## **SECTION 1**

## MONTANA-DAKOTA UTILITIES COMPANY Electric Division

## **Executive Summary**

Table 1 on pages 2-1 to 2-3 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 – Electric Division (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 1-Plant Site on pages 2-4 and 2-5 is essentially the same information as contained on the Steam and Other Production functions of Table 1 except that the depreciation amounts are displayed by individual plant site locations.

Table 1a on pages 2-6 through 2-9 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 2-10 through 2-12, (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 2-13 through 2-15 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 2-16 through 2-18 summarizes the depreciation recovery rates for the cost of removal segment of the total plant cost.

Table 3 on pages 2-19 to 2-21 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 2-22 to 2-24, 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 2-25 through 2-28 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 2-29 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 2-30 to 2-45 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 used 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 will be 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 deprecation 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 occurred relative to Account 312 – Boiler Plant Equipment, Account 344.10 – Generators, Account 344.20 – Generators-Wind Farm, Account 353 – Station Equipment, Account 355 – Poles & Fixtures, and Account 370 – Meters.

The depreciation rate for Account 312 – Boiler Plant Equipment increased from 2.46 percent to 2.71 percent. The proposed depreciation rate for the Company's investment in this property category is being developed via the Life Span Method. An interim retirement rate was identified for each property group based upon an analysis of the Company's historical experience to date. Using the location and vintage level surviving investments for each generating facility's location property, the estimated interim retirement rate and Company management's provided probable retirement/rehabilitation dates, an implicit average service life and average remaining life was produced via the life span approach. The developed depreciation rates "do not" include any proposed component for the recovery of either interim or terminal (decommission cost) net salvage.

Notwithstanding the occurrence of actual (experienced) interim negative net salvage and the further expectation of future, end of life terminal negative net salvage (decommissioning cost), Company management requested that no such cost be included in the development of the proposed depreciation rates related to its generating facilities. Company management will address the recovery of those components of cost through a separate regulatory request.

Ongoing additional new investments added to existing life span property class investments (absent changes in underlying parameters) automatically reduces the implicit average life and increases the required depreciation rate due to the fact that in each successive year there is a shorter period of time over which to recover the added investments.

The depreciation rate for Account 344.10 – Generators increased from 2.60 percent to 3.00 percent. The Company has multiple Other Production units including Glendive, Glendive II, Miles City, Heskett III, Ormat Generation, and Portable Generators at various locations. Not all of the various locations have investments in each of the Other Production property accounts.

The depreciation rate for the Company's investment in this property category is being developed via the Life Span Method. An interim retirement rate was identified for each property group based upon an analysis of the Company's total account historical experience to date. Using the location and vintage level surviving investments for each generating facility's location property, the estimated interim retirement rate and Company management's provided probable retirement/rehabilitation dates, an implicit average service life and average remaining life was produced via the life span approach. The developed depreciation rates "do not" include any proposed component for the recovery of either interim or terminal (decommission cost) net salvage.

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Similarly like the forgoing accounts, the ongoing additional new investments added to existing life span property class investments (absent changes in underlying parameters) automatically reduces the implicit average life and increases the required depreciation rate due to the fact that in each successive year there is a shorter period of time over which to recover the added investments.

The depreciation rate for Account 344.2-Generators-Wind Farm increased from 5.06 percent to 5.52 percent. The Company has 2 wind farm sites, namely, Diamond Willow and Cedar Hills. Diamond Willow currently has 20 turbine units while the Cedar Hills is comprise of 13 turbine units. The capacity of each of the Diamond Hills turbines is 1.5 MW and the Cedar Hills turbines are 1.5 MW each.

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The proposed depreciation rate for Account 353– Station Equipment, declined from 1.88 percent to 1.58 percent. The proposed depreciation rate is the result of combined changes of the average service life parameters as well as the changes to plant in service and the applicable book depreciation reserve. The proposed average service life was changed in accordance with the life indication developed through an analysis of the Company's historical data and consideration of future expectations. The resulting proposed average service life is sixty (60) years, while the average service life underlying the present depreciation rate is forty-five (45) years. Both the future net salvage underlying the proposed depreciation rates and the net salvage underlying the present depreciation rates and the net salv

The costs included in this account investment are related to numerous transmission substation equipment (including items such as transformers, voltage regulators, circuit breakers, etc.) used to transform power to different voltages. Currently, there are nearly 100 stations operating at voltages between 69Kv through 138 & 345Kv facilities. During the last several years the Company has been in an increasing growth mode having increased its plant investment

by approximately a third. To date the activity has been more on the growth side as opposed to replacement of existing facilities. In future years it is anticipated that replacement of existing facilities will likely occur at higher levels, thus the average service life should be monitored closely. At the current estimated average service life, the recovery period is longer than the maximum average service life for the property group identified in an industry survey.

