

**MONTANA-DAKOTA UTILITIES CO.  
COMMON PLANT**

Depreciation Study  
as of December 31, 2014

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April 2015



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April 30, 2015

Mr. Paul Bienek  
Montana-Dakota Utilities Company  
400 North Fourth Street  
Bismarck, ND 58501

Dear Mr. Bienek:

Re: MDU Common Plant Depreciation Study

In accordance with your authorization, we have prepared a depreciation study related to the utility plant in service of Montana-Dakota Utilities Company - Common Plant as of December 31, 2014. Our findings and recommendations, together with supporting schedules and exhibits, are set forth in the accompanying report.

Summary schedules have been prepared to illustrate the impact of instituting the recommended annual depreciation rates as a basis for the Company's annual depreciation expense as compared to the rates presently utilized. The application of the present rates to the depreciable plant in service as of December 31, 2014 results in an annual depreciation expense of \$2,649,018. In comparison the application of the proposed amortization/depreciation rates to the depreciable plant in service at December 31, 2014 results in an annual amortization/depreciation expense of \$2,924,572, which is an increase of \$275,554 from current rates. The composite annual depreciation rate under present rates is 3.89 percent, while the proposed pro forma composite depreciation rate is 4.30 percent.

Section 2 of our report contains the summary schedules showing the results of our service life and salvage studies and summaries of presently utilized depreciation rates. The subsequent sections of the report present a detailed outline of the methodology and procedures used in the study together with supporting calculations and analyses used in the development of the results. A detailed table of contents follows this letter.

Respectfully submitted,

A handwritten signature in black ink that reads 'Earl M. Robinson'.

EARL M. ROBINSON, CDP  
&

A handwritten signature in black ink that reads 'D.A. Sheffer'.

DAVID A. SHEFFER

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# **SECTION 1**

**MONTANA-DAKOTA UTILITIES COMPANY**  
Common Plant

Executive Summary

Table 1 on pages 2-1 to 2-2 is a comparative summary which illustrates the effect of instituting the revised depreciation rates. The schedule includes a comparison of the annual depreciation rates and annual depreciation expense under both present and proposed rates applied using the Straight Line Method for each depreciable property group of the Montana Dakota Utilities Company – Common Plant (the "Company") plant in service as of December 31, 2014. Both the present and proposed depreciation rates were developed utilizing the Straight Line (SL) Method, Broad Group (BG) Procedure, and the Average Remaining Life (ARL) Technique. The utilization of the recommended depreciation rates based upon the Straight Line Average Remaining Life Procedure results in the setting of depreciation rates which will continuously true up the Company's level of capital recovery over the life of each asset group. Application of this procedure, which is based upon the current best estimates of service life and net salvage together with the Company's plant in service and accrued depreciation, produces annual depreciation rates that will result in the Company recovering 100 percent of its investment -- no more, no less.

Table 1a on pages 2-3 and 2-4 summarizes the segmentation of the Company's property group's December 31, 2014 book depreciation reserves into the plant only, gross salvage, and cost of removal components.

Table 2 - Plant Only on pages 2-5 through 2-6, (which is the development of average remaining life depreciation rates for the Plant Only recovery component) provides a summary of

the detailed life estimates and service life parameters utilized in preparing the Average Remaining Life depreciation rates for each property group. The schedule provides a summary of the detailed data and narrative of the study results set forth in Sections 4 through 7. The developed depreciation rates (Column I) were determined by studying the Company's historical investment data together with the interpretation of future life expectancies which will have a bearing on the overall service life of the Company's property. This study included an analysis of the content of the property groups, discussions with senior management regarding current and anticipated events that may impact the various property groups.

Table 2 - Gross Salvage on pages 2-7 through 2-8 is a similar table to Table 2 – Plant Only, except that this table develops the component level depreciation rates for the recovery of the gross salvage portion of the property cost.

Table 2 - Cost of Removal on pages 2-9 and 2-10 summarizes the depreciation recovery rates for the cost of removal segment of the total plant cost.

Table 3 on pages 2-11 and 2-12 reconciles the December 31, 2014 account level plant in service balances per books versus the balances utilized in the performance of the depreciation study. The table incorporates pending (unrecorded) retirements identified during the course of completing the depreciation study.

Likewise, Table 4, on pages 2-13 and 2-14, reconciles the December 31, 2014 book depreciation reserve balances per books versus the balances utilized in preparing the depreciation rates per this study. The table incorporates the pending (unrecorded) retirements identified in assembling the detailed accounting data for this study.

Table 5 on pages 2-15 and 2-16 summarizes the depreciation parameters underlying the Company's current depreciation rates as well as also provides similar information relative to the proposed depreciation parameters and depreciation rates as of December 31, 2014.

Table 6 on page 2-17 summarizes the annual amortization rates and amounts for each of the general plant accounts for which the depreciation amortization approach is being used while Table 7 on page 2-18 through 2-30 are the supporting detail calculations that develop the amortization rates. The amortization of the investments within the selected general plant accounts is driven by the Company's ongoing difficulty to effectively track various of the property account investments that are in many cases related to a large quantity of items of corresponding small investment amounts. Due to the inability to effectively track the items, many times the items are no longer utilized but remain on the company's books and records as unrecorded retirements. Therefore, the accounting procedure for these property items it that the investments within each vintage of the applicable property group is amortized over a predetermined time period. Once attaining the stated amortization period age the asset's original cost investment will have been fully amortized, and accordingly, is retired from the company's books and records. The property accounts for which asset investment amortization is being proposed includes Account 391, 393, 394, 395, 397, and 398.

In the process of amortization of the selected general plant accounts, there are, by the very nature of average service life dispersion, vintage investments with the applicable property group which exceeds the estimated average service life / proposed amortization period. Given that each vintage of property is being amortized over the average service life an adjustment needs to be incorporated into the change over process to recover the under depreciated position of those

older investments. Accordingly, the variance between the amortization starting point depreciation reserve and the Company's actual book reserve (either positive or negative) is being recorded on a straight line basis over the proposed amortization period along with the annual amortization of all other vintage investments. The amortization starting point book depreciation reserve is equal to the sum of the original cost for vintage older than the amortization period plus the calculated depreciation reserve for vintages with ages equal to or less than the amortization period. .

It is recommended that the Company continue to apply depreciation rates and maintain its book depreciation reserve on an account-level basis. The maintenance of the book reserve on an account-level basis requires both the development of annual depreciation expense and distribution of other reserve account charges to an individual level. Maintaining the Company's depreciation records in this detail will aid in completing the various rate studies and, most importantly, clearly identifies the Company's level of capital recovery relative to each category of plant investment.

The general drivers for the proposed depreciation rates include an assessment of the Company's historical experience with regard to achieved service lives and net salvage factors. In addition, consideration is given to current and anticipated events which are anticipated to impact the Company's ability to recover its fixed capital costs related to utility plant in service utilized to provide service to the Company's customers.

The depreciation rate for each individual account changed as a result of reflecting estimates obtained through the in-depth analysis of the Company's most recent data together with an interpretation of ongoing and anticipated future events. Some of the revisions were not

significant and typically reflect fine tuning of previously utilized depreciation rates while others were more substantial in nature. Several of the accounts did reflect more significant changes (as outlined in Section 4 of this report) from the previously utilized depreciation rates.

The most notable depreciation/amortization change occurred relative to Account 392.20 - Transportation Equipment - Cars & Trucks.

The depreciation rate relative to Account 392.20 - Transportation Equipment - Cars & Trucks increased from 4.11 percent to 6.65 percent. Contributing to the depreciation expense increase is the change in the estimated average service life from seven to nine years while the future net salvage estimate remained at 20%. However, the more significant driver of the depreciation rate increase is the fact that the current book depreciation reserve is currently lower than required in comparison to the current age of the property group's investment.

The remaining account/sub-accounts experienced increases and/or declines in recommended depreciation rates to a lesser degree, as noted per Table 1 of this report. This revision in annual depreciation rates and expense is the result of both changes in the estimated service lives and salvage factors, and reflects the impact of the Company's property changes since the most recent study.

With regard to the inclusion of higher negative net salvage levels in the development of proposed depreciation rates, as noted within my discussion related to net salvage both in Section 3 of the depreciation report, the level of experienced net salvage should simply be a benchmark from which to estimate future net salvage. It is highly likely that the negative net salvage amounts experienced even recently will simply be the floor above which future negative net salvage levels will increase to a higher level. To appropriately and proportionately allocate the

true total asset cost (original cost adjusted for net salvage) over its applicable service life, proper consideration must be given in each accounting period, to the total costs that are anticipated to occur relative to the Company's assets that provide customer service.

Applying the proposed depreciation rates to the Company's December 31, 2014 plant in service produces annual depreciation/amortization expense of \$2,924,572 which is an increase of \$275,554 from current depreciation rates.

The following summary compares the present and proposed composite depreciation rates for illustrative purposes only. The Composite Depreciation Rate should not be applied to the total Company investment inasmuch as the non-proportional change in plant investment as a result of property additions or retirements would render the composite rate inappropriate. The Table 1 schedule lists the recommended annual depreciation rates for each property account.

Present Depreciation Rates

Depreciable Plant In Service at December 31, 2014	\$68,015,330
Annual Depreciation Expense	2,649,018
Composite Annual Depreciation Rate	3.89%

Proposed Depreciation Rates

Depreciable Plant In Service at December 31, 2014	\$68,015,330
Annual Depreciation Expense	2,924,572
Composite Annual Depreciation Rate	4.30%

## **SECTION 2**

Table 1

**Montana-Dakota Utilities Company  
Common Plant**

**Summary of Original Cost of Utility Plant in Service as of December 31, 2014  
and Related Annual Depreciation Expense Under Present and Proposed Rates**

Account No.	Description	Original Cost		Present Rates			Proposed Plant Only Rates			Proposed Gross Salv Rates			Proposed COR Rates			Total Proposed Rates			Net Change Depr. Exp. (l)
		12/31/14 (c)		Rate % (d)	Annual Accrual (e)	Rate % (f)	Annual Accrual (g)	Rate % (f)	Annual Accrual (g)	Rate % (h)	Annual Accrual (i)	Rate % (j)	Annual Accrual (k)	Rate % (j)	Annual Accrual (k)	Rate % (j)	Annual Accrual (k)		
390.0	General Structures	49,299,196.01	1,042,311.35	2.11%	1,042,311.35	2.60%	1,281,779.10	0.02%	9,859.84	-0.31%	(152,827.51)	2.31%	1,138,811.43	2.31%	1,138,811.43	2.31%	1,138,811.43	96,500.08	
391.1	Office Furniture & Equipment	2,599,028.93	173,268.60	6.67%	173,268.60	6.67%	173,268.60	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	173,268.60	6.67%	173,268.60	0.00	
391.3	Computer Equipment - PC	1,796,304.13	359,260.83	20.00%	359,260.83	20.00%	359,260.83	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	359,260.83	20.00%	359,260.83	0.00	
391.5	Computer Equipment - Other	2,083,247.21	416,649.44	20.00%	416,649.44	20.00%	416,649.44	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	416,649.44	20.00%	416,649.44	0.00	
	TOTAL Account 391	6,478,580.27	949,178.87	14.65%	949,178.87	14.65%	949,178.87	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	949,178.87	14.65%	949,178.87	0.00	
	TRANSPORTATION EQUIPMENT																		
392.1	Transportation Equipment (Trailers)	2,482.58	103.52	4.17%	103.52	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	0.00	(103.52)	
392.2	Transportation Equipment (Cars & Trucks)	7,053,425.86	289,895.80	4.11%	289,895.80	10.73%	756,832.59	-4.08%	(287,779.78)	0.00%	0.00	0.00%	0.00	0.00%	469,052.82	6.65%	469,052.82	179,157.02	
	TOTAL Account 392	7,055,908.44	289,999.32	4.11%	289,999.32	10.73%	756,832.59	-4.08%	(287,779.78)	0.00%	0.00	0.00%	0.00	0.00%	469,052.82	6.65%	469,052.82	179,053.50	
393.0	Stores Equipment	97,054.09	3,235.14	3.33%	3,235.14	3.33%	3,235.14	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	3,235.14	3.33%	3,235.14	0.00	
	TOOLS, SHOP & GARAGE EQ.																		
394.1	Tools, Shop & Garage Equip. (Fixed)	514,458.89	28,581.05	5.56%	28,581.05	5.56%	28,581.05	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	28,581.05	5.56%	28,581.05	0.00	
394.3	Vehicle Maintenance Equipment	104,823.25	5,241.16	5.00%	5,241.16	5.00%	5,241.16	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	5,241.16	5.00%	5,241.16	0.00	
394.4	Vehicle Refueling Equipment	14,529.19	726.46	5.00%	726.46	5.00%	726.46	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	726.46	5.00%	726.46	0.00	
	TOTAL Account 394	633,811.33	34,548.67	5.45%	34,548.67	5.45%	34,548.67	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	34,548.67	5.45%	34,548.67	0.00	
	COMMUNICATION EQUIPMENT																		
397.1	Radio Communication Equip. (Fixed)	1,591,742.35	106,116.16	6.67%	106,116.16	6.67%	106,116.16	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	106,116.16	6.67%	106,116.16	0.00	
397.2	Radio Communication Equip. (Mobile)	810,002.48	54,000.17	6.67%	54,000.17	6.67%	54,000.17	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	54,000.17	6.67%	54,000.17	0.00	
397.3	General Telephone Communication Equip.	508,064.64	50,806.46	10.00%	50,806.46	10.00%	50,806.46	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	50,806.46	10.00%	50,806.46	0.00	
397.5	Supervisory & Telemetering Equip.	26,716.56	1,781.10	6.67%	1,781.10	6.67%	1,781.10	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	1,781.10	6.67%	1,781.10	0.00	
397.8	Network Equipment	275,521.69	55,104.34	20.00%	55,104.34	20.00%	55,104.34	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	55,104.34	20.00%	55,104.34	0.00	
	TOTAL Account 397	3,212,047.72	267,808.23	8.34%	267,808.23	8.34%	267,808.23	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	267,808.23	8.34%	267,808.23	0.00	
398.0	Miscellaneous Equipment	1,238,732.27	61,936.61	5.00%	61,936.61	5.00%	61,936.61	0.00%	0.00	0.00%	0.00	0.00%	0.00	0.00%	61,936.61	5.00%	61,936.61	0.00	
	<b>Sub-Total (General Plant) Amortization</b>	<b>11,660,225.68</b>	<b>1,316,707.52</b>	<b>11.29%</b>	<b>1,316,707.52</b>	<b>11.29%</b>	<b>1,316,707.52</b>	<b>0.00%</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00</b>	<b>0.00%</b>	<b>0.00</b>	<b>0.00%</b>	<b>1,316,707.52</b>	<b>11.29%</b>	<b>1,316,707.52</b>	<b>0.00</b>	
	TOTAL General Plant	68,015,330.13	2,649,018.19	3.89%	2,649,018.19	4.93%	3,355,319.21	-0.41%	(277,919.94)	-0.22%	(152,827.51)	4.30%	2,924,571.77	4.30%	2,924,571.77	4.30%	2,924,571.77	275,553.58	
	TOTAL Depreciable Plant	68,015,330.13	2,649,018.19	3.89%	2,649,018.19	4.93%	3,355,319.21	-0.41%	(277,919.94)	-0.22%	(152,827.51)	4.30%	2,924,571.77	4.30%	2,924,571.77	4.30%	2,924,571.77	275,553.58	

Montana-Dakota Utilities Company  
Common Plant

Summary of Original Cost of Utility Plant in Service as of December 31, 2014  
and Related Annual Depreciation Expense Under Present and Proposed Rates

Account No.	Description	Original Cost 12/31/14	Present Rates		Proposed Plant Only Rates		Proposed Gross Salv Rates		Proposed COR Rates		Total Proposed Rates		Net Change Depr. Exp.
			Rate %	Annual Accrual	Rate %	Annual Accrual	Rate %	Annual Accrual	Rate %	Annual Accrual	Rate %	Annual Accrual	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
<b>Amortizable Plant</b>													
392.3	Aircraft Equipment	4,333,824.70											
	TOTAL Amortizable Plant	4,333,824.70											
<b>NON-DEPRECIABLE PLANT</b>													
389.0	Land & Land Rights (General)	3,086,836.15											
	Total Land	3,086,836.15											
<b>INTANGIBLE PLANT</b>													
303.0	Miscellaneous Intangible Plant	50,883,328.74											
	Total Intangible Plant	50,883,328.74											
	TOTAL Non-Depreciable Plant	53,970,164.89											
	TOTAL Plant in Service	126,319,319.72											
	(1) Account Fully Depreciated. No further current depreciation accrual.												

Table 1a

**Montana-Dakota Utilities Company  
Common Plant**

**Summary of Book Depreciation Reserve by Recovery Component as of December 31, 2014**

Account No. (a)	Description (b)	Cost 12/31/14 (c)	Total Book Depr Reserve 12/31/14 (f)	Cost of Removal In Book Res. (g)	Gross Salvage In Book Res. (h)	Plant Only Depr Reserve 12/31/14 (i)
<b><u>DEPRECIABLE PLANT</u></b>						
<b><u>General Plant</u></b>						
390.0	General Structures	49,299,196.01	14,804,363.01	1,912,317.79	(246,141.54)	13,138,186.76
OFFICE FURNITURE & EQUIPMENT						
391.1	Office Furniture & Equipment	2,599,028.93	1,197,289.08	0.00	0.00	1,197,289.08
391.3	Computer Equipment - PC	1,796,304.13	848,650.94	0.00	0.00	848,650.94
391.5	Computer Equipment - Other	2,083,247.21	1,043,724.92	0.00	0.00	1,043,724.92
	TOTAL Account 391	6,478,580.27	3,089,664.94	0.00	0.00	3,089,664.94
TRANSPORTATION EQUIPMENT						
392.1	Transportation Equipment (Trailers)	2,482.58	137.60	0.00	0.00	137.60
392.2	Transportation Equipment (Cars & Trucks)	7,053,425.86	3,344,198.87	0.00	0.00	3,344,198.87
	TOTAL Account 392	7,055,908.44	3,344,336.47	0.00	0.00	3,344,336.47
393.0	Stores Equipment	97,054.09	39,609.25	0.00	0.00	39,609.25
TOOLS, SHOP & GARAGE EQ.						
394.1	Tools, Shop & Garage Equip. (Non-Unitized)	514,458.89	262,037.30	0.00	0.00	262,037.30
394.3	Vehicle Maintenance Equipment	104,823.25	52,564.22	0.00	0.00	52,564.22
394.4	Vehicle Refueling Equipment	14,529.19	10,087.70	0.00	0.00	10,087.70
	TOTAL Account 394	633,811.33	324,689.22	0.00	0.00	324,689.22
COMMUNICATION EQUIPMENT						
397.1	Radio Communication Equip. (Fixed)	1,591,742.35	443,197.15	0.00	0.00	443,197.15
397.2	Radio Communication Equip. (Mobile)	810,002.48	231,171.48	0.00	0.00	231,171.48
397.3	General Telephone Communication Equip.	508,064.64	89,594.17	0.00	0.00	89,594.17
397.5	Supervisory & Telemetry Equip.	26,716.56	2,830.63	0.00	0.00	2,830.63
397.8	Network Equipment	275,521.69	153,929.32	0.00	0.00	153,929.32
	TOTAL Account 397	3,212,047.72	920,722.75	0.00	0.00	920,722.75
398.0	Miscellaneous Equipment	1,238,732.27	420,200.24	0.00	0.00	420,200.24
	<b>Sub-Total (General Plant) Amortization</b>	<b>11,660,225.68</b>	<b>4,794,886.40</b>	<b>0.00</b>	<b>0.00</b>	<b>4,794,886.40</b>
	TOTAL General Plant	68,015,330.13	22,943,585.88	1,912,317.79	(246,141.54)	21,277,409.63
	TOTAL Depreciable Plant	68,015,330.13	22,943,585.88	1,912,317.79	(246,141.54)	21,277,409.63

