Exhibit No. (LEK-1)

MONTANA-DAKOTA UTILITIES CO.

BEFORE THE SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

DOCKET NO. EL23-___

PREPARED DIRECT TESTIMONY OF

LARRY E. KENNEDY

Q1. Please state your name and business address.

A1. My name is Larry E. Kennedy. My business address is 200 Rivercrest Drive SE, Suite 277, Calgary, Alberta, T2C 2X5.

Q2. By whom are you employed?

A2. I am employed by Concentric Advisors, ULC.

Q3. What is your position with Concentric Advisors, ULC. ("Concentric")?

A3. I am employed by Concentric as a Senior Vice President.

Q4. On whose behalf are you submitting this Direct Testimony?

A4. I am submitting this Direct Testimony before the South Dakota Public Utilities Commission ("Commission") on behalf of Montana-Dakota Utilities Co. ("Montana-Dakota" or the "Company").

Q5. Please describe your education and experience.

A5. I am a Certified Depreciation Professional, with over 40 years of regulatory plant accounting and depreciation experience, and 22 years of depreciation and plant accounting consulting to the regulated utility industry. I have advised numerous energy and utility clients on a wide range of accounting, property tax and utility depreciation matters. Many of these assignments have included the determination of the cost of appropriate annual depreciation accrual rates. I have included my resume and a summary of testimony that I have filed in other proceedings as Exhibit No. (LEK-2), Schedule 1.

Q6. Please describe Concentric's activities in energy and utility engagements.

A6. Concentric provides financial and economic advisory services to many and various energy and utility clients across North America. Our regulatory, economic, and market analysis services include utility ratemaking and regulatory advisory services; energy market assessments; market entry and exit analysis; corporate and business unit strategy development; demand forecasting; resource planning; and energy contract negotiations. Our financial advisory activities include buy and sell-side merger, acquisition and divestiture assignments; due diligence and valuation assignments; project and corporate finance services; and transaction support services. In addition, we provide litigation support services on a wide range of financial and economic issues on behalf of clients throughout North America.

Q7. Have you testified before any regulatory authorities?

A7. Yes. A list of proceedings in which I have provided testimony is provided in Exhibit No. (LEK-2).

I. PURPOSE AND OVERVIEW OF DIRECT TESTIMONY

Q8. What is the purpose of your Direct Testimony?

A8. The purpose of my Direct Testimony is to set forth the results of my full and comprehensive depreciation study of the plant in service of the Montana-Dakota – Electric Division ("MDU" or the "Company"), as of December 31, 2020. My detailed report, including my analyses and recommendations, is provided in Exhibit No. (LEK-3), titled "Calculated Annual Depreciation Rates Applicable to Plant in Service as of December 31, 2020". Exhibit No. (LEK-4) presents the depreciation tables which have been revised to reflect the Diamond Willow Wind Farm repower project. The detailed depreciation study report and Diamond Willow Wind Farm Adjustment were prepared by me or under my direction**.** In addition, my Direct Testimony is to set forth the results of my full and comprehensive depreciation study of the plant for Montana-Dakota's Common assets. My detailed report, including my analyses and recommendations, is provided in Exhibit No. (LEK-5), titled "Calculated Annual Depreciation Rates Applicable to Common Plant in Service as of December 31, 2021".

Q9. Please provide a brief overview of the analyses that led to your depreciation recommendations.

A9. In preparing the depreciation study report, I analyzed the historic plant account data of MDU to prepare an analysis of the Company's past retirement experience. I met (virtually) with the Company's management and operations representatives to determine the extent to which the historic indications would be reflective of the future retirement patterns. In addition, as the study was completed over the period in which COVID protocols were in place, I relied on my notes from my operational site tours from the 2018 Depreciation Study completed by

Concentric. The completion of the 2018 depreciation study included tours of three Company substations and switch yards, a coal fired thermal generation plant, gas turbine generation facility, the Company service building and yard, and the MDU electric control room. Lastly, I also reviewed the average service life and net salvage indications of many North American based electric utilities to test the results of my analysis against the electric industry peers.

Q10. How is the remainder of your Direct Testimony organized?

A10. Section II provides the scope of my study and a summary of my analyses and conclusions. This section also includes a discussion of the major causes of changes in the depreciation accrual rate and amounts as compared to the last study. Section III provides a background on utility depreciation, depreciation methods and procedures. Section IV provides concluding comments.

