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March 31, 2021

–Via Electronic and U.S. Mail–

Steven M. Kahl, Executive Director
North Dakota Public Service Commission
Department 408
600 East Boulevard Avenue
Bismarck, ND 58505-0480

RE: 2020 ELECTRIC AND NATURAL GAS METER TESTING RESULTS

Dear Mr. Kahl:

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 2020 testing of the Company's North Dakota electric and natural gas meters.

Electric - A summary of the Company's 2020 electric meter testing results is provided in Attachment A to this filing. As a result of a 2015 Commission Staff review of our meter testing tariff, it was recommended the Company also 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.

Natural Gas - Attachment C provides a summary of our 2020 natural gas meter testing results.

Please contact me if you have any questions about this report.

Sincerely,

DAVID H. SEDERQUIST
SR. REGULATORY CONSULTANT

Enclosures

1 **PU-21-133** Filed: 3/31/2021 Pages: 5
2020 North Dakota Electric and Natural Gas Meter Test Report

Northern States Power Company
David Sederquist

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**Xcel Energy - State of North Dakota
Electric Meter Testing
Summary of 2020 Results**

Meters	Acceptable ¹		Slow		Fast		No Register	
	#	%	#	%	#	%	#	%
Random Sample Tests								
Self-contained Single & Polyphase	150	100.0%	0	0.0%	0	0.0%	0	0.0%
Transformer-rated Single & Polyphase	45	100.0%	0	0.0%	0	0.0%	0	0.0%
Total Random Tests	195	100.0%	0	0.0%	0	0.0%	0	0.0%
Periodic Tests								
Transformer-rated Polyphase (>600V) ²	31	100.0%	0	0.0%	0	0.0%	0	0.0%
Transformer-rated Polyphase (>1 MW) ³	43	100.0%	0	0.0%	0	0.0%	0	0.0%
Total Periodic Tests	74	100.0%	0	0.0%	0	0.0%	0	0.0%
2020 Electric Meter Tests:	269	100.0%	0	0.0%	0	0.0%	0	0.0%

¹ Meters that test within acceptable tolerance (i.e., have an average error within +/- 2 percent of accurate)

² Meters in substations on primary services above 600 volts

³ Meters with demands greater than 1 MW during the previous calendar year

See Section 3.1 *Metering and Testing* in Xcel Energy's North Dakota Electric Rate Book (NDPSC No. 2) for meter testing criterium and process.