Table 1a

**Montana-Dakota Utilities Company  
Common Plant**

**Summary of Book Depreciation Reserve by Recovery Component as of December 31, 2014**

Account No. (a)	Description (b)	Cost 12/31/14 (c)	Total Book Depr Reserve 12/31/14 (f)	Cost of Removal In Book Res. (g)	Gross Salvage In Book Res. (h)	Plant Only Depr Reserve 12/31/14 (i)
	<b><u>Amortizable Plant</u></b>					
392.3	Aircraft Equipment	4,333,824.70	2,219,871.79	0.00	0.00	2,219,871.79
	TOTAL Amortizable Plant	4,333,824.70	2,219,871.79	0.00	0.00	2,219,871.79
	<b><u>NON-DEPRECIABLE PLANT</u></b>					
389.0	Land & Land Rights (General)	3,086,836.15	0.00			0.00
	Total Land	3,086,836.15	0.00	0.00	0.00	0.00
	INTANGIBLE PLANT					
303.0	Miscellaneous Intangible Plant	50,883,328.74				0.00
	Total Intangible Plant	50,883,328.74	0.00	0.00	0.00	0.00
	TOTAL Non-Depreciable Plant	53,970,164.89	0.00	0.00	0.00	0.00
	<b>TOTAL Common Utility Plant in Service</b>	<b>126,319,319.72</b>	<b>25,163,457.67</b>	<b>1,912,317.79</b>	<b>(246,141.54)</b>	<b>23,497,281.42</b>

Table 2 - Plant Only

Montana-Dakota Utilities Company  
Common Plant

Summary of Original Cost of Utility Plant in Service and Calculation of Annual Depreciation Rates and Depreciation Expense Based Upon Utilization of Book Depreciation Reserve and Average Remaining Lives as of December 31, 2014

Account No.	Description	Original Cost 12/31/14	Estimated Future Net Salvage %	Original Cost Less Salvage	Book Depreciation Reserve	Net Original Cost Less Salvage	A.S.L./Survivor Curve	Average Remaining Life	Annual Depreciation Accrual	Annual Depreciation Rate
(a)	(b)	(c)	(d)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
<b>DEPRECIABLE PLANT</b>										
<b>General Plant</b>										
390.0	General Structures	49,299,196.01	0%	49,299,196.01	13,138,186.76	36,161,009.25	38-R3	28.2	1,282,305.29	2.60%
OFFICE FURNITURE & EQUIPMENT										
391.1	Office Furniture & Equipment	2,599,028.93	0%	2,599,028.93	1,197,289.08	1,401,739.85	N/A	N/A	173,268.60	6.67% *
391.3	Computer Equipment - PC	1,796,304.13	0%	1,796,304.13	848,650.94	947,653.19	N/A	N/A	359,260.83	20.00% *
391.5	Computer Equipment - Other	2,083,247.21	0%	2,083,247.21	1,043,724.92	1,039,522.29	N/A	N/A	416,649.44	20.00% *
TOTAL Account 391										
6,478,580.27										
TRANSPORTATION EQUIPMENT										
392.1	Transportation Equipment (Trailers)	2,482.58	0%	2,482.58	137.60	2,344.98	25-L1	23.6	0.00	0.00% (1)
392.2	Transportation Equipment (Cars & Trucks)	7,053,425.86	0%	7,053,425.86	3,344,198.87	3,709,226.99	9-R3	4.9	756,985.10	10.73%
TOTAL Account 392										
7,055,908.44										
393.0	Stores Equipment	97,054.09	0%	97,054.09	39,609.25	57,444.84	N/A	N/A	3,235.14	3.33% *
TOOLS, SHOP & GARAGE EQ.										
394.1	Tools, Shop & Garage Equip. (Non-Utilize)	514,458.89	0%	514,458.89	262,037.30	252,421.59	N/A	N/A	28,581.05	5.56% *
394.3	Vehicle Maintenance Equipment	104,823.25	0%	104,823.25	52,564.22	52,259.03	N/A	N/A	5,241.16	5.00% *
394.4	Vehicle Refueling Equipment	14,529.19	0%	14,529.19	10,087.70	4,441.49	N/A	N/A	726.46	5.00% *
TOTAL Account 394										
633,811.33										
COMMUNICATION EQUIPMENT										
397.1	Radio Communication Equip. (Fixed)	1,591,742.35	0%	1,591,742.35	443,197.15	1,148,545.20	N/A	N/A	106,116.16	6.67% *
397.2	Radio Communication Equip. (Mobile)	810,002.48	0%	810,002.48	231,171.48	578,831.00	N/A	N/A	54,000.17	6.67% *
397.3	General Telephone Communication Equip.	508,064.64	0%	508,064.64	89,594.17	418,470.47	N/A	N/A	50,806.46	10.00% *
397.5	Supervisory & Telemetering Equip.	26,716.56	0%	26,716.56	2,830.63	23,885.93	N/A	N/A	1,781.10	6.67% *
397.8	Network Equipment	275,521.69	0%	275,521.69	153,929.32	121,592.37	N/A	N/A	55,104.34	20.00% *
TOTAL Account 397										
3,212,047.72										
267,808.23										
8.34%										

**Montana-Dakota Utilities Company**  
Common Plant

**Summary of Original Cost of Utility Plant in Service and Calculation of  
Annual Depreciation Rates and Depreciation Expense Based Upon Utilization of  
Book Depreciation Reserve and Average Remaining Lives as of December 31, 2014**

Account No.	Description	Original Cost 12/31/14	Estimated Future Net Salvage %	Original Cost Less Salvage	Book Depreciation Reserve	Net Original Cost Less Salvage	A.S.L./Survivor Curve	Average Remaining Life	Annual Depreciation Accrual	Annual Depreciation Rate
(a)	(b)	(c)	(d)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
398.0	Miscellaneous Equipment	1,238,732.27	0%	1,238,732.27	420,200.24	818,532.03	N/A	N/A	61,936.61	5.00% *
	<b>Sub-Total (General Plant) Amortization</b>	<b>11,660,225.68</b>		<b>11,660,225.68</b>	<b>4,794,886.40</b>	<b>6,865,339.28</b>			<b>1,316,707.51</b>	<b>11.29%</b>
	TOTAL General Plant	68,015,330.13	0.00	68,015,330.13	21,277,409.63	46,737,920.50			3,355,997.91	4.93%
	TOTAL Depreciable Plant	68,015,330.13	0.00	68,015,330.13	21,277,409.63	46,737,920.50			3,355,997.91	4.93%
	<b><u>Amortizable Plant</u></b>									
392.3	Aircraft Equipment	4,333,824.70								
	TOTAL Amortizable Plant	4,333,824.70								
	<b><u>NON-DEPRECIABLE PLANT</u></b>									
389.0	Land & Land Rights (General)	3,086,836.15								
	Total Land	3,086,836.15								
	<b>INTANGIBLE PLANT</b>									
303.0	Miscellaneous Intangible Plant	50,883,328.74								
	Total Intangible Plant	50,883,328.74								
	TOTAL Non-Depreciable Plant	53,970,164.89								
	TOTAL Plant in Service	126,319,319.72								
	<b>TOTAL Common Utility Plant in Service</b>									

\* Based Upon Amortization Rates.

(1) Account Fully Depreciated. No further current depreciation accrual.

Table 2 - Gross Salv

Montana-Dakota Utilities Company  
Common Plant

Montana-Dakota Utilities Company

Summary of Original Cost of Utility Plant in Service and Calculation of  
Annual Depreciation Rates and Depreciation Expense Based Upon Utilization of  
Book Depreciation Reserve and Average Remaining Lives as of December 31, 2014

Account No.	Description	Original Cost 12/31/14	Estimated Future Net Salvage	Original Cost Less Salvage	Book Depreciation Reserve	Net Original Cost Less Salvage	A.S.L./ Survivor Curve	Average Remaining Life	Annual Accrual	Annual Depr. Rate	
											(a)
390.0	General Structures	49,299,196.01	0%	49,299,196.01	(246,141.54)	246,141.54	38-R3	28.2	8,728.42	0.02%	
<b>DEPRECIABLE PLANT</b>											
<b>General Plant</b>											
OFFICE FURNITURE & EQUIPMENT											
391.1	Office Furniture & Equipment	2,599,028.93	0%	2,599,028.93	0.00	0.00	N/A	N/A	0.00	0.00%	
391.3	Computer Equipment - PC	1,796,304.13	0%	1,796,304.13	0.00	0.00	N/A	N/A	0.00	0.00%	
391.5	Computer Equipment - Other	2,083,247.21	0%	2,083,247.21	0.00	0.00	N/A	N/A	0.00	0.00%	
TOTAL Account 391											
TRANSPORTATION EQUIPMENT											
392.1	Transportation Equipment (Trailers)	2,482.58	20%	496.52	0.00	(496.52)	25-L1	23.6	0.00	0.00% (1)	
392.2	Transportation Equipment (Cars & Trucks)	7,053,425.86	20%	1,410,685.17	0.00	(1,410,685.17)	9-R3	4.9	(287,894.93)	-4.08%	
TOTAL Account 392											
393.0	Stores Equipment	97,054.09	0%	97,054.09	0.00	0.00	N/A	N/A	0.00	0.00%	
TOOLS, SHOP & GARAGE EQ.											
394.1	Tools, Shop & Garage Equip. (Non-Unitized)	514,458.89	0%	514,458.89	0.00	0.00	N/A	N/A	0.00	0.00%	
394.3	Vehicle Maintenance Equipment	104,823.25	0%	104,823.25	0.00	0.00	N/A	N/A	0.00	0.00%	
394.4	Vehicle Refueling Equipment	14,529.19	0%	14,529.19	0.00	0.00	N/A	N/A	0.00	0.00%	
TOTAL Account 394											
COMMUNICATION EQUIPMENT											
397.1	Radio Communication Equip. (Fixed)	1,591,742.35	0%	1,591,742.35	0.00	0.00	N/A	N/A	0.00	0.00%	
397.2	Radio Communication Equip. (Mobile)	810,002.48	0%	810,002.48	0.00	0.00	N/A	N/A	0.00	0.00%	
397.3	General Telephone Communication Equip.	508,064.64	0%	508,064.64	0.00	0.00	N/A	N/A	0.00	0.00%	
397.5	Supervisory & Telemetering Equip.	26,716.56	0%	26,716.56	0.00	0.00	N/A	N/A	0.00	0.00%	
397.8	Network Equipment	275,521.69	0%	275,521.69	0.00	0.00	N/A	N/A	0.00	0.00%	
TOTAL Account 397											

**Montana-Dakota Utilities Company  
Common Plant**

**Montana-Dakota Utilities Company**

**Summary of Original Cost of Utility Plant in Service and Calculation of  
Annual Depreciation Rates and Depreciation Expense Based Upon Utilization of  
Book Depreciation Reserve and Average Remaining Lives as of December 31, 2014**

Account No.	Description	Original Cost 12/31/14	Estimated Future		Original Cost Less Salvage	Book Depreciation Reserve	Net Original Cost Less Salvage	A.S.L./ Survivor Curve	Average Remaining Life	Annual Depreciation Accrual	Annual Depr. Rate
			% Net Salvage	Amount							
398.0	Miscellaneous Equipment	1,238,732.27	0%	0.00	1,238,732.27	0.00	0.00	N/A	0.00	0.00%	
	<b>Sub-Total (General Plant) Amortization</b>	<b>11,660,225.68</b>		<b>0.00</b>	<b>11,660,225.68</b>	<b>0.00</b>	<b>0.00</b>		<b>0.00</b>	<b>0.00%</b>	
	TOTAL General Plant	68,015,330.13		1,411,181.69	66,604,148.44	(246,141.54)	(1,165,040.15)		(279,166.51)	-0.41%	
	TOTAL Depreciable Plant	68,015,330.13		1,411,181.69	66,604,148.44	(246,141.54)	(1,165,040.15)		(279,166.51)	-0.41%	
	<b><u>Amortizable Plant</u></b>										
392.3	Aircraft Equipment	4,333,824.70									
	TOTAL Amortizable Plant	4,333,824.70									
	<b><u>NON-DEPRECIABLE PLANT</u></b>										
389.0	Land & Land Rights (General)	3,086,836.15									
	Total Land	3,086,836.15									
	INTANGIBLE PLANT										
303.0	Miscellaneous Intangible Plant	50,883,328.74									
	Total Intangible Plant	50,883,328.74									
	TOTAL Non-Depreciable Plant	53,970,164.89									
	TOTAL Plant in Service	126,319,319.72									
	<b>TOTAL Common Utility Plant in Service</b>										

\* Based Upon Amortization Rates.

(1) Account Fully Depreciated. No further current depreciation accrual.

Montana-Dakota Utilities Company  
Common Plant

Summary of Original Cost of Utility Plant in Service and Calculation of  
Annual Depreciation Rates and Depreciation Expense Based Upon Utilization of  
Book Depreciation Reserve and Average Remaining Lives as of December 31, 2014

Account No. (a)	Description (b)	Original Cost 12/31/14 (c)	Estimated Future Net Salvage % (d)	Estimated Future Amount (e)	Original Cost Less Salvage (f)	Book Depreciation Reserve (g)	Net Original Cost Less Salvage (h)	A.S.L./ Survivor Curve (i)	Average Remaining Life (j)	Annual Depreciation Accrual (k)	Annual Depr. Rate (l)
390.0	General Structures	49,299,196.01	5%	2,464,959.80	46,834,236.21	1,912,317.79	-4,377,277.59	38-R3	28.2	-155,222.61	-0.31%
<b>DEPRECIABLE PLANT</b>											
<b>General Plant</b>											
OFFICE FURNITURE & EQUIPMENT											
391.1	Office Furniture & Equipment	2,599,028.93	0%	0.00	2,599,028.93	0.00	0.00	N/A	N/A	0.00	0.00%
391.3	Computer Equipment - PC	1,796,304.13	0%	0.00	1,796,304.13	0.00	0.00	N/A	N/A	0.00	0.00%
391.5	Computer Equipment - Other	2,083,247.21	0%	0.00	2,083,247.21	0.00	0.00	N/A	N/A	0.00	0.00%
TOTAL Account 391											
TRANSPORTATION EQUIPMENT											
392.1	Transportation Equipment (Trailers)	2,482.58	0%	0.00	2,482.58	0.00	0.00	25-L1	23.6	0.00	0.00% (1)
392.2	Transportation Equipment (Cars & Trucks)	7,053,425.86	0%	0.00	7,053,425.86	0.00	0.00	9-R3	4.9	0.00	0.00%
TOTAL Account 392											
393.0	Stores Equipment	97,054.09	0%	0.00	97,054.09	0.00	0.00	N/A	N/A	0.00	0.00%
TOOLS, SHOP & GARAGE EQ.											
394.1	Tools, Shop & Garage Equip. (Non-Unitize)	514,458.89	0%	0.00	514,458.89	0.00	0.00	N/A	N/A	0.00	0.00%
394.3	Vehicle Maintenance Equipment	104,823.25	0%	0.00	104,823.25	0.00	0.00	N/A	N/A	0.00	0.00%
394.4	Vehicle Refueling Equipment	14,529.19	0%	0.00	14,529.19	0.00	0.00	N/A	N/A	0.00	0.00%
TOTAL Account 394											
COMMUNICATION EQUIPMENT											
397.1	Radio Communication Equip. (Fixed)	1,591,742.35	0%	0.00	1,591,742.35	0.00	0.00	N/A	N/A	0.00	0.00%
397.2	Radio Communication Equip. (Mobile)	810,002.48	0%	0.00	810,002.48	0.00	0.00	N/A	N/A	0.00	0.00%
397.3	General Telephone Communication Equip.	508,064.64	0%	0.00	508,064.64	0.00	0.00	N/A	N/A	0.00	0.00%
397.5	Supervisory & Telemetering Equip.	26,716.56	0%	0.00	26,716.56	0.00	0.00	N/A	N/A	0.00	0.00%
397.8	Network Equipment	275,521.69	0%	0.00	275,521.69	0.00	0.00	N/A	N/A	0.00	0.00%
TOTAL Account 397											
TOTAL Account 397											

**Montana-Dakota Utilities Company**  
Common Plant

**Summary of Original Cost of Utility Plant in Service and Calculation of  
Annual Depreciation Rates and Depreciation Expense Based Upon Utilization of  
Book Depreciation Reserve and Average Remaining Lives as of December 31, 2014**

Account No. (a)	Description (b)	Original Cost 12/31/14 (c)	Estimated Future Net Salvage Amount (e)	Original Cost Less Salvage (f)		Book Depreciation Reserve (g)	Net Original Cost Less Salvage (h)	A.S.L./ Survivor Curve (i)	Average Remaining Life (j)	Annual Depreciation Accrual (k)	Annual Depr. Rate (l)
				% (d)	Cost Less Salvage						
398.0	Miscellaneous Equipment	1,238,732.27	0.00	1,238,732.27	0.00	0.00	0.00	N/A	N/A	0.00	0.00% *
	<b>Sub-Total (General Plant) Amortization</b>	<b>11,660,225.68</b>	<b>0.00</b>	<b>11,660,225.68</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>			<b>0.00</b>	<b>0.00%</b>
	TOTAL General Plant	68,015,330.13	2,464,959.80	65,550,370.33	1,912,317.79	-4,377,277.59				-155,222.61	-0.23%
	TOTAL Depreciable Plant	68,015,330.13	2,464,959.80	65,550,370.33	1,912,317.79	-4,377,277.59				-155,222.61	-0.23%
	<b><u>Amortizable Plant</u></b>										
392.3	Aircraft Equipment	4,333,824.70									
	TOTAL Amortizable Plant	4,333,824.70									
	<b><u>NON-DEPRECIABLE PLANT</u></b>										
389.0	Land & Land Rights (General)	3,086,836.15									
	Total Land	3,086,836.15									
	<b>INTANGIBLE PLANT</b>										
303.0	Miscellaneous Intangible Plant	50,883,328.74									
	Total Intangible Plant	50,883,328.74									
	TOTAL Non-Depreciable Plant	53,970,164.89									
	TOTAL Plant in Service	126,319,319.72									
	<b>TOTAL Common Utility Plant in Service</b>										

\* Based Upon Amortization Rates.

(1) Account Fully Depreciated. No further current depreciation accrual.