II. SCOPE OF THE DEPRECIATION STUDY

Q11. Please outline the Scope of the Depreciation Study.

A11. My depreciation study report sets forth the results of the depreciation study for the electric generation, transmission, distribution, and general plant assets of the MDU Electric Division, to determine the annual depreciation accrual rates and amounts for book purposes applicable to the original cost of investment, as of December 31, 2020. The rates and amounts are based on the Straight-Line Method, incorporating the Average Life Group Procedure applied on a Remaining Life Basis. This study also describes the concepts, methods and judgments which underlie the recommended annual depreciation accrual rates related to the MDU electric assets in service, as of December 31, 2020.

Q12. Please outline the information included in your depreciation study report.

A12. The depreciation study report is presented in nine (9) sections outlined as follows:

- Section 1 Study Highlights, presents a summary of the depreciation study and results.
- Section 2 Introduction, contains statements with respect to the plan and the basis of the study.
- Section 3 Development of Depreciation Parameters, presents descriptions of the methods used and factors considered in the service life study.
- Section 4 Calculation of Annual and Accrued Depreciation, presents the methods and procedures used in the calculation of depreciation.
- Section 5 Result of Study, presents summaries by depreciable group of annual and accrued depreciation in Tables 1, 2, 3, 4, 5, and 6.
- Section 6 Retirement Rate Analysis
- Section 7 Net Salvage Calculations
- Section 8 Detailed Depreciation Calculations
- Section 9 Estimation of Survivor Curves, is an overview of Iowa curves and the Retirement Rate Analysis.

Q13. Was the depreciation study prepared using generally accepted standard methods and practices?

A13. Yes. Previous depreciation studies completed for MDU utilized a widely accepted method for the study of the Company's historic data, known as the Retirement Rate Analysis Method. The Retirement Rate Analysis Method is generally accepted as the correct method to use when aged data is available for review. The aged data used in the last study, through December 31, 2017, was available to be incorporated into our database. Additional reliable aged data, for the period January 1, 2018 through to December 31, 2020, was provided by the Company and incorporated in our database. Given the availability of reliable aged data, I prepared the historic study of mortality history using the retirement rate method. A detailed discussion of the retirement rate analysis is presented in Section 9 of my depreciation study report.

Additionally, the service life study included:

- a review of MDU company practice and outlook, as they relate to plant operation and retirement;
- consideration of current practice in the electric system industry, including knowledge of service life estimates used for other electric system companies; and
- informed professional judgment which incorporated analyses of all of the above factors.

My study of the net salvage percentages was based on detailed study prepared under the standard approach, which has commonly become known as the "Traditional method". Within this method, the net salvage transactions (gross salvage proceeds, re-use salvage and costs of removal or retirement) are compared to the original cost of the item being retired. The analysis is prepared on an actual transaction year basis, for as many years as reliable data is available. The analysis then includes a series of 3-year rolling average bands, 5-year rolling average bands, and life to date bands covering all years of transactional data.

As described in later sections of this evidence, the depreciation accrual rates presented herein are based on generally-accepted methods and procedures for calculating depreciation.

The methods described above are generally accepted for use in the development of depreciation rates for regulated utilities.

Q14. Please provide a summary of the results of the depreciation study.

A14. The study results in an annual depreciation expense accrual related to the recovery of original cost (i.e. excluding net salvage requirement) of $57.8 million, when applied to depreciable plant balances, as of December 31, 2020 and accounting for the Diamond Willow Wind Farm repower project. The study results are summarized at an aggregate functional group level as follows:

SUMMARY OF ORIGINAL COST, ACCRUAL PERCENTAGES AND AMOUNTS

Plant Group	Original Cost	Annual Accrual	
Steam Plant	$372,470,891	2.45%	$9,115,697
Other Production Plant*	$552,138,101	4.05%	$22,374,578
Transmission Plant	$522,283,617	1.70%	$8,889,889
Distribution Plant	$461,078,839	3.25%	$15,005,624
General Plant	$33,261,966	7.34%	$2,443,013
Total Plant in Service*	$1,941,233,414	2.98%	$57,828,801

*Includes additional investment in 2022 related to the Diamond Willow Wind Farm repower project.

Q15. How do the above depreciation rates compare to the currently approved depreciation rates?

A15. The following chart summarizes the proposed composite depreciation rates as compared to the currently applied for composite depreciation rates.

