize the operation of Maritime Electric's generation resources. The capacity used for the Secure Energy product is the 50 MW combustion turbine in Charlottetown (CT3) while the Charlottetown Plant (CTGS) and the Borden combustion turbines (CT1 and CT2) supply the capacity for the Assured Energy product in the EPA. This accounts for all of Maritime Electric's generation facilities. If Maritime Electric generation facilities are not operational or not in a state of readiness, the Company cannot purchase the corresponding energy in the EPA.

The generation facilities are not only required to supply the corresponding capacity to those energy purchases, but are required should the Secure and/or Assured Energy products be curtailed, thus the generation facilities must be in a state of readiness corresponding to the level of Notification Period as set out in the EPA.

The following Articles are from the EPA:

Article 1.2

"Assured Energy" means Energy, the supply of which after the provision of written notification ("Notification") to Buyer by Seller, in which pricing can be changed. The

Notification shall specify a period of time (the "Notification Period") after which the Assured Energy can be Interrupted or Curtailed on ten minutes' notice.

Article 1.5

"CBAS" means those services that are necessary to support the transmission of capacity and energy from resources to loads while maintaining reliable operation of the Transmission Providers Transmission System in accordance with Good Utility Practice.

Article 1.22

"Notification Period" The Notification shall specify a period of time after which the Energy can be Interrupted or Curtailed on ten minutes' notice.

i. *The Notice Period for Secure energy shall be 24 hours if the delivery is in the Winter Period and one week if the delivery is in the Summer Period.*
ii. *The Notice Period for Assured Energy shall be 48 hours if the delivery is in the Winter Period and one week if the delivery is in the Summer Period.*

Article 1.25

"Secure Energy" means Energy, the supply of which after the provision of written Notification to Buyer by Seller, in which pricing can be changed. The Notification shall specify a Notification Period after which the Secure Energy can be Interrupted or Curtailed on ten minutes' notice.

Article 4.1 b.

Secure Energy and Assured, are Energy products available to Buyer that may be curtailed or interrupted by Seller upon the provision of appropriate Notification. These Energy products are intended to minimize the operation of Buyer's resources while Buyer provides backup using Buyer's available operable capacity. Seller will not include Secure or Assured Energy in its load and resource analysis, but will continue to offer to supply the Secure and Assured Energy component of this Agreement during the Notification Period provided the NBSO accepts such an arrangement.

Article 4.2 Secure Energy

a. *Secure Energy is energy made available to Maritime Electric to minimize operation of Maritime Electric's 50 MW Combustion Turbine in Charlottetown. Upon scheduling by Buyer, Seller shall deliver Secure Energy and Buyer shall take such Form and Secure Energy as per Section 4.1a.*

Article 4.3 Assured Energy

a. *Buyer has a 60 MW thermal generating plant in Charlottetown, PE and 40 MW of combustion turbines in Borden, PE. Assured Energy is energy made available to Buyer to minimize operation of these units.*

The Secure and Assured Energy Products can be interrupted or Curtailed on ten minutes notice after the "Notification Period". The notification specifies a period of time after which the energy can be interrupted or curtailed on ten minutes' notice. The notification period varies from winter or summer as set out in Article 1.22.

During a Notification Period, Maritime Electric would typically look for pricing on another energy product but if uneconomical, Maritime Electric would dispatch on-island generation as required. It is particularly important that on-island generation be available in the case of a significant curtailment or an interruption when off island energy may not be available to ensure system reliability to Maritime Electric customers.

Within the existing EPA, Maritime Electric and New Brunswick Power Generation Corporation have agreed in principle to allowing New Brunswick Power Generation Corporation to claim Maritime Electric's surplus Reserve Ancillary Services from CT3.

Q-2 On Page 3-2 provisions are being made for a new heating system at the Charlottetown Plant. What heating system is presently in place and why must it be replaced? It is further stated within this budgeting explanation that there will be a redeployment of employees as a result of the heating system replacement. What are the position titles of the employees to be redeployed and where will they be deployed?

