

June 28, 2018

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

RE: **Comments of the Minnesota Department of Commerce, Division of Energy Resources**
Docket No. E015/D-18-226

Dear Mr. Wolf:

Attached are the Comments of the Minnesota Department of Commerce, Division of Energy Resources (Department), in the following matter:

Minnesota Power's 2018 Five-Year Transmission and Distribution Plant
Depreciation Petition.

The petition was filed on March 27, 2018 by:

Christopher D. Anderson
Associate General Counsel
Minnesota Power
30 West Superior Street
Duluth, MN 55802

The Department recommends **approval, with modifications**, and is available to answer any questions the Minnesota Public Utilities Commission may have.

Sincerely,

/s/ Craig Addonizio
Financial Analyst



Before the Minnesota Public Utilities Commission

Comments of the Minnesota Department of Commerce Division of Energy Resources

Docket No. E015/D-18-226

I. SUMMARY OF THE UTILITY'S PROPOSAL

On March 27, 2018, Minnesota Power (MP or the Company) submitted its 2018 Five-Year Transmission and Distribution Plant Depreciation Petition (Petition) to the Minnesota Public Utilities Commission (Commission). The Company has reviewed its current depreciation parameters and rates for its transmission and distribution (T&D) plant accounts, and proposes changes to the lives and salvage rates for many of its accounts. When applied to plant balances as of December 31, 2017, the proposed parameters result in a decrease in depreciation expense \$1.3 million per year, or 3.4 percent, relative to the currently approved parameters.

II. DEPARTMENT ANALYSIS

The Minnesota Department of Commerce, Division of Energy Resources (Department or DOC) examined MP's Petition for compliance with previous Commission Orders and filing requirements, and for the reasonableness of the proposed depreciation parameters and the resulting depreciation rates.

A. COMPLIANCE WITH PREVIOUS COMMISSION ORDERS

MP filed its last T&D depreciation petition on April 1, 2013 in Docket No. E015/D-13-252 (2013 T&D Docket) and in that Docket, the Commission ordered the Company to file its next T&D petition no later than April 1, 2018. MP met this requirement by filing its Petition on March 27, 2018.

The Commission's Order in the 2013 T&D Docket also required the Company to include an update on its accounting and reporting for Accounting Standards Codification (ASC) 410-20 (formerly Financial Accounting Standard 143). ASC 410-20 addresses financial accounting for obligations associated with the retirement of tangible long-lived assets and the associated retirement costs. MP met this requirement with a discussion of its asset retirement obligations on pages 3-4 of its Petition. The Department discusses the Company's update below.

B. COMPLIANCE WITH DEPRECIATION RULES

Minn. Stat. §216B.11 and Minn. Rules 7825.0500-7825.0900 require public utilities to seek Commission certification of their depreciation rates and methods and use a straight-line depreciation method unless they can justify a different method. Once certified by order, depreciation rates remain in effect until the next certification.

As required, the Company uses a straight-line depreciation method, and the depreciation rates approved in Docket No. E015/D-13-252 have remained in effect in each year since the Commission approved them.

However, Minn. Rule 7825.0600 subp. 2D requires utilities to “review their depreciation rates annually to determine if they are still generally appropriate. Depreciation certification studies shall be made so that all primary accounts shall have been analyzed at least every five years.” The Department is concerned that MP’s depreciation practices do not comply with this requirement.

Prior to 2008, MP used a straight-line depreciation method in conjunction with an average service life technique to calculate depreciation rates and expense for its T&D plant accounts, and filed T&D depreciation studies once every five years, as required by Minn. Rule 7825.0600. Under an average service life technique, a plant account’s depreciation rate is solely a function of its estimated average service life and salvage rate:

$$\text{depreciation rate} = (1 - \text{salvage rate}) / \text{average service life}$$

Thus, under an average service life technique, depreciation rates remain constant as long as salvage rates and average service lives remain unchanged. In other words, depreciation rates do not change in between depreciation studies. As a result, utilities that use an average service life technique have generally been required by the Commission to conduct and file depreciation studies every 5 years, in which average service lives and salvage rates are statistically analyzed and adjusted. This, reasonably, was MP’s practice.

In 2008, however, MP began using a straight-line depreciation method with a *remaining life* technique.¹ Under a remaining life technique, depreciation rates are not constant in between studies, even when estimated average service lives and salvage rates are unchanged. The remaining lives MP uses to calculate depreciation expense for its T&D accounts are a function of the accounts’ estimated average service lives AND the age-makeup of the property in each

¹ See Docket Nos. E015/D-08-422 and E015/D-13-252.

account.² A change in the age-makeup of property in an account causes a change in the account's remaining life, even though the account's estimated average service life remains fixed. Additions of new property cause an account's remaining life to lengthen, as the account will become more heavily weighted toward "young" property that will be expected to remain in service for a relatively long time. Retirements of older property have the same effect. A change in an account's remaining life will result in a change in its depreciation rate.

For this reason, the Commission has generally required utilities that use a remaining life technique for mass property groups (such as T&D accounts) to file annual updates, even in years in which average service lives and salvage rates are not analyzed or updated. Otter Tail Power Company has been following this practice for many years,³ and the Commission recently approved a request by Northern States Power d/b/a Xcel Energy (Xcel) to begin using a remaining life technique for its T&D accounts and required Xcel to begin filing annual updates to its depreciation rates.⁴

In its response to Department Information Request (IR) No. 2, the Company stated that it does not believe that annual updates are necessary because it uses Commission-approved depreciation rates in between five-year depreciation studies.⁵ For example, MP has used the depreciation rates approved in the 2013 T&D Docket in each year since 2013. However, the issue is not whether MP is using Commission-approved depreciation rates. Rather, the issue is that one or more of the depreciation rates the Commission approved in 2013 for the Company's T&D plant accounts may have ceased to be "generally appropriate," as required by Minn. Rule 7825.0600 subp. 2D, in a subsequent year due to additions or retirements.