Plant Group	Proposed Depreciation Rate	Currently Applied Depreciation Rate
Steam Plant	2.45%	1.93%
Other Production Plant*	4.05%	3.76%
Transmission Plant	1.70%	1.61%
Distribution Plant	3.25%	2.40%
General Plant	7.34%	5.84%
Total Plant in Service*	2.98%	2.54%

***Includes additional investment in 2022 related to the Diamond Willow Wind Farm repower project.**

Q16. Please describe the reasons for the increase in the depreciation rates related to electric production plant.

A16. The largest influence in electric production depreciation rates results from the continued use of a Life Span approach applied to each generation unit. The impact of using the Life Span approach has been more dramatic in recent years because of the large capital spending primarily related to environmental requirements at several of the units.

The use of the Life Span Method is a continuation of the method that was incorporated into the production accounts in the last depreciation study, wherein the depreciation rates for each of the location specific generation accounts were developed from the continued use of a Life Span Method. With the use of a Life

Span Method, an interim retirement curve is identified for each property group, based on the analysis as described within Section 3.6 of my depreciation study report. The probable retirement dates for each of the generation plants were, provided to me by MDU, based on an internal MDU analysis of the factors impacting the terminal life of each plant. The life span date is incorporated into the interim survivor curve to develop an average service life and average remaining life, via the Life Span Method, for each of the generation accounts. A comparison of the life span dates used for each the generation facilities from the depreciation study completed in 2015 based on 2014 data and the life span dates used in my current depreciation study are provided below.

Generation Station	**Proposed**	**Currently Used**
Heskett Generating Stations (Common Plant)	N/A	2028
Lewis & Clark Generating Station (Common Plant)	N/A	2025
Coyote Generating Station	2041	2041
Big Stone Generating Station	2046	2046
Wygen III Generating Station	2060	2060
Glendive Turbine – Unit 1	2033	2022
Glendive Turbine – Unit 2	2046	2046
Miles City Turbine	2033	2019
Portable Generators	2047	2047
Heskett Turbine	2057	2057
Diamond Willow Wind Farm	2035	2027
Cedar Hills Wind Farm	2035	2030
Lewis & Clark Turbine - RICE	2045	2045
Ormat Generation Facility	2034	2029

Generation Station	Proposed	Currently Used
Thunder Spirit Wind Farm I	2040	N/A
Thunder Spirit Wind Farm II	2043	N/A

These life span dates, used in my study for the MDU steam generation plants, related to several stations, are the same dates used in the last depreciation study. However, the steam generation assets at Heskett Stations I and II have been retired since the last depreciation rates were approved, leaving the common plant assets required for the support of the Turbine unit left to be depreciated. Similarly, the steam generation units at Lewis and Clark Generating Station have also retired since the last depreciation study, and again leaving the Common Assets required for the recently installed turbine unit. The use of a life span approach for these common assets at the Heskett and Lewis and Clark generating sites has been discontinued in the current depreciation study. In the Other Production category, the life span date for the Glendive Turbine - Unit 1 has been extended from December 31, 2022 to December 31, 2033, the Miles City Turbine has been extended from December 31, 2019 to December 31,2033, the Ormat Generation Facility has been extended from December 31, 2029 to December 31, 2034, the Diamond Willow Wind Farm has been extended from December 31, 2027 to December 31, 2035, and the Cedar Hill Wind Farm has been extended from 2030 to December 31 2035 . Additionally, new life span dates have been introduced for both Thunder Spirit Wind Farm units. As such, the increase in the generation depreciation rate is not significantly caused by changes in the life span dates, but rather by the large amount of capital spending that is required for the generation plants to continue to operate through to the life span date.

Over the period since the 2014 depreciation study, the gross depreciable cost related to electric generation plants that incorporate the use of a life span has increased by approximately $297 million (an increase of 48 Within the steam generation capital additions, the removal of a life span from the depreciation rate calculations for the Common assets at the Heskett and Lewis and Clark generations stations has also contributed to the decrease in the depreciation rate for this segment of the generation plant.

The original cost of depreciable plant within the Other Production accounts, has increased by $331 million since 2014. This additional investment has been made in the gas turbine and renewable energy generation, representing an increase in these Other Production accounts of 160% since December 31, 2014. This investment was largely in the new Thunder Spirt Wind Farm facility - and the Lewis & Clark RICE turbine unit which account for approximately $250 million of the total $331 million of new capital investment. This new investment is subject to life span dates that are similar to the life span dates used for Other Production assets in the 2014 depreciation study, and therefore has a large impact on the depreciation rate in the Other Production category.

