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May 4, 2018



Darrell Nitschke
Executive Secretary/Director of Administration
North Dakota Public Service Commission
State Capitol - 600 East Boulevard
Bismarck, ND 58505-0480

RE: Otter Tail Power Company's Annual Report

Dear Mr. Nitschke:

Enclosed is Otter Tail Power Company's (Otter Tail's) 2017 Annual Report for North Dakota. As in past years, I am also enclosing a copy of Otter Tail Corporation's 2017 Annual Report to Shareholders and SEC Form 10-K for Otter Tail Corporation and Otter Tail's 2017 FERC FORM No. 1. I am also forwarding an electronic copy of the North Dakota Annual Report in .PDF format by email to you at dnitschk@nd.gov and to ndpsc@nd.gov.

Pages 1-3 reflect operating statement, rate base and capital structure values which include Otter Tail's current base rate recoveries as well as recoveries through Otter Tail's renewable, transmission, and environmental cost recovery riders on an actual, un-normalized basis. Page 4-6 reflects the same information except it is on a normalized basis to adjust for the impacts of anomalous items, including weather. Otter Tail's actual 2017 earnings reflected a return on equity (ROE) of 9.08 percent. As shown on page 5 of the attached report, Otter Tail's normalized 2017 results reflected a 9.43 percent ROE.

If you have questions on the information provided, don't hesitate to contact me at (218) 739-8279 or stommerdahl@otpco.com.

Sincerely,

A handwritten signature in dark ink, appearing to read "Stuart Tommerdahl", is written over a light blue circular stamp or watermark.

Stuart Tommerdahl
Manager, Regulatory Administration

jch
Enclosures
By electronic service and First Class mail

ANNUAL REPORT
OF
OTTER TAIL POWER COMPANY
TO THE
PUBLIC SERVICE COMMISSION OF NORTH DAKOTA
FOR THE
YEAR ENDED DECEMBER 31, 2017

INDEX	Page
STATE RETURN ON EQUITY	
<u>Actual</u>	
Operating Statement - With All Riders	1
Rate Base - With All Riders	2
Cost of Capital - With All Riders	3
<u>Normalized</u>	
Operating Statement - With All Riders	4
Rate Base - With All Riders	5
Cost of Capital - With All Riders	6
MISCELLANEOUS STATISTICS	7
REPORT ON SMART METERING	8



Otter Tail Power Company
2017 North Dakota Annual Report

Operating Statement - With All Riders, Un-Normalized

	(A)	(B)	(C)	(D)	(E)	
Line No.	2017 Total Company	2017 North Dakota	N. D. % (B / A)	2016 North Dakota	Annual Change (B-D / D)	
	Operating Revenues:					
1	Residential	115,781,565	52,843,666	45.64%	51,876,862	1.86%
2	Small Commercial and Industrial	62,129,329	27,387,525	44.08%	26,527,014	3.24%
3	Large Commercial and Industrial	187,502,414	62,046,155	33.09%	62,579,642	-0.85%
4	Other Retail	6,762,979	2,928,551	43.30%	2,895,502	1.14%
5	Total Retail Revenue	372,176,287	145,205,898	39.02%	143,879,019	0.92%
6	Other Electric Revenue	54,169,384	10,173,735	18.78%	10,710,945	-5.02%
7	Total Revenue	426,345,670	155,379,633	36.44%	154,589,964	0.51%
	Operating Expenses:					
8	Production Expenses	153,047,783	57,048,873	37.28%	54,725,139	4.25%
9	Transmission Expenses	32,135,395	12,882,935	40.09%	12,457,661	3.41%
10	Distribution Expenses	17,761,845	8,136,880	45.81%	7,668,210	6.11%
11	Customer Accounting Expenses	12,912,128	5,641,432	43.69%	5,456,338	3.39%
12	Customer Service and Information Expenses	9,358,287	1,016,506	10.86%	1,177,661	-13.68%
13	Sales Expenses	289,632	55,140	19.04%	16,303	238.22%
14	Administration and General Expenses	43,609,472	16,878,020	38.70%	15,985,354	5.58%
15	Charitable Contributions	0	0	N/A	0	N/A
16	Depreciation Expense	51,430,632	20,040,246	38.97%	20,190,484	-0.74%
17	General Taxes	15,045,286	5,020,337	33.37%	4,931,369	1.80%
18	Total Operating Expenses	335,590,459	126,720,369	37.76%	122,608,519	3.35%
19	Net Operating Income Before Income Taxes	90,755,211	28,659,264	31.58%	31,981,445	-10.39%
	Income Tax Expense:					
20	Investment Tax Credit	(8,997,380)	(3,443,139)	38.27%	(3,425,500)	0.51%
21	Deferred Income Taxes	20,827,503	6,629,932	31.83%	8,066,602	-17.81%
22	Income Taxes	2,674,514	0	0.00%	(1)	-162.88%
23	Total Income Tax Expense	14,504,637	3,186,794	21.97%	4,641,102	-31.34%
24	Net Regulated Earnings	76,250,574	25,472,470	33.41%	27,340,344	-6.83%

