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December 9, 2015

--Via U.S. Mail and Electronic Filing--

Darrell Nitschke, Executive Secretary
North Dakota Public Service Commission
600 East Boulevard
Bismarck, ND 58505-0480

RE: UPDATE - ELECTRIC METERING AND TESTING TARIFF MODIFICATION
CASE NO. PU-15-633

Dear Mr. Nitschke:

Northern States Power Company, doing business as Xcel Energy, submits the attached revisions to the miscellaneous meter testing tariff filing made August 10, 2015, and the revised versions submitted on December 1, 2015. These revisions reflect Commission staff's additional input after their review of our December 1, 2015 filing.

As we indicated in our original application, the purpose of the revised tariff is to align the language more closely with changes we are making in our meter testing practices to improve efficiency and effectiveness.

Commission staff also requested that we include more detailed testing and statistical information with all future meter test reports. Specifically, they recommended that a report similar to Attachment A of our response to staff's Data Request #5 in this case be provided annually. We have included an attachment with this letter for your reference.

We thank the Staff for their helpful insights, and we are hopeful that the Commission will approve these tariffs at their December 16 regular meeting. If you have any questions concerning this update, feel free to contact me at 701-241-8632.

Sincerely,

A handwritten signature in blue ink that reads 'David H. Sederquist'.

DAVID H. SEDERQUIST
SENIOR REGULATORY AND FINANCIAL CONSULTANT

cc: Sara Cardwell

Legislative

NORTH DAKOTA ELECTRIC RATE BOOK - NDPSO NO. 2

GENERAL RULES AND REGULATIONS (Continued)

Section No. 6
~~1st~~^{2nd} Revised Sheet No. 13

SECTION 3 METERING AND BILLING

3.1 METERING AND TESTING

Metering

The Company will furnish, install, and maintain one set of metering equipment for each account-service location and rate schedule under which service is supplied. The location, number of meters and appurtenances, and specifics of installation will depend on the service arrangements and requirements of the rate schedules.

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Customer Request for Meter Testing

The customer may request ~~the Company to test its~~ a meter test. If the request to test a meter is made within one year of a previous meter test, a charge will be added to customer's bill if the metering equipment tests accurate in accordance with ~~the Public Service~~ Commission standards. The charge must will be waived if the meter error is more than plus or minus two percent.

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The Company will test an electric meter within ten calendar days of receiving a customer request to test a meter. In the event that the Company fails to investigate a potentially malfunctioning meter within this timeframe and the meter is later determined to be malfunctioning, the customer will not be rebilled for any discrepancy in the amount owed for service provided from the date the customer contacted the Company about their meter to the date the meter was investigated.

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Meter Error

In the event the Company's test shows meter error in excess of accepted or prescribed tolerance, the Company will adjust the bills for service during the period of registration error equal to defined as one-half the time elapsed since the ~~most recent~~^{last previous meter test}, ~~but not to~~ This period shall not exceed six months. Adjustments shall be based on actual monthly consumptions.

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If the average meter error cannot be determined because of failure of part or all of the metering equipment, the customer shall pay an amount based upon registration of check metering equipment or an estimated amount based upon the customer's consumption for comparable operations over a similar period. Any adjustment because of metering equipment failure shall be from the date of the metering equipment failure, if known, or if not known, for a period equal to one-half the time elapsed since the last previous meter test, but not to exceed six months.

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Testing Process for New Electric Meters (Single Phase and Polyphase)

~~New meters, whether single phase or polyphase, self-contained or transformer rated, are normally sample tested (where a random selection of meters from a lot is tested every year and the condition of the sample is used to determine the performance of the group and whether or not it remains in service) for accuracy when they are received from the supplier. The Company requires the meter supplier to provide certified test data for all new meters demonstrating the "as left" calibration for each meter is within the Company's accuracy requirements.~~

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(Continued on Sheet No. ~~6-146-13.1~~)

Date Filed: ~~12-07-07~~⁰⁸⁻¹⁰⁻¹⁵ By: ~~David M. Sparby~~^{Christopher B. Clark} Effective Date: ~~03-01-09~~
President ~~and CEO of~~, Northern States Power Company, a Minnesota corporation
Case No. ~~PU-07-776~~^{PU-15-633} Order Date: ~~12-31-08~~

NORTH DAKOTA ELECTRIC RATE BOOK - NDPSO NO. 2

GENERAL RULES AND REGULATIONS (Continued)

Section No. 6

~~1st~~^{2nd} Revised Sheet No. 13

~~New transformer rated meter installations are also checked within sixty days of being energized and having customer load connected to ensure proper installation. This procedure is normally repeated if the current transformers and/or voltage transformers are replaced.~~

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(Continued on Sheet No. ~~6-146-13.1~~)

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NORTH DAKOTA ELECTRIC RATE BOOK - NDPSC NO. 2

GENERAL RULES AND REGULATIONS (Continued)

Section No. 6
Original Sheet No. 13.1

3.1 METERING AND TESTING (Continued)

Testing Process for New Electric Meters (Single Phase and Polyphase)

New meters, whether single phase or polyphase, self-contained or transformer rated, are normally sample tested ~~(where a random selection of meters from a lot is tested every year and the condition of the sample is used to determine the performance of the group and whether or not it remains in service)~~ for accuracy when they are received from the supplier. The Company requires the meter supplier to provide certified test data for all new meters demonstrating the "as left" calibration for each meter is within the Company's accuracy requirements.

New transformer rated meter installations are also checked within sixty days of being energized and having customer load connected to ensure proper installation. This procedure is normally repeated if the current transformers and/or voltage transformers are replaced.