Table 3

**Montana-Dakota Utilities  
Common Plant**

**Original Cost Per Company Books, Adjustments, And  
Original Cost Per Depreciation Study of December 31, 2014**

Account <u>No.</u> (a)	<u>Description</u> (b)	Original Cost Per Co. Books <u>12/31/14</u> (c)	(Pending) <u>Retirements</u> (d)	Original Cost Per Depr Study Data <u>12/31/14</u> (e)
<b><u>DEPRECIABLE PLANT</u></b>				
<b><u>General Plant</u></b>				
390.0	General Structures	49,299,196.01		49,299,196.01
OFFICE FURNITURE & EQUIPMENT				
391.1	Office Furniture & Equipment	2,599,028.93		2,599,028.93
391.2	Computer Equipment - Honeywell	0.00		0.00
391.3	Computer Equipment - PC	1,796,304.13		1,796,304.13
391.4	Computer Equipment - Prime/Sun	0.00		0.00
391.5	Computer Equipment - Other	2,083,247.21		2,083,247.21
	TOTAL Account 391	6,478,580.27	0.00	6,478,580.27
TRANSPORTATION EQUIPMENT				
392.1	Transportation Equipment (Trailers)	2,482.58		2,482.58
392.2	Transportation Equipment (Cars & Trucks)	7,053,425.86		7,053,425.86
	TOTAL Account 392	7,055,908.44	0.00	7,055,908.44
393.0	Stores Equipment	97,054.09		97,054.09
TOOLS, SHOP & GARAGE EQ.				
394.1	Tools, Shop & Garage Equip. (Non-Unitizec	514,458.89		514,458.89
394.3	Vehicle Maintenance Equipment	104,823.25		104,823.25
394.4	Vehicle Refueling Equipment	14,529.19		14,529.19
	TOTAL Account 394	633,811.33	0.00	633,811.33

Table 3

**Montana-Dakota Utilities  
Common Plant**

**Original Cost Per Company Books, Adjustments, And  
Original Cost Per Depreciation Study of December 31, 2014**

Account <u>No.</u> (a)	<u>Description</u> (b)	Original Cost Per Co. Books <u>12/31/14</u> (c)	(Pending) <u>Retirements</u> (d)	Original Cost Per Depr Study Data <u>12/31/14</u> (e)
	<b>COMMUNICATION EQUIPMENT</b>			
397.1	Radio Communication Equip. (Fixed)	1,591,742.35		1,591,742.35
397.2	Radio Communication Equip. (Mobile)	810,002.48		810,002.48
397.3	General Telephone Communication Equip.	508,064.64		508,064.64
397.5	Supervisory & Telemetering Equip.	26,716.56		26,716.56
397.8	Network Equipment	275,521.69		275,521.69
	TOTAL Account 397	3,212,047.72	0.00	3,212,047.72
398.0	Miscellaneous Equipment	1,238,732.27		1,238,732.27
	<b>Sub-Total (General Plant) Amortization</b>	<b>11,660,225.68</b>	<b>0.00</b>	<b>11,660,225.68</b>
	TOTAL General Plant	68,015,330.13	0.00	68,015,330.13
	TOTAL Depreciable Plant	68,015,330.13	0.00	68,015,330.13
	<b><u>Amortizable Plant</u></b>			
392.3	Aircraft Equipment	4,333,824.70		4,333,824.70
	TOTAL Amortizable Plant	4,333,824.70	0.00	4,333,824.70
	<b><u>NON-DEPRECIABLE PLANT</u></b>			
389.0	Land & Land Rights (General)	3,086,836.15		3,086,836.15
	Total Land	3,086,836.15	0.00	3,086,836.15
	<b>INTANGIBLE PLANT</b>			
303.0	Miscellaneous Intangible Plant	50,883,328.74		50,883,328.74
	Total Intangible Plant	50,883,328.74	0.00	50,883,328.74
	TOTAL Non-Depreciable Plant	53,970,164.89	0.00	53,970,164.89
	TOTAL Plant in Service	126,319,319.72	0.00	126,319,319.72

Table 4

**Montana-Dakota Utilities Company  
Common Plant**

**Summary of Book Depreciation Reserve Relative To Original Cost of Utility Plant in Service,  
Adjustments, And Depreciation Reserve Per Depreciation Study as of December 31, 2014**

Account <u>No.</u> (a)	<u>Description</u> (b)	Depr Reserve Per Books <u>12/31/14</u> (c)	(Pending) <u>Retirements</u> (d)	Depr Reserve Per Depr Study <u>12/31/14</u> (e)
<b><u>DEPRECIABLE PLANT</u></b>				
<b><u>General Plant</u></b>				
390.00	General Structures	14,804,363.01		14,804,363.01
OFFICE FURNITURE & EQUIPMENT				
391.10	Office Furniture & Equipment	1,197,289.08		1,197,289.08
391.20	Computer Equipment - Honeywell	0.00		0.00
391.30	Computer Equipment - PC	848,650.94		848,650.94
391.40	Computer Equipment - Prime/Sun	0.00		0.00
391.50	Computer Equipment - Other	1,043,724.92		1,043,724.92
	TOTAL Account 391	3,089,664.94	0.00	3,089,664.94
TRANSPORTATION EQUIPMENT				
392.10	Transportation Equipment (Trailers)	137.60		137.60
392.20	Transportation Equipment (Cars & Trucks)	3,344,198.87		3,344,198.87
	TOTAL Account 392	3,344,336.47	0.00	3,344,336.47
393.00	Stores Equipment	39,609.25		39,609.25
TOOLS, SHOP & GARAGE EQ.				
394.10	Tools, Shop & Garage Equip. (Non-Unitized)	262,037.30		262,037.30
394.30	Vehicle Maintenance Equipment	52,564.22		52,564.22
394.40	Vehicle Refueling Equipment	10,087.70		10,087.70
	TOTAL Account 394	324,689.22	0.00	324,689.22
COMMUNICATION EQUIPMENT				
397.10	Radio Communication Equip. (Fixed)	443,197.15		443,197.15
397.20	Radio Communication Equip. (Mobile)	231,171.48		231,171.48
397.30	General Telephone Communication Equip.	89,594.17		89,594.17
397.50	Supervisory & Telemetering Equip.	2,830.63		2,830.63
397.80	Network Equipment	153,929.32		153,929.32
	TOTAL Account 397	920,722.75	0.00	920,722.75

Table 4

**Montana-Dakota Utilities Company  
Common Plant**

**Summary of Book Depreciation Reserve Relative To Original Cost of Utility Plant in Service,  
Adjustments, And Depreciation Reserve Per Depreciation Study as of December 31, 2014**

Account <u>No.</u> (a)	<u>Description</u> (b)	Depr Reserve Per Books <u>12/31/14</u> (c)	(Pending) <u>Retirements</u> (d)	Depr Reserve Per Depr Study <u>12/31/14</u> (e)
398.00	Miscellaneous Equipment	420,200.24		420,200.24
	<b>Sub-Total (General Plant) Amortization</b>	<b>4,794,886.40</b>		<b>4,794,886.40</b>
	TOTAL General Plant	22,943,585.88	0.00	22,943,585.88
	TOTAL Depreciable Plant	22,943,585.88	0.00	22,943,585.88
	<b><u>Amortizable Plant</u></b>			
392.30	Aircraft Equipment	2,219,871.79		2,219,871.79
	TOTAL Amortizable Plant	2,219,871.79	0.00	2,219,871.79
	<b><u>NON-DEPRECIABLE PLANT</u></b>			
389.00	Land & Land Rights (General)	0.00		0.00
	Total Land	0.00	0.00	0.00
	INTANGIBLE PLANT			
303.00	Miscellaneous Intangible Plant	18,334,573.27		18,334,573.27
	Total Intangible Plant	18,334,573.27	0.00	18,334,573.27
	TOTAL Non-Depreciable Plant	18,334,573.27	0.00	18,334,573.27
	TOTAL Plant in Service	43,498,030.94	0.00	43,498,030.94
	<b>TOTAL Common Utility Plant in Service</b>	<b>43,498,030.94</b>	<b>0.00</b>	<b>43,498,030.94</b>
399.00	ARO	0.00		
	Total Including ARO	43,498,030.94		

Table 5

**Montana-Dakota Utilities Company  
Common Plant**

**Summary of Original Cost of Utility Plant in Service as of December 31, 2014 and  
Present and Proposed Parameters**

Account No.	Description	Present Parameters					Proposed Parameters					Average Remaining Life (o)
		Original Cost 12/31/14 (c)	Net Salvage W/ COR % (d)	Gross COR % (f)	A.S.L./ Survivor Curve (g)	Present Depr. Rate-% (h)	Average Remaining Life (i)	Net Salvage W/O COR % (j)	Gross COR % (l)	A.S.L./ Survivor Curve (n)	Average Remaining Life (o)	
<b>DEPRECIABLE PLANT</b>												
<b>General Plant</b>												
390.0	General Structures	49,299,196.01	-10%	-10%	35-R3	2.11%	17.8	5%	0%	5%	38-R3	28.2
OFFICE FURNITURE & EQUIPMENT												
391.1	Office Furniture & Equipment	2,599,028.93	0%	0%	N/A	6.67%	23.8	0%	0%	0%	N/A	*
391.3	Computer Equipment - PC	1,796,304.13	0%	0%	5-R3	20.00%	26.1	0%	0%	0%	N/A	*
391.5	Computer Equipment - Other	2,083,247.21	0%	0%	N/A	20.00%	26.2	0%	0%	0%	N/A	*
TOTAL Account 391		6,478,580.27										
TRANSPORTATION EQUIPMENT												
392.1	Transportation Equipment (Trailers)	2,482.58	15%	0%	20-L2	4.17%	8.0	20%	20%	0%	25-L1	23.6
392.2	Transportation Equipment (Cars & Trucks)	7,053,425.86	20%	0%	7-R3	4.11%	3.2	20%	20%	0%	9-R3	4.9
TOTAL Account 392		7,055,908.44										
393.0	Stores Equipment	97,054.09	0%	0%	N/A	3.33%	24.0	0%	0%	0%	N/A	*
TOOLS, SHOP & GARAGE EQ.												
394.1	Tools, Shop & Garage Equip. (Non-Unitized)	514,458.89	0%	0%	N/A	5.56%	12.6	0%	0%	0%	N/A	*
394.3	Vehicle Maintenance Equipment	104,823.25	0%	0%	N/A	5.00%	16.5	0%	0%	0%	N/A	*
394.4	Vehicle Refueling Equipment	14,529.19	0%	0%	N/A	5.00%	5.5	0%	0%	0%	N/A	*
TOTAL Account 394		633,811.33										
COMMUNICATION EQUIPMENT												
397.1	Radio Communication Equip. (Fixed)	1,591,742.35	-10%	-10%	N/A	6.67%	12.3	0%	0%	0%	N/A	*
397.2	Radio Communication Equip. (Mobile)	810,002.48	0%	0%	N/A	6.67%	7.6	0%	0%	0%	N/A	*
397.3	General Telephone Communication Equip.	508,064.64	10%	0%	N/A	10.00%	9.8	0%	0%	0%	N/A	*
397.5	Supervisory & Telemetering Equip.	26,716.56	0%	0%	N/A	6.67%	9.3	0%	0%	0%	N/A	*
397.8	Network Equipment	275,521.69	0%	0%	N/A	20.00%	2.4	0%	0%	0%	N/A	*
TOTAL Account 397		3,212,047.72										
398.0	Miscellaneous Equipment	1,238,732.27	5%	0%	N/A	5.00%	11.3	0%	0%	0%	N/A	*
<b>Sub-Total (General Plant) Amortization</b>		<b>11,660,225.68</b>										
TOTAL General Plant		68,015,330.13										
TOTAL Depreciable Plant		68,015,330.13										

Montana-Dakota Utilities Company  
Common Plant

Summary of Original Cost of Utility Plant in Service as of December 31, 2014 and Present and Proposed Parameters

Account No. (a)	Description (b)	Original Cost 12/31/14 (c)	Present Parameters				Proposed Parameters					
			Net Salvage W/ COR % (d)	Net Salvage W/O COR % (e)	Gross COR % (f)	A.S.L./ Survivor Curve (g)	Present Depr. Rate-% (h)	Average Remaining Life (i)	Net Salvage W/ COR % (j)	Net Salvage W/O COR % (k)	Gross COR % (l)	A.S.L./ Survivor Curve (n)
<b>Amortizable Plant</b>												
392.3	Aircraft Equipment	4,333,824.70										
	TOTAL Amortizable Plant	4,333,824.70										
<b>NON-DEPRECIABLE PLANT</b>												
389.0	Land & Land Rights (General)	3,086,836.15										
	Total Land	3,086,836.15										
<b>INTANGIBLE PLANT</b>												
303.0	Miscellaneous Intangible Plant	50,883,328.74										
	Total Intangible Plant	50,883,328.74										
	TOTAL Non-Depreciable Plant	53,970,164.89										
	TOTAL Plant in Service	126,319,319.72										

**TOTAL Common Utility Plant in Service**

\* Based Upon Amortization Rates.

**Montana-Dakota Utilities Company**  
Common Plant

Summary or Original Cost of Utility Plant in Service as of December 31, 2014  
and Related Annual Depreciation/Amortization Expense  
Under Present Rates and Proposed Amortization

Account No.	Description	Original Cost 12/31/14 (c)	Present Rates		Proposed Amortization Annual Accrual (g)	Net Change Depr/Amort Expense (h)
			Rate % (d)	Annual Accrual (e)		
<b>DEPRECIABLE GENERAL PLANT</b>						
<b>OFFICE FURNITURE &amp; EQUIPMENT</b>						
391.1	Office Furniture & Equipment	2,599,028.93	6.67%	173,268.60	173,268.60	0.00
391.3	Computer Equipment - PC	1,796,304.13	20.00%	359,260.83	359,260.83	0.00
391.5	Computer Equipment - Other	2,083,247.21	20.00%	416,649.44	416,649.44	0.00
	TOTAL Account 391	6,478,580.27	14.65%	949,178.87	949,178.87	0.00
393	Stores Equipment	97,054.09	3.33%	3,235.14	3,235.14	0.00
<b>TOOLS, SHOP &amp; GARAGE EQ.</b>						
394.1	Tools, Shop & Garage Equip. (Non-Unitized)	514,458.89	5.56%	28,581.05	28,581.05	0.00
394.3	Vehicle Maintenance Equipment	104,823.25	5.00%	5,241.16	5,241.16	0.00
394.4	Vehicle Refueling Equipment	14,529.19	5.00%	726.46	726.46	0.00
	TOTAL Account 394	633,811.33	5.45%	34,548.67	34,548.67	0.00
<b>COMMUNICATION EQUIPMENT</b>						
397.1	Radio Communication Equip. (Fixed)	1,591,742.35	6.67%	106,116.16	106,116.16	0.00
397.2	Radio Communication Equip. (Mobile)	810,002.48	6.67%	54,000.17	54,000.17	0.00
397.3	General Telephone Communication Equip.	508,064.64	10.00%	50,806.46	50,806.46	0.00
397.5	Supervisory & Telemetering Equip.	26,716.56	6.67%	1,781.10	1,781.10	0.00
397.8	Network Equipment	275,521.69	20.00%	55,104.34	55,104.34	0.00
	TOTAL Account 397	3,212,047.72	8.34%	267,808.23	267,808.23	0.00
398	Miscellaneous Equipment	1,238,732.27	5.00%	61,936.61	61,936.61	0.00
	<b>Total (General Plant) Amortization</b>	<b>11,660,225.68</b>	<b>11.29%</b>	<b>1,316,707.52</b>	<b>1,316,707.52</b>	<b>0.00</b>

**Montana-Dakota Utilities**

**Table 7**

**Account 391.10 - Office Furniture & Equipment**

**Development of Annual Amortization Amount Over Estimated Average Life of Property**

**Average Service 15 Years**

<b>Year</b>	<b>Original Cost</b>	<b>12/31/2014 Accum. Reserve</b>	<b>Remaining Amount To Be Amortized</b>	<b>Remaining Amortization Period</b>	<b>Annual Amortization Amount</b>
2000	112,470.56	105,309.17	7,161.39	1	7,498.04
2001	259,787.82	226,470.62	33,317.20	2	17,319.19
2002	128,177.44	103,462.01	24,715.43	3	8,545.16
2003	200,359.86	148,787.99	51,571.87	4	13,357.32
2004	238,450.48	161,676.47	76,774.01	5	15,896.70
2005	194,119.53	119,083.65	75,035.88	6	12,941.30
2006	113,039.74	62,045.37	50,994.37	7	7,535.98
2007	287,605.77	139,289.43	148,316.34	8	19,173.72
2008	95,339.47	40,017.08	55,322.39	9	6,355.96
2009	-	-	-	10	-
2010	32,157.67	9,344.51	22,813.16	11	2,143.84
2011	74,683.24	16,879.15	57,804.09	12	4,978.88
2012	216,594.23	34,966.02	181,628.21	13	14,439.62
2013	140,803.66	13,638.43	127,165.23	14	9,386.91
	<u>2,599,028.93</u>	<u>1,197,289.08</u>	<u>1,401,739.85</u>		<u>173,268.60</u>

Composite Depr. Rate                      173,268.60 /                      2,599,028.93 =                      6.67%

Montana-Dakota Utilities

Table 7

Account 391.30 - Computer Equipment - PC

Development of Annual Amortization Amount Over Estimated Average Life of Property

Average Service 5 Years

Year	Original Cost	12/31/2014 Accum. Reserve	Remaining Amount To Be Amortized	Remaining Amortization Period	Annual Amortization Amount
2010	278,017.93	260,892.89	17,125.04	1	55,603.59
2011	281,451.83	205,422.99	76,028.84	2	56,290.37
2012	412,086.52	214,835.15	197,251.37	3	82,417.30
2013	390,851.86	122,258.87	268,592.99	4	78,170.37
2014	433,895.99	45,241.04	388,654.95	5	86,779.20
	1,796,304.13	848,650.95	947,653.18		359,260.83

Composite Depr. Rate 359,260.83 / 1,796,304.13 = 20.00%

**Montana-Dakota Utilities**

**Table 7**

**Account 391.50 - Computer Equipment - Other**

**Development of Annual Amortization Amount Over Estimated Average Life of Property**

**Average Service 5 Years**

<b>Year</b>	<b>Original Cost</b>	<b>12/31/2014 Accum. Reserve</b>	<b>Remaining Amount To Be Amortized</b>	<b>Remaining Amortization Period</b>	<b>Annual Amortization Amount</b>
2011	9,116.71	6,542.27	2,574.44	2	1,823.34
2012	2,010,784.29	1,030,688.66	980,095.63	3	402,156.86
2013	-	-	-	4	-
2014	63,346.21	6,494.01	56,852.20	5	12,669.24
	<u>2,083,247.21</u>	<u>1,043,724.93</u>	<u>1,039,522.28</u>		<u>416,649.44</u>

Composite Depr. Rate                      416,649.44 / 2,083,247.21 =      20.00%

**Montana-Dakota Utilities**  
**Account 393 - Stores Equipment**

**Table 7**

**Development of Annual Amortization Amount Over Estimated Average Life of Property**

**Average Service 30 Years**

<b>Year</b>	<b>Original Cost</b>	<b>12/31/2014 Accum. Reserve</b>	<b>Remaining Amount To Be Amortized</b>	<b>Remaining Amortization Period</b>	<b>Annual Amortization Amount</b>
1995	10,272.04	8,685.30	1,586.74	11	342.40
1996		-	-	12	-
1997	18,926.69	14,361.71	4,564.98	13	630.89
1998		-	-	14	-
1999	9,502.32	6,386.38	3,115.94	15	316.74
2000	12,486.01	7,850.28	4,635.73	16	416.20
2001		-	-	17	-
2002		-	-	18	-
2003		-	-	19	-
2004	-	-	-	20	-
2005	-	-	-	21	-
2006	-	-	-	22	-
2007	4,385.78	1,426.27	2,959.51	23	146.19
2008	-	-	-	24	-
2009	-	-	-	25	-
2010	-	-	-	26	-
2011	-	-	-	27	-
2012	-	-	-	28	-
2013	-	-	-	29	-
2014	41,481.25	899.32	40,581.93	30	1,382.71
	<u>97,054.09</u>	<u>39,609.25</u>	<u>57,444.84</u>		<u>3,235.14</u>

Composite Depr. Rate                      3,235.14 /                      97,054.09 =                      3.33%

