

PUBLIC SERVICE COMMISSION OF WISCONSIN

Memorandum

May 28, 2014

FOR COMMISSION AGENDA

TO: The Commission

FROM: Robert Norcross, Administrator
Jeffrey Ripp, Deputy Administrator
Gas and Energy Division

Jeff Stone, Administrator
Carrie Templeton, Assistant Administrator
Division of Water, Compliance and Consumer Affairs

RE: Retention of Meters and Meter Reading Records 1-AC-227

Clearinghouse Rule 13-033

Additional Information Regarding Utility Meter Testing
Practices Upon Retirement, and Decision on Rule and
Legislative Packet

Suggested Minute: The Commission (approved/rejected/modified) a draft order adopting proposed rules and the associated report to the Legislature concerning the retention of meters and meter-related records, and directed Commission staff to make the necessary filings. If the legislative committees do not request changes to the rule, Commission staff is directed to change the title of the order to indicate that it is the adoption of a final rule and to make the additional required filings without further Commission action.

Background

The proposed changes to Wis. Admin. Code chs. PSC 113, 134, and 185 pertain to meter testing, retention, and record keeping. These rules were requested by the Commission and are intended to ensure that electric, gas, and water customer meters remain available for a reasonable period of time for additional testing under certain circumstances. These include: (1) after a customer requested test; (2) after a Commission refereed test; or (3) to resolve a customer

dispute or Commission inquiry. The rules also ensure that when meters are tested for other reasons and the result of the test indicates that the customer should be backbilled or credited, the meters are retained for a sufficient period of time to allow for further testing. Additionally, the rules require that, upon retirement, utilities either test or retain meters for a sufficient period of time to allow for testing in the event of a customer dispute. Finally, the rules establish retention periods for meter test records.

This rule initially dealt with the retention of meters when there is a dispute or a backbill or credit situation. Retirement was added when the docket team discussed the fact that disputes about retired meters may not arise until a new meter is in place. As a result, provisions about retaining all meters after retirement were added. When it was first drafted, the rule language required that all utilities keep all meters for a period of time after removal¹ so that a meter would be available in the event of a customer or Commission request for testing. During discussions, team members reported hearing expressions of concern about potential space requirements and cost, especially in terms of retired meters. As a result, language was added that allowed a final test upon retirement rather than retention of a meter. This was included as an imperfect compromise. Not all retired meters would be available for further testing, but at least there would be a final test on retired meters that were not retained. This also appeared to be a good solution to the later identified problem with retaining water meters in “as found” condition.

The Commission received written comments on the proposed rules and held a public hearing on May 30, 2013. Commission staff modified the proposed rules to address many of the concerns raised by commenters, with the exception of the proposed requirement that, upon retirement of a customer meter, a utility be required to either: (1) test the meter; or (2) retain the

¹ Whether because of a complaint, a meter testing as inaccurate or retirement.

meter in an “as found” condition for a sufficient period of time to allow the customer to request a meter test in the event of a billing dispute. This issue affects all regulated utilities; however, the Commission received the most comments from the water industry in opposition to this change. Appendix A ([DL: 926489](#)) summarizes the existing and proposed meter testing rules by industry type.

The Commission considered the proposed rule changes, along with the public comments, at its open meeting of October 25, 2013. ([PSC REF#: 201713.](#)) At that meeting, the Commission determined that additional information was needed about the costs and benefits of requiring utilities to either test or retain meters upon retirement before these rules could be approved. Specifically, Commission staff were directed to obtain the following information:

- the extent to which utilities are currently testing meters upon retirement;
- the extent to which retired meters are found to be within acceptable accuracy limits;
- the cost to utilities to test meters upon retirement; and
- the current billing practices of utilities that test meters upon retirement when the meters are found to be outside acceptable accuracy limits.

([PSC REF#: 192696.](#))

Survey Results and Analysis

Commission staff prepared an online survey that was sent to all of the regulated electric, natural gas, and water utilities with retail operations in Wisconsin on February 6, 2014. ([PSC REF#: 200260.](#)) Utilities were asked to respond no later than February 21, 2014. Appendix B ([DL: 926490](#)) provides a list of the utilities responding to the survey, by industry. As shown in Table 1, the response rate to the survey varied by utility type.