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(Continued on Sheet No. 6-14)

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NORTH DAKOTA ELECTRIC RATE BOOK - NDPSO NO. 2

GENERAL RULES AND REGULATIONS (Continued)

Section No. 6

~~1st~~^{2nd} Revised Sheet No. 14

3.1 METERING AND TESTING (Continued)

Testing Process for In-Service Meters

In-service meters are either sample tested or ~~periodically~~ tested ~~annually~~ ~~(where all the meters in a defined grouping are tested within a certain period)~~ depending on meter type as indicated in the following table:

Type of Meter	Type of Testing
Self-contained single and polyphase	Sample – yearly
Transformer-rated single and polyphase	Sample – yearly
Transformer-rated polyphase meters in substations on primary services (services above 600V)	Periodic – yearly
Transformer-rated polyphase meters with demands greater than 1MW (during previous calendar year)	Periodic – yearly
Self-contained single phase, non-demand	Sample – yearly
Self-contained single phase, demand	Periodic – 16 years
Transformer rated single phase, non-demand	Sample – yearly
Transformer rated single phase, demand	Periodic – 16 years
Self-contained polyphase, non-demand	Sample – yearly
Self-contained polyphase, demand	Periodic – 16 years
Transformer rated polyphase, non-demand	Periodic – 16 years
Transformer rated polyphase, demand	Periodic – 16 years
Self-contained and transformer rated time-of-use (TOU) and/or recording meters and battery equipped devices	Periodic – 8 years

1. Sample Testing Program

Meters to be sample tested on a yearly basis are placed in groups, or "lots." ANSI C12.1 Electric Meters Code for Electric Metering is used to determine the sample size. ~~These~~ lots are defined ~~by~~ based on the manufacturer, model type, and the industry standard test code. Each lot may be further separated into additional lots by individual or combinations of parameters such as serial numbers, purchase date, firmware revision, etc.

ANSI/ASQ Z1.9 Sampling Procedures and Tables for Inspection by Variables for Percent Nonconforming, is a sampling plan that specifies procedures by which an analysis of failures in a limited sample can determine the expected failure rate of an entire population. The Company uses tables from the ANSI/ASQ plan to evaluate the performance of in-service meters that have been grouped into lots for random sample testing. Testing is performed in accordance with ANSI/ASQ Z1.9, Inspection Level II with an acceptable quality level of 2.5 or better and specification limits of +/- 2%.

(Continued on Sheet No. 6-15)

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NORTH DAKOTA ELECTRIC RATE BOOK - NDPSA NO. 2

GENERAL RULES AND REGULATIONS (Continued)

Section No. 6

~~1st~~^{2nd} Revised Sheet No. 14

If a sample ~~unexpectedly fails~~^{does not meet acceptance criteria}, ~~for the first time, the Company will observe the test results for unusual test data or individual test results that are several standard deviations from the mean. If anomalies have occurred, and are the reason for the lot to fail, the Company will monitor the lot more closely in subsequent years. One of these options below will~~^{may} be employed:

- 1) ~~a second sample may be taken and tested. If in the following year the lot sample does not meet acceptance criteria, the lot will be replaced over the next four years. Sample testing will continue during this removal period. If any subsequent sample tests meet acceptance criteria, the meter removal will be discontinued.~~
- 2) ~~The lot may~~^{will} be separated by an additional parameter ~~such as (e.g. serial number)~~ and retested as multiple lots in ~~the following years~~^{subsequent years, or}. ~~If any subdivided lot does not meet acceptance criteria, it will be replaced over the next four years. Sample testing will be continued during this removal period. If any subsequent sample tests meet acceptance criteria, the meter removal will be discontinued.~~
- 3) ~~the lot may be left as is. If the lot fails again, analysis of the cause of failure is made to determine appropriate remedial action. If necessary, removal of a failed lot is accomplished as soon as practicable by the Company's normal operating personnel.~~

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(Continued on Sheet No. 6-15)

Date Filed: ~~12-07-07~~⁰⁸⁻¹⁰⁻¹⁵ By: ~~David M. Sparby~~^{Christopher B. Clark} Effective Date: ~~03-01-09~~
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Case No. ~~PU-07-776~~^{PU-15-633} Order Date: ~~12-31-08~~

NORTH DAKOTA ELECTRIC RATE BOOK - NDPSC NO. 2

GENERAL RULES AND REGULATIONS (Continued)

Section No. 6

~~2nd~~^{3rd} Revised Sheet No. 15

3.1 METERING AND TESTING (Continued)

Testing Process for In-Service Meters (Continued)

As meters are tested in the sample testing plan, individual meters are calibrated – if their design permits – ~~if~~^{when} the “as found” test results show an error greater than +/- 0.5% during either the full load or light load test. ~~If the meter design does not accommodate calibration, the meters are removed and retired.~~ Meters that require electronic reconfiguration due to their installation application will be individually re-programmed; calibration tested, and demand checked/~~tested~~ as appropriate.

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2. Periodic (Annual) Testing Program

Meters that are on a periodic (annual) schedule may be tested and re-installed, tested and retired, or placed on a retirement list prior to their required test date based on the lot’s performance or other factors impacting the Company’s meter management decisions. As meters are tested in the periodic testing plan, individual meters are calibrated – if design permits – if the “as found” test results show an error greater than +/- 0.5% during either the full load or light load test. Otherwise, they are removed and retired. Meters that require electronic reconfiguration due to their installation application will be individually re-programmed; calibration tested, and demand checked/tested as appropriate.

