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The Island Regulatory  
and Appeals Commission

July 3, 2015

Mr. Mark Lanigan  
Regulatory Services  
Island Regulatory and Appeals Commission  
PO Box 577  
501-134 Kent Street  
Charlottetown PE C1A 7L1

Dear Mr. Lanigan:

**DSM Filing Docket UE21406**  
**Response to Additional Interrogatories from Mr. John te Raa**

Please find attached the Company's response to the additional Interrogatories filed by Mr. John te Raa on June 19, 2015 with respect to the DSM filing. An electronic copy will follow shortly.

Yours truly,

MARITIME ELECTRIC



Jason C. Roberts  
Director, Regulatory & Financial Planning

JCR28  
Enclosure



Via email: [johnteraa@gmail.com](mailto:johnteraa@gmail.com)

July 3, 2015

Mr. John te Raa  
1848 Hardy Mill Rd Rte 220  
York PE C0A 1P0

Dear Mr. te Raa:

**DSM Filing Docket UE21406  
Response to Additional Interrogatories – June 19, 2015**

Please find attached the Company's response to your additional Interrogatories of June 19, 2015 with respect to the DSM filing.

Yours truly,

MARITIME ELECTRIC

Jason C. Roberts  
Director, Regulatory & Financial Planning

JCR27  
Enclosure

**5. Please provide the number of Island households on the Maritime Electric System.**

**Response – 5:**

The total number of Maritime Electric year-round Residential customers in December 2014 was 57,752. This was rounded to 58,000 in the Company's Application.

**6. What is the best estimate of annual energy consumption, in kWh used for space heating, by the 10% of Island households that have electric resistance heating?**

**Response – 6:**

Starting with an assumption of 75 GJ as the annual space heating requirement for a typical home with electric resistance heating, the corresponding annual values are 2,457 litres of furnace oil and 20,855 kWh of electric resistance heating, based on the following factors:

- 1 Btu = 1,054 Joules
- The Higher Heating Value for 1 litre of furnace oil is 36,200 Btu
- An oil furnace seasonal efficiency of 80%
- 1 kWh = 3,412 Btu (assumes 100% efficiency for electric resistance heating)

Multiplying the above annual 20,855 kWh per household times 10% of the 58,000 Maritime Electric Residential customers gives 121 million kWh annually.

- 7. An estimated 3600 heat pumps were installed in 2013. How many heat pumps were installed prior to 2013? How many heat pumps were installed in 2014? What is the forecast for heat pump installation in 2015?**

**Response – 7:**

Maritime Electric does not have an estimate of the number of heat pumps installed prior to 2013.

Based on discussions with heat pump installers in mid-2014, Maritime Electric estimates that the number of heat pumps installed in 2014 and each year for the next few years will be approximately the same as the estimated 3,600 number of installations in 2013.

- 8. Based on the number of heat pumps installed in 2013 and prior years, what is the estimated system peak load due to heat pumps at -15 degrees C and at -22 degrees C at the end of 2013?**

**What is the forecasted peak load grows due to heat pump installations at -15 degrees C and -22 degrees C for the next five years?**

**Response – 8:**

Table 12 on Page 29 of Maritime Electric’s Energy Efficiency and Demand Side Management Application shows an estimate of 3.0 MW of load at system peak due to the heat pumps installed in 2014.

The 3.0 MW estimate is intended as an indicative value of the heat pump load at system peak, which on average is expected to occur at temperatures in the -18 C to -20 C range. For the heat pumps that are capable of operating down to -25 C, by approximately -15 C they are probably operating at or close to their nameplate rating in terms of the amount of electricity they are using (The actual loading will be a function of the heating required by the heated space). As the temperature decreases below -15 C the amount of electricity they use gradually decreases due to the decreasing capacity of the compressor to affect the refrigerant at the colder temperatures.

Thus Maritime Electric’s estimate of peak load growth due heat pump installations over the next few years is 3.0 MW per year.