Response:

Q-2 The current heating system at the Charlottetown Plant consists of a small Bunker C fuelled heating boiler. This is used to heat the Charlottetown Plant building shell, the Energy Control Centre, the Bunker C main fuel tank as well as the Bunker C fuel day tanks and the 5 large power boilers. Even with this heat load, the heating boiler is operated at a low inefficient load level. The steam pressure and temperature from this heating boiler requires, under Provincial Regulation, the presence of a full time 3rd class power engineer 24 hours a day when the boiler is operational. The operation of this boiler is typically from mid-October to mid-May (7 to 8 months depending on weather).

The new heating systems would be of a smaller more efficient design which would also reduce overall heating costs.

It is the Company's intent, pending regulatory approval, to replace the operation of the existing heating boiler with separate building and boiler heating systems. Each system could then be designed such that it would fall below the regulation limits that would require the facility to be manned 24/7.

Concurrently the Company is in discussions with NB Power to increase the Notification Period for the Assured Energy from 48 hours to 96 hours in the Winter Period which would reduce heating load as the Bunker C Fuel would be allowed to drop to a lower temperature. However, during the two months (mid-December to mid-February) it is anticipated that the

heating boiler would still be required, thus the equivalent of 5 operational months at 24 hours per day or the equivalent of 15 man months of labour would be freed up. This labour would consist of 3rd class Power Engineers. This labour could then be efficiently redeployed within the Company.

In January 2013 the Production Department's work scope was expanded to include system mechanical maintenance tasks to enable the gradual transaction to a new department as production activity at the Charlottetown Plant winds down.

Q-3 On page 3-2 under the ECC Heating and Essential Service Generator Upgrade, it is stated that the existing steam heat exchanger will be replaced with an electric boiler. Why was an electric boiler chosen as a replacement unit and what other heating options were considered?

Response:

Q-3 With the proposed new heating system for the Charlottetown Plant (which also heats the ECC) an alternate heating source is also being sought for the ECC. There are currently two electricity sources (Maritime Electric distribution grid as well as a backup generator) and with an electric boiler, the backup generator must be upgraded. An electric boiler would provide a second source of heating for the ECC. At present the building's energy supply (steam, water, and electricity) is from the Charlottetown Plant and with eventual long term layup of the Charlottetown Plant, the proposed expenditure will provide one aspect of ensuring that ECC has redundant systems. Other options were considered (district heating, heat pump, and dedicated oil boiler) and the most economical option proved to be the installation of an electric boiler to replace the steam heat exchange unit.

Other heating sources were considered but with the limited space, the high cost of fuel storage and flue stacks or piping for district heating they were uneconomical and physically restrictive.

Q-5 There is an estimate of $47,000 assigned to the purchase of a ECC Screen Display described on Page 3-4. Why is there a requirement to expand the existing screen display and what are the anticipated benefits from this upgrade?

Response:

Q-5 The amount proposed under G.1.3. in 2014 represents the final component of the new ECC Screen Display which was purchased to replace a mimic board that had become obsolete. The proposed addition of 3 monitors to the existing video wall will allow for the viewing of the transmission system as well as three other inputs at the same time. A fourth monitor would also be installed in the Energy Control Centre (ECC) Emergency Operations Room. A new video switcher will also provide the ability to send anything displayed on the video wall to the ECC Emergency Operations Room display especially during significant system events. The addition of the video switcher will add further enhancement by providing the ability to take up to 8 sources and display them on the 3 x 4 (12 monitor) video wall, with multiple configurations. The increased functionality of the video switcher will enable the connection of multi types of inputs and display them on the video wall simultaneously. The anticipated inputs to the video wall will be as follows:

