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Public Service Commission of Wisconsin  
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**PUBLIC SERVICE COMMISSION OF WISCONSIN**

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

5-WI-101

**FINAL DECISION**

This is the Final Decision on the petition brought on July 5, 2012, by 33 customers (Petitioners) of the Madison Water Utility (MWU), under Wis. Stat. §§ 196.26 and 196.37(2), seeking an investigation into the health, safety, cost, privacy, security and need for a customer bill of rights to protect the public interest and users of Advanced Metering Infrastructure (AMI) systems.

At its open meeting of August 28, 2012, the Commission DENIED the petition.

**Introduction**

On July 5, 2012, 33 customers of the MWU requested that the Commission:

(1) investigate whether MWU has the legal authority to install AMI infrastructure; (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.

MWU filed a response to the petition on July 19, 2012. The Petitioners filed additional information related to their complaint on July 24, 2012, and August 6, 2012. Subsequent to the filing of the petition, the Commission received similar complaints or inquiries related to metering systems from a number of MWU customers and one non-MWU customer.

### **Conclusions of Law**

1. MWU is a municipal public utility as defined in Wis. Stat. §§ 66.0801 and 196.01(5).
2. Wisconsin state law does not regulate any aspect of devices that emit radio frequency (RF) signals.
3. The Federal Communications Commission's (FCC) rules, 47 C.F.R. §§ 1.1301-1.1319, require that a particular transmitting facility or device comply with the FCC's adopted RF exposure guidelines.
4. The Commission has authority under Wis. Stat. §§ 196.02, 196.26, 196.40 and 196.58 to dismiss the petition without investigation or hearing.
5. The Commission has authority under Wis. Stat. §§ 196.19, 196.20, 196.21, 196.37 and 196.60, to approve an opt-out policy and tariff, if requested by a utility.
6. Wisconsin Admin. Code § PSC 184.04 (August 2008), in effect at the time MWU proposed its AMI project, did not require that MWU receive a certificate of authority prior to initiating the AMI project.

### **Opinion**

Accurate metering is required for effective billing, accounting, and ratemaking 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

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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 using 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) generally refers to metering systems that use an RF signal to transmit meter data. In practice, AMR typically refers to systems where the meters have only one-way communication ability, either through a wired connection (*e.g.*, power line communication) or through an RF signal that is transmitted to a walk-by or drive-by receiver. 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 Final Decision, 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 to the Commission 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.<sup>1</sup> Municipal electric utilities and electric cooperatives have also reported widespread use of AMR and AMI technologies.<sup>2</sup> 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" which, in part, was the result of the Commission's directive to MWU to increase its billing frequency.

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<sup>1</sup> Wisconsin Public Service Corporation reported that its meters communicate using the power line, rather than with RF technology.

<sup>2</sup> U.S. Energy Information Agency 2010 Power Industry Data:  
[www.data.gov/communities/node/48/data\\_tools/40101](http://www.data.gov/communities/node/48/data_tools/40101).

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.

### **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 184.04<sup>3</sup> deprived the Commission of 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 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.

MWU does not dispute that it did not receive a certificate of authority from the Commission for its AMI project. However, in its *Final Decision* issued on December 28, 2008 (docket 3280-WR-110), the Commission ordered MWU to submit a plan for implementing more

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<sup>3</sup> Wisconsin Admin. Code ch. PSC 184 was repealed and recreated, with a new version taking effect on August 1, 2012.

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frequent billing in its next rate case application. Then, 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.” 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 and in the Request for Proposals - Advanced Metering Infrastructure System.”

The Commission 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, require a certificate of authority under the version of Wis. Admin. Code § 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 made the general policy decision to acknowledge water meter replacement projects rather than to open a formal investigation.

The Commission has adequately reviewed MWU’s AMI project. The Commission is also satisfied that the public has had adequate opportunity to be heard regarding implementation of the AMI project in rate cases in 2009 and 2010. Therefore, the Commission denies the

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Petitioners' first claim that MWU failed to receive a certificate of authority from the Commission prior to initiating the AMI project.

### **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. 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 eight states that have established opt-out programs. The Petitioners requested that the Commission open an investigation into all relevant issues related to advanced metering systems, including but not limited to, issues directly related to MWU. The Petitioners also requested 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.

