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July 24, 2019



Steve Kahl
Executive Secretary/Director of Administration
North Dakota Public Service Commission
State Capitol
600 East Boulevard, Dept. 408
Bismarck, ND 58505-0408

**RE: Case No. PU-401-88-374, Annual Depreciation Rates
Amended PSC Order dated June 23, 1992
Compliance Filing**

Dear Mr. Kahl:

Pursuant to the above-referenced order, enclosed is a worksheet, identified as Statement B. This Statement shows the total estimated impact on North Dakota of changes in depreciation rates. Page 2 of Statement B shows the estimated impact to be an increase in annual depreciation expense of \$176,383 for the North Dakota Jurisdiction.

Also included with this filing is the Minnesota Public Utilities Commission (MPUC) Order dated July 17, 2019 certifying proposed remaining lives and net salvage percentages. This Order certifies depreciation rates and methods based on Otter Tail's most recent depreciation study. Key decision items are provided on pages 6 and 7 of the Order. The parameters are effective January 1, 2019. A copy of Otter Tail's initial Annual Review of Depreciation Certification filing (Initial Filing) submitted to the MPUC on August 31, 2018 and a copy of the Supplemental Correction, dated November 28, 2018 are also enclosed in this compliance filing. Attachment 2 of this Initial Filing lists the remaining lives and net salvage, or amortization periods requested for certification.

An electronic copy of this filing is being sent to you at ndpsc@nd.gov. These items are filed for your information. If you have any questions, please contact me at 218-739-8042 or pfoster@otpc.com.

Sincerely,

/s/ PAULA M. FOSTER

Paula M. Foster
Rates Analyst, Regulatory Administration

mmo
Enclosures
By electronic filing and U.S. Mail

1 PU-19-287 Filed 07/24/2019 Pages: 145
Compliance filing - 2019 annual depreciation rates
Otter Tail Power Company
Paula Foster, Rates Analyst

Estimated Impact on North Dakota

Statement B

2018 Depreciation Rate Study



**North Dakota
(Statement B)**



OTTER TAIL POWER COMPANY

Statement B

Comparison of Current and Updated Accruals

Current: VG Procedure / RL Technique

Proposed: VG Procedure / RL Technique

Account Description A	12/31/17 Plant Investment B	North Dakota Allocation Factor C	Current Annual Accrual		Proposed Annual Accrual		Difference		
			Total	North Dakota	Total	North Dakota	Total	North Dakota	
			D	E=C*D	F	G=C*F	H=F-D	I=G-E	
<u>Luverne Wind Generation</u>									
341.00 Structures and Improvements	\$ 2,266,581	0.36434150	\$ 96,783	\$ 35,262	\$ 102,449	\$ 37,326	\$ 5,666	\$ 2,064	
342.00 Fuel Holders and Accessories									
343.00 Prime Movers									
344.00 Generators	65,778,913	0.36434150	2,854,805	1,040,124	3,038,986	1,107,229	184,181	67,105	
345.00 Accessory Electric Equipment	4,863,837	0.36434150	207,686	75,669	219,845	80,099	12,159	4,430	
346.00 Miscellaneous Power Plant Equipment	74,045	0.36434150	3,747	1,365	3,924	1,430	177	65	
Total Luverne Wind Generation	\$ 72,983,376		\$ 3,163,021	\$ 1,152,420	\$ 3,365,204	\$ 1,226,084	\$ 202,183	\$ 73,664	
<u>Solway Combustion Turbine</u>									
341.00 Structures and Improvements	\$ 4,411,779	0.36301593	\$ 131,471	\$ 47,726	\$ 133,677	\$ 48,527	\$ 2,206	\$ 801	
342.00 Fuel Holders and Accessories	1,003,596	0.36301593	29,405	10,674	30,008	10,893	603	219	
343.00 Prime Movers	21,507,132	0.36301593	651,666	236,565	664,570	241,249	12,904	4,684	
344.00 Generators									
345.00 Accessory Electric Equipment	1,305,578	0.36301593	40,995	14,882	41,778	15,166	783	284	
346.00 Miscellaneous Power Plant Equipment	350,326	0.36301593	11,140	4,044	11,351	4,121	211	77	
Total Solway Combustion Turbine	\$ 28,578,411		\$ 864,677	\$ 313,891	\$ 881,384	\$ 319,956	\$ 16,707	\$ 6,065	
<u>Fergus Falls Control Center</u>									
341.00 Structures and Improvements	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
342.00 Fuel Holders and Accessories									
343.00 Prime Movers	591,638	0.36301593	18,045	6,551	20,530	7,453	2,485	902	
344.00 Generators									
345.00 Accessory Electric Equipment									
346.00 Miscellaneous Power Plant Equipment									
Total Fergus Falls Control Center	\$ 591,638		\$ 18,045	\$ 6,551	\$ 20,530	\$ 7,453	\$ 2,485	\$ 902	

Minnesota Public Utilities
Commission Order
Dated July 17, 2019

Docket No. E017/D-18-568

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Katie J. Sieben	Chair
Dan Lipschultz	Commissioner
Valerie Means	Commissioner
Matthew Schuerger	Commissioner
John A. Tuma	Commissioner

In the Matter of Otter Tail Power Company's
Petition for Approval of its 2018 Five-Year
Review of Depreciation Certification

ISSUE DATE: July 17, 2019

DOCKET NO. E-017/D-18-568

ORDER APPROVING PETITION AND
SETTING ADDITIONAL
REQUIREMENTS

PROCEDURAL HISTORY

On August 31, 2018, Otter Tail Power Company (Otter Tail or the Company) submitted its 2018 Five-Year Review of Depreciation Certification (the Petition).

On November 28, 2018, Otter Tail filed a correction to Attachment 1 of the Petition.

On December 31, 2018, the Office of the Attorney General, Residential Utilities and Antitrust Division (OAG) filed comments on the Petition.

On January 29, 2019, the Department of Commerce, Division of Energy Resources (the Department) filed comments requesting that Otter Tail provide additional information in reply comments.

On February 20, 2019, Otter Tail filed reply comments responding to the Department's and OAG's comments.

On March 14, 2019, the Commission issued a notice requesting comment on the Department's final recommendations and Otter Tail's reply comments.

On March 27, 2019, the Department filed a response to reply comments. The Department recommended approval of the Petition with modifications.

On April 10, 2019, Otter Tail and OAG filed reply comments in response to the March 14 notice.

On April 29, 2019, Otter Tail filed a response to OAG's April 10 reply comments.

On June 6, 2019, the Commission met to consider the Petition.

FINDINGS AND CONCLUSIONS

I. Introduction

Generally, depreciation accounting is a way of recognizing the cost of an asset over a reasonable approximation of its useful life. Minn. Stat. § 216B.11 requires each public utility to “conform its depreciation, amortization or depletion accounts to the rates and methods fixed by the commission.” Utilities must seek Commission certification of their depreciation practices by filing a depreciation study at least once every five years.¹ Otter Tail uses the remaining-life technique for all accounts except certain General Plant accounts, for which it uses amortization accounting. As the Department explained in its comments,

When companies choose the remaining-life technique for depreciating group property accounts, the underlying life and salvage factors may not change, but depreciation rates are adjusted annually to reflect the passage of time on remaining lives, as well as the impact of plant additions and retirements. Annual depreciation study updates are required when the remaining-life technique is employed to allow the Commission the opportunity to approve changes in depreciation rates.²

Otter Tail also uses group accounting to depreciate its large assets like office buildings and production plants, as explained further in Section V below.

II. Depreciation Parameters

Otter Tail proposed to reduce the remaining lives of all production-plant accounts by one year to reflect the passage of time. It proposed small decreases to the salvage rates of most of its steam production and other production plants, which would have the effect of increasing depreciation expense.

Otter Tail proposed a number of changes to the remaining lives and salvage rates of its transmission, distribution, and general plant accounts.³ As the Department explained,

[Otter Tail] used a five-year moving average analysis of the ratio of realized salvage and removal expense to the associated retirements used in the 2018 study for transmission, distribution and general plant categories to: a) estimate a realized net salvage rate; b) detect the emergence of historical trends; and c) establish a basis for estimating a future net salvage rate. [Otter Tail] indicated that cost of removal and salvage opinions obtained from Company personnel

¹ Minn. R. 7825.0700, subp. 1.

² Department comments, at 2.

³ These changes are summarized in the Petition at Attachment 1, Statement A.24–25.

were blended with judgement and historical net salvage indications in developing estimates of the future.⁴

The Commission agrees with the Department that Otter Tail's proposed remaining lives and salvage rates for its production plant, transmission, distribution, and general plant accounts are reasonable. The Commission will therefore approve these parameters.

The Commission also agrees with the Department that Otter Tail should submit supporting schedules for the remaining life and salvage analyses of each of its transmission, distribution, and general plant accounts, and will accordingly order the Company to do so for its next five-year depreciation study.

To promote consistency between the Company's resource plans and depreciation filings, the Commission will require Otter Tail to, in its next depreciation filing, compare the retirement estimates used in its most current integrated resource plan to the remaining lives used in its depreciation filing and explain any differences.

III. Plant Balances, Additions, and Retirements

Otter Tail added approximately \$123.5 million and retired approximately \$7.8 million in total plant in 2017, resulting in a net increase of approximately \$116 million for all plant accounts.⁵ Most of this increase occurred in Otter Tail's transmission and distribution plant accounts.

Minn. R. 7825.0700, subp. 2(B), requires each utility to disclose any major future additions or retirements to plant accounts that the utility believes may have a material effect on the current certification results. Otter Tail stated that it is "unaware of any major future additions that will materially affect this filing's certification results other than the request to include amortized intangible software accounts starting with next year's depreciation certification filing. Intangible software depreciation is addressed further below."⁶ As the Department explained, Otter Tail "described several existing and potential future additions and retirements that may affect future depreciation expense," including two transmission projects, a 150-megawatt wind farm, and a 250-megawatt simple cycle natural gas plant.⁷

In Otter Tail's 2005 integrated-resource-plan docket, the Commission required the following: "In its first depreciation filing that includes new peaking generators, Otter Tail shall compare the last rate case's short-term peaking capacity costs to the peaking capacity costs of the new generators."⁸ The Petition stated, "[t]his filing does not include any new peaking generators so

⁴ Department comments, at 5.

⁵ Department comments, at 7, Table 4.

⁶ Petition, at Attachment 3.1.

⁷ Department comments, at 7.

⁸ *In the Matter of Otter Tail Power Company's 2005 Integrated Resource Plan*, Docket No. E-017/RP-05-968, Order Accepting Resource Plan Change, at 7 (March 26, 2009).

there is no cost information to report with this filing.”⁹ The Commission agrees with the Department that this comparison will be useful once Otter Tail “decides on the peaking option it will pursue.”¹⁰ Therefore, the Commission will continue this requirement.

IV. Intangible Software Amortization Periods

A. Otter Tail’s Proposal

Otter Tail stated that it is installing a new customer information system to replace its existing system, which was developed internally and has been in use for over 30 years. In response to an OAG information request, Otter Tail explained that the current customer information system is difficult to maintain and “lacks the functionality” of the new commercial-off-the-shelf system that will replace it.¹¹

Otter Tail requested to amortize the cost of the new customer information system over 10 years and to include its two intangible software accounts in its 2019 depreciation filing.¹² The estimated cost of the new system is \$17.85 million, with \$8.773 million allocated to the Minnesota jurisdiction.

B. Parties’ Positions

The Department disagreed with Otter Tail’s proposal to amortize the cost of the new customer information system over 10 years, and instead recommended a 15-year amortization period. The Department noted that Otter Tail’s current system has been in place for over 30 years, and “it is reasonable to assume that the useful life of the CISone software would be half of that period.”¹³ The Department also cited two other utilities that recently gained approval for a 15-year useful life for new customer information systems.

OAG argued that Otter Tail’s customer-information-system proposal would cause intergenerational inequity. OAG recommended a minimum 15-year amortization period for the new system, citing other utilities and the useful life of the existing system. OAG also argued that Otter Tail should not be allowed to use group accounting to amortize the cost of the new customer information system because of the difficulty of removing any undepreciated portion from rate base in the future.

Otter Tail maintained that 10 years was an appropriate amortization period due to the software developer’s expectations for the life of the product. Otter Tail also cited the Commission’s approval of a 10-year amortization period for another Minnesota utility’s customer-information

⁹ Petition, at 3.

¹⁰ Department comments, at 8.

¹¹ OAG comments, at Exhibit A.2.

¹² Otter Tail explained that it generally has not included its software amortization accounts in its depreciation filings because accounts for intangible property lack salvage expectations and therefore drive amortization expense rather than depreciation expense.

¹³ Department response comments, at 2.

system. Otter Tail also argued that using group accounting would not preclude future efforts to examine the new customer-information system individually.

C. Commission Action

The Commission appreciates the Department's and OAG's thorough review and discussion of Otter Tail's amortization proposal for its new customer-information software. It is important to match the amortization period with the expected useful life of the asset in order to ensure that the ratepayers who derive use from an asset are the ones paying the amortization expense. An amortization period that is too short or too long can lead to intergenerational inequity whereby current ratepayers subsidize future ratepayers, or vice versa. The Commission acknowledges that estimating service lives for assets is not an exact science and instead relies upon the informed judgment of those well-versed in the particular asset.

In this case, the Commission concludes that Otter Tail's proposed 10-year amortization period for its new customer-information system is reasonable. This period is consistent with the software developer's representations about the expected useful life of the software, and the reasons for the decades-long useful life of the existing system are unique and not likely to be repeated. Thus, the Commission will approve Otter Tail's proposal for its new customer-information system and its proposal to include its two intangible software accounts in its 2019 depreciation filing.

V. Group Accounting for Large Assets

A. Otter Tail's Current Practice

Otter Tail currently uses group accounting for large assets such as office buildings and production plants. Group accounting operates by depreciating all assets in the group over a time period, and at a rate, determined by the average life of the assets in the group. As Otter Tail explained in its response to the Department's information request:

Otter Tail's General Office campus building asset, for example, is made up of 665 individual assets. Building components include items as foundations, structural supports, electrical, and plumbing services, roofing, siding, windows, HVAC, fire protection, security systems for example are major office building components. Then there is a multitude of smaller units like floor covering, window treatments, and lighting. Each of these all have their own individual vintage, remaining life, and salvage characteristics relevant to that office building component.¹⁴

Otter Tail further explained that each building has its own depreciation rate that is a composite depreciation rate of all of the individual assets associated with that building.

¹⁴ Department comments, at 10–11.

B. Parties' Positions

The Department expressed concern with Otter Tail's use of group accounting for large assets due to the potential for an asset to stop being used and useful before it is fully depreciated. The Department cited another Minnesota utility that used group accounting had retired a large office building when a substantial portion of the cost of the building remained on the books, so that ratepayers would continue to pay for an asset that was no longer used and useful. The Department requested further information from Otter Tail detailing how it would avoid such a scenario for its large assets. Upon further explanation from Otter Tail, the Department ultimately recommended that the Commission permit Otter Tail to continue using group accounting on the condition that the Company cannot argue in a future rate case that group accounting alone would prohibit the Commission from adjusting the Company's rates.

OAG argued that Otter Tail should not use group accounting for its office buildings and production plants, because group accounting was inappropriate in the ratemaking context due to the potential difficulty of removing an individual asset that is part of the group from rate base if necessary.

Otter Tail concurred with the Department's condition that it not argue in a future rate case that group accounting alone would prohibit the Commission from adjusting the Company's rates. Otter Tail explained that its group accounting practices yield the same result as individual depreciation "if the correct remaining life is estimated," because Otter Tail is able to "separately identify all applicable assets along with their historic costs and accumulated depreciation balances."¹⁵

C. Commission Action

Like the Department, the Commission is assured that Otter Tail's practices provide the necessary level of detail about individual assets to avoid potential issues associated with group accounting. In order to ensure that this information remains available if needed, the Commission will require Otter Tail to continue to maintain information about each of the major components (such as buildings) in the Company's group accounting. The Commission also accepts Otter Tail's representation that it will not argue in a future rate case that group accounting alone would prohibit the Commission from adjusting the Company's rates.

ORDER

1. The Commission approves the proposed service lives, salvage values, and depreciation rates contained in the Company's 2018 Five-Year Review of Depreciation Certification, with the following additional requirements regarding group accounting:
 - a. The Commission accepts the Company's representation that it will not argue in a subsequent rate case that group accounting alone would prohibit the Commission from making adjustments to the Company's rates; and

¹⁵ Otter Tail reply comments, at 6–7 (February 20, 2019).

- b. The Company must continue to maintain information about each of the major components in the Company's group accounting.
2. The Company shall file its next annual depreciation study by September 1, 2019.
3. The Company shall file its next five-year depreciation study by September 1, 2023.
4. In its next five-year depreciation study, the Company shall include the supporting schedules for each of its transmission, distribution, and general plant accounts.
5. In its first depreciation filing that includes new peaking generators, the Company shall compare the last rate case's short-term peaking capacity costs to the peaking capacity costs of the new generators.
6. The Company shall include a comparison of the retirement estimates used in its most current integrated resource plan to remaining lives used in its depreciation filing and explain any differences.
7. This order shall become effective immediately.

BY ORDER OF THE COMMISSION

Daniel P. Wolf
Executive Secretary



This document can be made available in alternative formats (e.g., large print or audio) by calling 651.296.0406 (voice). Persons with hearing loss or speech disabilities may call us through their preferred Telecommunications Relay Service or email consumer.puc@state.mn.us for assistance.

Otter Tail Power Company's
2018 Minnesota Annual Review of
Depreciation Certification Filing

Minnesota Docket No. E017/D-18-568

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



August 31, 2018

Mr. Daniel P. Wolf
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-2147

**RE: In the Matter of Otter Tail Power Company's Petition for Approval of its
2018 Five-Year Review of Depreciation Certification
Docket No. E017/D-18-**

Dear Mr. Wolf:

Otter Tail Power Company (Otter Tail) hereby submits its 2018 Five-Year Review of Depreciation Certification.

Otter Tail electronically filed this document with the Commission. In compliance with Minn. R. 7829.1300, subp. 2., Otter Tail served a copy of this filing on the Minnesota Department of Commerce - Division of Energy Resources and the Office of Attorney General – Antitrust & Utilities Division. A Summary of the filing has been served on all persons on Otter Tail's general service list. A Certificate of Service is also enclosed.

Please contact me at (218) 739-8659 or ldemmer@otpc.com if you have any questions.

Sincerely,

/s/ LOYAL K. DEMMER
Loyal K. Demmer, CMA
Senior Depreciation Accountant

jch
Enclosures
By electronic filing
c: Service List

**STATE OF MINNESOTA
BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION**

In the Matter of Otter Tail Power
Company's Petition for Approval of its
2018 Five-Year Review of Depreciation
Certification

Docket No. E017/D-18-

SUMMARY OF FILING

Please take notice that on August 31, 2018, Otter Tail Power Company filed its 2018 Five-Year Review of Depreciation Certification with the Minnesota Public Utilities Commission. The study is being filed under Minn. R. 7825.0700.

**STATE OF MINNESOTA
BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION**

In the Matter of Otter Tail Power
Company's Petition for Approval of its 2018 Docket No. E017/D-18-
Five-Year Review of Depreciation
Certification

PETITION OF OTTER TAIL POWER COMPANY

I. INTRODUCTION

Pursuant to Minn. R. 7825.0700, Otter Tail Power Company (Otter Tail or the Company) hereby files its 2018 Five-Year Petition for Depreciation Certification. Otter Tail requests that the study be certified effective January 1, 2019.

II. GENERAL FILING INFORMATION

Pursuant to Minn. R. 7829.1300, subp. 4, Otter Tail provides the following general information.

A. Name, Address, and Telephone Number of Utility

Otter Tail Power Company
215 South Cascade Street
P. O. Box 496
Fergus Falls, MN 56538-0496
(218) 739-8200

B. Name, Address, and Telephone Number of Utility Attorney

Cary Stephenson
Associate General Counsel
Otter Tail Power Company
215 South Cascade Street
P. O. Box 496
Fergus Falls, MN 56538-0496
(218) 739-8956
cstephenson@otpc.com

C. Date of Filing and Date Study Proposed to Take Effect

The filing date is August 31, 2018, and Otter Tail requests approval as of January 1, 2019.

D. Controlling Law for the Filing

Minn. Stat. §§ 216B.08 and 216B.11, and Minn. R. 7825.0700 – 7825.0900 control the filing.

E. Title of Utility Employee Responsible for Filing

Loyal K. Demmer, CMA
Senior Depreciation Accountant
Otter Tail Power Company
215 South Cascade Street
P. O. Box 496
Fergus Falls, MN 56538-0496
(218) 739-8659
ldemmer@otpc.com

III. DESCRIPTION OF FILING

This filing constitutes Otter Tail’s 2018 Five-Year Petition for Depreciation Certification. Otter Tail’s last five-year comprehensive depreciation study was filed in 2013 and approved by the Minnesota Public Utilities Commission (Commission) on April 7, 2014, in Docket No. E017/D-13-795. Otter Tail’s next five-year comprehensive depreciation study is due September 1, 2023. Annual depreciation certification filings are to be filed on or before September 1 of each year in the four interim years between the five-year comprehensive depreciation studies.

This petition contains four attachments:

1. 2018 Depreciation Rate Study prepared by Foster Associates Consultants, LLC, Attachment No. 1;
2. Proposed Remaining Lives and Salvage Percentages for Use in 2019, Attachment No. 2;
3. Supplemental Comments, Attachment No. 3;
4. Comparison of Retirement Dates between this filing and the Company’s most recent Commission approved Resource Plan that was filed in Docket No. E017/RP-16-386, Attachment No. 4

Attachment No. 1 contains Statement B, which is a Comparison of Current and Proposed Accruals showing depreciation expense for both total Company and the portion allocated to the Minnesota jurisdiction based on plant in-service balances as of December 31, 2017. Other statements in Attachment No. 1 provide the rest of the schedules required in an annual review of depreciation.

Attachment No. 2 lists the property accounts for which the Company requests certification of the remaining lives and salvage percentages to be used in determining 2019 depreciation rates.

Attachment No. 3, “Supplemental Comments,” addresses additional information not included in Attachment No. 1; specifically, it includes comments related to long-term depreciation planning and explanations about future plant additions and retirements.

Attachment No. 4 provides a schedule and narrative explaining differences between the remaining lives used in this Petition and the Company’s most recent Commission approved Integrated Resource Plan that was filed on June 1, 2016.

IV. OTHER DEPRECIATION FILING MATTERS

A. Peaking Capacity Cost Information

The Commission’s Order Accepting Resource Plan Change, (Docket No. E017/RP-05-968) dated March 26, 2009, requires that: “In its first depreciation filing that includes new peaking generators, Otter Tail shall compare the last rate case’s short-term peaking capacity costs to the peaking capacity costs of the new generators.” This filing does not include any new peaking generators so there is no cost information to report with this filing.

B. Software Amortization

Historically Otter Tail Power has not included its Software Amortization account and amortization period in its annual Depreciation Certification filings. This is because those accounts are for intangible property and drive amortization expense and not depreciation expense. Amortized accounts utilize amortization periods and do not have salvage expectations, thus remaining lives and salvage percentages are not used for those accounts. Otter Tail is requesting permission to

include in our proposed remaining lives and salvage percentages for 2019, these two software amortization accounts. We would like to include 5 and 10-year amortization periods for use in our amortization postings for 2019. If approved, Otter Tail will commence including these two intangible accounts in our 2019 annual technical update depreciation filing. As of now those accounts have also been outside the scope our depreciation studies since they drove amortization expense and therefore were not included in our depreciation certification filings. If approved, for next year's depreciation certification filing we would include Software plant in service and accumulated amortized reserve property records along with all the other accounts currently a part of the outsourced depreciation study.

V. MISCELLANEOUS INFORMATION

A. Pursuant to Minn. R. 7829.0700, Otter Tail Requests that the Following Persons be Placed on the Commission's Official Service List for this Proceeding:

Loyal K. Demmer, CMA
Senior Depreciation Accountant
Otter Tail Power Company
215 South Cascade Street
P. O. Box 496
Fergus Falls, MN 56538-0496
ldemmer@otpc.com

and

Cary Stephenson
Associate General Counsel
Otter Tail Power Company
215 South Cascade Street
P. O. Box 496
Fergus Falls, MN 56538-0496
cstephenson@otpc.com

B. Service on Other Parties

Otter Tail served a copy of this filing on the Department of Commerce – Division of Energy Resources and the Office of Attorney General – Antitrust & Utilities Division, and a summary of the filing on all parties on the attached general service list.

C. Summary of Filing

A one-paragraph summary of the Petition is attached.

VI. CONCLUSION

Otter Tail respectfully requests that the Commission approve this annual petition for depreciation certification, to be effective January 1, 2019.

Dated: August 31, 2018

Respectfully submitted,

OTTER TAIL POWER COMPANY

/s/ LOYAL K. DEMMER

Loyal K. Demmer, CMA
Senior Depreciation Accountant
Otter Tail Power Company
215 South Cascade Street
P. O. Box 496
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(218) 739-8659
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2018 Depreciation Rate Study





Ronald E. White, Ph.D.
President

17595 S. Tamiami Trail, Suite 260
Fort Myers, Florida 33908
T 239.267.1600 | M 239.980.5991

August 7, 2018

Mr. Loyal K. Demmer
Senior Depreciation Accountant
OTTER TAIL POWER COMPANY
215 South Cascade Street
Fergus Falls, MN 56538-0496

RE: 2018 Depreciation Rate Study

Dear Mr. Demmer:

Foster Associates is pleased to submit our report of the 2018 Depreciation Rate Study for Otter Tail Power Company. This report presents the results of our study leading to a recommendation that the Company seek approval of the Minnesota Public Utilities Commission to record depreciation expense using primary account accrual rates that composite to 2.82 percent. This change represents an increase of 0.04 percentage points above the current composite rate of 2.78 percent.

The study provides a comparison of current and proposed depreciation rates and annualized accruals for calendar year 2018, based upon plant investments and depreciation reserves at December 31, 2017. These rates can be updated to a subsequent date as needed. A continued application of currently approved rates would provide annual depreciation expense of \$53,168,839 compared with an annual expense of \$53,812,743 using the rates recommended in this study.

The proposed 2018 expense increase is \$643,904. The computed change in annualized accruals includes a reduction of \$1,245,381 attributable to an amortization of a \$59,723,038 reserve imbalance. A proportionate amount of the total reserve imbalance will be allocated to Minnesota and amortized over the weighted average remaining life of each rate category using the remaining-life depreciation rates recommended in the study. The remaining portion of the increase is attributable to recommended changes in service life and net salvage parameters.

The scope of our investigation included:

- Collection of plant and net salvage data;
- Reconciliation of data to the official records of the Company;
- Discussions with OTP plant accounting personnel;
- Validation of estimated years of final retirement for life-span categories;
- Statistical studies of historical retirement activity;
- Estimation of projection lives and retirement dispersion patterns;
- Analysis of gross salvage and cost of removal;
- Analysis of recorded depreciation reserves; and
- Development of recommended accrual rates for each rate category.