**Montana-Dakota Utilities**

**Table 7**

**Account 394.1 - Tools, Shop & Garage Equipment (Non-Unitized)**

**Development of Annual Amortization Amount Over Estimated Average Life of Property**

**Average Service 18 Years**

Year	Original Cost	12/31/2014 Accum. Reserve	Remaining Amount To Be Amortized	Remaining Amortization Period	Annual Amortization Amount
1996	6,676.00	6,676.00	-	-	370.89
1997	35,774.05	35,774.05	-	1	1,987.45
1998	24,269.19	24,269.19	-	2	1,348.29
1999	18,290.18	18,290.18	-	3	1,016.12
2000	29,508.19	29,508.19	-	4	1,639.34
2001	10,700.16	9,088.02	1,612.14	5	594.45
2002	12,564.39	9,694.44	2,869.95	6	698.02
2003	4,145.01	2,942.35	1,202.66	7	230.28
2004	46,034.92	29,836.51	16,198.41	8	2,557.50
2005	30,657.04	17,977.33	12,679.71	9	1,703.17
2006	34,082.71	17,882.34	16,200.37	10	1,893.48
2007	15,616.53	7,229.65	8,386.88	11	867.59
2008	46,070.14	18,484.35	27,585.79	12	2,559.45
2009	6,617.89	2,246.74	4,371.15	13	367.66
2010	29,472.55	8,186.56	21,285.99	14	1,637.36
2011	64,949.37	14,031.83	50,917.54	15	3,608.30
2012	39,091.97	6,032.52	33,059.45	16	2,171.78
2013	33,002.84	3,055.72	29,947.12	17	1,833.49
2014	26,935.76	831.32	26,104.44	18	1,496.43
	514,458.89	262,037.30	252,421.59		28,581.05

Composite Depr. Rate                      28,581.05 /    514,458.89 =    5.56%

**Montana-Dakota Utilities**

**Table 7**

**Account 394.3 - Vehicle Maintenance Equipment**

**Development of Annual Amortization Amount Over Estimated Average Life of Property**

Average Service **20 Years**

Year	Original Cost	12/31/2014 Accum. Reserve	Remaining Amount To Be Amortized	Remaining Amortization Period	Annual Amortization Amount
1998	15,978.08	12,955.77	3,022.31	4	798.90
1999	3,603.02	2,744.44	858.58	5	180.15
2000	5,963.88	4,249.64	1,714.24	6	298.19
2001	2,238.57	1,485.11	753.46	7	111.93
2002		-	-	8	-
2003	9,575.67	5,411.55	4,164.12	9	478.78
2004	3,101.37	1,600.29	1,501.08	10	155.07
2005		-	-	11	-
2006	8,048.09	3,361.76	4,686.33	12	402.40
2007	56,314.57	20,755.67	35,558.90	13	2,815.73
2008		-	-	14	-
2009		-	-	15	-
2010		-	-	16	-
2011		-	-	17	-
2012		-	-	18	-
2013		-	-	19	-
2014		-	-	20	-
	<u>104,823.25</u>	<u>52,564.22</u>	<u>52,259.03</u>		<u>5,241.16</u>

Composite Depr. Rate                      5,241.16 /      104,823.25 =      5.00%

**Montana-Dakota Utilities**

**Table 7**

**Account 394.4 - Vehicle Refueling Equipment**

**Development of Annual Amortization Amount Over Estimated Average Life of Property**

**Average Service 20 Years**

<b>Year</b>	<b>Original Cost</b>	<b>12/31/2014 Accum. Reserve</b>	<b>Remaining Amount To Be Amortized</b>	<b>Remaining Amortization Period</b>	<b>Annual Amortization Amount</b>
2001	10,714.54	8,066.70	2,647.84	7	535.73
2002		-	-	8	-
2003		-	-	9	-
2004		-	-	10	-
2005	3,814.65	2,021.00	1,793.65	11	190.73
2006		-	-	12	-
2007		-	-	13	-
2008		-	-	14	-
2009		-	-	15	-
2010		-	-	16	-
2011		-	-	17	-
2012		-	-	18	-
2013		-	-	19	-
2014		-	-	20	-
	<u>14,529.19</u>	<u>10,087.70</u>	<u>4,441.49</u>		<u>726.46</u>

Composite Depr. Rate                      726.46 /                      14,529.19 =                      5.00%

**Montana-Dakota Utilities**

**Table 7**

**Account 397.10 - Radio Communications Equipment (Fixed)**

**Development of Annual Amortization Amount Over Estimated Average Life of Property**

**Average Service 15 Years**

Year	Original Cost	12/31/2014 Accum. Reserve	Remaining Amount To Be Amortized	Remaining Amortization Period	Annual Amortization Amount
2000	70,244.37	61,177.82	9,066.55	1	4,682.96
2001		-	-	2	-
2002	27,105.71	20,350.98	6,754.73	3	1,807.05
2003	2,425.10	1,675.10	750.00	4	161.67
2004	25,355.96	15,991.30	9,364.66	5	1,690.40
2005	16,932.68	9,661.93	7,270.75	6	1,128.85
2006	62,129.28	31,719.75	30,409.53	7	4,141.95
2007	6,750.02	3,040.75	3,709.27	8	450.00
2008	25,327.84	9,888.40	15,439.44	9	1,688.52
2009	678,246.85	224,060.34	454,186.51	10	45,216.46
2010	67,374.52	18,210.54	49,163.98	11	4,491.63
2011	91,653.20	19,267.71	72,385.49	12	6,110.21
2012	27,015.84	4,056.70	22,959.14	13	1,801.06
2013	155,578.42	14,017.00	141,561.42	14	10,371.89
2014	335,602.56	10,078.82	325,523.74	15	22,373.50
	<u>1,591,742.35</u>	<u>443,197.15</u>	<u>1,148,545.20</u>		<u>106,116.16</u>

Composite Depr. Rate                      106,116.16 / 1,591,742.35 =                      6.67%

**Montana-Dakota Utilities**

**Table 7**

**Account 397.20 - Radio Communications Equipment (Mobile)**

**Development of Annual Amortization Amount Over Estimated Average Life of Property**

Average Service | 15 Years

Year	Original Cost	12/31/2014 Accum. Reserve	Remaining Amount To Be Amortized	Remaining Amortization Period	Annual Amortization Amount
2002	10,689.91	8,319.40	2,370.51	3	712.66
2003	16,673.03	11,937.69	4,735.34	4	1,111.54
2004	41,983.31	27,445.67	14,537.64	5	2,798.89
2005	8,242.00	4,874.88	3,367.12	6	549.47
2006	-	-	-	7	-
2007	1,255.68	586.34	669.34	8	83.71
2008	95,101.86	38,486.66	56,615.20	9	6,340.12
2009	265,292.40	90,843.80	174,448.60	10	17,686.16
2010	61,810.83	17,317.49	44,493.34	11	4,120.72
2011	56,091.35	12,222.83	43,868.52	12	3,739.42
2012	64,821.15	10,089.38	54,731.77	13	4,321.41
2013	51,295.64	4,790.49	46,505.15	14	3,419.71
2014	136,745.32	4,256.87	132,488.45	15	9,116.35
	810,002.48	231,171.48	578,831.00		54,000.17

Composite Depr. Rate                      54,000.17 /                      810,002.48 =                      6.67%

**Montana-Dakota Utilities**

**Table 7**

**Account 397.30 - General Telephone Communication Equipment**

**Development of Annual Amortization Amount Over Estimated Average Life of Property**

**Average Service 10 Years**

<b>Year</b>	<b>Original Cost</b>	<b>12/31/2014 Accum. Reserve</b>	<b>Remaining Amount To Be Amortized</b>	<b>Remaining Amortization Period</b>	<b>Annual Amortization Amount</b>
2005	683.97	498.37	185.60	1	68.40
2006		-	-	2	-
2007	46,853.50	26,951.99	19,901.51	3	4,685.35
2008	26,647.79	13,285.02	13,362.77	4	2,664.78
2009	717.34	302.60	414.74	5	71.73
2010	-	-	-	6	-
2011	-	-	-	7	-
2012	22,514.99	4,317.17	18,197.82	8	2,251.50
2013	371,466.82	42,736.49	328,730.33	9	37,146.68
2014	39,180.23	1,502.53	37,677.70	10	3,918.02
	<u>508,064.64</u>	<u>89,594.17</u>	<u>418,470.47</u>		<u>50,806.46</u>

Composite Depr. Rate                      50,806.46 /                      418,470.47 =                      10.00%

**Montana-Dakota Utilities**

**Table 7**

**Account 397.50 - Supervisory & Telemetry Equipment**

**Development of Annual Amortization Amount Over Estimated Average Life of Property**

**Average Service 15 Years**

<b>Year</b>	<b>Original Cost</b>	<b>12/31/2014 Accum. Reserve</b>	<b>Remaining Amount To Be Amortized</b>	<b>Remaining Amortization Period</b>	<b>Annual Amortization Amount</b>
2005	2,001.82	1,129.18	872.64	6	133.45
2006	-	-	-	7	-
2007	-	-	-	8	-
2008	-	-	-	9	-
2009	-	-	-	10	-
2010	-	-	-	11	-
2011	-	-	-	12	-
2012	3,111.92	461.94	2,649.98	13	207.46
2013	10,073.86	897.23	9,176.63	14	671.59
2014	11,528.96	342.28	11,186.68	15	768.60
	<u>26,716.56</u>	<u>2,830.63</u>	<u>23,885.93</u>		<u>1,781.10</u>

Composite Depr. Rate                      1,781.10 /                      26,716.56 =                      6.67%

**Montana-Dakota Utilities**

**Table 7**

**Account 397.8 - Network Equipment**

**Development of Annual Amortization Amount Over Estimated Average Life of Property**

Average Service **5 Years**

Year	Original Cost	12/31/2014 Accum. Reserve	Remaining Amount To Be Amortized	Remaining Amortization Period	Annual Amortization Amount
2009	12,511.22	12,511.22	-	-	2,502.24
2010	124,218.01	103,822.33	20,395.68	1	24,843.60
2011	14,912.44	9,769.10	5,143.34	2	2,982.49
2012	36,883.11	17,258.60	19,624.51	3	7,376.62
2013	12,963.75	3,639.65	9,324.10	4	2,592.75
2014	74,033.16	6,928.42	67,104.74	5	14,806.63
	275,521.69	153,929.32	121,592.37		55,104.34

Composite Depr. Rate                      55,104.34 /                      275,521.69 =                      20.00%

**Montana-Dakota Utilities**

**Table 7**

**Account 398.0 - Miscellaneous Equipment**

**Development of Annual Amortization Amount Over Estimated Average Life of Property**

**Average Service Life: 20 Years**

Year	Original Cost	12/31/2014 Accum. Reserve	Remaining Amount To Be Amortized	Remaining Amortization Period	Annual Amortization Amount
1994	22,987.54	22,987.54	-	-	1,149.38
1995	11,583.82	11,583.82	-	1	579.19
2009	-	-	-	15	-
2010	74,799.68	18,211.09	56,588.59	16	3,739.98
2011	31,820.28	6,025.54	25,794.74	17	1,591.01
2012	385,682.19	52,166.69	333,515.50	18	19,284.11
2013	44,771.16	3,633.40	41,137.76	19	2,238.56
2014	123,935.77	3,352.67	120,583.10	20	6,196.79
	<u>1,238,732.27</u>	<u>420,200.24</u>	<u>818,532.03</u>		<u>61,936.61</u>

Composite Depr. Rate =  $\frac{61,936.61}{1,238,732.27} = 5.00\%$

# **SECTION 3**

# **MONTANA-DAKOTA UTILITIES**

## **Common Plant**

### General

This report sets forth the results of our study of the depreciable property of Montana-Dakota Utilities – Common Plant (MDU or the Company) as of December 31, 2014 and contains the basic parameters (recommended average service lives and life characteristics) for the proposed average remaining life depreciation rates. All average service lives set forth in this report are developed based upon plant in service as of December 31, 2014.

The scope of the study included an analysis of MDU's historical data through December 31, 2014, discussions with Company management and staff to identify prior and prospective factors affecting the Company's plant in service, as well as interpretation of past service life data experience and future life expectancies to determine the appropriate average service lives of the Company's surviving plant. The service lives and life characteristics resulting from the in-depth study were utilized together with the Company's plant in service and book depreciation reserve to determine the recommended Average Remaining Life (ARL) depreciation rates for the Company's plant in service as of December 31, 2014.

In preparing the study, the Company's historical investment data were studied using various service life analysis techniques. Further, discussions were held with the MDU's management to obtain an overview of the Company's facilities and to discuss

the general scope of operations together with other factors which could have a bearing on the service lives of the Company's property.

The Company maintains property records containing a summary of its fixed capital investments by property account. This investment data was analyzed and summarized by property group and/or sub group and vintage then utilized as a basis for the various depreciation calculations.

### Depreciation Study Overview

There are numerous methods utilized to recover property investment depending upon the goal. For example, accelerated methods such as double declining balance and sum of years digits are methods used in tax accounting to motivate additional investments. Broad Group (BG) and Equal Life Group (ELG) are both Straight Line Grouping Procedures recognized and utilized by various regulatory jurisdictions depending upon the policy of the specific agency.

The Straight Line Group Method of depreciation utilized in this study to develop the recommended depreciation rates is the Broad Group Procedure together with the Average Remaining Life Technique.

The distinction between the Whole Life and Remaining Life Techniques is that under the Whole Life Technique, the depreciation rate is based on the recovery of the investment and average net salvage over the average service life of the property group. In comparison, under the Average Remaining Life Technique, the resulting annual depreciation rate incorporates the recovery of the investment (and future net salvage) less any recovery experienced to date over the average remaining life of the property group.

That is, the Average Remaining Life technique is based upon recovering the net book cost (original cost less book reserve) of the surviving plant in service over its estimated remaining useful life. Any variance between the book reserve and an implied theoretical calculated reserve is compensated for under this procedure. As the Company's book reserve increases above or declines below the theoretical reserve at a specific point in time, the Company's average remaining life depreciation rate in subsequent years will be increased or decreased to compensate for the variance, thereby, assuring full recovery of the Company's investment by the end of the property's life.

The Company, like any other business, includes as an annual operating expense an amount which reflects a portion of the capital investment which was consumed in providing service during the accounting period. The annual depreciation amount to be recognized is based upon the remaining productive life over which the un-depreciated capital investment needs to be recovered. The determination of the productive remaining life for each property group usually includes an in-depth study of past experience in addition to estimates of future expectations.

#### Annual Depreciation Accrual

Through the utilization of the Average Remaining Life Technique, the Company will recover the un-depreciated fixed capital investment in the appropriate amounts as annual depreciation expense in each year throughout the remaining life of the property. The procedure incorporates the future life expectancy of the property, the vintage surviving plant in service, and estimated net salvage, together with the book depreciation reserve balance to develop the annual depreciation rate for each property

account. Accordingly, the ARL technique meets the objective of providing a straight line recovery of the un-depreciated fixed capital property investment.

The use of the Average Remaining Life Technique results in charging the appropriate annual depreciation amounts over the remaining life of the property to insure full recovery by the end of the life of the property. The annual expense is calculated on a Straight Line Method rather than by the previously mentioned, "sum of the years digits" or "double declining balance" methods, etc. The "group" refers to the method of calculating annual depreciation on the summation of the investment in any one depreciable group or plant account rather than calculating depreciation for each individual unit.

Under Broad Group Depreciation some units may be over depreciated and other units may be under depreciated at the time when they are retired from service, but overall, the account is fully depreciated when average service life is attained. By comparison, Equal Life Group depreciation rates are designed to fully accrue the cost of the asset group by the time of retirement. For both the Broad Group and Equal Life Group Procedures the full cost of the investment is credited to plant in service when the retirement occurs and likewise the depreciation reserve is debited with an equal retirement cost. No gain or loss is recognized at the time of property retirement because of the assumption that the retired property was at average service life.

#### Group Depreciation Procedures

Group depreciation procedures are utilized to depreciate property when more than one item of property is being depreciated. Such a procedure is appropriate because all of the items within a specific group typically do not have identical service

lives, but have lives which are dispersed over a range of time. Utilizing a group depreciation procedure allows for a condensed application of depreciation rates to groups of similar property in lieu of extensive depreciation calculations on an item by item basis. The two more common group depreciation procedures are the Broad Group (BG) and Equal Life Group (ELG) approach.

In developing depreciation rates using the Broad Group procedure, the annual depreciation rate is based on the average life of the overall property group, which is then applied to the group's surviving original cost investment. A characteristic of this procedure is that retirements of individual units occurring prior to average service life will be under depreciated, while individual units retired after average service life will be over depreciated when removed from service, but overall, the group investment will achieve full recovery by the end of the life of the total property group. That is, the under recovery occurring early in the life of the account is balanced by the over recovery occurring subsequent to average service life. In summary, the cost of the investment is complete at the end of the property's life cycle, but the rate of recovery does not match the consumption pattern which was used to provide service to the company's customers.

Under the average service life procedure, the annual depreciation rate is calculated by the following formula:

$$\text{Annual Accrual Rate, Percent} = \frac{100\% - \text{Salvage}}{\text{Average Service Life}} \times 100$$

The application of the broad group procedure to life span groups results in each vintage investment having a different average service life. This circumstance exists because the concurrent retirement of all vintages at the anticipated retirement year

results in truncating and, therefore, restricting the life of each successive years vintage investment. An average service life is calculated for each vintage investment in accordance with the above formula. Subsequently, a composite service life and depreciation rate is calculated relative to all vintages within the property group by weighting the life for each vintage by the related surviving vintage investment within the group.

In the Equal Life Group, the property group is subdivided, through the use of plant life tables, into equal life groups. In each equal life group, portions of the overall property group includes that portion which experiences the life of the specific sub-group. The relative size of each sub-group is determined from the overall group life characteristic (property dispersion curve). This procedure both overcomes the disadvantage of voluminous record requirements of unit depreciation, as well as eliminates the need to base depreciation on overall lives as required under the broad group procedure. The application of this procedure results in each sub-group of the property having a single life. In this procedure, the full cost of short lived units is accrued during their lives leaving no under accruals to be recovered by over accruals on long lived plant. The annual depreciation for the group is the summation of the depreciation accruals based on the service life of each Equal Life Group.

The ELG Procedure is viewed as being the more definitive procedure for identifying the life characteristics of utility property and as a basis for developing service lives and depreciation rates, nevertheless, the Broad Group procedure is more widely utilized throughout the utility industry by regulatory commissions as a basis for depreciation rates. That is, the ELG Procedure is more definitive because it allocates

the capital cost of a group property to annual expense in accordance with the consumption of the property group providing service to customers. In this regard, the company's customers are more appropriately charged with the cost of the property consumed in providing them service during the applicable service period. The more timely return of plant cost is accomplished by fully accruing each unit's cost during its service life, thereby not only reducing the risk of incomplete cost recovery, but also resulting in less return on rate base over the life of a depreciable group. The total depreciation expense over the life of the property is the same for all procedures which allocate the full capital cost to expense, but at any specific point in time, the depreciated original cost is less under the ELG procedure than under the BG procedure. This circumstance exists because under the equal life group procedure, the rate base is not maintained at a level of greater than the future service value of the surviving plant as is the case when using the average service life procedure. Consequently, the total return required from the ratepayers is less under the ELG procedure.