Lots	Description (OPCO, Random Test, Manuf, Model, Test Code)	Manufacturer	Model	Form	Lot Size	Sample size ANSI_ASQ_Z1_9 Inspection Lev II	Meters Requested	# of Meters Tested	Full Load Sigma	Full Load Bar-x	Full Load Est. % Defect	Max. Allowable % Defect	Full Load Pass/Fail
573	MN,RT,ABB,D5S,AC,SN>79200000	ABB Power	D5S	2S	1,587	50	54	51	0.295	99.792	0.000	5.21	Pass
882	MN,RT,SCHLUM,J5S,IF	Schlumberger	J5S	2S	72,416	150	156	150	0.236	99.935	0.000	4.42	Pass
1079	MN,RT,ABB,AB1,AI	ABB Power	AB1	1S	1,580	50	57	50	0.197	100.160	0.000	5.21	Pass
8001	MN,RT,SCHLUM,J4ES,AF	Schlumberger	J4ES	2S	939	35	40	39	0.517	100.115	0.002	5.58	Pass
8004	MN,RT,ABB,ABS-5U,MP	ABB Power	ABB-5U	12S	39,399	150	159	150	0.252	100.133	0.000	4.42	Pass
8006	MN,RT,ABB,AB1,AG	ABB Power	AB1	4S	91	10	12	10	0.371	100.023	0.000	7.26	Pass
8015	MN,RT,L&G,MTN12S,MP	Landys & Gyr	VMW65E	12S	4,218	75	80	77	0.235	99.895	0.000	4.83	Pass
8018	MN,RT,ABB,D4S5U,MP	ABB Power	D4S5U	12S	3,913	75	80	75	0.267	100.166	0.000	4.83	Pass
8019	MN,RT,ABB,D5S5U,MP	ABB Power	D5S5U	12S	3	3	3	3	0.351	99.803	0.000	7.59	Pass
8561	MN,RT,LANDIS&GYR,MGS	Landys & Gyr	VMW65E	3S	239	15	18	15	0.166	99.996	0.000	6.55	Pass
8743	MN,RT,S,J5ES,AF,FM2S	Schlumberger	J5ES	2S	51	7	9	9	0.237	99.938	0.000	8.4	Pass
8745	MN,RT,WA1D,TR,FM3S	ABB Power	A1D	3S	82	7	9	9	0.063	100.044	0.000	8.4	Pass
8747	MN,RT,WA1D,TE,FM16S	ABB Power	A1D	16S	10,809	100	108	101	0.054	99.996	0.000	4.67	Pass
8748	MN,RT,WA1D,TX,FM12S	ABB Power	A1D	12S	736	35	40	35	0.055	99.977	0.000	5.58	Pass
8756	MN,RT,WA1D,RJ,FM4S	ABB Power	A1D	4S	522	35	40	35	0.077	100.040	0.000	5.58	Pass
8773	MN,RT,WA1R+,Y8,FM35S	ABB Power	A1R+	35S	47	5	7	5	0.014	100.004	0.000	9.8	Pass
8779	MN,RT,G,65S,BW,FM14S	General Electric	V65S	14S	19	4	6	4	0.131	99.790	0.000	10.88	Pass
8837	MN,RT,WA1R+,BA,FM6S	ABB Power	A1R+	6S	136	10	12	10	0.069	99.951	0.000	7.26	Pass
8849	MN,RT,D,AL,NX,FM2S	Landys & Gyr	AL	2S	134,723	150	156	150	0.114	100.012	0.000	4.42	Pass
8850	MN,RT,D,AL,TX,FM12S	Landys & Gyr	AL	12S	44,826	150	156	153	0.085	100.061	0.000	4.42	Pass
8857	MN,RT,D,AL,LF,NY,FM2S	Landys & Gyr	AL (F)	2S	2,744	50	54	52	0.073	99.979	0.000	5.21	Pass
8868	MN,RT,D,AL,LF,TR,FM3S	Landys & Gyr	AL (F)	3S	49	5	7	6	0.058	99.953	0.000	9.8	Pass
8871	MN,RT,D,AL,ZS,FM1S	Landys & Gyr	AL	1S	636	35	40	36	0.068	100.044	0.000	5.58	Pass
8899	MN,RT,I,S,C1S,C1S,C1S,RC,2B,FM1S	Itron	C1S (C, RC)	1S	2,004	50	54	51	0.152	99.985	0.000	5.21	Pass
8901	MN,RT,E,W,A1T+,A1TL+,NX,FM2S	Elster	A1T+, A1TL+	2S	9,841	75	80	78	0.149	99.941	0.000	4.83	Pass
8902	MN,RT,E,A3R,A3R,A3T,A3TL,NX,FM2S	Elster	A3R (L), A3T (L)	2S	6,345	75	80	76	0.033	99.996	0.000	4.83	Pass
