COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF HARDIN COUNTY WATER DISTRICT NO. 2 FOR A DECLARATORY ORDER THAT SAMPLE TESTING SATISFIES THE TESTING REQUIREMENTS OF 807 KAR 5:066, SECTION 16(1) OR, IN THE ALTERNATIVE, FOR AN ORDER GRANTING A DEVIATION FROM 807 KAR 5:066, SECTION 16(1)	)	CASE NO. 2016-00432

ORDER

This matter is before the Commission on an application filed by Hardin County Water District No. 2 ("Hardin No. 2") requesting a declaratory order that Hardin No. 2's sample testing satisfies the requirements of 807 KAR 5:066, Section 16(1) or, in the alternative, an order granting a deviation from 807 KAR 5:066, Section 16(1).[1] No third party intervened or otherwise filed an objection to Hardin No. 2's application. Hardin No. 2 responded to two data requests and participated in two informal conferences ("IC") with Commission Staff. Having considered the Application and the materials at issue, the Commission now grants Hardin No. 2 a deviation from 807 KAR 5:066, Section 16(1) subject to the conditions set forth herein.

BACKGROUND

Hardin No. 2 implemented its proposed sample meter-testing plan in 2016.[2] Pursuant to its plan, Hardin No. 2 stated it would conduct annual sample testing of its

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[1] Application, Case No. 2016-00432 (filed Dec. 29, 2016) ("Application").

[2] *Id.* at 4.

meters using "statistical sampling and analytical methodologies" based in part on the sample-testing procedures set forth by the American National Standard Institute, *ANSI/ASQ Z1.9-2003* (2013) ("ANSI/ASQ Standards").[3] Specifically, Hardin No. 2 stated that under its plan it would test the maximum and intermediate flow rate of its meters using the Double Specification Limit Variability Unknown-Standard Deviation Method ("DSL Method") set forth in the ANSI/ASQ Standards with an Acceptance Quality Limit ("AQL") of 2.5 and Inspection Level II (as those terms are used in that standard).[4] Hardin No. 2 initially stated that it would test the minimum flow rate of its meters by the means analysis test used by Kentucky-American Water Company as discussed in Case No. 2009-00253.[5]

Hardin No. 2 reported that prior to implementing its proposed sample-testing plan that it replaced every meter in its system on or before each meter reached ten years in service.[6] This meant that at the time Hardin No. 2 began sample-testing meters in 2016 that no meters had been in service for more than ten years.[7] Specifically, Hardin No. 2 reported the following breakdown in the age of its meters in service as of February 22, 2017:

1. Meters installed in 2006: 555
2. Meters installed in 2007: 1,074
3. Meters installed in 2008: 1,342

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[3] *Id.*

[4] Sample Meter Testing Plan for Hardin County Water District No. 2: 5/8 x 3/4 Inch Displacement Meters, Case No. 2016-00432 (filed Dec. 29, 2016) ("Sample Meter Testing Plan") at 4 (attached as Exhibit 1 to the Application).

[5] Application at 5.

[6] *Id.* at 3.

[7] *Id.*

4. Meters installed in 2009: 1,487
5. Meters installed in 2010: 1,291
6. Meters installed in 2011: 1,878
7. Meters installed in 2012: 2,092
8. Meters installed in 2013: 1,993
9. Meters installed in 2014: 3,197
10. Meters installed in 2015: 5,810
11. Meters installed in 2016: 5,890[8]

Hardin No. 2 indicated that beginning in 2016, it phased in sample testing by testing a sample of ten-year-old meters installed in 2006, and that it would continue phasing in the plan in 2017 by testing a sample of ten-year-old meters installed in 2007, and the then 11-year-old meters installed in 2006 and tested in 2016.[9] Hardin No. 2 indicated it would then continue this phase in process until 2021 when it would test a sample of ten-year-old meters installed in 2011, 11-year-old meters installed in 2010, 12-year-old meters installed in 2009, 13-year-old meters installed in 2008, 14-year-old meters installed in 2007, and 15-year-old meters installed in 2006.[10]