- Transmission system video wall
  - Supervisory Control and Data Acquisition (SCADA)
    - ✓ Monitor energy flows on Maritime Electric's transmission system
    - ✓ Monitor Frequency and voltage levels
    - ✓ Data acquisition
    - ✓ Events/Alarms
    - ✓ Cable monitoring
      - Amperage, oil levels, etc.
    - ✓ Monitor all wind farms on PEI
    - ✓ Develop switching plans prior to switching operations
    - ✓ Perform/monitor switch operations (real time)

- Open Access Same-Time Information System ("OASIS") monitoring (transmission reservations/scheduling)
- Maritime Electric facility camera monitoring
- Vehicle Tracking System monitoring
- Maritime Electric Outage System monitoring
- Television (News, Weather, etc.)
- Future potential for live communication with the Emergency Measures Organization during significant events (storms, floods, etc.)

Q-6 Under the title Miscellaneous Boiler Improvements on Page 3-5, a provisional amount of $83,000 has been assigned. What is the typical annual expense incurred for this line item?

Response:

Q-6 The annual cost for Miscellaneous Boiler Improvements for the past 3 years is as follows:

- ✓ 2010 $68,503
- ✓ 2011 $75,886
- ✓ 2012 $84,754

There has been an increased trend in spending in this category for the last 3 years so an amount similar to 2012 was used for the 2014 Capital Budget submission.

Q-7 It is noted on Page 3-8 that $27,000 is assigned to improvements and upgrades to the CT3 combustion turbines. Given that this is a relatively new unit with few operating hours, what potential upgrades may be expected? What operational deficiencies have occurred to date?

Response:

Q-7 CT3 was commissioned in 2006. General Electric or GE (the supplier of the combustion turbine) identifies deficiencies, material and operational, associated with all of their generating units including the CT3 model (LM6000) via bulletins. These bulletins are evaluated and a determination on whether they are applicable to CT3 is made. The deficiencies listed in the bulletins are identified by GE as well as other owner/operators of LM6000s worldwide. Maritime Electric has implemented a number of bulletin related improvements over the life of CT3. Past deficiencies have included the replacement of identified thermocouples, replacement of the low pressure compressor coupling nuts and low pressure turbine coupling nuts, improved software to prevent the unit from unnecessarily tripping from inaccurate field device readings, and others. It is not known at this time whether any new bulletins will apply to CT3 or that items will arise in 2014, therefore the budget amount is presented as provisional.

Q-8 On Page 3-9, $1,462,000 has been assigned to the Borden Plant Projects. How often did each Borden CT operate during the past five years and why were they required to operate?

Response:

Q-8 Throughout each year Maritime Electric starts each of its generating assets to confirm availability, for testing purposes, training and to generate electricity. The following table summarizes operating hours, starts and generation starts for the 2 combustion turbines in Borden over the past 5 years.

	CT-1				CT-2		
	Operating Hours	Starts	Generation Starts		Operating Hours	Starts	Generation Starts
2008	18.8	17	10	**2008**	23.8	20	13
2009	14.54	14	9	**2009**	28.7	40	12
2010	13.06	12	3	**2010**	12.4	15	4
2011	20.27	28	3	**2011**	18.4	12	4
2012	44.58	22	17	**2012**	61.4	25	22

A summary as to the reason for the generation starts noted in the table above for the five year period is as follows:

	Submarine Cable Loading		Curtailments/Requests from NB		Support for MECL System		Total	
	CT1	CT2	CT1	CT2	CT1	CT2	CT1	CT2
2008	6	9	4	3	0	1	10	13
2009	2	3	7	6	0	3	9	12
2010	2	0	1	1	0	3	3	4
2011	2	3	1	1	0	0	3	4
2012	16	15	1	3	0	4	17	22
Total	28	30	14	14	0	11	42	55

Q-9 Further to the above question, it is noted that in 2009 there were electrical issues found with the generator rotor for Borden Unit #2. Why has it taken so long to respond to these issues? What is the downside to not responding to these issues? What is the cost of replacing the rotor as opposed to rewinding it?

