STATE OF RHODE ISLAND
PUBLIC UTILITIES COMMISSION

In Re: Advanced Metering Functionality Business Case and Cost Recovery Proposal of the Narragansett Electric Company d/b/a Rhode Island Energy	)))	Dkt. 22-49-EL

DIVISION'S RESPONSES TO COMMISSION'S FIRST SET OF DATA REQUESTS ISSUED MAY 12, 2023

Commission 1-1

Request:

1-1. On pages 11-12 of the Watson and Blanton testimony, the witnesses disagree with the company's stated level of urgency for AMF for several reasons, noting that AMR technology can provide customer choice, TVR, and other functionality that does not degrade reliability or safety. (p. 11 at lines 11, 20-21). They also state that while the AMR meters are at the end of their depreciated life, that is an accounting life and not the real operational life, noting that AMR technology is still manufactured and supported. (p. 11 at 15-16; page 12 at 5-8). Later, the witnesses indicate that the Division supports the Company's proposed timeline, but also indicate that "safety and reliability will not be compromised if AMF implementation is slower than proposed." They then state that AMF is the right technology, and it is the right time to invest in AMF. However, they note that the implementation timeline and full incorporation of all functionalities could be spread out over a longer period, noting that certain functionalities could follow "years later." (p. 12 at lines 11-22). Finally, on page 45, the Division recommends that each system component and software integration not directly related to reading the meters and sending retail bills should be deferred by 2 years…"

a. Has the Division evaluated whether the Company has proven a need to invest in AMF technology at this time aside from the need to replace aging meters? Please explain the Division's conclusions.

b. Has the Division evaluated whether the Company has proven a need to invest in the proposed advanced meters and the functionality needed to read usage, bill customers, and propose time-based rates? Please explain the Division's conclusions.

c. If the Company can bill customers, allow for customer choice, and have time-based rates without harming reliability or safety using the current AMR technology, what need does the Division believe the Company identified for AMF?

d. The Division has suggested a slower implementation schedule may be appropriate. As the ratepayer advocate, what does the Division suggest as an alternative timeline that is in the best interests of the ratepayer? Please include in the explanation a list of each functionality the Division believes can be delayed and for how long.

e. Please identify which categories of costs would be affected as a result of the Division's recommendations on the timeline.

Response:

a. Yes. The Division's analysis of the need to invest in AMF technology was based on standard benefit-cost analysis ("BCA"). The Division's assessment of the benefit-cost ratio is that the present value of the benefits of the AMF metering system deployment outweigh the present value of the costs by a ratio of 1.4 times. This conclusion indicates that the investment value of deploying the AMF metering system is a positive investment over and above the need to replace aging meters.

b. Yes. The Division has evaluated whether the Company has proven a need to invest in the proposed advanced meters and the functionality needed to read usage, bill customers, and propose time-based rates. See Response to 1(c) *infra* as to the Division's conclusions generally regarding whether the Company has satisfied its burden of proof relative to a need to invest in the proposed advanced meters and certain BCA categories.

c. Reference Table 1, p. 33 of Watson/Blanton testimony. The Company identified 81 benefit categories in its BCA. The Division has testified to its concerns about only a few of these categories. The remaining benefit categories appear to be reasonable from the Division's perspective and therefore provide the basis for the Division's conclusion that, after adjusting for its concerns, the net present value benefit-cost ratio still remains in positive territory at 1.4 times cost. This is the basis for the Division's belief that the Company has justified the investment value of AMF implementation.

d. As stated on Page 12 of its Direct Testimony, the Division supports the Company's proposed AMF timeline. Should the Commission deem it appropriate to lessen the short-term rate impact a longer timeline could be implemented without threatening safety or reliability. The Division, however, has not prepared a cost analysis of AMF categories for a longer timeline.

The longer timeline might look like the following:

Step 1. The communications system should be implemented in two phases. Phase 1 would be to initiate a communication system similar to the PPL system designed to collect metering data every 4 to 6 hours. Meter sets would follow

and would utilize this methodology of collection until the entire metering installation is complete. Concurrently, the backoffice, billing, and other necessary functions to facilitate meter reading and billing would be completed. The Division estimates that this could be completed in approximately 3 to 4 years and would generally provide the functionality proposed in Groups 1 & 2 in RIE's Roadmap. Load data from the AMF meters should be loaded into the CYME model after the winter and summer peaks occur which will assist with peak planning. In addition, load data from lightly loaded times can be utilized in CYME for DER planning to determine if additional DER can be added to the system.