Based on the above discussion, the Department recommends that the Commission require MP to continue to conduct depreciation studies at least once every five years, and begin filing annual updates to its depreciation rates for its transmission and distribution plant accounts to reflect changes that occur in between studies.

² Briefly, an expected average remaining life is developed for each vintage-year of plant based on the account's selected survivor curve. The remaining life for the account as a whole is the average of each vintage-year's expected remaining life, weighted by the dollar amount of property in each vintage year. MP provided these calculations for each of its T&D plant accounts in response to Department Information Request No. 1. DOC Attachment 1 includes an illustrative excerpt from MP's response.

³ See, for example, Docket No. E017/D-17-652.

⁴ See the Commission's May 4, 2018 Order in Docket No. E,G002/D-17-581.

⁵ See DOC Attachment No. 2.

C. REASONABLENESS OF PROPOSED DEPRECIATION PARAMETERS

The Company proposed changes to the depreciation lives and salvage rates of many of its T&D plant accounts. MP proposed an effective date of January 1, 2018 for these changes. The Department concludes that the proposed effective date is reasonable, and discusses the reasonableness of the proposed depreciation lives and salvage rates below.

1. Average Service Lives

As in past filings, the Company used Simulated Plant Record (SPR) analysis to estimate average service life (ASL) of most of the electric utility property accounts included in the Petition. The Company also used actuarial analysis to estimate the average service life of three of its T&D plant accounts.

SPR analysis is a method of estimating the ASL of a type of property and the dispersion, or variance, around that ASL, used when data on plant additions and retirements by year is available, but data on the age of property at retirement is not. SPR analysis uses actual plant additions and an assumed average service life and dispersion (represented by an Iowa Curve) to simulate annual plant balances for each property account. Those simulated plant balances are then compared to actual plant balances. A number of average service lives and dispersion patterns are tested for each account, and the retirement characteristics that produce simulated annual property balances that most closely match actual property balances are selected as an account's depreciation parameters and used to calculate the account's depreciation expense.

Actuarial analysis is generally considered to be a more accurate method of estimating average service lives, relative to SPR, but MP does not have the necessary vintage transactional data to use actuarial analysis for most of its T&D plant accounts. The Company has been collecting the necessary data since 2000, when it converted to its current accounting system, but has collected a sufficient amount of data to perform actuarial analysis for only three of its T&D plant accounts.⁶

The Department reviewed MP's SPR and actuarial analyses for all of its plant accounts, and concludes that the proposed average service lives are supported by the analyses, and are therefore reasonable.

⁶ See Petition, page 5, and DOC Attachment No. 3.

2. *Salvage Rates*

The Company studied its salvage experience for each T&D plant account over the last 30 years by analyzing trends in average salvage rates over time. The Company studied moving one- to ten-year average salvage rates over the 30-year period. One-year salvage rates can fluctuate significantly, and the Company's analysis tended to rely more on the five- and ten-year rolling average salvage rates, which smooth out some of the annual variance. Generally, the Company was conservative in proposing changes to salvage rates; if an account's recent salvage experience differed significantly from the currently approved salvage rate, the Company proposed to adjust the salvage rate in the direction of trend, but not close the entire gap. The Department supports this approach as even the ten-year moving averages can be noisy. The Department reviewed MP's salvage analysis and the data underlying it, and concludes that all of the Company's proposed salvage rates are reasonable, except for the salvage rates proposed for plant Accounts 3540 and 3722.

a. Account 3540 Towers and Fixtures

The Company has very limited retirement experience with account 3540 Towers and Fixtures. From 1987 through 2008, the Company recorded retirement and salvage activity in only three years. Since 2009, the Company has recorded retirement and salvage activity in all years except 2015. In the 2013 T&D Docket, due to the lack of historical data, the Company relied on the judgement of its internal experts and its depreciation consultant to determine the currently-approved salvage rate of negative 10 percent. In its Petition, the Company again stated that its limited retirement and salvage experience with this account is insufficient to produce a reliable salvage estimate, and proposed to retain the current salvage rate of negative 10 percent.⁷

The Department notes, however, that MP has recorded retirement and salvage activity in eight of the last nine years, and during those years, the one-year salvage rates have been below negative 200 percent seven times.⁸ The rolling five- and ten-year average salvage rates have similarly been significantly below the Company's proposed salvage rate. The Department understands and agrees that there is not enough data to draw a strong conclusion about the appropriate salvage rate for this plant account, but concludes that there is enough data to indicate that the Company's proposed rate, negative 10 percent, is too high.

⁷ See Petition, Appendix II, page 46.

⁸ See Petition, Appendix II, Appendix D, page 2 of 12.