Mr. Loyal K. Demmer
Page Two
August 7, 2018

The results of our investigation are presented in the attached report in five sections. The Executive Summary provides an overview of the study and a discussion of the principal findings. The Company Profile provides background information about Otter Tail Power Company that is foundational to the study. The Study Procedure section describes the steps involved in conducting a depreciation study and the specific procedures used in this engagement. The Statements provide a comparative summary of current and proposed depreciation parameters, rates and accruals and required filing schedules in compliance with Minnesota Rules 7825.0700. The report concludes with the Analysis section which provides examples of the supporting schedules prepared for each plant account.

We wish to express our appreciation for the opportunity to again be of service to Otter Tail and for the assistance you provided to us. We would be pleased to discuss the study with you or others at your convenience.

Respectfully submitted,
FOSTER ASSOCIATES CONSULTANTS
by



Ronald E. White, Ph.D.
President

REW:lj

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August 2018

EXECUTIVE SUMMARY

INTRODUCTION

This report presents the findings and recommendations developed in a 2018 depreciation study for utility plant owned and operated by Otter Tail Power Company (OTP). The study was undertaken pursuant to Minnesota Rules 7825.0500-7825.0900 and by order of the Minnesota Public Utilities Commission in Docket No. E017/D-13-795 (Order dated April 7, 2014) directing OTP to file a five-year depreciation study by September 1, 2018. The current study provides recommended 2018 depreciation rates and parameters for: a) steam, hydraulic and other production facilities; and b) electric transmission, distribution and general plant categories. Work on the study commenced in June 2018 and progressed through mid-August, at which time the project was completed.

Foster Associates is a public utility economic consulting firm headquartered in Fort Myers, Florida offering economic research and consulting services on issues and problems arising from governmental regulation of business. Areas of specialization supported by the firm's Fort Myers, Florida office include property life forecasting, technological forecasting, depreciation estimation, and valuation of industrial property.

Foster Associates has undertaken numerous depreciation engagements for both public and privately owned business entities including detailed statistical life studies, analyses of required net salvage rates, and the selection of depreciation systems that will most nearly achieve the goals of depreciation accounting under the constraints of either government regulation or competitive market pricing. Foster Associates is widely recognized for industry leadership in the development of depreciation systems, life analysis techniques and computer software for conducting depreciation and valuation studies.

Depreciation rates currently used by OTP became effective January 1, 2017 pursuant to a Commission order in Docket No. E017/D-16-729 (Erratum Notice dated July 7, 2017) approving revised remaining lives developed in a 2017 technical update of depreciation rates. Parameters (*i.e.*, projection curve, projection life and future net salvage rates) used in the 2017 update were developed by Foster Associates in a 2013 study.

The principal findings and recommendations of the 2018 Depreciation Rate Study are summarized in the Section IV of this report. Statement A provides a comparative summary of current and proposed annual depreciation rates for each rate category. Statement B provides a comparison of current and proposed annual depreciation accruals. Statement C provides a comparison of computed and recorded depreciation reserves for each rate category. Statement D provides a summary of the components used to obtain weighted-average net salvage rates. Statement E provides a computation of the estimated future net salvage rate for life-span categories. Statement F provides a comparative summary of current and proposed parameters including projection life, projection curve and future net salvage rates.

Statement F also contains current and proposed statistics including average service life, average remaining life, and average net salvage rates. Statements G through I provide a five-year history of plant, reserves and accruals in compliance with Minnesota Rules 7825.0700, Subpart 1.

SCOPE OF STUDY

The principal activities undertaken in the course of the current study included:

- Collection of plant and net salvage data;
- Reconciliation of data to the official records of the Company;
- Discussions with OTP plant accounting personnel;
- Validation of estimated years of final retirements for life-span categories;
- Statistical studies of historical retirement activity;
- Estimation of projection lives and retirement dispersion patterns;
- Analysis of gross salvage and cost of removal;
- Analysis of recorded depreciation reserves; and
- Development of recommended accrual rates for each rate category.

DEPRECIATION SYSTEM

A depreciation rate is formed by combining the elements of a depreciation system. A depreciation system is composed of a method, a procedure and a technique. A depreciation method (*e.g.*, straight-line) describes the component of the system that determines the acceleration or deceleration of depreciation accruals in relation to either time or use. A depreciation procedure (*e.g.*, vintage group) identifies the level of grouping or sub-grouping of assets within a plant category. The level of grouping specifies the weighting used to obtain composite life statistics for an account. A depreciation technique (*e.g.*, remaining-life) describes the life statistic used in the system.

With the exception of certain general plant categories, OTP is currently using a Commission approved depreciation system composed of the straight-line method, vintage group procedure, remaining-life technique. Amortization accounting is used by OTP for general plant categories in which the unit cost of plant items is small in relation to the number of units classified in an account. Plant is retired (*i.e.*, credited to plant and debited to the reserve) as each vintage achieves an age equal to the amortization period.

The matching and expense recognition principles of accounting provide that the cost of an asset (or group of assets) should be allocated to operations over an estimate of the economic life of the asset in proportion to the consumption of service potential. It is the opinion of Foster Associates that the objectives of depreciation accounting are being achieved through the use of the vintage group procedure

which distinguishes service lives among vintages, and the remaining-life technique which provides cost apportionment over the estimated weighted average remaining life of a rate category. Although the emergence of economic factors such as competition and incentive forms of regulation may eventually encourage abandonment of the straight-line method, no attempt was made in the current study to address these concerns.

PROPOSED DEPRECIATION RATES

Table 1 below provides a summary of the changes in annual rates and accruals resulting from an application of the parameters and depreciation rates recommended in the 2018 study.

Function	Accrual Rate			2018 Annualized Accrual		
	Current	Proposed	Diff.	Current	Proposed	Difference
A	B	C	D=C-B	E	F	G=F-E
Steam Production	3.01%	3.15%	0.14%	\$17,233,975	\$18,034,768	\$800,793
Hydraulic Production	8.94%	9.40%	0.46%	629,337	661,872	32,535
Other Production	4.14%	4.34%	0.20%	12,818,408	13,433,816	615,408
Transmission	1.69%	1.61%	-0.08%	8,228,627	7,845,575	(383,052)
Distribution	2.45%	2.36%	-0.09%	11,791,425	11,344,388	(447,037)
General Plant	4.60%	4.65%	0.05%	2,467,067	2,492,324	25,257
Total	2.78%	2.82%	0.04%	\$53,168,839	\$53,812,743	\$643,904

Table 1. Current and Proposed Rates and Accruals

Foster Associates is recommending primary account depreciation rates equivalent to a composite rate of 2.82 percent. Depreciation expense is currently accrued at rates that composite to 2.78 percent. The recommended change in the composite depreciation rate is, therefore, an increase of 0.04 percentage points.

A continued application of current rates would provide annualized depreciation expense of \$53,168,839 compared with an annualized expense of \$53,812,743 using the rates developed in this study. The proposed 2018 expense increase is \$643,904.¹ The computed change in annualized accruals includes a reduction of \$1,245,381 attributable to an amortization of a \$59,723,038 reserve imbalance. The remaining portion of the change is attributable to adjustments in service life and net salvage statistics recommended in the 2018 study. The portion of the increase in accruals allocated to the Minnesota jurisdiction is \$410,330.

Of the 129 plant accounts included in the 2018 study, Foster Associates is recommending rate reductions for 15 accounts, rate increases for 84 accounts and no change for 30 accounts.

¹ The depreciation expense increase would be \$289,079 if Otter Tail were permitted to rebalance depreciation reserves.

COMPANY PROFILE

GENERAL

Otter Tail Power Company was incorporated in Minnesota in 1907 and began selling electric energy with completion of the Dayton Hollow Hydro Plant on the Otter Tail River in 1909. OTP became a separate, wholly owned subsidiary of Otter Tail Corporation in 2009.

Over the years, OTP expanded its operations through construction, acquisition, and mergers, and serves more than 132,000 customers. Approximately 61,800 customers are located in Minnesota, 58,800 in North Dakota, and 11,600 in South Dakota.



GENERATING RESOURCES

OTP operates three coal-burning power plants that produce about 57 percent of the electricity sold to customers.

Located near Big Stone City, South Dakota, the 474 megawatt Big Stone plant is co-owned by OTP (53.9%), NorthWestern Energy (23.4%) and Montana-Dakota Utilities (22.7%). Plant construction began in 1969 and commercial operation began in May 1975. The initial cost to construct the plant was approximately \$170 million.



The Coyote Station is a single 427 megawatt lignite-fired unit located two miles south of Beulah, North Dakota. The station is operated by OTP (35%) and jointly owned with Montana-Dakota Utilities (25%), Northern Municipal Power Agency (30%) and NorthWestern Energy (10%). The plant consists of one Babcock and Wilcox cyclone-fired lignite boiler with a maximum rated heat input capacity of 5,800 MMBTU/hr. The boiler is equipped with a Flue Gas Desulfurization (FGD)

system in series with a fabric filter. Flue gas from the main boiler is emitted through a 498-foot stack equipped to monitor NO_x, SO_x and opacity. Steam from the boiler is routed to a Westinghouse steam driven turbine. Also located at the site are coal handling systems, an auxiliary boiler, emergency generators and fuel oil storage tanks. Construction of the Coyote Station began in October 1977 and commercial operation began in 1981.



In October 2012 the Coyote owners, including OTP, entered into a lignite sales agreement with Coyote Creek Mining Company, LLC, a subsidiary of The North American Coal Corporation, to deliver the annual coal supply needs of Coyote Station for 25 years beginning in May 2016 through 2040.

Located near Fergus Falls, Minnesota, the two-unit, coal fired (western subbituminous) Hoot Lake plant is owned and operated by OTP. Unit 2 (completed in 1959) and Unit 3 (completed in 1964) have combined capacity of 139.7 megawatt. The facility was originally constructed as a dam built on a diverted portion of the Otter Tail River (Hoot Lake and Wright Lake forming the reservoirs for this dam site).



As OTP grew and fluctuating river levels proved problematic, a steam plant was built adjacent to the hydroelectric station in 1923. The steam portion was expanded in 1937 and again in the 1940s and 1960s. The hydroelectric portion continues in operation today and also serves as the water intake for the steam portion. The 1923 and 1937 portions of the plant still exist but the steam machinery has long since been removed. Unit 1 (installed in 1946) was retired in 2006 while Units 2 and 3 continue in service.

In addition to its coal-fired power plants, OTP owns and operates six small hydro plants supplying about 1.0 percent of the electricity sold to customers.

Name	Capacity	Online	Comments
A	B	C	D
Bemidji	0.8 MW	1907	Purchased in 1943 from Interstate Power Company in 1943.
Dayton Hollow	1.0 MW	1909	OTP's first source of electricity.
Hoot Lake	0.8 MW	1914	A tunnel diverts water from the Otter Tail River to run the water wheel at the Hoot Lake plant.
Pisgah Dam	0.5 MW	1918	Purchased by OTP in 1938
Wright Dam	0.5 MW	1922	Named after one of OTP's founders.
Taplin Gorge	0.5 MW	1925	Designed as a replica of the tomb of Italian Emperor Theodoric.

With the exception of the Bemidji plant located on the Mississippi River, all other plants are located on the Otter Tail River near Fergus Falls, Minnesota.

Other production facilities, serving as peaking plants, include three oil-fired combustion turbines and one natural gas or oil fired turbine. Jamestown (two units with combined capacity of 43.3 MW) and Lake Preston (20.1 MW) are oil fired. Solway (42.8 MW) operates on natural gas or fuel oil.

Name	Capacity	Online	Comments
A	B	C	D
Solway, MN	42.8 MW	2003	Natural gas or fuel oil.
Jamestown, ND	43.3 MW	1976	Fuel oil.
Lake Preston, SD	20.1 MW	1978	Fuel oil.

OTP's renewable energy resources include 106 wind turbines located 6–12 miles south of Langdon, North Dakota. Initial operation of the 159 megawatt Langdon Wind Energy Center began in December 2007. OTP owns 27 of the 106 turbines or 40.5 megawatts. FPL Energy owns the remainder of the turbines and operates the entire wind farm. All of the remaining output from the facility is sold to Minnkota Power Cooperative (99 MW) and OTP (19.5 MW) under a 25-year power purchase agreements. The turbines are designed to operate in wind speeds up to 56 mph, but can withstand sustained wind speeds exceeding 100 mph. A control panel inside the base of each turbine houses communication and electronic circuitry. Electricity generated by each turbine is brought to a pad-mounted transformer where the voltage is raised to 34,500 volts.



Additionally, OTP owns a 48-megawatt portion of the Ashtabula Wind Center that became operational in November of 2008. NextEra Energy Resources (formerly FPL Energy) owns the remainder of the 199.5-megawatt site and is the project developer. The wind farm was built in Barnes County North Dakota. It is the largest wind farm in North Dakota to date although other large wind-generating facilities are planned.

In 2009 Otter Tail Power Company began construction of a 49.5 MW portion of the 169.5 MW Luverne Wind Farm in east central North Dakota. Purchase of the construction-ready site from M-Power LLC, was completed February 6, 2009. NextEra Energy was the construction manager of the wind farm. Otter Tail Power Company's portion of the site was commercially operational by early September 2009.

TRANSMISSION AND DISTRIBUTION FACILITIES

At December 31, 2017, the Company owned 77 miles of 345 kV lines; 420 miles of 230 kV lines; 875 miles of 115 kV lines; and about 4,000 miles of lower voltage lines, principally 41.6 kV. The Company's electric system is interconnected with those of most neighboring electric suppliers and is a member of the Midwest Reliability Organization (MRO) and the Midcontinent Independent System Operator (MISO). These associations allow OTP to participate in coordination of system reliability, reserve sharing, and planning and building of generation and transmission facilities over a multi-state area.

Distribution facilities consist of approximately 5,750 miles of overhead and underground primary cable. Other distribution plant and equipment includes approximately 180,000 meters; 575 substations; and 48,000 line transformers.

STUDY PROCEDURE

INTRODUCTION

The purpose of a depreciation study is to analyze the mortality characteristics, net salvage rates and adequacy of depreciation accruals and recorded depreciation reserves for each rate category. This study provides the foundation and documentation for recommended changes in the depreciation rates used by OTP for production, transmission, distribution and general plant categories. The proposed rates are subject to approval by the Minnesota Public Utilities Commission.

SCOPE

The steps involved in conducting a depreciation study can be grouped into five major tasks:

- Data Collection;
- Life Analysis and Estimation;
- Net Salvage Analysis;
- Depreciation Reserve Analysis; and
- Development of Accrual Rates.

The scope of the OTP 2018 study included a consideration of each of these tasks as described below.

DATA COLLECTION

The minimum database required to conduct a statistical life study consists of a history of vintage year additions and unaged activity—year retirements, transfers and adjustments. These data must be appropriately adjusted for transfers, sales and other plant activity that would otherwise bias the measured service life of normal retirements. The age distribution of surviving plant for unaged data can be estimated by distributing plant in service at the beginning of the study year to prior vintages in proportion to the theoretical amount surviving from a projection or survivor curve identified in the life study. The statistical methods of life analysis used to examine unaged plant data are known as *semi-actuarial techniques*.

A far more extensive database is required to apply statistical methods of life analysis known as *actuarial techniques*. Plant data used in an actuarial life study most often include age distributions of surviving plant at the beginning of a study year and the vintage year, activity year, and dollar amounts associated with normal retirements, reimbursed retirements, sales, abnormal retirements, transfers, corrections, and extraordinary adjustments over a series of prior activity years. An actuarial database may include age distributions of surviving plant at the beginning of the earliest activity year, rather than at the beginning of the study year. Plant additions, however, must be included in a database containing an opening age distribution to derive aged survivors at the beginning of the study year. All activity year transactions with vintage year identification are coded and stored in a database. These data are processed by a computer program and transaction summary reports

are created in a format reconcilable to official plant records. The availability of such detailed information is dependent upon an accounting system that supports aged property records. The Continuing Property Record (CPR) system used by OTP provides aged transactions for all plant accounts.²

The database used in conducting the 2018 study was assembled by appending 2017 plant and reserve activity to the database used in the 2017 Technical Update. Service life and net salvage statistics estimated in the 2018 study were derived from accounting transactions recorded over the period 1993 through 2017 for steam and other production accounts and over the period 1985 through 2017 for transmission, distribution and general plant accounts.³ Detailed accounting transactions were extracted from the CPR system and assigned transaction codes which describe the nature of the accounting activity. Transaction codes for plant additions, for example, were used to distinguish normal additions from acquisitions, purchases, reimbursements and adjustments. Similar transaction codes were used to distinguish normal retirements from sales, reimbursements, abnormal retirements and adjustments. Transaction codes were also assigned to transfers, capital leases, gross salvage, cost of removal and other accounting activity considered in a depreciation study.

The accuracy and completeness of the assembled database was verified by Foster Associates for activity year 2017 by comparing additions, retirements, transfers and adjustments, and the ending plant balance derived for 2017 to the regulated investments reported internally by the Company in electric plant in service reports. These reports conform to FERC Form 1 plant reporting requirements. The accuracy of prior activity years was confirmed in each of the full studies and technical updates prepared over the period 1998–2017. Age distributions of surviving plant at December 31, 2017 were reconciled to the CPR.

LIFE ANALYSIS AND ESTIMATION

Life analysis and life estimation are terms used to describe a two-step procedure for estimating the mortality characteristics of a plant category. The first step (*i.e.*, life analysis) is largely mechanical and primarily concerned with history. Statistical techniques are used in this step to obtain a mathematical description of the forces of retirement acting upon a plant category and an estimate of the *projection life* of

² Depreciation studies conducted prior to the 2007 Technical Update were based on unaged transactions for Account 370.00 (Meters) and Account 370.10 (Load Management Switches). Depreciation rates were derived from simulated age distributions. Vintaged plant activity for calendar year 2006 and recorded age distributions at December 31, 2006 were developed by OTP and first used in the 2007 Technical Update. Derived age distributions at December 31, 2005 and post-2005 aged transactions are now available for all metering plant accounts.

³ The 1993–2006 database for hydro production was disaggregated with transfers in 2006 to develop and maintain depreciation rates for each plant location.

the account. The mathematical expressions used to describe these life characteristics are known as *survival functions* or *survivor curves*.

The second step (*i.e.*, life estimation) is concerned with predicting the expected remaining life of property units still exposed to forces of retirement. It is a process of blending the results of a life analysis with informed judgment (including expectations about the future) to obtain an appropriate projection life and curve descriptive of the parent population from which a plant account is viewed as a random sample. The amount of weight given to a life analysis will depend upon the extent to which past retirement experience is considered descriptive of the future.

The analytical methods used in a life analysis are broadly classified as actuarial and semi-actuarial techniques. Actuarial techniques can be applied to plant accounting records that reveal the age of a plant asset at the time of its retirement from service. Stated differently, each property unit must be identifiable by date of installation and age at retirement. Semi-actuarial techniques can be used to derive service life and dispersion estimates when age identification of retirements is not maintained or readily available. Age identification of retirements was available for all plant accounts included in the 2018 OTP depreciation study.

An actuarial life analysis program designed and developed by Foster Associates was used in this study. The first step in an actuarial analysis involves a systematic treatment of the available data for the purpose of constructing an observed life table. A complete life table contains the life history of a group of property units installed during the same accounting period and various probability relationships derived from the data. A life table is arranged by age-intervals (usually defined as one year) and shows the number of units (or dollars) entering and leaving each age-interval and probability relationships associated with this activity. A life table minimally shows the age of each survivor and the age of each retirement from a group of units installed in a given accounting year.

A life table can be constructed in any one of at least five methods. The annual-rate or retirement-rate method was used in this study. The mechanics of the annual-rate method require the calculation of a series of ratios obtained by dividing the number of units (or dollars) surviving at the beginning of an age interval into the number of units (or dollars) retired during the same interval. This ratio—called a “retirement ratio” is an estimator of the hazard rate or conditional probability of retirement during an age interval. The cumulative proportion surviving is obtained by multiplying the retirement ratio for each age interval by the proportion of the original group surviving at the beginning of that age interval and subtracting this product from the proportion surviving at the beginning of the same interval. The annual-rate method is applied to multiple groups or vintages by combining the retirements and/or survivors of like ages for each vintage included in the analysis.

The second step in an actuarial analysis involves graduating or smoothing the observed life table and fitting the smoothed series to a family of survival functions. The functions used in this study are the Iowa-type curves which are mathematically described by the Pearson frequency curve family. The observed life table was smoothed by a weighted least-squares procedure in which first, second and third degree orthogonal polynomials were fitted to the observed retirement ratios. The resulting function can be expressed in as a survivorship function which is numerically integrated to obtain an estimate of the projection life. The smoothed survivorship function is then fitted by a weighted least-squares procedure to the Iowa-curve family to obtain a mathematical description or classification of the dispersion characteristics of the data.

The set of computer programs used in this analysis provides multiple rolling-band, shrinking-band and progressive-band analyses of an account. Observation bands are defined in terms of a "retirement era" that restricts the analysis to the retirement activity of all vintages represented by survivors at the beginning of a selected era. In a rolling-band analysis, a year of retirement experience is added to each successive retirement band and the earliest year from the preceding band is dropped. A shrinking-band analysis begins with the total retirement experience available and the earliest year from the preceding band is dropped for each successive band. A progressive-band analysis adds a year of retirement activity to a previous band without dropping earlier years from the analysis. Rolling, shrinking and progressive band analyses are used to detect the emergence of trends in the behavior of the dispersion and projection life.

Options available in the Foster Associates actuarial life-analysis program include the width and location of both placement and observation bands; the interval of years included in a selected band analysis; the estimator of the hazard rate (actuarial, conditional proportion retired, or maximum likelihood); the elements to include on the diagonal of a weight matrix (exposures, inverse of age, inverse of variance, or unweighted); and the age at which an observed life table is truncated. The program also provides tabular and graphics output as an aid in the analysis.

While actuarial and semi-actuarial statistical methods are well suited to an analysis of plant categories containing a large number of homogeneous units (*e.g.*, meters and services), the application of retirement dispersions is slightly different for plant categories composed of major items of plant that will most likely be retired as a single unit. Plant retirements from an integrated system prior to the retirement of the entire facility are viewed as interim retirements that will be replaced in order to maintain the integrity of the system. Additionally, plant facilities may be added to the existing system (*i.e.*, interim additions) in order to expand or enhance its productive capacity without extending the service life of the existing system. A proper depreciation rate can be developed for an integrated system using a life-span method.

All plant accounts classified in Steam, Hydro and Other Production were identified by unit and treated as life-span categories in the 2018 study. Additionally, three structures accounts (390.10; 390.20; and 390.30) classified in the General Plant function were treated as life-span categories in this and prior studies.

NET SALVAGE ANALYSIS

Depreciation rates designed to achieve the goals and objectives of depreciation accounting will include a parameter for future net salvage and a variable for average net salvage reflecting both realized and future net salvage rates.

Estimates of net salvage rates applicable to future retirements are most often derived from an analysis of gross salvage and cost of removal realized in the past. An analysis of past experience (including an examination of trends over time) provides a reasonable basis for estimating future salvage and cost of removal. However, consideration should also be given to events that may cause deviations from net salvage realized in the past. Among the factors that should be considered are the age of plant retirements; the portion of retirements likely to be reused; changes in the method of removing plant; the type of plant to be retired in the future; inflation expectations; the shape of the projection life curve; and economic conditions that may warrant greater or lesser weight to be given to net salvage rates observed in the past.

Average net salvage rates for an account or plant function are derived from a direct dollar weighting of a) historical retirements with historical (or realized) net salvage rates and b) future retirements (*i.e.*, surviving plant) with the estimated future net salvage rate. Average net salvage rates will change, therefore, as additional years of retirement and net salvage activity become available and as subsequent plant additions modify the weighting of future net salvage estimates. The computation of estimated average net salvage rates is shown in Statement D.

Future net salvage rates for steam production facilities (*i.e.*, Big Stone, Coyote and Hoot Lake) were developed from the projected cost of dismantling these facilities estimated in a demolition study commissioned by the Company in 2018. Terminal dismantlement costs estimated in the 2018 demolition study are summarized in Table 3 below. Terminal net salvage rates for general plant structures was estimated by OTP. The computation of future net salvage rates is shown in Statement E.

Special consideration should also be given to the treatment of insurance proceeds and other forms of third-party reimbursements credited to the depreciation reserve. A properly conducted net salvage study will exclude such activity from the estimate of future parameters and include the activity in the computation of realized and average net salvage rates.

Plant	2017 Cost	Ownership Share	Inflation Rate	AYFR	Demolition Cost
A	B	C	D	E	F
Steam Production					
Big Stone	\$ 17,690,452	53.90%	2.00%	2046	\$ 16,932,952
Coyote	26,139,240	35.00%	2.00%	2041	14,715,165
Hoot Lake Units 2 and 3	8,533,131	100.00%	2.00%	2021	9,236,535
Other Production					
Jamestown	\$ 331,166	100.00%	2.00%	2033	\$ 454,620
Lake Preston	208,927	100.00%	2.00%	2033	286,812
Solway	253,155	100.00%	2.00%	2038	383,699
Wind Farms					
Ashtabula	\$ 2,770,461	100.00%	2.00%	2033	\$ 3,803,249
Langdon	2,267,890	100.00%	2.00%	2032	3,052,281
Luverne	2,978,690	100.00%	2.00%	2034	4,170,885
General Plant					
General Office Bldg.	\$ (1,831,958)	100.00%	2.00%	2040	\$ (2,888,813)
Fleet Service Center	(206,166)	100.00%	2.00%	2035	(294,456)
Central Stores Bldg.	(1,870,002)	100.00%	2.00%	2040	(2,948,805)

Table 3. Demolition Costs

A five-year moving average analysis of the ratio of realized salvage and removal expense to the associated retirements was used in the 2018 study for transmission, distribution and general plant categories to: a) estimate a realized net salvage rate; b) detect the emergence of historical trends; and c) establish a basis for estimating a future net salvage rate. Cost of removal and salvage opinions obtained from Company personnel were blended with judgment and historical net salvage indications in developing estimates of the future.

DEPRECIATION RESERVE ANALYSIS

The purpose of a depreciation reserve analysis is to compare the current level of recorded reserves with the level required to achieve the goals or objectives of depreciation accounting if the amount and timing of future retirements and net salvage are realized as predicted. The difference between a required (or theoretical) depreciation reserve and a recorded reserve provides a measurement of the expected excess or shortfall that will remain in the depreciation reserve if corrective action is not taken to eliminate the reserve imbalance.

Unlike a recorded reserve which represents the net amount of depreciation expense charged to previous periods of operations, a theoretical reserve is a measure of the implied reserve requirement at the beginning of a study year if the timing of future retirements and net salvage is in exact conformance with a survivor curve chosen to predict the probable life of property still exposed to the forces of retirement. Stated differently, a theoretical depreciation reserve is the difference between

the recorded cost of plant presently in service and the sum of depreciation expense and net salvage that will be charged in the future if retirements are distributed over time according to a specified retirement frequency distribution.

