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MARITIME ELECTRIC
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October 20, 2023

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

Dear Ms. Mosher:

UE20737 - Advanced Metering for Sustainable Electrification Project Application Clarification Questions

Please find attached the Company's responses to clarification questions from Mr. Roger King with respect to the Advanced Metering for Sustainable Electrification Project Application filed with the Commission on November 25, 2022.

Yours truly,

MARITIME ELECTRIC

Gloria Crockett

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Via email: rdking519@gmail.com

October 20, 2023

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

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I N T E R R O G A T O R I E S

Responses to Clarification Questions
of
Roger King

SCBR - Advanced Metering for Sustainable Electrification Project Application
(UE20737)

Submitted October 20, 2023

Clarification Questions:

IR-1 The Application cites the recent Nova Scotia Power (NSPI) and New Brunswick Power AMI projects as useful MECL references. Please describe the priority "lessons learned" from each of these two projects for each of:

a. The AMI deployment and phased installation from the Utility's perspective
b. The AMI deployment and phased installation from the Customers' perspective
c. If any AMI installations were able to provide estimates of energy use allocation, segregated into particular "behind-the-meter" equipment or appliances.
d. The integration of the AMI system with the existing CIS.
e. The added value of an AMI infrastructure during storms and supply outages. The NSPI experience during Storm Fiona would be of particular interest here; did the RF communications remain 100% available during and after the storm?
f. Assuming that the AMI meters deployed have the standard Zigbee local RF data communication feature, did either project utilize this feature to provide customers with their energy use information?
g. On a per-meter basis what were/are the comparative costs (actual or budget) for all three AMI programs – NSPI, New Brunswick Power and MECL? Please explain the reasons for the differences.

Response:

a. No "lessons learned" are available for a phased approach as Nova Scotia Power Inc. ("NSPI") performed a mass change out and NB Power is planning to do the same.

b. The response to IR-1(a) herein, also applies here. NSPI performed a mass change out and NB Power is planning to do the same.

c. Maritime Electric is not aware of any NSPI or NB Power estimates of energy use allocation, segregated into particular "behind-the-meter" equipment or appliances.

d. The Meter Data Management Module ("MDM") is the primary interface between the advance metering infrastructure ("AMI") and customer information system ("CIS") components. It was discovered during the research phase, which included discussions with peer utilities, that the complexity of the MDM to CIS interface is considerably higher than it is with the AMI to MDM interface. This finding resulted in the decision to include MDM procurement and implementation within the scope of the CIS component, as opposed to including it within the AMI component.

e. It is Maritime Electric's understanding that during Fiona, NSPI maintained communications to their equipment as long as the power was on or the backup batteries continued to work. For equipment that lost power, once power was restored, the communications equipment came back online and worked as expected.

f. Neither NSPI nor NB Power have a Zigbee radio available in the meter.

g. Table 1 summarizes the all-in cost per meter for Maritime Electric, NB Power and NSPI, with the actual costs at the time of occurrence adjusted for inflation to the current equivalent amount.[1] The differences in all-in cost per meter are primarily related to inflation and economies of scale.

TABLE 1
Comparison of AMI Business Cases
All-In Cost Per Meter with Inflation Adjustment

	Maritime Electric	NB Power	NSPI
Number of Meters	79,000	360,000	495,000
All-in Cost Per Meter (without inflation)	$392	$304	$269
All-in Cost Per Meter (with inflation)	$392	$314	$284
All-in Cost Per Meter (with inflation and Government funding)	$261	$314	$284

The all-in cost per meter is influenced by the number of meters in the upgrade. Similar to most products, vendors typically reduce pricing as quantities are increased. This pricing reduction can be related to an increased desire to secure an order but there are also fixed costs associated with sales, regulatory compliance, and product configuration that are built into the overall cost for the meters.

Referring to the budget included in Section 7.1.1 of the Util-Assist Report,[2] there are fixed costs for the overall AMI component of the Advanced Metering for Sustainable Electrification Project ("Project") which do not increase proportionally as the number of meters increases. Examples of fixed costs include costs for the head-end system infrastructure, additional professional services, utility staff charged to the project, system upgrade costs, customer education/marketing, and consulting and legal services. Fixed costs increase on a cost-per-meter basis as the number of meters decreases.