Table 1
Utility Responses to Commission Survey

(Some additional surveys were received after the deadline or with substantially incomplete information.)

Utility Type	Number of Active Utilities	Number of Utilities Responding to Survey	Percentage Responding
Electric			
Municipal & Small IOU	88	27	30.78%
Large IOU	<u>6</u>	<u>6</u>	100.0%
Subtotal, Electric	94	33	35.1%
Natural Gas (all owners)	11	7	63.6%
Water (all owners)	<u>583</u>	<u>142</u>	<u>24.3%</u>
Total, All Utilities	688	182	26.5%

A summary of the responses from each utility by question, is available for review. (See Key Documents listing at the end of this memorandum for links.) Commission staff notes that while all of the large electric investor-owned utilities (IOUs) and the majority of the natural gas utilities responded to the survey, the response rate from smaller IOUs and municipal electric and water utilities was much lower. Furthermore, of those that responded, many chose to answer only some of the questions. Thus, the number of responses provided may not equal the total number of utilities identified as responding in Table 1. As a result, the data collected from these utilities is incomplete and may not be representative of the overall population.

The data collected by the survey was not verified for accuracy or completeness. While Commission staff corrected some obvious problems with the data (*e.g.*, duplicate responses and those with no answers), it is questionable how well this data represents the overall utility population, especially since some utilities only answered one or two questions. Furthermore, Commission staff notes that several utilities provided responses indicating that they were not

complying with current administrative code requirements related to meter testing and billing. Because these surveys may have been completed by a person unfamiliar with the topic of the question, such as a meter technician providing information about billing practices, Commission staff may follow-up with the utilities to verify their responses, and provide additional compliance training, when needed.

To provide context regarding the number of meters in service and the number of meters retired each year, Commission staff analyzed information reported by all utilities as part of the 2012 annual financial reports. Table 2 summarizes the number of customer meters in service as of December 31, 2012, and the number of meters retired by utilities in calendar year (CY) 2012. This is the most recent year for which complete annual financial reports are available. As shown in this table, the meter retirement rate in 2012 was 5.5 percent for water, 2.5 percent for electric, and 3.2 percent for natural gas. It should be noted that utilities are not required to indicate in their annual financial reports whether these meters were tested upon retirement.

Table 2
Meters in Service and Retired in 2012
Source: 2012 Utility Annual Financial Reports

Utility Type	No. of Customer Meters in Service, Dec. 31, 2012	No. of Customer Meters Retired CY 2012	Percentage of Meters Retired
Electric			
Large IOU	2,596,122	58,322	2.2%
Municipal & Small IOU	314,524	15,925	5.0%
Subtotal, Electric Meters	2,910,646	74,247	2.6%
Natural Gas	1,905,897	60,395 ²	3.2%
Water ³	1,397,477	76,510	5.5%

Survey respondents were asked to describe their policies for testing small residential-type meters upon retirement. As shown in Table 3, the percentage of utilities reporting that they test all or some of their customer meters upon retirement varies by utility type. All six of the large electric IOUs indicated that they are not required to test meters on retirement because they employ a statistical sampling plan for their routine meter testing. Nonetheless, three of the six (Wisconsin Power and Light Company, Wisconsin Public Service Corporation, and Superior Water, Light, and Power Company) indicated that they test all small customer meters upon retirement, while the other three (Madison Gas and Electric Company, Northern States Power Company-Wisconsin, and Wisconsin Electric Power Company) test some, but not all, small residential-type electric meters prior to retirement. All of the natural gas utilities responding to the survey reported that they test all customer meters upon retirement.

²Meter retention information is based on survey responses because natural gas utilities do not report meter retirements in their annual financial reports. The seven utilities responding to the survey serve the vast majority (99 percent) of the gas customers in the state.

³ Includes 5/8", 3/4", and 1" meters, which have the same requirements for testing frequency in Wis. Admin. Code § PSC 185.76. The totals do not include meters in stock but not in service, nor "secondary" or "deduct" meters.