Q17. Please outline the reasons for the increase in the composite depreciation rate for electric transmission plant.

A17. Within the electric transmission group of assets, extensions to the average service life estimates have a decreasing impact on the transmission system depreciation rates. However, cost of removal estimates have become more negative which has an offsetting impact resulting in a small overall increase to the transmission system depreciation rates.

Q18. Please provide a summary of the current and proposed average service life estimates for transmission plant.

A18. The following is a summary of the proposed average service life estimates compared to the currently used estimates, demonstrating the lengthening of the average service lives in all but two accounts.

Account	Description	Proposed Iowa Curves	Current Iowa Curves
350.20	Land Rights	70-R4	50-R3
352.00	Structures and Improvements	50-R2	45-R2
353.00	Station Equipment	65-R2.5	60-R3
354.00	Towers and Fixtures	60-R4	55-R5
355.00	Poles and Fixtures	63-R2.5	50-R3
356.00	Overhead Conductors and Devices	70-R3	65-R3
357.00	Underground Conduit	50-R3	50-R3
358.00	Underground Conductors and Devices	50-R3	50-R3

The specific reasons for the average service life extensions for each of the large transmission accounts are discussed in Section 3.6 of my report. Additionally, the results of the statistical mortality study are presented for each account in Section 6 of my report.

Q19. Are the average service life extensions, as noted above, typical for electric transmission assets?

A19. Yes. In a number of recent depreciation studies that I have completed, I have noted that the average service life of electric transmission assets is lengthening throughout North America. While there are a number of factors causing this lengthening of life estimates, the most prevalent reason is the increased focus of utilities in maintaining and life extending the transmission infrastructure. For example, in recent years electric transmission utilities have been pro-active in pole and tower structure management and adding enhanced protection and control equipment within the substations. The specific life expectation of the digital protection and control systems is shorter than the previous electro-mechanical protection and control system, however, the enhanced protection provided within the substation of the new technology has had a life extension influence for transforming and switching equipment.

Likewise, I have noted that the life of transmission line assets has also benefited from enhanced technology and the pro-active maintenance programs undertaken by electric transmission utilities. The introduction of pole and tower testing and treatments for wood structures combined with the observation of longer than previously expected life indications for steel structures throughout the industry, have provided electric transmission utilities with the ability to recognize longer lives on these transmission assets. As such, the average service life extensions as observed in this study are consistent with my observations in a number of other electric utilities.

Q20. Please provide a summary of the current and proposed net salvage percentages for transmission plant.

A20. The following is a summary of the proposed net salvage percentages used in the depreciation rate calculations. I note that the currently approved rates differ in many accounts from those proposed in the 2015 depreciation study. It is my understanding that the currently approved depreciation rates related to cost of removal were ultimately negotiated. Therefore, the net salvage percentage comparisons as noted below are based on the percentages as recommended in the 2015 depreciation study. However, the following also provides a comparison of the recommended net salvage depreciation rate to the currently approved net salvage depreciation rate.

Account	**Description**	**Proposed**		**Last Depn Study (*)**	
		Net Salvage %	**Depn Rate**	**Net Salvage %**	**Depn Rate**
350.20	Land Rights	0	0.00	0.00	0.00%
352.00	Structures and Improvements	0	0.00	0.00	-2.00%
353.00	Station Equipment	-10	0.10	-10	0.15%
354.00	Towers and Fixtures	-20	0.77	-5	0.15%
355.00	Poles and Fixtures	-35	0.59	-50	1.18% 0.60%
356.00	Overhead Conductors and Devices	-20	0.46	-15	0.51%
357.00	Underground Conduit	0	0.00	0.0	0.00%
358.00	Underground Conductors and Devices	0	0.00	0.0	0.00%

(*)Rate identified in yellow represents the depreciation rate after negotiated settlement.

The specific reasons for the net salvage percentages for each of the large transmission accounts are discussed in Section 3.6 of my report. Additionally, the results of the statistical net salvage study are presented for each account, in Section 7 of my report.

Q21. Please outline the reasons for the increased composite depreciation rate for the electric distribution assets.

A21. The average service life estimates for the electric distribution assets have extended in a similar fashion as described for the average service life extensions of the electric transmission assets. However, in the circumstances of the distribution assets, the need for more negative net salvage percentages has had a depreciation rate increase impact that out-weighed the influence of a decrease due to the life extensions. The following is a summary of the proposed average service life estimates compared to the currently used estimates, demonstrating the lengthening of the average service lives in all but four accounts.