As per the comparison included in Section 5.2, Table 8 of the Util-Assist Report, the number of meters in the Project is significantly less than all other referenced projects, and therefore, the all-in cost per meter is expected to be higher for Maritime Electric.

The all-in cost for the AMI component of the Project is reduced substantially when the Federal Government funding is considered. The allocation of this funding has been prorated based on budget costs for the CIS and AMI components of the overall project. This results in $10.4 million of the funding being applied to the AMI component. With the funding contribution included, the all-in cost per meter reduces from $392 to $261.

1 Based on the Bank of Canada Inflation Calculator – https://www.bankofcanada.ca/rates/related/inflation-calculator/
2 The Util-Assist Report is included in the 2022 Supplemental Capital Budget Request application for the Project, as Appendix B.

IR-2 With reference to question 1), PEI's electricity infrastructure has considerably fewer customers, is a smaller scale, has lower energy consumption, has a fully deployed RI metering infrastructure and has a high concentration of wind energy (hopefully expanding soon). How have these unique aspects and advantages been maximized in this MECL Sustainable Electrification Project Application.

Response:

As indicated in the response to IR-1(g) herein, the fact that Maritime Electric's electricity infrastructure has fewer customers results in a higher cost per customer for both the AMI and CIS components of the Project. Lower energy consumption and high concentration of wind energy have no impact on the implementation of the Project. The baseline energy consumption and high penetration of wind energy will be considered in the future, when the Company begins studying innovative rate structures.

The experience and knowledge gained through the deployment of radio interrogation ("RI") metering infrastructure, which was executed by Maritime Electric staff, has helped the Company through the planning stages of the AMI component. For this reason, Maritime Electric believes that it can execute the installation of meters at a reduced cost, and with increased safety controls, while minimizing the impact to customers, as compared to using a contractor to execute this work.

IR-3 What is MECL's current viewpoint on the choices that any Utility has for controlling peak load and/or using excess wind or solar energy? Is it preferred to:

a. Provide incentives for customers to optimize when and how energy is used, e.g. time-of-day, and /or time of excess available energy, and /or energy-demand tariffs?
b. Or is it more effective for the Utility to control energy use at the individual customer level and provide customer participation incentives, e.g. monthly discounts for direct time-of-wind (Summerside Utility HFLN) or extending MECL curtailment tariffs?

Response:

This response is intended to collectively address parts a and b of IR-3 herein.

Maritime Electric expects the transition to AMI will be a foundational advancement in the way the Company conducts business. This upgrade will enable the Company to improve reliability and provide customer service offerings that are not possible with the existing metering system. The conversion to AMI will also allow the Company to implement innovative rate structures aimed at reducing system peaks, with the ultimate goal of reducing the overall cost of operating the electrical system.

However, as indicated in the 2022 Supplemental Capital Budget Request – Advanced Metering for Sustainable Electrification Project ("Application"), innovative rate structures will require at least one year of interval data before a study can be initiated, and likely another year of data analysis and rate design work.[3] Once this interval data is available and study is underway, the Company will be in a better position to comment on the appropriate incentives or tariffs.

[3] Lines 25-29 on page 22 of the Application.

IR-4 Summerside Utility's deployment of smart meters over the past fourteen (14) years has increased iteratively as customers changed to electric heating. Having the benefit of the experiences of all three Maritime Utilities' programs, what are MECL's conclusions on the strategies of:

a. Introducing customer tariffs and incentives and then deploying smart meters to suit customers' adoption of the new incentives
b. Or deploying smart meters to every customer and subsequently offering new tariffs?

Response:

NSPI completed their AMI conversion in a similar timeframe to that proposed by Maritime Electric. NB Power has not begun the replacement of meters but their plan is to complete the full conversion in a similar timeframe to that proposed in the Application.

a. The strategy suggested in the question is not viable. AMI requires a significant amount of data to be transmitted from each meter back to the utility. In order to allow this data to flow back to the utility, a communication system is required. The mesh network technology used to bring meter data and alarms back to the utility requires the full network to be deployed. The mesh network relies on meters passing data from meter to meter over short distances. Some meters will require repeaters to send data over longer distances. Eventually all meter data is compiled in collectors and sent back to a central location. Before the data can be collected remotely, or remote commands can be executed by a meter, the entire communication network and network of meters must be installed. Without the full deployment of meters additional collectors or repeaters would need to be deployed. This would significantly increase the cost of the communication system as repeaters and collectors are costly pieces of equipment. This is not required if the full mesh network is deployed.