About half of the water utilities responding to the survey reported that they do not currently test customer meters upon retirement. Commission staff notes that those water utilities serving more customers (Class AB) were more likely to report that they test all or some of their meters upon retirement compared to smaller (Class D) water utilities. This is likely due to the fact that larger water utilities gain economies of scale with meter test benches that test multiple meters at the same time. Another possible reason would be larger utilities testing at retirement to see trends in particular types and classes of meters. If a particular type or class of meters shows significant problems, they may wish to take proactive steps as to that type or class of meter, or work with the manufacturer to have that type or class replaced.

Water utilities that reported testing some, but not all, of their meters were asked to explain their policies. These utilities described a variety of policies that included testing a percentage of all meters retired, random sampling, and customer-requested meter tests.

Table 3
Utility Meter Testing Practices upon Meter Retirement
Source: Survey Responses

Utility Type	No. of Utilities Reporting	Percentage of Utilities Reporting
Electric – Large IOU		
Test All Meters	3	50.0%
Test Some Meters	3	50.0%
Do Not Test Meters	<u>0</u>	0.0%
Subtotal	6	100.0%
Electric – Municipal & Small IOU		
Test All Meters	19	70.0%
Test Some Meters	3	11.0%
Do Not Test Meters	<u>5</u>	19.0%
Subtotal	27	100.0%
Natural Gas (All Utilities)		
Test All Meters	7	100.0%
Test Some Meters	0	0.0%
Do Not Test Meters	<u>0</u>	0.0%
Subtotal	7	100.0%
Water (All Utilities)		
Test All Meters	48	34.0%
Test Some Meters	18	12.8%
Do Not Test Meters	75	53.1%
Subtotal	141	100.0%

The Commission also requested information on the percentage of retired meters that were found to be within the acceptable accuracy limits. This information is not routinely compiled by the utilities nor is it reported to the Commission. As a result, those utilities that test some or all

of their meters upon retirement were asked to estimate the percentage of meters tested that fell within the acceptable accuracy standards.⁴ Commission staff notes that the responses received are of questionable reliability, particularly for the municipal water and electric utilities, because many of these utilities reported that “100 percent” or “all” of their meters tested within the appropriate accuracy standards upon retirement, which is an unlikely result. Nonetheless, the range of meter accuracies reported by the utilities responding to the survey is summarized in Table 4.

The six large electric IOUs reported that 71 to 100 percent of the meters tested upon retirement were within the required accuracy limits. Commission staff notes that for the three large electric IOUs that reported testing all meters, on average, 94 percent of the retired meters were found to register within the accuracy standards. By comparison, the three large electric IOUs that test some, but not all, residential electric meters at retirement reported a lower average accuracy of 86 percent. The percentage of meters that tested accurately may be lower for these utilities because they selectively tested only the potentially problematic meters.

Although 19 municipal and small electric IOUs stated that they test all meters at retirement, only 12 reported their actual accuracy findings. These 12 utilities reported that 85 to 100 percent of the meters tested at retirement were within the required accuracy limits. Six natural gas utilities reported that 92 to 98 percent of the meters they tested at retirement were within the required accuracy standards. Water utilities reported that 60 to 100 percent of the meters tested at retirement were within the required accuracy. Commission staff notes that the lower range for water utilities may be attributable to the fact that a smaller percentage of water

⁴ Meter accuracy standards vary by utility and meter type size. For example, Wis. Admin. Code § PSC 113.0811 requires an accuracy of plus or minus one percent for small electric meters. For small customer diaphragm type gas meters, Wis. Admin. Code § PSC 134.27 requires an accuracy of plus or minus one percent. For small customer positive displacement water meters, Wis. Admin. Code § 185.65 requires an accuracy of plus or minus 1.5 percent.

utilities test all of their meters at retirement. Instead, water utilities are more likely to selectively test problematic meters and meters involved with customer disputes.