The survivor curve used in the calculation of a theoretical depreciation reserve is intended to describe forces of retirement that will be operative in the future. However, retirements caused by forces such as accidents, physical deterioration and changing technology seldom, if ever, remain stable over time. It is unlikely, therefore, that a probability or retirement frequency distribution can be identified that will accurately describe the age of plant retirements over the complete life cycle of a vintage. It is for this reason that depreciation rates should be reviewed periodically and adjusted for observed or expected changes in the parameters chosen to describe the underlying forces of mortality.

Although reserve records are commonly maintained by various account classifications, the total utility reserve in relation to the sum of account computed reserves is the most important indicator of the adequacy (or inadequacy) of recorded reserves. If statistical life studies have not been conducted or retirement dispersion has been overlooked in setting depreciation rates, it is likely that some accounts will be over-depreciated and other accounts will be under-depreciated relative to a calculated theoretical reserve. Differences between a theoretical reserve and a recorded reserve also will arise as a normal occurrence when service lives, dispersion patterns and net salvage estimates are adjusted in the course of depreciation reviews. It is appropriate, therefore, and consistent with group depreciation theory to periodically redistribute or rebalance recorded reserves among the various primary accounts based upon the most recent estimates of retirement dispersion and net salvage rates.

Notwithstanding that Otter Tail had responsibly rebalanced depreciation reserves (with Commission authorization) in each full study and each technical update for nearly twenty (20) years, the Department asserted in Docket No. E-017/D-11-886 that: "... the only clear effect of OTP's practice of redistributing reserves is to create a layer of confusion on OTP's depreciation calculations." The Commission accepted the Department's assertion and ordered that: "OTP shall discontinue redistributing its depreciation reserves effective with this filing." The stability in accrual rates and control of amortization accounts that Otter Tail achieved by rebalancing depreciation reserves has been eliminated by the Commission directive and removed from all post-2011 depreciation studies and technical updates.

Statement C provides a comparison of recorded and computed reserves at December 31, 2017. The recorded reserve was \$723,721,323 or 37.9 percent of the depreciable plant investment. The corresponding computed reserve is \$663,998,285 or 34.8 percent of the depreciable plant investment. A proportionate amount of the measured reserve imbalance of \$59,723,038 will be amortized over

the composite weighted-average remaining life of each rate category using the remaining life depreciation rates proposed in this study.

DEVELOPMENT OF ACCRUAL RATES

The goal or objective of depreciation accounting is cost allocation over the economic life of an asset in proportion to the consumption of service potential. Ideally, the cost of an asset—which represents the cost of obtaining a bundle of service units—should be allocated to future periods of operation in proportion to the amount of service potential expended during an accounting interval. The service potential of an asset is the present value of future net revenue (*i.e.*, revenue less expenses exclusive of depreciation and other non-cash expenses) or cash inflows attributable to the use of that asset alone.

Cost allocation in proportion to the consumption of service potential is often approximated by the use of depreciation methods employing time rather than net revenue as the apportionment base. Examples of time-based methods include sinking-fund, straight-line, declining balance, and sum-of-the-years' digits. The advantage of a time-based method is that it does not require an estimate of the remaining amount of service capacity an asset will provide or the amount of capacity actually consumed during an accounting interval. Using a time-based allocation method, however, does not change the goal of depreciation accounting. If it is predictable that the net revenue pattern of an asset will either decrease or increase over time, then an accelerated or decelerated time-based method should be used to approximate the rate at which service potential is actually consumed.

The time period over which the cost of an asset will be allocated to operations is determined by the combination of a procedure and a technique. A depreciation procedure describes the level of grouping or sub-grouping of assets within a plant category. The broad group, vintage group, equal-life group, and item (or unit) are a few of the more widely used procedures. A depreciation technique describes the life statistic used in a depreciation system. Whole life and remaining life (or expectancy) are the most common techniques.

Depreciation rates recommended in the 2018 study were developed using a system composed of the straight-line method, vintage group procedure, remaining-life technique. This formulation of the accrual rate is equivalent to a straight-line method, vintage group procedure, whole-life technique with amortization of reserve imbalances over the estimated remaining life of each rate category. This system was proposed and adopted in the 1993 study and has been retained in each subsequent study and technical update. It is the opinion of Foster Associates that this system will remain appropriate for OTP, provided depreciation studies are conducted periodically and parameters are routinely adjusted to reflect changing operating conditions. Although the emergence of economic factors such as restructuring and performance based regulation may ultimately encourage abandonment of the

straight-line method, no attempt was made in the current study to address this concern.

It is also the opinion of Foster Associates that amortization accounting is consistent with the goals and objectives of depreciation accounting and remains appropriate for the approved amortization categories.

STATEMENTS

INTRODUCTION

This section provides a comparative summary of depreciation rates, annual depreciation accruals, recorded and computed depreciation reserves, and current and proposed service life and net salvage parameters recommended for OTP plant and equipment categories. The content of these statements is briefly described below.

- Statement A provides a comparative summary of current and proposed annual depreciation rates using the vintage group procedure, remaining-life technique.
- Statement B provides a comparison of current and proposed annualized 2018 depreciation accruals derived from the depreciation rates contained in Statement A.
- Statement C provides a comparison of recorded and computed reserves for each rate category at December 31, 2017.
- Statement D provides a summary of the components used to obtain weighted average net salvage rates.
- Statement E provides a computation of the estimated future net salvage rate for life-span categories.
- Statement F provides a comparative summary of current and proposed parameters and statistics including projection life, projection curve, average service life, average remaining life, and average and future net salvage rates.

Current depreciation accruals shown on Statement B are the product of the plant investment (Column B) and current depreciation rates (Column D) shown on Statement A. These are the effective rates used by the Company for the mix of investments recorded on December 31, 2017. Similarly, proposed depreciation accruals shown on Statements B are the product of the plant investment and proposed depreciation rates (Column H) shown on Statement A. Proposed remaining life accrual rates (Statement A) are given by:

$$\text{Accrual Rate} = \frac{1.0 - \text{Reserve Ratio} - \text{Future Net Salvage Rate}}{\text{Remaining Life}}$$

This formulation of a remaining-life accrual rate is equivalent to

$$\text{Accrual Rate} = \frac{1.0 - \text{Average Net Salvage}}{\text{Average Life}} + \frac{\text{Computed Reserve} - \text{Recorded Reserve}}{\text{Remaining Life}}$$

where Average Net Salvage, Computed Reserve and Recorded Reserve are expressed in percent.

Minnesota State Agency Rules 7825.0700, Subpart 1 provide that each utility shall file the following schedules (for each year since the last certification) in the form prescribed by the Commission:

1. Plant in service (by primary account):
 - a. Beginning and ending plant balances;
 - b. Additions and retirements; and
 - c. Adjustments and transfers.
2. Analysis of depreciation reserve (by primary account):
 - a. Beginning and ending reserve balances;
 - b. Depreciation accruals and plant retirements;
 - c. Cost of removal and gross salvage value; and
 - d. Transfers, adjustments and other debits (credits).
3. Summary of annual depreciation accruals (by primary account):
 - a. Plant balance;
 - b. Estimated net salvage;
 - c. Depreciation reserve;
 - d. Probable service life; and
 - e. Depreciation accrual and rate.

Accordingly, this section also includes the following statements which set forth the above information for each of the calendar years 2008 through 2012:

1. Statement G – Plant Activity;
2. Statement H – Analysis of Depreciation Reserve; and
3. Statement I – Summary of Annual Depreciation Accruals.

Minnesota State Agency Rules 7825.0700, Subpart 2, B. provide that each utility shall disclose a list of any major future additions or retirements to the plant accounts that the utility believes may have a material effect on the current certification results. Any future additions or retirements that would materially affect the current certification results are discussed in the Company's application.

OTTER TAIL POWER COMPANY
Comparison of Current and Updated Accrual Rates
Current: VG Procedure / RL Technique
Updated: VG Procedure / RL Technique

Statement A

Account Description A	Current			Updated			
	Rem. Life B	Fut. Net Salvage C	Accrual Rate D	Rem. Life E	Fut. Net Salvage F	Reserve Ratio G	Accrual Rate H
<u>Luverne Wind Generation</u>							
341.00 Structures and Improvements	17.11	-2.0%	4.27%	16.15	-5.9%	32.98%	4.52%
342.00 Fuel Holders and Accessories							
343.00 Prime Movers							
344.00 Generators	17.11	-2.0%	4.34%	16.15	-5.9%	31.36%	4.62%
345.00 Accessory Electric Equipment	17.11	-2.0%	4.27%	16.15	-5.9%	32.94%	4.52%
346.00 Miscellaneous Power Plant Equipment	17.11	-2.0%	5.06%	16.16	-5.9%	20.22%	5.30%
Total Luverne Wind Generation			4.33%	16.15	-5.9%	31.50%	4.61%
<u>Solway Combustion Turbine</u>							
341.00 Structures and Improvements	20.90	-0.4%	2.98%	19.96	-1.6%	41.06%	3.03%
342.00 Fuel Holders and Accessories	20.90	-0.4%	2.93%	19.96	-1.6%	41.91%	2.99%
343.00 Prime Movers	20.90	-0.4%	3.03%	19.96	-1.6%	39.99%	3.09%
344.00 Generators							
345.00 Accessory Electric Equipment	20.90	-0.4%	3.14%	19.96	-1.6%	37.82%	3.20%
346.00 Miscellaneous Power Plant Equipment	20.91	-0.4%	3.18%	19.96	-1.6%	36.96%	3.24%
Total Solway Combustion Turbine			3.03%	19.96	-1.6%	40.09%	3.08%
<u>Fergus Falls Control Center</u>							
341.00 Structures and Improvements							
342.00 Fuel Holders and Accessories							
343.00 Prime Movers	13.26		3.05%	12.29	-5.0%	62.36%	3.47%
344.00 Generators							
345.00 Accessory Electric Equipment							
346.00 Miscellaneous Power Plant Equipment							
Total Fergus Falls Control Center			3.05%	12.29	-5.0%	62.36%	3.47%

OTTER TAIL POWER COMPANY

Statement B

Comparison of Current and Updated Accruals
Current: VG Procedure / RL Technique
Proposed: VG Procedure / RL Technique

Account Description A	12/31/17 Plant Investment B	Minnesota Allocation Factor C	Current Annual Accrual		Proposed Annual Accrual		Difference	
			Total	Minnesota	Total	Minnesota	Total	Minnesota
			D	E=C*D	F	G=C*F	H=F-D	I=G-E
<u>Luverne Wind Generation</u>								
341.00 Structures and Improvements	\$ 2,266,581	0.54174088	\$ 96,783	\$ 52,431	\$ 102,449	\$ 55,501	\$ 5,666	\$ 3,070
342.00 Fuel Holders and Accessories								
343.00 Prime Movers								
344.00 Generators	65,778,913	0.54174088	2,854,805	1,546,565	3,038,986	1,646,343	184,181	99,778
345.00 Accessory Electric Equipment	4,863,837	0.54174088	207,686	112,512	219,845	119,099	12,159	6,587
346.00 Miscellaneous Power Plant Equipment	74,045	0.54174088	3,747	2,030	3,924	2,126	177	96
Total Luverne Wind Generation	\$ 72,983,376		\$ 3,163,021	\$ 1,713,538	\$ 3,365,204	\$ 1,823,069	\$ 202,183	\$ 109,531
<u>Solway Combustion Turbine</u>								
341.00 Structures and Improvements	\$ 4,411,779	0.54305025	\$ 131,471	\$ 71,395	\$ 133,677	\$ 72,593	\$ 2,206	\$ 1,198
342.00 Fuel Holders and Accessories	1,003,596	0.54305025	29,405	15,968	30,008	16,296	603	328
343.00 Prime Movers	21,507,132	0.54305025	651,666	353,887	664,570	360,895	12,904	7,008
344.00 Generators								
345.00 Accessory Electric Equipment	1,305,578	0.54305025	40,995	22,262	41,778	22,688	783	426
346.00 Miscellaneous Power Plant Equipment	350,326	0.54305025	11,140	6,050	11,351	6,164	211	114
Total Solway Combustion Turbine	\$ 28,578,411		\$ 864,677	\$ 469,562	\$ 881,384	\$ 478,636	\$ 16,707	\$ 9,074
<u>Fergus Falls Control Center</u>								
341.00 Structures and Improvements	\$ -		\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
342.00 Fuel Holders and Accessories								
343.00 Prime Movers	591,638	0.54305025	18,045	9,799	20,530	11,149	2,485	1,350
344.00 Generators								
345.00 Accessory Electric Equipment								
346.00 Miscellaneous Power Plant Equipment								
Total Fergus Falls Control Center	\$ 591,638		\$ 18,045	\$ 9,799	\$ 20,530	\$ 11,149	\$ 2,485	\$ 1,350

OTTER TAIL POWER COMPANY

Depreciation Reserve Summary
Vintage Group Procedure
December 31, 2017

Statement C

Account Description A	Plant Investment B	Recorded Reserve		Computed Reserve		Reserve Imbalance	
		Amount C	Ratio D=C/B	Amount E	Ratio F=E/B	Amount G=C-E	Multiple H=G/C
STEAM PRODUCTION							
<u>Big Stone</u>							
311.00 Structures and Improvements	\$ 85,343,127	\$ 23,353,474	27.36%	\$ 17,806,546	20.86%	\$ 5,546,929	23.75%
312.00 Boiler Plant Equipment	186,146,304	35,677,673	19.17%	33,943,801	18.24%	1,733,872	4.86%
312.10 Boiler Plant Equipment - Landfill							
314.00 Turbogenerator Units	30,307,708	18,355,035	60.56%	12,229,040	40.35%	6,125,995	33.38%
315.00 Accessory Electric Equipment	22,078,610	7,692,569	34.84%	5,661,309	25.64%	2,031,260	26.41%
316.00 Miscellaneous Power Plant Equipment	3,207,158	1,581,402	49.31%	1,169,374	36.46%	412,029	26.05%
Total Big Stone	\$ 327,082,907	\$ 86,660,153	26.49%	\$ 70,810,068	21.65%	\$ 15,850,085	18.29%
<u>Hoot Lake Units 2 and 3</u>							
311.00 Structures and Improvements	\$ 6,088,767	\$ 6,223,959	102.22%	\$ 6,338,945	104.11%	\$ (114,985)	-1.85%
312.00 Boiler Plant Equipment	38,129,553	31,479,411	82.56%	33,159,896	86.97%	(1,680,485)	-5.34%
312.10 Boiler Plant Equipment - Landfill	10,442,475	2,920,904	27.97%	1,113,748	10.67%	1,807,157	61.87%
314.00 Turbogenerator Units	11,543,445	11,084,939	96.03%	11,395,550	98.72%	(310,611)	-2.80%
315.00 Accessory Electric Equipment	2,766,673	2,713,043	98.06%	2,769,855	100.12%	(56,812)	-2.09%
316.00 Miscellaneous Power Plant Equipment	1,192,288	964,753	80.92%	1,043,683	87.54%	(78,930)	-8.18%
Total Hoot Lake Units 2 and 3	\$ 70,163,201	\$ 55,387,011	78.94%	\$ 55,821,677	79.56%	\$ (434,666)	-0.78%
<u>Coyote</u>							
311.00 Structures and Improvements	\$ 34,345,882	\$ 24,918,700	72.55%	\$ 20,676,813	60.20%	\$ 4,241,888	17.02%
312.00 Boiler Plant Equipment	103,127,761	62,180,365	60.29%	52,549,421	50.96%	9,630,944	15.49%
312.10 Boiler Plant Equipment - Landfill							
314.00 Turbogenerator Units	24,135,430	13,300,401	55.11%	11,926,775	49.42%	1,373,626	10.33%
315.00 Accessory Electric Equipment	11,865,207	8,285,826	69.83%	6,855,494	57.78%	1,430,332	17.26%
316.00 Miscellaneous Power Plant Equipment	2,156,206	972,817	45.12%	920,218	42.68%	52,599	5.41%
Total Coyote	\$ 175,630,486	\$ 109,658,109	62.44%	\$ 92,928,721	52.91%	\$ 16,729,389	15.26%
HYDRAULIC PRODUCTION							
<u>Hoot Lake</u>							
331.00 Structures and Improvements	\$ 69,354	\$ 68,627	98.95%	\$ 65,426	94.34%	\$ 3,201	4.66%
332.00 Reservoirs, Dams and Waterways	297,674	269,800	90.64%	263,098	88.38%	6,702	2.48%
333.00 Water Wheels, Turbines & Generators	104,195	97,565	93.64%	94,190	90.40%	3,375	3.46%
334.00 Accessory Electric Equipment	34,651	31,616	91.24%	30,737	88.70%	879	2.78%
335.00 Miscellaneous Power Plant Equipment	48,801	24,530	50.26%	29,805	61.07%	(5,275)	-21.50%
Total Hoot Lake	\$ 554,675	\$ 492,137	88.73%	\$ 483,255	87.12%	\$ 8,883	1.80%

OTTER TAIL POWER COMPANY

Depreciation Reserve Summary
Vintage Group Procedure
December 31, 2017

Statement C

Account Description A	Plant Investment B	Recorded Reserve		Computed Reserve		Reserve Imbalance		
		Amount C	Ratio D=C/B	Amount E	Ratio F=E/B	Amount G=C-E	Multiple H=G/C	
Wright								
331.00 Structures and Improvements	\$ 19,026	\$ 16,511	86.78%	\$ 16,876	88.70%	\$ (365)	-2.21%	
332.00 Reservoirs, Dams and Waterways	892,711	493,003	55.23%	656,801	73.57%	(163,798)	-33.22%	
333.00 Water Wheels, Turbines & Generators	545,392	454,994	83.43%	334,190	61.28%	120,804	26.55%	
334.00 Accessory Electric Equipment	202,552	153,663	75.86%	161,493	79.73%	(7,830)	-5.10%	
335.00 Miscellaneous Power Plant Equipment	115,218	73,771	64.03%	82,204	71.35%	(8,433)	-11.43%	
Total Wright	\$ 1,774,899	\$ 1,191,942	67.16%	\$ 1,251,564	70.51%	\$ (59,622)	-5.00%	
Pisgah								
331.00 Structures and Improvements	\$ 12,118	\$ 10,841	89.46%	\$ 11,033	91.05%	\$ (192)	-1.77%	
332.00 Reservoirs, Dams and Waterways	376,297	247,652	65.81%	275,643	73.25%	(27,991)	-11.30%	
333.00 Water Wheels, Turbines & Generators	159,732	112,787	70.61%	119,603	74.88%	(6,817)	-6.04%	
334.00 Accessory Electric Equipment	102,487	74,087	72.29%	79,774	77.84%	(5,687)	-7.68%	
335.00 Miscellaneous Power Plant Equipment	62,744	29,971	47.77%	38,174	60.84%	(8,202)	-27.37%	
Total Pisgah	\$ 713,378	\$ 475,338	66.63%	\$ 524,227	73.49%	\$ (48,889)	-10.29%	
Dayton Hollow								
331.00 Structures and Improvements	\$ 16,269	\$ 8,753	53.80%	\$ 10,585	65.06%	\$ (1,832)	-20.93%	
332.00 Reservoirs, Dams and Waterways	1,291,391	708,181	54.84%	828,547	64.16%	(120,366)	-17.00%	
333.00 Water Wheels, Turbines & Generators	226,751	161,093	71.04%	165,556	73.01%	(4,463)	-2.77%	
334.00 Accessory Electric Equipment	193,342	154,337	79.83%	161,933	83.75%	(7,596)	-4.92%	
335.00 Miscellaneous Power Plant Equipment	111,159	57,644	51.86%	67,899	61.08%	(10,256)	-17.79%	
Total Dayton Hollow	\$ 1,838,912	\$ 1,090,007	59.27%	\$ 1,234,520	67.13%	\$ (144,513)	-13.26%	
Taplin Gorge								
331.00 Structures and Improvements	\$ 35,140	\$ 33,730	95.99%	\$ 33,501	95.34%	\$ 229	0.68%	
332.00 Reservoirs, Dams and Waterways	602,762	437,511	72.58%	468,227	77.68%	(30,716)	-7.02%	
333.00 Water Wheels, Turbines & Generators	15,110	14,585	96.52%	14,471	95.77%	114	0.78%	
334.00 Accessory Electric Equipment	58,695	48,346	82.37%	49,479	84.30%	(1,133)	-2.34%	
335.00 Miscellaneous Power Plant Equipment	103,632	64,144	61.90%	72,869	70.32%	(8,725)	-13.60%	
Total Taplin Gorge	\$ 815,339	\$ 598,316	73.38%	\$ 638,547	78.32%	\$ (40,231)	-6.72%	

OTTER TAIL POWER COMPANY

Depreciation Reserve Summary
Vintage Group Procedure
December 31, 2017

Statement C

Account Description A	Plant Investment B	Recorded Reserve		Computed Reserve		Reserve Imbalance		
		Amount C	Ratio D=C/B	Amount E	Ratio F=E/B	Amount G=C-E	Multiple H=G/C	
Bemidji								
331.00 Structures and Improvements	\$ 199,805	\$ 130,800	65.46%	\$ 147,156	73.65%	\$ (16,356)	-12.50%	
332.00 Reservoirs, Dams and Waterways	816,220	515,749	63.19%	597,087	73.15%	(81,338)	-15.77%	
333.00 Water Wheels, Turbines & Generators	322,687	240,129	74.42%	259,268	80.35%	(19,139)	-7.97%	
334.00 Accessory Electric Equipment	5,376	4,006	74.52%	5,075	94.40%	(1,069)	-26.67%	
335.00 Miscellaneous Power Plant Equipment	1,070	613	57.28%	740	69.17%	(127)	-20.77%	
Total Bemidji	\$ 1,345,158	\$ 891,298	66.26%	\$ 1,009,327	75.03%	\$ (118,029)	-13.24%	
OTHER PRODUCTION								
Jamestown								
341.00 Structures and Improvements	\$ 305,657	\$ 234,190	76.62%	\$ 187,023	61.19%	\$ 47,166	20.14%	
342.00 Fuel Holders and Accessories	415,964	258,607	62.17%	200,449	48.19%	58,157	22.49%	
343.00 Prime Movers	6,952,527	5,576,903	80.21%	4,581,821	65.90%	995,081	17.84%	
344.00 Generators								
345.00 Accessory Electric Equipment	227,590	152,143	66.85%	146,723	64.47%	5,420	3.56%	
346.00 Miscellaneous Power Plant Equipment	88,665	46,174	52.08%	35,925	40.52%	10,249	22.20%	
Total Jamestown	\$ 7,990,403	\$ 6,268,016	78.44%	\$ 5,151,942	64.48%	\$ 1,116,074	17.81%	
Jamestown Unit 1								
341.00 Structures and Improvements	\$ 280,804	\$ 219,438	78.15%	\$ 175,221	62.40%	\$ 44,218	20.15%	
342.00 Fuel Holders and Accessories	379,195	227,254	59.93%	179,009	47.21%	48,245	21.23%	
343.00 Prime Movers	3,030,866	2,308,820	76.18%	1,894,984	62.52%	413,836	17.92%	
344.00 Generators								
345.00 Accessory Electric Equipment	155,272	122,749	79.05%	119,944	77.25%	2,805	2.29%	
346.00 Miscellaneous Power Plant Equipment	85,462	42,683	49.94%	33,448	39.14%	9,235	21.64%	
Total Jamestown Unit 1	\$ 3,931,599	\$ 2,920,944	74.29%	\$ 2,402,605	61.11%	\$ 518,339	17.75%	
Jamestown Unit 2								
341.00 Structures and Improvements	\$ 24,853	\$ 14,751	59.35%	\$ 11,803	47.49%	\$ 2,949	19.99%	
342.00 Fuel Holders and Accessories	36,769	31,353	85.27%	21,440	58.31%	9,913	31.62%	
343.00 Prime Movers	3,921,661	3,268,083	83.33%	2,686,838	68.51%	581,246	17.79%	
344.00 Generators								
345.00 Accessory Electric Equipment	72,318	29,394	40.65%	26,779	37.03%	2,615	8.90%	
346.00 Miscellaneous Power Plant Equipment	3,203	3,491	109.00%	2,478	77.35%	1,014	29.04%	
Total Jamestown Unit 2	\$ 4,058,804	\$ 3,347,072	82.46%	\$ 2,749,337	67.74%	\$ 597,735	17.86%	

OTTER TAIL POWER COMPANY

Depreciation Reserve Summary
Vintage Group Procedure
December 31, 2017

Statement C

Account Description A	Plant Investment B	Recorded Reserve		Computed Reserve		Reserve Imbalance		
		Amount C	Ratio D=C/B	Amount E	Ratio F=E/B	Amount G=C-E	Multiple H=G/C	
<u>Lake Preston</u>								
341.00 Structures and Improvements	\$ 229,834	\$ 192,116	83.59%	\$ 156,935	68.28%	\$ 35,181	18.31%	
342.00 Fuel Holders and Accessories	328,705	265,140	80.66%	217,984	66.32%	47,156	17.79%	
343.00 Prime Movers	3,282,642	2,735,389	83.33%	2,274,089	69.28%	461,300	16.86%	
344.00 Generators								
345.00 Accessory Electric Equipment	400,094	329,285	82.30%	273,370	68.33%	55,915	16.98%	
346.00 Miscellaneous Power Plant Equipment	21,607	19,934	92.26%	16,621	76.92%	3,313	16.62%	
Total Lake Preston	\$ 4,262,882	\$ 3,541,864	83.09%	\$ 2,938,998	68.94%	\$ 602,867	17.02%	
<u>Ashtabula Wind Generation</u>								
341.00 Structures and Improvements	\$ 3,248,290	\$ 1,173,497	36.13%	\$ 1,262,988	38.88%	\$ (89,491)	-7.63%	
342.00 Fuel Holders and Accessories								
343.00 Prime Movers								
344.00 Generators	106,487,068	36,525,574	34.30%	40,843,113	38.35%	(4,317,539)	-11.82%	
345.00 Accessory Electric Equipment	6,479,774	2,276,707	35.14%	2,456,556	37.91%	(179,849)	-7.90%	
346.00 Miscellaneous Power Plant Equipment	28,417	6,623	23.31%	7,593	26.72%	(970)	-14.65%	
Total Ashtabula Wind Generation	\$ 116,243,549	\$ 39,982,400	34.40%	\$ 44,570,250	38.34%	\$ (4,587,850)	-11.47%	
<u>Langdon Wind Generation</u>								
341.00 Structures and Improvements	\$ 2,484,069	\$ 989,922	39.85%	\$ 1,074,309	43.25%	\$ (84,387)	-8.52%	
342.00 Fuel Holders and Accessories								
343.00 Prime Movers								
344.00 Generators	69,252,649	26,367,788	38.07%	29,449,019	42.52%	(3,081,231)	-11.69%	
345.00 Accessory Electric Equipment	7,407,275	2,865,555	38.69%	3,109,193	41.97%	(243,637)	-8.50%	
346.00 Miscellaneous Power Plant Equipment	65,210	16,248	24.92%	18,099	27.75%	(1,851)	-11.39%	
Total Langdon Wind Generation	\$ 79,209,203	\$ 30,239,513	38.18%	\$ 33,650,620	42.48%	\$ (3,411,107)	-11.28%	
<u>Luverne Wind Generation</u>								
341.00 Structures and Improvements	\$ 2,266,581	\$ 747,442	32.98%	\$ 805,698	35.55%	\$ (58,256)	-7.79%	
342.00 Fuel Holders and Accessories								
343.00 Prime Movers								
344.00 Generators	65,778,913	20,625,856	31.36%	22,929,705	34.86%	(2,303,850)	-11.17%	
345.00 Accessory Electric Equipment	4,863,837	1,602,275	32.94%	1,727,533	35.52%	(125,258)	-7.82%	
346.00 Miscellaneous Power Plant Equipment	74,045	14,968	20.22%	16,901	22.83%	(1,933)	-12.91%	
Total Luverne Wind Generation	\$ 72,983,376	\$ 22,990,541	31.50%	\$ 25,479,837	34.91%	\$ (2,489,297)	-10.83%	