In its response to Department IR No. 19, the Company stated that an incremental decrease to negative 20 or negative 30 percent would be reasonable based on MP's salvage data and other industry norms.⁹ The Department therefore recommends that the Commission approve a salvage rate of negative 30 percent, which better reflects the Company's recent experience.

b. Account 3722 Leased Property on Customer Premises – Lighting

In its Petition, the Company proposed to change the salvage rate of account 3722 Leased Property on Customer Premises – Lighting from the currently-approved negative 60 percent to negative 40 percent based on the most recent five- and 10-year averages of negative 44.11 percent and negative 52.20 percent.¹⁰ In its response to Department IR No. 23, the Company also noted that the moving averages from one to six years show a decline, and that three of those rolling averages are currently above negative 40 percent.¹¹

The Department is concerned that the Company's proposed increase in account 3722's salvage rate from negative 60 percent to negative 40 percent is an overreaction to a small amount of recent data. The salvage rates above negative 40 percent experienced in just a few of the last several years may not prove to be the norm. As noted above, the five- and ten-year rolling average salvage rates for this account are below negative 40 percent and in the Department's view support a smaller adjustment than the Company has proposed. The Department concludes that a smaller incremental change from negative 60 percent to negative 50 percent is reasonable for this account as it appropriately balances the recent trend with past experience. In addition, the Department notes that the Company stated in its response to Department IR No. 23 that it would consider a salvage rate of negative 50 percent to be reasonable value for this account.¹²

The Department recommends that the Commission approve a salvage rate of negative 50 percent for Account 3722 Leased Property on Customer Premises – Lighting.

D. ASC 410-20, ACCOUNTING FOR ASSET RETIREMENT OBLIGATIONS

An asset retirement obligation (ARO) is a legal obligation associated with the retirement of a tangible long-lived asset. The legal obligation may result from an existing or enacted law, statute, ordinance, or written or oral contract or by legal construction of a contract under the doctrine of promissory estoppel. The Financial Accounting Standard Board's Accounting ASC

⁹ See DOC Attachment No. 4

¹⁰ See Petition, Appendix II, page 51.

¹¹ See DOC Attachment No. 5.

¹² See DOC Attachment No. 5.

410-20 establishes the accounting standards for the recognition and measurement of a liability for an ARO.

On page three of its Petition, MP stated that there have been no changes in its accounting for AROs since the 2013 T&D Docket. MP also stated that its entire transmission and distribution network must be viewed as a single asset, which the Company intends to operate indefinitely. According to MP, because no retirement or settlement date can be determined for its transmission and distribution network, the recognition of any obligation shall be deferred until an actual settlement date can be determined, as allowed by ASC 410-20.

The Company also stated that it has no AROs pursuant to either its easement agreements with private landowners or its assets located on public rights-of-way. Certain of the MP's easements require removal of its facilities if they interfere with mining and mineral rights, however no retirement obligation is created until the Company is asked to remove those facilities.

The Department concludes that MP has reasonably met this reporting requirement and recommends that the Commission require the Company to include an update on its reporting and accounting for ASC 410-20 in its next average service life depreciation filing for transmission and distribution plant.

III. CONCLUSION AND RECOMMENDATIONS

After review, the Department concludes that MP's proposed depreciation parameters and the resulting depreciation rates are reasonable. The Department recommends that the Commission:

- approve the Company's proposed average service lives, salvage rates, and depreciation rates, except for its proposed salvage rates for plant accounts 3540 and 3722;
- approve a salvage rate of negative 30 percent for account 3540 Towers and Fixtures;
- approve a salvage rate of negative 50 percent for account 3722 Leased Property on Customer Premises – Lighting
- require Minnesota Power to continue to conduct depreciation studies at least once every five years for its transmission and distribution plant accounts, and begin filing annual updates to its depreciation rates for these accounts to reflect changes that occur in between studies;
 - require Minnesota Power to file an annual update to its transmission and distribution plant account depreciation rates by April 1, 2019;
- require Minnesota Power to file its next five-year depreciation study for its transmission and distribution plant accounts by April 1, 2023; and require

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Analyst assigned: Craig Addonizio

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the Company to include an update on its accounting and reporting for ASC 410-20 in its next transmission and distribution plant five-year depreciation study filing.

/ja

Minnesota Department of Commerce
Division of Energy Resources
Information Request

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DOC Attachment 1
Page 1 of 4

Docket Number: E015/D-18-226 Nonpublic Public
Requested From: Debra A. Davey, Minnesota Power Date of Request: April 11, 2018
Type of Inquiry: Financial Response Due: April 23, 2018

Requested by: Craig Addonizio
Email Address(es): craig.addonizio@state.mn.us
Phone Number(s): 651-539-1818

Request Number: 1
Topic: Remaining Life Calculations
Reference(s): Appendix II, Appendix A

Request:

Please provide, in working Microsoft Excel spreadsheets, workpapers showing the derivation of the remaining life for each plant account shown in Appendix A.

RESPONSE:

Please see the attached excel file *DoC IR 1. Attachment 1*. In the tab called Theoretical Reserve, the remaining life for each account is shown by vintage and a composite remaining life for each account is computed in column J.