Step 2. After all metering, billing and communication system issues are reconciled, Phase 2 of communications project would be initiated. This phase would upgrade the system to allow for a faster collection and processing time of 15 to 30 minutes. The Company should also incorporate all metering data from AMF and MV-90 systems into its CYME engineering software modeling. The anticipated timeline for completion is 24 months. The Division supports this upgrade primarily for enhanced planning capabilities. The frequency and granularity of meter data, both from loads and generators, should be leveraged to identify system issues, evaluate solutions, and justify investments within the ISR Plan. The Division believes that AMF capabilities will provide improved system load distribution on feeders and enhanced voltage profile confirmation to inform future investments by generating actual data to inform decisions as opposed to RIE relying on generalized assumptions and estimated load distribution across its feeders.

Step 3. Group 3 items are helpful to keep customers engaged and manage home energy usage. Green Button Connect, Near Real-Time Customer Data Access, In-home Device Support and Bill Alerts are beneficial tools but may require additional evaluation for successful implementation. Further, these features provide the most value in connection with time varying rates (TVR) and would be optimized with the granularity of 15 to 30 minute data. The Division recommends evaluating implementation in Step 1 (above) with further refinement once TVR rates and 15 to 30 minute data are made available.

Step 4. Groups 4 and 5 (with the exception of TVR) are recommended 24 months after the metering, billing and initial communication systems are fully functional and after all issues which customarily arise are resolved. The Division, however, recommends future re-evaluation of all proposed functionality prior to implementation. The review should consider customary factors such as system need, technology improvements that may drive alternative solutions, expected benefits, etc.

Step 5. Group 6 items, scheduled at an unidentified time in the future, are mostly advanced functions that RIE states will need further review. These items should be deferred and any future review should consider customary factors such as system need, technology improvements that may drive alternative solutions, expected benefits, etc.

Step 6. Time Varying Rates should be a separate rate docket, which the Division anticipates proceeding during Step 1, and would develop the appropriate series of rate options. All hardware and software necessary for the implementation would be coordinated to be available upon final approval of the TVR tariffs.

e. It is unknown which categories of costs would be affected as a result of a longer timeline.

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Commission 1-2

Request:

1-2. Did the Division's witnesses consider whether a mesh network and web-based system is necessary to meet the operational needs of the Company? Please explain.

Response:

The Division's witnesses did consider whether a mesh network and web-based system is necessary to meet the operational needs of the Company. While a mesh network and web-based system is not necessary to meet the minimum operational needs of the Company, in the Division consultant's experience with other systems, these will deliver the best operational system and BCA. There are other communication system options which include: Power Line Carrier (PLC), radio and cellular. PLC limits the amount of data that can be transmitted back from the meters which would reduce the benefit of AMF. Radio can be exceedingly expensive since it requires the installation of additional radio towers and operates with limited frequencies. Cellular is often an expensive long-term solution that requires a data card for each meter and cellular plans that can become costly over time. In addition, cellular communications during emergencies can be slow due to congestion It is the Division's understanding that RIE will rely on cellular for backhaul or transmitting data from the mesh network to the head end system under the AMF plan. The Company proposes to replace cellular services with a private fiber network system within the Grid Modernization Plan. If implemented, AMF data transmission would rely on fiber for backhaul instead of cellular. In this case, the Division would expect that the fiber network be evaluated against cellular as a long-term solution to justify the investment.

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Commission 1-3

Request:

1-3. Referencing the Division's assertion on page 14 of the witnesses' testimony that "it will cost at least an additional $16,000,000, at $30 or more per meter, to have remote disconnect and reconnect technology on each residential meter." Please explain how the Division arrived at this conclusion. Please also explain how RI Energy's response to Division Data Request 4-7 was considered in the calculation.

Response:

The Division's consultants have professional relationships with multiple electric utilities that have implemented AMF and installed Landis+Gyr meters with and without disconnect and reconnect features. The Division's consultant determined that some of these clients paid an additional $30 per meter for the disconnect feature. The consultant had also contacted the Landis+Gyr representative for Rhode Island and requested an updated cost differential price between a meter with and a meter without the disconnect feature. Although not available at the time the Division's testimony was filed, Landis+Gyr ultimately stated that its meter with the disconnect feature would cost $50.00 per meter more than a meter without the disconnect feature.

RIE response to Division data request 4-7, states that "Advanced metering functionality ("AMF") meters with a remote disconnect/reconnect switch are less expensive than AMF meters without the feature." The Division's consultant had knowledge that remote disconnect/reconnect switch meters could at least $30 per meter more expensive than meters without the feature. RIE's response to data request 4-7 was not consistent with that knowledge.

In subsequent discovery responses, the Division learned that purchasing meters with the disconnect feature in volume may enable the Company to obtain favorable pricing for those meters. Whether meters without the disconnect feature when purchased in volume would be even less costly remains an open question. At present the Division continues believe that it would be prudent to conduct a separate BCA analysis for utilization of meter disconnect technology.

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