MWU states that it considered the health, safety, and other risks posed by its AMI system and found that the implementation of this system did not pose a public health risk. MWU cited 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 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.

The Commission is not convinced that the current literature on the potential health and safety effect of advanced metering systems justifies opening an investigation. Of course, Commission staff will continue to monitor the literature and to stay current on the issues.

The Commission also denies Petitioners' request that it open a rulemaking docket. The Commission 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.

### **Moratorium and Customer Opt-Out Policy**

The Petitioners requested 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 requested 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.

MWU has already executed more than \$12 million in project-related contracts and any delay in the project would add significant costs, which will be borne by MWU's ratepayers. Such delays could cost the utility in excess of \$20,000 per week in change orders. MWU is also 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. MWU has also informed the Commission that it will voluntarily delay the installation of new meters upon customer request, pending approval of its opt-out policy.

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 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.<sup>4</sup>

The Commission denies the Petitioners' request for a moratorium and opt-out policy. Individual utilities, such as MWU, should work with their customers to determine whether an opt-out from an advanced metering system makes sense and what an opt-out policy would look like. If a utility decides to allow customers to opt-out of such metering systems, any costs associated with opting-out should be fully allocated to reflect the actual costs to the utility of owning, maintaining, reading and processing bills associated with a non-standard meter. Those costs should not be subsidized by other ratepayers. The utility is free to propose and submit for Commission approval any tariff that establishes rates according to a methodology that fully allocates the cost of opting-out of an AMI program to those customers who choose to opt-out. However, the Commission directs that any utility filing an opt-out tariff shall provide a statement or justification that the opt-out will not be detrimental to the goals of the meter program.

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<sup>4</sup> 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.

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**Order**

1. The Petitioners' request to open a docket to investigate AMI systems is denied.
2. This Final Decision is effective on the date after the mailing date.

Dated at Madison, Wisconsin, this 12<sup>th</sup> day of September 2012.

By the Commission:

A handwritten signature in cursive script, appearing to read "Sandra J. Paske".

Sandra J. Paske  
Secretary to the Commission

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PUBLIC SERVICE COMMISSION OF WISCONSIN  
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**NOTICE OF RIGHTS FOR REHEARING OR JUDICIAL REVIEW, THE  
TIMES ALLOWED FOR EACH, AND THE IDENTIFICATION OF THE  
PARTY TO BE NAMED AS RESPONDENT**

The following notice is served on you as part of the Commission's written decision. This general notice is for the purpose of ensuring compliance with Wis. Stat. § 227.48(2), and does not constitute a conclusion or admission that any particular party or person is necessarily aggrieved or that any particular decision or order is final or judicially reviewable.

*PETITION FOR REHEARING*

If this decision is an order following a contested case proceeding as defined in Wis. Stat. § 227.01(3), a person aggrieved by the decision has a right to petition the Commission for rehearing within 20 days of mailing of this decision, as provided in Wis. Stat. § 227.49. The mailing date is shown on the first page. If there is no date on the first page, the date of mailing is shown immediately above the signature line. The petition for rehearing must be filed with the Public Service Commission of Wisconsin and served on the parties. An appeal of this decision may also be taken directly to circuit court through the filing of a petition for judicial review. It is not necessary to first petition for rehearing.

*PETITION FOR JUDICIAL REVIEW*

A person aggrieved by this decision has a right to petition for judicial review as provided in Wis. Stat. § 227.53. In a contested case, the petition must be filed in circuit court and served upon the Public Service Commission of Wisconsin within 30 days of mailing of this decision if there has been no petition for rehearing. If a timely petition for rehearing has been filed, the petition for judicial review must be filed within 30 days of mailing of the order finally disposing of the petition for rehearing, or within 30 days after the final disposition of the petition for rehearing by operation of law pursuant to Wis. Stat. § 227.49(5), whichever is sooner. If an *untimely* petition for rehearing is filed, the 30-day period to petition for judicial review commences the date the Commission mailed its original decision.<sup>5</sup> The Public Service Commission of Wisconsin must be named as respondent in the petition for judicial review.

If this decision is an order denying rehearing, a person aggrieved who wishes to appeal must seek judicial review rather than rehearing. A second petition for rehearing is not permitted.

Revised: December 17, 2008

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<sup>5</sup> See *State v. Currier*, 2006 WI App 12, 288 Wis. 2d 693, 709 N.W.2d 520.