   Additionally, the Federal Government funding has a requirement that the majority of eligible expenses be incurred before March 31, 2026. In order for the Company to take advantage of this funding, the smart meters must be deployed in the timeframe indicated in the Application.

b. The strategy suggested in the question is being pursued by Maritime Electric. Deploying smart meters to every customer in the timeframe indicated in the Application will result in a significant reduction to the overall cost of completing an AMI conversion. This scenario will also allow the Company to collect interval data from customers and study this data to provide better insight into future rate design.

IR-5 The Application justifies the "Rationale and Necessity" of AMI by prioritizing the PEI Government's objective of converting all space heating from oil to electricity by 2040. Considering the recent mismanaged contraction of available PEI wind energy and the Government's blatant disregard for the impacts of increased peak load driven by the new electrification programs, what financial contribution to the proposed capital expenditure has been sought from the PEI Government?

Response:

The Prince Edward Island ("PEI") Government is supportive of the Company's plans to upgrade its metering system with AMI technology, as it considers AMI to be a key tool for supporting its net-zero carbon emission objectives. As such, the PEI Government assisted Maritime Electric in the process of obtaining Federal Government funding, however, it is not providing a financial contribution to the Project.

IR-6 Using efficiencyPEI's installation data please provide the 2021, 2022 and part 2023 annual Heat Pump (HP) installations. To explain how these installed HPs have changed MECL's electricity peak load challenges, please compile a table for the years 2020, 2021, 2022 and part 2023 showing the monthly energy sales (MWh), the monthly peak load (MW) and the resulting monthly system load factor.

Response:

Table 2 provides the total number of heat pump installations supported by the Province of PEI. The number of installations is separated by fiscal year and program.[4]

TABLE 2
Number of Heat Pump Installations by Program and Provincial Fiscal Year

Program	2023/2024 to Date	2022/2023	2021/2022	2020/2021
Energy Efficient Equipment	2,975	6,972	4,790	4,167
Business Energy Rebate	142	374	298	240
Free Heat Pump Program	4,681	2,915	-	-
Total	**7,798**	**10,261**	**5,088**	**4,407**

IR-6 requests monthly energy sales (MWh), monthly peak load (MW) and the resulting monthly system load factor. However, since monthly peak load is measured at the system level (before system losses) and energy sales are measured at the customer level (after system losses), it is more appropriate to provide the monthly peak load, and the total monthly generated and purchased energy (MWh), with the latter being the total energy delivered to customers at the system level (before system losses). Table 3 provides for the requested/energy and system information.

[4] Heat pumps installed under the Energy Efficient Equipment and Business Energy Rebate programs are administered by EfficiencyPEI. Heat pumps installed under the Free Heat Pump Program are administered by the PEI Government's Net-Zero Office.

TABLE 3 Maritime Electric Monthly Energy, Load and Load Factor			
Month-Year	**MECL Net Monthly Peak Load (MW)**	**MECL Total Monthly Generated and Purchased (MWh)**	**System Load Factor (%)**
2020			
Jan-20	**259.4**	143,283	74%
Feb-20	**249.3**	130,901	71%
Mar-20	**224.8**	129,501	77%
Apr-20	**193.7**	107,296	74%
May-20	**189.3**	102,852	73%
Jun-20	**186.8**	99,121	71%
Jul-20	**193.5**	108,155	75%
Aug-20	**201.7**	110,139	73%
Sep-20	**183.3**	99,317	73%
Oct-20	**195.3**	108,859	75%
Nov-20	**231.8**	119,342	69%
Dec-20	**256.7**	133,161	70%
2021			
Jan-21	**240.0**	142,104	80%
Feb-21	**245.8**	127,369	70%
Mar-21	**256.3**	131,516	69%
Apr-21	**209.8**	112,391	72%
May-21	**193.5**	106,830	74%
Jun-21	**192.2**	102,278	72%
Jul-21	**190.4**	107,412	76%
Aug-21	**216.4**	117,364	73%
Sep-21	**189.7**	104,168	74%
Oct-21	**193.4**	109,760	76%
Nov-21	**242.7**	122,961	68%
Dec-21	**266.7**	147,261	74%