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Testing Process for Reconditioned Meters

~~1. Mechanical Meters~~

~~Meters are retired if the “as found” test results show an error greater than +/- 0.5% during either the full load or light load test. Re-serviceable meters removed from a customer premise are reconditioned by cleaning, testing, and calibration prior to re-installation. Meters are calibrated if the “as found” test results show an error greater than +/- 0.5% during either the full load or light load test.~~

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~~2. Electronic Meters~~

~~Re-serviceable meters removed from a customer premise are reconditioned by cleaning, re-programming, and testing prior to re-installation. Many electronic meters have no calibration adjustment, but if possible they are calibrated if the “as found” test results show an error greater than +/- 0.5% during either the full load or light load test. If the meter has no calibration adjustment, and is found to be more than +/- 1.0% inaccurate, it is retired or repaired.~~

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~~Customers may contact the Company to report a concern with the accuracy of their electric meter. The Company will investigate an electric meter within ten calendar days of receiving a report from a customer questioning its accuracy. In the event that the Company fails to investigate a potentially malfunctioning meter within ten days of the customer’s contact, and the meter is later found to be malfunctioning, it will not rebill for any discrepancy in the amount owed for service occurring between when the customer contacted the Company regarding a concern with their meter and when the meter was investigated.~~

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Verification of WH Accuracy of Meter Test Equipment

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Shop WH test equipment are verified for WH accuracy monthly using a WH standard that is traceable to NIST (National Institute of Standards and Technology); this standard is verified annually for accuracy.

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NORTH DAKOTA ELECTRIC RATE BOOK - NDPS NO. 2

GENERAL RULES AND REGULATIONS (Continued)

Section No. 6
2nd Revised Sheet No. 13

SECTION 3 METERING AND BILLING

3.1 METERING AND TESTING

Metering

The Company will furnish, install, and maintain one set of metering equipment for each service location and rate schedule under which service is supplied. The location, number of meters and appurtenances, and specifics of installation will depend on the service arrangements and requirements of the rate schedules.

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Customer Request for Meter Testing

The customer may request a meter test. If the request to test a meter is made within one year of a previous meter test, a charge will be added to customer's bill if the metering equipment tests accurate in accordance with Commission standards. The charge will be waived if the meter error is more than plus or minus two percent.

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The Company will test an electric meter within ten calendar days of receiving a customer request to test a meter. In the event that the Company fails to investigate a potentially malfunctioning meter within this timeframe and the meter is later determined to be malfunctioning, the customer will not be rebilled for any discrepancy in the amount owed for service provided from the date the customer contacted the Company about their meter to the date the meter was investigated.

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Meter Error

In the event the Company's test shows meter error in excess of accepted or prescribed tolerance, the Company will adjust the bills for service during the period of registration error defined as one-half the time elapsed since the last previous meter test, but not to exceed six months. Adjustments shall be based on actual monthly consumptions.

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If the average meter error cannot be determined because of failure of part or all of the metering equipment, the customer shall pay an amount based upon registration of check metering equipment or an estimated amount based upon the customer's consumption for comparable operations over a similar period. Any adjustment because of metering equipment failure shall be from the date of the metering equipment failure, if known, or if not known, for a period equal to one-half the time elapsed since the last previous meter test, but not to exceed six months.

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(Continued on Sheet No. 6-13.1)

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Order Date:

NORTH DAKOTA ELECTRIC RATE BOOK - NDPSC NO. 2

GENERAL RULES AND REGULATIONS (Continued)

Section No. 6
Original Sheet No. 13.1

3.1 METERING AND TESTING (Continued)

Testing Process for New Electric Meters (Single Phase and Polyphase)

New meters, whether single phase or polyphase, self-contained or transformer rated, are normally sample tested for accuracy when they are received from the supplier. The Company requires the meter supplier to provide certified test data for all new meters demonstrating the "as left" calibration for each meter is within the Company's accuracy requirements.

New transformer rated meter installations are also checked within sixty days of being energized and having customer load connected to ensure proper installation. This procedure is normally repeated if the current transformers and/or voltage transformers are replaced.

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(Continued on Sheet No. 6-14)

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NORTH DAKOTA ELECTRIC RATE BOOK - NDPSO NO. 2

GENERAL RULES AND REGULATIONS (Continued)

Section No. 6
 2nd Revised Sheet No. 14

3.1 METERING AND TESTING (Continued)

Testing Process for In-Service Meters

In-service meters are either sample tested or tested annually depending on meter type as indicated in the following table:

<u>Type of Meter</u>	<u>Type of Testing</u>
Self-contained single and polyphase	Sample – yearly
Transformer-rated single and polyphase	Sample – yearly
Transformer-rated polyphase meters in substations on primary services (services above 600V)	Periodic – yearly
Transformer-rated polyphase meters with demands greater than 1MW (during previous calendar year)	Periodic – yearly

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1. Sample Testing Program

Meters to be sample tested on a yearly basis are placed in groups, or "lots." ANSI C12.1 Electric Meters Code for Electric Metering is used to determine the sample size. The lots are defined based on the manufacturer, model type, and the industry standard test code. Each lot may be further separated into additional lots by individual or combinations of parameters such as serial number, purchase date, firmware revision, etc.

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ANSI/ASQ Z1.9 Sampling Procedures and Tables for Inspection by Variables for Percent Nonconforming, is a sampling plan that specifies procedures by which an analysis of failures in a limited sample can determine the expected failure rate of an entire population. The Company uses tables from the ANSI/ASQ plan to evaluate the performance of in-service meters that have been grouped into lots for random sample testing. Testing is performed in accordance with ANSI/ASQ Z1.9, Inspection Level II with an acceptable quality level of 2.5 or better and specification limits of +/- 2%.