While the Equal Life Group procedure has been known to depreciation experts for many years, widespread interest in applying the procedure developed only after high speed electronic computers became available to perform the large volume of arithmetic computations required in developing ELG based depreciation lives and rates. The table on the following page illustrates the procedure for calculating equal life group depreciation accrual rates and summarizes the results of the underlying calculations. Depreciation rates are determined for each age interval (one year increment) during the life of a group of property which was installed in a given year or vintage group. The age of the vintage group is shown in column (A) of the ELG table. The percent surviving at

XYZ UTILITY COMPANY

CALCULATION OF ASL, ARL AND ACCRUED DEPRECIATION FACTORS

Table 8

BASED UPON AN NEW YORK STATE (KIMBALL) h3.00 CURVE USING THE EQUAL LIFE GROUP (ELG) PROCEDURE

AGE AT BEGIN OF INTERVAL	LIFE TABLE BEGIN OF INTERVAL	RETIREMENT DURING INTERVAL	AVERAGE SURVIVING	AGE OF AMOUNT RETIRED	AMOUNT FOR EACH LIFE GROUP	AMOUNT FOR REMAINING LIFE GROUPS	EQUAL LIFE GROUP PROCEDURE			
							AVERAGE SERVICE LIFE	AVERAGE REMAINING LIFE	ELG/ARL DEPR RATE	ACCRUED DEPR RES FACTOR
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
0.0	1.000000	0.0006400	0.9996800	0.25	0.0006400	0.0587873	8.50	8.50	11.76	0.0000000
0.5	0.9993600	0.0029600	0.9978800	1.0	0.0029600	0.1148146	8.69	8.19	11.51	0.0575293
1.5	0.9964000	0.0064000	0.9932000	2.0	0.0032000	0.1117346	8.89	7.39	11.25	0.1687494
2.5	0.9900000	0.0126200	0.9836900	3.0	0.0042067	0.1080313	9.11	6.61	10.98	0.2745562
3.5	0.9773800	0.0227600	0.9660000	4.0	0.0056900	0.1030830	9.37	5.87	10.67	0.3734890
4.5	0.9546200	0.0375500	0.9358450	5.0	0.0075100	0.0964830	9.70	5.20	10.31	0.4639372
5.5	0.9170700	0.0566100	0.8887650	6.0	0.0094350	0.0880105	10.10	4.60	9.90	0.5446406
6.5	0.8604600	0.0780600	0.8214300	7.0	0.0111514	0.0777172	10.57	4.07	9.46	0.6149789
7.5	0.7824000	0.0984200	0.7331900	8.0	0.0123025	0.0659903	11.11	3.61	9.00	0.6750325
8.5	0.6839800	0.1134200	0.6272700	9.0	0.0126022	0.0535379	11.72	3.22	8.54	0.7254808
9.5	0.5705600	0.1195400	0.5107900	10.0	0.0119540	0.0412598	12.38	2.88	8.08	0.7673764
10.5	0.4510200	0.1151700	0.3934350	11.0	0.0104700	0.0300478	13.09	2.59	7.64	0.8019165
11.5	0.3358500	0.1014600	0.2851200	12.0	0.0084550	0.0205853	13.85	2.35	7.22	0.8302857
12.5	0.2343900	0.0817300	0.1935250	13.0	0.0062869	0.0132143	14.65	2.15	6.83	0.8535298
13.5	0.1526600	0.0601800	0.1225700	14.0	0.0042986	0.0079216	15.47	1.97	6.46	0.8724942
14.5	0.0924800	0.0405200	0.0722200	15.0	0.0027013	0.0044216	16.33	1.83	6.12	0.8877583
15.5	0.0519600	0.0249500	0.0394850	16.0	0.0015594	0.0022913	17.23	1.73	5.80	0.8994571
16.5	0.0270100	0.0140400	0.0199900	17.0	0.0008259	0.0010987	18.19	1.69	5.50	0.9068526
17.5	0.0129700	0.0072300	0.0093550	18.0	0.0004017	0.0004849	19.29	1.79	5.18	0.9070652
18.5	0.0057400	0.0000000	0.0057400	19.0	0.0000000	0.0002841	20.21	1.71	4.95	0.9155172
19.5	0.0057400	0.0048600	0.0033100	20.0	0.0002430	0.0001626	20.36	0.86	4.91	0.9576667
20.5	0.0008800	0.0005800	0.0005900	21.0	0.0000276	0.0000272	21.65	1.15	4.62	0.9467615
21.5	0.0003000	0.0002000	0.0002000	22.0	0.0000091	0.0000089	22.49	0.99	4.45	0.9560277
22.5	0.0001000	0.0001000	0.0000500	23.0	0.0000043	0.0000022	23.00	0.50	4.35	0.9782609
23.5	0.0000000	0.0000000	0.0000000	24.0	0.0000000	0.0000000				
		1.0000000				1.0000000				

the beginning of each age interval is determined from the Iowa 10-R3 survivor curve which is set forth in column (B). The percent retired during each age interval, as shown in column (C), is the difference between the percent surviving at successive age intervals. Accordingly, the percentage amount of the vintage group retired defines the size of each equal life group. For example, during the interval 3 1/2 to 4 1/2, 1.93690 percent of the vintage group is retired at an average age of four years. In this case, the 1.93690 percent of the group experiences an equal life of four years. Likewise, 3.00339 percent is retired during the interval 4 1/2 to 5 1/2 and experiences a service life of five years. Furthermore, 4.42969 percent experiences a six-year life; etc. Calculations are made for each age interval from the zero age interval through the end of the life of the vintage group. The average service life for each age interval's equal life group is shown in column (E) of the table.

The amount to be accrued annually for each equal life group is equal to the percentage retired in the equal life group divided by its service life. In as much as additions retirements are assumed, for calculation purposes, to occur at midyear only one-half of the equal life group's annual accrual is allocated to expense during its first and last years of service life. The accrual amount for the property retired during age interval 0 to .5 must be equal to the amount retired to insure full recovery of that component during that period. The accruals for each equal life group during the age intervals of the vintage group's life cycle are shown in column (F). The total accrual for a given year is the summation of the equal life group accruals for that year. For example, the total accrual for the second year, as shown in column (G), is 11.31019 percent and is the sum of all succeeding years remaining equal life group accruals plus

one half of the current years life group accrual listed in column (F). For the zero age interval year the total accrual is equal to one half of the sum of all succeeding years remaining equal life accruals plus the amount for the zero interval equal life group accrual. The one half year accrual for the zero age interval is consistent with the half year convention relative to property during its installation year. The sum of the annual accruals for each age interval contained in column (G) total to 1.000 demonstrating that the developed rates will recover 100% of plant no more and no less. The annual accrual rate which will result in the accrual amount is the ratio of the accrual amount (11.31019 percent) to the average percent surviving during the interval, column (D), (99.74145 percent), which is a rate of 11.34% (column J). Column (J) contains a summary of the accrual rates for each age interval of the property groups life cycle based upon an Iowa 10-R3 survivor curve.

#### Remaining Life Technique

As previously noted, while I prefer the Average Remaining Life Technique (because it considers all factors in developing the applicable depreciation rates) the NY Commission and its staff have indicated that the Whole Life depreciation Technique should be used to develop depreciation rates other than for Electric generating facilities.

In the Average Remaining Life depreciation technique, the annual accrual is calculated according to the following formula where, (A) the annual depreciation for each group equals, (D) the depreciable cost of plant less (U) the accumulated provision for depreciation less (S) the estimated future net salvage, divided by (R) the composite remaining life of the group:

$$A = \frac{D - U - S}{R}$$

The annual accrual rate (a) is expressed as a percentage of the depreciable plant balance by dividing the equation by (D) the depreciable cost of plant times 100:

$$(a) = \frac{D - U - S}{R} \times \frac{1}{D} \times 100$$

As further indicated by the equation, the accumulated provision for depreciation by vintage is required in order to calculate the remaining life depreciation rate for each property group. In practice, most often such detail is not available; therefore, composite remaining lives are determined for each depreciable group, (i.e., property account).

The remaining life for a depreciable group is calculated by first determining the remaining life for each vintage year in which there is surviving investment. This is accomplished by solving the area under the survivor curve selected to represent the average life and life characteristic of the property account. The remaining life for each vintage is determined by dividing (D) the depreciable cost of each vintage, by (L) its average service life, and multiplying this ratio by its average remaining life (E). The composite remaining life of the group (R) equals the sums of products divided by the sum of the quotients:

$$R \text{ Group} = \frac{\sum D/L \times E}{\sum D/L}$$

The accumulated provision for depreciation, which was the basis for developing the composite average remaining life accrual and annual depreciation rate for each property account as per this report, was obtained from the Company's books and records.

### Salvage

Net salvage is the difference between gross salvage, or what is received when an

asset is disposed of, and the cost of removing it from service. Salvage experience is normally included with the depreciation rate so that current accounting periods reflect a proportional share of the ultimate abandonment and removal cost or salvage received at the end of the property service life. Net salvage is said to be positive if gross salvage exceeds the cost of removal, but if cost of removal exceeds gross salvage the result is then negative salvage.

The cost of removal includes such costs as demolishing, dismantling, tearing down, disconnecting or otherwise removing plant, as well as normal environmental clean up costs associated with the property. Salvage includes proceeds received for the sale of plant and materials or the return of equipment to stores for reuse.

Net salvage experience is studied for a period of years to determine the trends which have occurred in the past. These trends are considered together with any changes that are anticipated in the future to determine the future net salvage factor for remaining life depreciation purposes. The net salvage percentage is determined by relating the total net positive or negative salvage to the book cost of the property investment.

Many retired assets generate little, if any, positive salvage. Instead, many of the Company's asset property groups generate negative net salvage at end of their life as a result of the cost of removal (retirement).

The method used to estimate the retirement cost is a standard analysis approach which is used to identify a company's historical experience with regard to what the end of life cost will be relative to the cost of the plant when first placed into service. This information, along with knowledge about the average age of the historical

retirements that have occurred to date, enables the depreciation professional to estimate the level of retirement cost that will be experienced by the Company at the end of each property group's useful life. The study methodology utilized has been extensively set forth in depreciation textbooks and has been the accepted practice by depreciation professionals for many decades. Furthermore, the cost of removal analysis approach is the current standard practice used for mass assets by essentially all depreciation professionals in estimating future net salvage for the purpose of identifying the applicable depreciation for a property group. There is a direct relationship to the installation of specific plant in service and its corresponding removal in that the installation is its beginning of life cost while the removal is its end of life cost. Also, it is important to note that average remaining life based depreciation rates incorporate future net salvage which is routinely more representative of recent versus long-term past average net salvage.

The Company's historical net salvage experience was analyzed to identify the historical net salvage factor for each applicable property group. This analysis routinely identifies that historical retirements have occurred at average ages significantly prior to the property group's average service life. This occurrence of historical retirements, at an age which is significantly younger than the average service life of the property category, clearly demonstrates that the historical data does not appropriately recognize the true level of retirement cost at the end of the property's useful life. An additional level of cost to retire will occur due to the passage of time until all the current in service plant is retired at end of life. That is, the level of retirement costs will increase over time until the average service life is attained. The estimated additional inflation, within the estimate of retirement cost, is related to those additional year's cost increases (primarily higher labor

costs over time) that will occur prior to the end of the property group’s average life.

To provide an additional explanation of the issue, several general principles surrounding property retirements and related net salvage need to be highlighted. Those are that as property continues to age, the retirement of assets, if generating positive salvage when retired, will typically generate a lower percent of positive salvage. By comparison, if the class of property is one that typically generates negative net salvage (cost of removal), with increasing age at retirement the negative percentage as related to original cost will typically be greater. This situation is routinely driven by the higher labor cost with the passage of time.

Next, a simple example will aid in a better understanding of the above discussed net salvage analysis and the required adjustment to the historical analysis results. Assume the following scenario. A company has two (2) cars, Car #1 and Car #2, each purchased for \$20,000. Car #1 is retired after 2 years and Car #2, is retired after 10 years. Accordingly, the average life of the two cars is six (6) years (2 Yrs. Plus 10 Yrs./2). Car #1 generates 75% salvage or \$15,000 when retired and Car #2 generates 5% salvage or \$1,000 when retired.

<u>Unit</u>	<u>Cost</u>	<u>Ret. Age (Yrs)</u>	<u>% Salv.</u>	<u>Salvage Amount</u>
Car # 1	\$20,000	2	75%	\$15,000
<u>Car # 2</u>	<u>20,000</u>	<u>10</u>	<u>5%</u>	<u>1,000</u>
Total	40,000	6	40%	16,000

Assume an analysis of the experienced net salvage at year three (3). Based upon the Car #1 retirement, which was retired at a young age (2 Yrs.) as compared to the average six (6) year life of the property group, the analysis indicates that the property group would generate 75% salvage. This analysis indication is incorrect and is the result

of basing the estimate on incomplete data. That is, the estimate is based upon the salvage generated from a retirement that occurred at an age which is far less than the average service life of the property group. The actual total net salvage, that occurred over the average life of the assets (which experienced a six (6) year average life for the property group) is 40% as opposed to the initial incorrect estimate of 75%.

This is exactly the situation with the majority of the Company's historical net salvage data except that most of the Company's plant property groups routinely experience negative net salvage (cost of removal) as opposed to positive salvage.

The total end of life net salvage amount must be incorporated in the development of annual depreciation rates to enable the Company to fully recover its total plant life costs. Otherwise, upon retirement of the plant, the Company will incur end of life costs without having recovered those plant related costs from the customers who benefitted from the use of the expired plant.

With regard to location type properties (e.g. generation facilities, etc.) a company will routinely experience both interim and terminal net salvage. Interim net salvage occurs in conjunction with interim retirements that occur throughout the life of the asset group. This net salvage activity (routinely and largely cost of removal) is attributable to the removal of components within the Company's facilities to enable the placement of a new asset component. Interim net salvage is routinely negative given the care required in removing the defective component so as not to damage the remaining plant in service. Interim net salvage is applicable to the estimated interim retirement assets.

The terminal net salvage component is attributable to the end of life costs incurred (less any gross salvage received) to disconnect, remove, demolish and/or dispose of the

operating asset. Terminal net salvage is attributable to those assets remaining in service subsequent to the occurrence of interim retirements.

The total net salvage incorporated into the depreciation rate for location type plant account investments is the sum of interim and terminal net salvage. Both of the items must be incorporated in the development of annual depreciation rates to enable the Company to fully recover its total plant life costs. Otherwise, upon retirement of the plant, the Company will incur end of life costs without having recovered those plant related costs from the customers who benefitted from the use of the expired facility.

### Service Lives

Several factors contribute to the length of time or average service life which the property achieves. The three (3) major categories under which these factors fall are: (1) physical; (2) functional; and (3) contingent casualties.

The physical category includes such things as deterioration, wear and tear and the action of the natural elements. The functional category includes inadequacy, obsolescence and requirements of governmental authorities. Obsolescence occurs when it is no longer economically feasible to use the property to provide service to customers or when technological advances have provided a substitute of superior performance. The remaining factor of contingent casualties relates to retirements caused by accidental damage or construction activity of one type or another.

In performing the life analysis for any property being studied, both past experience and future expectations must be considered in order to fully evaluate the circumstances which may have a bearing on the remaining life of the property. This ensures the selection of an average service life which best represents the expected life of each

property investment.

### Survivor Curves

The preparation of a depreciation study or theoretical depreciation reserve typically incorporates smooth curves to represent the experienced or estimated survival characteristics of the property. The "smoothed" or standard survivor curves generally used are the family of curves developed at Iowa State University which are widely used and accepted throughout the utility industry.

The shape of the curves within the Iowa family of curves are dependent upon whether the maximum rate of retirement occurs before, during or after the average service life. If the maximum retirement rate occurs earlier in life, it is a left (L) mode curve; if occurring at average life, it is a symmetrical (S) mode curve; if it occurs after average life, it is a right (R) mode curve. In addition, there is the origin (O) mode curve for plant which has heavy retirements at the beginning of life.

Many times, actual Company data has not completed its life cycle, therefore, the survivor table generated from the Company data is not extended to zero percent surviving. This situation requires an estimate be made with regard to the remaining segment of the property group's life experience. Furthermore, actual Company experience is often erratic, making its utilization for average service life estimating difficult. Accordingly, the Iowa curves are used to both extend Company experience to zero percent surviving as well as to smooth actual Company data.

### Study Procedures

Several study procedures were used to determine the prospective service lives recommended for the Company's plant in service. These include the review and

analysis of historical retirements, current and future construction, historical experience and future expectations of salvage and cost of removal as related to plant investment. Service lives are affected by many different factors, some of which can be obtained from studying plant experience, others which may rely heavily on future expectations. When physical aspects are the controlling factor in determining the service life of property, historical experience is a valuable tool in selecting service lives. In the case where changing technology or a less costly alternative develops, then historical experience is of lesser value.

While various methods are available to study historical data, the principal methods utilized to determine average service lives for a Company's property are the Retirement Rate Method, the Simulated Plant Record Method, the Life Span Method, and the Judgment Method.

Retirement Rate Method - The Retirement Rate Method uses actual Company retirement experience to develop a survivor curve (Observed Life Table) which is used to determine the average service life being experienced in the account under study. Computer processing provides the opportunity to review various experience bands throughout the life of the account to observe trends and changes. For each experience band studied, the "observed life table" is constructed based on retirement experience within the band of years. In some cases, the total life of the account has not been achieved and the experienced life table, when plotted, results in a "stub curve." It is this "stub curve" or total life curve, if achieved, which is matched or fitted to a standard Survivor curve. The matching process is performed both by computer analysis, using a least squares technique, and by manually plotting observed life tables to which smooth

curves are fitted. The fitted smooth curve provides the basis to determine the average service life of the property group under study.

Simulated Balances Method - In this method of analysis, simulated surviving balances are determined for each balance included in the test band by multiplying each proceeding year's original gross additions installed by the Company by the appropriate factor of each Standard Survivor Curve, summing the products, and comparing the results with the related year end plant balance to determine the "best fitting" curve and life within the test period. Various test bands are reviewed to determine trends or changes to indicated service lives in various bands of years. By definition, the curve with the "best fit" is the curve which produces simulated plant balances that most closely matches the actual plant balances as determined by the sum of the "least squares". The sum of the "least squares" is arrived at by starting with the difference between the simulated balances and the actual balance for a given year, squaring the difference, and the curve which produces the smallest sum (of squared difference) is judged to be the "best fit".

Period Retirements Method - The application of the Period Retirements Method is similar to the "Simulated Plant Balances" Method, except the procedure utilizes a Standard Survivor Curve and service life to simulate annual retirements instead of balances in performing the "least squares" fitting process during the test period. This procedure does tend to experience wider fluctuations due to the greater variations in level of experienced retirements versus additions and balances thereby producing greater variation in the study results.

Life Span Method - The Life Span or Forecast Method is a method utilized to

study various accounts in which the expected retirement dates of specific property or locations can be reasonably estimated. In the Life Span Method, an estimated probable retirement year is determined for each location of the property group. An example of this would be a structure account, in which the various segments of the account are "life spanned" to a probable retirement date which is determined after considering a number of factors, such as management plans, industry standards, the original construction date, subsequent additions, resultant average age and the current - as well as the overall - expected service life of the property being studied. If, in the past, the property has experienced interim retirements, these are studied to determine an interim retirement rate. Otherwise, interim retirement rate parameters are estimated for properties which are anticipated to experience such retirements. The selected interim service life parameters (Iowa curve and life) are then used with the vintage investment and probable retirement year of the property to determine the average remaining life as of the study date.

Judgment Method - Standard quantitative methods such as the Retirement Rate Method, Simulated Plant Record Method, etc. are normally utilized to analyze a Company's available historical service life data. The results of the analysis together with information provided by management as well as judgment are utilized in estimating the prospective recommended average service lives. However, there are some circumstances where sufficient retirements have not occurred, or where prospective plans or guidelines are unavailable. In these circumstances, judgment alone is utilized to estimate service lives based upon service lives used by other utilities for this class of plant as well as what is considered to be a reasonable life for this plant giving

consideration to the current age and use of the facilities.

# **SECTION 4**

# MONTANA-DAKOTA UTILITIES CO. - COMMON PLANT

## Study Analysis & Results

### ACCOUNT – 390.00 Structures And Improvements

#### Historical Experience

Plant Statistics      Plant Balance = \$49,299,196  
Average Age of Survivors = 11.2 years.  
Original Gross Additions = \$58,376,038  
Oldest Surviving Vintage = 1953  
Retirements - \$3,717,530, or 6.4% of historical additions.  
Average Age of Retirements = 30.8 years

Experience Bands      1977 – 2014 (Full Depth) 38-R3

Historic Net Salvage: (68-14)

Three Year Average Net Salvage Percent			<u>Full Depth</u>
<u>2010-12</u>	<u>2011-13</u>	<u>2012-14</u>	<u>1968-2014</u>
8%	8%	1%	-6%

Gross Salvage Trend Analysis			
<u>20 Year</u>	<u>15 Year</u>	<u>10 Year</u>	<u>5 Year</u>
0%	5%	9%	3%

Forecasted Net Salvage: -20%

#### Plant Considerations/Future Expectations

This investment is related to cost of various General related structures and improvements. Ongoing changes occur due to required upgrades as well as changes in business environment conditions. In this regard, during the recent 15 plus years the Company has been consolidating offices plus got out of the service and repair business including the selling of appliances so there was less need for facilities.