Otter Tail Power Company
2017 North Dakota Annual Report

Rate Base - With All Riders, Un-Normalized

Line No.	Description	(A)	(B)	(C)	(D)	(E)
		2017 Total Company	2017 North Dakota	N. D. % (B / A)	2016 North Dakota	Annual Change
1	Plant in Service	1,920,657,893	735,002,015	38.27%	713,874,704	2.96%
2	Net Capitalized Items - Big Stone Plant			0.00%	0	0.00%
3	Accumulated Depreciation	<u>(728,591,497)</u>	<u>(292,313,667)</u>	40.12%	<u>(275,833,971)</u>	5.97%
4	Net Plant in Service	1,192,066,396	442,688,348	37.14%	438,040,733	1.06%
5	Plant Held for Future Use	29,657	13,175	44.42%	13,093	0.62%
6	Construction Work in Progress	141,101,735	4,548,243	3.22%	5,734,954	-20.69%
7	Materials and Supplies	19,056,979	7,859,575	41.24%	7,832,359	0.35%
8	Fuel Stocks	9,362,470	3,390,720	36.22%	4,030,121	-15.87%
9	Prepayments	<u>(28,335,184)</u>	<u>(10,522,615)</u>	37.14%	<u>(6,646,069)</u>	58.33%
10	Customer Advances	<u>(973,822)</u>	<u>(361,641)</u>	37.14%	<u>(396,682)</u>	-8.83%
11	Cash Working Capital	14,993,289	4,818,181	32.14%	2,847,469	69.21%
12	Accumulated Deferred Income Taxes	<u>(260,006,587)</u>	<u>(100,884,294)</u>	38.80%	<u>(100,914,018)</u>	-0.03%
13	Total Average Rate Base	<u>1,087,294,933</u>	<u>351,549,692</u>	32.33%	<u>350,541,960</u>	0.29%
ACTUAL						
14	Rate of Return on Average Rate Base (page 1, Line 24 /line 13)	7.01%	7.25%			
15	Less: Weighted Cost of Ltd (Page 3, line 1 (D))	2.46%	2.46%			
16	Weighted Cost of Pref. Stock (Page 3 line 2 (D))	<u>0.00%</u>	<u>0.00%</u>			
17	Weighted Return on Equity	4.56%	4.79%			
18	% of Equity to Capital Structure (Page 3, line 3 (B))	<u>52.76%</u>	<u>52.76%</u>			
19	Return on Equity (Page 3, line 3 (C))	<u>8.64%</u>	<u>9.08%</u>			

Otter Tail Power Company
2017 North Dakota Annual Report

Average Weighted Cost of Capital - With All Riders, Un-Normalized

		(A)	(B)	(C)	(D)
Line No.	Description	Average Balance	Ratio	Cost	Weighted Cost
1	Long Term Debt	495,981,657	47.24%	5.20%	2.46%
2	Preferred Equity	0	0.00%	0.00%	0.00%
3	Common Equity	553,908,834	52.76%	9.08%	4.79%
4	Total	1,049,890,491	100.00%		7.25%