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If a sample does not meet acceptance criteria, one of the options below will be employed:

- 1) If in the following year the lot sample does not meet acceptance criteria, the lot will be replaced over the next four years. Sample testing will continue during this removal period. If any subsequent sample tests meet acceptance criteria, the meter removal will be discontinued.
- 2) The lot will be separated by an additional parameter (e.g. serial number) and retested as multiple lots in the following year. If any subdivided lot does not meet acceptance criteria, it will be replaced over the next four years. Sample testing will be continued during this removal period. If any subsequent sample tests meet acceptance criteria, the meter removal will be discontinued.

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(Continued on Sheet No. 6-15)

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NORTH DAKOTA ELECTRIC RATE BOOK - NDPSC NO. 2

GENERAL RULES AND REGULATIONS (Continued)

Section No. 6
3rd Revised Sheet No. 15

3.1 METERING AND TESTING (Continued)

Testing Process for In-Service Meters (Continued)

As meters are tested in the sample testing plan, individual meters are calibrated – if their design permits – when the “as found” test results show an error greater than +/- 0.5% during either the full load or light load test. If the meter design does not accommodate calibration, the meters are removed and retired. Meters that require electronic reconfiguration due to their installation application will be individually re-programmed, calibration tested, and demand checked as appropriate. T
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2. Periodic (Annual) Testing Program C

Meters that are on a periodic (annual) schedule may be tested and re-installed, tested and retired, or placed on a retirement list prior to their required test date based on the lot’s performance or other factors impacting the Company’s meter management decisions. As meters are tested in the periodic testing plan, individual meters are calibrated – if design permits – if the “as found” test results show an error greater than +/- 0.5% during either the full load or light load test. Otherwise, they are removed and retired. N
Meters that require electronic reconfiguration due to their installation application will be individually re-programmed; calibration tested, and demand checked/tested as appropriate. C

Testing Process for Reconditioned Meters

Meters are retired if the “as found” test results show an error greater than +/- 0.5% during either the full load or light load test. Re-serviceable meters removed from a customer premise are reconditioned by cleaning, testing, and calibration prior to re-installation. C
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Verification of WH Accuracy of Meter Test Equipment N

Shop WH test equipment are verified for WH accuracy monthly using a WH standard that is traceable to NIST (National Institute of Standards and Technology); this standard is verified annually for accuracy. N
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President, Northern States Power Company, a Minnesota corporation

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Xcel Energy
Northern States Power of Minnesota
Electric Meter Random Test Results for Year 2014

