2302 Great Northern Drive
Fargo, ND 54802

March 28, 2023

– VIA ELECTRONIC MAIL AND U.S. MAIL –

Steven M. Kahl, Executive Director
North Dakota Public Service Commission, Dept. 408
State Capitol, 600 East Boulevard
Bismarck, ND 58504-0480

RE: 2022 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 2022 testing of the Company's North Dakota electric and natural gas meters.

A summary of the Company's 2022 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.

Attachment C provides a summary of our 2022 natural gas meter testing results.

Please contact me at alex.j.nisbet@xcelenergy.com if you have any questions about this report.

Sincerely,

/S/

ALEX NISBET
REGULATORY POLICY SPECIALIST

Enclosures

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Summary Report of 2022 Meter Testing Results
Northern States Power Company
Alex Nisbet, Reg. Policy Specialist

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Summary Report of 2022 Meter Testing Results
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Xcel Energy - State of North Dakota
Electric Meter Testing
Summary of 2022 Results

	Meters	Acceptable[1]		Slow		Fast		No Register	
Random Sample Tests	#	#	%	#	%	#	%	#	%
Self-contained Single & Polyphase	143	143	100.0%	0	0.0%	0	0.0%	0	0.0%
Transformer-rated Single & Polyphase	39	39	100.0%	0	0.0%	0	0.0%	0	0.0%
Total Random Tests	182	182	100.0%	0	0.0%	0	0.0%	0	0.0%
Periodic Tests	#	#	%	#	%	#	%	#	%
Transformer-rated Polyphase (>600V)[2]	36	36	100.0%	0	0.0%	0	0.0%	0	0.0%
Transformer-rated Polyphase (>1 MW)[3]	35	35	100.0%	0	0.0%	0	0.0%	0	0.0%
Total Periodic Tests	71	71	100.0%	0	0.0%	0	0.0%	0	0.0%
2022 Electric Meter Tests:	253	253	100.0%	0	0.0%	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 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 Level II)	New Buffer Sample Size Values Showing Requested Meters	Meters Requested	# of Meters Tested	Full Load Sigma	Bar-X	Full Load Bar-x	Full Load Estimated Percent Defect	Maximum Allowable Percent Defect	Full Load Pass/Fail
573	MN,RT,ABB,D5S,AC,SN>79200000	ABB Power	D5S	2S	1445	50	54	54	50	0.329	-0.235	99.765	0.000	5.21	Pass
882	MN,RT,SCHLUM,J5S,IF	Schlumberger	J5S	2S	69671	150	156	159	150	0.276	-0.037	99.963	0.000	4.42	Pass
1079	MN,RT,ABB,AB1,AI	ABB Power	AB1	1S	1199	35	40	52	36	0.356	0.104	100.104	0.000	5.58	Pass
8001	MN,RT,SCHLUM,J4ES,AF	Schlumberger	J4ES	2S	815	35	40	40	37	0.375	0.16	100.16	0.000	5.58	Pass
8004	MN,RT,ABB,ABS-5U,MP	ABB Power	ABS-5U	12S	37608	150	156	169	154	0.504	0.138	100.138	0.008	4.42	Pass