Hardin No. 2 indicated that each sample group tested would consist of the same meters initially tested when a particular group of meters reached ten years in service.[11] It stated it would select those meters randomly using a computerized process.[12] With respect to the high and intermediate flow tests, the sample size for each group would be determined by ANSI/ASQ Standards based on an AQL of 2.5 and Inspection Level II, as

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[8] Hardin No. 2's Response to Commission Staff's First Request for Information (filed Mar. 3, 2017) ("Response to Staff's First Request") at Item 1.

[9] Application at 5-6.

[10] *Id.*

[11] Hardin No. 2's Response to Commission Staff's Second Request for Information ("Response to Staff's Second Request") at Item 4.

[12] Application at 5; Sample Meter Testing Plan at 2.

discussed above, and the number of meters installed in a particular year.[13] There is a chart in the ANSI/ASQ Standards from which the appropriate sample size can be determined using that information.[14]

Hardin No. 2 did not initially indicate how it would choose the sample size for testing the low flow rate of meters using the means analysis test.[15] Further, in response to the Commission's Second Request for Information, Hardin No. 2 proposed using the Single Specification Limit Variability Unknown-Standard Deviation Method ("SSL Method") set forth in the ANSI/ASQ Standards with an AQL of 10 and Inspection Level I to test the meters' low flow rate, as opposed to the means analysis test previously proposed for low flow testing, and to determine the sample size of a particular group of meters for low flow testing using that standard.[16]

Hardin No. 2 claimed the DSL Method it proposed using to test the high and intermediate flow rate was not a good method to test the low flow rate because of the wide range of variability of the meters at the low flow rate.[17] Hardin No. 2 also asserted that a lower level of scrutiny was appropriate for testing the accuracy of meters at a low flow rate, because the low flow rate makes up a small percentage of total water usage.[18] Moreover, Hardin No. 2 stated that there is little danger of it overcharging customers

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[13] Application at 4-5; Sample Meter Testing Plan at 2-3.

[14] Sample Meter Testing Plan at 2-3.

[15] *Id.* at 7-8 (discussing the means analysis test initially proposed for the low flow rate).

[16] Response to Staff's Second Request at Item 5.

[17] *Id.*; *see also* Sample Meter Testing Plan at 7-8 (where it makes the same argument in support of using the means analysis test).

[18] Response to Staff's Second Request at Item 5 (indicating that only 8.15% of the volume of water consumed by its customers is at the low flow rate).

based on the proposed lower level of scrutiny for low flow rates because inaccuracies at low flow rates generally result in under reporting of water usage as opposed to over reporting of usage.[19]

DISCUSSION

Hardin No. 2 first requested an Order from the Commission declaring that its sample-testing plan for 5/8 x 3/4 inch meters satisfies the requirements of 807 KAR 5:066, Section 16(1), which states in relevant part:

> Each utility shall test periodically all water meters so that no meter will remain in service without test for a period longer than specified in the following table:
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> | Size of Meter Inches | Interval Between Tests Years |
> |---|---|
> | 5/8 | 10 |
> | 5/8 x 3/4 | 10 |

Based on its plain language, and in particular the use of the term "shall," 807 KAR 5:066, Section 16(1) requires, without exception, that every 5/8 x 3/4 inch meter be tested every ten years, and prohibits a utility from leaving such meters in place more than ten years without testing them.[20] Thus, 807 KAR 5:066, Section 16(1) prohibits Hardin No. 2 from leaving its 5/8 x 3/4 inch meters in service for more than ten years without testing.