Response Date: April 23, 2018
Response by: Debra Davey
Email Address: ddavey@allete.com
Phone Number: 218-355-3714

description	vintage	age	surviving_balance	average_srremaining_	Net Salv	Theo Res	\$ x RL	RL	
352	2017	0.5	2,238,577.94	56.00	55.50	-10.00%	21,986.03	124,241,075.67	
352	2016	1.5	1,487,326.56	56.00	54.50	-10.00%	43,823.01	81,059,297.52	
352	2015	2.5	71,451.73	56.00	53.50	-10.00%	3,508.79	3,822,667.56	
352	2014	3.5	5,977,378.38	56.00	52.50	-10.00%	410,944.76	313,812,364.95	
352	2013	4.5	3,224,824.84	56.00	51.50	-10.00%	285,051.48	166,078,479.26	
352	2012	5.5	1,397,416.73	56.00	50.50	-10.00%	150,970.91	70,569,544.87	
352	2011	6.5	212,019.40	56.00	49.50	-10.00%	27,070.33	10,494,960.30	
352	2010	7.5	1,045,115.00	56.00	48.50	-10.00%	153,967.83	50,688,077.50	
352	2009	8.5	648,544.58	56.00	47.50	-10.00%	108,283.78	30,805,867.55	
352	2007	10.5	30,962.17	56.00	45.50	-10.00%	6,385.95	1,408,778.74	
352	2006	11.5	22,791.67	56.00	44.50	-10.00%	5,148.48	1,014,229.32	
352	2005	12.5	88,372.16	56.00	43.50	-10.00%	21,698.52	3,844,188.96	
352	2004	13.5	515,523.20	56.00	42.50	-10.00%	136,705.71	21,909,736.00	
352	2003	14.5	17,727.22	56.00	41.50	-10.00%	5,049.09	735,679.63	
352	2002	15.5	208,555.85	56.00	40.50	-10.00%	63,497.81	8,446,511.93	
352	2000	17.5	8,948.89	56.00	38.50	-10.00%	3,076.18	344,532.27	
352	1999	18.5	6,261.91	56.00	37.50	-10.00%	2,275.53	234,821.63	
352	1998	19.5	154,054.77	56.00	36.50	-10.00%	59,008.45	5,623,000.65	
352	1997	20.5	20,267.04	56.00	35.50	-10.00%	8,161.09	719,480.53	
352	1996	21.5	503,868.19	56.00	34.50	-10.00%	212,793.25	17,383,507.98	
352	1995	22.5	237,256.23	56.00	33.50	-10.00%	104,857.24	7,948,162.00	
352	1994	23.5	84,008.37	56.00	32.50	-10.00%	38,777.54	2,730,339.23	
352	1993	24.5	474,894.54	56.00	31.50	-10.00%	228,526.30	14,960,028.07	
352	1992	25.5	9,946.71	56.00	30.50	-10.00%	4,981.54	303,410.16	
352	1991	26.5	4,152.85	56.00	29.51	-10.00%	2,161.17	122,536.36	
352	1989	28.5	67,859.15	56.00	27.52	-10.00%	37,964.32	1,867,383.38	
352	1988	29.5	54,177.18	56.00	26.53	-10.00%	31,362.77	1,437,271.83	
352	1986	31.5	13,970.92	56.00	24.56	-10.00%	8,627.02	343,177.63	
352	1985	32.5	44,245.62	56.00	23.59	-10.00%	28,168.09	1,043,742.67	
352	1984	33.5	11,624.00	56.00	22.62	-10.00%	7,620.79	262,976.38	
352	1983	34.5	60,307.70	56.00	21.67	-10.00%	40,672.51	1,306,630.85	
352	1982	35.5	164,334.80	56.00	20.72	-10.00%	113,889.89	3,404,717.97	
352	1981	36.5	225,063.40	56.00	19.78	-10.00%	160,120.55	4,451,958.86	
352	1980	37.5	16,305.14	56.00	18.86	-10.00%	11,896.66	307,439.77	
352	1979	38.5	10,388.29	56.00	17.94	-10.00%	7,765.66	186,401.55	
352	1978	39.5	2,802,026.01	56.00	17.05	-10.00%	2,144,064.27	47,761,093.75	
352	1977	40.5	325,314.56	56.00	16.16	-10.00%	254,570.63	5,257,655.84	
352	1976	41.5	34,248.50	56.00	15.29	-10.00%	27,384.29	523,806.83	
352	1975	42.5	181,131.45	56.00	14.45	-10.00%	147,849.81	2,616,461.91	
352	1974	43.5	1,016.21	56.00	13.62	-10.00%	846.04	13,836.80	
352	1973	44.5	77,796.74	56.00	12.81	-10.00%	66,003.56	996,436.21	
352	1972	45.5	91,173.16	56.00	12.02	-10.00%	78,758.04	1,096,196.78	
352	1971	46.5	255,236.21	56.00	11.26	-10.00%	224,292.01	2,874,725.43	
352	1970	47.5	62,514.53	56.00	10.53	-10.00%	55,833.56	658,378.02	
352	1969	48.5	34,723.52	56.00	9.83	-10.00%	31,491.69	341,303.83	
352	1968	49.5	95.08	56.00	9.16	-10.00%	87.49	870.61	
352	1967	50.5	34,153.53	56.00	8.51	-10.00%	31,856.47	290,813.86	
352	1966	51.5	35,868.91	56.00	7.91	-10.00%	33,886.01	283,553.20	
352	1964	53.5	170,149.58	56.00	6.79	-10.00%	164,480.55	1,154,821.36	
352	1961	56.5	3,043.37	56.00	5.35	-10.00%	3,027.89	16,281.37	
352	1960	57.5	1,252.80	56.00	4.93	-10.00%	1,256.67	6,180.82	
352	1959	58.5	76,190.84	56.00	4.55	-10.00%	77,004.75	346,445.46	
352	1958	59.5	2,804.59	56.00	4.19	-10.00%	2,854.22	11,751.07	
352	1956	61.5	1,087.99	56.00	3.56	-10.00%	1,120.68	3,874.74	
352	1953	64.5	12,852.11	56.00	2.82	-10.00%	13,426.54	36,185.08	
352	1950	67.5	47,232.25	56.00	2.22	-10.00%	49,893.94	104,950.91	
352	1949	68.5	4,553.55	56.00	2.01	-10.00%	4,828.76	9,171.08	
352	1947	70.5	2,045.68	56.00	1.54	-10.00%	2,188.26	3,155.92	
352	1928	89.5	442.91	56.00	0.00	-10.00%	487.20	0.00	
352	1924	93.5	4,016.67	56.00	0.00	-10.00%	4,418.34	0.00	
352	1923	94.5	3,557.90	56.00	0.00	-10.00%	3,913.69	0.00	
352 Total			23,623,051.78				5,982,624.40	1,018,320,930.38	43.11