Account	Description	Proposed Iowa Curves	Current Iowa Curves
360.2	Rights of Way	62-R3	50-R2
362.00	Station Equipment	53-R2	50-R2.5
364.00	Poles, Towers & Fixtures	60-R1.5	50-R1
365.00	Overhead Conductor & Devices	65-R2	55-R1
366.00	Underground Conduit	50-R3	50-R3
367.00	Underground Conductors and Devices	42-R2.5	40-R2
368.00	Line Transformers	55-R3	55-R3
369.10	Services	50-R3	45-R3 (*)

Account	Description	Proposed Iowa Curves	Current Iowa Curves
370.00	Meters	20-L3	20-L3
371.00	Installation on Customer Premises	20-R0.5	22-R0.5
373.00	Street Lighting System	43-R1	43-R1

(*) For comparison purposes, the underground Iowa curve has been used as it accounts for the majority of the investment. The current study proposes to aggregate the overhead and underground into one depreciation rate.

The specific reasons for the average service life extensions for each of the large distribution accounts are discussed in Section 3.6 of my report. Additionally, the results of the statistical mortality study are presented for each account, in Section 6 of my report.

Q22. Are the average service life extensions, as noted above, typical for electric distribution assets?

A22. Yes. In a number of recent depreciation studies that I have completed, I have noted that the average service life of electric distribution assets is lengthening throughout North America. While there are a number of factors causing this lengthening of life estimates, the most prevalent reason is the increased focus of utilities in maintaining and life extending the distribution infrastructure. For example, in recent years electric distribution utilities have been pro-active in pole structure management and adding enhanced protection and control equipment within the substations. The specific life expectation of the digital protection and control systems is shorter than the previous electro-mechanical protection and control system, however, the enhanced protection provided within the substation of the new technology has had a life extension influence for transforming and switching equipment.

Likewise, I have noted that the life of distribution line assets has also benefited from enhanced technology and the pro-active maintenance programs undertaken by electric distribution utilities. The introduction of pole testing and treatments for wood structures have provided electric distribution utilities with the ability to recognize longer lives. As such, the average service life extensions as observed in this study are consistent with my observations in a number of other electric utilities.

Q23. Please provide a summary of the current and proposed net salvage percentages for distribution plant.

A23. The following is a summary of the proposed net salvage percentages used in the depreciation rate calculations. I note that the current rates differ in many accounts from those proposed in the 2015 depreciation study. It is my understanding that the currently approved depreciation rates related to cost of removal were ultimately negotiated. Therefore, the net salvage percentage comparisons as noted below are based on the percentages as recommended in the 2015 depreciation study. However, a comparison of the recommended net salvage depreciation rates to the currently approved net salvage depreciation rate is also provided.

Account	Description	Proposed		Last Depn Study (*)	
		Net Salvage %	Depn Rate	Net Salvage %	Depn Rate
360.20	Rights of Ways	0%	0.00%	0%	0.00%
362.00	Station Equipment	(15)%	0.27%	(5)%	0.13%
364.00	Poles, Towers & Fixtures	(120)%	2.50%	(95)%	2.17% 1.50%
365.00	Overhead Conductor & Devices	(110)%	1.98%	(85)%	1.62% 1.26%

Account	Description	Proposed		Last Depn Study (*)	
		Net Salvage %	Depn Rate	Net Salvage %	Depn Rate
366.00	Underground Conduit	0%	-.06%	0%	-0.05%
367.00	Underground Conductor & Devices	(50)%	1.84%	(25)%	0.73% 0.33%
368.00	Line Transformers	(20)%	0.58%	(20)%	0.50% 0.25%
369.10	Services	(50)%	0.84%	(50)%	0.90% 0.23%
370.00	Meters	(5)%	0.57%	(5)%	0.46%
371.00	Installation on Customers Premises	(15)%	1.93%	(15)%	1.51%
373.00	Street Lighting System	(45)%	1.16%	(40)%	0.97%

(*)Rates identified in yellow represent the depreciation rate after negotiated settlement.

As noted above, the depreciation rates related to cost of removal and salvage currently used were changed significantly from the depreciation rates as proposed in the 2015 depreciation study. The current study has noted the continued trend to increased levels of recovery for cost of removal. Five of the nine distribution accounts that had proposed cost of removal recovery in the 2015 study, now indicate the need for increased levels from the level witnessed in the 2015 study. Given the period from 2015 through 2020 has incorporated a lower than recommended rate for a number of the Depreciation accounts, this current depreciation study is proposing a significant increase in the depreciation for the company's distribution assets.