The Commission may, upon good cause shown, grant deviations from the requirements set forth in 807 KAR 5:066, Section 16, and Hardin No. 2 has requested, in

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[19] *Id.*

[20] *See Bowen v. Com. Ex. Rel. Stidham*, 887 S.W.2d 350, 352 (Ky. 1994) (holding that the use of the term "shall" in a statute mandates that an action occur, unless its application would lead to an absurd result); *see also Marksberry v. Chandler*, 126 S.W.3d 747, 753 (Ky. App. 2003) ("The same rules of construction or interpretation that apply to statutes also apply to administrative regulations.").

the alternative, that it be granted a deviation.[21] However, Hardin No. 2 had not been granted a deviation when it began sample testing in 2016 as opposed to testing all of its 5/8 x 3/4 inch meters pursuant to 807 KAR 5:066, Section 16(1). Thus, Hardin No. 2 is in violation of 807 KAR 5:066, Section 16(1) to the extent it has 5/8 x 3/4 inch meters that have been in service for more than ten years that have not been individually tested in the last ten years.

The willful failure to comply with 807 KAR 5:066, Section 16 could result in the imposition of penalties pursuant to KRS 278.990. While declining to pursue penalties at this time, the Commission expects Hardin No. 2 to comply with 807 KAR 5:066, and any other applicable regulations, subject to any deviations granted by the Commission. The Commission may seek to impose penalties pursuant to KRS 278.990 for similar violations or failures by Hardin No. 2. Moreover, with respect to any utility that would seek to rely on this Order as the basis for a request for deviation allowing sample testing, the Commission observes that this Order should provide notice that implementing such a plan prior to seeking Commission approval is a violation of 807 KAR 5:066, Section 16(1), and that doing so may indicate a willful violation justifying the imposition of penalties.

In the event the Commission found that its sample-testing plan did not meet the requirements of 807 KAR 5:066, Section 16(1), Hardin No. 2 requested that the Commission grant it a deviation from those requirements.[22] As noted above, the Commission is able to grant deviations from 807 KAR 5:066, Section 16(1), pursuant to

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[21] *See* 807 KAR 5:066, Section 18 (indicating the standard for requesting a deviation from 807 KAR 5:066).

[22] Application at 7.

807 KAR 5:066, Section 18, which states that "for good cause shown, the commission may permit deviations from this administrative regulation." Hardin No. 2 bears the burden of proving that good cause exists for granting a deviation.[23] Hardin No. 2 argues that it has demonstrated good cause for the deviation, because its sample-testing plan will provide significant cost savings and will not erode protections for customers.[24]

Based on current information, the Commission does find that Hardin No. 2's claims of cost saving are credible. Specifically, Hardin No. 2 will experience an average annual cost savings of about $76,636 by deferring the purchase of meters alone, because it will be able to spread the cost of new meter purchases over 15 years as opposed to ten years for the same number of meters (and those savings would grow as its customer base increases).[25] Further, Hardin No. 2 will also experience, on average, an annual cost savings based on labor costs associated with replacing fewer meters per year, which Hardin No. 2 estimated to be $50.00 per meter.[26] There would be some cost increases associated with the sample-metering testing, which Hardin No. 2 estimated at $25.00 per meter tested, but those costs would be more than offset by just the labor cost savings resulting from the decrease in the average number of meters replaced per year.[27] Thus, the Commission finds that Hardin No. 2's plan is likely to result in cost savings.[28]

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[23] *Energy Regulatory Comm'n v. Kentucky Power, Co.*, 605 S.W.2d 46, 50 (Ky. App. 1980) ("Applicants before an administrative agency have the burden of proof.").

[24] Application at 7-9.

[25] Response to Staff's First Request at Item 7.

[26] Response to Staff's Second Request at Item 6.

