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March 19, 2018

–Via Electronic and U.S. Mail–

Darrell Nitschke
Executive Secretary
North Dakota Public Service Commission
Department 408
600 East Boulevard Avenue
Bismarck, ND 58505-0480

RE: SUMMARY REPORT OF 2017 METER TESTING RESULTS

Dear Mr. Nitschke:

In accordance with sections 69.09.01.16 and 69.09.02.28 of the North Dakota Administrative Code, Northern States Power Company, an Xcel Energy company with operations in North Dakota, encloses summary results of the 2017 testing of the Company's North Dakota electric and natural gas meters.

A summary of the Company's 2017 electric meter testing results is provided in Attachment A to this filing. Note that as a result of a 2015 Commission Staff review of our meter testing tariff, it was recommended the Company include a more detailed report of our electric meter random test results for meters within the NSP-Minnesota operating company (serving the states of Minnesota, North Dakota, and South Dakota). That information is included in Attachment B. Attachment C provides a summary of our 2017 gas meter testing results.

Please call or email me if you have any questions about this report.

Sincerely,

DAVID H. SEDERQUIST
SR. REGULATORY CONSULTANT

Enclosures

1 **PU-18-101** Filed: 3/19/2018 Pages: 5
Summary Report of 2017 Meter Testing Results

Northern States Power Company
David Sederquist

1 **PU-18-102** Filed: 3/19/2018 Pages: 5
Summary Report of 2017 Meter Testing Results

Northern States Power Company
David Sederquist

**Xcel Energy - State of North Dakota
Electric Meter Testing
Summary of 2017 Results**

**Case No. PU-18-____
Annual Compliance - March 19, 2018
Attachment A - Page 1 of 1**

Test Category

Re-serviced/Repair 305
 Selective/Random/Routine Test 245
 Did Not Register 93
 Customer Requested 53
 Company Request/Field Check 26
 Tamper Suspected 3
 Cellnet Errors 2

2017 Electric Meter Totals:

Meters	Acceptable ¹		Slow ²		Fast ³		No Register		
	#	%	#	%	#	%	#	%	
Re-serviced/Repair	305	100.0%	0	0.0%	0	0.0%	0	0.0%	
Selective/Random/Routine Test	244	99.6%	1	0.4%	0	0.0%	0	0.0%	
Did Not Register	93	100.0%	0	0.0%	0	0.0%	0	0.0%	
Customer Requested	53	100.0%	0	0.0%	0	0.0%	0	0.0%	
Company Request/Field Check	26	100.0%	0	0.0%	0	0.0%	0	0.0%	
Tamper Suspected	3	100.0%	0	0.0%	0	0.0%	0	0.0%	
Cellnet Errors	2	100.0%	0	0.0%	0	0.0%	0	0.0%	
2017 Electric Meter Totals:	727								
		726	99.9%	1	0.1%	0	0.0%	0	0.0%

¹ Meters that test within acceptable tolerance have an average error within plus or minus 2% of accurate

² Meters that test slow (under measuring) have an average error lower than -2% of accurate

³ Meters that test fast (over measuring) have an average error higher than +2% of accurate