Further future activity can be anticipated as the Company continues to make changes to meet ever changing business conditions.

**Life Analysis Method:** Retirement Rate Method (Actuarial)

#### Current Depreciation Parameters

ASL/Curve: 35-R3  
Net Salv: -10%

## **Proposed Depreciation Parameters**

ASL/Curve: 38-R3

Future Net Salv: 0%

	<u>New Rate @New Parameters</u>	<u>Old Rate @ Old Parameters</u>
Rate	2.31%	2.18%
Average Remaining Life	28.2 years	N/A

## ACCOUNT – 392.10 Transportation Equipment - Trailers

### Historical Experience

Plant Statistics      Plant Balance = \$2,482  
Average Age of Survivors = 1.5 years.  
Original Gross Additions = \$426,161  
Oldest Surviving Vintage = 2013  
Retirements - \$261,809, or 61.4% of historical additions.  
Average Age of Retirements = 16.7 years

Experience Bands      1977 – 2014 (Full Depth) 25-L1

Historic Net Salvage: (77-14)

Three Year Average Net Salvage Percent			Full Depth
<u>2010-12</u>	<u>2011-13</u>	<u>2012-14</u>	<u>1977-2014</u>
24%	23%	29%	50%

Gross Salvage Trend Analysis			
<u>20 Year</u>	<u>15 Year</u>	<u>10 Year</u>	<u>5 Year</u>
21%	15%	26%	34%

Forecasted Net Salvage: 34%

### Plant Considerations/Future Expectations

This property group contains investments principally related to trailers used by the Company's workforce. The minor investment in this property account is currently fully depreciated, therefore, no further accruals should be recorded until such time that significant additional plant is added and/or the fully accrued status is significantly reduced.\*The proposed depreciation is currently set to zero percent.

**Life Analysis Method:** Retirement Rate Method (Actuarial)

### Current Depreciation Parameters

ASL/Curve: 20-L2

Net Salv: 15%

### Proposed Depreciation Parameters

ASL/Curve: 25-L1

Future Net Salv: 20%

	<u>New Rate @New Parameters</u>	<u>Old Rate @ Old Parameters</u>
Rate	0.00% *	4.17%
Average Remaining Life	23.6 years	N/A

## ACCOUNT – 392.20 Transportation Equipment – Cars & Trucks

### Historical Experience

Plant Statistics      Plant Balance = \$7,053,425  
Average Age of Survivors = 5.9 years.  
Original Gross Additions = \$23,694,568  
Oldest Surviving Vintage = 1987  
Retirements - \$16,559,465, or 69.9% of historical additions.  
Average Age of Retirements = 9.0 years

Experience Bands      2005 – 2014 (Full Depth) 9-R3

Historic Net Salvage: (68-14)

Three Year Average Net Salvage Percent			<u>Full Depth</u>
<u>2010-12</u>	<u>2011-13</u>	<u>2012-14</u>	<u>1968-2014</u>
21%	22%	24%	24%

Gross Salvage Trend Analysis			
<u>20 Year</u>	<u>15 Year</u>	<u>10 Year</u>	<u>5 Year</u>
29%	24%	24%	23%

Forecasted Net Salvage: 23%

### Plant Considerations/Future Expectations

This property group contains investments is related to vehicles which are used in constructing and maintaining distribution and transmission lines. The Company's general replacement policy is 8 years or 95,000 miles.

**Life Analysis Method:** Retirement Rate Method (Actuarial)

### Current Depreciation Parameters

ASL/Curve: 7-R3

Net Salv: 20%

### Proposed Depreciation Parameters

ASL/Curve: 9-R3

Future Net Salv: 20%

	<u>New Rate @New Parameters</u>	<u>Old Rate @ Old Parameters</u>
Rate	6.65%	4.11%
Average Remaining Life	4.9 years	N/A

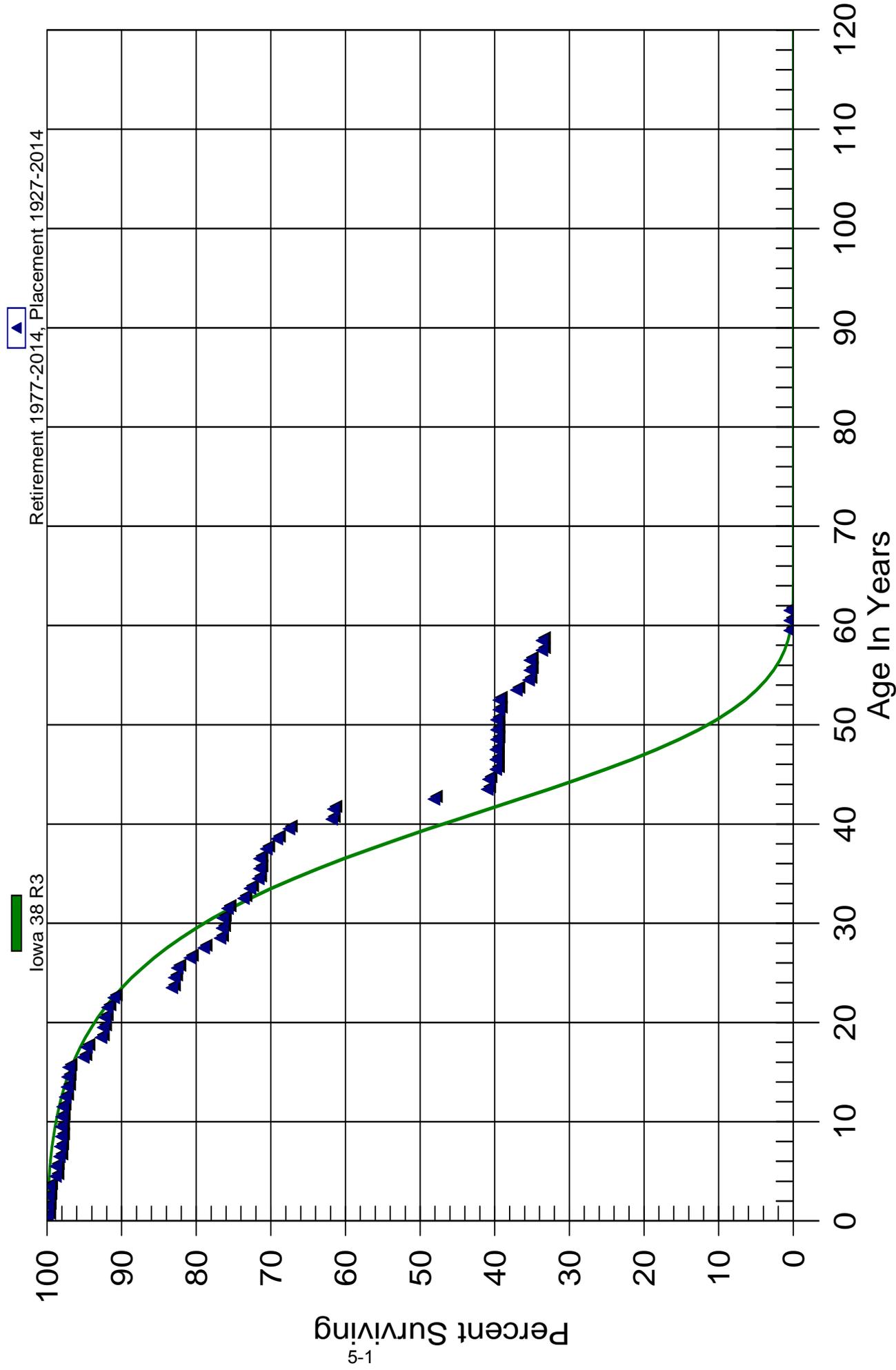
# **SECTION 5**

# Montana-Dakota Utilities Company

Common Plant

## 390.00 STRUCTURES & IMPROVEMENTS

Original And Smooth Survivor Curves



**Montana-Dakota Utilities Company**  
**Common Plant**

**390.00 STRUCTURES & IMPROVEMENTS**

**Observed Life Table**

**Retirement Expr. 1977 TO 2014**

**Placement Years 1927 TO 2014**

<b>Age Interval</b>	<b>\$ Surviving At Beginning of Age Interval</b>	<b>\$ Retired During The Age Interval</b>	<b>Retirement Ratio</b>	<b>% Surviving At Beginning of Age Interval</b>
0.0 - 0.5	\$51,386,462.17	\$25,673.53	0.00050	100.00
0.5 - 1.5	\$37,069,625.54	\$23,092.38	0.00062	99.95
1.5 - 2.5	\$35,724,362.90	\$30,368.26	0.00085	99.89
2.5 - 3.5	\$30,989,828.85	\$21,067.24	0.00068	99.80
3.5 - 4.5	\$30,181,839.15	\$266,416.20	0.00883	99.74
4.5 - 5.5	\$28,479,882.20	\$7,321.78	0.00026	98.85
5.5 - 6.5	\$28,620,601.98	\$139,558.85	0.00488	98.83
6.5 - 7.5	\$27,644,714.19	\$34,965.67	0.00126	98.35
7.5 - 8.5	\$23,216,229.11	\$22,937.57	0.00099	98.22
8.5 - 9.5	\$23,977,517.16	\$3,506.22	0.00015	98.13
9.5 - 10.5	\$20,351,346.32	\$20,800.15	0.00102	98.11
10.5 - 11.5	\$19,239,300.84	\$22,460.50	0.00117	98.01
11.5 - 12.5	\$19,019,350.49	\$62,380.28	0.00328	97.90
12.5 - 13.5	\$18,559,122.49	\$50,345.38	0.00271	97.58
13.5 - 14.5	\$18,259,241.48	\$14,405.14	0.00079	97.31
14.5 - 15.5	\$17,541,661.06	\$23,427.31	0.00134	97.23
15.5 - 16.5	\$17,267,907.53	\$347,724.14	0.02014	97.10
16.5 - 17.5	\$16,666,604.80	\$76,946.11	0.00462	95.15
17.5 - 18.5	\$15,290,782.31	\$309,758.75	0.02026	94.71
18.5 - 19.5	\$14,695,770.75	\$49,274.84	0.00335	92.79
19.5 - 20.5	\$14,080,472.00	\$34,886.01	0.00248	92.48
20.5 - 21.5	\$11,866,405.13	\$45,061.83	0.00380	92.25
21.5 - 22.5	\$11,896,477.46	\$109,517.38	0.00921	91.90
22.5 - 23.5	\$11,630,990.42	\$993,464.06	0.08542	91.05
23.5 - 24.5	\$10,598,164.75	\$40,923.19	0.00386	83.28
24.5 - 25.5	\$10,687,001.78	\$51,633.39	0.00483	82.96
25.5 - 26.5	\$10,631,550.44	\$218,841.22	0.02058	82.55
26.5 - 27.5	\$10,427,979.09	\$241,150.76	0.02313	80.86
27.5 - 28.5	\$10,187,429.04	\$282,390.96	0.02772	78.99
28.5 - 29.5	\$9,526,593.55	\$29,871.72	0.00314	76.80
29.5 - 30.5	\$8,970,339.51	\$15,451.43	0.00172	76.56
30.5 - 31.5	\$5,989,770.31	\$48,328.18	0.00807	76.42
31.5 - 32.5	\$5,603,875.46	\$159,064.05	0.02838	75.81
32.5 - 33.5	\$3,910,397.99	\$45,747.70	0.01170	73.66
33.5 - 34.5	\$3,713,192.79	\$55,938.13	0.01506	72.79
34.5 - 35.5	\$3,414,005.20	\$7,220.80	0.00212	71.70

**Montana-Dakota Utilities Company**  
**Common Plant**

**390.00 STRUCTURES & IMPROVEMENTS**

**Observed Life Table**

**Retirement Expr. 1977 TO 2014**

**Placement Years 1927 TO 2014**

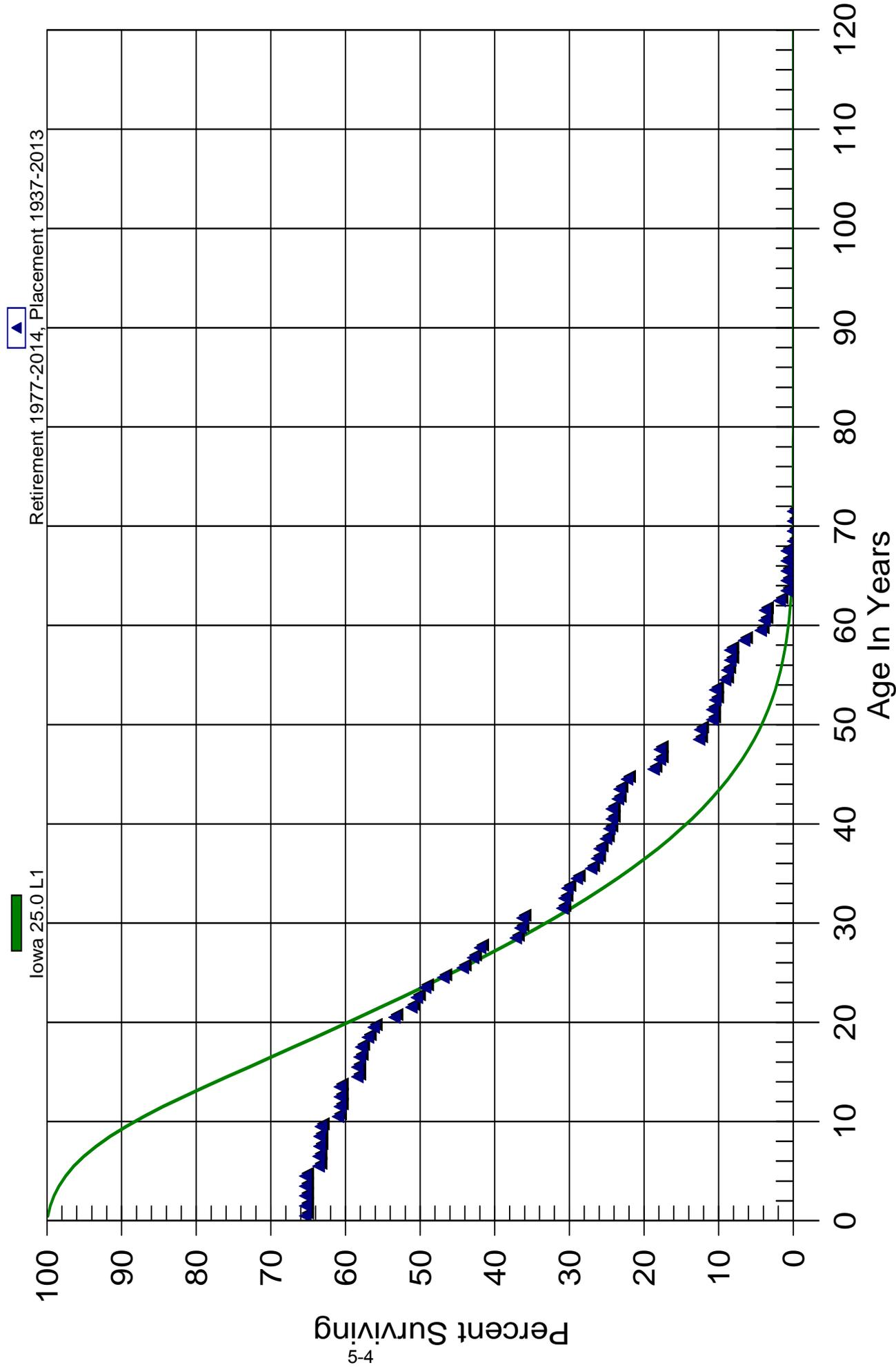
<b>Age Interval</b>	<b>\$ Surviving At Beginning of Age Interval</b>	<b>\$ Retired During The Age Interval</b>	<b>Retirement Ratio</b>	<b>% Surviving At Beginning of Age Interval</b>
35.5 - 36.5	\$2,878,310.71	\$0.00	0.00000	71.55
36.5 - 37.5	\$2,919,547.05	\$37,680.44	0.01291	71.55
37.5 - 38.5	\$2,582,013.24	\$51,569.55	0.01997	70.62
38.5 - 39.5	\$2,491,649.17	\$58,309.83	0.02340	69.21
39.5 - 40.5	\$2,466,427.82	\$209,702.82	0.08502	67.59
40.5 - 41.5	\$2,832,493.56	\$10,564.14	0.00373	61.84
41.5 - 42.5	\$2,773,154.01	\$605,124.47	0.21821	61.61
42.5 - 43.5	\$1,744,711.63	\$259,617.42	0.14880	48.17
43.5 - 44.5	\$1,466,474.58	\$6,119.46	0.00417	41.00
44.5 - 45.5	\$1,454,610.53	\$34,871.55	0.02397	40.83
45.5 - 46.5	\$1,345,172.72	\$0.00	0.00000	39.85
46.5 - 47.5	\$429,879.72	\$0.00	0.00000	39.85
47.5 - 48.5	\$268,827.55	\$551.05	0.00205	39.85
48.5 - 49.5	\$116,831.53	\$0.00	0.00000	39.77
49.5 - 50.5	\$414,560.87	\$0.00	0.00000	39.77
50.5 - 51.5	\$395,576.93	\$3,171.15	0.00802	39.77
51.5 - 52.5	\$387,498.70	\$0.00	0.00000	39.45
52.5 - 53.5	\$377,886.76	\$22,494.25	0.05953	39.45
53.5 - 54.5	\$354,159.92	\$15,598.57	0.04404	37.10
54.5 - 55.5	\$336,483.05	\$1,665.36	0.00495	35.47
55.5 - 56.5	\$334,404.65	\$0.00	0.00000	35.29
56.5 - 57.5	\$333,066.63	\$15,066.48	0.04524	35.29
57.5 - 58.5	\$308,446.93	\$0.00	0.00000	33.70
58.5 - 59.5	\$305,938.50	\$301,579.65	0.98575	33.70
59.5 - 60.5	\$4,358.85	\$0.00	0.00000	0.48
60.5 - 61.5	\$3,494.96	\$0.00	0.00000	0.48

