215 South Cascade Street
PO Box 496
Fergus Falls, Minnesota 56538-0496
218 739-8200
www.otpco.com (web site)

May 20, 2014

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") 2013 Annual Report for North Dakota. As in past years, I am also enclosing a copy of Otter Tail Corporation's 2013 Annual Report to Shareholders and FERC Form 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 of Otter Tail's report reflect the operating statement, rate base, and cost of capital values based on current rates from Otter Tail's most recent general rate case (Case No. PU-08-862). These pages exclude the impact (investment and associated recovery) of Otter Tail's renewable (wind), transmission, and environmental riders.

Pages 4-5 reflect operating statement and rate base values which include renewable, transmission, and environmental cost recovery rider assets. These pages are provided for reference purposes only, as the revenue requirements for these riders are determined through a separate cost recovery process that uses different periods for calculations and has a true-up mechanism for prior period under- and over-collections.

As shown on page 2 of the attached report, Otter Tail earned 8.47 percent ROE in 2013 through base rates.

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

Very truly yours,

/s/ *Stuart Tommerdahl*
Stuart Tommerdahl
Manager, Regulatory Administration

jce
Enclosures
By electronic service and First Class mail

ELECTRIC

ANNUAL REPORT

OF

OTTER TAIL POWER COMPANY

TO THE

PUBLIC SERVICE COMMISSION OF NORTH DAKOTA

FOR THE

YEAR ENDED DECEMBER 31, 2013

INDEX **Page**

Operating Statement - Base Rates

Line No.	Description	(A) 2013 Total Company	(B) 2013 North Dakota	(C) N. D. % (B / A)
	Operating Revenues:			
1	Residential	103,115,508	45,462,831	44.09%
2	Small Commercial and Industrial	54,493,191	23,060,057	42.32%
3	Large Commercial and Industrial	136,655,780	51,042,240	37.35%
4	Other Retail	5,874,675	2,424,652	41.27%
5	Total Retail Revenue	300,139,154	121,989,781	40.64%
6	Other Electric Revenue	20,367,559	6,393,062	31.39%
7	Total Revenue	320,506,713	128,382,843	40.06%
	Operating Expenses:			
8	Production Expenses	136,763,156	57,526,900	42.06%
9	Transmission Expenses	11,152,390	4,706,651	42.20%
10	Distribution Expenses	16,698,686	7,544,880	45.18%
11	Customer Accounting Expenses	13,422,288	5,848,350	43.57%
12	Customer Service and Information Expenses	8,131,767	1,156,369	14.22%
13	Sales Expenses	570,923	158,258	27.72%
14	Administration and General Expenses	38,378,992	15,994,069	41.67%
15	Charitable Contributions	102,618	0	0.00%
16	Depreciation Expense	34,144,858	14,576,378	42.69%
17	General Taxes	10,004,240	4,131,786	41.30%
18	Total Operating Expenses	269,369,918	111,643,641	41.45%
19	Net Operating Income Before Income Taxes	51,136,795	16,739,202	32.73%
	Income Tax Expense:			
20	Investment Tax Credit	(596,954)	(255,104)	42.73%
21	Deferred Income Taxes	2,279,143	965,333	42.36%
22	Income Taxes	10,807,102	2,607,658	24.13%
23	Total Income Tax Expense	12,489,291	3,317,887	26.57%
24	Net Regulated Earnings	38,647,504	13,421,316	34.73%