description	vintage	age	surviving_balance	average_sremaining	Net Salv	Theo Res	\$ x RL	RL	
353	2017	0.5	31,627,033.47	52.00	51.51	-20.00%	359,307.43	1,629,035,751.86	
353	2016	1.5	17,152,533.83	52.00	50.52	-20.00%	583,901.28	866,629,370.41	
353	2015	2.5	20,842,952.57	52.00	49.54	-20.00%	1,181,045.06	1,032,654,914.18	
353	2014	3.5	17,011,476.44	52.00	48.57	-20.00%	1,347,681.88	826,197,226.84	
353	2013	4.5	25,729,033.36	52.00	47.59	-20.00%	2,616,868.32	1,224,512,107.67	
353	2012	5.5	17,659,945.71	52.00	46.62	-20.00%	2,191,914.42	823,334,218.52	
353	2011	6.5	9,494,593.66	52.00	45.65	-20.00%	1,390,411.67	433,467,698.09	
353	2010	7.5	15,748,975.73	52.00	44.69	-20.00%	2,656,469.38	703,833,064.64	
353	2009	8.5	20,602,416.88	52.00	43.73	-20.00%	3,931,145.58	900,976,035.96	
353	2008	9.5	3,163,989.64	52.00	42.78	-20.00%	673,417.96	135,346,016.47	
353	2007	10.5	5,427,534.38	52.00	41.83	-20.00%	1,274,128.73	227,019,542.98	
353	2006	11.5	4,952,504.67	52.00	40.88	-20.00%	1,270,546.02	202,473,248.42	
353	2005	12.5	3,857,261.19	52.00	39.94	-20.00%	1,073,132.49	154,075,173.85	
353	2004	13.5	9,439,183.62	52.00	39.01	-20.00%	2,829,280.57	368,235,390.31	
353	2003	14.5	3,761,181.68	52.00	38.08	-20.00%	1,207,787.19	143,244,002.49	
353	2002	15.5	3,160,491.85	52.00	37.16	-20.00%	1,081,990.25	117,459,331.95	
353	2001	16.5	1,960,855.50	52.00	36.25	-20.00%	712,614.11	71,084,541.41	
353	2000	17.5	2,418,115.72	52.00	35.35	-20.00%	929,344.37	85,470,428.07	
353	1999	18.5	1,999,719.55	52.00	34.45	-20.00%	810,005.94	68,885,159.22	
353	1998	19.5	1,520,258.95	52.00	33.56	-20.00%	647,045.48	51,014,827.90	
353	1997	20.5	1,233,796.69	52.00	32.67	-20.00%	550,256.62	40,312,974.35	
353	1996	21.5	3,107,083.67	52.00	31.80	-20.00%	1,448,420.59	98,803,458.60	
353	1995	22.5	4,178,761.46	52.00	30.93	-20.00%	2,031,514.53	129,263,299.75	
353	1994	23.5	955,321.76	52.00	30.08	-20.00%	483,331.82	28,732,352.79	
353	1993	24.5	4,170,670.31	52.00	29.23	-20.00%	2,191,746.28	121,899,184.03	
353	1992	25.5	1,398,801.98	52.00	28.39	-20.00%	762,181.27	39,709,848.05	
353	1991	26.5	1,281,520.13	52.00	27.56	-20.00%	722,815.50	35,317,041.62	
353	1990	27.5	824,200.31	52.00	26.74	-20.00%	480,471.06	22,038,003.62	
353	1989	28.5	767,748.90	52.00	25.93	-20.00%	461,918.78	19,906,462.19	
353	1988	29.5	1,527,502.88	52.00	25.13	-20.00%	947,239.43	38,383,107.64	
353	1987	30.5	482,349.01	52.00	24.34	-20.00%	307,910.79	11,739,347.50	
353	1986	31.5	44,363.57	52.00	23.56	-20.00%	29,118.06	1,045,123.19	
353	1985	32.5	232,779.88	52.00	22.79	-20.00%	156,916.54	5,304,836.98	
353	1984	33.5	203,784.49	52.00	22.03	-20.00%	140,936.07	4,489,563.87	
353	1983	34.5	346,374.99	52.00	21.28	-20.00%	245,520.85	7,372,262.61	
353	1982	35.5	1,087,368.95	52.00	20.55	-20.00%	789,210.79	22,344,050.96	
353	1981	36.5	8,672,686.69	52.00	19.83	-20.00%	6,439,401.82	171,938,962.34	
353	1980	37.5	5,080,181.07	52.00	19.11	-20.00%	3,855,354.49	97,104,054.22	
353	1979	38.5	1,917,233.20	52.00	18.42	-20.00%	1,485,885.23	35,307,766.61	
353	1978	39.5	40,795,295.71	52.00	17.73	-20.00%	32,261,710.65	723,347,915.48	