The detailed analysis of the net salvage estimates is provided in Section 7 of my MDU report.

Q24. Is the trend for more negative net salvage percentage, as noted above, typical for electric distribution assets?

A24. Yes. The increased amount of cost of removal expenditures is a common trend throughout North American utilities. In fact, this trend has been the most significant change noted in depreciation studies over the past five years. Accordingly, it has become the most debated topic of depreciation studies filed throughout North America, as well as being a significant topic of discussion at depreciation conferences. At the 2018 Society of Depreciation Professionals conference held in September, there were four presentations regarding the large increase in cost of removal expenditures. This trend has been witnessed over virtually all electric, gas and pipeline utilities. As such, the trend witnessed in my MDU study is consistent with depreciation studies conducted across North America.

Q25. What is causing this trend to increased cost of removal of utility assets?

A25. It is generally accepted that there exist three main causes of increases.

Firstly, as the average age of utility assets continue to be extended, the impact of inflation becomes more pronounced. For example, in the MDU Account 364 – Distribution Poles and Fixtures, the average service life has been extended in this study from 50 years to 60 years. Also, the last depreciation study increased the average life from 38 years to 50 years for this same account. As such, over the course of two depreciation studies, the indications of average service life have increased from 38 years to 60 years (a 58% increase). As the average service life has increased, the length of time between the original installation of the assets in this account and the estimated average time of retirement of the asset is 58% longer. The net salvage percentage is calculated by dividing the costs to remove the asset in dollars of the time when the asset is removed by the original cost dollar of the time of installation. Given that the major component of cost of removal is labor, this 58% increase in the life expectation, also results in an increased length of time that the labor associated with the removal is 58% longer. When it is considered that in this account, the impacts of inflation of an additional 22 years are recognized in the cost of removal included in my study as compared to the study completed two studies ago, and an additional 10 years when compared to the last depreciation study, it is expected and reasonable to see the increases in cost of removal. To the extent that the average service lives for distribution assets have extended, the impact as described above (for Account 364) applies to a number of the MDU electric distribution accounts.

Secondly, the costs associated with the removal (or retirement) of utility assets must deal with increased environmental and regulatory requirements. For example, the costs related to the safe removal of asbestos and PCB contaminants at substations have greatly increased since the assets were originally installed. Additionally, the utilities are required to deal with the increased level of regulations within areas that are much more densely populated at the time of removal of the assets as compared to when the assets were originally placed into service. As distribution assets are often removed in municipal areas, the need to effectively deal with urban growth and density within the areas adds a significant cost to the removal of the assets that did not exist at the time of the original installation of the assets. When the assets were originally installed, the distribution assets were largely within greenfield developments, whereas now, when the assets are removed, the utility must deal with (for example) applications for road closures and re-routing, noise bylaws, and performing work within and around developed and landscaped yards.

Lastly, as utilities have implemented new and enhanced accounting systems, the ability to better track capital projects has improved the processes to track capital project costs more accurately. This provides the ability for direct charging labor associated to costs of removal specifically to cost of removal. Likewise, in circumstances where the utility uses an allocation of the total project costs to recognize that a portion of the capital project relates to the removal of assets, the advancements in the work order and plant accounting systems provide better information to allow the utility to better develop proper allocation factors.

Q26. Please summarize your proposed average service life estimates for the general plant assets as compared to the currently approved average service life for the general plant assets.

A26. The average service life estimates for the general plant assets have generally remained consistent with the currently approved average service life estimates with the exception of three accounts. The following is a summary of the proposed average service life estimates compared to the currently approved estimates,

Account	Description	Proposed Iowa Curves	Current Iowa Curves
390.00	Structures and Improvements	30-L0.5	29-L2