Lot Number	MDMS Lot Description	Meter Manufacturer	Meter Type	Meter Form	In-Service Meter Count	Statistical Sample Size	Useable Sample Tests	Full Load Sigma	Full Load Bar-X	Full Load Estimated Percent Defect	Statistical Maximum Allowable Percent Defect	Full Load Pass / Fail / No Analysis*
211	MN,RT,GE,I70S,AF	GENERAL ELECTRIC	I70S	2	20	4	4	0.136	100.048	0.000	10.920	Pass
218	MN,RT,GE,I70S,AI	GENERAL ELECTRIC	I70S	1	4	3	5	0.197	99.835	0.000	7.590	Pass
573	MN,RT,ABB,D5S,AC,SN>79200000	ABB POWER	D5S	2	2,115	40	43	0.277	99.736	0.000	5.580	Pass
609	MN,RT,L&G,MS,AC,SN<21155180	LANDIS & GYR	MS	2	21,219	75	81	0.289	99.951	0.000	4.870	Pass
610	MN,RT,L&G,MS,AC,BET 21155180 - 224256936	LANDIS & GYR	MS	2	23,475	100	110	0.221	99.900	0.000	4.690	Pass
611	MN,RT,L&G,MS,AC,BET 24256935 - 33024770	LANDIS & GYR	MS	2	27,954	100	104	0.335	99.921	0.000	4.690	Pass
612	MN,RT,L&G,MS,AC,SN>33024770	LANDIS & GYR	MS	2	29,959	100	106	0.164	99.962	0.000	4.690	Pass
882	MN,RT,SCHLUM,J5S,IF	SCHLUMBERGER	J5S	2	79,725	100	108	0.247	99.856	0.000	4.690	Pass
884	MN,RT,SCHLUM,J5S,LY	SCHLUMBERGER	J5S	4	27	5	6	0.184	100.183	0.000	9.800	Pass
938	MN,RT,SCHLUM,J4S,IF	SCHLUMBERGER	J4S	2	22,571	100	106	0.260	99.838	0.000	4.690	Pass
1006	MN,RT,GE,I70S,AC,SN <= 70000000	GENERAL ELECTRIC	I70S	2	26,615	100	107	0.243	99.838	0.000	4.690	Pass
1007	MN,RT,GE,I70S,AC,SN BET 70,000,000 & 80,000,001	GENERAL ELECTRIC	I70S	2	36,207	100	108	0.162	99.913	0.000	4.690	Pass
1008	MN,RT,GE,I70S,AC,SN BET 80,000,000 & 90,000,001	GENERAL ELECTRIC	I70S	2	48,240	100	107	0.166	99.957	0.000	4.690	Pass
1009	MN,RT,GE,I70S,AC,SN > 90,000,000	GENERAL ELECTRIC	I70S	2	42,355	100	107	0.185	99.947	0.000	4.690	Pass
1051	MN,RT,ABB,AB1,AC	ABB POWER	AB1	2	328,864	150	159	0.300	99.997	0.000	4.430	Pass
1077	MN,RT,SCHLUM,SL12S,MP	SCHLUMBERGER	SL12S	12	3,281	50	55	0.179	100.191	0.000	5.200	Pass
1079	MN,RT,ABB,AB1,AI	ABB POWER	AB1	1	3,026	40	36	0.171	100.084	0.000	5.580	Pass
8001	MN,RT,SCHLUM,J4ES,AF	SCHLUMBERGER	J4ES	2	1,288	35	38	0.307	100.106	0.000	5.570	Pass
8004	MN,RT,ABB,ABS-5U,MP	ABB POWER	ABS-5U	12	44,766	100	109	0.186	100.079	0.000	4.690	Pass
8005	MN,RT,ABB,AB1,JW	ABB POWER	AB1	3	26	5	5	0.156	100.204	0.000	9.800	Pass
8006	MN,RT,ABB,AB1,AG	ABB POWER	AB1	4	212	20	21	0.202	100.028	0.000	6.170	Pass
8015	MN,RT,L&G,MTN12S,MP	LANDIS & GYR	MTN12S	12	5,289	50	53	0.170	100.069	0.000	5.200	Pass
8016	MN,RT,SCHLUM,S12S,MP	SCHLUMBERGER	S12S	12	6,776	50	55	0.178	100.115	0.000	5.200	Pass
8018	MN,RT,ABB,D4S5U,MP	ABB POWER	D4S5U	12	5,023	50	55	0.265	99.967	0.000	5.200	Pass
8019	MN,RT,ABB,D5S5U,MP	ABB POWER	D5S5U	12	35	5	6	0.129	99.875	0.000	9.800	Pass
8020	MN,RT,GE,V62S,MP	GENERAL ELECTRIC	V62S	12	3	3	3	0.094	99.810	0.000	7.590	Pass
8038	MN,RT,SCHLUM,C1S,1N	SCHLUMBERGER	C1S	2	3	3	3	0.088	100.050	0.000	7.590	Pass
8489	MN,RT,ELSTER,AB1,AC	ELSTER ELECTRICITY	AB1	2	8,149	75	80	0.195	100.028	0.000	4.870	Pass
8561	MN,RT,LANDIS&GYR,MQS	LANDIS & GYR	MQS	2	421	25	27	0.162	99.957	0.000	5.970	Pass
8729	MN,RT,G,VMW65E,BA,FM6S	GENERAL ELECTRIC	VMW65E	6	3	3	3	0.037	99.933	0.000	7.590	Pass
8730	MN,RT,G,VMW65E,SX,FM6S	GENERAL ELECTRIC	VMW65E	6	5	3	4	0.144	100.328	0.000	7.590	Pass
8731	MN,RT,S,SL5S,BW,FM14	SCHLUMBERGER	SL5S	14	111	15	16	0.281	100.178	0.000	6.560	Pass
8734	MN,RT,D,MSE,AF,FM2S	LANDIS & GYR	MSE	2	186	20	22	0.178	99.920	0.000	6.170	Pass
8735	MN,RT,D,MS2SE,AF,FM2S	LANDIS & GYR	MS2SE	2	53	7	8	0.195	99.931	0.000	7.590	Pass
8736	MN,RT,D,MT,BW,FM14S	LANDIS & GYR	MT	14	6	3	4	0.053	100.220	0.000	7.590	Pass
8737	MN,RT,D,MT14S,BW,FM14S	LANDIS & GYR	MT14S	14	688	30	31	0.192	100.035	0.000	5.860	Pass
8738	MN,RT,D,MT14S,CL,FM14S	LANDIS & GYR	MT14S	14	7	3	4	0.202	100.150	0.000	7.590	Pass
8740	MN,RT,S,S5S,CL,FM14S	SCHLUMBERGER	S5S	14	21	4	5	0.191	100.146	0.000	10.920	Pass
8741	MN,RT,S,S5S,QM,FM14S	SCHLUMBERGER	S5S	14	71	10	10	0.201	100.119	0.000	7.290	Pass
8742	MN,RT,S,J4ES,NX,FM2S	SCHLUMBERGER	J4ES	2	10	3	4	0.199	99.940	0.000	7.590	Pass
8743	MN,RT,S,J5ES,AF,FM2S	SCHLUMBERGER	J5ES	2	130	15	17	0.342	99.921	0.000	6.560	Pass
8745	MN,RT,W,A1D,TR,FM3S	ABB POWER	A1D	3	139	15	15	0.079	99.955	0.000	6.560	Pass
8746	MN,RT,W,A1R,BA,FM6S	ABB POWER	A1R	6	57	7	7	0.000	99.989	0.000	8.400	Pass
8747	MN,RT,W,A1D,TE,FM16S	ABB POWER	A1D	16	12,729	75	80	0.037	99.954	0.000	4.870	Pass
8748	MN,RT,W,A1D,TX,FM12S	ABB POWER	A1D	12	957	35	36	0.037	99.977	0.000	5.570	Pass
8750	MN,RT,W,A1R-A,BA,FM6S	ABB POWER	A1R-A	6	36	5	5	0.077	99.982	0.000	9.800	Pass
8751	MN,RT,W,A1R-A,KZ,FM9S	ABB POWER	A1R-A	9	30	5	6	0.055	99.998	0.000	9.800	Pass

