

July 25, 2014

Executive Secretary  
North Dakota Public Service Commission  
State Capitol Building  
Bismarck, ND 58505-0480

Re: Gas Meter Test Results

Montana-Dakota Utilities Co. (Montana-Dakota), a Division of MDU Resources Group, Inc., herewith submits the results of its gas meter testing program for the period April 1, 2012 through March 31, 2014. Montana-Dakota also requires a deviation from its Gas Meter Testing Plan approved by the Commission in Case No. I-5083 for the Gas Meter Testing Results provided in this report.

The following deviations from Montana-Dakota's approved Gas Meter Testing Plan for the Company's random sampling program of meters as part of the Testing Plan are noted:

- The meter test results being submitted reflect results over a two year testing period April 1, 2012 through March 31, 2014.
- Inspection Level III criteria with specification limit of  $\pm 2\%$  was used in determining the minimum sample size needed to produce statistically valid test results. Inspection Level III criteria requires a minimum of 1,011 meters be tested. The Company tested 1,384 meters, 135 meters short of Inspection Level IV criteria.

The Company's need to deviate from Montana-Dakota's approved plan is a result of:

- The Company-wide implementation of a new Customer Care and Billing System in early 2013. The implementation delayed the Company's ability to randomly select gas meters for inclusion in the present test period, schedule Company personnel to perform the meter exchanges, as well as track the meters going forward, within the billing system. Measures are now in place to assist in the process and the Company is working to resolve any remaining gaps in order to more effectively administer its gas meter testing program.
- The Company continues to experience increased difficulty in the scheduling of meter exchanges with customers necessary to perform gas meter testing, contributing to delays in testing.

Montana-Dakota's meter testing program consists of the following three categories:

1. New Test - New meters purchased were tested and found to be satisfactory prior to release. 100% of new meters were tested at the factory. Montana-Dakota tested 470 meters during the period April 1, 2012 through March 31, 2014 resulting in an average accuracy of 99.8% at an open test (100% of meter rating) and 100% accuracy at a check test (20% of meter rating).
2. Periodic Test – Meters with ratings of 630 cubic feet per hour or greater are tested at a periodic interval of at least once in eight years.
3. Random Test - All other active meters, with ratings of 630 cubic feet per hour or less, are assigned to lots and are randomly computer selected for test each year.

All damaged or non-registering meters are incapable of measuring gas accurately due to damaged indexes, mechanical malfunctions, or break(s) in the meter body. These damaged meters are either retired or given a complete overhaul and re-tested before being placed back in service.

Calculations of all lots in the Random Sample Program are made in accordance with the program detailed in Department of Defense Bulletin dated June 11, 1957, entitled "Military Standard Sampling Procedure & Tables for Inspections by Variable for Percent Defective," as approved in Case No. I-5083. As mentioned previously, the minimum sample size for each group included in the present report was determined using Inspection Level III criteria with specification limit of  $\pm 2\%$ .

The Random Test results are provided in Attachment A. As demonstrated, all lots were below the maximum allowable percent defective for April 1, 2012 through March 31, 2014. The three groups that failed in the last test cycle were re-sampled in this test cycle and the test results summarized below. A fourth group of meters noted in the last test cycle have been removed from service.

- Meter Lot ER03 – install date of 1986 through 1990: Montana-Dakota has removed a total of 683 meters from active service since this meter lot first failed in the 2010 test year. The remaining meters in Lot ER03 with an install date of 1986 – 1990 were resampled and tested. The group now falls within the allowable percentage defective.
- Meter Lot AS02 – install date of 1991 through 1995: This group did not fail for a second time. The group will continue to be sample tested.
- Meter Lot ER02 – install date of 1976 through 1980: This group did not fail for a second time. The group will continue to be sample tested.

- Meter Lot S400A – install date of 1997 through 2001: This group failed for a second time in the 2011 test year. All meters included in this lot were removed from service in 2012.

The Periodic test results are provided in Attachment B. As shown, 581 meters were tested during this review period resulting in an average accuracy of 99.14% at an open test (100% of meter rating) and 100.06% accuracy at a check test (20% of meter rating).

Please contact me if you have questions regarding the gas meter testing results.

Please acknowledge receipt by stamping or initialing the duplicate copy of this letter attached hereto and returning the same in the enclosed self-addressed, stamped envelope.