# Montana-Dakota Utilities Company

Common Plant

## 392.10 TRANSPORTATION EQUIPMENT - (TRAILERS)

Original And Smooth Survivor Curves



**Montana-Dakota Utilities Company**  
**Common Plant**

**392.10 TRANSPORTATION EQUIPMENT - (TRAILERS)**

**Observed Life Table**

*Retirement Expr. 1977 TO 2014*

*Placement Years 1937 TO 2013*

<b>Age Interval</b>	<b>\$ Surviving At Beginning of Age Interval</b>	<b>\$ Retired During The Age Interval</b>	<b>Retirement Ratio</b>	<b>% Surviving At Beginning of Age Interval</b>
0.0 - 0.5	\$330,428.96	\$114,357.49	0.34609	100.00
0.5 - 1.5	\$217,834.78	\$0.00	0.00000	65.39
1.5 - 2.5	\$216,449.46	\$0.00	0.00000	65.39
2.5 - 3.5	\$222,106.27	\$0.00	0.00000	65.39
3.5 - 4.5	\$227,017.66	\$0.00	0.00000	65.39
4.5 - 5.5	\$225,338.15	\$6,163.53	0.02735	65.39
5.5 - 6.5	\$240,460.31	\$0.00	0.00000	63.60
6.5 - 7.5	\$243,714.62	\$386.34	0.00159	63.60
7.5 - 8.5	\$229,203.60	\$0.00	0.00000	63.50
8.5 - 9.5	\$239,934.64	\$725.94	0.00303	63.50
9.5 - 10.5	\$227,783.16	\$8,265.96	0.03629	63.31
10.5 - 11.5	\$220,336.56	\$948.01	0.00430	61.01
11.5 - 12.5	\$219,803.26	\$0.00	0.00000	60.75
12.5 - 13.5	\$226,180.66	\$0.00	0.00000	60.75
13.5 - 14.5	\$233,857.60	\$8,939.16	0.03822	60.75
14.5 - 15.5	\$216,295.53	\$0.00	0.00000	58.43
15.5 - 16.5	\$203,285.05	\$1,156.30	0.00569	58.43
16.5 - 17.5	\$200,026.82	\$717.60	0.00359	58.10
17.5 - 18.5	\$181,492.19	\$2,766.18	0.01524	57.89
18.5 - 19.5	\$165,969.87	\$2,304.69	0.01389	57.00
19.5 - 20.5	\$164,643.45	\$8,112.21	0.04927	56.21
20.5 - 21.5	\$159,471.41	\$6,780.89	0.04252	53.44
21.5 - 22.5	\$150,259.95	\$2,178.80	0.01450	51.17
22.5 - 23.5	\$153,884.16	\$3,353.83	0.02179	50.43
23.5 - 24.5	\$155,934.50	\$7,716.08	0.04948	49.33
24.5 - 25.5	\$149,294.98	\$8,264.54	0.05536	46.89
25.5 - 26.5	\$136,620.62	\$4,241.96	0.03105	44.29
26.5 - 27.5	\$122,985.74	\$2,723.07	0.02214	42.92
27.5 - 28.5	\$116,648.20	\$13,321.75	0.11420	41.97
28.5 - 29.5	\$100,108.43	\$1,673.57	0.01672	37.17
29.5 - 30.5	\$100,787.37	\$775.11	0.00769	36.55
30.5 - 31.5	\$93,558.21	\$13,769.43	0.14718	36.27
31.5 - 32.5	\$65,631.99	\$610.95	0.00931	30.93
32.5 - 33.5	\$60,120.64	\$776.26	0.01291	30.65
33.5 - 34.5	\$59,344.38	\$2,439.04	0.04110	30.25
34.5 - 35.5	\$56,905.34	\$3,768.07	0.06622	29.01

**Montana-Dakota Utilities Company**  
**Common Plant**

**392.10 TRANSPORTATION EQUIPMENT - (TRAILERS)**

**Observed Life Table**

*Retirement Expr. 1977 TO 2014*

*Placement Years 1937 TO 2013*

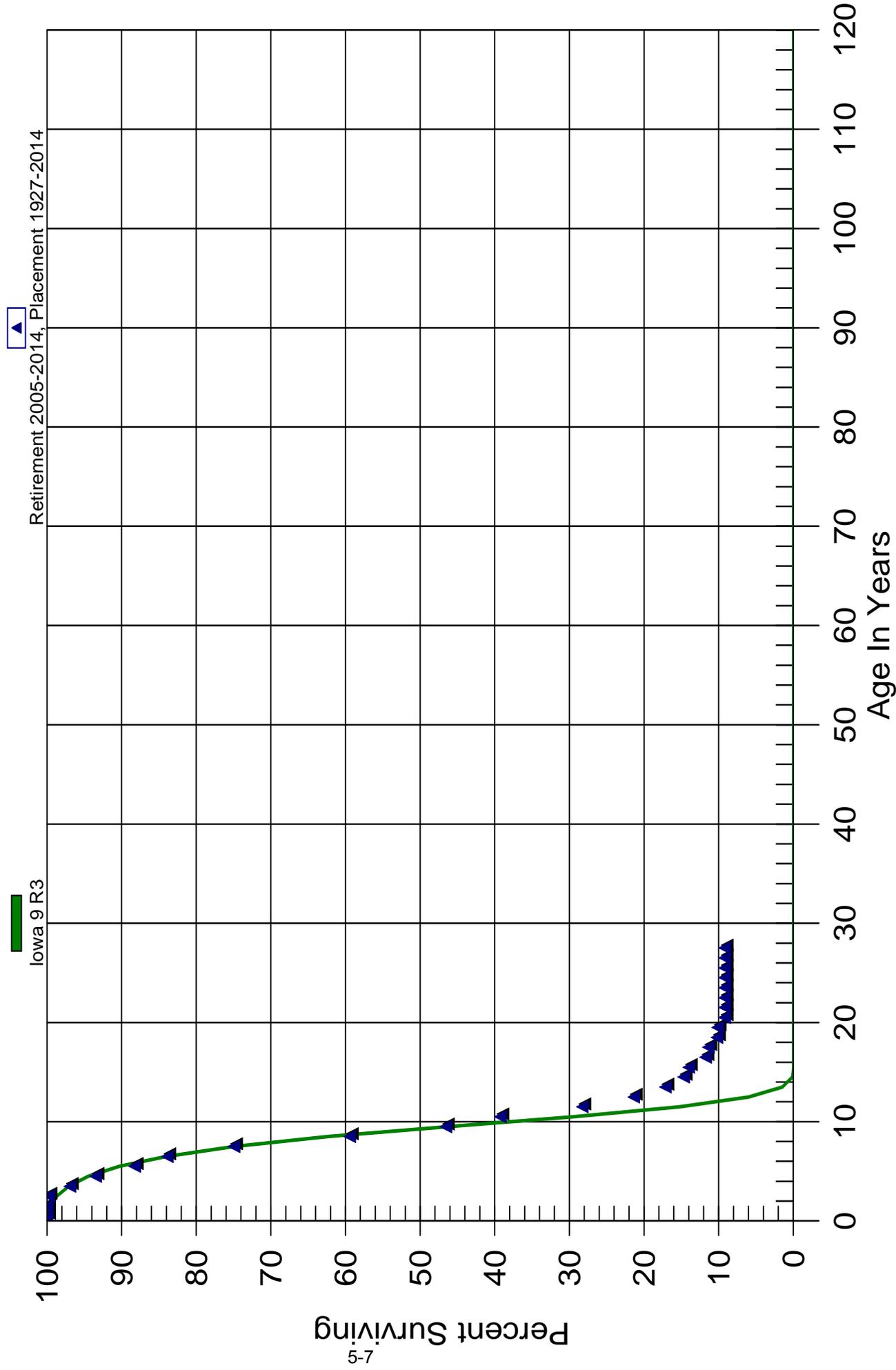
<b>Age Interval</b>	<b>\$ Surviving At Beginning of Age Interval</b>	<b>\$ Retired During The Age Interval</b>	<b>Retirement Ratio</b>	<b>% Surviving At Beginning of Age Interval</b>
35.5 - 36.5	\$50,887.70	\$1,544.14	0.03034	27.09
36.5 - 37.5	\$46,847.76	\$616.19	0.01315	26.26
37.5 - 38.5	\$42,052.10	\$1,318.81	0.03136	25.92
38.5 - 39.5	\$38,167.20	\$702.41	0.01840	25.11
39.5 - 40.5	\$36,237.93	\$478.15	0.01319	24.64
40.5 - 41.5	\$35,759.78	\$0.00	0.00000	24.32
41.5 - 42.5	\$35,759.78	\$1,174.62	0.03285	24.32
42.5 - 43.5	\$33,864.45	\$365.00	0.01078	23.52
43.5 - 44.5	\$33,205.89	\$1,412.40	0.04253	23.27
44.5 - 45.5	\$31,793.49	\$5,058.50	0.15910	22.28
45.5 - 46.5	\$26,734.99	\$1,188.78	0.04447	18.73
46.5 - 47.5	\$25,546.21	\$0.00	0.00000	17.90
47.5 - 48.5	\$23,552.66	\$6,949.98	0.29508	17.90
48.5 - 49.5	\$16,602.68	\$181.56	0.01094	12.62
49.5 - 50.5	\$13,581.88	\$1,757.50	0.12940	12.48
50.5 - 51.5	\$11,824.38	\$0.00	0.00000	10.86
51.5 - 52.5	\$11,824.38	\$451.13	0.03815	10.86
52.5 - 53.5	\$11,373.25	\$0.00	0.00000	10.45
53.5 - 54.5	\$11,373.25	\$1,438.98	0.12652	10.45
54.5 - 55.5	\$9,934.27	\$333.04	0.03352	9.13
55.5 - 56.5	\$9,601.23	\$416.94	0.04343	8.82
56.5 - 57.5	\$9,184.29	\$0.00	0.00000	8.44
57.5 - 58.5	\$9,184.29	\$2,020.83	0.22003	8.44
58.5 - 59.5	\$7,163.46	\$2,417.97	0.33754	6.58
59.5 - 60.5	\$4,745.49	\$550.82	0.11607	4.36
60.5 - 61.5	\$4,194.67	\$55.69	0.01328	3.85
61.5 - 62.5	\$4,138.98	\$2,154.98	0.52065	3.80
62.5 - 63.5	\$1,984.00	\$1,012.19	0.51018	1.82
63.5 - 64.5	\$971.81	\$0.00	0.00000	0.89
64.5 - 65.5	\$971.81	\$0.00	0.00000	0.89
65.5 - 66.5	\$971.81	\$0.00	0.00000	0.89
66.5 - 67.5	\$971.81	\$0.00	0.00000	0.89
67.5 - 68.5	\$971.81	\$946.81	0.97427	0.89
68.5 - 69.5	\$25.00	\$0.00	0.00000	0.02
69.5 - 70.5	\$25.00	\$0.00	0.00000	0.02
70.5 - 71.5	\$25.00	\$0.00	0.00000	0.02

# Montana-Dakota Utilities Company

Common Plant

## 392.20 TRANSPORTATION EQUIPMENT - (CARS & TRUCKS)

Original And Smooth Survivor Curves



**Montana-Dakota Utilities Company**  
**Common Plant**

**392.20 TRANSPORTATION EQUIPMENT - (CARS & TRUCKS)**

**Observed Life Table**

**Retirement Expr. 2005 TO 2014**

**Placement Years 1927 TO 2014**

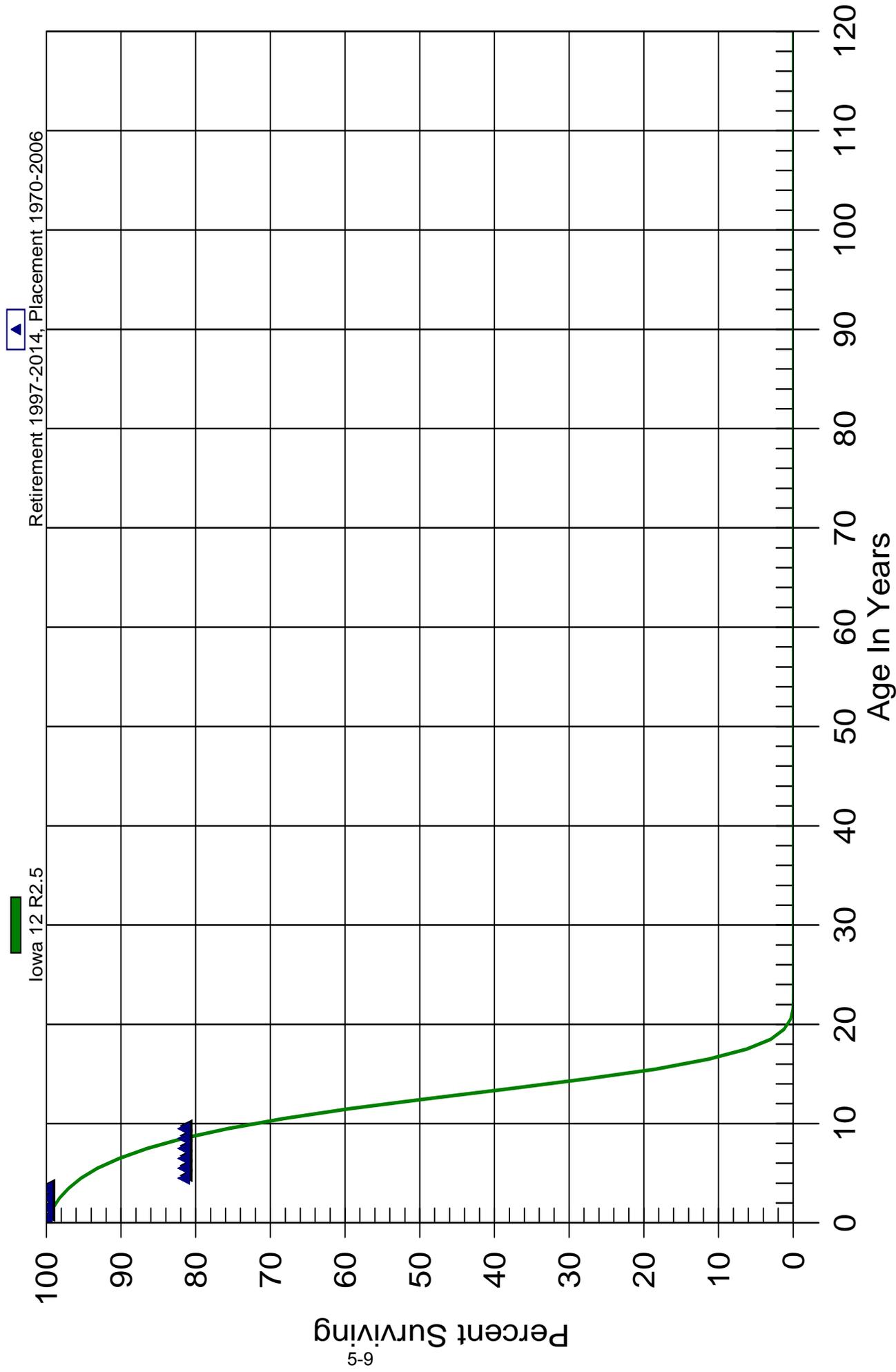
<b>Age Interval</b>	<b>\$ Surviving At Beginning of Age Interval</b>	<b>\$ Retired During The Age Interval</b>	<b>Retirement Ratio</b>	<b>% Surviving At Beginning of Age Interval</b>
0.0 - 0.5	\$5,931,090.59	\$0.00	0.00000	100.00
0.5 - 1.5	\$5,130,823.60	\$0.00	0.00000	100.00
1.5 - 2.5	\$5,019,024.48	\$10,581.83	0.00211	100.00
2.5 - 3.5	\$4,754,379.70	\$135,801.16	0.02856	99.79
3.5 - 4.5	\$4,925,466.19	\$174,309.83	0.03539	96.94
4.5 - 5.5	\$5,426,020.31	\$304,169.80	0.05606	93.51
5.5 - 6.5	\$5,507,281.26	\$274,162.37	0.04978	88.27
6.5 - 7.5	\$4,820,835.70	\$514,288.47	0.10668	83.87
7.5 - 8.5	\$3,903,887.58	\$807,786.68	0.20692	74.92
8.5 - 9.5	\$2,797,796.49	\$605,844.55	0.21654	59.42
9.5 - 10.5	\$2,245,011.45	\$351,859.11	0.15673	46.55
10.5 - 11.5	\$1,659,650.90	\$464,502.40	0.27988	39.26
11.5 - 12.5	\$1,182,622.03	\$288,221.78	0.24371	28.27
12.5 - 13.5	\$688,558.38	\$136,480.72	0.19821	21.38
13.5 - 14.5	\$611,416.63	\$88,078.72	0.14406	17.14
14.5 - 15.5	\$564,391.31	\$26,541.90	0.04703	14.67
15.5 - 16.5	\$471,456.23	\$75,264.83	0.15964	13.98
16.5 - 17.5	\$386,644.93	\$12,595.66	0.03258	11.75
17.5 - 18.5	\$290,143.43	\$29,290.92	0.10095	11.37
18.5 - 19.5	\$252,934.50	\$2,269.48	0.00897	10.22
19.5 - 20.5	\$246,764.49	\$23,023.38	0.09330	10.13
20.5 - 21.5	\$223,741.11	\$0.00	0.00000	9.18
21.5 - 22.5	\$162,882.38	\$0.00	0.00000	9.18
22.5 - 23.5	\$138,180.14	\$0.00	0.00000	9.18
23.5 - 24.5	\$3,191.64	\$0.00	0.00000	9.18
24.5 - 25.5	(\$5,487.89)	\$0.00	0.00000	9.18
25.5 - 26.5	\$1,122.40	\$0.00	0.00000	9.18
26.5 - 27.5	\$360.90	\$0.00	0.00000	9.18

# Montana-Dakota Utilities Company

Common Plant

## 396.20 POWER OPERATED EQUIPMENT

Original And Smooth Survivor Curves



**Montana-Dakota Utilities Company**  
**Common Plant**  
**396.20 POWER OPERATED EQUIPMENT**

**Observed Life Table**  
**Retirement Expr. 1997 TO 2014**  
**Placement Years 1970 TO 2006**

<b>Age Interval</b>	<b>\$ Surviving At Beginning of Age Interval</b>	<b>\$ Retired During The Age Interval</b>	<b>Retirement Ratio</b>	<b>% Surviving At Beginning of Age Interval</b>
0.0 - 0.5	\$196,415.18	\$0.00	0.00000	100.00
0.5 - 1.5	\$196,415.18	\$0.00	0.00000	100.00
1.5 - 2.5	\$152,067.51	\$0.00	0.00000	100.00
2.5 - 3.5	\$110,393.83	\$0.00	0.00000	100.00
3.5 - 4.5	\$110,393.83	\$20,275.10	0.18366	100.00
4.5 - 5.5	\$90,118.73	\$0.00	0.00000	81.63
5.5 - 6.5	\$85,376.75	\$0.00	0.00000	81.63
6.5 - 7.5	\$52,450.87	\$0.00	0.00000	81.63
7.5 - 8.5	\$15,707.42	\$0.00	0.00000	81.63
8.5 - 9.5	\$15,707.42	\$0.00	0.00000	81.63

# **SECTION 6**

**Montana-Dakota Utilities Company**

**Common Plant**

**390.00 STRUCTURES & IMPROVEMENTS**

**Original Cost Of Utility Plant In Service**

**And Development Of Composite Remaining Life as of December 31, 2014**

**Based Upon Broad Group/Remaining Life Procedure and Technique**

*Average Service Life: 38*

*Survivor Curve: R3*

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1953	3,494.96	38.00	91.97	0.76	69.67
1954	863.89	38.00	22.73	0.95	21.56
1956	2,508.43	38.00	66.01	1.40	92.74
1957	9,553.22	38.00	251.40	1.65	413.73
1958	1,338.02	38.00	35.21	1.90	67.01
1959	413.04	38.00	10.87	2.15	23.35
1960	2,078.30	38.00	54.69	2.40	131.38
1961	1,232.59	38.00	32.44	2.66	86.37
1962	9,611.94	38.00	252.95	2.91	737.23
1963	4,907.08	38.00	129.13	3.18	410.24
1964	18,983.94	38.00	499.58	3.43	1,713.05
1965	3,850.31	38.00	101.32	3.69	373.67
1966	151,444.97	38.00	3,985.39	3.96	15,773.83
1967	161,052.17	38.00	4,238.21	4.23	17,922.41
1968	915,293.00	38.00	24,086.65	4.51	108,691.98
1969	74,566.26	38.00	1,962.27	4.81	9,442.72
1970	5,744.59	38.00	151.17	5.12	774.65
1971	18,619.63	38.00	489.99	5.46	2,673.15
1972	423,317.91	38.00	11,139.94	5.81	64,692.40
1973	65,575.41	38.00	1,725.67	6.18	10,664.43
1974	16,413.39	38.00	431.93	6.58	2,840.10
1976	38,794.52	38.00	1,020.91	7.44	7,595.23
1977	300,253.37	38.00	7,901.40	7.91	62,484.24
1978	6,271.01	38.00	165.03	8.40	1,386.75
1979	517,309.31	38.00	13,613.40	8.92	121,472.02
1980	243,249.46	38.00	6,401.30	9.47	60,594.86
1981	186,300.70	38.00	4,902.65	10.04	49,198.11