2017 North Dakota Random Test Detail Report

Lot	Description (OPCO, Random Test, Manuf, Model, Test Code)	Manufacturer	Meter Type	Meter Form	Lot Size	Sample Size MIL-STD-414 (Inspection Level IV)	Meters Requested	# of Meters Tested	Full Load Sigma	Full Load Bar-x	Full Load Est. % Defect	MIL-STD-414 Maximum Allowable % Defect	Full Load Pass/Fail
211	MN,RT,GE,I70S,AF	General Electric	I70S	25	6	3	5	5	0.249	99.908	0.000	7.590	Pass
573	MN,RT,ABB,D5S,AC,SN>79200000	ABB Power	D5S	25	1,863	50	54	54	0.273	99.819	0.000	5.210	Pass
882	MN,RT,SCHLUM,J5S,IF	Schlumberger	S5S	25	76,560	150	156	156	0.254	99.930	0.000	4.420	Pass
884	MN,RT,SCHLUM,J5S,LY	Schlumberger	SL12S	45	12	3	5	5	0.062	99.630	0.000	7.590	Pass
1077	MN,RT,SCHLUM,SL12S,MP	Schlumberger	SL12S	125	3,031	50	54	54	0.193	99.657	0.000	5.210	Pass
1079	MN,RT,ABB,AB1,AI	ABB Power	AB1	55	2,266	50	54	54	0.250	99.898	0.000	5.210	Pass
8001	MN,RT,SCHLUM,J4ES,AF	Schlumberger	S12S	25	1,115	35	40	40	0.273	99.823	0.000	5.580	Pass
8004	MN,RT,ABB,ABS-5U,MP	ABB Power	ABS-5U	125	42,790	150	156	156	0.243	99.911	0.000	4.420	Pass
8006	MN,RT,ABB,AB1,JW	ABB Power	AB1	35	11	3	5	5	0.430	99.655	0.000	7.590	Pass
8006	MN,RT,ABB,AB1,AG	ABB Power	AB1	45	139	10	12	12	0.269	99.955	0.000	7.260	Pass
8015	MN,RT,L&G,MTN12S,MP	Landys & Gyr	VMW65E	125	4,879	75	80	80	0.175	99.872	0.000	4.830	Pass
8016	MN,RT,SCHLUM,S12S,MP	Schlumberger	S12S	125	6,302	75	80	80	0.271	99.858	0.000	4.830	Pass
8018	MN,RT,ABB,D4SSU,MP	ABB Power	J4S	125	4,587	75	80	80	0.311	99.836	0.000	4.830	Pass
8019	MN,RT,ABB,D5SSU,MP	ABB Power	J5S	125	17	4	6	6	0.294	99.763	0.000	10.880	Pass
8561	MN,RT,LANDIS&GYR,MQS	General Electric	VMW65E	65	322	20	23	23	0.163	99.970	0.000	6.180	Pass
8729	MN,RT,G,VMW65E,BA,FM6S	General Electric	VMW65E	65	3	3	5	3	0.197	99.910	0.000	7.590	Pass
8731	MN,RT,S,SL5S,BW,FM14	Schlumberger	SL5S	145	67	7	9	9	0.233	99.487	0.000	8.400	Pass
8734	MN,RT,D,MSE,AF,FM2S	Landys & Gyr	V65S	25	125	10	12	12	0.215	99.909	0.000	7.260	Pass
8735	MN,RT,D,MS2SE,AF,FM2S	Landys & Gyr	SL5S	25	30	5	7	7	0.146	99.977	0.000	9.800	Pass
8743	MN,RT,S,J6ES,AF,FM2S	Schlumberger	S5S	25	79	7	9	9	0.257	99.975	0.000	8.400	Pass
8745	MN,RT,W,A1D,TR,FM3S	ABB Power	A1D	35	88	7	9	9	0.063	99.975	0.000	8.400	Pass
8747	MN,RT,W,A1D,TE,FM16S	ABB Power	A1D	165	11,824	100	105	105	0.057	99.998	0.000	4.670	Pass
8748	MN,RT,W,A1D,TX,FM12S	ABB Power	A1D	125	820	35	40	40	0.045	99.967	0.000	5.580	Pass
8753	MN,RT,W,A1R,KZ,FM9S	ABB Power	A1R	95	38	5	7	7	0.039	99.994	0.000	9.800	Pass
8756	MN,RT,W,A1D,RJ,FM4S	ABB Power	A1D	45	568	35	40	40	0.067	99.979	0.000	5.580	Pass
8763	MN,RT,S,S2S,MP,FM12S	Schlumberger	S2S	125	442	25	29	29	0.294	99.871	0.000	5.980	Pass
8773	MN,RT,W,A1R+,Y8,FM35S	ABB Power	A1R+	355	66	7	9	9	0.041	99.988	0.000	8.400	Pass
8779	MN,RT,G,V65S,BW,FM14S	General Electric	V65S	145	37	5	7	7	0.238	99.804	0.000	9.800	Pass
8785	MN,RT,W,A1R-AL,ON,FM5S	ABB Power	A1R-AL	55	3	3	5	3	0.030	99.980	0.000	7.590	Pass
8787	MN,RT,W,A1T+,Y1,FM16S	ABB Power	A1T+	165	83	10	12	12	0.115	99.937	0.000	7.260	Pass
8834	MN,RT,E,A3R-AL,BA,X8,FM6/96S	Elster	A3R-AL	65	661	35	40	40	0.512	99.915	0.001	5.580	Pass
8837	MN,RT,W,A1R+,BA,FM6S	ABB Power	A1R+	65	150	10	12	12	0.033	99.964	0.000	7.260	Pass
8849	MN,RT,D,AL,NX,FM2S	Landys & Gyr	AL	25	63,620	150	156	156	0.118	99.984	0.000	4.420	Pass
8850	MN,RT,D,AL,FX,FM12S	Landys & Gyr	C1S	125	20,652	100	105	105	0.085	99.910	0.000	4.670	Pass
8857	MN,RT,D,AL,ALF,NY,FM2S	Landys & Gyr	AL(F)	25	1,532	50	54	54	0.095	99.991	0.000	5.210	Pass
8868	MN,RT,D,AL,ALF,TR,FM3S	Landys & Gyr	AL(F)	35	39	5	7	7	0.151	99.954	0.000	9.800	Pass
8871	MN,RT,D,AL,ZS,FM1S	Landys & Gyr	C1S	15	284	20	23	23	0.130	99.994	0.000	6.180	Pass
8899	MN,RT,I,S,C1S,C1SRC,C1SRC,2B,FM1S	Itron	C1S(C,RC)	15	2,356	50	54	54	0.110	99.970	0.000	5.210	Pass
8901	MN,RT,E,W,A1T+,A1TL+,NX,FM2S	Elster	A1T+,A1TL+	25	10,868	100	105	105	0.117	99.984	0.000	4.670	Pass
8902	MN,RT,E,A3R-A3RL-A3T-,A3TL-,NX,FM2S	Elster	3R(L),A3T(-)	25	3,706	75	80	80	0.041	100.000	0.000	4.830	Pass
8903	MN,RT,E,W,AB1,AC,FM2	Elster	AB1	25	310,023	200	209	209	0.290	99.990	0.000	4.390	Pass
8904	MN,RT,I,S,C1S,C1SRC,C1SRC,1N,FM2S	Itron	C1S(C,RC)	25	494,972	200	209	209	0.112	99.951	0.000	4.390	Pass
8905	MN,RT,S,J4S,AC,IF,FM2S	Schlumberger	S2S	25	21,402	100	105	105	0.308	99.912	0.000	4.670	Pass
8906	MN,RT,E,W,A1T+,NY,TU,FM2S	Elster	A1T+	25	2,246	50	54	54	0.117	99.974	0.000	5.210	Pass
8907	MN,RT,E,A3RL-A3R-A3T-,A3TL-,NY,FM2S	Elster	3R(L),A3T(-)	25	356	20	23	23	0.068	99.983	0.000	6.180	Pass
8908	MN,RT,I,C1S,C1SRC,2J,FM2S	Itron	C15C	25	4,440	75	80	80	0.106	99.943	0.000	4.830	Pass
8909	MN,RT,W,A1T+,A1TL+,TR,FM3S	ABB Power	A1T+,A1TL+	35	145	10	12	12	0.100	99.983	0.000	7.260	Pass