OTTER TAIL POWER COMPANY

Depreciation Reserve Summary
Vintage Group Procedure
December 31, 2017

Statement C

Account Description A	Plant Investment B	Recorded Reserve		Computed Reserve		Reserve Imbalance		
		Amount C	Ratio D=C/B	Amount E	Ratio F=E/B	Amount G=C-E	Multiple H=G/C	
<u>Solway Combustion Turbine</u>								
341.00 Structures and Improvements	\$ 4,411,779	\$ 1,811,527	41.06%	\$ 1,774,497	40.22%	\$ 37,030	2.04%	
342.00 Fuel Holders and Accessories	1,003,596	420,613	41.91%	413,028	41.15%	7,585	1.80%	
343.00 Prime Movers	21,507,132	8,601,044	39.99%	8,627,585	40.11%	(26,541)	-0.31%	
344.00 Generators								
345.00 Accessory Electric Equipment	1,305,578	493,778	37.82%	510,606	39.11%	(16,828)	-3.41%	
346.00 Miscellaneous Power Plant Equipment	350,326	129,491	36.96%	127,421	36.37%	2,070	1.60%	
Total Solway Combustion Turbine	\$ 28,578,411	\$ 11,456,452	40.09%	\$ 11,453,136	40.08%	\$ 3,316	0.03%	
<u>Fergus Falls Control Center</u>								
341.00 Structures and Improvements	\$ -	\$ -		\$ -		\$ -		
342.00 Fuel Holders and Accessories								
343.00 Prime Movers	591,638	368,938	62.36%	399,458	67.52%	(30,520)	-8.27%	
344.00 Generators								
345.00 Accessory Electric Equipment								
346.00 Miscellaneous Power Plant Equipment								
Total Fergus Falls Control Center	\$ 591,638	\$ 368,938	62.36%	\$ 399,458	67.52%	\$ (30,520)	-8.27%	

OTTER TAIL POWER COMPANY
Future Net Salvage
Steam and Other Production

Statement E

Account Description A	12/31/17 Plant Investment B	Future Retirements		Net Salvage Rate		Future Net Salvage			Future Rate J=I/B
		Interim C	Final D=B-C	Interim E	Final F	Interim G=C*E	Final H=D*F	Total I=G+H	
<u>Luverne Wind Generation</u>									
341.00 Structures and Improvements	\$2,266,581	\$92,632	\$ 2,173,949	-5.0%	-6.0%	\$ (4,632)	\$ (129,530)	\$ (134,162)	-5.9%
342.00 Fuel Holders and Accessories									
343.00 Prime Movers									
344.00 Generators	65,778,913	2,687,455	63,091,458	-5.0%	-6.0%	(134,373)	(3,759,165)	(3,893,537)	-5.9%
345.00 Accessory Electric Equipment	4,863,837	198,774	4,665,063	-5.0%	-6.0%	(9,939)	(277,957)	(287,896)	-5.9%
346.00 Miscellaneous Power Plant Equipment	74,045	2,997	71,048	-5.0%	-6.0%	(150)	(4,233)	(4,383)	-5.9%
Total Luverne Wind Generation	\$ 72,983,376	\$ 2,981,858	\$ 70,001,518	-4.8%	-6.0%	\$ (144,461)	\$ (4,170,885)	\$ (4,319,978)	-5.9%
<u>GENERAL PLANT</u>									
390.10 General Office Buildings	\$6,063,536	\$358,254	\$ 5,705,282	-5.0%	50.6%	\$ (17,913)	\$ 2,888,813	\$ 2,870,901	47.3%
390.20 Fleet Service Center Building	937,678	43,247	894,431	-5.0%	32.9%	(2,162)	294,456	292,293	31.2%
390.30 Central Stores Building	4,101,405	303,858	3,797,547	-5.0%	85.7%	(15,193)	3,255,719	3,240,526	79.0%

OTTER TAIL POWER COMPANY
Current and Proposed Parameters
Vintage Group Procedure

Statement F

Account Description A	Current Parameters						Proposed Parameters					
	P-Life/ AYFR B	Curve Shape C	VG ASL D	Rem. Life E	Avg. Sal. F	Fut. Sal. G	P-Life/ AYFR H	Curve Shape I	VG ASL J	Rem. Life K	Avg. Sal. L	Fut. Sal. M
<u>Luverne Wind Generation</u>												
341.00 Structures and Improvements	2034	200-SC	24.29	17.11	-2.0	-2.0	2034	200-SC	24.31	16.15	-5.9	-5.9
342.00 Fuel Holders and Accessories												
343.00 Prime Movers												
344.00 Generators	2034	200-SC	24.15	17.11	-2.0	-2.0	2034	200-SC	24.12	16.15	-6.1	-5.9
345.00 Accessory Electric Equipment	2034	200-SC	24.28	17.11	-2.0	-2.0	2034	200-SC	24.30	16.15	-5.9	-5.9
346.00 Miscellaneous Power Plant Equipment	2034	200-SC	20.59	17.11	-2.0	-2.0	2034	200-SC	20.60	16.16	-5.9	-5.9
Total Luverne Wind Generation			24.16	17.11	-2.0	-2.0			24.13	16.15	-6.1	-5.9
<u>Solway Combustion Turbine</u>												
341.00 Structures and Improvements	2038	200-SC	33.01	20.90	-0.4	-0.4	2038	200-SC	33.04	19.96	-1.6	-1.6
342.00 Fuel Holders and Accessories	2038	200-SC	33.51	20.90	-0.4	-0.4	2038	200-SC	33.55	19.96	-1.6	-1.6
343.00 Prime Movers	2038	200-SC	33.08	20.90	-0.7	-0.4	2038	200-SC	33.08	19.96	-1.9	-1.6
344.00 Generators												
345.00 Accessory Electric Equipment	2038	200-SC	32.42	20.90	-0.4	-0.4	2038	200-SC	32.42	19.96	-1.5	-1.6
346.00 Miscellaneous Power Plant Equipment	2038	200-SC	31.06	20.91	-0.4	-0.4	2038	200-SC	31.09	19.96	-1.6	-1.6
Total Solway Combustion Turbine			33.03	20.90	-0.6	-0.4			33.03	19.96	-1.8	-1.6
<u>Fergus Falls Control Center</u>												
341.00 Structures and Improvements												
342.00 Fuel Holders and Accessories												
343.00 Prime Movers	2030	200-SC	34.05	13.26	0.6		2030	200-SC	34.10	12.29	-4.0	-5.0
344.00 Generators												
345.00 Accessory Electric Equipment												
346.00 Miscellaneous Power Plant Equipment												
Total Fergus Falls Control Center			34.05	13.26	0.6				34.10	12.29	-4.0	-5.0

OTTER TAIL POWER COMPANY
Plant Activity for 2013

Statement G

Account Description A	Beginning Balance B	Additions C	Retirements D	Adjustments E	Transfers F	Ending Balance G
STEAM PRODUCTION						
311.00 Structures and Improvements	\$ 61,837,428	\$ 214,946	\$ 56,486			\$ 61,995,887
312.00 Boiler Plant Equipment	202,860,000	1,956,794	1,398,585			203,418,208
312.10 Boiler Plant Equipment - Landfill						
314.00 Turbo Generator Units	60,589,909	5,712,498	3,134,406			63,168,000
315.00 Accessory Electric Equipment	23,504,826	525,346	54,028			23,976,144
316.00 Misc. Power Plant Equipment	5,467,569	310,204	356,862			5,420,911
Total Steam Production	\$ 354,259,730	\$ 8,719,787	\$ 5,000,367			\$ 357,979,150
HYDRAULIC PRODUCTION						
331.00 Structures and Improvements	\$ 351,712					\$ 351,712
332.00 Reservoirs, Dams and Waterways	3,148,824	609,281			(48,826)	3,709,279
333.00 Water Wheels, Turbines and Gen.	1,057,186					1,057,186
334.00 Accessory Electric Equipment	592,375				25	592,400
335.00 Misc. Power Plant Equipment	393,336	487			48,801	442,624
Total Hydraulic Production	\$ 5,543,432	\$ 609,769	\$ -			\$ 6,153,201
OTHER PRODUCTION						
341.00 Structures and Improvements	\$ 12,721,530	\$ 94,380	\$ 3,906			\$ 12,812,004
342.00 Fuel Holders and Accessories	1,782,049	(5,775)	28,008			1,748,266
343.00 Prime Movers	31,658,649	57,846	29,340			31,687,155
344.00 Generators	240,489,740	1,328,800	843,799			240,974,741
345.00 Accessory Electric Equipment	20,011,664	756,402	341		(59,110)	20,708,615
346.00 Misc. Power Plant Equipment	442,906	24,315	34,068		59,110	492,263
Total Other Production	\$ 307,106,538	\$ 2,255,966	\$ 939,461			\$ 308,423,044
TRANSMISSION PLANT						
353.00 Station Equipment	\$ 74,896,201	\$ 3,543,098	\$ 384,761		\$ 90,634	\$ 78,145,172
354.00 Towers and Fixtures	4,692,263	7,664,853				12,357,116
355.00 Poles and Fixtures	101,637,471	(6,854,130)	56,403		22,239	94,749,175
356.00 Overhead Conductors and Devices	77,617,900	4,337,592	85,504		13,572	81,883,560
358.00 Underground Conductors and Devices	77,461					77,461
Total Transmission Plant	\$ 258,921,295	\$ 8,691,412	\$ 526,669		\$ 126,444	\$ 267,212,483

OTTER TAIL POWER COMPANY
Plant Activity for 2013

Statement G

Account Description	Beginning Balance	Additions	Retirements	Adjustments	Transfers	Ending Balance
A	B	C	D	E	F	G
DISTRIBUTION PLANT						
362.00 Station Equipment	\$ 67,383,703	\$ 4,427,033	\$ 622,884		\$ (85,322)	\$ 71,102,531
364.00 Poles, Towers and Fixtures	64,643,246	1,869,493	90,650		(22,239)	66,399,850
365.00 Overhead Conductors and Devices	45,917,036	1,321,492	122,851		(13,572)	47,102,104
367.00 Underground Conductors and Devices	63,089,210	2,928,273	170,086			65,847,397
368.00 Line Transformers	75,696,778	4,961,189	516,831		(8,728)	80,132,409
369.00 Overhead Services	12,101,446	205,966	13,925			12,293,487
369.10 Underground Services	35,005,457	1,366,880	32,126			36,340,210
370.00 Meters	22,160,086	1,371,083	533,904			22,997,266
370.10 Load Management Switches	8,860,392		145,345			8,715,047
370.20 Interruption Monitors	645,863					645,863
371.20 Other Private Lighting	4,130,401	249,581	103,787			4,276,194
373.00 Street Lighting and Signal Systems	4,744,947	186,986	88,598			4,843,334
Total Distribution Plant	\$ 404,378,564	\$ 18,887,975	\$ 2,440,987		\$ (129,860)	\$ 420,695,692
GENERAL PLANT						
390.00 Structures and Improvements	\$ 19,227,812	\$ 662,438	\$ 170,992		(\$50,131)	\$ 19,669,126
390.10 General Office Buildings	5,536,383	2,362	4,478		(32,182)	5,502,085
390.20 Fleet Service Center Buildings	815,155	4,201	4,866		1,101	815,591
390.30 Central Stores Building	3,904,166	25,629	36,146		81,212	3,974,861
391.00 Office Furniture	1,488,916	105,543	130,428		(21,704)	1,442,327
391.10 Office Equipment	1,016,129		10,686			1,005,443
391.20 Duplicating Equipment	687,242		5,533			681,709
391.50 Computer Systems	3,212,597	559,849	343,020			3,429,426
391.60 Computer Related Equipment	1,379,920	291,319	260,921			1,410,318
394.00 Tools, Shop and Garage Equipment	3,256,553	446,798	127,946		21,704	3,597,109
394.20 Automated Meter Reading Equipment	589,444					589,444
396.00 Power Operated Equipment	586,118	39,218	52,217			573,119
397.00 Communication Equipment	662,089	301,591	55,546			908,134
397.10 Radio Telecommunications Equipment	1,355,018	243,300	124,699			1,473,619
397.20 Microwave Equipment	3,422,579	609,478	14,130			4,017,927
397.30 Radio Load Control Equipment	446,920	(2,041)	41,800			403,080
397.40 Communication Equipment - Towers	1,691,775	187,191				1,878,966
Total General Plant	\$ 49,278,816	\$ 3,476,876	\$ 1,383,409		\$ -	\$ 51,372,283
TOTAL DEPRECIABLE PLANT	\$ 1,379,488,375	\$ 42,641,786	\$ 10,290,892		\$ (3,416)	\$ 1,411,835,853

OTTER TAIL POWER COMPANY
Plant Activity for 2014

Statement G

Account Description A	Beginning Balance B	Additions C	Retirements D	Adjustments E	Transfers F	Ending Balance G
STEAM PRODUCTION						
311.00 Structures and Improvements	\$ 61,995,887	\$ 335,041	\$ 338,186		(\$774,763)	\$ 61,217,980
312.00 Boiler Plant Equipment	203,418,208	8,025,484	917,334		4,805	210,531,164
312.10 Boiler Plant Equipment - Landfill						
314.00 Turbo Generator Units	63,168,000	1,220,997	385,276		774,763	64,778,484
315.00 Accessory Electric Equipment	23,976,144	160,385	80,906			24,055,622
316.00 Misc. Power Plant Equipment	5,420,911	104,523	55,064		(4,805)	5,465,565
Total Steam Production	\$ 357,979,150	\$ 9,846,431	\$ 1,776,765		(\$0)	\$ 366,048,815
HYDRAULIC PRODUCTION						
331.00 Structures and Improvements	\$ 351,712					\$ 351,712
332.00 Reservoirs, Dams and Waterways	3,709,279	555,797	1,015			4,264,061
333.00 Water Wheels, Turbines and Gen.	1,057,186	323,709	7,028			1,373,867
334.00 Accessory Electric Equipment	592,400					592,400
335.00 Misc. Power Plant Equipment	442,624					442,624
Total Hydraulic Production	\$ 6,153,201	\$ 879,506	\$ 8,043			\$ 7,024,664
OTHER PRODUCTION						
341.00 Structures and Improvements	\$ 12,812,004	\$ 134,205				\$ 12,946,209
342.00 Fuel Holders and Accessories	1,748,266					1,748,266
343.00 Prime Movers	31,687,155	359,027	236,487			31,809,895
344.00 Generators	240,974,741	1,079,476	809,188			241,245,031
345.00 Accessory Electric Equipment	20,708,615	(116,278)			(68,273)	20,524,064
346.00 Misc. Power Plant Equipment	492,263	30,405			68,273	590,942
Total Other Production	\$ 308,423,044	\$ 1,486,836	\$ 1,045,674			\$ 308,864,206
TRANSMISSION PLANT						
353.00 Station Equipment	\$ 78,145,172	\$ 2,873,013	\$ 1,458,601		\$ (13,095)	\$ 79,546,489
354.00 Towers and Fixtures	12,357,116	32,545,046			(2,685)	44,899,477
355.00 Poles and Fixtures	94,749,175	5,140,462	174,603		(18,516)	99,696,518
356.00 Overhead Conductors and Devices	81,883,560	9,762,122	97,749		(5,786)	91,542,146
358.00 Underground Conductors and Devices	77,461					77,461
Total Transmission Plant	\$ 267,212,483	\$ 50,320,642	\$ 1,730,953		\$ (40,082)	\$ 315,762,090

OTTER TAIL POWER COMPANY
Plant Activity for 2014

Statement G

Account Description	Beginning Balance	Additions	Retirements	Adjustments	Transfers	Ending Balance
A	B	C	D	E	F	G
DISTRIBUTION PLANT						
362.00 Station Equipment	\$ 71,102,531	\$ 4,021,274	\$ 801,649		\$ 12,509	\$ 74,334,664
364.00 Poles, Towers and Fixtures	66,399,850	1,617,647	125,969		21,201	67,912,729
365.00 Overhead Conductors and Devices	47,102,104	1,284,302	190,655		5,786	48,201,537
367.00 Underground Conductors and Devices	65,847,397	3,636,141	311,061			69,172,477
368.00 Line Transformers	80,132,409	5,775,912	544,924		2,900	85,366,296
369.00 Overhead Services	12,293,487	352,489	15,285			12,630,691
369.10 Underground Services	36,340,210	1,671,547	32,070			37,979,687
370.00 Meters	22,997,266	1,194,045	527,666			23,663,645
370.10 Load Management Switches	8,715,047		13,225			8,701,822
370.20 Interruption Monitors	645,863		568,007			77,857
371.20 Other Private Lighting	4,276,194	245,127	172,377			4,348,944
373.00 Street Lighting and Signal Systems	4,843,334	228,380	89,048			4,982,666
Total Distribution Plant	\$ 420,695,692	\$ 20,026,864	\$ 3,391,936		\$ 42,396	\$ 437,373,015
GENERAL PLANT						
390.00 Structures and Improvements	\$ 19,669,126	\$ 198,730	\$ 141,961			\$ 19,725,895
390.10 General Office Buildings	5,502,085	259,057	51,085			5,710,057
390.20 Fleet Service Center Buildings	815,591	126,792	10,914			931,469
390.30 Central Stores Building	3,974,861	47,676				4,022,537
391.00 Office Furniture	1,442,327	112,462	35,000			1,519,789
391.10 Office Equipment	1,005,443	68,502	245,147			828,799
391.20 Duplicating Equipment	681,709	53,041	333,615			401,136
391.50 Computer Systems	3,429,426	864,525	48,783			4,245,167
391.60 Computer Related Equipment	1,410,318	391,380				1,801,698
394.00 Tools, Shop and Garage Equipment	3,597,109	285,002	75,919			3,806,191
394.20 Automated Meter Reading Equipment	589,444	14,193				603,637
396.00 Power Operated Equipment	573,119	44,350	12,406			605,062
397.00 Communication Equipment	908,134	(9,811)			(2,314)	896,010
397.10 Radio Telecommunications Equipment	1,473,619	160	265,122			1,208,657
397.20 Microwave Equipment	4,017,927	542,008	182,713			4,377,222
397.30 Radio Load Control Equipment	403,080		85,221			317,859
397.40 Communication Equipment - Towers	1,878,966	357				1,879,323
Total General Plant	\$ 51,372,283	\$ 2,998,424	\$ 1,487,886		\$ (2,314)	\$ 52,880,507
TOTAL DEPRECIABLE PLANT	\$ 1,411,835,853	\$ 85,558,702	\$ 9,441,257		\$ (0)	\$ 1,487,953,298

OTTER TAIL POWER COMPANY
Plant Activity for 2015

Statement G

Account Description A	Beginning Balance B	Additions C	Retirements D	Adjustments E	Transfers F	Ending Balance G
STEAM PRODUCTION						
311.00 Structures and Improvements	\$ 61,217,980	\$ 63,405,719	\$ 289,384		(\$48,259)	\$ 124,286,056
312.00 Boiler Plant Equipment	210,531,164	136,145,735	24,547,320		(6,932,417)	315,197,162
312.10 Boiler Plant Equipment - Landfill					6,980,676	6,980,676
314.00 Turbo Generator Units	64,778,484	1,550,083	856,307			65,472,261
315.00 Accessory Electric Equipment	24,055,622	12,909,819	369,621			36,595,821
316.00 Misc. Power Plant Equipment	5,465,565	862,224	89,759			6,238,030
Total Steam Production	\$ 366,048,815	\$ 214,873,581	\$ 26,152,390			\$ 554,770,006
HYDRAULIC PRODUCTION						
331.00 Structures and Improvements	\$ 351,712					\$ 351,712
332.00 Reservoirs, Dams and Waterways	4,264,061	12,994				4,277,054
333.00 Water Wheels, Turbines and Gen.	1,373,867					1,373,867
334.00 Accessory Electric Equipment	592,400					592,400
335.00 Misc. Power Plant Equipment	442,624					442,624
Total Hydraulic Production	\$ 7,024,664	\$ 12,994	\$ -			\$ 7,037,658
OTHER PRODUCTION						
341.00 Structures and Improvements	\$ 12,946,209					\$ 12,946,209
342.00 Fuel Holders and Accessories	1,748,266					1,748,266
343.00 Prime Movers	31,809,695	182,859	95,040			31,897,513
344.00 Generators	241,245,031	876,650	608,740			241,512,941
345.00 Accessory Electric Equipment	20,524,064	87,430	65,212			20,546,283
346.00 Misc. Power Plant Equipment	590,942	29,500	14,774			605,668
Total Other Production	\$ 308,864,206	\$ 1,176,439	\$ 783,765			\$ 309,256,880
TRANSMISSION PLANT						
353.00 Station Equipment	\$ 79,546,489	\$ 6,774,458	\$ 549,298		\$ (303,581)	\$ 85,468,068
354.00 Towers and Fixtures	44,899,477	38,910,440			2,075,127	85,885,043
355.00 Poles and Fixtures	99,696,518	9,947,885	367,304		(2,058,769)	107,218,331
356.00 Overhead Conductors and Devices	91,542,146	10,997,031	307,231		(16,359)	102,215,587
358.00 Underground Conductors and Devices	77,461					77,461
Total Transmission Plant	\$ 315,762,090	\$ 66,629,813	\$ 1,223,832		\$ (303,581)	\$ 380,864,490

OTTER TAIL POWER COMPANY
Plant Activity for 2016

Statement G

Account Description A	Beginning Balance B	Additions C	Retirements D	Adjustments E	Transfers F	Ending Balance G
STEAM PRODUCTION						
311.00 Structures and Improvements	\$ 124,286,056	\$ 1,328,567	\$ 179,042		(\$35,353)	\$ 125,400,228
312.00 Boiler Plant Equipment	315,197,162	13,841,360	3,929,420		37,023	325,146,126
312.10 Boiler Plant Equipment - Landfill	6,980,676					6,980,676
314.00 Turbo Generator Units	65,472,261	779,348	351,141		(1,670)	65,898,798
315.00 Accessory Electric Equipment	36,595,821	80,419				36,676,241
316.00 Misc. Power Plant Equipment	6,238,030	241,384	45,069			6,434,345
Total Steam Production	\$ 554,770,006	\$ 16,271,078	\$ 4,504,671		\$0	\$ 566,536,413
HYDRAULIC PRODUCTION						
331.00 Structures and Improvements	\$ 351,712					\$ 351,712
332.00 Reservoirs, Dams and Waterways	4,277,054					4,277,054
333.00 Water Wheels, Turbines and Gen.	1,373,867					1,373,867
334.00 Accessory Electric Equipment	592,400					592,400
335.00 Misc. Power Plant Equipment	442,624					442,624
Total Hydraulic Production	\$ 7,037,658	\$ -	\$ -			\$ 7,037,658
OTHER PRODUCTION						
341.00 Structures and Improvements	\$ 12,946,209					\$ 12,946,209
342.00 Fuel Holders and Accessories	1,748,266					1,748,266
343.00 Prime Movers	31,897,513	886,326	457,680			32,326,159
344.00 Generators	241,512,941	976,677	888,263			241,601,355
345.00 Accessory Electric Equipment	20,546,283	19,516	14,046			20,551,752
346.00 Misc. Power Plant Equipment	605,668	24,173	1,570			628,270
Total Other Production	\$ 309,256,880	\$ 1,906,692	\$ 1,361,559			\$ 309,802,012
TRANSMISSION PLANT						
353.00 Station Equipment	\$ 85,468,068	\$ 9,723,713	\$ 52,512		\$ (2,150)	\$ 95,137,119
354.00 Towers and Fixtures	85,885,043	(4,778,625)				81,106,418
355.00 Poles and Fixtures	107,218,331	5,604,070	126,649		(10,036)	112,685,716
356.00 Overhead Conductors and Devices	102,215,587	5,231,832	272,799		(2,773)	107,171,847
358.00 Underground Conductors and Devices	77,461					77,461
Total Transmission Plant	\$ 380,864,490	\$ 15,780,989	\$ 451,960		\$ (14,959)	\$ 396,178,561

OTTER TAIL POWER COMPANY
Plant Activity for 2017

Statement G

Account Description A	Beginning Balance B	Additions C	Retirements D	Adjustments E	Transfers F	Ending Balance G
STEAM PRODUCTION						
311.00 Structures and Improvements	\$ 125,400,228	\$ 338,293	\$ 9,004	\$ -	\$ -	\$ 125,729,517
312.00 Boiler Plant Equipment	325,146,126	\$ 6,333,691	\$ 566,140	\$ -	\$ -	330,913,677
312.10 Boiler Plant Equipment - Landfill	6,980,676					6,980,676
314.00 Turbo Generator Units	65,898,798	\$ 290,407	\$ 202,622	\$ -	\$ -	65,986,582
315.00 Accessory Electric Equipment	36,676,241	\$ 53,629	\$ 19,379	\$ -	\$ -	36,710,490
316.00 Misc. Power Plant Equipment	6,434,345	\$ 238,978	\$ 117,671	\$ -	\$ -	6,555,652
Total Steam Production	\$ 566,536,413	\$ 7,254,997	\$ 914,817			\$ 572,876,593
HYDRAULIC PRODUCTION						
331.00 Structures and Improvements	\$ 351,712	\$ -	\$ -	\$ -	\$ -	\$ 351,712
332.00 Reservoirs, Dams and Waterways	4,277,054	\$ -	\$ -	\$ -	\$ -	4,277,054
333.00 Water Wheels, Turbines and Gen.	1,373,867	\$ -	\$ -	\$ -	\$ -	1,373,867
334.00 Accessory Electric Equipment	592,400	\$ 6,783	\$ 2,080	\$ -	\$ -	597,103
335.00 Misc. Power Plant Equipment	442,624	\$ -	\$ -	\$ -	\$ -	442,624
Total Hydraulic Production	\$ 7,037,658	\$ 6,783	\$ 2,080			\$ 7,042,361
OTHER PRODUCTION						
341.00 Structures and Improvements	\$ 12,946,209	\$ -	\$ -	\$ -	\$ -	\$ 12,946,209
342.00 Fuel Holders and Accessories	1,748,266	\$ -	\$ -	\$ -	\$ -	1,748,266
343.00 Prime Movers	32,326,159	\$ 14,780	\$ 7,000	\$ -	\$ -	32,333,939
344.00 Generators	241,601,355	\$ 460,877	\$ 543,602	\$ -	\$ -	241,518,630
345.00 Accessory Electric Equipment	20,551,752	\$ 134,375	\$ 1,980	\$ -	\$ -	20,684,148
346.00 Misc. Power Plant Equipment	628,270	\$ -	\$ -	\$ -	\$ -	628,270
Total Other Production	\$ 309,802,012	\$ 610,032	\$ 552,582			\$ 309,859,462
TRANSMISSION PLANT						
353.00 Station Equipment	\$ 95,137,119	\$ 27,783,944	\$ 1,239,556	\$ -	\$ (1,594)	\$ 121,679,913
354.00 Towers and Fixtures	81,106,418	\$ 1,131,746	\$ -	\$ -	\$ 25,830,245	108,068,409
355.00 Poles and Fixtures	112,685,716	\$ 30,631,296	\$ 423,670	\$ -	\$ (25,827,042)	117,066,300
356.00 Overhead Conductors and Devices	107,171,847	\$ 32,120,370	\$ 314,666	\$ -	\$ (1,609)	138,975,942
358.00 Underground Conductors and Devices	77,461	\$ -	\$ -	\$ -	\$ -	77,461
Total Transmission Plant	\$ 396,178,561	\$ 91,667,356	\$ 1,977,892		\$ 0	\$ 485,868,025