Rate Base and Return on Equity - Base Rates

Line No.	Description	(A) 2013 Total Company	(B) 2013 North Dakota	(C) N. D. % (B / A)
1	Plant in Service	1,147,190,165	490,244,377	42.73%
2	Net Capitalized Items - Big Stone Plant	0	0	0.00%
3	Accumulated Depreciation	(560,847,509)	(239,981,519)	42.79%
4	Net Plant in Service	586,342,656	250,262,859	42.68%
5	Plant Held for Future Use	29,657	13,219	44.57%
6	Construction Work in Progress	48,147,987	4,287,977	8.91%
7	Materials and Supplies	16,529,183	7,164,510	43.34%
8	Fuel Stocks	10,024,121	4,109,625	41.00%
9	Prepayments	(33,192,138)	(14,167,073)	42.68%
10	Customer Advances	(592,044)	(252,696)	42.68%
11	Cash Working Capital	11,718,457	3,154,592	26.92%
12	Accumulated Deferred Income Taxes	(149,246,135)	(61,668,345)	41.32%
13	Total Average Rate Base	489,761,744	192,904,668	39.39%
	ACTUAL			
14	Rate of Return on Average Rate Base (page 1, Line 24 /line 13)	7.89%	6.96%	
15	Less: Weighted Cost of Ltd (Page 3, line 1 (D))	2.55%	2.55%	
16	Weighted Cost of Pref. Stock (Page 3 line 2 (D))	0.00%	0.00%	
17	Weighted Return on Equity	5.34%	4.41%	
18	% of Equity to Capital Structure (Page 3, line 3 (B))	52.03%	52.03%	
19	Return on Equity (Page 3, line 4 (D))	10.26%	8.47%	

Average Weighted Cost of Capital - Base Rates

Line No.	Description	(A) Average Balance	(B) Ratio	(C) Cost	(D) Weighted Cost
1	Long Term Debt	346,514,682	47.97%	5.32%	2.55%
2	Preferred Equity	0	0.00%	0.00%	0.00%
3	Common Equity	375,849,424	52.03%	8.47%	4.41%
4	Total	722,364,106	100.00%		6.96%

Operating Statement - With All Riders

Line No.	Description	(A) 2013 Total Company	(B) 2013 North Dakota	(C) N. D. % (B / A)	(D) 2012 North Dakota	(E) Annual Change (B-D / D)
	Operating Revenues:					
1	Residential	109,453,530	50,603,065	46.23%	48,290,431	4.79%
2	Small Commercial and Industrial	57,668,360	25,579,030	44.36%	23,945,642	6.82%
3	Large Commercial and Industrial	144,727,848	57,309,533	39.60%	55,754,831	2.79%
4	Other Retail	6,175,403	2,662,113	43.11%	2,607,775	2.08%
5	Total Retail Revenue	318,025,140	136,153,741	42.81%	130,598,679	4.25%
6	Other Electric Revenue	28,327,616	9,768,090	34.48%	8,429,560	15.88%
7	Total Revenue	346,352,756	145,921,831	42.13%	139,028,240	4.96%
	Operating Expenses:					
8	Production Expenses	138,991,604	58,468,657	42.07%	55,522,399	5.31%
9	Transmission Expenses	21,045,555	8,883,535	42.21%	7,117,428	24.81%
10	Distribution Expenses	16,698,686	7,544,880	45.18%	7,129,087	5.83%
11	Customer Accounting Expenses	13,422,288	5,848,350	43.57%	5,431,759	7.67%
12	Customer Service and Information Expenses	8,131,767	1,156,369	14.22%	1,193,407	-3.10%
13	Sales Expenses	570,923	158,258	27.72%	140,489	12.65%
14	Administration and General Expenses	38,839,214	16,195,432	41.70%	13,409,755	20.77%
15	Charitable Contributions	102,618	0	0.00%	0	N/A
16	Depreciation Expense	45,080,051	19,203,803	42.60%	18,560,095	3.47%
17	General Taxes	11,305,254	4,674,431	41.35%	4,493,799	4.02%
18	Total Operating Expenses	294,187,960	122,133,715	41.52%	112,998,220	8.08%
19	Net Operating Income Before Income Taxes	52,164,796	23,788,116	45.60%	26,030,020	-8.61%
	Income Tax Expense:					
20	Investment Tax Credit	(8,537,100)	(3,640,842)	42.65%	(1,256,852)	189.68%
21	Deferred Income Taxes	2,766,987	891,090	32.20%	851,271	4.68%
22	Income Taxes	7,502,972	4,119,980	54.91%	2,470,284	66.78%
23	Total Income Tax Expense	1,732,859	1,370,228	79.07%	2,064,703	-33.64%
24	Net Regulated Earnings	50,431,937	22,417,888	44.45%	23,965,317	-6.46%