[27] *See id.*

[28] In applying for its deviation, Hardin No. 2 did not address the potential effects on revenue of keeping the meters in place for 15 as opposed to ten years without individual testing. Potential revenue losses from keeping older meters in service are important, particularly in matters involving a non-profit

However, cost savings, while important, are not dispositive on whether Hardin No. 2 has shown good cause for the deviation requested, because the inspection obligation in 807 KAR 5:066, Section 16(1) is intended, among other things, to protect customers from being over charged by inaccurate meters and to ensure that customers are charged fairly.[29] To understand whether Hardin No. 2's plan provides adequate protections for customers, it is important to address exactly what Hardin No. 2 is requesting. Hardin No. 2 is not requesting that its meters be allowed to remain in service for 15 years with no testing, or that an entire group of meters of a particular age, make, and model be permitted to remain in service for 20 years after a portion of those meters are sample tested as would be permitted if each individual meter were tested and passed after ten years of service. Rather, Hardin No. 2 is requesting that it be permitted to sample test its meters as described above in lieu of testing every meter as required by 807 KAR 5:066, Section 16(1), with a commitment that every meter will be replaced after 15 years of service.[30] Hardin No. 2 argued that under those circumstances its deviation provided

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utility, because a decrease in revenue from water loss through defective meters or otherwise is ultimately borne by the consumer in the form of higher rates. Moreover, to truly determine the net cost savings, the Commission would need to know the lost revenue resulting from aging, inaccurate meters.

However, Hardin No. 2 has a positive history of keeping line loss low. *See* Response to Staff's Second Request at Item 10. Moreover, Hardin No. 2's sample-testing plan, as discussed in more detail and approved herein, should allow it and the Commission to monitor meter accuracy and, therefore, any potential revenue loss as the meters age. Most importantly, Hardin No. 2 cannot accurately assess the revenue effects of extending the service life of meters without first testing the meters' accuracy. Thus, under the circumstances, the potential for revenue loss would not justify denying Hardin No. 2's request for a deviation, though in the event Hardin No. 2 later seeks a deviation pursuant to KRS 278.210 it should be prepared to discuss any revenue loss.

[29] *See* Case No. 2011-00220, *Joint Application of Warren County Water District, Simpson County Water District, and Butler County Water System, Inc. for a Deviation from Approved Meter Testing* Program (Ky. PSC Mar. 5, 2013), Order at 7 ("Warren County Water Sample Testing Order, Case No. 2011-00220")(noting the various reasons for sample testing, including the need to accurately charge customers); *see also* KRS 278.210(4) (which allows a utility to obtain a deviation if sample testing reveals costs savings *and* that "no statistically significant number of its meters over-register").

[30] Application at 8.

adequate assurances as to the accuracy of meters, because all of its 5/8 x 3/4 inch meters have at minimum a 15-year warranty as to their accuracy, previous studies have indicated that the meters remain accurate for 15 years, and sample tests by other water utilities in Kentucky have indicated that the meters remain accurate for 15 years.[31]

Although Hardin No. 2 stated that studies indicated that meters remain accurate for 15 years, it did not identify the specific studies to which it was referring in the Application, so the Commission could not evaluate them. Hardin No. 2 did attach a graph from "Forester University" indicating that water meter accuracy is above 99% after ten years of service and between 97% and 98% after 15 years of service, at which point their accuracy begins to drop rapidly.[32] However, Hardin No. 2 did not explain how the information contained in that graph was obtained or could be used to draw a conclusion as to the performance of Hardin No. 2's meters. Thus, Hardin No. 2's evidence of other studies does not strongly support its position (though, it also does not discredit Hardin No. 2's position).

Hardin No. 2 further supported its request for deviation by referencing sample tests performed by Warren County Water District, Simpson County Water District, and Butler County Water System, Inc., which collectively presented a sample-testing plan to the Commission (hereinafter collectively referred to as "Warren County Water"), and Kentucky-American Water Company ("Kentucky-American").[33] The Commission granted

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[31] Application at 8-9; Sample Meter Testing Plan at 1, 9; *see also* Response to Staff's First Request at Item 2-3 (discussing meter warranties).

[32] Sample Meter Testing Plan at Exhibit 1.