Xcel Energy
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Lot Number	MDMS Lot Description	Meter Manufacturer	Meter Type	Meter Form	In-Service Meter Count	Statistical Sample Size	Useable Sample Tests	Full Load Sigma	Full Load Bar-X	Full Load Estimated Percent Defect	Statistical Maximum Allowable Percent Defect	Full Load Pass / Fail / No Analysis*
8753	MN,RT,W,A1R,KZ,FM9S	ABB POWER	A1R	9	311	25	27	0.046	100.048	0.000	5.970	Pass
8756	MN,RT,W,A1D,RJ,FM4S	ABB POWER	A1D	4	711	30	33	0.106	100.003	0.000	5.860	Pass
8757	MN,RT,W,A1R,ON,FM5S	ABB POWER	A1R	5	9	3	3	0.049	99.980	0.000	7.590	Pass
8758	MN,RT,W,A1R-A,NX,FM2S	ABB POWER	A1R-A	2	9	3	3	0.030	99.990	0.000	7.590	Pass
8759	MN,RT,W,A1R-AL,KZ,FM9S	ABB POWER	A1R-AL	9	1,485	40	43	0.061	100.033	0.000	5.580	Pass
8760	MN,RT,W,A1R-AL,BA,FM6S	ABB POWER	A1R-AL	6	192	20	22	0.082	99.977	0.000	6.170	Pass
8761	MN,RT,W,A1R,X8,FM36S	ABB POWER	A1R	36	9	3	4	0.035	100.010	0.000	7.590	Pass
8762	MN,RT,W,A1R,Y8,FM35S	ABB POWER	A1R	35	8	3	4	0.066	99.992	0.000	7.590	Pass
8763	MN,RT,S,S2S,MP,FM12S	SCHLUMBERGER	S2S	12	549	30	33	0.285	100.077	0.000	5.860	Pass
8764	MN,RT,W,A1R+,KZ,FM9S	ABB POWER	A1R+	9	14,903	75	82	0.219	100.006	0.000	4.870	Pass
8765	MN,RT,W,A1R+,X8,FM36S	ABB POWER	A1R+	36	5,582	50	55	0.044	99.933	0.000	5.200	Pass
8766	MN,RT,W,A1T+,NX,FM2S	ABB POWER	A1T+	2	7,824	50	52	0.102	99.977	0.000	5.200	Pass
8767	MN,RT,W,A1T+,RJ,FM4S	ABB POWER	A1T+	4	2,727	40	43	0.093	99.991	0.000	5.580	Pass
8768	MN,RT,W,A1T+,TE,FM16S	ABB POWER	A1T+	16	14,091	75	81	0.042	99.954	0.000	4.870	Pass
8769	MN,RT,W,A1T+,TR,FM3S	ABB POWER	A1T+	3	204	20	21	0.106	99.971	0.000	6.170	Pass
8770	MN,RT,W,A1T+,TX,FM12S	ABB POWER	A1T+	12	2,979	40	43	0.032	99.972	0.000	5.580	Pass
8772	MN,RT,W,A1D+,TE,FM16S	ABB POWER	A1D+	16	25	4	5	0.017	99.980	0.000	10.920	Pass
8773	MN,RT,W,A1R+,Y8,FM35S	ABB POWER	A1R+	35	94	10	10	0.026	99.990	0.000	7.290	Pass
8774	MN,RT,W,A1R-AL,X8,FM36S	ABB POWER	A1R-AL	36	228	20	22	0.044	99.969	0.000	6.170	Pass
8775	MN,RT,W,A1R-AL,Y8,FM35S	ABB POWER	A1R-AL	35	6	3	4	0.026	100.003	0.000	7.590	Pass
8776	MN,RT,W,A1D+,TX,FM12S	ABB POWER	A1D+	12	6,012	50	54	0.037	99.971	0.000	5.200	Pass
8777	MN,RT,W,A1T+,V0,FM12S	ABB POWER	A1T+	12	31	5	6	0.054	99.990	0.000	9.800	Pass
8778	MN,RT,S,S5S,BW,FM14S	SCHLUMBERGER	S5S	14	87	10	9	0.286	100.072	0.000	7.290	Pass
8779	MN,RT,G,V65S,BW,FM14S	GENERAL ELECTRIC	V65S	14	64	7	8	0.185	100.248	0.000	8.400	Pass
8780	MN,RT,E,A1D+,TX,FM12S	ELSTER ELECTRICITY	A1D+	12	6,855	50	55	0.045	99.964	0.000	5.200	Pass
8781	MN,RT,E,A1R+,X8,FM36S	ELSTER ELECTRICITY	A1R+	36	17	4	5	0.024	99.866	0.000	10.920	Pass
8782	MN,RT,E,A1RL+,KZ,FM9S	ELSTER ELECTRICITY	A1RL+	9	140	15	17	0.047	100.027	0.000	6.560	Pass
8784	MN,RT,W,A1R-A,TE,N5,RJ,Y8,ALL	ABB POWER	A1R-A	1,2,4,16,35	10	3	4	0.032	100.023	0.000	7.590	Pass
8785	MN,RT,W,A1R-AL,ON,FM5S	ABB POWER	A1R-AL	5	11	3	4	0.000	100.003	0.000	7.590	Pass
8786	MN,RT,W,A1RL+,X8,FM36S	ABB POWER	A1RL+	36	22	4	5	0.030	99.970	0.000	100.920	Pass
8787	MN,RT,W,A1T+,Y1,FM16S	ABB POWER	A1T+	16	250	20	22	0.039	99.940	0.000	6.170	Pass
8788	MN,RT,E,A1T+,NX,FM2S	ELSTER ELECTRICITY	A1T+	2	4,014	50	54	0.092	99.899	0.000	5.200	Pass
8789	MN,RT,E,A1T+,NY,FM2S	ELSTER ELECTRICITY	A1T+	2	755	30	33	0.112	99.927	0.000	5.860	Pass
8790	MN,RT,E,A1T+,RJ,FM4S	ELSTER ELECTRICITY	A1T+	4	765	30	32	0.092	99.947	0.000	5.860	Pass
8791	MN,RT,E,A1T+,TE,FM16S	ELSTER ELECTRICITY	A1T+	16	8,332	75	81	0.057	99.890	0.000	4.870	Pass
8792	MN,RT,E,A1T+,Y1,FM16S	ELSTER ELECTRICITY	A1T+	16	577	30	33	0.070	99.905	0.000	5.860	Pass
8793	MN,RT,E,A1TL+,NX,FM2S	ELSTER ELECTRICITY	A1TL+	2	20	4	5	0.024	100.046	0.000	10.920	Pass
8795	MN,RT,E,A1TL+,RJ,FM4S	ELSTER ELECTRICITY	A1TL+	4	41	7	8	0.070	99.992	0.000	8.400	Pass
8796	MN,RT,E,A1TL+,TE,FM16S	ELSTER ELECTRICITY	A1TL+	16	5	3	4	0.039	99.930	0.000	7.590	Pass
8800	MN,RT,I,SS4S3L,KZ,FM9S	ITRON	SS4S3L	9	6	3	1	N/A	N/A	N/A	N/A	No Analysis
8801	MN,RT,W,A1R-A,NY,FM2S	ABB POWER	A1R-A	2	18	4	5	0.059	100.024	0.000	10.920	Pass
8802	MN,RT,W,A1TL+,RJ,FM4S	ABB POWER	A1TL+	4	3	3	3	0.097	99.937	0.000	7.590	Pass
8805	MN,RT,E,A1D+,TE,FM16S	ELSTER ELECTRICITY	A1D+	16	385	25	27	0.040	99.885	0.000	5.970	Pass
8806	MN,RT,E,A1R+,KZ,FM9S	ELSTER ELECTRICITY	A1R+	9	6,722	50	53	0.051	99.871	0.000	5.200	Pass
8807	MN,RT,E,A1TL+,TX,FM12S	ELSTER ELECTRICITY	A1TL+	12	4	3	4	0.046	99.937	0.000	7.590	Pass
8808	MN,RT,I,CN1SRC,2H,FM12S	ITRON	CN1SRC	12	13	3	4	0.120	99.905	0.000	7.590	Pass
8809	MN,RT,I,C1SRC,1N,FM2S	ITRON	C1SRC	2	19	4	5	0.045	100.038	0.000	10.920	Pass