Account	Description	Proposed Iowa Curves	Current Iowa Curves
391.10	Office Furniture and Equipment	15-SQ	15-SQ
391.30	Computer Equipment - PC	5-SQ	5-SQ
391.40	Computer Equipment - Prime	5-SQ	5-SQ
391.50	Computer Equipment - Other	10-SQ	10-SQ
392.10	Transportation Equipment - Trailers	25-R4	15-R4
392.20	Transportation Equipment	11-L3	11-L3
393.00	Stores Equipment	30-SQ	30-SQ
394.00	Tools, Shop & Garage Equipment	20-SQ	20-SQ
395.00	Laboratory Equipment	20-SQ	20-SQ
396.10	Work Equipment - Trailers	25-L3	20-L3
396.20	Power Operated Equipment	9-L0	9-L0
397.10	Radio Communication Equipment - Fixed	15-SQ	15-SQ
397.20	Radio Communication Equipment - Mobile	15-SQ	15-SQ
397.30	General Telephone Communications Equipment	10-SQ	10-SQ
397.50	Supervisory & Telemetering Equipment	10-SQ	10-SQ
397.60	SCADA System	10-SQ	10-SQ
397.80	Network Equipment	5-SQ	5-SQ
398.00	Miscellaneous Equipment	25-SQ	25-SQ

Q27: Was a Common depreciation study also completed?

A27. Yes, a depreciation study was also conducted on the MDU Common assets. My detailed report, including my analyses and recommendations, is provided in Exhibit No. (LEK-5), titled "Calculated Annual Depreciation Rates Applicable to Common Plant in Service as of December 31, 2021".

Q28: Please provide a summary of the results of the Common depreciation study.

A28. The study results in an annual depreciation expense accrual related to the recovery of original cost and net salvage requirement of $4.3 million, when applied to depreciable plant balances, as of December 31, 2021. The study results are summarized at an aggregate functional group level as follows:

SUMMARY OF ORIGINAL COST, ACCRUAL PERCENTAGES AND AMOUNTS

Plant Group / Accounts	Original Cost	Previous Study Annual Accrual		Recommended Annual Accrual	
General Plant	$81,481,558	4.30%	$2,924,572	5.31%	$4,327,970
TOTAL	$81,481,558	4.30%	$2,924,572	5.31%	$4,327,970

III. DEPRECIATION METHODS AND PROCEDURES

Q29: How is depreciation defined for a rate regulated utility?

A29. Depreciation defined – "Depreciation, as applied to depreciable electric plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of electric plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities".[1] When considering the action of the elements, my average service life recommendations have considered large catastrophic events that have occurred

1 Federal Energy Regulatory Commission, Part 101, Uniform System of Accounts Prescribed for Public Utilities and Licensees Subject to the Provisions of the Federal Power Act, Definitions

and impacted the life estimates of utility assets across North America through our use of peer analysis. The average service life of utilities has been influenced by events including forest fires, earthquakes, tornadoes, ice storms, wind storms, large scale flooding, fires, actions of third parties and other natural forces of nature, and these forces of retirement should be included in the determination of the average service life.

Depreciation, as used in accounting, is a method of distributing fixed capital costs, less net salvage, over a period of time by allocating annual amounts to expense. Each annual amount of such depreciation expense is part of that year's total cost of providing electric system utility service. Normally, the period of time over which the fixed capital cost is allocated to the cost of service is equal to the period of time over which an item renders service, that is, the item's service life. The most prevalent method of allocation is to distribute an equal amount of cost to each year of service life. This method is known as the Straight-Line Method of depreciation, which was adopted for use in my study.

Q30. Please outline the depreciation methods and procedures used in your depreciation study.

A30. The calculation of annual and accrued depreciation, based on the Straight-Line Method, requires the estimation of survivor curves and the selection of group depreciation procedures, as discussed below.

<u>Depreciation Grouping Procedures</u> - When more than a single item of property is under consideration, a group procedure for depreciation is appropriate because

normally all of the items within a group do not have identical service lives but have lives that are dispersed over a range of time. There are two primary group procedures, namely, the Average Life Group and Equal Life Group procedures.

In the Average Life Group Procedure, the rate of annual depreciation is based on the average service life of the group. This rate is applied to the surviving balances of the group's cost. A characteristic of this procedure is that the cost of plant retired prior to average life is not fully recouped at the time of retirement, whereas the cost of plant retired subsequent to the average life is more than fully recouped. Over the entire life cycle, the portion of cost not recouped prior to average life is balanced by the cost recouped subsequent to average life.

In the Equal Life Group Procedure, also known as the Unit Summation Procedure, the property group is subdivided according to service life. That is, each equal life group includes that portion of the property which experiences the life of that specific group. The relative size of each equal life group is determined from the property's life dispersion curve. The calculated depreciation for the property group is the summation of the calculated depreciation based on the service life of each equal life unit. In the determination of the depreciation rates in this study, the use of the Average Service Life Procedure has been continued.