[33] Response to Staff's First Request at Item 10.

those utilities a deviation from 807 KAR 5:066, Section 16(1), allowing them to keep their meters, or some of their meters, in place for 15 years without any testing based on sample tests showing that the meters remained accurate for that period. Hardin No. 2 pointed out that all meters tested by Warren County Water were Sensus SRII meters, which Hardin No. 2 claimed are similar to Hardin No. 2's Sensus SR Series meters, and that a number of the meters tested by Kentucky-American were Sensus brand meters like the vast majority of Hardin No. 2's meters.[34] Thus, the tests performed by those utilities support the position that Hardin No. 2's meters can be expected to perform within the specifications set by 807 KAR 5:066, Section 15 for 15 years, but the tests are not conclusive on that point.

Hardin No. 2, like every water utility in the state, is operating on a different system than Kentucky-American and Warren County Water that may affect the useful service life of meters. Moreover, the bulk of Hardin No. 2's newer meters are Sensus Accustream meters (some 10,607 installed after 2011)[35] as opposed to the SR Series meters, which Hardin No. 2 indicated are similar to those tested by Warren County Water. Hardin No. 2 asserted that meters with a different make and model from meters tested could be comparable, because it plans to continue purchasing meters which meet or exceed American Water Works Association ("AWWA") Standards.[36] However, Hardin No. 2

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[34] Response to Staff's First Request at Item 10; *see also* Warren County Water Sample Testing Order, Case No. 2011-00220 at 9-10 (indicating that the meters tested by Warren County Water were Sensus Series II); *Kentucky-American Water Company's Request for Permission to Deviate from 807 KAR 5:066, Section 16(1)*, Case No. 2009-00253, Kentucky-American Water Company's Response to the Commission Staff's First Data Request (Ky. PSC June 18, 2010) at Item 3 (showing that a mix of meters were tested including some Sensus meters).

[35] Response to Staff's Second Request at Item 7(a).

[36] *Id.* at Item 7(b).

provides no assurance that a new type of meter that meets or exceeds AWWA Standards would perform in the same manner as an older model tested by Kentucky-American, Warren County Water, or even Hardin No. 2 itself. Thus, while the tests performed by the other water utilities support Hardin No. 2's position, it cannot rely on those tests alone to justify a deviation from 807 KAR 5:066, Section 16.

Hardin No. 2, recognizing that it could not rely on the tests of other water companies alone, proposed the sample-testing plan discussed above to further support its request for a deviation. Hardin No. 2 argued in the Application that its sample testing of the meters would ensure that the meters were reading accurately, stating:

> Unlike meters that are tested after ten years of service and then not subject to further testing for another ten years, [Hardin No. 2] will subject the meters in each age group that is ten years or older to annual sample testing to ensure their accuracy.[37]

Hardin No. 2 also indicated that the manufacturers of all of its meters have warranted the meters for accuracy for a period of 15 years.[38] Moreover, Hardin No. 2 has a positive history of a low percentage of line loss,[39] which is a major issue the Commission has sought to limit with its testing requirements.[40] Thus, the Commission finds that Hardin

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[37] Application at 8.

[38] Response to Staff's First Request at Item 2.

[39] Hardin No. 2 presented evidence that its line loss was 12.7% in 2010, 12.4% in 2011, 14.8% in 2012, and 11.6% in 2013. Hardin No. 2 acquired the Elizabethtown System in October 2014 and that system had significant line loss issues arising from decisions that predated Hardin No. 2's acquisition, which in turn affect Hardin No. 2's overall line loss. However, Hardin No. 2 presented evidence that those issues are being addressed and that line loss is falling. Nevertheless, Hardin No. 2 historically has a positive record on its line loss percentage. *See* Response to Staff's Second Request at Item 10 (where Hardin No. 2 discusses line loss issues).

[40] Warren County Water Sample Testing Order, Case No. 2011-00220 at 7-8 ("Common reasons for requiring water meter testing are . . . to reduce revenue loss to the utility.") (citation omitted).

