

PUBLIC SERVICE COMMISSION OF WISCONSIN

Memorandum

RECEIVED

August 14, 2012

AUG 16 2012

FOR COMMISSION AGENDA

Commissioners' Office

TO: The Commission

FROM: John Schulze, Jr., Administrator
Jeffrey Ripp, Assistant Administrator
Denise Schmidt, Water Conservation Coordinator
Division of Water, Compliance and Consumer Affairs

Robert Norcross, Administrator
Terri Kosobucki, Staff Engineer
Gas and Energy Division

RE: Investigation into the Health and Safety and Other Aspects
of Advanced Meter Infrastructure Systems for Water
Utilities

5-WI-101

Suggested Minutes: The Commission (granted/denied) the request of the petitioners to investigate whether the Madison Water Utility has the necessary legal authority to implement its advanced metering infrastructure project.

The Commission (granted/denied) the request of petitioners to open a docket to investigate the health, safety, privacy, cost, security, customer rights and other issues related to the implementation of advanced metering systems (with/without) conditions.

The Commission (ordered/did not order) a moratorium on the installation of advanced metering systems (statewide/in the Madison Water Utility's service area) (with/without) conditions.

Background

On July 5, 2012, Ms. Dolores Kester, along with 32 other customers of the Madison Water Utility (MWU), filed a petition under Wis. Stat. §§ 196.26 and 196.37(2), and Wis. Admin. Code §§ PSC 2.07 and 2.08, requesting that the Commission: (1) investigate whether MWU has the legal authority to install advanced metering infrastructure (AMI);

(2) open an investigation into matters relating to AMI systems generally, including, but not limited to health, safety, cost, privacy, security, and the rights of customers related to these systems; and (3) order a moratorium on the installation of an AMI system in MWU's service area pending resolution of these issues and/or adoption of an "opt-out" policy for customers (Attachment 1, PSC REF#: 168052). MWU filed its response to the petition on July 19, 2012, (Attachment 2, PSC REF#: 168645). The petitioners filed additional information related to their complaint on July 24, 2012, (Attachment 3, PSC REF#: 168830), and August 6, 2012, (Attachment 4, PSC REF#: 169708). Subsequent to the filing of this petition, the Commission received similar complaints or inquiries related to metering systems from nine MWU customers and one non-MWU customer.¹

Discussion

Accurate metering is required for effective billing, accounting, and rate making for electric, gas, and water utilities. In general, the selection of the appropriate metering equipment, like other utility plant equipment, is made by the utility. The Commission provides limited oversight to ensure that the meters comply with accuracy and service standards, including those listed in Wis. Admin. Code §§ PSC 113.0809, 113.0811, 134.11, and 185.61. Traditionally, meters were read by trained utility personnel based on visual inspection at each location where a meter was installed. Advances in metering technology have allowed utilities to read meters remotely and more frequently using wired or wireless technology to transmit a signal to a fixed or mobile receiver. While numerous technologies and vendors exist, meters that communicate

¹ Commission staff has informed customers who have filed inquiries or complaints related to metering systems after July 5, 2012, that their complaint will be put on hold, pending Commission action on the MWU petition. If the Commission decides to act on any of the matters raised in this petition, these customers would be given the opportunity to participate in any investigation, as appropriate.

using a radio frequency signal (RF) are commonly referred to as “advanced meters” or “smart meters.”

The terms “advanced meter” and “smart meter” are often used interchangeably.

However, not all advanced meters are smart meters, resulting in some confusion. An advanced meter, generally, is any meter that can be read remotely, while a smart meter is typically considered to be any meter that is capable of collecting, at a minimum, hourly usage data and that is capable of two-way communication with a utility’s central data system. Automatic Meter Reading (AMR) typically refers to systems where the meters have only one-way communication ability, either through a wired connection (e.g., powerline communication) or through an RF signal that is transmitted to a walk-by or drive-by receiver. Advanced Metering Infrastructure (AMI) generally refers to the entire measurement and collection system, which typically includes a fixed wireless communications network comprised of receivers, relays, transmitters, advanced meters (which may not always be smart meters), and the central data management system. For the purposes of this discussion, the term “automatic metering system” will refer to both AMR and AMI systems.