Table 4
Percentage of Retired Meters Tested Within Accuracy Limits
 Source: Survey Responses

Utility Type	No. of Utilities Reporting	Percentage Range of Meters Within Accuracy Limits
Electric – Large IOU	6	71 - 100%
Electric – Municipal & Small IOU	12	85 - 100%
Natural Gas	6	92 – 96%
Water – Class AB	16	60 - 100%
Water – Class C	16	90 - 100%
Water – Class D	17	60 - 100%

Utilities were also asked to estimate the per-meter cost they incurred for testing small customer meters. As shown in Table 5, the responses demonstrate a broad range of estimates, with some utilities reporting significantly higher costs than others. It is unclear the extent to which these ranges reflect differences in actual costs between utilities rather than differences in how these costs were estimated. For example, some utilities have included only the cost of labor to perform the test, while others have included costs associated with meter replacement, administrative costs, water costs and equipment. Furthermore, many of the smaller municipal utilities do not have adequate facilities or personnel to conduct meter tests in-house. These utilities may need to contract for meter testing, which may result in higher costs. The survey did not request information about whether the meters were tested in-house or under a contract.

Table 5
Estimated Cost per Meter for Testing Small Customer Meters
Source: Survey Responses

Utility Type	No. of Utilities Reporting	Range (\$)	Weighted Average (\$)
Electric – Large IOU	6	2.31 - 11.58	3.41
Electric – Municipal & Small IOU	16	2.50 - 62.00	8.12
Natural Gas	7	2.00 - 10.00	2.70
Water – Class AB	15	3.40 - 60.00	14.26 ⁵
Water – Class C	18	3.00 - 60.00	27.63
Water – Class D	19	5.00 - 96.50	44.96 ⁶

It is possible to estimate the total annual cost for testing all customer meters upon retirement using the information reported in Tables 2 and 5. As shown in Table 6, multiplying the number of meters retired in 2012 by the weighted average cost per meter test gives a total estimated cost of approximately \$1.77 million. It should be noted that this does not represent an incremental cost over current revenue requirements, since many of these meters were, in fact, tested. Rather, this represents an estimate of the total amount that utilities would need to spend to test all of the meters they retired during that year.

⁵ This figure was calculated without using Milwaukee Water Works' (MWW) data. MWW does so many tests at a low price that it skews the results. If MWW's data is included, the weighted average cost per test is \$8.09.

⁶ There were two meter test cost figures which were significantly higher than the next highest figure, which skewed this number higher. If those two cost figures are removed, the weighted average cost per test is \$40.66.

Table 6
Estimated Cost of Testing all Small Residential-Type Meters Retired in CY 2012

Utility Type	No. of Meters Retired	Weighted Average Cost per Meter Test	Total Cost
Electric - Large IOU	58,322	\$3.41	\$198,878
Electric - Municipal & Small IOU	15,925	\$8.12	\$129,311
Natural Gas	60,395	\$2.70	\$163,007
Water	76,510	\$16.83 ⁷	\$1,278,663
Total			\$1,788,859

Utilities were asked to what extent cost was a factor in their decision to test or not test meters upon retirement.⁸ Not many utilities chose to answer this question. However, of the 5 gas utilities that answered this question, 100 percent said that cost was not a factor. Of the 25 electric utilities that answered this question, 57 percent said that cost was not a factor, 18 percent said cost was somewhat of a factor and 25 percent said cost was a significant factor. Of the 103 water utilities that answered this question, 32 percent said that cost was not a factor, 19 percent said that cost was somewhat of a factor and 49 percent said cost was a significant factor.

Billing Adjustments

Cost may be only one of the reasons why some utilities are reluctant to test customer meters upon retirement. Another consideration may be that some utilities do not wish to have a potentially upsetting conversation with a customer nor incur the administrative costs associated

⁷ This figure was calculated without using Milwaukee Water Works' (MWW) data. MWW does so many tests at a low price that it skewed the results. If MWW's data is included, the weighted average cost per test is \$9.81.

⁸ Those that answered this question but did not enter a test cost were disregarded since if the test cost is not known, the utility cannot base a decision on that factor.

with backbilling or crediting their customers if a retired meter tests outside of required accuracy limits. The Commission requested information about the extent to which utilities that test meters on retirement issue backbills or credits when those meters fail to meet the required accuracy standards.

Under current law, a utility may not charge, demand, collect or receive more or less compensation than the amounts in its tariffs and the amounts charged, demanded, collected or received from any other person.⁹ Specific penalties are assessed for this and for giving an unreasonable preference or advantage to anyone.¹⁰ While a couple of administrative rules seem to state that doing so is optional,¹¹ the statute controls. A utility must backbill for service it has provided, but not billed for, and must issue credits, if it has billed for service not provided. This helps ensure that the cost causer pays for the service that is used. If backbilling does not occur, the unpaid cost of that customer's service is spread to all ratepayers.