8910	MN,RT,E,A3R,A3T,A3T,TR,FM3S	Elster	3R (L), A3T (L)	3S	63	7	9	9	0.037	99,977	0.000	8.400	Pass
8911	MN,RT,I,C1S,C1SC,2F,FM3S	Itron	C1SC	3S	1,464	50	54	54	0.121	99,897	0.000	5.210	Pass
8912	MN,RT,E,W,A1T+,A1T+,RJ,FM4S	Elster	A1T+, A1T+	4S	3,158	50	54	54	0.200	99,984	0.000	5.210	Pass
8914	MN,RT,I,C1SRC,C1SC,2G,FM4S	Itron	IS, C1SC, C1S	4S	1,985	50	54	54	0.124	99,903	0.000	5.210	Pass
8918	MN,RT,I,S,CN1S,CN1SC,CN1SRC,2H,FM12S	Itron	S,CN1S,CN1S	12S	54,745	150	156	156	0.144	99,938	0.000	4.420	Pass
8920	MN,RT,D,MT14S,BW,CL,FM14S	Landys & Gyr	VMM65E	14S	566	35	40	40	0.310	99,830	0.000	5.580	Pass
8923	MN,RT,E,A3R,A3R,A3T,A3T,TE,FM16S	Elster	3R (L), A3T (L)	16S	6,516	75	80	80	0.041	99,982	0.000	4.830	Pass
8926	MN,RT,W,A1R,A1R,AL,X8,FM36S	ABB Power	A1R, A1R-AL	36S	11	3	5	5	0.104	99,974	0.000	7.590	Pass
8927	MN,RT,E,W,A1R+,A1R+,X8,FM36S	Elster	A1R+, A1R+	36S	4,893	75	80	80	0.057	99,974	0.000	4.830	Pass
8928	MN,RT,E,A3R,A3R-A,A3RALNCO,X8,FM36S	Elster	A3R (ALNCO)	36S	1,088	35	40	40	0.321	99,916	0.000	5.580	Pass
8935	MN,RT,E,A1R-A,A1T+,Y1,FM16S	Elster	A1R-A, A1T+	16S	190	15	18	18	0.075	99,962	0.000	6.550	Pass
8936	MN,RT,E,A3R,A3R,A3T,V0,FM12S	Elster	A3R (L), A3T	12S	20	4	6	6	0.024	99,978	0.000	10.880	Pass
8937	MN,RT,E,A3R,A3T,A3T,A3R,AL,A3R-A,RJ,FM4S	Elster	BR (AL), A3T	4S	777	35	40	40	0.053	99,975	0.000	5.580	Pass
8938	MN,RT,E,A3R-AL,A3R,A3R-A,ON,Y8,FM5/35S	Elster	A3R (AL)	5S	73	7	9	9	0.061	99,971	0.000	8.400	Pass
8939	MN,RT,E,A3T,A3T,A3R,AL,N5,FM1S	Elster	A3T (L), A3R (L)	1S	142	10	12	12	0.039	99,998	0.000	7.260	Pass
8940	MN,RT,W,A1T+,A1R-A,V0,FM12S	ABB Power	A1T+, A1R-A	12S	32	5	7	7	0.074	99,960	0.000	9.800	Pass
8942	MN,RT,E,W,A1T+,N5,FM1S	Elster	A1T+, A1R-A	1S	10	3	5	5	0.044	99,946	0.000	7.590	Pass
8943	MN,RT,E,W,A1R-A,NY,FM2S	Elster	A1R-A	2S	6	3	5	5	0.095	99,946	0.000	7.590	Pass
8944	MN,RT,E,W,A1D+,TE,FM16S	Elster	A1D+	16S	297	20	23	23	0.051	99,846	0.000	6.180	Pass
8945	MN,RT,E,W,A1R+,KZ,FM9S	Elster	A1R+	9S	19,779	100	105	105	0.115	99,971	0.000	4.670	Pass
8946	MN,RT,E,W,A1D+,TE,FM16S	Elster	A1D+	16S	20,888	100	105	105	0.316	99,928	0.000	4.670	Pass
8947	MN,RT,E,W,A1D+,TX,FM12S	Elster	A1D+	12S	12,373	100	105	105	0.052	99,948	0.000	4.670	Pass
8948	MN,RT,E,W,A1T+,TX,FM12S	Elster	A1T+	12S	2,901	50	54	54	0.152	99,998	0.000	5.210	Pass
8949	MN,RT,W,A1R-A,A1R-AL,KZ,FM6S	ABB Power	A1R-A, A1R-AL	9S	32	5	7	7	0.020	99,971	0.000	9.800	Pass
8950	MN,RT,W,A1R,A1R-A,AL,BA,FM6S	ABB Power	R, A1R-A, A1R	6S	17	4	6	6	0.042	99,978	0.000	10.880	Pass
8951	MN,RT,L&G,MS,AC	Landys & Gyr	MS	2S	96,508	150	156	156	0.594	99,999	0.060	4.420	Pass
8952	MN,RT,GE,I70S,AC	General Electric	I70S	2S	142,944	150	156	156	0.185	99,910	0.000	4.420	Pass
8953	MN,RT,S,SSS,QM,CL,BW,FM14S	Schlumberger	SSS	14S	114	10	12	12	0.387	99,544	0.000	7.260	Pass
8958	MN,RT,E,W,A3R,A3R-A,A3R-AL,A3R-ALNCO,A3RALNCO,A	Elster	A3R (ALNCO)	9S	7,767	75	80	80	0.185	99,994	0.000	4.830	Pass
8959	MN,RT,D,AL,ALF,RJ,FM4S	Landys & Gyr	AL (F)	4S	225	15	18	18	0.062	99,974	0.000	6.550	Pass
8960	MN,RT,E,A3R,A3R-A,A3R-AL,A3RL,A3T,A3T,AL,A3T,AL	Elster	BR (AL), A3T	16S	1,193	35	40	40	0.040	99,999	0.000	5.580	Pass
8961	MN,RT,E,A3T,A3T,A3R,TX,FM12S	Elster	A3T (L), A3R	12S	509	35	40	40	0.166	99,967	0.000	5.580	Pass
Totals					1,476,871	3,728	4,024	4,020					