The ability to transmit a signal using RF is not new technology and is commonly used in mobile communications equipment and household devices such as radios, cellular phones, wireless routers, remote controls, and cordless telephones. The use of automatic metering systems is becoming increasingly common as utilities replace obsolete, outdated, and fully depreciated meters. In Wisconsin, the use of automatic metering systems is already widespread in the water, gas, and electric utility industries. Based on information submitted in the 2011 annual financial reports, it is estimated that about half of the nearly 600 regulated Wisconsin water utilities have advanced meters in service, including 262 that report using a

drive-by AMR system and 40 that report using an AMI system. According to the U.S. Energy Information Agency's 2010 Electric Power Industry Data, four of the five Wisconsin investor-owned electric utilities reported that nearly 100 percent of their residential customer meters and a majority of commercial and industrial meters relied on AMR or AMI technologies.² Municipal electric utilities and electric cooperatives have also reported widespread use of AMR and AMI technologies.³ Comparable data for natural gas utilities were not readily available.

MWU currently relies on remote outside registers to obtain manual meter readings from the majority of its customers, but this equipment is no longer supported by the vendor. MWU plans to install an AMI system in its service area that consists of a fixed wireless communication network and meters capable of two-way communications. This system was initially proposed in MWU's 2008 "AMI and Monthly Billing Plan" (PSC REF#: 122702) which, in part, was the result of the Commission's directive to MWU to increase its billing frequency. MWU has identified a number of benefits of the AMI system, which include:

- Enabling more frequent billing (from semiannual to monthly billing) and improved cash flow for the utility.
- Providing data to assist with implementing conservation rates and tracking the effectiveness of water conservation measures.
- Improving leak detection capabilities and accuracy of water loss assessment.
- Allowing customers to access and manage their water use data.
- Reducing operational costs such as vehicle costs and emissions, lost time injuries, and salary for meter reading personnel.

² Wisconsin Public Service Corporation reported that its meters communicate using the power line, rather than with RF technology.

³ U.S. Energy Information Agency 2010 Power Industry Data: www.data.gov/communities/node/48/data_tools/40101.

- Providing for more efficient final meter reads, eliminating remote reading device maintenance, and enabling quick detection of meter problems.

The issues raised by the petitioners can be broadly categorized into three separate requests for Commission action: (1) investigate whether MWU complied fully with all statutory and administrative rule requirements before implementing its AMI project; (2) open a docket to investigate issues relating to the health, safety, privacy, cost, security, customer rights, and other issues related to the installation of advanced metering systems; and (3) order a moratorium on the installation of an AMI system in MWU's service area pending the resolution of these issues and/or the availability of an "opt-out" policy for customers. Each of these issues is summarized along with alternatives for Commission consideration in the following sections.

Alternatives for Consideration

While all of the petitioners are customers of the Madison Water Utility, they raise general concerns about the health, safety, cost, privacy, and security of advance metering systems that could affect other gas, electric, and water utilities statewide. In considering the petitioners' requests, the Commission may wish to consider whether any decision applies only to MWU or whether it should be applied to other utilities.

Compliance with Statutory and Administrative Rule Requirements

The petitioners assert that MWU failed to receive a certificate of authority under Wis. Stat. § 196.49 from the Commission prior to initiating the AMI project. The petitioners claim that MWU's failure to submit an application under Wis. Admin. Code § PSC 184.04⁴

⁴ Wisconsin Admin. Code ch. PSC 184 was repealed and recreated, with a new version taking effect on August 1, 2012.

deprived the Commission the opportunity to review detailed data and explanations regarding the purpose and necessity of this project, the effect of the project on quality and reliability of service, and alternatives to the project. Further, the petitioners believe that compliance with Wis. Admin. Code PSC ch. 184 was even more necessary given the fact that nearly three years had elapsed since the Commission's authorization of the AMI project in MWU's rate case on December 22, 2009, and the commencement of construction in July 2012. The petitioners request that the Commission investigate whether MWU has the necessary legal authority to construct the project. Presumably, if the Commission finds that MWU lacks authority for the project, the Commission would initiate a proceeding under Wis. Admin. Code ch. PSC 184.