Several utilities provided responses indicating that they were not complying with current administrative code requirements related to meter testing and billing. Commission staff questions the reliability of the data, particularly for the municipal utilities. In some cases, the person responding to the survey may not have been familiar with utility's billing practices. Commission staff intend to follow up with these utilities to verify their responses, and provide additional compliance training, if needed.

As a final matter, it may be helpful to know more about the extent of the problem as demonstrated by the number of backbilling and other meter related complaints the Commission

⁹ Wis. Stat. §§ 196.22 and 196.60. The only exception is that, except under limited circumstances, a utility must bill for service within two years of providing that service. If the utility does not do so, the customer is not liable for the charges. Wis. Stat. § 196.635.

¹⁰ Wis. Stat. §§ 196.60(1)(b) and (3).

¹¹ Wis. Admin. Code §§ PSC 113.0924(4) and 185.35(4)

receives.¹² Table 7 shows the number of meter related complaints as compared to the total number of complaints over the last five years. As Table 7 shows, the number of meter related complaints decreased each year until 2013 when it went back up to 2011 levels. Just over 6 percent of the complaints received over the five-year period were meter related. Additional information, such as the number of complaints, broken down by industry and type of complaint, over both the five-year period and for 2012, may be found in the following documents: [DL: 924883](#), [DL: 924884](#).

**Table 7
Customer Complaints Regarding Metering Issues: 2008-2013**

Total Number of Complaints Regarding Metering Issues Compared to Total for all Complaint Categories

Year	Total number of complaints received	Total Disputed Amount of Use Complaints (Complaint Code 101)	Total Meter Accuracy/ Meter Test Complaints (Complaint Code 102)	Total Backbilling Complaints (Complaint Code 204)	Total Complaints for Codes 101, 102 & 204	Percent of Combined Complaint Codes
2008	8,108	107	82	250	439	5.41%
2009	6,531	105	65	218	388	5.94%
2010	5,718	119	32	148	299	5.23%
2011	4,901	122	24	111	257	5.24%
2012	2,403	81	22	96	199	8.28%
2013	2,191	114	15	127	256	11.68%
Total	29,852	648	240	950	1838	6.16%

The Commission receives other information that may assist in this area. Specifically, natural gas and electric utilities are required to submit reports to the Commission annually

¹² Of course, only a small percentage of complaints make it to the Commission.

describing bill adjustments under Wis. Admin. Code §§ PSC 134.14(6) and 113.0924(5), respectively, no later than April 1 of each year. These reports provide information about the dollar amount and occurrence of several types of refunds and charges related to seven different categories of billing issues: (1) inaccurate meters; (2) stopped or broken meters; (3) faulty or incorrect metering installations; (4) failure to apply appropriate multipliers or application of incorrect multipliers; (5) misapplication of rates; (6) fraud or theft of service; and (7) other billing errors. Each utility is also required to file a report with the Commission identifying the number of meter complaints received and the number of customer requested meter tests each year. The reports do not require utilities to include information about whether the meter in question is being retired, but this information could be requested in future reports.

Water utilities are required to compile similar information under Wis. Admin. Code § PSC 185.35(8), which states: “A record shall be kept of the number of refunds, and charges made because of inaccurate meters, misapplication of rates, and erroneous billing. A summary of the record for the previous calendar year shall, upon request, be submitted to the commission.”

Conclusions

The proposed rules are intended to ensure that customer meters removed from service are either tested or retained for an adequate period of time to assist in resolving customer disputes. In general, utilities are not opposed to the requirement to test or retain meters involved in a customer dispute, a referee test, or a backbill or credit situation. However, the Commission received comments, especially from water utilities, in opposition to testing or retaining meters at retirement due to the costs associated with testing and the difficulty of retaining water meters in an “as found” condition.

The general questions before the Commission are: (1) for water utilities, do the costs associated with testing or retaining meters at retirement outweigh the potential benefits; and (2) should the same rules about testing or retaining meters at retirement apply to all regulated utility industries or should water be treated differently?