Response:

Q-9 Maritime Electric concluded, after consultation with the original equipment manufacturer, that the rotor rewind could be delayed given the expected operational requirements of the unit. With the recent experience of submarine cable leaks and the increase in the number of curtailments, the Company believes it prudent to rewind the rotor in 2014.

Not rewinding the rotor on CT2 could result in shorted rotor winding turns which will then result in a bow in the field causing vibration of the unit. A failure of the insulation (shorted turns) of the generator rotor could be as slight as a field repair (4-6 week outage) to as significant as an extreme heated area that could cause un-repairable damage to the generator (12-24 month outage).

The cost of rewinding the rotor is approximately 30% to 50% of the cost of a new rotor.

Q-10 As a supplementary question to Q-9, please describe other capacity options that were considered prior to deciding to rewind the rotor on the Borden Unit #2?

Response:

Q-10 The cost to rewind the rotor to extend the life of the 25 MW generator is significantly less than the cost of new generating facilities.

Capacity purchases from off Island were ruled out as there is a requirement for on Island, dispatchable capacity to address submarine cable contingencies and transmission curtailment. As well this generator is used to back stop assured energy purchases, serves as a source of 10 minute reserve energy and functions as a synchronous condenser for voltage control purposes.

The need for additional on Island capacity is growing and the Company is currently investigating the alternatives.

Q-11 Under the Distribution budget on Page 4-1, it is estimated that $1,233,000 will be required for replacements due to storms, collisions, fire and road alterations. How does this year's estimate compare to historical expenditures for this line item?

Response:

Q-11

Year	Budget	Actual
2008	$ 622,000	$ 3,479,993
2009	$ 623,000	$ 1,694,115
2010	$ 780,000	$ 1,738,002
2011	$ 1,091,000	$ 1,408,148
2012	$ 1,145,000	$ 1,240,335
2013	$ 1,195,000	N/A

The table above summarizes the approved budget and actual expenditures over the past five years for account 70200 (Replacement due to storms, collisions, fire and road alterations). Actual charges to this account over the 2008 – 2012 period exceeded the budget in those years due primarily to work required to accommodate accelerated infrastructure spending by the Provincial Government for widening highways, roundabout installations and bridge improvements as well as the costs of the significant ice storm in 2008. The 2014 budget amount of $1,233,000 is comparable to the actual expenditures in 2012 and accounts for traditional levels of roadwork and normal weather events. At the time of developing the 2014 budget, there were no indications from the Provincial Government that budgeting should accommodate non-traditional levels of roadwork similar to what occurred between 2008 and 2011.

Q-12 Within the Distribution budget there is an allowance of $275,000 for customer contributions. Past experience has shown that customer contributions are considerable higher than estimated. Is there not a relationship between Distribution Expenses and Customer Contributions that would allow the Customer Contributions figure to be more accurately forecasted? How are customer contributions assigned for the various distribution services afforded to customers?

Response:

Q-12 Customer contributions are collected in accordance with the Company's Rates and General Rules and Regulations as approved by the Island Regulatory and Appeals Commission. The forecast of annual customer contributions is based on normally reoccurring levels of customer contributions typically received over the past several years and adjusted for anticipated changes in economic conditions and any known large projects. In general, there is a correlation between service lines and customer contributions that is used to develop the annual contribution forecast. However, distribution line extensions and line work performed for communication companies are two types of work performed that are difficult to forecast and often result in large customer contributions.

Q-13 On Page 4-8, $570,000 has been assigned to the Porcelain Cutout Replacement Program. What is the preferred replacement material for porcelain cutouts and what are the expected benefits as a result of this program?

Response:

Q-13 Approximately 1,250 porcelain cutouts are planned to be replaced with synthetic polymer cutouts in 2014 through the Porcelain Cutout Replacement Program. In northern climates porcelain cutouts go through a "freeze-thaw" cycle which can lead to the development of hairline cracks. Other environmental factors such as salt and dirt contamination are also key factors in premature failure. These failures present both a reliability and a safety concern for the Company since hairline cracks are difficult to detect so the failure of a porcelain cutout during opening and closing operations is unpredictable.