TABLE 3 (continued) Maritime Electric Monthly Energy, Load and Load Factor			
Month-Year	**MECL Net Monthly Peak Load (MW)**	**MECL Total Monthly Generated and Purchased (MWh)**	**System Load Factor (%)**
2022			
Jan-22	**292.6**	160,410	74%
Feb-22	**273.5**	140,791	69%
Mar-22	**268.7**	142,049	71%
Apr-22	**227.2**	118,831	70%
May-22	**197.0**	109,678	75%
Jun-22	**190.0**	106,803	76%
Jul-22	**214.6**	117,795	74%
Aug-22	**218.4**	123,311	76%
Sep-22	**192.8**	93,276	65%
Oct-22	**177.3**	106,676	81%
Nov-22	**251.9**	127,531	68%
Dec-22	**279.3**	150,802	73%
2023			
Jan-23	**275.7**	157,279	77%
Feb-23	**359.0**	156,602	59%
Mar-23	**261.9**	149,471	77%
Apr-23	**245.5**	122,165	67%
May-23	**213.8**	117,074	74%
Jun-23	**196.2**	111,621	76%
Jul-23	**225.4**	127,733	76%
Aug-23	**196.0**	119,779	82%
Sep-23	**203.2**	110,344	73%

IR-7 The two-way communications for AMI is described as a series of four (4) communication paths between five (5) modules: A radio link from the customers' meter to a neighborhood-based collector, a radio link from the neighborhood collector to the common "Head End" system and then local connection to the MDM and then on to the CIS. In the event of storms and power outages/line failures how does the reliability of this series of communication paths compare to fibre internet, direct wireless internet and cellular network. The question focus here is to assess the expected improvement provided by AMI in communicating individual customer outage situations as compared to the existing direct communication methods available to customers and MECL.

Response:

The AMI system will utilize its own secure and proprietary 900 MHz communication system between the meter and the neighborhood area network ("NAN") to provide a robust mesh network. Each meter will evaluate and create primary and backup paths between other meters and NAN equipment in the event that any device becomes unavailable. A private secure cellular connection will be used to communicate between the NAN and the head end system.

Power outage notification ("PON") is a meter status, not meter data, meaning a PON event gets sent to the head end system immediately and is not queued up or aggregated with other meter communications. PONs are considered priority messages and sent directly to the CIS/Outage Management System, bypassing the MDM.

While PONs are expected to significantly augment the outage restoration process, there will always be a benefit to customers communicating directly with the Company, and the ability to do so will not change. While the meters can indicate a status, customers can communicate valuable information, including the possible cause of an outage.

IR-8 The Application identifies that the implementation of AMI will enable new "Time of Day" (TOD) or similar tariffs to encourage customers to change energy-use habits to either reduce the collective peak load or to enable use of lower cost energy during the day. What are the expected benefits for MECL and customers; what are the expected cost savings for both?

Response:

Time of day ("TOD") or other innovative rate structures have the potential to avoid or delay certain infrastructure investments and capacity costs associated with electrification by incentivizing customers to shift electricity usage from typical peak times to non-peak times. Innovative rate structures are a type of demand side management ("DSM") and the PEI Energy Corporation, which is responsible for DSM on PEI, has identified the lack of an AMI and compatible billing system as a limiting factor in their demand response strategy.

It is difficult to accurately estimate the potential cost savings or avoided costs associated with the implementation of innovative rate structures once AMI technology is implemented. To do so would require estimated values for a cost per megawatt ("MW") for the increases in demand, and the total demand savings in MW associated with innovative rates.

The cost per MW for increases in demand involves estimating the avoided cost of the infrastructure upgrades required to accommodate the increased demand. The calculation of which includes estimating the cost for additional generation, transmission, transformation devices, and distribution system costs. Each MW of demand added to the system would result in different system improvements to accommodate the increase. Although it is difficult to determine the costs associated with each incremental MW of demand, the overall impact of demand-related costs are known and are considerable. In 2020, demand-related costs accounted for 35 per cent of Maritime Electric's overall revenue requirement.[5]

The total demand savings associated with innovative rate structures would depend on the aggressiveness of the rate structures, the types of incentives that are enacted to reduce overall demand, and customer willingness to change their energy-use behavior. The actual cost savings associated with these demand savings could be considerable but cannot be quantified at this time.

[5] Based on the 2020 Cost Allocation Study completed by Chymko Consulting Ltd.