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Lot Number	MDMS Lot Description	Meter Manufacturer	Meter Type	Meter Form	In-Service Meter Count	Statistical Sample Size	Useable Sample Tests	Full Load Sigma	Full Load Bar-X	Full Load Estimated Percent Defect	Statistical Maximum Allowable Percent Defect	Full Load Pass / Fail / No Analysis*
8810	MN,RT,I,C1SRC,2B,FM1S	ITRON	C1SRC	1	5	3	2	N/A	N/A	N/A	N/A	No Analysis
8813	MN,RT,W,A1R-A,TX,FM12S	ABB POWER	A1R-A	12	5	3	4	0.055	100.028	0.000	7.590	Pass
8814	MN,RT,I,C1SRC,2G,FM4S	ITRON	C1SRC	4	3	3	3	0.071	99.983	0.000	7.590	Pass
8815	MN,RT,I,CN1S,2H,FM12S	ITRON	CN1S	12	873	35	39	0.086	100.027	0.000	5.570	Pass
8816	MN,RT,I,CN1SC,2H,FM12S	ITRON	CN1SC	12	39,021	100	107	0.089	100.004	0.000	4.690	Pass
8817	MN,RT,I,C1S,1N,FM2S	ITRON	C1S	2	13,643	75	83	0.113	100.011	0.000	4.870	Pass
8818	MN,RT,I,C1S,2F,FM3S	ITRON	C1S	3	91	10	11	0.124	100.162	0.000	7.290	Pass
8819	MN,RT,I,C1S,2J,FM2S	ITRON	C1S	2	786	30	32	0.133	100.089	0.000	5.860	Pass
8820	MN,RT,I,C1SC,1N,FM2S	ITRON	C1SC	2	358,555	150	164	0.114	100.019	0.000	4.430	Pass
8821	MN,RT,I,C1SC,2B,FM1S	ITRON	C1SC	1	1,565	40	42	0.102	99.958	0.000	5.580	Pass
8822	MN,RT,I,C1SC,2F,FM3S	ITRON	C1SC	3	1,447	40	44	0.097	100.071	0.000	5.580	Pass
8823	MN,RT,I,C1SC,2G,FM4S	ITRON	C1SC	4	1,917	40	43	0.120	100.061	0.000	5.580	Pass
8824	MN,RT,I,C1SC,2J,FM2S	ITRON	C1SC	2	3,525	50	53	0.140	100.028	0.000	5.200	Pass
8825	MN,RT,S,CN1S,2H,FM12S	SCHLUMBERGER	CN1S	12	9,007	75	81	0.155	99.895	0.000	4.870	Pass
8826	MN,RT,S,C1S,2B,FM1S	SCHLUMBERGER	C1S	1	1,047	35	38	0.462	99.938	0.000	5.570	Pass
8827	MN,RT,S,C1SC,1N,FM2S	SCHLUMBERGER	C1SC	2	109,451	100	110	0.200	99.943	0.000	4.690	Pass
8829	MN,RT,W,A1T+,NY,TU,FM2S	ABB POWER	A1T+	2	1,435	40	43	0.150	99.954	0.000	5.580	Pass
8830	MN,RT,W,A1T+,N5,FM1S	ABB POWER	A1T+	1	17	4	5	0.205	99.868	0.000	10.920	Pass
8831	MN,RT,E,A1T+,N5,FM1S	ELSTER ELECTRICITY	A1T+	1	9	3	4	0.098	100.015	0.000	7.590	Pass
8832	MN,RT,E,A1T+,TU,FM2S	ELSTER ELECTRICITY	A1T+	2	288	20	22	0.094	99.989	0.000	6.170	Pass
8833	MN,RT,E,A3R-AL,KZ,FM9S	ELSTER ELECTRICITY	A3R-AL	9	453	25	28	0.037	99.958	0.000	5.970	Pass
8834	MN,RT,E,A3R-AL,BA,X8,FM6/36S	ELSTER ELECTRICITY	A3R-AL	36/6	142	15	17	0.039	99.921	0.000	6.560	Pass