8006	MN,RT,ABB,AB1,AG	ABB Power	AB1	4S	69	7	9	9	7	0.382	-0.304	99.696	0.000	8.4	Pass
8015	MN,RT,L&G,MTN12S,MP	Landys & Gyr	VMW65E	12S	3852	75	80	80	77	0.214	-0.14	99.86	0.000	4.83	Pass
8018	MN,RT,ABB,D4S5U,MP	ABB Power	D4S5U	12S	3518	75	80	80	76	0.316	0.166	100.166	0.000	4.83	Pass
8561	MN,RT,LANDIS&GYR,MQS	Landys & Gyr	VMW65E	3S	203	15	18	18	15	0.242	-0.062	99.938	0.000	6.55	Pass
8743	MN,RT,S,J5ES,AF,FM2S	Schlumberger	J5ES	2S	35	5	7	7	6	0.4	-0.252	99.748	0.000	9.8	Pass
8745	MN,RT,W,A1D,TR,FM3S	ABB Power	A1D	3S	78	7	9	9	9	0.135	-0.014	99.986	0.000	8.4	Pass
8747	MN,RT,W,A1D,TE,FM16S	ABB Power	A1D	16S	10360	100	105	118	103	0.064	-0.008	99.992	0.000	4.67	Pass
8748	MN,RT,W,A1D,TX,FM12S	ABB Power	A1D	12S	711	35	40	40	35	0.05	-0.032	99.968	0.000	5.58	Pass
8756	MN,RT,W,A1D,RJ,FM4S	ABB Power	A1D	4S	499	25	29	29	26	0.112	0.04	100.04	0.000	5.98	Pass
8773	MN,RT,W,A1R+,Y8,FM35S	ABB Power	A1R+	35S	34	5	7	7	6	0.02	-0.025	99.975	0.000	9.8	Pass
8779	MN,RT,G,V65S,BW,FM14S	General Electric	V65S	14S	12	3	5	5	3	0.232	-0.243	99.757	0.000	7.59	Pass
8837	MN,RT,W,A1R+,BA,FM6S	ABB Power	A1R+	6S	127	10	12	12	10	0.071	-0.051	99.949	0.000	7.26	Pass
8849	MN,RT,D,AL,NX,FM2S	Landys & Gyr	AL	2S	179198	200	209	209	202	0.123	0.038	100.038	0.000	4.39	Pass
8850	MN,RT,D,AL,TX,FM12S	Landys & Gyr	AL	12S	68030	150	156	156	152	0.082	0.086	100.086	0.000	4.42	Pass
8857	MN,RT,D,AL,ALF,NY,FM2S	Landys & Gyr	AL (F)	2S	3482	75	80	80	77	0.087	0.001	100.001	0.000	4.83	Pass
8868	MN,RT,D,AL,ALF,TR,FM3S	Landys & Gyr	AL (F)	3S	54	7	9	9	8	0.052	0.034	100.034	0.000	8.4	Pass
8871	MN,RT,D,AL,ZS,FM1S	Landys & Gyr	AL	1S	776	35	40	45	36	0.084	0.045	100.045	0.000	5.58	Pass
8899	MN,RT,I,S,C1S,CISC,C1SRC,2B,FM1S	Itron	C1S (C, RC)	1S	1826	50	54	56	50	0.109	-0.033	99.967	0.000	5.21	Pass
8901	MN,RT,E,W,A1T+,A1TL+,NX,FM2S	Elster	A1T+, A1TL+	2S	9179	75	80	80	75	0.131	-0.058	99.942	0.000	4.83	Pass
8902	MN,RT,E,A3R,A3RL,A3T,A3TL,NX,FM2S	Elster	A3R (L), A3T (L)	2S	8146	75	80	80	76	0.03	-0.016	99.984	0.000	4.83	Pass
8903	MN,RT,E,W,AB1,AC,FM2	Elster	AB1	2S	264320	200	209	209	201	0.358	-0.061	99.939	0.000	4.39	Pass
8904	MN,RT,I,S,C1S,C1SC,C1SRC,1N,FM2S	Itron	C1S (C, RC)	2S	480675	200	209	214	202	0.126	0.062	100.062	0.000	4.39	Pass
8905	MN,RT,S,J4S,AC,IF,FM2S	Schlumberger	J4S	2S	19032	100	105	105	100	0.28	-0.12	99.88	0.000	4.67	Pass
8906	MN,RT,E,W,A1T+,NY,TU,FM2S	Elster	A1T+	2S	2083	50	54	54	50	0.111	-0.008	99.992	0.000	5.21	Pass
8907	MN,RT,E,A3RL,A3R,A3T,A3TL,NY,FM2S	Elster	A3R (L), A3T (L)	2S	780	35	40	40	40	0.046	-0.029	99.971	0.000	5.58	Pass