IR-9 The 2023 capital budget Application suggests, for new customers:

a. Supply and installation of single phase Watt-hour RI meters is around $200; swap-out for existing customers could be around $100. Please confirm the amounts.
b. Supply and installation of three phase Watt-hour RI meters is around $600; swap-out for existing customers could be around $300. Please confirm the amounts.
c. Supply and installation of (three phase) Combination RI meters is around $1000; swap-out for existing customers could be around $500. Please confirm the amounts.

What are the comparable individual meter costs and expected installed quantities used for the AMI budget? Is it correct to assume that only single and three phase types of AMI meter are required – not a Combination type?

Response:
Maritime Electric is not able to provide more detail on meter supply costs as this information is commercially confidential and, as such, is provided to the Commission in confidential appendices to annual capital budget applications.

Over 90 per cent of Maritime Electric customers require a single-phase meter. With the increased capabilities of AMI, Maritime Electric is evaluating what meter types will meet the required needs going forward. The exact types and quantities will be based on these evaluations. At this point, it should not be assumed that there is a direct one-for-one correlation from the previous meter versions. Current meter versions have a host of options including the amount of memory and storage options, whether physical buttons are required, and the durations of warranty available. The need for these options, which will be determined during procurement, will have an impact on pricing.

As indicated in the Util-Assist report and the response to IR-1(g) herein, the "All-in Cost per Meter" is $392.[6] This cost is reduced to $261 when the portion of the Federal Government funding attributed to the AMI component of the Project ($10.4 million) is included. However, as the All-in Cost per Meter involves much more than just replacement of meters,[7] the "supply and installation" and "swap-out" costs indicated above are not comparable.

[6] Table 8: Comparison of AMI Business Cases on page 24 of the Business Case for Advanced Metering Infrastructure for Maritime Electric Company, Limited included as Appendix B in the Application.
[7] The All-in Costs per meter also includes costs for network infrastructure, head-end-system, integration services, etc.

IR-10 CIS Asset Value: Following the adoption of "Power Builder" as the software platform/codebase for the current MECL CIS in year 2000:

a. What has been the accumulated capitalized annual IT investment?
b. What is the 2022 year end asset value and how long is the remaining depreciation period before a reasonable "write-off" asset value is achieved?

Response:

a. The accumulated CIS investment, net of retirements, was approximately $2.1 million, as of December 31, 2022.

b. Gross investment less accumulated amortization value at December 31, 2022 is approximately $0.7 million. Intangible assets are amortized over a 10-year life.

Maritime Electric follows the grouped asset, straight-line method of depreciation using average service life procedures.[8] Therefore, any remaining amortization balance is not "written-off". Instead, it is subtracted from, or added to, the replacement asset cost and recovered over the useful life of the new asset, as is normal utility practice.

[8] This approach is described in page I-3, in the Basis of Study section of the 2020 Depreciation Study prepared by Gannett & Fleming, and filed with the Commission on July 29, 2021, in accordance with Commission Order UE19-08.

IR-11 What would be the estimated cost savings for the new CIS if detailed energy-use data was archived and only provided to customers on each monthly billing date as opposed to being available "on-line" on an hourly basis?

Response:

The primary function of the MDM is to be a central and authoritative repository for metering data received and processed from the AMI system. The primary role of the CIS is to be a central and authoritative repository for customer information, including demographic, service requests, billing information, and other such data. The primary function of the Customer Portal is to be a self-service gateway for customers to view and edit their information stored within the CIS. Conversely, the presentation of interval energy consumption data to the customer in an "on-line" manner is a secondary function of MDM and CIS. As such, only minimal cost savings would be achieved if energy-use data were to be archived and only provided to customers in their monthly bill as opposed to being available "on-line" on an hourly basis.[9]

[9] It is not the intention to provide "live" energy usage data to customers. Energy usage data will be collected, compiled and presented to customers periodically. It is likely that data will be uploaded once daily, with a 24 hour delay.

IR-12 Considering that the phased deployment of MECL RI meters starting in 2004 was:

a. First two years – 7,500 meters
b. Next two years – 10,000 meters
c. Final five years – 50,000 meters

and the twenty year RI meter life renewal cycle is due to start in 2024, would it not be prudent to deploy AMI meters in a similar renewal pattern and avoid significant capital write-downs of the RI meters?

Response:

The communication technology used for meter data and alarms requires the full network deployment. Without the full deployment, additional repeaters and collectors would be required. This would significantly increase the cost of the communication system, as repeaters and collectors are costly and would not be required if the full mesh network was deployed.