No. 2 has presented sufficient evidence to justify its requested deviation under the circumstances, subject to the conditions set forth herein.

In granting Hardin No. 2's request for a deviation, the Commission would note that ANSI/ASQ Standard A7.2 requires that all samples from a particular lot be selected "without regard to their quality."[41] Hardin No. 2 stated that it would satisfy this requirement by using a random, computerized process to select the meters to be tested from a particular lot after that lot reached ten years in service and then it would test those same meters each year until they had been in service for 15 years at which point they would be removed from service. Hardin No. 2 then stated that:

> If any randomly selected meter is broken, damaged, frozen, or has been vandalized or tampered with, then that particular meter will be replaced by another random selection. If HCWD2 identifies any results that are extreme outliers from others in the sample, HCWD2 will investigate the cause of the outlier and, if the investigation determines that the cause of the outlier is rare, may discard the outlier for use in the sample testing. HCWD2 will report any outlier and explain why it was not used to determine the acceptability of the sample in its annual report to the Commission. . . .
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> If the sample is not accepted under the ANSI Standard and a poorly performing sub-group can be identified for separation from the original control group, the deviate sub-group will be removed from service within a 6-month period. If, by removal of a specific sub-group of meters, HCWD2 can demonstrate that the original control group of meters now meets the applicability standard, the remaining meters in the original control group shall remain in service.[42]

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[41] Pursuant to ANSI/ASQ Standard, A5.1, a "lot" is a collection of units of product from which samples are drawn to be tested.

[42] Sample Meter Testing Plan at 7.

The Commission does not have an issue with Hardin No. 2 removing meters from the sample group as described above if they are damaged in a manner that would not be generally applicable to the meters as a whole – for instance, if a meter is subject to vandalism or tampering that causes obvious and apparent damage. However, the exclusion of a meter or meters from the sample group simply because they were found to have suffered a mechanical failure or because they failed to properly measure water flow will result in the selection of meters based on quality. For instance, if Hardin No. 2 were to replace a meter in a sample group for testing in 2017 after sample testing in 2016 revealed that it was not measuring properly, then the results would be skewed in favor of finding that meters remain accurate, because a meter that had tested as inaccurate would be replaced by a randomly selected meter that may or may not be accurate.[43] Thus, the Commission finds that meters that simply fail to measure accurately or suffer a mechanical or other failure that is equally likely to occur at the same or a similar rate in the lot as a whole should not be removed from the sample group but rather must be accounted for in the sample group in a statistically appropriate manner even if it is necessary to remove the meter from service, unless the failure is such that it would be apparent and easily identified without individualized meter testing.

[43] As an example, if 33% of meters fail to register accurately after ten years of service, then you would expect 10 out of 30 meters to test as inaccurate if you tested the meters after ten years of service. If those 10 meters were then removed from the sample group and replaced with 10 randomly selected meters from the lot, then about 3 (33%) of those replacement meters would test as inaccurate on average, which would change the tested rate of inaccuracy to about 10% despite an actually rate of inaccuracy of 33%. If those 3 meters were then removed from the sample group and replaced with 3 randomly selected meters, then one of those meters (again 33%) on average would test as inaccurate, which would change the tested rate of inaccuracy to about 3% despite an actually rate of inaccuracy at 33%. While this is an example that does not account for numerous variables, it illustrates how replacing samples that fail to measure accurately from a lot will artificially inflate the tested accuracy of the meter's overtime, because it results in selection based on quality.