8835	MN,RT,E,A3R-AL,ON,Y8,FM5/35S	ELSTER ELECTRICITY	A3R-AL	35/5	8	3	4	0.020	99.965	0.000	7.590	Pass
8836	MN,RT,I,SS4S2L,KZ,FM9S	ITRON	SS4S2L	9	144	15	17	0.032	99.966	0.000	6.560	Pass
8837	MN,RT,W,A1R+,BA,FM6S	ABB POWER	A1R+	6	212	20	22	0.057	99.931	0.000	6.170	Pass
8838	MN,RT,W,A1R-A,TU,FM2S	ELSTER ELECTRICITY	A1R-A	2	4	3	4	0.073	100.015	0.000	7.590	Pass
8840	MN,RT,E,A1R-A,NX,FM2S	ELSTER ELECTRICITY	A1R-A	2	3	3	3	0.035	99.957	0.000	7.590	Pass
8841	MN,RT,E,A1R-A,NY,FM2S	ELSTER ELECTRICITY	A1R-A	2	21	4	5	0.055	99.972	0.000	10.920	Pass
8842	MN,RT,E,A1T+,TX,FM12S	ELSTER ELECTRICITY	A1T+	12	123	15	17	0.041	99.914	0.000	6.560	Pass
8843	MN,RT,E,A1T+,V0,FM12S	ELSTER ELECTRICITY	A1T+	12	4	3	4	0.028	99.780	0.000	7.590	Pass
8844	MN,RT,E,A3RL,NX,FM2S	ELSTER ELECTRICITY	A3RL	2	3	3	3	0.056	99.817	0.000	7.590	Pass
8845	MN,RT,E,A3RL,TE,FM16S	ELSTER ELECTRICITY	A3RL	16	4	3	4	0.030	99.990	0.000	7.590	Pass
8846	MN,RT,E,A3RL,TR,FM3S	ELSTER ELECTRICITY	A3RL	3	5	3	4	0.032	99.852	0.000	7.590	Pass
8848	MN,RT,W,A1TL+,TR,FM3S	ABB POWER	A1TL+	3	3	3	3	0.039	99.927	0.000	7.590	Pass
8849	MN,RT,D,AL,NX,FM2S	LANDIS & GYR	AL	2	14,994	75	83	0.050	100.021	0.000	4.870	Pass
8850	MN,RT,D,AL,TX,FM12S	LANDIS & GYR	AL	12	3,605	50	54	0.046	100.001	0.000	5.200	Pass
8851	MN,RT,E,A3T,TE,FM16S	ELSTER ELECTRICITY	A3T	16	2,688	40	41	0.030	99.995	0.000	5.580	Pass
8852	MN,RT,E,A3R,KZ,FM9S	ELSTER ELECTRICITY	A3R	9	2,037	40	41	0.022	100.001	0.000	5.580	Pass
8853	MN,RT,E,A3T,NX,FM2S	ELSTER ELECTRICITY	A3T	2	1,078	35	37	0.067	99.869	0.000	5.570	Pass
8854	MN,RT,E,A3R,X8,FM36S	ELSTER ELECTRICITY	A3R	36	597	30	32	0.026	100.003	0.000	5.860	Pass
8855	MN,RT,E,A3TL,NX,FM2S	ELSTER ELECTRICITY	A3TL	2	436	25	28	0.064	99.962	0.000	5.970	Pass
8856	MN,RT,E,A3T,RJ,FM4S	ELSTER ELECTRICITY	A3T	4	272	20	22	0.059	99.885	0.000	6.170	Pass
8857	MN,RT,D,AL,ALF,NY,FM2S	LANDIS & GYR	AL,ALF	2	256	20	22	0.052	99.990	0.000	6.170	Pass
8858	MN,RT,E,A3T,Y1,FM16S	ELSTER ELECTRICITY	A3T	16	189	20	21	0.010	99.990	0.000	6.170	Pass
8859	MN,RT,E,A3T,TX,FM12S	ELSTER ELECTRICITY	A3T	12	156	15	16	0.026	100.003	0.000	6.560	Pass
8860	MN,RT,E,A3T,NY,FM2S	ELSTER ELECTRICITY	A3T	2	95	10	10	0.053	99.890	0.000	7.290	Pass
8861	MN,RT,E,A3R-A,KZ,FM9S	ELSTER ELECTRICITY	A3R-A	9	133	15	17	0.039	99.989	0.000	6.560	Pass