Rate Base - With All Riders

Line No.	Description	(A) 2013 Total Company	(B) 2013 North Dakota	(C) N. D. % (B / A)	(D) 2012 North Dakota	(E) Annual Change
1	Plant in Service	1,442,063,828	615,001,100	42.65%	596,135,372	3.16%
2	Net Capitalized Items - Big Stone Plant	0	0	0.00%	0	0.00%
3	Accumulated Depreciation	(608,662,784)	(260,249,090)	42.76%	(244,287,891)	6.53%
4	Net Plant in Service	833,401,044	354,752,010	42.57%	351,847,481	0.83%
5	Plant Held for Future Use	29,657	13,219	44.57%	13,092	0.97%
6	Construction Work in Progress	130,139,241	38,550,822	29.62%	10,014,087	284.97%
7	Materials and Supplies	17,320,438	7,517,502	43.40%	7,065,808	6.39%
8	Fuel Stocks	10,024,121	4,109,625	41.00%	4,513,362	-8.95%
9	Prepayments	(33,192,138)	(14,128,825)	42.57%	(14,184,479)	-0.39%
10	Customer Advances	(592,044)	(252,014)	42.57%	(209,300)	20.41%
11	Cash Working Capital	11,317,460	3,344,282	29.55%	3,164,188	5.69%
12	Accumulated Deferred Income Taxes	(215,624,337)	(98,611,849)	45.73%	(89,832,782)	9.77%
13	Total Average Rate Base	752,823,442	295,294,772	39.22%	272,391,455	8.41%

Miscellaneous

Line No.	Description	(A) 2013	(B) 2012	(C) 2011	(D) 2010	(E) 2009	(F) 2008
	Customer Related (ND):						
	Year End # of Customers						
1	Residential	45,191	44,951	44,554	44,424	44,340	44,222
2	Commercial	11,270	11,188	11,152	11,170	11,194	11,277
3	Industrial	950	952	918	896	878	843
4	Other	504	504	506	509	532	536
5	Total	57,915	57,595	57,130	56,999	56,944	56,878
	KWH's Sold						
6	Residential	652,328,505	583,154,678	620,333,270	588,526,166	600,554,154	568,278,543
7	Commercial	319,824,033	281,752,844	300,862,002	301,965,143	318,238,797	301,585,437
8	Industrial	867,335,225	841,489,786	849,256,868	823,343,090	751,574,603	709,550,579
9	Other	29,593,473	29,084,463	32,138,905	31,276,297	31,552,451	30,499,320
10	Subtotal	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	17,390,019	11,804,152	(6,735,687)	1,283,596	4,072,195	9,168,347
12	Total	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	Reliability Indices (1)						
14	SAIDI (total minutes)	99.7	84.1	105.6	92.9	62.1	68.1
15	SAIFI (frequency)	1.3	1.5	1.6	1.6	1.1	1.2
16	CAIDI (duration)	78.6	57.7	67.9	57.0	56.9	58.4

(1) Beginning in 2006, Otter Tail began using a new interruption monitoring system. The new IMS allows use of the more common definition of a service interruption (longer than 5 minutes). With the changed definition, the frequency of measured interruptions decreases while the length of recorded interruptions increases. Total minutes of interruptions is generally comparable with historic measures.

BEFORE THE
NORTH DAKOTA PUBLIC SERVICE COMMISSION

Case No. PU-14-__

Otter Tail Power Company's

Report on Status of Smart Metering

May 20, 2014

Otter Tail Power Company May 2014 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 of the utilities service areas. Otter Tail's response to this Commission's order in May 2008 and May 2009 has been to review the status of technology available for smart metering. Since then the Company has annually filed an update on our smart grid applications as our response to this requirement.

Otter Tail has 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 is a list of some of the smart grid type applications that are in use at Otter Tail and are further described in the following sections.