Otter Tail Power Company
2017 North Dakota Annual Report

Operating Statement - With All Riders, Normalized

	(A)	(B)	(C)	(D)	(E)	
Line No.	2017 Total Company	2017 North Dakota	N. D. % (B / A)	2016 North Dakota	Annual Change (B-D / D)	
	Operating Revenues:					
1	Residential	117,733,008	53,526,381	45.46%	53,625,305	-0.18%
2	Small Commercial and Industrial	62,873,430	27,644,407	43.97%	27,243,495	1.47%
3	Large Commercial and Industrial	188,361,236	62,359,381	33.11%	63,089,175	-1.16%
4	Other Retail	6,782,800	2,934,385	43.26%	2,908,292	0.90%
5	Total Retail Revenue	375,750,474	146,464,555	38.98%	146,866,267	-0.27%
6	Other Electric Revenue	53,957,811	10,173,735	18.85%	11,143,957	-8.71%
7	Total Revenue	429,708,285	156,638,290	36.45%	158,010,224	-0.87%
	Operating Expenses:					
8	Production Expenses	153,540,301	57,233,292	37.28%	55,818,292	2.54%
9	Transmission Expenses	32,135,395	12,882,935	40.09%	12,457,661	3.41%
10	Distribution Expenses	17,761,845	8,136,880	45.81%	7,668,210	6.11%
11	Customer Accounting Expenses	12,912,128	5,641,432	43.69%	5,456,338	3.39%
12	Customer Service and Information Expenses	9,358,287	1,016,506	10.86%	968,587	4.95%
13	Sales Expenses	289,632	55,140	19.04%	16,303	238.22%
14	Administration and General Expenses	43,609,472	16,878,020	38.70%	15,614,755	8.09%
15	Charitable Contributions	0	0	N/A	0	N/A
16	Depreciation Expense	51,430,632	20,040,246	38.97%	20,190,484	-0.74%
17	General Taxes	15,045,286	5,020,337	33.37%	4,931,369	1.80%
18	Total Operating Expenses	336,082,977	126,904,788	37.76%	123,121,999	3.07%
19	Net Operating Income Before Income Taxes	93,625,308	29,733,502	31.76%	34,888,225	-14.77%
	Income Tax Expense:					
20	Investment Tax Credit	(8,997,380)	(3,443,139)	38.27%	(3,425,500)	0.51%
21	Deferred Income Taxes	20,873,788	7,035,886	33.71%	9,164,820	-23.23%
22	Income Taxes	2,730,288	0	0.00%	(1)	-162.51%
23	Total Income Tax Expense	14,606,696	3,592,747	24.60%	5,739,319	-37.40%
24	Net Regulated Earnings	79,018,612	26,140,755	33.08%	29,148,906	-10.32%

Otter Tail Power Company
2017 North Dakota Annual Report

Rate Base - With All Riders, Normalized

Line No.	Description	(A)	(B)	(C)	(D)	(E)
		2017 Total Company	2017 North Dakota	N. D. % (B / A)	2016 North Dakota	Annual Change
1	Plant in Service	1,920,657,893	735,002,015	38.27%	713,874,705	2.96%
2	Net Capitalized Items - Big Stone Plant	0	0	0.00%	0	0.00%
3	Accumulated Depreciation	<u>(728,591,497)</u>	<u>(292,313,667)</u>	40.12%	<u>(275,833,971)</u>	5.97%
4	Net Plant in Service	1,192,066,396	442,688,348	37.14%	438,040,734	1.06%
5	Plant Held for Future Use	29,657	13,175	44.42%	13,093	0.62%
6	Construction Work in Progress	141,101,735	4,548,243	3.22%	5,734,954	-20.69%
7	Materials and Supplies	19,056,979	7,859,575	41.24%	7,832,359	0.35%
8	Fuel Stocks	9,362,470	3,390,720	36.22%	4,030,121	-15.87%
9	Prepayments	(28,335,184)	(10,522,615)	37.14%	(6,646,069)	58.33%
10	Customer Advances	(973,822)	(361,641)	37.14%	(396,682)	-8.83%
11	Cash Working Capital	15,034,945	4,831,575	32.14%	2,908,301	66.13%
12	Accumulated Deferred Income Taxes	<u>(260,006,587)</u>	<u>(100,884,294)</u>	38.80%	<u>(100,914,018)</u>	-0.03%
13	Total Average Rate Base	<u>1,087,336,589</u>	<u>351,563,087</u>	32.33%	<u>350,602,792</u>	0.27%
ACTUAL						
14	Rate of Return on Average Rate Base (page 4, Line 24 /line 13)	7.27%	7.44%			
15	Less: Weighted Cost of Ltd (Page 6, line 1 (D))	2.46%	2.46%			
16	Weighted Cost of Pref. Stock (Page 6 line 2 (D))	<u>0.00%</u>	<u>0.00%</u>			
17	Weighted Return on Equity	4.81%	4.98%			
18	% of Equity to Capital Structure (Page 6, line 3 (B))	<u>52.76%</u>	<u>52.76%</u>			
19	Return on Equity (Page 6, line 3 (C))	<u>9.12%</u>	<u>9.44%</u>			