8908	MN,RT,I,C1S,C1SC,2J,FM2S	Itron	C1SC	2S	4286	75	80	80	79	0.116	0.046	100.046	0.000	4.83	Pass
8909	MN,RT,W,A1T+,A1TL+,TR,FM3S	ABB Power	A1T+, A1TL+	3S	123	10	12	12	10	0.124	0.015	100.015	0.000	7.26	Pass
8910	MN,RT,E,A3RL,A3R,A3T,A3TL,TR,FM3S	Elster	A3R (L), A3T (L)	3S	58	7	9	9	8	0.059	-0.02	99.98	0.000	8.4	Pass
8911	MN,RT,I,C1S,C1SC,2F,FM3S	Itron	C1SC	3S	1265	50	54	54	53	0.143	0.043	100.043	0.000	5.21	Pass
8912	MN,RT,E,W,A1T+,A1TL+,RJ,FM4S	Elster	A1T+, A1TL+	4S	2821	50	54	58	51	0.102	-0.03	99.97	0.000	5.21	Pass
8914	MN,RT,I,C1SRC,C1SC,2G,FM4S	Itron	C1SC, C1SRC	4S	1841	50	54	54	52	0.121	0.027	100.027	0.000	5.21	Pass
8918	MN,RT,I,S,CN1S,CN1SC,CN1SRC,2H,FM12S	Itron	CN1S, CN1SRC	12S	53725	150	156	160	150	0.148	-0.045	99.955	0.000	4.42	Pass
8920	MN,RT,D,MT14S,BW,CL,FM14S	Landys & Gyr	VMW65E	14S	360	20	23	26	21	0.254	0.25	100.25	0.000	6.18	Pass
8923	MN,RT,E,A3R,A3RL,A3T,A3TL,TE,FM16S	Elster	A3R (L), A3T (L)	16S	11807	100	105	115	101	0.031	-0.025	99.975	0.000	4.67	Pass
8926	MN,RT,W,A1R,A1R-AL,X8,FM36S	ABB Power	A1R, A1R-AL	36S	10	3	5	5	3	0.05	0.007	100.007	0.000	7.59	Pass
8927	MN,RT,E,W,A1R+,A1RL+,X8,FM36S	Elster	A1R+, A1RL+	36S	4162	75	80	83	75	0.127	-0.05	99.95	0.000	4.83	Pass
8936	MN,RT,E,A3R,A3RL,A3T,V0,FM12S	Elster	A3R (L), A3T	12S	55	7	9	9	7	0.046	-0.063	99.937	0.000	8.4	Pass
8937	MN,RT,E,A3R,A3T,A3TL,A3RL,A3R-AL,A3R-A,RJ,FM4S	Elster	A3R (AL), A3T (L)	4S	1242	50	54	54	50	0.061	-0.003	99.997	0.000	5.21	Pass
8938	MN,RT,E,A3R-AL,A3R,A3R-A,ON,Y8,FM5/35S	Elster	A3R (AL)	5S	83	7	9	15	7	0.03	-0.057	99.943	0.000	8.4	Pass
8939	MN,RT,E,A3T,A3TL,A3RL,N5,FM1S	Elster	A3T (L), A3RL	1S	132	10	12	12	10	0.022	-0.037	99.963	0.000	7.26	Pass
8940	MN,RT,W,A1T+,A1R-A,V0,FM12S	ABB Power	A1T+, A1R-A	12S	19	4	6	6	5	0.035	0.026	100.026	0.000	10.88	Pass
8942	MN,RT,E,W,A1T+,N5,FM1S	Elster	A1T+,A1R-A	1S	7	3	5	5	3	0.148	0.11	100.11	0.000	7.59	Pass
8943	MN,RT,E,W,A1R-A,NY,FM2S	Elster	A1R-A	2S	4	3	4	4	3	0.037	-0.11	99.89	0.000	7.59	Pass
8945	MN,RT,E,W,A1R+,KZ,FM9S	Elster	A1R+	9S	17555	100	105	105	101	0.109	-0.03	99.97	0.000	4.67	Pass
8950	MN,RT,W,A1R,A1R-A,A1R-AL,BA,FM6S	ABB Power	A1R,A1R-A,A1R-AL	6S	7	3	5	7	4	0.084	0.045	100.045	0.000	7.59	Pass
8951	MN,RT,L&G,MS,AC	Landys & Gyr	MS	2S	85584	150	156	159	150	0.249	0	100	0.000	4.42	Pass
8952	MN,RT,GE,I70S,AC	General Electric	I70S	2S	124931	150	156	156	151	0.153	-0.033	99.967	0.000	4.42	Pass
8959	MN,RT,D,AL,ALF,RJ,FM4S	Landys & Gyr	AL (F)	4S	417	25	29	29	28	0.141	0.058	100.058	0.000	5.98	Pass
8960	MN,RT,E,A3R,A3R-A,A3R-AL,A3RL,A3T,A3TL,Y1,FM16S	Elster	A3R (AL), A3T (L)	16S	1973	50	54	62	53	0.046	-0.23	99.77	0.000	5.21	Pass