- Peak-Shaving Technologies
- Energy Storage Systems
- Time-varying Rates
- Electricity Metering
- Protective Relaying
- Power Profiler
- Interruption Monitoring System
- Mobile Data
- Bill Analyzer
- Fleet Tracking
- Geographic Information System (GIS)

Peak-Shaving Technologies

Otter Tail has a long history of installing peak-shaving technologies at customer premises. This legacy started with electric water heaters back in the 1940s that were controlled with time-clocks set to avoid energy usage during the morning and evening highest load periods each day. In the 1980's this legacy system was updated with a radio control system. Beginning in 2003, Otter Tail began to replace the radio control system with an updated radio control system. This update was completed in 2007. The updated system allows Otter Tail to send a signal out to groups of customers during periods of high demand, which includes capacity constraints or high energy prices. When the signal is received by a radio typically near the customer's meter socket, the customer's system automatically reduces their controllable load.

Several peak-shaving tariff options are available to work with various technologies installed by customers and controlled by Otter Tail. Technologies include: electric storage water heaters, dual fuel heating systems, thermal storage systems, heat pumps, air conditioning systems, and whole-house residential demand controllers, and commercial demand control.

The system and supporting tariff that allows the most flexibility for the customer is the Residential Demand Controller ("RDC"). A radio receiver mounted near the customer meter socket receives the signal when system demand is high. A demand controller installed in the home reacts to this signal by reducing the customer demand to a level preselected by the customer. A set station installed in the living area identifies that the customer is being controlled, shows the demand level that is being maintained by the demand controller, and in cases where the connected load does not reduce home demand to the preselected level, the set station signals to the customer that further action is required to reduce non-controlled load. At this point the customer has the choice to either increase their preselected demand or reduce demand by turning off lights, electric appliances, or any heating equipment that may not be connected to the demand controller. Customers are billed based on their highest winter-season demand level measured during a control event. The RDC rate is under evaluation because it was originally designed to reduce winter capacity needs whereas now, Otter Tail is participating in MISO, which is summer peaking.

Otter Tail has an average of 40,839 meters installed associated with demand response tariffs and has demonstrated over 130 MW of control during the coldest days in the winter. Winter demand response total capacity is based on the load management events and system tests and varies by month and season. Otter Tail accredited through MISO 90 MW of demand response capacity for January and 18 MW of demand response capacity for the 2013 summer season, June through September. Otter Tail's internal costs directly related to marketing and sales to grow demand response participation are approximately $1 million each year.

Energy Storage Systems

As noted above, Otter Tail's Peak-Shaving Technologies include Energy Storage Systems which are most commonly known as "Thermal Storage" or "Deferred Load" systems. These include water heating, under floor heating, brick storage furnaces, and brick storage room heaters. Customers and contractors are advised to size storage systems to heat or cool adequately during the maximum control period allowed by the tariff on which it is installed (14-16 continuous hours depending on the tariff used). These systems store energy by charging during off-peak

periods, and heat is available for discharge into the home or business as needed. Otter Tail continues to explore opportunities associated with distributed energy storage systems.

Time-varying rates

Otter Tail's definition of time-varying rates includes any tariff that charges based on when electricity is used and/or controlled. Table 1 below presents the rates, tariff sections, and average number of meters by state currently provided by Otter Tail. As shown, there are on average 1,185 meters on Time of Use Rates and 356 of these are served in North Dakota.

Table 1: Time of Use Rates

Time of Use Rate	Tariff Section	MN Average Meter Count	ND Average Meter Count	SD Average Meter Count	Total Average Meter Count	Program Started
General Service Time-of-Use	10.03 MN, SD; 10.04 ND	44	1	0	45	1978
Large General Service - Time of Day	10.05	27	1	3	31	1993
Standby Service - Option A Firm	11.01	0	1	0	1	1993
Irrigation Service	11.02	200	32	12	244	1974
Real Time Pricing Rider	14.02	0	1	0	1	1996
Fixed Time of Delivery Service	14.07	468	320	76	863	1996
Total Time of Use		**738**	**356**	**91**	**1,185**	**NA**

Demand response tariffs require the customers to limit or stop usage during peaking periods in response to an automated control system signal provided by Otter Tail. Otter Tail may require a control period in response to capacity, economic, or reliability conditions. Table 2 below presents tariffs that are part of Otter Tail's accredited demand response and the meter count by state that for each tariff. Otter Tail's direct control demand response consists of 40,839 meters across the Company's service territory, of which 18,014 are in North Dakota.