OTTER TAIL POWER COMPANY
Plant Activity for 2017

Statement G

Account Description	Beginning Balance	Additions	Retirements	Adjustments	Transfers	Ending Balance
A	B	C	D	E	F	G
DISTRIBUTION PLANT						
362.00 Station Equipment	\$ 78,123,696	\$ 3,216,831	\$ 756,709	\$ -	\$ (2,579)	\$ 80,581,239
364.00 Poles, Towers and Fixtures	70,849,816	\$ 2,475,570	\$ 127,046	\$ -	\$ -	73,198,340
365.00 Overhead Conductors and Devices	49,842,694	\$ 2,293,211	\$ 222,456	\$ -	\$ -	51,913,449
367.00 Underground Conductors and Devices	74,699,089	\$ 2,990,629	\$ 296,444	\$ -	\$ -	77,393,273
368.00 Line Transformers	93,713,427	\$ 4,855,223	\$ 594,326	\$ -	\$ 2,579	97,976,903
369.00 Overhead Services	12,990,947	\$ 1,517,939	\$ 51,715	\$ -	\$ -	14,457,171
369.10 Underground Services	40,988,218					40,988,218
370.00 Meters	24,832,623	\$ 1,368,316	\$ 543,692	\$ -	\$ -	25,657,247
370.10 Load Management Switches	8,665,511					8,665,511
370.20 Interruption Monitors	(0)					(0)
371.20 Other Private Lighting	4,786,865					4,786,865
373.00 Street Lighting and Signal Systems	5,464,004	\$ 319,070	\$ 85,462	\$ -	\$ -	5,697,612
Total Distribution Plant	\$ 464,956,890	\$ 19,036,789	\$ 2,677,850	\$ -	\$ (0)	\$ 481,315,829
GENERAL PLANT						
390.00 Structures and Improvements	\$ 19,890,073	\$ 913,428	\$ 345,993	\$ -	\$ -	\$ 20,457,508
390.10 General Office Buildings	5,718,958					5,718,958
390.20 Fleet Service Center Buildings	937,678					937,678
390.30 Central Stores Building	4,027,548					4,027,548
391.00 Office Furniture	1,177,317	\$ 1,650,789	\$ 1,170,492	\$ -	\$ -	1,657,614
391.10 Office Equipment	807,128					807,128
391.20 Duplicating Equipment	287,696					287,696
391.50 Computer Systems	2,677,295					2,677,295
391.60 Computer Related Equipment	944,691					944,691
394.00 Tools, Shop and Garage Equipment	3,996,914	\$ 213,938	\$ -	\$ -	\$ -	4,210,851
394.20 Automated Meter Reading Equipment	617,570					617,570
396.00 Power Operated Equipment	616,048	\$ 33,469	\$ 28,186	\$ -	\$ -	621,330
397.00 Communication Equipment	818,647	\$ 2,173,881	\$ 204,661	\$ -	\$ -	2,787,866
397.10 Radio Telecommunications Equipment	1,184,478					1,184,478
397.20 Microwave Equipment	4,448,448					4,448,448
397.30 Radio Load Control Equipment	317,859					317,859
397.40 Communication Equipment - Towers	1,888,762					1,888,762
Total General Plant	\$ 50,357,109	\$ 4,985,504	\$ 1,749,333	\$ -	\$ -	\$ 53,593,280
TOTAL DEPRECIABLE PLANT	\$ 1,794,868,642	\$ 123,561,461	\$ 7,874,554	\$ -	\$ 0	\$ 1,910,555,549

OTTER TAIL POWER COMPANY
Analysis of Depreciation Reserve for 2013

Statement H

Account Description	Beginning Balance	Credits		Debits		Other Credits (Debits)	Ending Balance
		Accruals	Gross Salvage	Retirements	Cost of Removal		
A	B	C	D	E	F	G	H
STEAM PRODUCTION							
311.00 Structures and Improvements	\$ 46,003,918	\$ 1,174,029		\$ 56,486	\$ 16,140		\$ 47,105,320
312.00 Boiler Plant Equipment	124,514,402	6,047,170	35,146	1,398,585	223,018		128,975,115
312.10 Boiler Plant Equipment - Landfill							
314.00 Turbo Generator Units	36,060,473	1,796,701	3,516,111	3,134,406	79,128		38,159,750
315.00 Accessory Electric Equipment	15,887,998	543,016		54,028	21,741		16,355,245
316.00 Misc. Power Plant Equipment	3,185,079	174,055	56,410	356,862			3,058,681
Total Steam Production	\$ 225,651,869	\$ 9,734,970	\$ 3,607,666	\$ 5,000,367	\$ 340,027		\$ 233,654,111
HYDRAULIC PRODUCTION							
331.00 Structures and Improvements	\$ 176,363	\$ 18,678					\$ 195,041
332.00 Reservoirs, Dams and Waterways	1,117,134	216,475				(2,707)	1,330,902
333.00 Water Wheels, Turbines and Gen.	521,937	57,036					578,973
334.00 Accessory Electric Equipment	327,639	28,213				24	355,876
335.00 Misc. Power Plant Equipment	37,180	38,032				2,683	77,895
Total Hydraulic Production	\$ 2,180,253	\$ 358,433	\$ -	\$ -	\$ -		\$ 2,538,687
OTHER PRODUCTION							
341.00 Structures and Improvements	\$ 2,851,840	\$ 442,718		\$ 3,906			\$ 3,290,652
342.00 Fuel Holders and Accessories	694,063	63,624	593	28,008	15,000		715,272
343.00 Prime Movers	14,186,057	806,741		29,340			14,963,458
344.00 Generators	38,280,434	9,407,458	12,000	843,799	115,666		46,740,428
345.00 Accessory Electric Equipment	3,771,559	763,236		341		(3,050)	4,531,405
346.00 Misc. Power Plant Equipment	163,279	13,621		34,068		3,050	145,882
Total Other Production	\$ 59,947,232	\$ 11,497,398	\$ 12,593	\$ 939,461	\$ 130,666		\$ 70,387,097
TRANSMISSION PLANT							
353.00 Station Equipment	\$ 17,890,625	\$ 1,235,397	\$ 3,505	\$ 384,761	\$ 19,052	\$ 1,767	\$ 18,727,481
354.00 Towers and Fixtures	2,425,530	89,480					2,515,011
355.00 Poles and Fixtures	41,124,503	2,316,770	203,775	56,403	70,293	19,550	43,537,901
356.00 Overhead Conductors and Devices	33,205,849	1,628,128	127,320	85,504	45,354	15,130	34,845,569
358.00 Underground Conductors and Devices	67,641	1,642					69,283
Total Transmission Plant	\$ 94,714,148	\$ 5,271,417	\$ 334,600	\$ 526,669	\$ 134,699	\$ 36,447	\$ 99,695,245

OTTER TAIL POWER COMPANY
Analysis of Depreciation Reserve for 2014

Statement H

Account Description A	Beginning Balance B	Credits		Debits		Other Credits (Debits) G	Ending Balance H
		Accruals C	Gross Salvage D	Retirements E	Cost of Removal F		
STEAM PRODUCTION							
311.00 Structures and Improvements	\$ 47,105,320	\$ 1,069,112		\$ 338,186	\$ 33,951	(\$127,662)	\$ 47,674,634
312.00 Boiler Plant Equipment	128,975,115	6,328,847	10,645	917,334	208,884	3,677	134,192,065
312.10 Boiler Plant Equipment - Landfill							
314.00 Turbo Generator Units	38,159,750	1,880,280		385,276	26,805	127,662	39,755,612
315.00 Accessory Electric Equipment	16,355,245	561,652		80,906	8,826		16,827,164
316.00 Misc. Power Plant Equipment	3,058,681	195,786	974	55,064	72.16	(3,677)	3,196,628
Total Steam Production	\$ 233,654,111	\$ 10,035,677	\$ 11,618	\$ 1,776,765	\$ 278,538	(\$0)	\$ 241,646,103
HYDRAULIC PRODUCTION							
331.00 Structures and Improvements	\$ 195,041	\$ 18,631					\$ 213,672
332.00 Reservoirs, Dams and Waterways	1,330,902	285,858		1,015	24,132		1,591,613
333.00 Water Wheels, Turbines and Gen.	578,973	56,865	275,000	7,028	20,000		883,809
334.00 Accessory Electric Equipment	355,876	28,126					384,002
335.00 Misc. Power Plant Equipment	77,895	43,368					121,264
Total Hydraulic Production	\$ 2,538,687	\$ 432,848	\$ 275,000	\$ 8,043	\$ 44,132		\$ 3,194,359
OTHER PRODUCTION							
341.00 Structures and Improvements	\$ 3,290,652	\$ 464,499					\$ 3,755,151
342.00 Fuel Holders and Accessories	715,272	62,226					777,498
343.00 Prime Movers	14,963,458	800,675		236,487	20,000		15,507,645
344.00 Generators	46,740,428	9,922,219	3,800	809,186	38,500		55,818,760
345.00 Accessory Electric Equipment	4,531,405	825,972				(3,487)	5,353,889
346.00 Misc. Power Plant Equipment	145,882	20,479				3,487	169,849
Total Other Production	\$ 70,387,097	\$ 12,096,069	\$ 3,800	\$ 1,045,674	\$ 58,500		\$ 81,382,792
TRANSMISSION PLANT							
353.00 Station Equipment	\$ 18,727,481	\$ 1,180,525	\$ 6,458	\$ 1,458,601	\$ 7,376	\$ (4,514)	\$ 18,443,973
354.00 Towers and Fixtures	2,515,011	801,781				(16)	3,316,776
355.00 Poles and Fixtures	43,537,901	1,801,578	73,101	174,603	91,935	(14,750)	45,131,292
356.00 Overhead Conductors and Devices	34,845,569	1,421,400	59,080	97,749	29,756	(4,021)	36,194,522
358.00 Underground Conductors and Devices	69,283	1,110					70,392
Total Transmission Plant	\$ 99,695,245	\$ 5,206,393	\$ 138,638	\$ 1,730,953	\$ 129,067	\$ (23,300)	\$ 103,156,956

OTTER TAIL POWER COMPANY
Analysis of Depreciation Reserve for 2015

Statement H

Account Description A	Beginning Balance B	Credits		Debits			Ending Balance H
		Accruals C	Gross Salvage D	Retirements E	Cost of Removal F	Other Credits (Debits) G	
STEAM PRODUCTION							
311.00 Structures and Improvements	\$ 47,674,634	\$ 854,964		\$ 289,384	\$ 18,093	\$ (53,240)	\$ 48,168,882
312.00 Boiler Plant Equipment	134,192,065	5,827,377	35,882	24,547,320	1,452,918	(2,278,523)	111,776,563
312.10 Boiler Plant Equipment - Landfill						2,331,763	2,331,763
314.00 Turbo Generator Units	39,755,612	1,541,090		856,307	14,062		40,426,334
315.00 Accessory Electric Equipment	16,827,164	430,296	37,863	369,621	1,024		16,924,678
316.00 Misc. Power Plant Equipment	3,196,628	153,965	25,254	89,759	137		3,285,952
Total Steam Production	\$ 241,646,103	\$ 8,807,692	\$ 99,000	\$ 26,152,390	\$ 1,486,233	\$ -	\$ 222,914,172
HYDRAULIC PRODUCTION							
331.00 Structures and Improvements	\$ 213,672	\$ 18,580					\$ 232,252
332.00 Reservoirs, Dams and Waterways	1,591,613	359,808					1,951,421
333.00 Water Wheels, Turbines and Gen.	883,809	65,959					949,768
334.00 Accessory Electric Equipment	384,002	28,049					412,050
335.00 Misc. Power Plant Equipment	121,264	43,252					164,516
Total Hydraulic Production	\$ 3,194,359	\$ 515,648	\$ -	\$ -	\$ -	\$ -	\$ 3,710,007
OTHER PRODUCTION							
341.00 Structures and Improvements	\$ 3,755,151	\$ 468,960					\$ 4,224,111
342.00 Fuel Holders and Accessories	777,498	62,056					839,554
343.00 Prime Movers	15,507,645	814,999		95,040	55,500		16,172,104
344.00 Generators	55,818,760	9,947,164	3,800	608,740	51,800		65,109,184
345.00 Accessory Electric Equipment	5,353,889	817,132	7,500	65,212	7,500		6,105,810
346.00 Misc. Power Plant Equipment	169,849	22,273	11,200	14,774			188,548
Total Other Production	\$ 81,382,792	\$ 12,132,584	\$ 22,500	\$ 783,765	\$ 114,800	\$ -	\$ 92,639,311
TRANSMISSION PLANT							
353.00 Station Equipment	\$ 18,443,973	\$ 1,258,452	\$ 16,192	\$ 549,298	\$ 66,782	\$ (31,594)	\$ 19,070,943
354.00 Towers and Fixtures	3,316,776	1,324,292				3,997	4,645,065
355.00 Poles and Fixtures	45,131,292	2,000,211	57,860	367,304	151,535	(3,740)	46,666,786
356.00 Overhead Conductors and Devices	36,194,522	1,670,516	26,331	307,231	104,323	(257)	37,479,558
358.00 Underground Conductors and Devices	70,392	1,059					71,452
Total Transmission Plant	\$ 103,156,956	\$ 6,254,530	\$ 100,383	\$ 1,223,832	\$ 322,640	\$ (31,594)	\$ 107,933,803

OTTER TAIL POWER COMPANY
Analysis of Depreciation Reserve for 2016

Statement H

Account Description A	Beginning Balance B	Credits		Debits		Other Credits (Debits) G	Ending Balance H
		Accruals C	Gross Salvage D	Retirements E	Cost of Removal F		
STEAM PRODUCTION							
311.00 Structures and Improvements	\$ 48,168,882	\$ 3,176,214	\$ 359,376	\$ 179,042	\$ 45,517	\$ (43,568)	\$ 51,436,345
312.00 Boiler Plant Equipment	111,776,563	11,091,766	3,479,724	3,929,420	2,251,526	(2,731,239)	117,435,868
312.10 Boiler Plant Equipment - Landfill	2,331,763					2,778,538.97	5,110,302
314.00 Turbo Generator Units	40,426,334	1,482,833.98		351,140.52	25,964.10	(3,732.38)	41,528,331
315.00 Accessory Electric Equipment	16,924,678	886,118.22					17,810,797
316.00 Misc. Power Plant Equipment	3,285,952	184,783.37	13.85	45,069.28	1,561.47		3,424,119
Total Steam Production	\$ 222,914,172	\$ 16,821,716	\$ 3,839,114	\$ 4,504,672	\$ 2,324,569	(\$0)	\$ 236,745,760
HYDRAULIC PRODUCTION							
331.00 Structures and Improvements	\$ 232,252	\$ 18,523					\$ 250,775
332.00 Reservoirs, Dams and Waterways	1,951,421	360,573					2,311,994
333.00 Water Wheels, Turbines and Gen.	949,768	65,754					1,015,522
334.00 Accessory Electric Equipment	412,050	27,963					440,013
335.00 Misc. Power Plant Equipment	164,516	43,118					207,634
Total Hydraulic Production	\$ 3,710,007	\$ 515,931	\$ -	\$ -	\$ -		\$ 4,225,938
OTHER PRODUCTION							
341.00 Structures and Improvements	\$ 4,224,111	\$ 467,728					\$ 4,691,839
342.00 Fuel Holders and Accessories	839,554	61,901					901,455
343.00 Prime Movers	16,172,104	824,392		457,680	43,560		16,495,256
344.00 Generators	65,109,184	9,972,219	50,000	888,263	32,000		74,211,140
345.00 Accessory Electric Equipment	6,105,810	820,171	582	14,046	1,200		6,911,317
346.00 Misc. Power Plant Equipment	188,548	24,712		1,570			211,690
Total Other Production	\$ 92,639,311	\$ 12,171,123	\$ 50,582	\$ 1,361,559	\$ 76,760		\$ 103,422,697
TRANSMISSION PLANT							
353.00 Station Equipment	\$ 19,070,943	\$ 1,414,405	\$ 708,619	\$ 52,512	\$ 10,666	\$ (7)	\$ 21,130,782
354.00 Towers and Fixtures	4,645,065	1,377,044					6,022,109
355.00 Poles and Fixtures	46,666,786	2,133,012	783,924	126,649	199,577	(138)	49,257,358
356.00 Overhead Conductors and Devices	37,479,558	1,776,996	15,331	272,799	210,098	(27)	38,788,961
358.00 Underground Conductors and Devices	71,452	1,005					72,457
Total Transmission Plant	\$ 107,933,803	\$ 6,702,462	\$ 1,507,874	\$ 451,960	\$ 420,341	\$ (172)	\$ 115,271,666

OTTER TAIL POWER COMPANY
Summary of Annual Depreciation Accruals for 2017

Statement I

Account Description	Beginning Plant Balance	Est. Future Net Salvage		Beginning Depreciation Reserve	Net Balance	Projection Life (Yrs.)	Remaining Life (Yrs.)	Annual Accrual	Accrual Rate
		Percent	Amount						
A	B	C	D	E	F=B-D-E	G	H	I=F/H	J=I/B
STEAM PRODUCTION									
311.00 Structures and Improvements	\$ 125,400,228	-7.0%	\$ (8,745,926)	\$ 51,436,345	\$ 82,709,809		27.20	\$ 3,040,802	2.42%
312.00 Boiler Plant Equipment	325,146,126	-7.5%	(24,331,885)	117,435,868	232,042,142		22.18	10,461,774	3.22%
312.10 Boiler Plant Equipment - Landfill	6,980,676			-5,110,302	1,870,374		33.91	55,157	0.79%
314.00 Turbo Generator Units	65,898,798	-8.0%	(5,277,594)	41,528,331	29,648,061		21.20	1,398,493	2.12%
315.00 Accessory Electric Equipment	36,676,241	-7.3%	(2,669,210)	17,810,797	21,534,654		25.49	844,828	2.30%
316.00 Misc. Power Plant Equipment	6,434,345	-7.6%	(491,281)	3,424,119	3,501,507		18.80	186,250	2.89%
Total Steam Production	\$ 566,536,413	-7.3%	\$ (41,515,895)	\$ 236,745,760	\$ 371,306,548		23.23	\$ 15,987,304	2.82%
HYDRAULIC PRODUCTION									
331.00 Structures and Improvements	\$ 351,712		\$ -	\$ 250,775	\$ 100,937		5.46	\$ 18,487	5.26%
332.00 Reservoirs, Dams and Waterways	4,277,054			2,311,994	1,965,060		5.46	359,901	8.41%
333.00 Water Wheels, Turbines and Gen.	1,373,867			1,015,522	358,345		5.46	65,631	4.78%
334.00 Accessory Electric Equipment	592,400			440,013	152,387		5.46	27,910	4.71%
335.00 Misc. Power Plant Equipment	442,624			207,634	234,991		5.46	43,039	9.72%
Total Hydraulic Production	\$ 7,037,658		\$ -	\$ 4,225,938	\$ 2,811,719		5.46	\$ 514,967	7.32%
OTHER PRODUCTION									
341.00 Structures and Improvements	\$ 12,946,209	-1.1%	\$ (148,597)	\$ 4,691,839	\$ 8,402,966		18.42	\$ 456,187	3.52%
342.00 Fuel Holders and Accessories	1,748,266	-1.2%	(20,618)	901,455	867,429		19.80	43,810	2.51%
343.00 Prime Movers	32,326,159	-0.9%	(294,826)	16,495,256	16,125,729		20.56	784,325	2.43%
344.00 Generators	241,601,355	-1.5%	(3,561,735)	74,211,140	170,951,951		17.09	10,003,040	4.14%
345.00 Accessory Electric Equipment	20,551,752	-1.4%	(297,330)	6,911,317	13,937,766		17.21	809,864	3.94%
346.00 Misc. Power Plant Equipment	628,270	-1.0%	(6,499)	211,690	423,080		19.22	22,012	3.50%
Total Other Production	\$ 309,802,012		\$ (4,329,606)	\$ 103,422,697	\$ 210,708,921		17.39	\$ 12,119,239	3.91%
TRANSMISSION PLANT									
353.00 Station Equipment	\$ 95,137,119	-5.0%	\$ (4,756,856)	\$ 21,130,782	\$ 78,763,192	65.00	53.06	\$ 1,484,417	1.56%
354.00 Towers and Fixtures	81,106,418	-10.0%	(8,110,642)	6,022,109	83,194,952	70.00	66.45	1,251,993	1.54%
355.00 Poles and Fixtures	112,685,716	-50.0%	(56,342,858)	49,257,358	119,771,216	70.00	54.30	2,205,731	1.96%
356.00 Overhead Conductors and Devices	107,171,847	-30.0%	(32,151,554)	38,788,961	100,534,441	70.00	55.22	1,820,616	1.70%
358.00 Underground Conductors and Devices	77,461	-5.0%	(3,873)	72,457	8,877	40.00	9.36	948	1.22%
Total Transmission Plant	\$ 396,178,561	-25.6%	\$ (101,365,783)	\$ 115,271,666	\$ 382,272,677		56.52	\$ 6,763,707	1.71%

OTTER TAIL POWER COMPANY
Summary of Annual Depreciation Accruals for 2017

Statement I

Account Description A	Beginning Plant Balance	Est. Future Net Salvage		Beginning Depreciation Reserve	Net Balance	Projection Life (Yrs.)	Remaining Life (Yrs.)	Annual Accrual	Accrual Rate
	B	Percent C	Amount D	E	F=B-D-E	G	H	I=F/H	J=I/B
DISTRIBUTION PLANT									
362.00 Station Equipment	\$ 78,123,696	5.0%	\$ 3,906,185	\$ 21,420,787	\$ 52,796,724	40.00	32.11	\$ 1,644,246	2.10%
364.00 Poles, Towers and Fixtures	70,849,816	-75.0%	(53,137,362)	40,670,751	83,316,426	68.00	47.61	1,749,977	2.47%
365.00 Overhead Conductors and Devices	49,842,694	-100.0%	(49,842,694)	39,572,568	60,112,820	65.00	43.53	1,380,952	2.77%
367.00 Underground Conductors and Devices	74,699,089	-5.0%	(3,734,954)	35,553,205	42,880,838	40.00	24.39	1,758,132	2.35%
368.00 Line Transformers	93,713,427	50.0%	46,856,714	13,945,405	32,911,309	40.00	28.21	1,166,654	1.24%
369.00 Overhead Services	12,990,947	-150.0%	(19,486,421)	15,061,134	17,416,234	55.00	32.19	541,045	4.16%
369.10 Underground Services	40,988,218	-20.0%	(8,197,644)	17,497,918	31,687,946	45.00	29.99	1,056,617	2.58%
370.00 Meters	24,832,623			8,243,380	16,589,243	28.00	20.69	801,800	3.23%
370.10 Load Management Switches	8,665,511			7,283,294	1,382,218	12.00	2.12	651,989	7.52%
370.20 Interruption Monitors*				0	(0)	5.00	1.00		
371.20 Other Private Lighting	4,786,865	10.0%	478,667	1,047,024	3,261,155	23.00	16.83	193,770	4.05%
373.00 Street Lighting and Signal Systems	5,464,004	-5.0%	(273,200)	2,852,491	2,884,714	22.00	15.03	191,930	3.51%
Total Distribution Plant	\$ 464,956,890	-17.9%	\$ (83,430,690)	\$ 203,147,954	\$ 345,239,625		31.00	\$ 11,137,113	2.40%
GENERAL PLANT									
390.00 Structures and Improvements	\$ 19,890,073	10.0%	\$ 1,989,007	\$ 5,683,517	\$ 12,217,548	47.00	31.91	\$ 382,875	1.92%
390.10 General Office Buildings	5,718,958	49.6%	2,836,603	2,474,268	408,086		17.10	23,865	0.42%
390.20 Fleet Service Center Buildings	937,878	33.6%	315,060	505,503	117,115		12.29	9,529	1.02%
390.30 Central Stores Building	4,027,548	92.6%	3,729,509	1,798,730	(1,500,692)		21.81	(68,808)	-1.71%
391.00 Office Furniture*	1,177,317			764,664	412,653	15.00		78,488	6.67%
391.10 Office Equipment*	807,128			593,716	213,413	10.00		80,713	10.00%
391.20 Duplicating Equipment*	287,696			170,812	116,884	10.00		28,770	10.00%
391.50 Computer Systems*	2,677,295			1,490,523	1,186,772	5.00		535,459	20.00%
391.60 Computer Related Equipment*	944,691			562,427	382,263	5.00		188,938	20.00%
394.00 Tools, Shop and Garage Equipment*	3,996,914			1,682,230	2,314,683	15.00		266,461	6.67%
394.20 Automated Meter Reading Equipment*	617,570			381,068	236,503	15.00		41,171	6.67%
396.00 Power Operated Equipment	616,048	20.0%	123,210	166,253	326,585	24.00	16.79	19,451	3.16%
397.00 Communication Equipment*	818,647			368,365	450,282	15.00		54,576	6.67%
397.10 Radio Telecommunications Equipment*	1,184,478			694,473	490,006	10.00		118,448	10.00%
397.20 Microwave Equipment*	4,448,448			2,034,320	2,414,128	15.00		296,563	6.67%
397.30 Radio Load Control Equipment*	317,859			162,556	155,302	10.00		31,786	10.00%
397.40 Communication Equipment - Towers	1,888,762	5.0%	94,438	892,277	902,047	40.00	25.05	36,010	1.91%
Total General Plant	\$ 50,357,109	18.0%	\$ 9,087,827	\$ 20,425,703	\$ 20,843,579		9.81	\$ 2,124,296	4.22%
TOTAL DEPRECIABLE PLANT	\$ 1,794,868,642	-12.3%	\$ (221,554,147)	\$ 683,239,719	\$ 1,333,183,070		27.41	\$ 48,646,625	2.71%

*Amortization Account. (Col. I = Col. B / Col. G)

ANALYSIS

INTRODUCTION

This section provides an explanation of the supporting schedules developed in the OTP 2018 depreciation study to estimate appropriate projection curves, projection lives and net salvage statistics for each rate category. The form and content of the schedules developed for an account depend upon the method of analysis adopted for the category.