**Xcel Energy - State of North Dakota
 Natural Gas Meter Testing
 Summary of 2017 Results**

**Case No. PU-18-_____
 Annual Compliance - March 19, 2018
 Attachment C - Page 1 of 1**

Meter Test Group

Residential (capacity < 400 cubic ft/hr)	655
Small C&I (capacity 400 - 999 cubic ft/hr)	71
Large C&I (capacity > 999 cubic ft/hr)	<u>164</u>
Natural Gas Meter Totals	890

Meters		Acceptable ¹		Slow ²		Fast ³	
#		#	%	#	%	#	%
	655	<u>626</u>	95.6%	9	1.4%	20	3.1%
	71	<u>66</u>	93.0%	3	4.2%	2	2.8%
	<u>164</u>	<u>148</u>	<u>90.2%</u>	<u>4</u>	<u>2.4%</u>	<u>12</u>	<u>7.3%</u>
	890	840	94.4%	16	1.8%	34	3.8%

Note: Meters are tested at two flow rates. The accuracy is the average of the two tests.

- ¹ Meters that test within acceptable tolerance have an average error within plus or minus 2% of accurate
- ² Meters that test slow (under measuring) have an average error lower than -2% of accurate
- ³ Meters that test fast (over measuring) have an average error higher than +2% of accurate