353	1977	40.5	7,234,787.80	52.00	17.06	-20.00%	5,833,414.97	123,427,650.30	
353	1976	41.5	567,108.86	52.00	16.40	-20.00%	465,853.06	9,302,694.95	
353	1975	42.5	2,544,979.44	52.00	15.76	-20.00%	2,128,270.77	40,113,864.13	
353	1974	43.5	103,168.02	52.00	15.14	-20.00%	87,766.92	1,561,503.69	
353	1973	44.5	732,937.26	52.00	14.52	-20.00%	633,849.95	10,645,906.37	
353	1972	45.5	1,430,994.24	52.00	13.93	-20.00%	1,257,157.06	19,934,894.56	
353	1971	46.5	2,958,789.34	52.00	13.35	-20.00%	2,638,776.93	39,510,045.51	
353	1970	47.5	651,953.17	52.00	12.79	-20.00%	589,866.47	8,340,684.65	
353	1969	48.5	881,772.26	52.00	12.25	-20.00%	808,837.35	10,802,539.05	
353	1968	49.5	426,688.86	52.00	11.73	-20.00%	396,560.20	5,003,545.58	
353	1967	50.5	236,303.39	52.00	11.22	-20.00%	222,378.85	2,651,359.48	
353	1966	51.5	1,168,969.62	52.00	10.73	-20.00%	1,113,250.14	12,545,580.69	
353	1965	52.5	69,002.90	52.00	10.26	-20.00%	66,461.39	708,157.44	
353	1964	53.5	179,259.19	52.00	9.81	-20.00%	174,522.44	1,758,838.65	
353	1963	54.5	45,683.49	52.00	9.38	-20.00%	44,932.76	428,455.04	
353	1962	55.5	202,960.28	52.00	8.96	-20.00%	201,569.42	1,819,259.64	
353	1961	56.5	80,155.80	52.00	8.57	-20.00%	80,342.27	686,603.44	
353	1960	57.5	283,620.77	52.00	8.18	-20.00%	286,773.59	2,321,424.37	
353	1959	58.5	560,142.01	52.00	7.82	-20.00%	571,082.70	4,380,467.36	
353	1958	59.5	260,578.83	52.00	7.47	-20.00%	267,768.39	1,946,802.16	
353	1957	60.5	5,075.15	52.00	7.14	-20.00%	5,254.37	36,218.57	
353	1956	61.5	7,978.40	52.00	6.82	-20.00%	8,319.24	54,376.41	
353	1955	62.5	2,734.30	52.00	6.51	-20.00%	2,870.57	17,792.02	
353	1954	63.5	80,180.01	52.00	6.21	-20.00%	84,725.91	497,904.31	
353	1953	64.5	624,274.08	52.00	5.92	-20.00%	663,803.72	3,697,424.30	
353	1952	65.5	12,065.62	52.00	5.64	-20.00%	12,907.28	68,096.56	
353	1951	66.5	135,752.17	52.00	5.37	-20.00%	146,075.29	729,183.69	
353	1950	67.5	341,206.52	52.00	5.10	-20.00%	369,255.00	1,741,689.02	
353	1949	68.5	222,106.69	52.00	4.84	-20.00%	241,711.74	1,075,372.63	
353	1948	69.5	163,299.17	52.00	4.58	-20.00%	178,692.88	748,198.91	
353	1947	70.5	80,449.96	52.00	4.32	-20.00%	88,512.91	347,838.35	
353	1946	71.5	321.70	52.00	4.07	-20.00%	355.85	1,308.21	
353	1945	72.5	32.46	52.00	3.81	-20.00%	36.10	123.67	
353	1944	73.5	42,001.83	52.00	3.55	-20.00%	46,957.93	149,251.65	
353	1942	75.5	29.42	52.00	3.04	-20.00%	33.24	89.50	
353	1941	76.5	14.04	52.00	2.79	-20.00%	15.94	39.15	
353	1940	77.5	10,718.67	52.00	2.54	-20.00%	12,234.77	27,197.36	
353	1938	79.5	11,324.10	52.00	2.04	-20.00%	13,055.35	23,121.49	
353	1932	85.5	23.45	52.00	0.70	-20.00%	27.76	16.33	
353	1929	88.5	66.30	52.00	0.00	-20.00%	79.56	0.00	
353	1928	89.5	7,769.57	52.00	0.00	-20.00%	9,323.48	0.00	
353	1927	90.5	78,227.40	52.00	0.00	-20.00%	93,872.88	0.00	
353	1926	91.5	26,080.07	52.00	0.00	-20.00%	31,296.08	0.00	
353	1925	92.5	37,369.35	52.00	0.00	-20.00%	44,843.22	0.00	
353	1924	93.5	40,567.00	52.00	0.00	-20.00%	48,680.40	0.00	
353	1923	94.5	39,581.72	52.00	0.00	-20.00%	47,498.06	0.00	
353	1920	97.5	15,696.66	52.00	0.00	-20.00%	18,835.99	0.00	
353 Total			318,442,685.39				104,598,610.46	12,026,413,186.83	37.77