Amortization accounting is used for certain general plant accounts because of the disproportionate plant accounting effort required in these accounts. Many regulated utilities in North America have received approval to adopt amortization accounting for these accounts. This study calculates the annual and accrued depreciation using the Straight-Line Method and Average Life Group Procedure for most accounts. For certain general plant accounts, the annual and accrued depreciation are based on amortization accounting. Both types of calculations were based on original cost, attained ages and estimates of service lives. Variances between the calculated accrued depreciation and the book accumulated depreciation are amortized over the composite remaining life of each account within the remaining life calculations. Amortization accounting has been continued in this study in a manner largely consistent with the prior study.

A detailed account by account analysis of the factors considered in the selection of my recommended average service life estimates is provided in Section 3.6 of my depreciation study report.

Q31. Please outline any changes that you made in the depreciation method, grouping procedures or remaining life calculations as compared to previous depreciation studies.

A31. The depreciation rates calculated in this study were calculated on the same manner as used in the prior full depreciation study – i.e. using the Straight-Line Method, the Average Life Group Procedure was applied on a remaining life basis. However, I note that in the application of the remaining life basis, the prior study calculated the remaining life on a broad average basis, whereas Concentric incorporates a refinement into the remaining life calculations based on a weighted investment by vintage approach. The vintage approach weighs the calculations of remaining life on an allocation of the actual book accumulated depreciation account by the Calculated Accumulated Depreciation (CAD) factor determined for each vintage of plant in service. This method is described as a Calculated Accumulated Depreciation ("CAD") weighted calculation in the textbook Depreciation Systems, by Frank K. Wolf and W. Chester Fitch, published by the Iowa State University in 1994, under the title "Adjustments" within the Broad Group Model.

In contrast, the remaining life calculations in prior studies was based on a broad averaging of the composite remaining life. This method is also discussed as the Amortization Method in Depreciation Systems under the title "Adjustments" within the Broad Group Model.

In the manner in which I developed the remaining life calculations, the depreciation rate is established by dividing the undepreciated value of each group of assets (after consideration to the net salvage requirements) by the composite remaining life of the group of assets. Specifically, my calculations are made for each vintage surviving investment as of the date of the study (December 31, 2020), and then composited into a calculation for the account or group as a whole as compared to applying one overall composite life to all vintages as done in prior studies. My calculation requires two estimates:

1. The actual booked accumulated depreciation for each vintage within each account. Consistent with the plant accounting systems of most utilities, MDU does not track the booked accumulated depreciation reserve by vintage within each account. Rather the depreciation expense is calculated at an account level and booked to accumulated depreciation at the same account level. As such, the

accumulated depreciation by account is allocated within the account to each vintage, on the basis of the calculated accumulated depreciation by vintage. The calculated accumulated depreciation is a function of the estimated survivor curve, the average service life estimate, the net salvage estimates and the achieved age of each vintage.

2. The estimated remaining life of each vintage within each account. The estimated remaining life of each vintage is a direct function of the achieved age of each vintage, the estimated survivor curve and the average service life estimate.

Once the above two estimates are determined (the allocated booked reserve by vintage and the average remaining life of each vintage), an annual accrual requirement for each vintage is determined by dividing the net book value for each vintage (considering the estimated future salvage requirements) by the average remaining life of the vintage. The annual requirement for each vintage is summed at the account level and divided into the sum of the accounts original cost surviving, as of December 31, 2020.

This process results in each vintage's calculated net book value to be depreciated over an appropriate remaining life. This vintage weighting on a CAD approach to the remaining life calculations is widely considered to be the most accurate. I agree and view this methodology as the correct and most appropriate calculation.

IV. CONCLUDING REMARKS

Q32. What is your conclusion with respect to Montana-Dakota's proposed Depreciation expense?

A32. My conclusion is that Montana-Dakota's requested depreciation rates, resulting in a composite depreciation rate of 2.98% for the Electric Division and 5.31% for Common Plant, reasonably reflect the annual consumption of the undepreciated service value of the utility plant in service. Therefore, the use of the depreciation rates as presented in my report, by account, will provide for an appropriate amount of depreciation expense in the Company's revenue requirement. Therefore, I recommend that the proposed depreciation rates set forth in the depreciation studies, that I prepared for this proceeding, be adopted by the Commission for regulatory purposes as well as by the Company for financial reporting purposes.

Q33. Does this conclude your Direct Testimony?

A33. Yes, it does.