Table 2: Direct Control Rates[1]						
Direct Control Rate	**Tariff Section**	**MN Average Customer Count**	**ND Average Customer Count**	**SD Average Customer Count**	**Total Average Customer Count**	**Program Started**
Water Heating - Controlled Service (Off-Peak)	14.01	8,529	6,395	2,236	17,160	Before 1970 – with subsequent revisions
Controlled Service, Interruptible Load, CT Metering Rider ("Large Dual Fuel")	14.04	197	280	30	507	1980s – with subsequent revisions
Controlled Service, Interruptible Load, Self Contained Metering Rider ("Small Dual Fuel")	14.05	6,073	6,955	935	13,962	
Controlled Service Deferred Load Rider ("Thermal Storage")	14.06	842	703	185	1,730	
Residential Service-Controlled Demand	9.02	2,393	3,482	424	6,300	
Air Conditioning Control Rider	14.08	904	199	77	1,180	2006
Total Direct Control		**18,938**	**18,014**	**3,887**	**40,839**	**NA**

Electricity Meters

As of December 31, 2013, Otter Tail had 170,448 active retail electricity meters across a three state area that includes Minnesota, North Dakota and South Dakota. Nearly all of the meter readings are collected by Otter Tail employees or contracted meter readers by entering meter readings into a handheld meter reading processor. The handheld processor also has a probe that allows the meter reader to collect time of day meter readings electronically by attaching the probe to a port on the face of the meter.

Otter Tail has installed 60 meters with an encoder receiver transmitter ("ERT") register that allows the handhelds with a special transmitter receiver module to read meters as the meter reader walks by the area, which is an example of a mobile Automated Meter Reading ("AMR") application. These special meters have been installed in areas where access to the customers meter was difficult and time consuming.

[1] With the exception of Residential Demand Control, all customer counts shown in Table 2 are based on meter counts for direct control rates.

Over several years, Otter Tail has developed a group of AMR type meters that can be read remotely using cell phones or land lines to collect interval kWh and demand meter information. These meter installations allow Otter Tail to contact the meter and download meter interval data on a daily, weekly or monthly basis. There are 453 meters that are read remotely and, of these, 98 meters are used for billing data. The remaining meters are for measuring other loads such as generation, substation, and tie metering. The data is used for calculating and reporting Otter Tail's load to MISO, as well as tracking voltage data at Company substations, observing anomalies in load behavior, and forecasting day-ahead loads. The cost to support these AMR devices in 2013 was $136,630 for software and labor.

Approximately 0.30 percent of Otter Tail electricity metering is operating in a way that Otter Tail would describe as AMR. Table 3 below presents the category of meters based on how they are read, the number of meters in each category, and the corresponding percentage that each category is of the total meters. Otter Tail has no Advanced Metering Infrastructure ("AMI") or two-way capable meters. The Company has been actively investigating AMR/AMI technology and evaluating the potential costs and benefits of a system-wide investment.

Table 3

Category of Meters	Number of Meters	% of Total Meters
Automated Meter Reading (AMR) - read from general office using landline, cellular, or TCP/IP communications	453	0.26%
AMR – drive or walk by (mobile)	60	0.03
Manually read meters	169,935	99.70%
Total Meters	170,448	100%

In 2014, Otter Tail will conduct a pilot of 10 AMI meters. The purpose of the pilot will be to explore the reliability of cellular coverage for meter reading, understand the customer portal and tools related to usage, trial the head-end AMI and back-end Meter Data Management (MDM) systems, perform load management measurement and verification, and assess reliability measurement and reporting capabilities. The cost of the pilot is being paid by the vendor.