8903	MN,RT,E,W,AB1,AC,FM2	Elster	AB1	2S	278,702	200	209	202	0.294	99.965	0.000	4.39	Pass
8904	MN,RT,I,S,C1S,C1S,C1S,RC,2F,FM2S	Itron	C1S (C, RC)	2S	486,517	200	209	200	0.116	100.047	0.000	4.39	Pass
8905	MN,RT,S,J4S,AC,IF,FM2S	Schlumberger	J4S	2S	19,981	100	105	102	0.236	99.888	0.000	4.67	Pass
8906	MN,RT,E,W,A1T+,NY,TU,FM2S	Elster	A1T+	2S	2,126	50	54	51	0.111	100.017	0.000	5.21	Pass
8907	MN,RT,E,A3R,A3R,A3T,A3TL,NY,FM2S	Elster	A3R (L), A3T (L)	2S	648	35	40	36	0.046	99.998	0.000	5.58	Pass
8908	MN,RT,I,C1S,C1S,C1S,2J,FM2S	Itron	C1S	2S	4,305	75	80	76	0.103	100.064	0.000	4.83	Pass
8909	MN,RT,WA1T+,A1TL+,TR,FM3S	ABB Power	A1T+, A1TL+	3S	130	10	12	10	0.078	99.990	0.000	7.26	Pass
8910	MN,RT,E,A3R,A3R,A3T,A3TL,TR,FM3S	Elster	A3R (L), A3T (L)	3S	61	7	9	7	0.065	100.016	0.000	8.4	Pass
8911	MN,RT,I,C1S,C1S,2F,FM3S	Itron	C1S	3S	1,348	50	54	50	0.154	100.077	0.000	5.21	Pass
8912	MN,RT,E,W,A1T+,A1TL+,RJ,FM4S	Elster	A1T+, A1TL+	4S	2,942	50	54	51	0.167	100.029	0.000	5.21	Pass
8914	MN,RT,I,C1S,RC,C1S,2G,FM4S	Itron	C1S, C1S, RC	4S	1,894	50	54	50	0.124	100.100	0.000	5.21	Pass
8918	MN,RT,I,S,CN1S,CN1S,RC,2H,FM12S	Itron	CN1S, CN1S, RC	12S	54,150	150	156	151	0.13	99.924	0.000	4.42	Pass
8920	MN,RT,D,MT14S,BW,CL,FM14S	Landys & Gyr	VMW65E	14S	431	25	29	26	0.54	100.148	0.003	5.98	Pass
8923	MN,RT,E,A3R,A3R,A3T,A3TL,TE,FM16S	Elster	A3R (L), A3T (L)	16S	9,924	75	80	75	0.033	99.989	0.000	4.83	Pass
8926	MN,RT,WA1R,A1R,A1L,X8,FM36S	ABB Power	A1R, A1R-AL	36S	10	3	5	3	0.024	100.017	0.000	7.59	Pass
8927	MN,RT,E,W,A1R+,A1RL+,X8,FM36S	Elster	A1R+, A1RL+	36S	4,375	75	80	76	0.054	99.970	0.000	4.83	Pass
8936	MN,RT,E,A3R,A3R,A3T,V0,FM12S	Elster	A3R (L), A3T	12S	34	5	7	5	0.04	100.012	0.000	9.8	Pass
	MN,RT,E,A3R,A3T,A3TL,A3R,A3R-AL,A3R-												
8937	A,RJ,FM4S	Elster	A3R (AL), A3T (L)	4S	1,088	35	40	36	0.054	100.008	0.000	5.58	Pass
8938	MN,RT,E,A3R-AL,A3R,A3R-A,ON,Y8,FM5/35S	Elster	A3R (AL)	5S	82	7	9	8	0.048	99.946	0.000	8.4	Pass
8939	MN,RT,E,A3T,A3TL,A3RL,N5,FM1S	Elster	A3T (L), A3RL	1S	139	10	12	10	0.017	99.982	0.000	7.26	Pass
8940	MN,RT,WA1T+,A1R-A,V0,FM12S	ABB Power	A1T+, A1R-A	12S	22	4	6	4	0.057	99.942	0.000	10.88	Pass
8942	MN,RT,E,W,A1T+,N5,FM1S	Elster	A1T+, A1R-A	1S	9	3	5	4	0.099	100.010	0.000	7.59	Pass
8943	MN,RT,E,W,A1R-A,NY,FM2S	Elster	A1R-A	2S	4	3	4	3	0.036	99.913	0.000	7.59	Pass
8945	MN,RT,E,W,A1R+,KZ,FM9S	Elster	A1R+	9S	18,318	100	105	100	0.113	99.981	0.000	4.67	Pass
8950	MN,RT,WA1R,A1R-A,A1R-AL,BA,FM6S	ABB Power	A1R-A1R-A,A1R-AL	6S	8	3	5	4	0.028	99.980	0.000	7.59	Pass
8951	MN,RT,L&G,MS,AC	Landys & Gyr	MS	2S	89,549	150	157	150	0.35	99.928	0.000	4.42	Pass
8952	MN,RT,GE,I70S,AC	General Electric	I70S	2S	131,261	150	156	150	0.189	99.922	0.000	4.42	Pass