Moreover, ANSI/ASQ Standard, A5.1.1 states "each lot shall, as far as practicable, consist of units of product of a single type, grade, class, size, or composition manufactured under essentially the same conditions." Hardin No. 2 previously reported that 15,589 of its meters, including all of those meters installed in 2006 through 2011, are Sensus SR Series meters, 10,607 are Sensus Accustream meters, 169 are Sensus iPERL meters, and 244 are Badger meters. Hardin No. 2 purposed establishing the lots based on the calendar year during which the meters were installed. However, the Commission finds that including meters that use different mechanisms to measure water flow or meters manufactured by different companies in the same lot would be inconsistent with section A5.1.1 of the ANSI/ASQ Standards on which Hardin No. 2 relies.[44] Moreover, Hardin No. 2 failed to demonstrate how testing meters produced by different manufacturers or that measure water flow using different mechanisms would provide conclusive evidence as to accuracy of the different meters based on the methodology purposed. Thus, in implementing its sample testing, Hardin No. 2's lots from which samples are drawn must be divided by the calendar year in which the meters are installed, the manufacturer of the meter, and the mechanism used by the meter to measure water usage.

The Commission expects Hardin No. 2 to submit an annual report to the Commission each year, as indicated in its plan, detailing the test results for each year, including details regarding each meter tested and the relevant data necessary for the Commission to perform the calculations detailed in ANSI/ASQ Standards, an explanation

[44] *See also Warren County Water Sample Testing Order*, Case No. 2011-00220 at 9-10 (in which the deviation from testing requirements was limited to the Sensus SR II meters on which sample testing was performed).

of whether each sample was accepted at each flow rate using the relevant ANSI/ASQ Standards, and an explanation of any abnormal meter results that were not used in determining the acceptability of the sample. If a particular meter is excluded from or replaced in a sample group, the Commission expects Hardin No. 2 to provide a detailed explanation of the basis for excluding the meter from the sample group or replacing it.[45]

In granting Hardin No. 2's application to deviate from 807 KAR 5:066, Section 16(1), the Commission is making no determination regarding whether Hardin No. 2's sample-testing plan or other evidence presented by Hardin No. 2 are "based on established scientific, engineering, and economic methods" necessary to justify a deviation pursuant to KRS 278.210(4), because that issue is not currently before the Commission. Moreover, if it is later determined that the circumstances used to justify this deviation are not accurate, either because the meters fail the proposed sample testing, or other evidence is reported to the Commission, the Commission may revoke or modify this deviation as necessary to fulfill its statutory mandates. Finally, unless it abandons sample testing, the Commission expects Hardin No. 2 to come before the Commission after completing sample testing in 2021 to make appropriate motions and applications regarding further sample testing or deviations. However, Hardin No. 2 should continue

[45] The level of detail necessary would depend on the explanation for the exclusion from or replacement of the meter in the sample group. For instance, if a vandal were to cause significant and apparent damage to a meter that would have been identified regardless of whether it was individually tested, then Hardin No. 2 may easily explain why such failure is not representative of the lot as a whole. However, if a meter is simply reporting as inaccurate or suffers a mechanical failure, Hardin No. 2 would face a very high bar to justify excluding the meter from the sample group, potentially to the point of requiring a statistical explanation of why Hardin No. 2 would not expect the failure, defect, or non-conformity of the meter to be consistent with a percentage of the lot of meters that remain in service.

sample testing for all lots of meters that have been in service for ten years[46] or more as described herein, until it is granted further deviations or abandons its sample-testing plan and returns to periodic testing of meters as prescribed by 807 KAR 5:066, Section 16(1), because Hardin No. 2 is being permitted its deviation, in part, based on the protections purportedly provided by sample testing.[47]

IT IS THEREFORE ORDERED that:

1. Hardin No. 2's application for a deviation from 807 KAR 5:066, Section 16(1) is hereby GRANTED. Hardin No. 2 shall not be required to test its 5/8 x 3/4 inch meters, pursuant to 807 KAR 5:066, Section 16(1), subject to the conditions set forth herein.