Protective Relaying

The first "smart" protective relays were developed and installed in the mid 1980's. Otter Tail was involved with the first installation on high voltage transmission lines of the devices designed by Schweitzer Engineering Labs ("SEL"). These devices provided system data during faults, giving personnel information on fault location. The SEL relays also provide sub-cycle information about the fault that enables engineers to review the fault record and evaluate whether the relay tripped the breaker properly. This information is used by the Company's System Operations department to isolate the faulted line section quickly and reduce outage duration on the Company's transmission system.

Before the use of the SEL fault locating relays, each time a line tripped, it required a long process of switching and re-energizing the line section by section to determine which section of the transmission line experienced the fault.

The technology used for remote communication to protective relays in Otter Tail's substations has improved greatly since the mid 1980's, allowing advance monitoring of the transmission grid by Otter Tail and the Midwest Independent System Operator ("MISO").

Otter Tail has been participating in the North American SynchroPhasor initiative by installing special relays and related communications in one substation in 2010, two substations in 2011, five substations in 2012, and five substations in 2013/2014. This reliability project is being coordinated by MISO for the region. Otter Tail incurred costs of about $325,000 in 2013/2014. This initiative expires on March 31, 2014. These costs will be reimbursed to Otter Tail by the Department of Energy through MISO's coordination.

Synchrophasors are precise grid measurements now available from monitors called Phasor Measurement Units ("PMU"). PMU measurements are taken at high speed, typically 30 observations per second compared to one observation every four seconds using conventional technology. Each measurement is time-stamped according to a common time reference. Time stamping allows synchrophasors from different utilities to be time-aligned (or "synchronized") and combined together providing a precise and comprehensive view of the entire interconnection. Synchrophasors enable a better indication of grid stress and can be used to trigger corrective actions to maintain reliability.

Power Profiler

The Power Profiler is a fee-based on-line program offered to customers with interval metering. Commercial or industrial customers are the main users of this program.

The program allows "day after", "week after" or "month after" 15-minute interval energy and demand usage to be displayed in a variety of graphical formats. Otter Tail's larger customers have found this data to be valuable to identify and reduce demand peaks by fine-tuning equipment operation and altering work schedules.

The Power Profiler has nine detailed reports as bar graphs, line graph or data output.

- Peak day demand
- 24 hour profile
- kVA / power factor
- Daily peaks
- Detail profile
- Daily totals
- Peaks report
- Statistics report
- Comparison graph

Customers using Power Profiler are learning how to manage their energy and demand profiles based on information from this online tool. Otter Tail's ongoing charge by the software vendor for system maintenance and updating Power Profiler was $9,543 for 2013.

Interruption Monitoring System

In order to monitor and improve the reliability of Otter Tail's electrical system, an Interruption Monitoring System ("IMS") was installed and commissioned in mid-2004. Voltage and interruption monitoring devices manufactured by Sensus have been installed on each of the 725 distribution feeders in the Otter Tail system. These intelligent field devices report interruptions, over and under voltage alarms and power reliability status using the commercial cellular networks (GPRS and 1XRTT).

Web based analysis and application tools allow reporting, alarm notifications and graphical status updates. As of 2012, all service representatives receive interruption alarms when feeders they are responsible for, experience an outage. Otter Tail's reliability engineer uses the IMS for reporting reliability indices and for further analysis as he works with the Company's Area Engineers to propose projects to improve reliability. These devices are also utilized for power quality analysis at some of Otter Tail's industrial and commercial customer locations to aid in the investigation of power quality issues and allow for alarm notifications to be sent directly to customers.

Otter Tail also has the capability of providing graphical interruption information to all customers on Otter Tail's web site. Graphical data, at the feeder level, is merged with Google Maps and linked to the home website.

The current IMS communication platform utilizes 2G commercial cellular network. The supplier (Sensus) has no plans for upgrading the current monitors to 3G or 4G networks. Otter Tail has begun investigating NextGen IMS solutions for implementation in the 2017-2020 timeframe. Several options are being investigated.