This section also includes an example of the supporting schedules developed for Account 368.00 – Line Transformers. Documentation for all other plant accounts is contained in the study work papers. Supporting schedules developed in the OTP study include:

- Schedule A – Generation Arrangement;
- Schedule B – Age Distribution;
- Schedule C – Plant History;
- Schedule D – Actuarial Life Analysis;
- Schedule E – Graphics Analysis; and
- Schedule F – Historical Net Salvage Analysis.

The format and content of these schedules are briefly described below.

SCHEDULE A – GENERATION ARRANGEMENT

The purpose of this schedule is to obtain appropriate weighted-average life statistics for a rate category. A weighted-average remaining-life is the sum of Column H divided by the sum of Column I. A weighted average life is the sum of Column C divided by the sum of Column I. Table 4 below provides a description of each column in the generation arrangement.

It should be noted that the generation arrangement does not include parameters for net salvage. Computed Net Plant (Column C) and Accruals (Column I) must be adjusted for net salvage to obtain a correct measurement of theoretical reserves and annualized depreciation accruals.

SCHEDULE B – AGE DISTRIBUTION

This schedule provides the age distribution and realized life of surviving plant shown in Column C of the Generation Arrangement (Schedule A). The format of the schedule depends upon the availability of either aged or unaged data. Derived additions for vintage years older than the earliest activity year in an account for unaged data are obtained from the age distribution of surviving plant at the beginning of the earliest activity year. The amount surviving from these vintages is shown in Column D. The realized life (Column G) is derived from the dollar years of service provided by a vintage over the period of years the vintage has been in service. Plant additions for vintages older than the earliest activity year in an account are represented by the opening balances shown in Column D.

Column	Title	Description
A	Vintage	Vintage or placement year of surviving plant.
B	Age	Age of surviving plant at beginning of study year.
C	Surviving Plant	Actual dollar amount of surviving plant.
D	Average Life	Estimated average life of each vintage. This statistic is the sum of the realized life and the unrealized life, which is the product of the remaining life (Column E) and the theoretical proportion surviving.
E	Remaining Life	Estimated remaining life of each vintage.
F	Net Plant Ratio	Theoretical net plant ratio of each vintage.
G	Allocation Factor	A pivotal ratio which determines the amortization period of the difference between the recorded and computed reserve.
H	Computed Net Plant	Plant in service less theoretical reserve for each vintage.
I	Accrual	Ratio of computed net plant (Column H) and remaining life (Column E).

Table 4. Generation Arrangement

The computed proportion surviving (Column D) for unaged data is derived from a computed mortality analysis. The average service life displayed in the title block is the life statistic derived for the most recent activity year, given the derived age distribution at the start of the year and the specified retirement dispersion. The realized life (Column F) is obtained by finding the slope of an SC retirement dispersion, which connects the computed survivors of a vintage (Column E) to the recorded vintage addition (Column B). The realized life is the area bounded by the SC dispersion, the computed proportion surviving and the age of the vintage.

SCHEDULE C – PLANT HISTORY

An Unadjusted Plant History schedule provides a summary of recorded plant data extracted from the continuing property records maintained by the Company. Activity year total amounts shown on this schedule for aged data are obtained from a historical arrangement of the database in which all plant accounting transactions are identified by vintage and activity year. Activity year totals for unaged data are obtained from a transaction file without vintage identification. Information displayed in the unadjusted plant history is consistent with regulated investments reported internally by the Company.

An Adjusted Plant History schedule provides a summary of recorded plant data extracted from the continuing property records maintained by the Company with sales, transfers, and adjustments appropriately aged for depreciation study purposes. Activity year total amounts shown on this schedule for aged data are obtained from a historical arrangement of the database in which all plant accounting transactions are identified by vintage and activity year. Ageing of adjusting trans-

actions is achieved using transaction codes that identify an adjusting year associated with the dollar amount of a transaction. Adjusting transactions processed in the adjusted plant history are not aged in the Company's records or in the unadjusted plant history.

SCHEDULE D – ACTUARIAL LIFE ANALYSIS

These schedules provide a summary of the dispersion and life indications obtained from an actuarial life analysis for a specified placement band. The observation band (Column A) is specified to produce a rolling-band, shrinking-band, or progressive-band analysis depending upon the movement of the end points of the band. The degree of censoring (or point of truncation) of the observed life table is shown in Column B for each observation band. The estimated average service life, best fitting Iowa dispersion, and a statistical measure of the goodness of fit are shown for each degree polynomial (First, Second, and Third) fitted to the estimated hazard rates. Options available in the analysis include the width and location of both the placement and observation bands; the interval of years included in a selected rolling, shrinking, or progressive band analysis; the estimator of the hazard rate (actuarial, conditional proportion retired, or maximum likelihood); the elements to include on the diagonal of a weight matrix (exposures, inverse of age, inverse of variance, or unweighted); and the age at which an observed life table is truncated.

Estimated projection lives (Columns C, F, and I) are flagged with an asterisk if negative hazard rates are indicated by the fitted polynomial. All negative hazard rates are set equal to zero in the calculation of the graduated survivor curve. The Conformance Index (Columns E, H, and K) is the square root of the mean sum-of-squared differences between the graduated survivor curve and the best fitting Iowa curve. A Conformance Index of zero would indicate a perfect fit.

SCHEDULE E – GRAPHICS ANALYSIS

This schedule provides a graphics plot of a) the observed proportion surviving for a selected placement and observation band; b) the statistically best fitting Iowa dispersion and derived average service life; and c) the projection curve and projection life selected to describe future forces of mortality.

The graphics analysis also provides a plot of the observed hazard rates and graduated hazard function for a selected placement and observation band. The estimator of the hazard rates and weighting used in fitting orthogonal polynomials to the observed data are displayed in the title block of the displayed graph.

SCHEDULE F – HISTORICAL NET SALVAGE ANALYSIS

This schedule provides a moving average analysis of the ratio of realized net salvage (Column I) to the associated retirements (Column B). The schedule also provides a moving average analysis of the components of net salvage related to retirements. The ratio of gross salvage to retirements is shown in Column D and the ratio of cost of removal to retirements is shown in Column G.

OTTER TAIL POWER COMPANY

Distribution Plant
 Account: 368.00 Line Transformers

Dispersion: 43 - R2.5
 Procedure: Vintage Group

Generation Arrangement

Vintage	December 31, 2017		Avg. Life	Rem. Life	Net Plant Ratio	Alloc. Factor	Computed Net Plant	Accrual
	Age	Surviving Plant						
A	B	C	D	E	F	G	H=C*F*G	I=H/E
2017	0.5	2,672,790	43.00	42.53	0.9890	1.0000	2,643,415	62,158
2016	1.5	5,280,385	43.00	41.59	0.9671	1.0000	5,106,573	122,795
2015	2.5	5,254,509	43.00	40.65	0.9452	1.0000	4,966,695	122,185
2014	3.5	5,307,578	43.01	39.72	0.9234	1.0000	4,901,225	123,407
2013	4.5	5,007,776	43.01	38.79	0.9017	1.0000	4,515,752	116,420
2012	5.5	5,485,849	43.00	37.87	0.8807	1.0000	4,831,132	127,583
2011	6.5	5,436,570	43.03	36.95	0.8587	1.0000	4,668,217	126,338
2010	7.5	5,025,466	43.04	36.04	0.8373	1.0000	4,207,622	116,749
2009	8.5	4,316,774	43.06	35.14	0.8161	1.0000	3,522,769	100,262
2008	9.5	4,423,306	43.08	34.24	0.7950	1.0000	3,516,703	102,713
2007	10.5	4,406,612	43.08	33.35	0.7741	1.0000	3,411,035	102,287
2006	11.5	4,773,452	43.08	32.46	0.7536	1.0000	3,597,418	110,811
2005	12.5	2,849,098	43.02	31.59	0.7343	1.0000	2,092,079	66,228
2004	13.5	2,896,515	42.96	30.72	0.7152	1.0000	2,071,512	67,429
2003	14.5	1,301,207	43.05	29.86	0.6937	1.0000	902,695	30,229
2002	15.5	883,956	42.73	29.01	0.6789	1.0000	600,130	20,686
2001	16.5	1,561,521	42.08	28.17	0.6695	1.0000	1,045,402	37,111
2000	17.5	1,941,947	41.89	27.34	0.6526	1.0000	1,267,295	46,358
1999	18.5	1,470,182	42.30	26.51	0.6269	1.0000	921,617	34,760
1998	19.5	1,152,488	43.37	25.70	0.5926	1.0000	682,950	26,573
1997	20.5	1,692,262	41.90	24.90	0.5942	1.0000	1,005,508	40,386
1996	21.5	1,750,077	41.74	24.10	0.5775	1.0000	1,010,692	41,930
1995	22.5	1,065,819	39.51	23.32	0.5903	1.0000	629,158	26,977
1994	23.5	1,362,611	40.38	22.55	0.5585	1.0000	760,951	33,744
1993	24.5	1,117,443	43.26	21.79	0.5037	1.0000	562,905	25,833
1992	25.5	553,316	40.80	21.04	0.5157	1.0000	285,337	13,561
1991	26.5	759,223	42.52	20.30	0.4775	1.0000	362,541	17,855
1990	27.5	712,889	41.01	19.58	0.4774	1.0000	340,366	17,384
1989	28.5	2,032,659	43.55	18.87	0.4332	1.0000	880,644	46,676
1988	29.5	1,328,463	43.32	18.17	0.4194	1.0000	557,124	30,665
1987	30.5	768,546	43.95	17.48	0.3977	1.0000	305,683	17,486
1986	31.5	620,910	43.77	16.81	0.3841	1.0000	238,480	14,187
1985	32.5	687,589	41.01	16.15	0.3939	1.0000	270,821	16,766
1984	33.5	599,518	43.23	15.51	0.3587	1.0000	215,075	13,867
1983	34.5	1,829,337	43.67	14.88	0.3408	1.0000	623,389	41,885
1982	35.5	454,069	41.93	14.27	0.3404	1.0000	154,556	10,828
1981	36.5	1,412,371	43.80	13.68	0.3123	1.0000	441,107	32,246

OTTER TAIL POWER COMPANY

Schedule A
Page 2 of 2

Distribution Plant
Account: 368.00 Line Transformers

Dispersion: 43 - R2.5
Procedure: Vintage Group

Generation Arrangement

Vintage	December 31, 2017		Avg. Life	Rem. Life	Net Plant Ratio	Alloc. Factor	Computed Net Plant	Accrual
	Age	Surviving Plant						
A	B	C	D	E	F	G	H=C*F*G	I=H/E
1980	37.5	884,837	44.38	13.10	0.2953	1.0000	261,275	19,938
1979	38.5	873,447	44.08	12.55	0.2847	1.0000	248,634	19,816
1978	39.5	975,157	43.42	12.01	0.2766	1.0000	269,687	22,458
1977	40.5	810,718	43.47	11.49	0.2643	1.0000	214,263	18,648
1976	41.5	755,113	43.04	10.99	0.2553	1.0000	192,812	17,543
1975	42.5	613,937	45.33	10.51	0.2319	1.0000	142,378	13,545
1974	43.5	541,598	44.67	10.05	0.2251	1.0000	121,898	12,126
1973	44.5	374,556	46.31	9.61	0.2076	1.0000	77,769	8,088
1972	45.5	155,484	42.84	9.20	0.2147	1.0000	33,383	3,630
1971	46.5	188,290	43.07	8.80	0.2043	1.0000	38,467	4,372
1970	47.5	237,927	45.04	8.42	0.1870	1.0000	44,481	5,283
1969	48.5	207,838	47.73	8.06	0.1689	1.0000	35,098	4,355
1968	49.5	319,454	49.43	7.72	0.1561	1.0000	49,877	6,462
1967	50.5	86,051	45.49	7.39	0.1625	1.0000	13,985	1,892
1966	51.5	29,166	43.38	7.08	0.1633	1.0000	4,763	672
1965	52.5	224,750	48.84	6.79	0.1390	1.0000	31,241	4,602
1964	53.5	139,037	50.42	6.51	0.1290	1.0000	17,937	2,757
1963	54.5	114,930	49.86	6.23	0.1250	1.0000	14,371	2,305
1962	55.5	101,748	49.87	5.97	0.1198	1.0000	12,185	2,040
1961	56.5	124,836	50.32	5.72	0.1136	1.0000	14,186	2,481
1960	57.5	20,272	45.52	5.47	0.1202	1.0000	2,436	445
1957	60.5	2,677	40.62	4.76	0.1172	1.0000	314	66
Total	14.5	\$97,976,903	42.99	30.70	0.7140	1.0000	\$69,958,012	\$2,278,885

OTTER TAIL POWER COMPANY
Distribution Plant
Account: 368.00 Line Transformers

Age Distribution

Vintage	Age as of 12/31/2017	Derived Additions	1985 Opening Balance	Experience to 12/31/2017		
				Amount Surviving	Proportion Surviving	Realized Life
A	B	C	D	E	F=E/(C+D)	G
2017	0.5	2,672,790		2,672,790	1.0000	0.5000
2016	1.5	5,280,385		5,280,385	1.0000	1.5000
2015	2.5	5,254,509		5,254,509	1.0000	2.5000
2014	3.5	5,307,578		5,307,578	1.0000	3.5000
2013	4.5	5,007,776		5,007,776	1.0000	4.5000
2012	5.5	5,510,606		5,485,849	0.9955	5.4753
2011	6.5	5,438,086		5,436,570	0.9997	6.4988
2010	7.5	5,032,533		5,025,466	0.9986	7.4993
2009	8.5	4,333,134		4,316,774	0.9962	8.4943
2008	9.5	4,432,744		4,423,306	0.9979	9.4861
2007	10.5	4,416,586		4,406,612	0.9977	10.4814
2006	11.5	4,797,929		4,773,452	0.9949	11.4540
2005	12.5	2,905,228		2,849,098	0.9807	12.3680
2004	13.5	2,985,750		2,896,515	0.9701	13.2736
2003	14.5	1,337,634		1,301,207	0.9728	14.3262
2002	15.5	917,178		883,956	0.9638	14.9719
2001	16.5	1,705,596		1,561,521	0.9155	15.2715
2000	17.5	2,187,118		1,941,947	0.8879	16.0331
1999	18.5	1,608,929		1,470,182	0.9138	17.3813
1998	19.5	1,187,240		1,152,488	0.9707	19.3924
1997	20.5	1,932,767		1,692,262	0.8756	18.8538
1996	21.5	2,024,994		1,750,077	0.8642	19.6112
1995	22.5	1,692,309		1,065,819	0.6298	18.2959
1994	23.5	1,884,752		1,362,611	0.7230	20.0728
1993	24.5	1,196,973		1,117,443	0.9336	23.8441
1992	25.5	771,506		553,316	0.7172	22.2764
1991	26.5	862,077		759,223	0.8807	24.8697
1990	27.5	991,037		712,889	0.7193	24.2203
1989	28.5	2,252,341		2,032,659	0.9025	27.6115
1988	29.5	1,549,766		1,328,463	0.8572	28.2222
1987	30.5	829,595		768,546	0.9264	29.6772
1986	31.5	697,193		620,910	0.8906	30.3002
1985	32.5	921,085		687,589	0.7465	28.3361
1984	33.5		777,419	599,518	0.7712	31.3355
1983	34.5		2,201,524	1,829,337	0.8309	32.5349
1982	35.5		683,158	454,069	0.6647	31.5318
1981	36.5		1,826,717	1,412,371	0.7732	34.1174
1980	37.5		1,127,386	884,837	0.7849	35.3923

OTTER TAIL POWER COMPANY
Distribution Plant
Account: 368.00 Line Transformers

Schedule B
Page 2 of 3

Age Distribution

Vintage	Age as of 12/31/2017	Derived Additions	1985 Opening Balance	Experience to 12/31/2017		
				Amount Surviving	Proportion Surviving	Realized Life
A	B	C	D	E	F=E/(C+D)	G
1979	38.5		1,271,335	873,447	0.6870	35.7653
1978	39.5		1,600,819	975,157	0.6092	35.7592
1977	40.5		1,375,280	810,718	0.5895	36.4371
1976	41.5		1,340,737	755,113	0.5632	36.6054
1975	42.5		939,316	613,937	0.6536	39.4602
1974	43.5		926,024	541,598	0.5849	39.3432
1973	44.5		576,492	374,556	0.6497	41.5006
1972	45.5		410,594	155,484	0.3787	38.5130
1971	46.5		462,558	188,290	0.4071	39.2003
1970	47.5		433,009	237,927	0.5495	41.5948
1969	48.5		334,896	207,838	0.6206	44.6794
1968	49.5		499,879	319,454	0.6391	46.7476
1967	50.5		434,220	86,051	0.1982	43.1353
1966	51.5		314,667	29,166	0.0927	41.3276
1965	52.5		383,139	224,750	0.5866	47.0613
1964	53.5		266,056	139,037	0.5226	48.8979
1963	54.5		285,699	114,930	0.4023	48.5518
1962	55.5		282,057	101,748	0.3607	48.7633
1961	56.5		348,979	124,836	0.3577	49.3889
1960	57.5		352,519	20,272	0.0575	44.7443
1959	58.5		304,806		0.0000	42.8919
1958	59.5		298,158		0.0000	42.2956
1957	60.5		236,760	2,677	0.0113	40.1869
1956	61.5		204,474		0.0000	37.3813
1955	62.5		158,927		0.0000	36.4333
1954	63.5		81,363		0.0000	37.0255
1953	64.5		75,984		0.0000	37.2813
1952	65.5		37,957		0.0000	37.5770
1951	66.5		34,661		0.0000	38.7383
1950	67.5		18,494		0.0000	39.8341
1949	68.5		37,345		0.0000	40.4566
1948	69.5		30,069		0.0000	40.4386
1947	70.5		17,197		0.0000	41.2486
1946	71.5		9,863		0.0000	41.7799
1945	72.5		12,516		0.0000	42.5908
1944	73.5		4,559		0.0000	43.5769
1943	74.5		1,349		0.0000	44.6412
1942	75.5		2,154		0.0000	45.2841

OTTER TAIL POWER COMPANY
Distribution Plant
Account: 368.00 Line Transformers

Schedule B
Page 3 of 3

Age Distribution

Vintage	Age as of 12/31/2017	Derived Additions	1985 Opening Balance	Experience to 12/31/2017		
				Amount Surviving	Proportion Surviving	Realized Life
A	B	C	D	E	F=E/(C+D)	G
1941	76.5		1,542		0.0000	46.9728
1940	77.5		910		0.0000	47.5747
1939	78.5		908		0.0000	49.4229
1938	79.5		1,116		0.0000	50.3665
1937	80.5		990		0.0000	51.5121
1936	81.5		716		0.0000	52.0377
1935	82.5		612		0.0000	53.0033
1934	83.5		330		0.0000	54.1212
1933	84.5		163		0.0000	55.1779
1932	85.5		408		0.0000	56.2549
1931	86.5		602		0.0000	57.3455
1930	87.5		959		0.0000	58.1470
1929	88.5		770		0.0000	58.8130
1928	89.5		699		0.0000	59.5579
1927	90.5		500		0.0000	60.0000
1926	91.5		321		0.0000	61.0000
1925	92.5		297		0.0000	62.0000
1924	93.5		497		0.0000	63.0000
1923	94.5		49		0.0000	64.0000
1922	95.5		55		0.0000	65.0000
1921	96.5		87		0.0000	66.0000
1920	97.5		33		0.0000	67.0000
1919	98.5		40		0.0000	68.0000
1918	99.5		27		0.0000	69.0000
1917	100.5		522		0.0000	70.0000
Total	14.5	\$89,925,721	\$21,034,267	\$97,976,903	0.8830	

OTTER TAIL POWER COMPANY
Distribution Plant
Account: 368.00 Line Transformers

Unadjusted Plant History

Year	Beginning Balance	Additions	Retirements	Sales, Transfers & Adjustments	Ending Balance
A	B	C	D	E	F=B+C-D+E
1987	22,689,681	820,432	195,920		23,314,193
1988	23,314,193	1,551,868	226,995	5,242	24,644,308
1989	24,644,308	2,263,122	117,996	(5,527)	26,783,907
1990	26,783,907	991,037	326,221	4,616	27,453,339
1991	27,453,339	862,078	207,646	(12,467)	28,095,304
1992	28,095,304	786,675	150,570	(9,787)	28,721,622
1993	28,721,622	1,192,241	195,536	4,252	29,722,579
1994	29,722,579	1,886,432	149,575		31,459,436
1995	31,459,436	1,686,752	314,072	10,338	32,842,454
1996	32,842,454	2,027,115	147,983	4,510	34,726,096
1997	34,726,096	1,912,324	55,522	(1)	36,582,897
1998	36,582,897	1,187,240	153,733		37,616,404
1999	37,616,404	1,609,327	156,027	(208)	39,069,497
2000	39,069,497	2,188,835	166,433		41,091,899
2001	41,091,899	1,705,596	192,474		42,605,021
2002	42,605,021	916,851	277,076	317	43,245,113
2003	43,245,113	1,337,634	2,873,659	32	41,709,120
2004	41,709,120	2,985,750	441,561	(15,540)	44,237,769
2005	44,237,769	2,896,827	432,818	3	46,701,781
2006	46,701,781	3,131,711	360,187	(448)	49,472,857
2007	49,472,857	4,655,291	486,133	(40,432)	53,601,583
2008	53,601,583	6,003,190	483,256	56,694	59,178,212
2009	59,178,212	3,936,418	458,656	3,951	62,659,924
2010	62,659,924	5,098,877	731,745		67,027,056
2011	67,027,056	4,566,114	500,083	93,606	71,186,693
2012	71,186,693	4,917,618	428,907	21,375	75,696,778
2013	75,696,778	4,961,189	516,831	(8,728)	80,132,409
2014	80,132,409	5,775,912	544,924	2,900	85,366,296
2015	85,366,296	4,849,271	521,544	67,990	89,762,013
2016	89,762,013	4,543,501	574,675	(17,411)	93,713,427
2017	93,713,427	4,855,223	594,326	2,579	97,976,903

OTTER TAIL POWER COMPANY
Distribution Plant
Account: 368.00 Line Transformers

Adjusted Plant History

Year	Beginning Balance	Additions	Retirements	Sales, Transfers & Adjustments	Ending Balance
A	B	C	D	E	F=B+C-D+E
1987	22,698,755	825,004	195,920		23,327,839
1988	23,327,839	1,550,708	226,995	5,242	24,656,794
1989	24,656,794	2,263,122	117,996	(5,527)	26,796,393
1990	26,796,393	991,037	326,221	4,816	27,465,826
1991	27,465,826	862,078	207,646	(12,467)	28,107,791
1992	28,107,791	776,714	150,570	(9,787)	28,724,147
1993	28,724,147	1,192,241	195,536	4,252	29,725,105
1994	29,725,105	1,886,432	149,575		31,461,962
1995	31,461,962	1,686,752	314,072	10,338	32,844,980
1996	32,844,980	2,024,994	147,983	4,510	34,726,500
1997	34,726,500	1,912,324	55,522	(1)	36,583,301
1998	36,583,301	1,187,240	153,733		37,616,809
1999	37,616,809	1,608,602	156,027	(208)	39,069,177
2000	39,069,177	2,188,835	166,433		41,091,579
2001	41,091,579	1,705,596	192,474		42,604,701
2002	42,604,701	917,178	277,076	317	43,245,119
2003	43,245,119	1,337,634	2,873,659	32	41,709,127
2004	41,709,127	2,985,750	441,561	(15,542)	44,237,775
2005	44,237,775	2,905,228	432,818		46,710,184
2006	46,710,184	4,798,378	360,187	(449)	51,147,926
2007	51,147,926	4,416,586	486,133	(40,432)	55,037,948
2008	55,037,948	4,392,025	483,256	56,694	59,003,411
2009	59,003,411	4,335,839	458,656	3,951	62,884,545
2010	62,884,545	4,997,275	731,745		67,150,074
2011	67,150,074	5,415,644	500,083	93,604	72,159,239
2012	72,159,239	5,485,341	428,907	21,375	77,237,048
2013	77,237,048	5,000,703	516,831	(8,728)	81,712,193
2014	81,712,193	5,229,326	544,924	2,900	86,399,494
2015	86,399,494	5,261,442	521,544	67,990	91,207,382
2016	91,207,382	5,280,565	574,675	(17,411)	95,895,861
2017	95,895,861	2,672,790	594,326	2,579	97,976,903

OTTER TAIL POWER COMPANY

Distribution Plant

Account: 368.00 Line Transformers

Schedule D
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T-Cut: None

Placement Band: 1917-2017

Hazard Function: Proportion Retired

Rolling Band Life Analysis

Weighting: Exposures

Observation Band	Censoring	First Degree			Second Degree			Third Degree		
		Average Life	Disper- sion	Conf. Index	Average Life	Disper- sion	Conf. Index	Average Life	Disper- sion	Conf. Index
A	B	C	D	E	F	G	H	I	J	K
1985-1989	0.0	47.8	L2 *	23.04	37.3	R3 *	7.91	37.8	R4 *	5.67
1986-1990	0.0	40.4	L2 *	16.76	34.4	R3 *	6.89	35.5	R4 *	4.54
1987-1991	0.0	38.1	L2 *	14.55	33.4	R3 *	6.53	34.5	R4 *	3.60
1988-1992	0.0	40.3	L2 *	17.19	34.7	R3 *	7.67	34.9	R4 *	3.82
1989-1993	0.0	41.9	L2 *	18.51	36.1	R3 *	8.80	35.4	R4 *	4.28
1990-1994	0.0	43.1	L2 *	19.76	36.8	R3 *	10.53	35.8	R4 *	5.49
1991-1995	0.0	46.5	L2 *	19.77	39.0	R3 *	13.97	36.8	R4 *	8.22
1992-1996	0.0	49.0	L2 *	19.32	40.2	R3 *	14.73	37.6	R4 *	9.86
1993-1997	0.0	53.9	L1.5 *	15.87	43.1	R3 *	13.27	39.4	R4 *	10.32
1994-1998	15.0	58.2	L1.5 *	14.55	44.5	R3 *	11.60	40.7	R4 *	8.76
1995-1999	6.1	61.8	L1.5 *	16.68	46.7	S2	13.88	42.3	R4 *	11.20
1996-2000	15.7	64.7	L1.5 *	16.59	46.9	S3 *	12.83	43.3	R4 *	10.21
1997-2001	7.6	64.6	L1.5 *	18.87	46.9	S3 *	14.63	43.3	R4 *	11.58
1998-2002	20.8	58.6	L1.5 *	13.92	44.4	R3 *	10.29	41.9	R4 *	7.74
1999-2003	10.3	46.4	O2	9.87	34.1	R0.5	7.34	32.3	R0.5	4.62
2000-2004	2.1	41.1	O2	10.78	33.0	R0.5	7.84	31.9	R0.5	5.31
2001-2005	0.6	38.1	L0	10.78	32.3	R0.5	7.64	31.6	R0.5	5.41
2002-2006	0.9	37.5	L0	9.89	32.5	R0.5	6.87	31.6	R0.5	4.88
2003-2007	9.9	37.0	L0	7.01	33.0	R0.5	4.73	31.6	R0.5	3.50
2004-2008	18.9	45.1	L2 *	9.07	41.7	S3 *	4.99	41.2	R4 *	4.74
2005-2009	23.0	45.8	L2 *	8.75	42.7	S3 *	4.36	42.3	R4	4.32
2006-2010	0.0	45.5	L2 *	7.88	43.3	S3 *	4.68	43.2	S3 *	4.72
2007-2011	0.0	45.5	L2 *	7.81	43.8	S2 *	3.90	44.1	S2 *	3.95
2008-2012	27.8	46.6	L2 *	6.94	44.7	S2 *	2.77	45.0	S2 *	2.73
2009-2013	26.1	46.9	L2 *	6.64	45.3	S2 *	2.20	45.5	S2 *	2.16
2010-2014	24.7	47.2	L2 *	6.04	45.7	S2 *	1.54	45.8	S2 *	1.53
2011-2015	27.3	49.4	L2 *	5.71	47.3	S2 *	1.41	47.0	S2 *	1.53
2012-2016	26.2	50.1	L2 *	5.23	47.9	S2 *	1.19	47.5	S2 *	1.28
2013-2017	24.6	49.9	L2 *	4.86	48.0	S2	1.19	47.5	S2 *	1.23