2. Hardin No. 2 shall sample test its 5/8 x 3/4 inch meters for which a deviation was granted herein, pursuant to its sample-testing plan, as modified by the Commission below and herein.

a. Hardin No. 2 shall use the DSL Method with an AQL of 2.5 and Inspection Level II to test the intermediate and high flow rate and the SSL Method with an AQL of 10.0 and Inspection Level I to test the low flow rate of meters.

b. Hardin No. 2 shall randomly select a sample group from each lot without regard to quality. The lots shall be divided by the year the meter was installed, the manufacture of the meter, and the type of mechanism used to measure water use, such that only meters installed in the same calendar year, made by the same

[46] Ten years should be measured as proposed by Hardin No. 2 with lots of meters installed in 2006 being considered ten years of age in 2016 with sample-testing of the lot being expected to occur at some point in 2016.

[47] Further, in the event additional sample testing in necessary in 2021 to justify further deviation, the Commission would not want Hardin No. 2 to stop and have to restart sample-testing to justify further deviation.

manufacturer, and that use the same type of mechanism to measure water would be in a lot together.

c. Hardin No. 2 shall annually test the sample groups for each lot that has been in service for ten years or more with the sample groups for each lot being the same meters originally chosen at random when the lot was tested after being in service for ten years, except as otherwise stated herein.

d. Hardin No. 2 shall submit annual reports of its sample testing detailing the results of the sample testing for that year, including:[48]

(1) The serial number, manufacturer, and model/form/type of each meter tested;

(2) The date that each meter was tested;

(3) The total water flow through the meter from the date it was placed in service through the date of sample testing as recorded at the time of testing;

(4) Any raw data collected from each test necessary for the Commission to perform the calculations detailed in ANSI/ASQ Standards or on which Hardin No. 2 relied in conducting or analyzing its sample testing;

(5) The results of Hardin No. 2's calculations and an explanation of whether each sample was passed at each flow rate using the relevant ANSI/ASQ Standards;

(6) An explanation of any abnormal meter results that were excluded or otherwise not used in determining whether a sample passed;

[48] For past tests, the Commission would not find that Hardin No. 2 was in violation of this order so long as it provides the information it committed to provide in its plan as the Commission understands that Hardin No. 2 would not have known to collect certain information requested herein.

(7) A detailed explanation, as discussed above, of the basis for excluding a meter or group of meters from a sample group or replacing them, including the test results at each flow level for the excluded meter;

(8) The total number of meters in a particular lot in service at the time Hardin No. 2 performed the sample testing; and

(9) Any other information Hardin No. 2 has deemed relevant and necessary to review the accuracy of the meters tested.

e. Hardin No. 2 shall replace each and every meter in a lot after 15 years of service but not before sample testing is completed for the lot that year.

3. Hardin No. 2 may abandon its sample-testing plan and return to periodic testing of meters as prescribed by 807 KAR 5:066, Section 16(1) at its discretion but if it does so it must notify the Commission in writing.

4. Hardin No. 2 shall continue sample-testing meter lots pursuant to the sample-testing plan as approved herein for meters in their 10th through 15th year of service until the Commission orders otherwise, unless Hardin No. 2 choses to abandon the sample-testing plan altogether, or for a particular lot, and returns to periodic testing of meters as prescribed by 807 KAR 5:066, Section 16(1). If Hardin No. 2 contends a change in the sample-testing plan or deviation as set forth herein is justified, it shall request and obtain the approval of the Commission before implementing that or any other change, unless it returns to periodic testing as described above.

5. Hardin No. 2 shall come before the Commission after sample testing in 2021 to make the appropriate motions or applications regarding continued sample testing or

deviations unless it previous abandoned sample testing and returned to periodic testing as prescribed by 807 KAR 5:066, Section 16(1).

6. Hardin No. 2 shall continue to comply with any other relevant regulations pertaining to its meters, including the quarterly reporting requirements in 807 KAR 5:006, subject to any deviation granted by the Commission.

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By the Commission

ENTERED

MAR 22 2018

KENTUCKY PUBLIC
SERVICE COMMISSION

ATTEST:

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