Otter Tail Power Company
2017 North Dakota Annual Report

Average Weighted Cost of Capital - With All Riders, Normalized

		(A)	(B)	(C)	(D)
Line No.	Description	Average Balance	Ratio	Cost	Weighted Cost
1	Long Term Debt	495,981,657	47.24%	5.20%	2.46%
2	Preferred Equity	0	0.00%	0.00%	0.00%
3	Common Equity	553,908,834	52.76%	9.44%	4.98%
4	Total	1,049,890,491	100.00%		7.44%

Otter Tail Power Company
2017 North Dakota Annual Report

Miscellaneous

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	
Line No.	Description	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
	Customer Related (ND):										
	Year End # of Customers										
1	Residential	45,882	45,743	45,689	45,379	45,191	44,951	44,554	44,424	44,340	44,222
2	Commercial	11,439	11,385	11,333	11,286	11,270	11,188	11,152	11,170	11,194	11,277
3	Industrial	979	978	984	947	950	952	918	896	878	843
4	Other	499	503	509	504	504	504	506	509	532	536
5	Total Customers	58,799	58,609	58,515	58,116	57,915	57,595	57,130	56,999	56,944	56,878
	KWH's Sold										
6	Residential	591,880,809	580,345,390	609,253,548	669,563,374	652,328,505	583,154,678	620,333,270	588,526,166	600,554,154	568,278,543
7	Commercial	300,470,972	291,700,647	296,940,142	339,108,033	319,824,033	281,752,844	300,862,002	301,985,143	318,238,797	301,585,437
8	Industrial	854,040,398	856,544,193	852,769,327	899,948,129	867,335,225	841,489,786	849,256,868	823,343,090	751,574,603	709,550,579
9	Other	29,625,196	29,262,956	29,829,127	30,127,525	29,593,473	29,084,463	32,138,905	31,276,297	31,552,451	30,499,320
10	Subtotal	1,776,017,375	1,757,853,186	1,788,792,144	1,938,747,061	1,869,081,236	1,735,481,771	1,802,591,045	1,745,110,696	1,701,920,005	1,609,913,879
11	Unbilled sales	11,845,290	5,681,679	(9,116,877)	(5,251,688)	17,390,019	11,804,152	(6,735,687)	1,283,596	4,072,195	9,168,347
12	Total kWh	1,787,862,665	1,763,534,865	1,779,675,267	1,933,495,373	1,886,471,255	1,747,285,923	1,795,855,358	1,746,394,292	1,705,992,200	1,619,082,226
13	System Wide Reliability Indices (1)										
14	SAIDI (total minutes)	86.5	110.5	100.6	74.2	99.7	84.1	105.6	92.9	62.1	68.1
15	SAIFI (frequency)	1.4	1.7	1.7	1.2	1.3	1.5	1.6	1.6	1.1	1.2
16	CAIDI (duration)	61.5	65.7	58.4	59.9	78.6	57.7	67.9	57.0	56.9	58.4

(1) Otter Tail has begun the process of implementing a new interruption monitoring system through the use of bellwether cellular meters. Installation was completed in North Dakota in 2017 and progress will continue in 2018 in Minnesota and South Dakota. This will help to identify interruptions more easily and more quickly. Please see the Status on Smart Metering for more information.

**BEFORE THE
NORTH DAKOTA PUBLIC SERVICE COMMISSION**

Case No. PU-18-

**Otter Tail Power Company's
Report on Status of Smart Metering
and Smart Grid Technologies**

May 4, 2018

TABLE OF CONTENTS

INTERRUPTION MONITORING SYSTEM.....	4
CUSTOMER INFORMATION SYSTEM	4
INNOVATION 2030.....	5

Otter Tail Power Company 2017 Annual Report to North Dakota

Report on Status of Smart Metering

In its Order dated August 8, 2007, Case No. PU-06-290, the North Dakota Public Service Commission, at ordering paragraph no. 2, required that:

"Each jurisdictional electric utility shall include in its annual reports to the Commission, beginning with reports filed for 2007, a discussion of progress towards the feasibility of making smart metering available for all customers."