**Montana-Dakota Utilities Company**  
**Common Plant**

**390.00 STRUCTURES & IMPROVEMENTS**

**Original Cost Of Utility Plant In Service**  
**And Development Of Composite Remaining Life as of December 31, 2014**  
**Based Upon Broad Group/Remaining Life Procedure and Technique**

*Average Service Life: 38*

*Survivor Curve: R3*

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>
1982	1,534,413.42	38.00	40,379.28	10.62	429,018.19
1983	337,566.67	38.00	8,883.33	11.24	99,848.30
1984	2,988,209.11	38.00	78,637.04	11.88	933,893.15
1985	535,883.88	38.00	14,102.20	12.53	176,706.63
1986	379,603.59	38.00	9,989.56	13.21	131,930.82
1988	4,844.35	38.00	127.48	14.61	1,862.73
1989	5,026.60	38.00	132.28	15.34	2,029.26
1990	1,377.26	38.00	36.24	16.09	582.99
1991	70,702.10	38.00	1,860.58	16.84	31,340.57
1992	163,560.50	38.00	4,304.22	17.62	75,839.44
1993	301,888.43	38.00	7,944.43	18.41	146,238.92
1994	2,292,791.36	38.00	60,336.59	19.21	1,159,163.31
1995	578,721.33	38.00	15,229.50	20.03	305,024.89
1996	290,056.16	38.00	7,633.05	20.86	159,205.94
1997	643,800.12	38.00	16,942.10	21.70	367,653.07
1998	261,211.63	38.00	6,873.99	22.56	155,047.34
1999	253,140.13	38.00	6,661.58	23.42	156,027.16
2000	712,787.22	38.00	18,757.55	24.30	455,823.39
2001	258,152.69	38.00	6,793.49	25.19	171,124.21
2002	425,278.52	38.00	11,191.53	26.09	291,988.80
2003	231,680.54	38.00	6,096.85	27.00	164,618.52
2004	1,256,998.87	38.00	33,078.90	27.92	923,550.67
2005	3,898,831.72	38.00	102,600.78	28.85	2,959,891.42
2006	37,502.34	38.00	986.90	29.79	29,395.58
2007	4,473,390.22	38.00	117,720.74	30.73	3,617,547.96
2008	845,919.79	38.00	22,261.04	31.68	705,271.68
2010	2,447,246.60	38.00	64,401.19	33.60	2,164,139.31

**Montana-Dakota Utilities Company  
Common Plant**

**390.00 STRUCTURES & IMPROVEMENTS**

**Original Cost Of Utility Plant In Service  
And Development Of Composite Remaining Life as of December 31, 2014  
Based Upon Broad Group/Remaining Life Procedure and Technique**

*Average Service Life: 38                      Survivor Curve: R3*

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
2011	655,506.13	38.00	17,250.15	34.57	596,398.94
2012	4,517,749.95	38.00	118,888.10	35.55	4,226,158.39
2013	1,324,924.42	38.00	34,866.41	36.53	1,273,525.20
2014	14,387,388.94	38.00	378,615.31	37.51	14,201,054.32
<b>Total</b>	49,299,196.01	38.00	1,297,346.63	28.25	36,652,247.98

**Composite Average Remaining Life ... 28.2 Years**

**Montana-Dakota Utilities Company  
Common Plant**

**392.10 TRANSPORTATION EQUIPMENT - (TRAILERS)**

**Original Cost Of Utility Plant In Service  
And Development Of Composite Remaining Life as of December 31, 2014  
Based Upon Broad Group/Remaining Life Procedure and Technique**

*Average Service Life: 25                      Survivor Curve: LI*

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
2013	2,482.58	25.00	99.30	23.61	2,344.74
<b>Total</b>	2,482.58	25.00	99.30	23.61	2,344.74

*Composite Average Remaining Life ... 23.6 Years*

**Montana-Dakota Utilities Company  
Common Plant**

**392.20 TRANSPORTATION EQUIPMENT - (CARS & TRUCKS)**

**Original Cost Of Utility Plant In Service  
And Development Of Composite Remaining Life as of December 31, 2014  
Based Upon Broad Group/Remaining Life Procedure and Technique**

*Average Service Life: 9*

*Survivor Curve: R3*

<i>Year</i>	<i>Original Cost</i>	<i>Avg. Service Life</i>	<i>Avg. Annual Accrual</i>	<i>Avg. Remaining Life</i>	<i>Future Annual Accruals</i>
<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>	<i>(6)</i>
1987	360.90	0.00	0.00	0.00	0.00
1988	761.50	0.00	0.00	0.00	0.00
1989	2,069.24	0.00	0.00	0.00	0.00
1991	134,988.50	0.00	0.00	0.00	0.00
1992	24,702.24	0.00	0.00	0.00	0.00
1993	60,858.73	0.00	0.00	0.00	0.00
1995	3,900.53	0.00	0.00	0.00	0.00
1997	79,241.87	0.00	0.00	0.00	0.00
1999	83,826.63	0.00	0.00	0.00	0.00
2000	55,176.52	9.00	6,130.72	0.50	3,065.36
2001	103,334.00	9.00	11,481.55	0.56	6,440.77
2002	249,132.30	9.00	27,681.35	0.76	21,062.35
2003	195,383.44	9.00	21,709.26	1.00	21,608.19
2004	310,050.40	9.00	34,450.02	1.27	43,752.41
2005	80,708.66	9.00	8,967.62	1.62	14,562.96
2006	672,833.55	9.00	74,759.23	2.08	155,715.00
2007	801,384.55	9.00	89,042.66	2.65	235,853.96
2008	732,606.88	9.00	81,400.71	3.31	269,309.84
2010	133,489.72	9.00	14,832.18	4.84	71,846.44
2011	317,435.55	9.00	35,270.59	5.70	200,998.69
2012	1,098,742.33	9.00	122,082.39	6.60	805,882.41
2013	498,159.93	9.00	55,351.06	7.54	417,430.85
2014	1,414,277.89	9.00	157,141.87	8.51	1,337,139.44
<b>Total</b>	<b>7,053,425.86</b>	<b>5.48</b>	<b>740,301.21</b>	<b>4.87</b>	<b>3,604,668.66</b>

**Composite Average Remaining Life ... 4.87 Years**

# **SECTION 7**

**Montana-Dakota Utilities Company**  
**Common Plant**

**390.00 STRUCTURES & IMPROVEMENTS**

*Forecasted Future Net Salvage  
Based Upon Experienced Net Salvage 1968 - 2014*

<u>Year</u>	<u>Original Cost Of Retirements</u>	<u>Gross Salvage</u>		<u>Cost of Removal</u>		<u>Net Salvage</u>	
		<u>Amount</u>	<u>%</u>	<u>Amount</u>	<u>%</u>	<u>Amount</u>	<u>%</u>
<u>Annual Activity</u>							
1968	4,755.66	662.00	13.92%	40.08	0.84%	621.92	13.08%
1969	23,146.27	350.00	1.51%	978.69	4.23%	(628.69)	-2.72%
1970	9,535.95	5,550.94	58.21%	1,401.83	14.70%	4,149.11	43.51%
1971	55.50	816.00	1470.27%	1,457.69	2626.47%	(641.69)	-1156.20%
1972	89,020.14	20,850.79	23.42%	100.23	0.11%	20,750.56	23.31%
1973	823.15	556.00	67.55%	0.00	0.00%	556.00	67.55%
1974	6,649.36	0.00	0.00%	2,380.69	35.80%	(2,380.69)	-35.80%
1975	0.00	0.00	0.00%	0.00	0.00%	0.00	0.00%
1976	698.69	0.00	0.00%	17.84	2.55%	(17.84)	-2.55%
1977	33,563.08	10.00	0.03%	7,368.10	21.95%	(7,358.10)	-21.92%
1978	5,945.18	166.75	2.80%	470.81	7.92%	(304.06)	-5.11%
1979	361.83	-2.15	-0.59%	28.73	7.94%	(30.88)	-8.53%
1980	36,428.79	46,043.00	126.39%	0.00	0.00%	46,043.00	126.39%
1981	386.16	0.00	0.00%	0.00	0.00%	0.00	0.00%
1982	2,390.36	-35,198.49	-1472.52%	0.00	0.00%	(35,198.49)	-1472.52%
1983	151,268.18	52,055.19	34.41%	17,106.40	11.31%	34,948.79	23.10%
1984	0.00	239.87	0.00%	0.00	0.00%	239.87	0.00%
1985	29,321.00	0.00	0.00%	0.00	0.00%	0.00	0.00%
1986	353,205.79	462.87	0.13%	23,017.27	6.52%	(22,554.40)	-6.39%
1987	114,668.89	6.60	0.01%	178,550.90	155.71%	(178,544.30)	-155.70%
1988	1,065.81	20.00	1.88%	44,427.72	4168.45%	(44,407.72)	-4166.57%
1989	2,907.81	0.00	0.00%	1,361.75	46.83%	(1,361.75)	-46.83%
1990	1,179.28	0.00	0.00%	4,183.53	354.75%	(4,183.53)	-354.75%
1991	11,317.67	0.00	0.00%	21,000.00	185.55%	(21,000.00)	-185.55%
1992	6,400.00	0.00	0.00%	59,485.65	929.46%	(59,485.65)	-929.46%
1993	66,938.07	5,500.00	8.22%	11,015.00	16.46%	(5,515.00)	-8.24%
1994	76,339.95	52.50	0.07%	3,348.28	4.39%	(3,295.78)	-4.32%
1995	249,269.07	188,096.00	75.46%	48,516.38	19.46%	139,579.62	56.00%

**Montana-Dakota Utilities Company**  
**Common Plant**

**390.00 STRUCTURES & IMPROVEMENTS**

*Forecasted Future Net Salvage  
Based Upon Experienced Net Salvage 1968 - 2014*

<u>Year</u>	<u>Original Cost Of Retirements</u>	<u>Gross Salvage</u>		<u>Cost of Removal</u>		<u>Net Salvage</u>	
		<u>Amount</u>	<u>%</u>	<u>Amount</u>	<u>%</u>	<u>Amount</u>	<u>%</u>
<u>Annual Activity</u>							
1996	174,572.37	26,753.21	15.32%	22,545.80	12.91%	4,207.41	2.41%
1997	97,788.56	45,363.50	46.39%	4,264.75	4.36%	41,098.75	42.03%
1998	255,811.74	0.00	0.00%	40,398.90	15.79%	(40,398.90)	-15.79%
1999	303,792.23	30,685.00	10.10%	12,226.33	4.02%	18,458.67	6.08%
2000	172,070.45	10,283.75	5.98%	30,934.95	17.98%	(20,651.20)	-12.00%
2001	109,759.98	0.00	0.00%	14,718.75	13.41%	(14,718.75)	-13.41%
2002	110,036.20	0.00	0.00%	29,201.73	26.54%	(29,201.73)	-26.54%
2003	16,416.00	0.00	0.00%	0.00	0.00%	0.00	0.00%
2004	0.00	0.00	0.00%	26,474.19	0.00%	(26,474.19)	0.00%
2005	-32,272.79	0.00	0.00%	225.00	0.00%	(225.00)	0.00%
2006	13,529.44	0.00	0.00%	9,972.50	73.71%	(9,972.50)	-73.71%
2007	45,025.37	0.00	0.00%	14,204.68	31.55%	(14,204.68)	-31.55%
2008	26,948.70	0.00	0.00%	2,070.30	7.68%	(2,070.30)	-7.68%
2009	0.00	0.00	0.00%	0.00	0.00%	0.00	0.00%
2010	59,048.64	3,138.00	5.31%	243.60	0.41%	2,894.40	4.90%
2011	88,464.39	19,860.89	22.45%	452.55	0.51%	19,408.34	21.94%
2012	192,753.79	3,871.55	2.01%	250.00	0.13%	3,621.55	1.88%
2013	11,997.96	0.00	0.00%	0.00	0.00%	0.00	0.00%
2014	762,012.59	1,212.10	0.16%	0.00	0.00%	1,212.10	0.16%

**Montana-Dakota Utilities Company**  
**Common Plant**  
**390.00 STRUCTURES & IMPROVEMENTS**  
**Forecasted Future Net Salvage**  
**Based Upon Experienced Net Salvage 1968 - 2014**

<u>Year</u>	<u>Original Cost Of Retirements</u>	<u>Gross Salvage</u>		<u>Cost of Removal</u>		<u>Net Salvage</u>	
		<u>Amount</u>	<u>%</u>	<u>Amount</u>	<u>%</u>	<u>Amount</u>	<u>%</u>
<b><u>Three - Year Rolling Bands</u></b>							
1968 - 1970	37,437.88	6,562.94	17.53%	2,420.60	6.47%	4,142.34	11.06%
1969 - 1971	32,737.72	6,716.94	20.52%	3,838.21	11.72%	2,878.73	8.79%
1970 - 1972	98,611.59	27,217.73	27.60%	2,959.75	3.00%	24,257.98	24.60%
1971 - 1973	89,898.79	22,222.79	24.72%	1,557.92	1.73%	20,664.87	22.99%
1972 - 1974	96,492.65	21,406.79	22.18%	2,480.92	2.57%	18,925.87	19.61%
1973 - 1975	7,472.51	556.00	7.44%	2,380.69	31.86%	(1,824.69)	-24.42%
1974 - 1976	7,348.05	0.00	0.00%	2,398.53	32.64%	(2,398.53)	-32.64%
1975 - 1977	34,261.77	10.00	0.03%	7,385.94	21.56%	(7,375.94)	-21.53%
1976 - 1978	40,206.95	176.75	0.44%	7,856.75	19.54%	(7,680.00)	-19.10%
1977 - 1979	39,870.09	174.60	0.44%	7,867.64	19.73%	(7,693.04)	-19.30%
1978 - 1980	42,735.80	46,207.60	108.12%	499.54	1.17%	45,708.06	106.95%
1979 - 1981	37,176.78	46,040.85	123.84%	28.73	0.08%	46,012.12	123.77%
1980 - 1982	39,205.31	10,844.51	27.66%	0.00	0.00%	10,844.51	27.66%
1981 - 1983	154,044.70	16,856.70	10.94%	17,106.40	11.10%	(249.70)	-0.16%
1982 - 1984	153,658.54	17,096.57	11.13%	17,106.40	11.13%	(9.83)	-0.01%
1983 - 1985	180,589.18	52,295.06	28.96%	17,106.40	9.47%	35,188.66	19.49%
1984 - 1986	382,526.79	702.74	0.18%	23,017.27	6.02%	(22,314.53)	-5.83%
1985 - 1987	497,195.68	469.47	0.09%	201,568.17	40.54%	(201,098.70)	-40.45%
1986 - 1988	468,940.49	489.47	0.10%	245,995.89	52.46%	(245,506.42)	-52.35%
1987 - 1989	118,642.51	26.60	0.02%	224,340.37	189.09%	(224,313.77)	-189.07%
1988 - 1990	5,152.90	20.00	0.39%	49,973.00	969.80%	(49,953.00)	-969.42%
1989 - 1991	15,404.76	0.00	0.00%	26,545.28	172.32%	(26,545.28)	-172.32%
1990 - 1992	18,896.95	0.00	0.00%	84,669.18	448.06%	(84,669.18)	-448.06%
1991 - 1993	84,655.74	5,500.00	6.50%	91,500.65	108.09%	(86,000.65)	-101.59%
1992 - 1994	149,678.02	5,552.50	3.71%	73,848.93	49.34%	(68,296.43)	-45.63%
1993 - 1995	392,547.09	193,648.50	49.33%	62,879.66	16.02%	130,768.84	33.31%
1994 - 1996	500,181.39	214,901.71	42.96%	74,410.46	14.88%	140,491.25	28.09%
1995 - 1997	521,630.00	260,212.71	49.88%	75,326.93	14.44%	184,885.78	35.44%

**Montana-Dakota Utilities Company**

**Common Plant**

**390.00 STRUCTURES & IMPROVEMENTS**

*Forecasted Future Net Salvage*

*Based Upon Experienced Net Salvage 1968 - 2014*

<u>Year</u>	<u>Original Cost Of Retirements</u>	<u>Gross Salvage</u>		<u>Cost of Removal</u>		<u>Net Salvage</u>	
		<u>Amount</u>	<u>%</u>	<u>Amount</u>	<u>%</u>	<u>Amount</u>	<u>%</u>
<b><u>Three - Year Rolling Bands</u></b>							
1996 - 1998	528,172.67	72,116.71	13.65%	67,209.45	12.72%	4,907.26	0.93%
1997 - 1999	657,392.53	76,048.50	11.57%	56,889.98	8.65%	19,158.52	2.91%
1998 - 2000	731,674.42	40,968.75	5.60%	83,560.18	11.42%	(42,591.43)	-5.82%
1999 - 2001	585,622.66	40,968.75	7.00%	57,880.03	9.88%	(16,911.28)	-2.89%
2000 - 2002	391,866.63	10,283.75	2.62%	74,855.43	19.10%	(64,571.68)	-16.48%
2001 - 2003	236,212.18	0.00	0.00%	43,920.48	18.59%	(43,920.48)	-18.59%
2002 - 2004	126,452.20	0.00	0.00%	55,675.92	44.03%	(55,675.92)	-44.03%
2003 - 2005	-15,856.79	0.00	0.00%	26,699.19	0.00%	(26,699.19)	0.00%
2004 - 2006	-18,743.35	0.00	0.00%	36,671.69	0.00%	(36,671.69)	0.00%
2005 - 2007	26,282.02	0.00	0.00%	24,402.18	92.85%	(24,402.18)	-92.85%
2006 - 2008	85,503.51	0.00	0.00%	26,247.48	30.70%	(26,247.48)	-30.70%
2007 - 2009	71,974.07	0.00	0.00%	16,274.98	22.61%	(16,274.98)	-22.61%
2008 - 2010	85,997.34	3,138.00	3.65%	2,313.90	2.69%	824.10	0.96%
2009 - 2011	147,513.03	22,998.89	15.59%	696.15	0.47%	22,302.74	15.12%
2010 - 2012	340,266.82	26,870.44	7.90%	946.15	0.28%	25,924.29	7.62%
2011 - 2013	293,216.14	23,732.44	8.09%	702.55	0.24%	23,029.89	7.85%
2012 - 2014	966,764.34	5,083.65	0.53%	250.00	0.03%	4,833.65	0.50%

**Montana-Dakota Utilities Company**

**Common Plant**

**390.00 STRUCTURES & IMPROVEMENTS**

**Forecasted Future Net Salvage**

**Based Upon Experienced Net Salvage 1968 - 2014**

<u>Year</u>	<u>Original Cost Of Retirements</u>	<u>Gross Salvage</u>		<u>Cost of Removal</u>		<u>Net Salvage</u>	
		<u>Amount</u>	<u>%</u>	<u>Amount</u>	<u>%</u>	<u>Amount</u>	<u>%</u>

**Three - Year Rolling Bands**

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1968 - 2014	3,685,397.26	427,405.87	11.60	634,441.60	17.22	(207,035.73)	-5.62
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**Trend Analysis (End Year) 2014**

\*Based Upon Three - Year Rolling Averages

Annual Inflation Rate	2.75%
Average Service Life (ASL)	42.0
Average Retirement Age (Yrs)	30.8
Years To ASL	11.2
Inflation Factor At 2.75% to ASL	1.36

**Gross Salvage**  
**Linear Trend Analysis**

<b>1995-2014</b>	<b>20 - Year Trend</b>	0.00%
<b>2000-2014</b>	<b>15 - Year Trend</b>	5.42%
<b>2005-2014</b>	<b>10 - Year Trend</b>	8.62%
<b>2010-2014</b>	<b>5 - Year Trend</b>	3.03%

**Forecasted**

<b>Gross Salvage</b>	3.03%
( Five Year Trend )	
<b>Cost Of Removal</b>	23.36%
<b>Net Salvage</b>	-20.33%