8961	MN,RT,E,A3T,A3TL,A3R,TX,FM12S	Elster	A3T (L), A3R	12S	1810	50	54	54	53	0.032	-0.025	99.975	0.000	5.21	Pass
8965	MN,RT,D,RXRE-SD,NX,FM2S	Landys & Gyr	RXRE-SD	2S	15551	100	105	105	100	0.051	0.052	100.052	0.000	4.67	Pass
8966	MN,RT,D,RXRE-SD,TX,FM12S	Landys & Gyr	RXRE-SD	12S	927	35	40	40	37	0.04	0.036	100.036	0.000	5.58	Pass
8967	MN,RT,S,S5S,SL5S,QM,CL,BW,FM14S	Schlumberger	S5S, SL5S	14S	43	5	7	7	5	0.401	0.75	100.75	0.000	9.8	Pass
8968	MN,RT,E,W,A3R,A3R-A,A3R-AL,A3R-ALNCQ,A3RALNCQ,A3CSPOLY,A3RL, KZ, FM9S	Elster	A3R (ALNCQ), A3CSPOLY	9S	12208	100	105	115	101	0.049	-0.012	99.988	0.000	4.67	Pass
8969	MN,RT,SCHLUMBERGER,SL12S,S12S,S2S,FM12S	Schlumberger	SL12S, S12S, S2S	12S	7958	75	80	80	75	0.268	0.255	100.255	0.000	4.83	Pass
8970	MN,RT,E,W,A1T+,A1D+,TX,FM12S	Elster	A1D+, A1T+	12S	14533	100	105	112	102	0.051	-0.06	99.94	0.000	4.67	Pass
8971	MN,RT,D,MSE,MS2SE,AF,FM2S	Landys & Gyr	MSE, MS2SE	2S	68	7	9	9	7	0.148	-0.004	99.996	0.000	8.4	Pass
8972	MN,RT,E,W,A1T+,A1D+,TE,FM16S	Elster	A1D+, A1T+	16S	19162	100	105	120	102	0.13	-0.007	99.993	0.000	4.67	Pass
8973	MN,RT,W,A1R,A1R-A,A1R-AL,KZ,FM9S	Elster	A1R (AL)	9S	46	5	7	9	5	0.07	0.01	100.01	0.000	9.8	Pass
8974	MN,RT,E,W,A1T+,A1R-A,Y1,FM16S	Elster	A1T+, A1R-A	16S	257	15	18	18	15	0.126	-0.042	99.958	0.000	6.55	Pass
8975	MN,RT,E,A3R-AL,A3R,A3R-A,A3RALNCQ,BA,X8,FM6/36S	Elster	A3R (ALNCQ)	6S, 36	2011	50	54	59	51	0.057	-0.039	99.961	0.000	5.21	Pass

Xcel Energy - North Dakota
Gas Meter Testing
Summary of 2022 Results

Meters with a capacity less than 400 Cubic feet per hour (CFH) (Residential size meters)	#	%
Total Number of Meters Tested	555	
Meters Tested Within Tolerance[1]	531	95.7%
Meters Tested Slow[2]	4	0.7%
Meters Tested Fast[3]	20	3.6%

Meters with a capacity of 400 CFH through 999 CFH (Small commercial size meters)	#	%
Total Number of Meters Tested	50	
Meters Tested Within Tolerance[1]	45	90.0%
Meters Tested Slow[2]	4	8.0%
Meters Tested Fast[3]	1	2.0%

Meters with a capacity greater than 999 CFH (Large commercial/industrial size meters)	#	%
Total Number of Meters Tested	153	
Meters Tested Within Tolerance[1]	151	98.7%
Meters Tested Slow[2]	0	0.0%
Meters Tested Fast[3]	2	1.3%

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

[1] Meters that test within tolerance have an average error within plus or minus 2% of accurate
[2] Meters that test slow (undermeasuring), have an average error greater than minus 2% of accurate
[3] Meters that test fast (overmeasuring), have an average error greater than plus 2% of accurate