The remainder of the attachment to Minnesota Power's response to DOC IR No. 1, "DoC IR 1.Attachment 1.xlsx," has been omitted due to its length, but can be filed in eDockets upon request.

Minnesota Department of Commerce
Division of Energy Resources
Information Request

Docket No. E015/D-18-226
DOC Attachment 2
Page 1 of 2

Docket Number: E015/D-18-226 Nonpublic Public
Requested From: Debra A. Davey, Minnesota Power Date of Request: April 11, 2018
Type of Inquiry: Financial Response Due: April 23, 2018

Requested by: Craig Addonizio
Email Address(es): craig.addonizio@state.mn.us
Phone Number(s): 651-539-1818

Request Number: 2
Topic: Annual Updates
Reference(s): n/a

Request:

- a. Please explain whether MP considers the depreciation methodology used in its Petition to be an Average Service Life methodology, or an Average Remaining Life methodology.
- b. Minn. Rule 7825.0600, subp. 2D requires utilities to review their depreciation rates annually to determine if they are still generally appropriate. Utilities that use remaining life methods for mass property groups (like transmission and distribution property accounts) file annual updates to reflect the impact of changes in the age profile of the property in the accounts (caused by additions, retirements, transfers, etc.) on the accounts' remaining lives, which can cause prior depreciation rates to become inappropriate. Please explain whether MP's position on whether it should file annual updates to its T&D depreciation study to reflect the impact of changes in the age profile of property accounts.

RESPONSE:

- a. Depreciation systems are described by three characteristics: method, procedure and technique. The calculations used by Minnesota Power are defined by the Straight-line method, average service life procedure and remaining life technique. The depreciation rates derived in Appendix A to Appendix II use the average service life procedure (along with the remaining life technique and straight-line method) to compute depreciation rates as described on page 17 of the depreciation study and as defined in authoritative texts such as Depreciation Systems and NARUC's Public Utility Depreciation Practices. The average service life procedure is a grouping method used to recover the cost of the entire asset group (e.g. account) less any net book cost of the group less any net salvage over the life of the average service life of the entire depreciable group. In Minnesota Power's depreciation study,
-

Response Date: April 23, 2018
Response by: Dane Watson
Email Address: dwatson@alliancecg.net
Phone Number: 214-473-6771, ext 10

Minnesota Department of Commerce
Division of Energy Resources
Information Request

Docket No. E015/D-18-226
DOC Attachment 2
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Docket Number: E015/D-18-226 Nonpublic Public
Requested From: Debra A. Davey, Minnesota Power Date of Request: April 11, 2018
Type of Inquiry: Financial Response Due: April 23, 2018

Requested by: Craig Addonizio
Email Address(es): craig.addonizio@state.mn.us
Phone Number(s): 651-539-1818

an average service life is determined for each group and the remaining life for the group is calculated from that average service life. As such, the calculation meets the definition of an average service life procedure. The same depreciation methodology was used in prior proceedings, E015-D-08-422 and 13-252.

- b. MP does not believe an annual update is necessary to reflect the changes that might occur in a remaining life methodology. The rates shown as "Present Accrual Rates" were the Transmission and Distribution rates incorporated in 2013 and have been used to calculate depreciation expense for each period since that point. Typically, the depreciation rates remain in effect until new rates, based on updated depreciation study parameters, are approved by the Commission. MP believes the five year cycle in which Companies file depreciation studies is sufficient to accurately update depreciation rates using remaining life technique. In recent years, Northern States Power has begun to use remaining life depreciation for its transmission and distribution assets as shown in Dockets 12-858 and 17-581.

Response Date: April 23, 2018
Response by: Dane Watson
Email Address: dwatson@alliancecg.net
Phone Number: 214-473-6771, ext 10

Minnesota Department of Commerce
Division of Energy Resources
Information Request

Docket No. E015/D-18-226
DOC Attachment 3
Page 1 of 2

Docket Number: E015/D-18-226 Nonpublic Public
Requested From: Debra A. Davey, Minnesota Power Date of Request: 6/6/2018
Type of Inquiry: Financial Response Due: 6/18/2018

Requested by: Craig Addonizio
Email Address(es): craig.addonizio@state.mn.us
Phone Number(s): 651-539-1818

Request Number: 24
Topic: Data for SPR Analysis
Reference(s): Appendix II, pg. 6; Resp. to IR 1

Request:

Appendix II, page 6 states that vintaged data is available since the Company converted to its current accounting system in 2000, but that seventeen years of transactional history is insufficient for actuarial analysis. As a result, the Company used SPR analysis for most plant accounts.

However, in response to Department Information Request 1, the Company provided current plant balances by vintage as far back as 1917, implying that the Company is able to determine plant balances and retirements by vintage. Please explain what data the Company would need, but does not have, to perform actuarial analysis for all accounts.

Response Date: June 15, 2018
Response by: Dane Watson
Email Address: dwatson@alliancecg.net
Phone Number: 214-473-6771, ext. 10

Minnesota Department of Commerce
Division of Energy Resources
Information Request

Docket No. E015/D-18-226
DOC Attachment 3
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Docket Number: E015/D-18-226 Nonpublic Public
Requested From: Debbra A. Davey, Minnesota Power Date of Request: 6/6/2018
Type of Inquiry: Financial Response Due: 6/18/2018

Requested by: Craig Addonizio
Email Address(es): craig.addonizio@state.mn.us
Phone Number(s): 651-539-1818

RESPONSE:

The vintage year for plant in service assets was derived when the Company converted to its current accounting system from a legacy system. When the conversion occurred, it analyzed old work orders and transactions to ensure that the data was accurate. The Company hired the consultant for the first time in 2007 and provided the consultant vintage transactions (necessary for actuarial analysis) to begin building an actuarial data base. Vintage balances are updated contemporaneously each year.