MWU does not dispute that it did not receive a certificate of authority from the Commission for its AMI project. However, MWU's July 19, 2012, response provides an accurate discussion of the history of the Commission's oversight of the project. In its Final Decision issued on December 28, 2008, (docket 3280-WR-110), the Commission ordered MWU to submit a plan for implementing more frequent billing in its next rate case application. As part of its 2009 rate case, MWU submitted testimony describing its AMI and monthly billing plans. In its Final Decision issued on December 22, 2009 (docket 3280-WR-111), the Commission ordered MWU to "continue with its Advanced Metering Infrastructure (AMI) project as outlined in the AMI and Monthly Billing Plan (PSC REF#: 122702)." MWU filed additional information about the project as part of its 2010 water rate case, including a proposed schedule for implementation. In its Final Decision issued on May 3, 2011, the Commission ordered MWU to: "continue with its Advanced Metering Infrastructure (AMI) project as outlined in the AMI and Monthly Billing Plan (PSC REF#: 122702) and in the Request for Proposals - Advanced Metering Infrastructure System (PSC REF#: 145692)."

Commission staff notes that the issuance of certificates of authority for water utility construction has historically been delegated to the Division Administrator. The petitioners and MWU disagree on whether advanced metering projects, such as the one proposed by MWU, require a certificate of authority under the version of Wis. Admin. Code ch. PSC 184 (August 2008) in effect at the time MWU proposed its AMI project. Nonetheless, under this same rule, the Commission had the option to either open an investigation or to simply acknowledge receipt of a project application and take no further action, allowing the applicant to proceed with construction. The Division Administrator at the time had made the general policy decision to acknowledge water meter replacement projects, rather than to open a formal investigation.

Alternative 1a: Deny the petitioners' request.

Alternative 1b: Grant the petitioners' request to open an investigation into whether MWU received the necessary approvals for its AMI project and direct staff to issue a Notice of Investigation consistent with this decision.

Health, Safety, Privacy, Security and Cost Concerns

The petitioners raise a number of potential concerns related to the health, safety, cost, privacy, and security of advanced metering systems, all of which are enumerated in their filings and are not repeated here. They cite numerous reports, research, and other activities by other state legislatures, courts, and utility commissions related to advanced metering systems. Specifically, the petitioners assert that approximately 14 states have addressed customers' rights relating to advanced metering systems, including at least 8 states that have established opt-out programs. The petitioners request that the Commission open an investigation into all relevant

issues related to advanced metering systems, including, but not limited to those issues directly related to MWU. The petitioners also request that the investigation include a determination of the rights of customers related to advanced metering systems, including the establishment of a reasonable opt-out policy and the factors related to determining fair and equitable rates and terms of service.

In its response, MWU states that it considered the health, safety, and other risks posed by its AMI system and found that the implementation of this system does not pose a public health risk. MWU cites a report by the joint agency Public Health Madison and Dane County that summarizes a literature review and concludes that there is little evidence supporting an association between advanced meters and potential health effects. MWU argues that the claims made by the petitioners have been carefully considered and rejected and should not provide any basis for delaying the project. MWU agrees with the petitioners that the Commission has broad authority to conduct an investigation into issues related to automatic metering systems. However, MWU suggests that if the Commission undertakes such an investigation, that it be broadened to include all statewide interests and not just MWU.

Commission staff notes that although the Commission has not established a “customer bill of rights” specifically related to automatic metering systems, the rights and responsibilities of utility customers relating to metering are established in existing statutes, administrative rules, and utility tariff provisions. If the Commission decides to open an investigation related to advanced metering systems, it may wish to clearly identify the scope of the investigation, including the types of metering systems covered, the specific concerns to be addressed, and the utility sectors that would be included.

Alternative 2a: Deny the petitioners' request.

Alternative 2b: Grant the petitioners' request to open a docket to investigate the health, safety, privacy, cost, security, customer rights and other issues related to automatic metering systems, but limit the scope of the investigation to only the AMI system proposed by the Madison Water Utility.