All of the Atlantic Province's electric utilities have experienced premature failures with porcelain cutouts and have stopped purchasing them in favor of polymer synthetic cutouts. Maritime Electric has experienced an average of one porcelain cutout failure per day over the past 5 years and often these failures result in pole fires. The Company is targeting specific areas under the Program where porcelain cutout failures are occurring more frequently in an attempt to effectively deal with this issue. The Porcelain Cutout Replacement Program will result in fewer customer disruptions in service and improve service reliability.

Q-14 Referring to Page 4-9, what percentage of meters are RI meters? What is the expected life span of an RI meter?

Response:

Q-14 At September 1, 2013 there were 71,519 (98%) active Remote Interrogation (RI) meters and 1,531 (2%) active electromechanical meters in service. The electromechanical meters are demand units which are currently being targeted for phase out by 2015.

The RI meter's stated life expectancy is 15 years, however, the industry is experiencing over a 95% survival rate at the 15 year mark. External reliability studies done on the Company's single phase meter of choice (Itron Centron) concludes that 95% of a meter population could expect a survival rate of 20+ years. Maritime Electric's first batch of RI meters reached the regulated 10 year test requirement and was analyzed for accuracy earlier this year. The results were such that a 7 year extension for RI meters was granted from Measurement Canada.

Q-15 In regards to Transportation Equipment as described on Page 4-14, what salvage value is assigned to replaced vehicles?

Response:

Q-15 The proposed capital expenditures in Section D-8 Transportation Equipment represent the gross cost of purchasing the replacement vehicle or equipment. In accordance with the Company's accounting procedures, the value of new capital items is recorded at its gross cost and the value of any item retired, together with the cost of dismantling or removing from service, less any credits for salvage is charged to the Depreciation or Retirement Reserve accounts.

When the replaced vehicle or equipment is removed from service, the manner in which it is disposed of will be dependent upon the type and condition of the unit. Small units such as service vans and passenger trucks are typically purchased through local dealerships. When seeking competitive bids from the local dealer for the replacement units, the Purchasing Department will include, as part of the bid process, the requirement to accept the existing unit as a trade-in against the new unit. This allows the Company to maximize the salvage value of the former unit through an efficient disposal process. Experience has shown that these trade-in or salvage values range between $1,000 - $3,000 and reflects the model, age, mileage and overall condition of the unit.

The larger Line Operations trucks (digger, bucket and material handlers) are also sourced through a competitive bid process but are manufactured by off-island suppliers, making the trade-in option uneconomical due to transportation or shipping costs and other logistical constraints. Instead, the Purchasing Department will solicit tenders from potential buyers in the region to purchase the older unit on an as is where is basis. Experience in recent years has shown that this competitive tender process will yield salvage proceeds of $10,000 - $20,000 per unit.

The table from section D-8 is presented below with estimated salvage proceeds for each unit to be replaced.

	Vehicle Replaced	Description	Location	Age (Yrs.)	Replacement Cost	Estimated Salvage
1.	06-04-21	Ford Escape	Meter Reader, Central District	8	$ 35,000	$ 1,000
2.	07-05-25	GMC Canyon Truck	Construction Services	7	$ 35,000	$ 1,000
3.	09-06-28	Toyota Tundra 4x4	Construction Services	10	$ 35,000	$ 1,500
4.	04-12-59	Digger Truck (tandem axle) (new chassis and boom)	Eastern Line Department	10	$340,000	$20,000
5.	03-12-53	Digger Truck (single axle) (new chassis and boom)	Central Line Department	13	$280,000	$10,000
6.	Allowance for unforeseen capital expenditures				$ 70,000	$ -
Total					**$795,000**	**$33,500**