Operating costs associated with the IMS for 2013 were for maintenance and communications. Maintenance dollars dealt with the replacement of defective devices as well as GPRS device replacement with 1XRTT. Network solution replacements will intensify in the future due to transition from GPRS to 1XRTT availability. Costs totaled $130,000 and are detailed below:

2013 IMS Maintenance:	$40,000
2013 IMS Communications:	$70,000
2013 IMS Software maintenance and updates:	$20,000

Mobile Data

The vehicles used to move information among employees and between employees and customers is changing. The original scope of our mobile data project was limited to email communications for Service Representatives, but the availability and capability of technology has evolved quickly, as have the needs of employees and customers.

Service Representatives and Line Crews
The goal of this project continues to be to improve productivity and efficiency while enhancing customer satisfaction by providing Service Representatives with "real time" information with the use of mobile technologies. The development of Smartphones and tablets will allow the

Company to provide information beyond the truck, giving us the ability to access information at the meter, customer premise, substation, or other site.

Service Representatives currently use laptops, voice only phones, and hand held meter reading devices to perform work in a mobile environment. Laptops provide employees remote access through Citrix, a secure channel, to the Company network. These laptops are reaching end-of-life, prompting the Company to evaluate an asset replacement plan. Therefore, Otter Tail is evaluating alternative hardware combinations beyond the laptop, including smart phones and tablets. Considerations around security, employee uses, and Company requirements make the evaluation complex and highlight the need for the Company to prepare thoughtfully for the future. Mobile app solutions, Mobile Work Force Management solutions, and other mobile services such as Mobile Device Management software, are all factors that must be considered prior to selecting and implementing an asset replacement plan. In addition, considerations of data systems that the mobile device can tie to and the potential capability of those systems, such as CIS or GIS, are also being evaluated.

Current data available through the laptops includes:

- Company email
- Customer Information Systems (the Company's billing system)
- Customer Service Guide
- Geographic Information System (GIS)
- Load management real time control information
- Interruption monitoring system
- Ability to display and update maps and prints of Otter Tail's electrical system
- Otter Tail Power Company website
- Bill Analyzer, and other on-line tools

Issues with the present mobile solutions for field personnel have included lack of network connectivity, speed of the connection, getting "dropped" when working online, varying computer skill levels and the need for training and support.

Technicians

Otter Tail has several groups of technicians that perform a variety of work in Communications, Electrical System Maintenance, and Metering. A small pilot of a mobile app on iPad mini devices is being deployed in 2014 for four meter technicians to perform CT Meter Testing. The application was developed in-house using Fulcrum, an Apple approved application. The cost of this pilot in 2014 is expected to be roughly $5,400. Through this project, the Company aims to reduce vehicle drive time, optimize routing, eliminate paper processes, illuminate "dark data" that previously was filed on hard copies in filing cabinets, error-proof the testing process as much as possible, and eliminate redundant site visits. The Company also aims to learn about the iPad and its strengths and weaknesses for other Company uses by the technicians.

Bill Analyzer

Bill Analyzer is a program that is available to residential customers through the Otter Tail website, which allows customers to analyze their energy usage and billing, input home profile data, and compare their usage with other comparable customers. The purpose of this tool is to

help residential customers, who have the desire to better understand their energy bill, to understand what steps they could take to reduce energy use and manage cost.

After a simple registration process a customer can review 25 months of billing history, provide personal information about their home, appliances, and living habits, and review payment information. The analytic engine uses weather data and customer provided information to calculate probable reasons for changes in usage. By entering their home profile, the customer can determine how their usage is broken out by applications and see how their usage compares to other customers with comparable size homes. Bill analyzer is an Aclara tool and features include:

Bill center - Customer account with amount due, due date, last payment, and graphs to compare energy use.

Bill highlights - Factors that may have contributed to a change in the electric bill. If customers need more details they can dig deeper with bill analysis.

Bill history and analysis - Provides 25 months of history and allows customers to compare statements from any two billing cycles.