OTTER TAIL POWER COMPANY
Distribution Plant
Account: 368.00 Line Transformers

Schedule D
Page 1 of 1

T-Cut: None
Placement Band: 1917-2017
Hazard Function: Proportion Retired

Shrinking Band Life Analysis

Weighting: Exposures

Observation Band	Censoring	First Degree			Second Degree			Third Degree		
		Average Life	Disper-sion	Conf. Index	Average Life	Disper-sion	Conf. Index	Average Life	Disper-sion	Conf. Index
A	B	C	D	E	F	G	H	I	J	K
1985-2017	0.0	47.4	L1.5 *	9.98	43.4	R2.5	2.78	42.7	R2.5	2.15
1987-2017	0.0	47.1	L1.5 *	10.21	43.2	R2.5	3.15	42.6	R2.5	2.34
1989-2017	12.7	47.4	L1.5 *	7.27	43.4	R2.5	2.33	42.7	R2.5	2.29
1991-2017	17.3	47.7	L1.5 *	6.99	43.6	R2.5	2.52	42.9	R2.5	2.74
1993-2017	17.5	47.8	L1.5 *	6.95	43.7	R2.5	2.55	42.9	R2.5	2.74
1995-2017	17.6	47.7	L1.5 *	6.84	43.8	R2.5	2.55	43.0	R2.5	2.73
1997-2017	17.8	47.6	L1.5 *	6.73	43.9	R2.5	2.51	43.0	R2.5	2.69
1999-2017	17.6	46.9	L1.5 *	6.39	43.6	R2.5	2.44	42.8	R2.5	2.62
2001-2017	17.6	46.2	L1.5 *	6.01	43.3	S1.5	2.28	42.5	R2.5	2.48
2003-2017	17.8	45.6	L1.5 *	5.45	43.1	R2	1.99	42.3	R2	2.20
2005-2017	20.2	47.7	L2 *	6.45	45.8	S2 *	1.89	45.6	S2	2.00
2007-2017	22.1	48.2	L2 *	5.63	46.3	S2 *	1.53	46.4	S2 *	1.51
2009-2017	22.6	48.5	L2 *	5.50	46.8	S2 *	1.41	46.8	S2 *	1.41
2011-2017	23.6	49.8	L2 *	5.42	47.8	S2 *	1.33	47.3	S2 *	1.37
2013-2017	24.6	49.9	L2 *	4.86	48.0	S2	1.19	47.5	S2 *	1.23
2015-2017	25.8	50.8	L1.5 *	4.51	48.7	S2	1.46	47.9	S2 *	1.43
2017-2017	26.3	50.8	L1.5 *	4.61	48.8	S2	1.45	48.0	S2 *	1.44

OTTER TAIL POWER COMPANY
Distribution Plant
Account: 368.00 Line Transformers

Schedule D
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T-Cut: None
Placement Band: 1917-2017
Hazard Function: Proportion Retired
Weighting: Exposures

Progressing Band Life Analysis

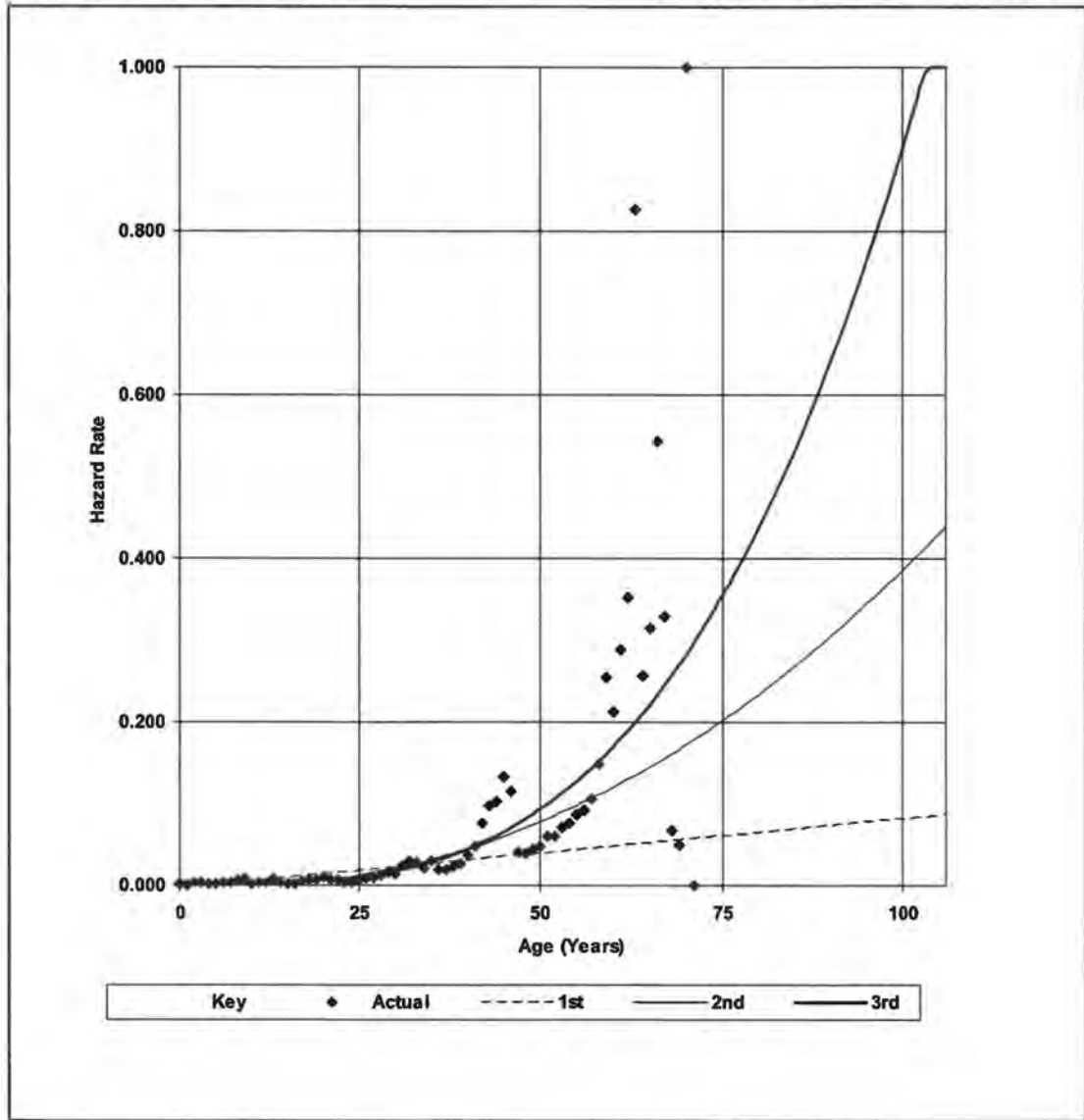
Observation Band	Censoring	First Degree			Second Degree			Third Degree		
		Average Life	Disper- sion	Conf. Index	Average Life	Disper- sion	Conf. Index	Average Life	Disper- sion	Conf. Index
A	B	C	D	E	F	G	H	I	J	K
1985-1986	100.0				No Retirements					
1985-1988	0.0	48.5	L1.5 *	23.81	37.4	R3 *	8.09	37.9	R4 *	6.49
1985-1990	0.0	42.8	L2 *	18.80	35.6	R3 *	7.27	36.4	R4 *	5.16
1985-1992	0.0	43.2	L2 *	18.81	36.1	R3 *	7.54	36.6	R4 *	4.55
1985-1994	0.0	44.8	L2 *	20.25	37.0	R3 *	8.67	37.1	R4 *	5.17
1985-1996	0.0	45.6	L2 *	21.14	37.9	R3 *	10.08	37.4	R4 *	6.22
1985-1998	0.0	49.3	L1.5 *	23.63	40.0	R3 *	11.12	38.9	R4 *	6.70
1985-2000	0.0	51.5	L1.5 *	24.35	41.4	R3 *	11.39	40.0	R4 *	6.69
1985-2002	0.0	51.9	L1.5 *	23.27	41.7	R3 *	10.10	40.4	R4 *	5.38
1985-2004	0.0	47.6	L1	19.63	38.8	R2	8.69	37.7	R2.5	4.62
1985-2006	0.0	46.7	L1.5 *	17.96	38.9	R2.5	7.63	38.0	R3 *	4.17
1985-2008	0.0	46.6	L1.5 *	15.12	39.6	R2.5	4.90	38.6	R3 *	2.11
1985-2010	0.0	46.0	L1.5 *	12.44	40.2	R2.5	3.28	39.2	R2.5	2.28
1985-2012	0.0	46.5	L1.5 *	11.80	41.2	R2.5	3.10	40.3	R2.5	2.23
1985-2014	0.0	46.7	L1.5 *	10.90	42.1	R2.5	2.90	41.2	R2.5	2.32
1985-2016	0.0	47.2	L1.5 *	10.36	43.0	R2.5	2.91	42.2	R2.5	2.25
1985-2017	0.0	47.4	L1.5 *	9.98	43.4	R2.5	2.78	42.7	R2.5	2.15

OTTER TAIL POWER COMPANY
Distribution Plant
Account: 368.00 Line Transformers

Schedule E
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T-Cut: None
Placement Band: 1917-2017 Observation Band: 1985-2017
Hazard Function: Proportion Retired
Weighting: Exposures
1st: 47.4-L1.5 2nd: 43.4-R2.5 3rd: 42.7-R2.5

Polynomial Hazard Functions

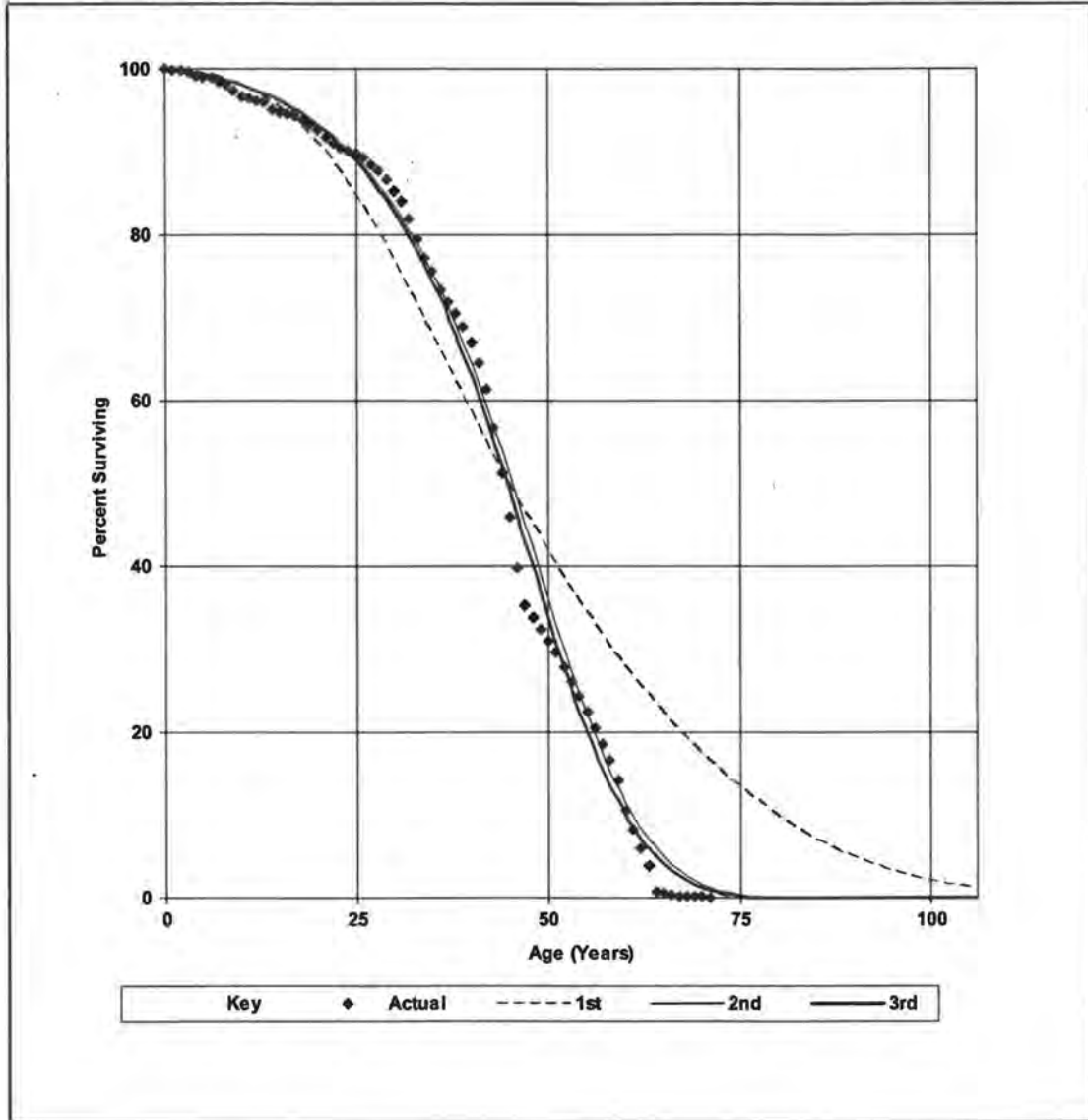


OTTER TAIL POWER COMPANY
Distribution Plant
Account: 368.00 Line Transformers

Schedule E
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T-Cut: None
Placement Band: 1917-2017 Observation Band: 1985-2017
Hazard Function: Proportion Retired
Weighting: Exposures
1st: 47.4-L1.5 2nd: 43.4-R2.5 3rd: 42.7-R2.5

Survivorship Functions



OTTER TAIL POWER COMPANY
Distribution Plant
Account: 368.00 Line Transformers

Schedule E
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T-Cut: None

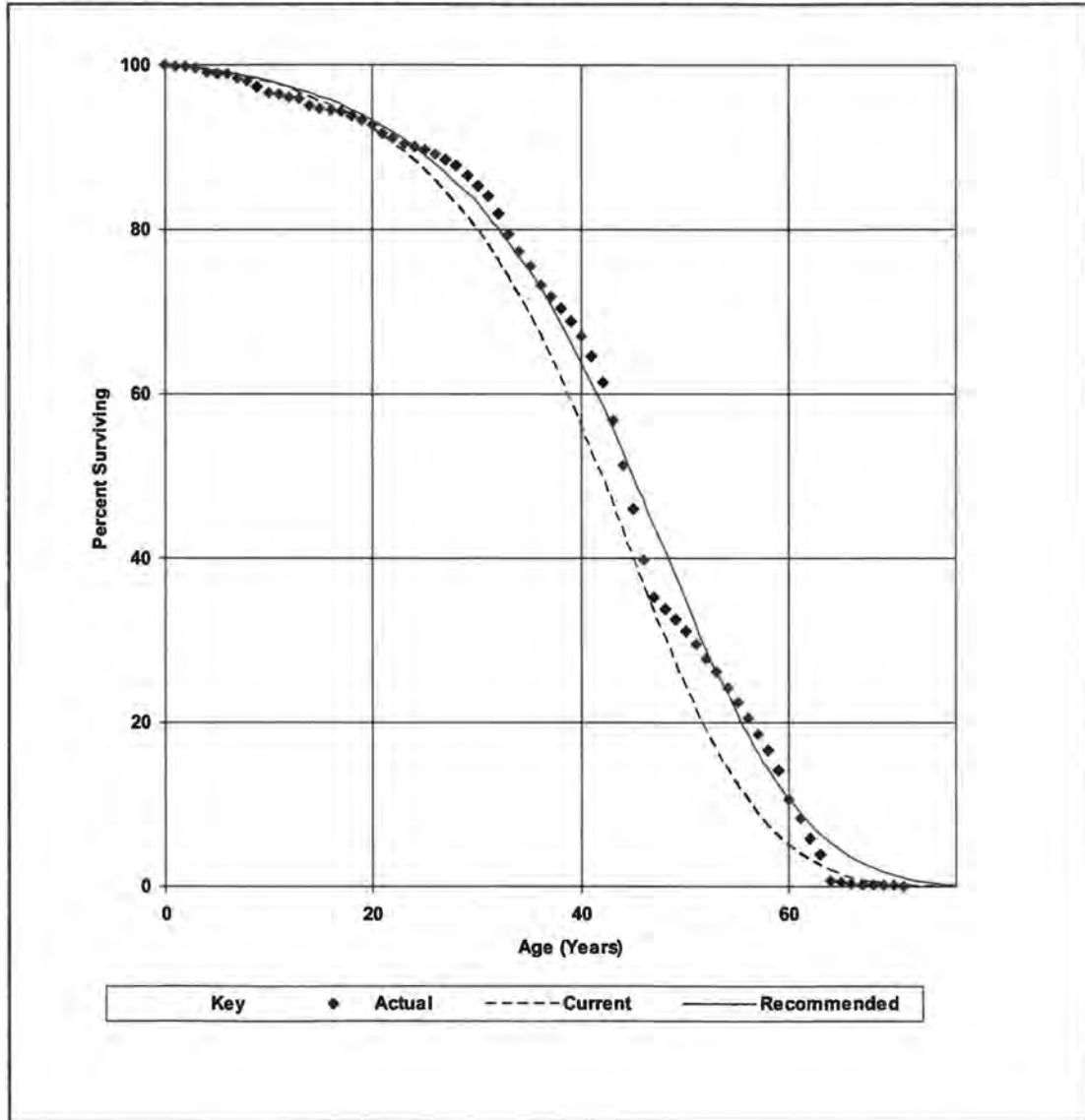
Placement Band: 1917-2017

Observation Band: 1985-2017

Current and Recommended Projection Life Curves

Current: 40.0-R2.5

Recommended: 43.0-R2.5



Scheduled F
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OTTER TAIL POWER COMPANY
Distribution Plant
Account: 368.00 Line Transformers

Unadjusted Net Salvage History

Year	Retirements	Gross Salvage			Cost of Retiring			Net Salvage		
		Amount	Pct.	5-Yr Avg.	Amount	Pct.	5-Yr Avg.	Amount	Pct.	5-Yr Avg.
A	B	C	D=C/B	E	F	G=F/B	H	I=C-F	J=I/B	K
1987	195,920	26,552	13.6		25,567	13.0		985	0.5	
1988	226,995	64,590	28.5		42,690	18.8		21,900	9.6	
1989	117,996	20,394	17.3		40,916	34.7		(20,522)	-17.4	
1990	326,221	33,556	10.3		59,450	18.2		(25,894)	-7.9	
1991	207,646	43,368	20.9	17.5	46,287	22.3	20.0	(2,919)	-1.4	-2.5
1992	150,570	2,382	1.6	16.0	19,879	13.2	20.3	(17,497)	-11.6	-4.4
1993	195,536	45,604	23.3	14.6	60,610	31.0	22.8	(15,006)	-7.7	-8.2
1994	149,575	46,593	31.2	16.7	49,442	33.1	22.9	(2,849)	-1.9	-6.2
1995	314,072	118,479	37.7	25.2	45,387	14.5	21.8	73,092	23.3	3.4
1996	147,983	35,303	23.9	25.9	47,380	32.0	23.3	(12,077)	-8.2	2.7
1997	55,522	17,579	31.7	30.6	24,969	45.0	26.4	(7,390)	-13.3	4.1
1998	153,733	52,665	34.3	33.0	36,001	23.4	24.8	16,664	10.8	8.2
1999	156,027	40,610	26.0	32.0	22,692	14.5	21.3	17,917	11.5	10.7
2000	166,433	12,099	7.3	23.3	53,237	32.0	27.1	(41,138)	-24.7	-3.8
2001	192,474	10,157	5.3	18.4	38,952	20.2	24.3	(28,795)	-15.0	-5.9
2002	277,076	15,305	5.5	13.8	49,415	17.8	21.2	(34,110)	-12.3	-7.3
2003	2,873,659	1,860,919	64.8	52.9	51,659	1.8	5.9	1,809,260	63.0	47.0
2004	441,561	641,255	145.2	64.3	187,379	42.4	9.6	453,876	102.8	54.6
2005	432,818	702,627	162.3	76.6	178,290	41.2	12.0	524,337	121.1	64.6
2006	360,187	217,533	60.4	78.4	126,295	35.1	13.5	91,238	25.3	64.9
2007	486,133	380,721	78.3	82.8	190,333	39.2	16.0	190,388	39.2	66.8
2008	483,256	305,526	63.2	102.0	199,608	41.3	40.0	105,918	21.9	62.0
2009	458,656	318,611	69.5	86.7	198,593	43.3	40.2	120,018	26.2	46.5
2010	731,745	556,759	76.1	70.6	217,534	29.7	37.0	339,225	46.4	33.6
2011	500,083	578,581	115.7	80.5	275,914	55.2	40.7	302,667	60.5	39.8
2012	428,907	373,718	87.1	82.0	244,508	57.0	43.7	129,210	30.1	38.3
2013	516,831	493,229	95.4	88.0	466,016	90.2	53.2	27,213	5.3	34.8
2014	544,924	605,489	111.1	95.8	269,270	49.4	54.1	336,220	61.7	41.7
2015	521,544	405,508	77.8	97.8	361,287	69.3	64.4	44,221	8.5	33.4
2016	574,675	403,144	70.2	88.2	313,565	54.6	64.0	89,579	15.6	24.2
2017	594,326	460,786	77.5	86.0	352,744	59.4	64.1	108,042	18.2	22.0
Total	12,983,084	8,889,643	68.5		4,295,870	33.1		4,593,774	35.4	

Scheduled F
Page 1 of 1

OTTER TAIL POWER COMPANY
Distribution Plant
Account: 368.00 Line Transformers

Adjusted Net Salvage History

Year	Retirements	Gross Salvage			Cost of Retiring			Net Salvage		
		Amount	Pct.	5-Yr Avg.	Amount	Pct.	5-Yr Avg.	Amount	Pct.	5-Yr Avg.
A	B	C	D=C/B	E	F	G=F/B	H	I=C-F	J=I/B	K
1987	195,920	26,552	13.6		25,567	13.0		985	0.5	
1988	226,995	64,590	28.5		42,690	18.8		21,900	9.6	
1989	117,996	20,394	17.3		40,916	34.7		(20,522)	-17.4	
1990	326,221	33,556	10.3		59,450	18.2		(25,894)	-7.9	
1991	207,646	43,368	20.9	17.5	46,287	22.3	20.0	(2,919)	-1.4	-2.5
1992	150,570	2,382	1.6	16.0	19,879	13.2	20.3	(17,497)	-11.6	-4.4
1993	195,536	45,604	23.3	14.6	60,610	31.0	22.8	(15,006)	-7.7	-8.2
1994	149,575	46,593	31.2	16.7	49,442	33.1	22.9	(2,849)	-1.9	-6.2
1995	314,072	118,479	37.7	25.2	45,387	14.5	21.8	73,092	23.3	3.4
1996	147,983	35,303	23.9	25.9	47,380	32.0	23.3	(12,077)	-8.2	2.7
1997	55,522	17,579	31.7	30.6	24,969	45.0	26.4	(7,390)	-13.3	4.1
1998	153,733	52,665	34.3	33.0	36,001	23.4	24.8	16,664	10.8	8.2
1999	156,027	40,610	26.0	32.0	22,692	14.5	21.3	17,917	11.5	10.7
2000	166,433	12,099	7.3	23.3	53,237	32.0	27.1	(41,138)	-24.7	-3.8
2001	192,474	10,157	5.3	18.4	38,952	20.2	24.3	(28,795)	-15.0	-5.9
2002	277,076	15,305	5.5	13.8	49,415	17.8	21.2	(34,110)	-12.3	-7.3
2003	2,873,659	1,860,919	64.8	52.9	51,659	1.8	5.9	1,809,260	63.0	47.0
2004	441,561	638,141	144.5	64.2	187,379	42.4	9.6	450,762	102.1	54.6
2005	432,818	702,277	162.3	76.5	178,290	41.2	12.0	523,987	121.1	64.5
2006	360,187	216,058	60.0	78.3	126,295	35.1	13.5	89,763	24.9	64.8
2007	486,133	380,721	78.3	82.7	190,333	39.2	16.0	190,388	39.2	66.7
2008	483,256	305,526	63.2	101.8	199,608	41.3	40.0	105,918	21.9	61.7
2009	458,656	299,778	65.4	85.7	198,593	43.3	40.2	101,185	22.1	45.5
2010	731,745	538,669	73.6	69.1	217,534	29.7	37.0	321,134	43.9	32.1
2011	500,083	525,674	105.1	77.1	275,914	55.2	40.7	249,760	49.9	36.4
2012	428,907	356,176	83.0	77.8	244,508	57.0	43.7	111,668	26.0	34.2
2013	516,831	479,840	92.8	83.5	466,016	90.2	53.2	13,823	2.7	30.3
2014	544,924	589,438	108.2	91.5	269,270	49.4	54.1	320,168	58.8	37.3
2015	521,544	405,508	77.8	93.8	361,287	69.3	64.4	44,221	8.5	29.4
2016	574,675	400,597	69.7	86.3	313,565	54.6	64.0	87,032	15.1	22.3
2017	594,326	460,786	77.5	84.9	352,744	59.4	64.1	108,042	18.2	20.8
Total	12,983,084	8,745,342	67.4		4,295,870	33.1		4,449,473	34.3	