Although the Company has begun building an actuarial data base for its assets, the database is not at a point where it can be used in an actuarial analysis in most accounts. When sufficient additional transaction occur in the future and are added to the database, the Company will be able to perform meaningful actuarial analysis on more of its accounts.

For this study, the Company was able to perform actuarial analysis on the following accounts: 3550, 3560 and 3722. To run actuarial analysis on its longer-lived accounts, it may be necessary to have an actuarial data base that included twenty to thirty or more years of transaction history. This time frame can vary based on the average life of assets in an account and how robust the transaction level is in an account. At this time, they don't have vintage retirement data sufficient to perform actuarial analysis for all accounts. For many accounts, the stub curve produced by actuarial analysis is too short to make a life estimate. Depending on transactional activity between now and its next depreciation study, the Company intends to analyze more of its property using actuarial analysis.

Response Date: June 15, 2018
Response by: Dane Watson
Email Address: dwatson@allianceceg.net
Phone Number: 214-473-6771, ext. 10

Minnesota Department of Commerce
Division of Energy Resources
Information Request

Docket No. E015/D-18-226
DOC Attachment 4
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Docket Number: E015/D-18-226 Nonpublic Public
Requested From: Debra A. Davey, Minnesota Power Date of Request: April 11, 2018
Type of Inquiry: Financial Response Due: April 23, 2018

Requested by: Craig Addonizio
Email Address(es): craig.addonizio@state.mn.us
Phone Number(s): 651-539-1818

Request Number: 19
Topic: Account 3540 Salvage Analysis
Reference(s): Appendix II, page 46 and Appendix II, Appendix D

Request:

On page 46, the Company states that “[r]etirements in this account are sparse, and the net salvage results from history do not contain a sufficient statistical sample to rely on the data. Judgement was used to retain the approved negative 10 percent salvage for this account.” However, there has been a steady stream of retirements in this account since 2009, and the retirement experience in those years indicates a salvage rate significantly below negative 10 percent.

- a. Please explain how much data is necessary to have a “sufficient statistical sample” for a salvage analysis.
- b. Please explain whether an incremental decrease, to negative 20 or negative 30 percent, would be reasonable based on the recent salvage experience in this account.

RESPONSE:

- a. Mr. Watson looks at cumulative retirement history over the life of an account compared to the current plant balance. In the case of Account 3540, the total retirements are 553,186 (Sum of retirements Appendix D). The plant balance is 26,033,935. This makes the ratio of total retirements divided by plant balance to be 2.12%. Ratios higher than around 2 percent (5 percent or more should be adequate) form a sufficient sample in Mr. Watson’s experience absent specific information from company operations which could guide judgement to move the net salvage percentage with fewer retirements.

Response Date: April 23, 2018
Response by: Dane Watson
Email Address: dwatson@alliancecg.net
Phone Number: 214-473-6771, ext 10

Minnesota Department of Commerce
Division of Energy Resources
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Docket No. E015/D-18-226
DOC Attachment 4
Page 2 of 2

Docket Number: E015/D-18-226 Nonpublic Public
Requested From: Debra A. Davey, Minnesota Power Date of Request: April 11, 2018
Type of Inquiry: Financial Response Due: April 23, 2018

Requested by: Craig Addonizio
Email Address(es): craig.addonizio@state.mn.us
Phone Number(s): 651-539-1818

- b. An incremental decrease to negative 20 or 30 percent would also be reasonable based on net salvage data and other industry norms.

Response Date: April 23, 2018
Response by: Dane Watson
Email Address: dwatson@alliancecg.net
Phone Number: 214-473-6771, ext 10

Minnesota Department of Commerce
Division of Energy Resources
Information Request

Docket No. E015/D-18-226
DOC Attachment 5
Page 1 of 1

Docket Number: E015/D-18-226 Nonpublic Public
Requested From: Debra A. Davey, Minnesota Power Date of Request: April 11, 2018
Type of Inquiry: Financial Response Due: April 23, 2018

Requested by: Craig Addonizio
Email Address(es): craig.addonizio@state.mn.us
Phone Number(s): 651-539-1818

Request Number: 23
Topic: Account 3722 Salvage Analysis
Reference(s): Appendix II pages 48-49 and Appendix II, Appendix D

Request:

- a. Please explain why MP is proposing such a large adjustment to the salvage rate for account 3722 given that for much of the last decade, the 5 and 10 year averages have been closer to negative 50 or negative 60 percent than negative 40 percent. Please explain why a move to negative 40 percent is not an overreaction to a small amount of recent data.
- b. Would the Company oppose a negative 50 percent salvage rate for this account?

RESPONSE:

- a. Mr. Watson does not consider the movement from negative 60 to negative 40 overly large with the trend shown in the data. Given the net salvage pattern since the last case in 2012, the moving averages from 1 to 6 years show a decline. The five year moving average in 2017 since the last case shows negative 44.11 percent for this account with the 2 through 4 year bands showing a 40 percent or less net salvage. To move in the direction of that trend, Mr. Watson still recommends negative 40 percent for this account.
- b. No. The Company would find negative 50 percent net salvage for this account a reasonable value.

Response Date: April 23, 2018
Response by: Dane Watson
Email Address: dwatson@alliancecg.net
Phone Number: 214-473-6771, ext 10