My energy center - Includes an energy audit for the home. After the audit is complete, customers can create a plan to save energy.

A counterpart to the Bill Analyzer web self-service tool is a version used by Customer Service employees to answer customer questions about energy use and billing.

Results
In 2010, 2012, and 2013 Otter Tail contracted with Integral Analytics to conduct measurement and verification of energy savings associated with the Bill Analyzer program.

- The 2010 evaluation indicated that Bill Analyzer saved an average 296 kWh per year per participant overall, or approximately 1.5 to 2 percent of their energy usage.
- The 2012 evaluation refined participation levels and indicates savings of 529 kWh per participant or approximately 3 percent of their energy use.
- The 2013 evaluation indicates Bill Analyzer saved an average of 715 kWh per year per participant, or approximately 4 percent of a customer's annual energy usage .

Fleet Tracking

Otter Tail owns many vehicles that are used by employees for the purposes of servicing our electrical system. In 2012, a sample group of these vehicles were equipped with a fleet tracking device as part of a three year pilot project to provide real time geospatial information on Company vehicles. Vehicles selected for the pilot included some vehicles that are assigned to Otter Tail field meter technicians, communications specialists, the hot line crew, project management, and electrical technicians. Overall, 39 mobile devices (27 in Minnesota) are in the field; 38 vehicles and one light tower/trailer have been upgraded with this capability for purposes of the pilot study. In 2013, the Company spent $14,737 on fleet tracking services.

Fleet tracking enhances reliability by assisting in dispatch decisions to optimize the Company's responses to service interruptions or service needs. Fleet tracking also enhances safety by providing the ability to know the current location and identification of staff when they are in the field working on Otter Tail's electrical system. The ability to track Company vehicles is also an additional tool for managers to manage staff and enables the Company to decrease operation and maintenance expenses and optimize work allocation. Fleet tracking has provided reports that accurately present mileage for tax purposes to each state for qualifying vehicles, ensuring the Company pays exactly what is owed, not more or less. Otter Tail will continue to evaluate the benefits, challenges, and usefulness of the fleet tracking service over the course of the pilot project. Upon successful pilot completion, the Company will look to expand the implementation of fleet tracking throughout the system and integrate it with several key activities and systems at Otter Tail, specifically:

- System operations' dispatch activities,
- A potential outage management system,
- The evolving GIS, and
- Customer service applications for premise visits.

Geographic Information System (GIS)

Otter Tail has developed a Geographic Information System to track and manage Company assets. In 2012, the Company pursued converting nearly 4,000 maps from an AutoCAD format to GIS and the conversion of these maps was completed in January 2013. Also in 2012, Otter Tail developed applications in anticipation of a fully developed GIS for use in future ground line inspections, line patrols, and vegetation management activities. The GIS development activities in 2013 cost $299,386 and included the charges for the conversion of the 4,000 CAD maps, geospatial cleanup, and required survey efforts, as well as the development of tools to perform tax reporting, export data for distribution electrical studies, and to apply attributes to assets connected geometrically. Mapping services from the GIS were published for Company use in the first half of 2013 and have displaced the previous CAD mapping service. The GIS is used to track units of property for every circuit for use in determining tax deduction eligibility for repair work.

The goal of the GIS is to enhance communication with employees and customers, leverage existing data systems to track and manage the Company's assets more efficiently, and provide geo-spatial information of the Company's assets along with related attributes and detail. The GIS will ultimately provide a single, interactive map for asset information thereby eliminating inefficiencies related to having information in disparate locations. Because maps will be electronic and linked to the GIS, data will be more current than the existing paper maps.

Spatial business intelligence through the GIS is expected to provide a platform for data management, strategic planning and analysis, and engineering and operational support. Longer-term, the Company envisions the GIS as a foundational tool for automating work flow management, distribution automation and outage management, and providing enhanced situational awareness.

For 2014, the GIS will continue to be cleaned and maintained. New survey data will be added and the GIS will be used for tax reporting, publishing maps for field work, and electrical studies.