The proposed depreciation rate for Account 355 – Poles and Fixtures, increased from 2.40 percent to 2.99 percent. The proposed depreciation rate is the result of combined changes of both the average service life and net salvage parameters. The proposed average service life changed in accordance with the life indication developed through an analysis of the Company's historical data and consideration of future expectations. The resulting proposed average service life is fifty (50) years, which is an increase from the forty-five (45) year average service life underlying the present depreciation rate. The future net salvage underlying the proposed depreciation rates is negative fifty (50) percent while the future net salvage underlying the present depreciation rates 35 (35) percent and is reflective of the increased level of negative net salvage being experienced by the company.

During the last several years the Company has been in an increasing growth mode having increased its plant investment by approximately a third. Historically, the activity has been more on the growth side as opposed to replacement of existing facilities, however, during the most recent study year replacements/retirements have accelerated rather dramatically. In fact while the overall and more 5 year experience band analysis produced life indication of an estimated 57 years' average service life, the current 2014 band produced an average service life indication of 45 years. In future years it is anticipated that replacement of existing facilities will likely occur

at higher levels.

Over the immediate coming 5 years management anticipates building approximately 100 miles of pole transmission line of which one half is expected to me continued growth/expansion while the remaining one half is expected to be replacement of existing property with further activity in more distant years. This significant increase in plant activity can be anticipated to continue the shorter life presently being experience. Based upon the available recent study result a reduction to the longer than normal average service life for the Company's property is proposed. At the present time, an average service life of 50 years is estimated for the property group. As additional activity occurs in future years a further reduction will likely be warranted. Even at the estimated average service life of a 50-R3 life and curve, the recovery period is at the higher end of the industry range of service lives.

The proposed depreciation rate for Account 370– Meters, increased from 3.44 percent to 7.19 percent. The proposed depreciation rate is the result of combined changes of both the average service life and net salvage parameters. The resulting proposed composite average service life twenty (20) years, while the average service life underlying the present depreciation rate is thirty-five (45) years. The future net salvage underlying the proposed depreciation rates is negative 5 percent while the future net salvage underlying the present depreciation rates is 0 percent.

In more recent years, the Company replaced the overwhelming majority of its electric meters in conjunction with an AMR conversion project. Accordingly, the historical analysis of recent data, in which there was a wholesale change out of property, produced a shorter life indication for the property group than might be experienced for the current property. That is, the

conversion project resulted in the Company now having a completely different automated metering reading (AMR) technology of Meters than which previously existed. This current new technologically driven property is routinely influenced by greater levels of upgrades, obsolescence, etc. than the prior mechanical meters.

For example, while the AMR technology provides improved efficiencies and enhanced technology capabilities, it only captures a limited part of the ultimate transformation to the current state of the art meter reading and plant utilization capabilities. Advanced Meter Infrastructure (AMI) and related Smart Grid will further expand the control capabilities of the electric network. Accordingly, it is only a matter of time until it will be necessary to complete further upgrades to its present Meter facilities. Thus, an average service life of 20 years is initially estimated for the present property group investment. The life of this property group needs to be monitored on an ongoing basis in conjunction with changing technology and the Company's needs to address such rapid changes.

Various of 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, 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 \$36,880,451 which is an increase of \$1,993,230 from current depreciation rates.

The following summary compares the present and proposed composite depreciation rates for illustrative purposes only. The <u>Composite Depreciation Rate</u> 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	\$1,213,018,682
Annual Depreciation Expense	34,887,221
Composite Annual Depreciation Rate	2.88%
Proposed Depreciation Rates	
Depreciable Plant In Service at December 31, 2014	\$1,213,018,682
Annual Depreciation Expense	36,880,451
Composite Annual Depreciation Rate	3.04%