Sincerely,



Tamie A. Aberle  
Director of Regulatory Affairs

Attachments

<b>MONTANA - DAKOTA UTILITIES CO.</b> <b>NORTH DAKOTA</b> <b>APRIL 1, 2012 THROUGH MARCH 31, 2014 TEST YEAR</b> <b>RANDOM SAMPLE TEST RESULTS</b>						
Lot Type	Size (in CIS)	Install Year	Count	Minimum Sample*	Defective [%]	Allowable [%]
<b>415</b>	<b>415</b>	05-09	1,819	30	8.66	23.58
		10-12	913	25	12.52	23.97
<b>AC-250</b>	<b>AC250</b>	90-94	32	3	0.66	40.47
		95-99	1,723	30	0.38	23.58
		00-04	11,137	50	4.01	22.00
		05-09	14,493	50	4.72	22.00
		10-12	12,541	50	0.13	22.00
<b>AL-425</b>	<b>AL425</b>	90-94	5	3	1.00	40.47
		95-99	49	4	3.29	36.90
		00-04	296	10	0.48	27.57
		05-09	262	10	14.18	27.57
		10-12	239	10	3.32	27.57
<b>AS02</b>	<b>AL175</b>	76-79	66	5	24.03	33.99
		85-89	136	7	9.22	30.50
	<b>AL225</b>	90-94	1,066	25	1.16	23.97
		91-95	1,036	30	1.06	23.58
	<b>AL250</b>	95-99	1,431	30	6.23	23.58
		00-04	822	25	0.17	23.97
		05-09	435	15	0.15	25.61
		10-12	271	10	15.30	27.57
<b>ER01</b>	<b>175</b>	95-99	95	5	3.19	33.99
		00-04	218	10	0.36	27.57
		05-09	18	3	0.00	40.47
<b>ER02</b>	<b>250</b>	76-79	45	4	0.62	36.90
		76-80	45	4	0.62	36.90
		85-89	677	20	9.04	24.53
		90-94	3,804	40	14.16	22.86
		95-99	5,733	40	15.13	22.86
		00-04	2,359	30	1.69	23.58
		05-09	277	10	0.88	27.57
		10-12	71	5	0.00	33.99
<b>ER03</b>	<b>R-200</b>	85-89	1,107	25	8.39	23.97
		86-90	1,403	40	8.79	22.99
	<b>R-275</b>	90-94	3,159	30	14.24	23.58
		95-99	7,202	40	14.39	22.86
		00-04	8,764	50	0.50	22.00
		05-09	5,409	40	0.91	22.86
	10-12	2,621	30	1.10	23.58	

<b>MONTANA - DAKOTA UTILITIES CO.</b> <b>NORTH DAKOTA</b> <b>APRIL 1, 2012 THROUGH MARCH 31, 2014 TEST YEAR</b> <b>RANDOM SAMPLE TEST RESULTS</b>						
<b>Lot Type</b>	<b>Size (in CIS)</b>	<b>Install Year</b>	<b>Count</b>	<b>Minimum Sample*</b>	<b>Defective [%]</b>	<b>Allowable [%]</b>
<b>NL-250</b>	<b>NL-250</b>	90-94	143	7	23.94	30.50
		95-99	100	5	17.99	33.99
		00-04	194	10	2.03	27.57
		05-09	252	10	0.00	27.57
		10-12	285	10	4.95	27.57
<b>S250</b>	<b>S250</b>	85-89	10	3	0.00	40.47
		90-94	923	25	0.00	23.97
		95-99	681	20	0.00	24.53
		00-04	788	20	2.96	24.53
		05-09	635	20	0.00	24.53
		10-12	785	20	0.05	24.53
<b>SL250</b>	<b>SL250</b>	95-99	278	10	0.00	27.57
		00-04	348	15	0.02	25.61
		05-09	315	15	0.01	25.61
		10-12	468	15	0.00	25.61
<b>S400</b>	<b>S400</b>	00-04	20	3	0.00	40.47
		05-09	28	5	0.00	40.47
		10-12	62	9	0.00	36.90
<b>S400A</b>	<b>S400A</b>	00-04	63	4	0.00	36.90
		05-09	54	4	0.00	36.90
		10-12	125	7	0.14	30.50

\* - Military Standard No. 414, Inspection Level III with specification limit of  $\pm 2\%$

**MONTANA - DAKOTA UTILITIES CO.**  
**NORTH DAKOTA**  
**APRIL 1, 2012 THROUGH MARCH 31, 2014 TEST YEAR**  
**PERIODIC TEST RESULTS**

**Accuracy by Size**

<b>Meter Size</b>	<b>Quantity</b>	<b>Open Accuracy %</b>	<b>Check Accuracy %</b>
AC630	81	101.0%	101.2%
800	2	101.7%	100.6%
AL1400	8	99.3%	94.5%
AL2300	10	96.3%	99.5%
AL800	175	99.1%	99.5%
1000	193	99.4%	100.3%
10000	4	98.5%	100.3%
1600	98	99.4%	100.5%
3000	42	99.1%	100.1%
5000	49	99.3%	100.4%
Total	662		
	<b>Accuracy (all)</b>	<b>99.37%</b>	<b>100.20%</b>