Certainly, for an individual customer, it is beneficial to have the meter tested at retirement, if the test indicates that the customer is due a credit because the meter was over registering usage. Conversely, it is beneficial to the utility and its other ratepayers to test meters at retirement to identify those meters that may have been under registering usage because it provides the utility with an opportunity to recover its costs from that specific customer through a backbill. Nonetheless, many water utilities, and some municipal and small electric IOUs and natural gas utilities, are reluctant to test all of their meters at retirement because they are unaware of the requirement to backbill or do not wish to backbill customers. There are a number of reasons why this may be the case. First, there has been confusion, especially in the water industry, about whether backbilling is a requirement or is optional based on the utility's preference. Second, issuing a backbill to a customer often generates the need to explain why the customer is being billed for past service and may lead to customer complaints and questioning of the reliability of the utility overall. Finally, calculating credits and backbills based on meter test results adds additional administrative costs that many utilities wish to avoid.

In weighing its decision, the Commission may wish to consider other benefits of requiring that all meters be tested at retirement, particularly for water utilities. Specifically, accurate meters provide the data that helps utilities track water losses, which is a significant cost for many water utilities. In addition, testing meters allows utilities to recover costs from those customers who used the utility service. In several cases where the meter was not operating

correctly for an extended period of time, the customers could have questioned why they were being billed for low usage sooner, but the utility will be constrained to issuing a backbill to those customers for only the previous 24 months of service they used. In the absence of meter testing, the cost of meter inaccuracies are spread across all of the other ratepayers.

Another benefit may be that testing at retirement allows utilities to see trends in particular types and classes of meters. If a particular type or class of meter shows significant problems, they may wish to take proactive steps as to that type or class of meter, or work with the manufacturer to have that type or class replaced. This is part of the strategy of statistical sample testing of meters.

The real area of contention is testing or retaining meters at retirement. The Commission could choose to only require one or the other, although the higher testing costs and the difficulty of retaining a water meter in “as found” condition could influence this decision as it applies to the water industry. Not requiring the retention of meters at retirement unless there is a dispute seems to go against the initial goal of this rulemaking which is to ensure that meters are available for additional testing if necessary. But again, the cost and difficulties of retaining water meters in “as found” condition could justify not requiring this of water utilities. The Commission could choose to not require the testing or retention of meters at retirement unless there is a dispute and could either apply this just to the water industry or to all regulated industries.

Commission Alternatives

Alternative One: Approve the rules as proposed.

Alternative Two: Eliminate the option for *water utilities/all utilities* to test meters at retirement rather than retaining them and instead require that all meters be retained upon retirement.

Alternative Three: Eliminate the option for *water utilities/all utilities* to retain meters at retirement rather than testing them and instead require that all meters be tested upon retirement.

Alternative four: Do not require *water utilities/any utilities* to retain or test meters at retirement, but continue to require that utilities retain meters for the specified period of time under other circumstances, such as after a customer requested test or a complaint.

Alternative Four: Provide other drafting instructions to Commission staff.

Alternative Five: Close the rulemaking with no further action.

RDN:DS:JR:CT:pc:00911355

Key Background Documents

[Appendix A.docx - DL: 926489](#)

[Appendix B.docx - DL: 926490](#)

[Complaints for inaccurate meter percentages for 5 years plus YTD 2013.pdf - DL: 924883](#)

[Complaints for inaccurate meter percentages for 2012.pdf - DL: 924884](#)

[155-PSC 113 134 185-Meter Retention-Order Adopting Proposed Rules.docx - 852417](#)

[1-AC-227 Cmemo 9.25.13.docx - 869394](#)

Raw data:

[ELEC #1 Q 23 - 35.pdf - 926601](#)

[ELEC #2 Q 36 - 39.pdf - 926602](#)

[GAS #1 Q 40 - 52.pdf - 926603](#)

[GAS #2 Q 53 - 56.pdf - 926604](#)

[WATER #1 Q 1-9.pdf - 926598](#)

[WATER #2 Q 5-16.pdf - 926597](#)

[WATER #3 Q 17 - 22.pdf - 926600](#)