Lots	Description (OPCO, Random Test, Manuf, Model, Test Code)	Manufacturer	Model	Form	Lot Size	Sample size ANSI_ASQ_Z1_9 Inspection Level II	Meters Requested	# of Meters Tested	Full Load Sigma	Full Load Bar-x	Full Load Est. % Defect	Max. Allowable % Defect	Full Load Pass/Fail
8959	MN,RT,D,AL,ALF,RJ,FM4S	Landys & Gyr	AL (F)	4S	344	20	23	20	0.237	99.944	0.000	6.18	Pass
8960	MN,RT,E,A3R,A3R-A,A3R-AL,A3RL,A3T,A3TL,Y1,FM16S	Elster	A3R (AL), A3T (L)	16S	1,690	50	54	50	0.135	99.964	0.000	5.21	Pass
8961	MN,RT,E,A3T,A3TL,A3R,TX,FM12S	Elster	A3T (L), A3R	12S	750	35	40	36	0.035	99.982	0.000	5.58	Pass
8965	MN,RT,D,RXRE-SD,NX,FM2S	Landys & Gyr	RXRE-SD	2S	10,558	100	105	102	0.062	100.024	0.000	4.67	Pass
8966	MN,RT,D,RXRE-SD,TX,FM12S	Landys & Gyr	RXRE-SD	12S	510	35	40	35	0.024	100.028	0.000	5.58	Pass
8967	MN,RT,S,S5S,SL5S,QM,CL,BW,FM14S	Schlumberger	S5S, SL5S	14S	114	10	12	11	0.308	100.555	0.000	7.26	Pass
8968	MN,RT,E,W,A3R,A3R-A,A3R-AL,A3R-ALNCQ,A3RALNCQ,A3CSPOLY,A3RL,KZ,FM9S	Elster	A3R (ALNCQ), A3CSPOLY	9S	10,697	100	105	100	0.1	100.009	0.000	4.67	Pass
8969	MN,RT,SCHLUMBERGER,SL12S,S12S,S2S,FM12S	Schlumberger	SL12S, S12S, S2S	12S	8,567	75	80	76	0.24	100.274	0.000	4.83	Pass
8970	MN,RT,E,W,A1T+,A1D+,TX,FM12S	Elster	A1D+, A1T+	12S	14,748	100	105	100	0.058	99.948	0.000	4.67	Pass
8971	MN,RT,D,MSE,MS2SE,AF,FM2S	Landys & Gyr	MSE, MS2SE	2S	92	10	12	11	0.182	100.133	0.000	7.26	Pass
8972	MN,RT,E,W,A1T+,A1D+,TE,FM16S	Elster	A1D+, A1T+	16S	19,819	100	111	101	0.105	99.972	0.000	4.67	Pass
8973	MN,RT,W,A1R,A1R-A,A1R-AL,KZ,FM9S	Elster	A1R (AL)	9S	49	5	7	5	0.052	100.038	0.000	9.8	Pass
8974	MN,RT,E,W,A1T+,A1R-A,Y1,FM16S	Elster	A1T+, A1R-A	16S	264	15	18	15	0.154	99.988	0.000	6.55	Pass
8975	MN,RT,E,A3R-AL,A3R,A3R-A,A3RALNCQ,BA,X8,FM6/36S	Elster	A3R (ALNCQ)	6S, 36S	1,948	50	54	50	0.049	99.968	0.000	5.21	Pass

Totals					1,516,163	3,736	4,019	3,782					
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**Xcel Energy - State of North Dakota
Natural Gas Meter Testing
Summary of 2020 Results**

Meter Test Group	Meters	Acceptable¹		Slow		Fast	
	#	#	%	#	%	#	%
Residential (capacity < 400 cubic ft/hr)	463	433	93.5%	9	1.9%	21	4.5%
Small C&I (capacity 400 - 999 cubic ft/hr)	63	52	82.5%	6	9.5%	5	7.9%
Large C&I (capacity > 999 cubic ft/hr)	<u>164</u>	<u>153</u>	<u>93.3%</u>	<u>1</u>	<u>0.6%</u>	<u>10</u>	<u>6.1%</u>
Natural Gas Meter Totals	690	638	92.5%	16	2.3%	36	5.2%

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 +/- 2 percent