Additionally, per the Company's response to IR-4 herein, the deployment timeframe proposed in the Application is necessary as the majority of funding-eligible expenses must be incurred before March 31, 2026. A phased deployment similar to the conversion to RI meters would limit the amount of funding that the Company would be able to access or possibly exclude the Company from the funding. A phased deployment would also require prolonged operation of two customer information systems, extending the need to maintain and support the legacy CIS.

IR-13 Noting also that the current segmentation of Residential customers' by a) energy-use and b) collective coincident peak load, for a typical winter month is:

a. 7,017 customers using between 2,300 KWh and 5,000 KWh; peak load of 48 MW
b. 11,687 customers using between 1,200 KWh and 2,300 KWh; peak load of 37 MW
c. 41,000 customers using up to 1,200 KWh; peak load of 58 MW,

an AMI deployment schedule based upon customer energy-use segmentation conveniently coincides with the avoidance of capital write downs as cited in 12) above. Enabling those customers with the highest incentives to adopt new energy-use or peak load reduction tariffs would ensure that DSM results would occur faster, progressively, and in "pilot" quantities. Does MECL agree and what other benefits would MECL identify?

Response:

Maritime Electric does not agree. As stated in the responses to IR-4 and IR-12 herein, a phased deployment does not suit the Project. A phased deployment will result in increased complexity of the communication network, prolonged operation of two customer information systems, potential for lapsed Federal Government funding, and additional equipment that would be required for the partial deployment but not be necessary once full deployment is achieved. For these reasons, a phased deployment will result in increased overall costs to customers.

IR-14 Finally, please respond and comment on the following two Alternative AMI Deployment Scenarios:

A) Alternative CIS Solution:
Enable evaluation of a PEI based AMI infrastructure and the early introduction of new tariffs by retaining the current CIS and replacing a proportion of RI meters with AMI meters. The primary factors that prompt this alternative are:

a. the AMI meters have the capability to not only report energy and power usage but also provide some calculations of individual customer tariffs
b. that the Meter Data Management Module (MDM as described) provides the management of streamed meter data before billing information is compiled by the CIS,
    i. that the data storage of the proposed new CIS is to be the same configuration as the existing CIS - namely "On Premises" storage rather than "cloud storage".
c. As a result, how many AMI meters could replace RI meters and still retain the existing CIS?

B) Alternative AMI Meter Solution:
Extend the recent deployment of the ITRON "Bridge Meters" (BM) to enable early evaluation of new tariffs while providing an expandable meter platform in readiness for AMI. The ITRON BM has the expandable "Open Way" architecture which enables each BM to provide a compatible path from RI to AMI metering.

For the recent pilot deployment of 600 "Bridge Meters" (BM) please respond to:

a. The Application refers to "slowing down the drive-by meter reading process" what is the quantified data here and the estimate pro-rated delay for each additional 1000 BM deployed?
b. Earlier capital budget information suggested that the average swap-out cost for a BM Watt-hour meter was $230 and for a BM Combination meter was $300. What are the current costs?
c. For these 600 meters, what are the quantities deployed for each customer class
d. How many customers recorded (and perhaps used) the monthly day-by-day energy-use information collected by their BM?
e. As the current CIS has processed the increased data from these 600 BM so far, how many additional BM could be deployed before the current CIS would require upgrades?
f. What would be the incremental cost to add the 2-way communications module to each deployed meter to enable full AMI meter features?

Response:

A. The replacement of the CIS is justified based on the age and technological obsolescence of the existing software. Until replacement is complete, the existing 34-year-old CIS will continue to be a critical component to many of Maritime Electric's core business functions,

and any interruption in operation could severely impact the Company's ability to provide service. The legacy CIS has been on the Company's business risk matrix for many years and its replacement is required as soon as possible, with or without the upgrade to AMI.

As discussed in the response to IR-13 herein, a phased AMI deployment will result in increased overall costs to customers.

The Federal Government funding of $19 million was provided based on the entire project. If the Company delays the CIS replacement or a portion of the upgrade to AMI, it would lapse a considerable portion of the approved funding.

B. Itron's Open Way platform, used by Bridge Meters, was introduced in 2004. In January 2022, Itron announced the end of new sales for the Open Way AMI architecture, which will no longer be supported by Itron after January 2027. Therefore, Bridge Meters are not an available option.