Alternative 2c: Grant the petitioners' request to open a generic docket to investigate issues related to automatic metering systems, but limit the scope of the investigation to those issues agreed upon by the Commission in its decision.

Alternative 2d: Grant the petitioners' request to open a generic docket to investigate all matters pertaining to the health, safety, privacy, cost, security, customer rights and other issues related to the implementation of automatic metering systems for all Wisconsin utilities.

Moratorium and Customer Opt-Out Policy

The petitioners request that the Commission order MWU to cease and desist from further communication with customers and installation of AMI meters unless and until customers have been informed of their rights, including their right to opt-out of having these meters installed on their property. The petitioners also request that the Commission order a moratorium on further expenditures by MWU on the AMI program, pending an investigation and determination by the Commission on all matters related to customers' interests in regard to these matters. The petitioners argue that allowing MWU to proceed with implementation of its AMI project before the Commission makes its determination on the issues raised in this petition could endanger customer health and safety and result in increased customer costs associated with removing AMI meters and equipment once they have been installed.

MWU responds that it plans to continue with the installation of its AMI project and that it is currently developing an opt-out policy to address customers' concerns relating to the AMI project, although the timetable for approval of such a policy is not known. In the interim, MWU has informed Commission staff that it will voluntarily delay the installation of new meters upon customer request, pending approval of its opt-out policy. MWU notes that it has been actively planning for AMI implementation since 2009, and that during the past three years it has made consistent efforts to inform the public about the project. MWU also states that it has already executed more than \$12 million in project-related contracts and that any delay in the project would add significant costs, which will be borne by MWU's ratepayers. MWU estimates that such delays could cost the utility in excess of \$20,000 per week in change orders.

The Commission has received several complaints in recent years from electric and water customers who have sought the ability to opt-out of advanced metering projects in other Wisconsin utility service areas. Commission staff has responded to these customers by informing them that: (1) the Federal Communication Commission (FCC) is responsible for regulating the licensing and safety of RF equipment and that the meters used by Wisconsin utilities comply with FCC standards; (2) under Wisconsin law, each utility has discretion in selecting the type of metering equipment to be installed and its location; and (3) a utility is not required to offer an opt-out to customers.

The petitioners and MWU agree that the Commission has the authority to approve an opt-out policy and tariff, if requested by a utility. In fact, at least one water utility has a long-established tariff that allows customers to opt-out of automatic metering equipment at an

additional cost to the customer.⁵ This utility has informed Commission staff that only approximately 100 out of nearly 20,000 customers have taken advantage of this option. In contrast, no Wisconsin electric utilities have offered customers the ability to opt-out of their metering systems. Instead, one electric utility has offered concerned customers the option to relocate the transmitting equipment to an alternative location on the customer's property, at the customer's expense. To date, no customer has accepted this option.

Alternative 3a: Deny the petitioners' request.

Alternative 3b: Deny the petitioners' request for a moratorium on the installation of AMI meters within MWU's service area, but order MWU to delay the installation of AMI meters for any customer who indicates that they wish to wait until MWU's opt-out policy is finalized before deciding whether to allow the installation of such meters on their property.

Alternative 3c: Deny the petitioners' request for a moratorium on the installation of AMI meters within MWU's service area, but order that, pending the outcome of the Commission's investigation, all utilities statewide refrain from installing advanced meters in the home or business of any customer who notifies the utility in writing that they do not wish to have such a meter installed.

Alternative 3d: Grant the petitioners' request and order MWU to halt the installation of its AMI project until it has received Commission approval for its customer opt-out policy, including establishment of fair and equitable rates and terms of service.

⁵ Waukesha Water Utility has established an AMR opt-out tariff that requires customers to pay a charge of \$15.00 per quarter for a manual meter reading. This tariff was created January 1, 1990, and originally was set at \$3.00 per reading.

Alternative 3e: Grant the petitioner's request and order that all utilities statewide, including MWU, halt the installation of ongoing AMI projects pending the outcome of the Commission's investigation and determination on all related matters.

JJR:DA:pc:00584378