OTTER TAIL POWER COMPANY
2018 ANNUAL REVIEW OF DEPRECIATION CERTIFICATION
PROPOSED REMAINING LIVES & SALVAGE %'s FOR USE IN 2019

<u>Account Number</u>	<u>Class of Utility Plant</u>	<u>Remaining Life (Yrs)</u>	<u>Net Salvage (%)</u>	<u>Amortization Period (Yrs)</u>
STEAM PRODUCTION				
<u>Big Stone Plant</u>				
311-101	Structures & Improvements	27.46	-5.9%	
312-101	Boiler Plant Equipment	27.47	-5.9%	
314-101	Turbogenerator Units	27.44	-5.9%	
315-101	Accessory Electric Equipment	27.46	-5.9%	
316-101	Misc. Power Plant Equipment	27.44	-5.9%	
<u>Hoot Lake Plant - Units 2 & 3</u>				
311-102	Structures & Improvements	3.48	-15.5%	
312-102	Boiler Plant Equipment	3.48	-15.5%	
312.1-102	Boiler Plant Equipment	32.08		
314-102	Turbogenerator Units	3.48	-15.5%	
315-102	Accessory Electric Equipment	3.48	-15.5%	
316-102	Misc. Power Plant Equipment	3.48	-15.5%	
<u>Coyote Station</u>				
311-103	Structures & Improvements	22.75	-9.0%	
312-103	Boiler Plant Equipment	22.77	-9.0%	
314-103	Turbogenerator Units	22.78	-9.0%	
315-103	Accessory Electric Equipment	22.76	-9.0%	
316-103	Misc. Power Plant Equipment	22.78	-9.0%	
HYDRAULIC PRODUCTION				
<u>Hoot Lake Hydro Unit</u>				
331-131	Structures & Improvements	3.48	0.0%	
332-131	Reservoirs, Dams & Waterways	3.48	0.0%	
333-131	Water Wheels, Turbines & Gen.	3.48	0.0%	
334-131	Accessory Electric Equipment	3.48	0.0%	
335-131	Misc. Power Plant Equipment	3.48	0.0%	
<u>Wright Hydro Unit</u>				
331-132	Structures & Improvements	3.48	0.0%	
332-132	Reservoirs, Dams & Waterways	3.48	0.0%	
333-132	Water Wheels, Turbines & Gen.	3.48	0.0%	
334-132	Accessory Electric Equipment	3.48	0.0%	
335-132	Misc. Power Plant Equipment	3.48	0.0%	
<u>Pisgah Hydro Unit</u>				
331-133	Structures & Improvements	3.48	0.0%	
332-133	Reservoirs, Dams & Waterways	3.48	0.0%	
333-133	Water Wheels, Turbines & Gen.	3.48	0.0%	
334-133	Accessory Electric Equipment	3.48	0.0%	
335-133	Misc. Power Plant Equipment	3.48	0.0%	
<u>Dayton Hollow Hydro Unit</u>				
331-134	Structures & Improvements	3.48	0.0%	
332-134	Reservoirs, Dams & Waterways	3.48	0.0%	
333-134	Water Wheels, Turbines & Gen.	3.48	0.0%	
334-134	Accessory Electric Equipment	3.48	0.0%	
335-134	Misc. Power Plant Equipment	3.48	0.0%	

**OTTER TAIL POWER COMPANY
2018 ANNUAL REVIEW OF DEPRECIATION CERTIFICATION
PROPOSED REMAINING LIVES & SALVAGE %'s FOR USE IN 2019**

<u>Account Number</u>	<u>Class of Utility Plant</u>	<u>Remaining Life (Yrs)</u>	<u>Net Salvage (%)</u>	<u>Amortization Period (Yrs)</u>
<u>Taplin Gorge Hydro Unit</u>				
331-135	Structures & Improvements	3.48	0.0%	
332-135	Reservoirs, Dams & Waterways	3.48	0.0%	
333-135	Water Wheels, Turbines & Gen.	3.48	0.0%	
334-135	Accessory Electric Equipment	3.48	0.0%	
335-135	Misc. Power Plant Equipment	3.48	0.0%	
<u>Bemidji Hydro Unit</u>				
331-138	Structures & Improvements	3.48	0.0%	
332-138	Reservoirs, Dams & Waterways	3.48	0.0%	
333-138	Water Wheels, Turbines & Gen.	3.48	0.0%	
334-138	Accessory Electric Equipment	3.48	0.0%	
335-138	Misc. Power Plant Equipment	3.48	0.0%	
OTHER PRODUCTION				
<u>Jamestown Unit 1</u>				
341-140	Structures & Improvements	15.18	-5.9%	
342-140	Fuel Holders & Accessories	15.19	-5.9%	
343-140	Prime Movers	15.18	-5.9%	
345-140	Accessory Electric Equipment	15.16	-5.9%	
346-140	Misc. Power Plant Equipment	15.19	-5.9%	
<u>Jamestown Unit 2</u>				
341-142	Structures & Improvements	15.19	-5.9%	
342-142	Fuel Holders & Accessories	15.17	-5.9%	
343-142	Prime Movers	15.18	-5.9%	
345-142	Accessory Electric Equipment	15.19	-5.9%	
346-142	Misc. Power Plant Equipment	15.17	-5.9%	
<u>Lake Preston</u>				
341-141	Structures & Improvements	15.18	-6.9%	
342-141	Fuel Holders & Accessories	15.18	-6.9%	
343-141	Prime Movers	15.18	-6.9%	
345-141	Accessory Electric Equipment	15.18	-6.9%	
346-141	Misc. Power Plant Equipment	15.17	-6.9%	
<u>Fergus Falls Control Center</u>				
343-143	Prime Movers	12.29	-5.0%	
<u>Solway Combustion Turbine Plant</u>				
341-144	Structures & Improvements	19.96	-1.6%	
342-144	Fuel Holders & Accessories	19.96	-1.6%	
343-144	Prime Movers	19.96	-1.6%	
345-144	Accessory Electric Equipment	19.96	-1.6%	
346-144	Misc. Power Plant Equipment	19.96	-1.6%	
<u>Langdon Wind Energy Center</u>				
341-160	Structures & Improvements	14.23	-4.0%	
344-160	Generators	14.23	-4.0%	
345-160	Accessory Electric Equipment	14.23	-4.0%	
346-160	Misc. Power Plant Equipment	14.23	-4.0%	
<u>Ashtabula Wind Energy Center</u>				
341-161	Structures & Improvements	15.19	-3.5%	
344-161	Generators	15.19	-3.5%	
345-161	Accessory Electric Equipment	15.19	-3.5%	
346-161	Misc. Power Plant Equipment	15.20	-3.5%	

**OTTER TAIL POWER COMPANY
2018 ANNUAL REVIEW OF DEPRECIATION CERTIFICATION
PROPOSED REMAINING LIVES & SALVAGE %'s FOR USE IN 2019**

<u>Account Number</u>	<u>Class of Utility Plant</u>	<u>Remaining Life (Yrs)</u>	<u>Net Salvage (%)</u>	<u>Amortization Period (Yrs)</u>
<u>Luverne Wind Energy Center</u>				
341-162	Structures & Improvements	16.15	-5.9%	
344-162	Generators	16.15	-5.9%	
345-162	Accessory Electric Equipment	16.15	-5.9%	
346-162	Misc. Power Plant Equipment	16.16	-5.9%	
TRANSMISSION				
353	Station Equipment	55.72	-5.0%	
354	Towers & Fixtures	70.63	-10.0%	
355	Poles & Fixtures	58.91	-50.0%	
356	Overhead Conductor & Devices	62.70	-30.0%	
358	Underground Conductor & Devices	14.97	-5.0%	
DISTRIBUTION				
362	Station Equipment	34.81	5.0%	
364	Poles, Towers & Fixtures	48.98	-100.0%	
365	Overhead Conductor & Devices	43.27	-75.0%	
367	Underground Conductor & Devices	28.66	-5.0%	
368	Line Transformers	30.70	30.0%	
369	Overhead Services	31.01	-200.0%	
369.1	Underground Services	34.03	-20.0%	
370	Meters	19.76	0.0%	
370.1	Load Management Switches	3.00	0.0%	
370.20	Interruption Monitors			5
371.20	Other Private Lighting	24.39	0.0%	
373	Street Lighting & Signal System	15.09	-5.0%	
GENERAL PLANT				
Depreciable				
390	Structures & Improvements	34.19	5.0%	
390.1	General Office Buildings	21.83	47.3%	
390.2	Fleet Service Center Buildings	17.09	31.2%	
390.3	Central Stores Building	26.47	79.0%	
396	Power Operated Equipment	17.09	5.0%	
397.4	Communication Towers	32.70	-5.0%	
Amortizable				
391	Office Furniture			15
391.1	Office Equipment			10
391.2	Duplicating Equipment			10
391.5	Computer Systems			5
391.6	Computer Related Equipment			5
393	Stores Equipment			15
394	Tools, Shop & Garage Equipment			15
394.2	Automated Meter Reading Equip.			15
395	Laboratory Equipment			15
397	Communication Equipment			15
397.1	Radio Telecom Equipment			10
397.2	Microwave Equipment			15
397.3	Radio Load Control Equipment			10
Intangibles				
303.91	Software: 5-year Amortization Period			5
303.92	Software: 10-year Amortization Period			10

Source is Statement A from Foster Report

OTTER TAIL POWER COMPANY
FIVE-YEAR REVIEW OF DEPRECIATION CERTIFICATION
Supplemental Comments

Future Additions and Retirements

As indicated in the 2018 Annual Depreciation Study (Attachment 1):

“Minnesota State Agency Rules 7825.0700, Subpart 2-B provides that each utility shall disclose a list of any major future additions or retirements to the plant accounts that the utility believes may have a material effect on the current certification results.” (See page 18 of the Study).

Otter Tail Power Company (Otter Tail) is unaware of any major future additions that will materially affect this filing’s certification results other than the request to include amortized intangible software accounts starting with next year’s depreciation certification filing.

Otter Tail requests the inclusion of 5 and 10-year amortization periods for intangible software accounts. Otter Tail is currently working on the installation of a new customer information system (internally referred to as CISone), to replace our aged internally-built legacy system with a modern commercial application provided by Cayenta Utilities. We expect this software application to be in service in Q4 2018 at an expected cost of \$17.85M and consider it a large software implementation that would utilize the 10-year amortization period. These types of software applications typically go through rounds of upgrades and enhancements over the years which may contain additional capitalizable components over a software’s useful life.

Otter Tail continues to invest in the transmission line construction initiatives in Minnesota, North Dakota, and South Dakota. CapX2020 project segments have gone into service from 2012 through 2015. Otter Tail actively participated in the development and construction of two new 345 kV transmission projects and corresponding substation upgrades in the Big Stone, South Dakota, area. We worked closely with MISO and area utilities on these projects, which are part of MISO’s Multi-Value Project (“MVP”) portfolio making them eligible for regional cost sharing under the MISO’s FERC-approved MVP cost allocation methodology. The first of these projects, the Big Stone South – Brookings line went into service in 2017. The Big Stone South – Ellendale project is actively under construction and is expected to go into service in 2019 at an estimated cost of approximately \$120M (Otter Tail Power Company share).

With respect to retirements, Otter Tail Power Company is also unaware of any major future retirements that would materially affect this filing’s certification results.

In addition to discussing active future additions or retirements that could affect the current certification results, it is the Company’s practice to also discuss future (and potential future) additions and retirements that may influence *future* depreciation expense or *future* certification results.

**OTTER TAIL POWER COMPANY
FIVE-YEAR REVIEW OF DEPRECIATION CERTIFICATION
Supplemental Comments**

Otter Tail Power Company's 2013 five-year depreciation filing provided some discussion on these projects and we provide below additional updates on current projects or projects being considered.

On November 17, 2016, Otter Tail announced agreements with EDF Renewable Development Inc. and certain of its affiliated companies whereby EDF will develop and construct and OTP will acquire to a 150-megawatt (MW) wind farm proposed to be built near the southeastern North Dakota town of Merricourt. The Company anticipates construction to begin in 2019 with a targeted completion date in 2020. The contract with EDF is for approximately \$235 million and Otter Tail will have additional direct costs.

On March 27, 2017, the company announced plans to seek regulatory approvals to build a new 250 MW simple cycle, natural gas-fired electricity-generating station northwest of Astoria in Deuel County, South Dakota. This plant is proposed to be located near the intersection of the Northern Border Pipeline and the Big Stone South-to-Brookings County 345-kilovolt electric transmission line. The Astoria Station will be a state-of-the-art, highly efficient simple-cycle natural gas combustion turbine with the capacity to provide approximately 250 MW of energy. Otter Tail Power Company expects to invest \$165 million in the project with a planned in-service date in 2021.

Together these new generation facilities will help offset the scheduled 2021 retirement of coal-fired Units 2 and 3 at Hoot Lake Plant located outside of Fergus Falls, MN. Astoria Station will help offset capacity needs, while the wind farm will help offset energy needs. The Hoot Lake Plant units began serving customers in 1959 and 1964 respectively and have a combined output of 140-megawatts (MW).

**OTTER TAIL POWER COMPANY
2018 FIVE-YEAR REVIEW OF DEPRECIATION CERTIFICATION
Comparison of Resource Plan and Depreciation Filing Retirement Dates**

Generating Unit	Retirement Dates			Comments
	Resource Plan 2017 - 2031	2018 Depreciation Study (Attachment No. 1)	Difference	
BASE LOAD				
➤ Hoot Lake Plant Units 2 & 3	Jun-2021	Jun-2021	None	Hoot Lake Plant units 2 & 3 have an Average Year of Final Retirement (AYFR) of 2021. The Depreciation Study adopts a mid-year convention where all asset activity is assumed to take place on June 30th of its respective activity years, whether that activity is a plant addition or plant retirement. Therefore the depreciation study has June, 2021 as its retirement date. The IRP in Appendix F also adopts June, 2021 as the retirement month matching the Depreciation filing.
➤ Big Stone Plant	Jun-2046	Jun-2046	None	Big Stone Plant has an Average Year of Final Retirement (AYFR) of 2046. The Depreciation Study adopts a mid-year convention where all asset activity is assumed to take place on June 30th of its respective activity years, whether that activity is a plant addition or plant retirement. Therefore the depreciation study has June, 2046 as its retirement date. The IRP in Appendix F also adopts June, 2046 as the retirement month matching the Depreciation filing.
➤ Coyote Station	Jun-2041	Jun-2041	None	Coyote Station has an Average Year of Final Retirement (AYFR) of 2041. The Depreciation Study adopts a mid-year convention where all asset activity is assumed to take place on June 30th of its respective activity years, whether that activity is a plant addition or plant retirement. Therefore the depreciation study has June, 2041 as its retirement date. The IRP in Appendix F also adopts June, 2041 as the retirement month matching the Depreciation filing.
WIND				
➤ Langdon Wind Energy Center	Dec-2032	Jun-2032	6 months (outside of IRP study period)	The Langdon Wind Energy Center has an Average Year of Final Retirement (AYFR) of 2032. The Depreciation Study adopts a mid-year convention where all asset activity is assumed to take place on June 30th of its respective activity years, whether that activity is a plant addition or plant retirement. Therefore the depreciation study has June, 2032 as its retirement date. The IRP models the Wind Farms as Purchase Power Agreements which expire at the end of their termination year, therefore the IRP uses December, 2032 as its retirement month.
➤ Ashtabula Wind Energy Center	Dec-2033	Jun-2033	6 months (outside of IRP study period)	The Ashtabula Wind Energy Center has an Average Year of Final Retirement (AYFR) of 2033. The Depreciation Study adopts a mid-year convention where all asset activity is assumed to take place on June 30th of its respective activity years, whether that activity is a plant addition or plant retirement. Therefore the depreciation study has June, 2033 as its retirement date. The IRP models the Wind Farms as Purchase Power Agreements which expire at the end of their termination year, therefore the IRP uses December, 2033 as its retirement month.
➤ Luverne Wind Energy Center	Dec-2034	Jun-2034	6 months (outside of IRP study period)	The Luverne Wind Energy Center has an Average Year of Final Retirement (AYFR) of 2034. The Depreciation Study adopts a mid-year convention where all asset activity is assumed to take place on June 30th of its respective activity years, whether that activity is a plant addition or plant retirement. Therefore the depreciation study has June, 2034 as its retirement date. The IRP models the Wind Farms as Purchase Power Agreements which expire at the end of their termination year, therefore the IRP uses December, 2034 as its retirement month.
HYDRO				
➤ 6 units in 5 dams on the Otter Tail River, FERC licensed	No retirement date discussed - IRP assumes operating perpetually	Jun-2021	Program assumption differences	The latest approved IRP assume these permanent hydro dam structures operate perpetually until a final retirement date is established. Depreciation Studies tie the retirement date to end of the current active FERC hydro operating license. This is the latest date these facilities can operate as generation resources until a new license renewal is granted pursuant to the satisfaction of its stated conditions. OTP is currently pursuing renewing its FERC Hydro license.
➤ 2 units on outlet of Lake Bemidji – not subject to FERC jurisdiction	No retirement date discussed - IRP assumes operating perpetually	Jun-2021	Program assumption differences	The latest approved IRP assumes permanent hydro dam structures operate perpetually until a final retirement date is established. Depreciation Studies tie retirement date to end of current hydro license for other hydro structures which are of a similar vintage.
PEAKING				
➤ Jamestown Combustion Turbines - 2 units	Jun-2033	Jun-2033	None	The two Jamestown Combustion Turbines have an Average Year of Final Retirement (AYFR) of 2033. The Depreciation Study adopts a mid-year convention where all asset activity is assumed to take place on June 30th of its respective activity years, whether that activity is a plant addition or plant retirement. Therefore the depreciation study has June, 2033 as its retirement date. The IRP in Appendix F also adopts June, 2033 as the retirement month matching the Depreciation filing.
➤ Lake Preston Combustion Turbine	Jun-2033	Jun-2033	None	The Lake Preston Combustion Turbine has an Average Year of Final Retirement (AYFR) of 2033. The Depreciation Study adopts a mid-year convention where all asset activity is assumed to take place on June 30th of its respective activity years, whether that activity is a plant addition or plant retirement. Therefore the depreciation study has June, 2033 as its retirement date. The IRP in Appendix F also adopts June, 2033 as the retirement month matching the Depreciation filing.
➤ Solway Combustion Turbine	Jun-2038	Jun-2038	None	The Solway Combustion Turbine has an Average Year of Final Retirement (AYFR) of 2038. The Depreciation Study adopts a mid-year convention where all asset activity is assumed to take place on June 30th of its respective activity years, whether that activity is a plant addition or plant retirement. Therefore the depreciation study has June, 2038 as its retirement date. The IRP in Appendix F also adopts June, 2038 as the retirement month matching the Depreciation filing.
➤ Fergus Control Center Diesel	No retirement date discussed - beyond study period	Jun-2030	Program assumption differences	IRP assumes retirement is outside of resource plan study period. Depreciation study accounts for assets functionality as control center black start and back up strategic functionality. Unit classified as an Emergency Generator as defined by EPA Rice rules.

Note:

Otter Tail 's most recently approve IRP was filed under Docket No. E07-RP-16-386. In the RP's, the near-term is intended to be very specific with regard to resource changes, additions, retirements, etc. The long-term is much more uncertain and identifies resources that a utility is likely to use. The depreciation study is intended to be an exact forecast used for appropriate depreciation expense allocation of our current investment over the current plants remaining life. The RP is far less exact in the long-term, so there can be potential difference because of the intended purposes and assumptions the two filings.

CERTIFICATE OF SERVICE

**RE: In the Matter of Otter Tail Power Company's Petition for Approval of its
2018 Five-Year Review of Depreciation Certification
Docket No. E017/D-18-**

I, Jana Hrdlicka, hereby certify that I have this day served a copy of the following, or a summary thereof, on Daniel P. Wolf and Sharon Ferguson by e-filing, and to all other persons on the attached service list by electronic service or by First Class Mail.

**Otter Tail Power Company
Initial Filing**

Dated this **31st** day of **August 2018**

/s/ JANA HRDLICKA

Jana Hrdlicka, Regulatory Filing Coordinator
Otter Tail Power Company
215 South Cascade Street
Fergus Falls MN 56537
(218) 739-8879

First Name	Last Name	Email	Company Name	Address	Delivery Method	View Trade Secret	Service List Name
Christopher	Anderson	canderson@allete.com	Minnesota Power	30 W Superior St Duluth, MN 558022191	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_DEPRECIATIO N
Ray	Choquette	rchoquette@agp.com	Ag Processing Inc.	12700 West Dodge Road PO Box 2047 Omaha, NE 68103-2047	Paper Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_DEPRECIATIO N
Generic Notice	Commerce Attorneys	commerce.attorneys@ag.state.mn.us	Office of the Attorney General-DOC	445 Minnesota Street Suite 1800 St. Paul, MN 55101	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_DEPRECIATIO N
Loyal	Demmer	ldemmer@otpc.com	Otter Tail Power Co.	215 South Cascade Street PO Box 496 Fergus Falls, MN 565380496	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_DEPRECIATIO N
Ian	Dobson	residential.utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012130	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_DEPRECIATIO N
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Douglas	Larson	dlarson@dakotaelectric.com	Dakota Electric Association	4300 220th St W Farmington, MN 55024	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_DEPRECIATIO N

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Daniel P	Wolf	dan.wolf@state.mn.us	Public Utilities Commission	121 7th Place East Suite 350 St. Paul, MN 551012147	Electronic Service	No	GEN_SL_Otter Tail Power Company_GEN_SL_Otter Tail Power Company_DEPRECIATIO N

Otter Tail Power Company's
2018 Minnesota Annual Review of
Depreciation Certification Filing

Supplemental - Correction

Minnesota Docket No. E017/D-18-568

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

November 28, 2018



Mr. Daniel P. Wolf
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-2147

**RE: In the Matter of Otter Tail Power Company's Petition for Approval of its
2018 Five-Year Review of Depreciation Certification
Docket No. E017/D-18-568
Supplemental - Correction**

Dear Mr. Wolf:

Otter Tail Power Company (Otter Tail) submits this filing to correct a typographical error discovered in our initial filing, on Attachment 1, page 6 of 104, paragraph 4. With this filing Otter Tail replaces Attachment 1, page 6 of 104 with a corrected page 6. The new page 6 corrects the typographic error in paragraph 4. That error mistakenly referenced Docket No. E017/D-16-729, which raised a question whether Otter Tail was utilizing correct data in this matter. The corrected page 6 now references last year's depreciation certification, Docket No. E017/D-17-652, which is in fact the docket from which Otter Tail utilized data for this matter.

Otter Tail electronically filed this document with the Commission. In compliance with Minn. R. 7829.1300, subp. 2., Otter Tail served a copy of this filing on the Minnesota Department of Commerce - Division of Energy Resources and the Office of Attorney General – Antitrust & Utilities Division. A copy of this filing has been served on all persons on Otter Tail's general service list. A Certificate of Service is also enclosed.

Please contact me at (218) 739-8659 or ldemmer@otpc.com if you have any questions.

Sincerely,

/s/ *LOYAL K. DEMMER*
Loyal K. Demmer, CMA
Senior Depreciation Accountant

mmo
Enclosures
By electronic filing
c: Service List



17595 S. Tamiami Trail, Suite 260
Fort Myers, Florida 33908
T 239.267.1600 | M 239.980.5991

Ronald E. White, Ph.D.
President

November 20, 2018

Mr. Loyal K. Demmer
Senior Depreciation Accountant
OTTER TAIL POWER COMPANY
215 South Cascade Street
Fergus Falls, MN 56538-0496

RE: Otter Tail 2018 Depreciation Study (Addendum)

Dear Mr. Demmer:

Thank you for bringing to our attention an inadvertent error on page 1, paragraph 4 of the 2018 Depreciation Rate Study. Attached is a replacement page correcting the effective date of current depreciation rates and the docket number of the approving Commission order.

We apologize for any inconvenience resulting from our error.

Respectfully,

A handwritten signature in black ink, appearing to read 'Ronald E. White', with a large, stylized flourish at the end.

Ronald E. White, Ph.D.

EXECUTIVE SUMMARY

INTRODUCTION

This report presents the findings and recommendations developed in a 2018 depreciation study for utility plant owned and operated by Otter Tail Power Company (OTP). The study was undertaken pursuant to Minnesota Rules 7825.0500-7825.0900 and by order of the Minnesota Public Utilities Commission in Docket No. E017/D-13-795 (Order dated April 7, 2014) directing OTP to file a five-year depreciation study by September 1, 2018. The current study provides recommended 2018 depreciation rates and parameters for: a) steam, hydraulic and other production facilities; and b) electric transmission, distribution and general plant categories. Work on the study commenced in June 2018 and progressed through mid-August, at which time the project was completed.

Foster Associates is a public utility economic consulting firm headquartered in Fort Myers, Florida offering economic research and consulting services on issues and problems arising from governmental regulation of business. Areas of specialization supported by the firm's Fort Myers, Florida office include property life forecasting, technological forecasting, depreciation estimation, and valuation of industrial property.

Foster Associates has undertaken numerous depreciation engagements for both public and privately owned business entities including detailed statistical life studies, analyses of required net salvage rates, and the selection of depreciation systems that will most nearly achieve the goals of depreciation accounting under the constraints of either government regulation or competitive market pricing. Foster Associates is widely recognized for industry leadership in the development of depreciation systems, life analysis techniques and computer software for conducting depreciation and valuation studies.

Depreciation rates currently used by OTP became effective January 1, 2018 pursuant to a Commission order in Docket No. E017/D-17-652 approving revised remaining lives developed in a 2017 technical update of depreciation rates. Parameters (*i.e.*, projection curve, projection life and future net salvage rates) used in the 2017 update were developed by Foster Associates in a 2013 study.

The principal findings and recommendations of the 2018 Depreciation Rate Study are summarized in the Section IV of this report. Statement A provides a comparative summary of current and proposed annual depreciation rates for each rate category. Statement B provides a comparison of current and proposed annual depreciation accruals. Statement C provides a comparison of computed and recorded depreciation reserves for each rate category. Statement D provides a summary of the components used to obtain weighted-average net salvage rates. Statement E provides a computation of the estimated future net salvage rate for life-span categories. Statement F provides a comparative summary of current and proposed parameters including projection life, projection curve and future net salvage rates.

CERTIFICATE OF SERVICE

**RE: In the Matter of Otter Tail Power Company's Petition for Approval of its
2018 Five-Year Review of Depreciation Certification
Docket No. E017/D-18-568**

I, Mikayla Osterman, hereby certify that I have this day served a copy of the following, or a summary thereof, on Daniel P. Wolf and Sharon Ferguson by e-filing, and to all other persons on the attached service list by electronic service or by First Class Mail.

**Otter Tail Power Company
Supplemental - Correction**

Dated this **28th** day of **November, 2018**

/s/ MIKAYLA OSTERMAN _____

Mikayla Osterman
Regulatory Filing Coordinator
Otter Tail Power Company
215 South Cascade Street
Fergus Falls MN 56537
(218) 739-8545

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