References to smart grid and smart metering have been used interchangeably as the utility industry moves to adopt changes that make sense for each utilities' service areas. We've used technology to improve employee productivity and customer service for many years. Smart grid investments occur in many aspects of our work and our mission, which is:

To produce and deliver electricity as reliably, economically, and environmentally responsibly as possible to the balanced benefit of customers, shareholders, and employees and to improve the quality of life in the area in which we do business.

The following lists some of the smart grid-type applications that we discussed in past filings and are still in place today. However, this filing does not go into detail for each of these areas:

- Peak-shaving technologies
- Energy storage systems
- Time-varying rates
- Electricity metering
- Power Profiler
- Bill Analyzer

This update focuses on updates to our:

- Interruption Monitoring System
- Customer Information System

In addition, we provide high-level information related to technologies that encompass smart metering in our Innovation 2030 initiative.

Interruption Monitoring System

In order to monitor and improve the reliability of our company's electrical system, we installed and commissioned an Interruption Monitoring System (IMS) in mid-2004. We installed voltage and interruption monitoring devices manufactured by Sensus on each of the approximately 730 distribution feeders in our system. These intelligent field devices report interruptions, over and under voltage alarms, and power reliability status using commercial cellular networks (GSM and 1XRTT).

Our current IMS communication platform utilizes 2G commercial cellular network. The two cellular networks described above (GSM and 1XRTT) each have separate life expectancies due to planned shutdown of 2G service. The devices using GSM no longer were going to be useable by the end of 2016 and the devices using 1XRTT by the end of 2017 or 2018. The supplier (Sensus) has no plans for upgrading the current monitors to 3G or 4G networks and discontinued manufacturing the devices in 2015.

With the known shutdown dates, we initiated replacement plans for this system through cellular Advanced Metering Infrastructure (AMI) meters. In late 2015 we solicited feedback from approximately one dozen potential IMS vendors. After a comparison of alternatives, we selected a least-cost AMI meter solution that includes hosted head-end systems for reading meter data, which we'll use for billing and reliability analytics. We started deploying the AMI meters in North Dakota in late 2016 and finished in 2017. We deployed a total of 450 meters in North Dakota. Progress in 2018 will include deploying to our Minnesota and South Dakota jurisdictions.

This deployment gives our company better reliability coverage than the old Sensus IMS as it covers all three phases of each feeder (through either three single-phase meters or one three-phase meter), whereas the Sensus solution was deployed only on one phase of each feeder. This replacement project also includes software design to create/modify a system that allows us to continue to run similar reliability metrics as we'd done historically.

In conclusion, the IMS replacement project provides us valuable experience with AMI without a full deployment.

Customer Information System (CIS)

We developed and maintained a mainframe Customer Information System (CIS) over the past 30 years. The system served the company well but its capabilities and features require updates to meet expected future customer and company needs. In early 2016 we selected Cayenta as our vendor to replace the CIS and Meter Information System (MIS) with Cayenta Utilities. The new CIS, internally branded CISone, is scheduled to be in service by the end of 2018. CISone will greatly expand functionality to both customers and our company and includes upgrades to rates/billing management, customer interfaces and connections, service order management, and business intelligence.

A significant benefit of CISone is its ability to connect and integrate with our other systems, including systems deployed with an AMI or smart meter. For example, the current CIS does not

have the capabilities or features needed to take some forms of billing determinates from AMI. Therefore, in order to achieve the benefits of AMI, we first need a CIS and billing system that is able to handle new AMI data and billing determinants. CISone will offer many benefits both to customers and the company, one of which is providing the necessary foundation for a successful smart meter deployment.

Innovation 2030 Initiative

We are working to increase customer engagement, reliability, and business efficiency through new technologies. Innovation 2030, a Company initiative that began in 2016, is in the planning stages and includes technologies such as AMI and the associated communications infrastructure to support AMI. We hired Util-Assist in late 2017 to aid in developing a business case for procuring an AMI system. Through 2018 we will work with Util-Assist to determine the feasibility of implementing AMI for our customers.

Ultimately, other projects included in this initiative will move from conceptual design to execution after assessing and evaluating the full value the technologies will offer our customers.