

Direct Testimony and Exhibits
John J. Spanos

Before the South Dakota Public Utilities Commission
of the State of South Dakota

In the Matter of the Application of
Black Hills Power, Inc. d/b/a Black Hills Energy

for Authority to Increase Rates for Electric Service in South Dakota

Docket No. EL26-_____

February 19, 2026

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1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME AND ADDRESS.**

3 A. My name is John J. Spanos. My business address is 300 Sterling Parkway,
4 Mechanicsburg, Pennsylvania, 17050 (formerly 207 Senate Avenue, Camp Hill,
5 Pennsylvania, 17011).

6 **Q. ARE YOU ASSOCIATED WITH ANY FIRM?**

7 A. Yes. I am associated with the firm of Gannett Fleming Valuation and Rate
8 Consultants, LLC (“Gannett Fleming”), a subsidiary of GFT Infrastructure, Inc.

9 **Q. HOW LONG HAVE YOU BEEN ASSOCIATED WITH GANNETT
10 FLEMING?**

11 A. I have been associated with the firm since June 1986.

12 **Q. WHAT IS YOUR POSITION WITH THE FIRM?**

13 A. I am President.

14 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND
15 PROFESSIONAL EXPERIENCE.**

16 A. I have Bachelor of Science degrees in Industrial Management and Mathematics from
17 Carnegie-Mellon University and a Master of Business Administration from York
18 College. I have over 39 years of depreciation experience, which includes giving
19 expert testimony in more than 520 cases before 47 regulatory commissions, including
20 this Commission. These cases have included depreciation studies in the electric, gas,
21 water, wastewater, and pipeline industries. In addition to cases where I have
22 submitted testimony, I have also supervised over 900 other depreciation or valuation
23 assignments. Please refer to Exhibit JJS-1 for my qualifications statement, which

1 includes further information on my work history, case experience, and leadership in
2 the Society of Depreciation Professionals.

3 **II. OVERVIEW OF TESTIMONY**

4 **Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS CASE?**

5 A. I am testifying on behalf of Black Hills Power, Inc. d/b/a Black Hills Energy (“Black
6 Hills Power” or the “Company”).

7 **Q. HAVE YOU FILED ANY ADDITIONAL EXHIBITS WITH YOUR**
8 **TESTIMONY?**

9 A. Yes. Attached to my testimony is Exhibit JJS-1 which sets forth my experience and
10 work history. Also, attached to my testimony is Exhibit JJS-2, which is the 2025
11 Black Hills Power Depreciation Study (“2025 Depreciation Study” or the “Study”).

12 **Q. WAS EXHIBIT JJS-2 PREPARED BY YOU, UNDER YOUR DIRECTION**
13 **AND SUPERVISION?**

14 A. Yes.

15 **Q. IS EXHIBIT JJS-2 A TRUE AND ACCURATE COPY OF YOUR 2025**
16 **DEPRECIATION STUDY?**

17 A. Yes.

18 **Q. PLEASE PROVIDE AN EXECUTIVE SUMMARY OF YOUR TESTIMONY.**

19 A. My testimony supports the 2025 Depreciation Study filed in this case as Exhibit JJS-
20 2. The Study was conducted under my direction and supervision for the electric
21 utility plant of Black Hills Power. The Study utilizes widely recognized and adopted
22 methods for setting depreciation rates. I have previously prepared similar studies for
23 Black Hills Power that have been utilized for rate setting in South Dakota. In my

1 testimony, I describe the contents and purpose of the 2025 Depreciation Study that
2 was prepared for Black Hills Power, which estimates the most current annual
3 depreciation accruals for ratemaking purposes and determines the appropriate average
4 service lives and net salvage percentages for each plant account. For the 2025
5 Depreciation Study, I used the straight line remaining life method of depreciation for
6 the majority of plant assets and explain the amortization method for general plant
7 accounts where relevant.

8 Next, I describe and explain the two phases used to develop the 2025
9 Depreciation Study. In the first phase, I estimated the service life and net salvage
10 characteristics for each depreciable group of assets by applying the retirement rate
11 method to data and accounting entries for different groups of property from 1950
12 through 2024. In the second phase, I calculated composite remaining lives and
13 annual depreciation accrual rates by applying the straight line remaining life method
14 of depreciation.

15 The estimates and analyses in both of these phases were developed using
16 techniques and approaches that are widely accepted among depreciation
17 professionals. Together, these two phases of analyses make up the depreciation and
18 amortization rates set forth in Exhibit JJS-2, which are reasonable, consistent with
19 Company plans, and reflective of widely accepted practices in setting depreciation
20 rates.

21 **Q. PLEASE DEFINE THE CONCEPT OF DEPRECIATION.**

22 A. Depreciation refers to the loss in service value not restored by current maintenance,
23 incurred in connection with the consumption or prospective retirement of utility plant

1 during service from causes that are known to be in current operation, against which
2 the Company is not protected by insurance. Among the causes to be given
3 consideration are wear and tear, decay, action of the elements, obsolescence, changes
4 in the art, changes in demand and the requirements of public authorities.

5 **III. OVERVIEW OF 2025 DEPRECIATION STUDY**

6 **Q. PLEASE DESCRIBE EXHIBIT JJS-2.**

7 A. Exhibit JJS-2 is a report entitled, “2025 Depreciation Study - Calculated Annual
8 Depreciation Accruals Related to Electric Plant as of June 30, 2025.” This report
9 presents the results of my 2025 Depreciation Study for Black Hills Power.

10 **Q. WHAT WAS THE PURPOSE OF YOUR 2025 DEPRECIATION STUDY?**

11 A. The purpose of the 2025 Depreciation Study was to estimate the most current annual
12 depreciation accruals related to electric plant in-service for ratemaking purposes and
13 determine appropriate average service lives and net salvage percentages for each
14 plant account.

15 **Q. PLEASE DESCRIBE THE CONTENTS OF YOUR REPORT.**

16 A. The 2025 Depreciation Study consists of nine parts. Part I, Introduction, presents the
17 scope and basis for the 2025 Depreciation Study. Part II, Estimation of Survivor
18 Curves, includes descriptions of the methodology of estimating survivor curves.
19 Parts III and IV set forth the analysis for determining service life and net salvage
20 estimates. Part V, Calculation of Annual and Accrued Depreciation, includes the
21 concepts of depreciation and amortization using the remaining life. Part VI, Results
22 of Study, presents a description of the results of my analysis and a summary of the
23 depreciation calculations. Parts VII, VIII and IX include graphs and tables that relate

1 to the service life and net salvage analyses and the detailed depreciation calculations
2 by account.

3 The 2025 Depreciation Study also includes several tables and tabulations of
4 data and calculations. Table 1 on pages VI-4 through VI-10 of the Depreciation
5 Study presents the estimated survivor curve, the net salvage percent, the original cost
6 as of June 30, 2025, the book depreciation reserve, and the calculated annual
7 depreciation accrual and rate for each account or subaccount. The section beginning
8 on page VII-2 presents the results of the retirement rate analyses prepared as the
9 historical bases for the service life estimates. The section beginning on page VIII-2
10 presents the results of the net salvage analysis. The section beginning on page IX-2
11 presents the depreciation calculations related to surviving original cost as of June 30,
12 2025.

13 **Q. PLEASE EXPLAIN HOW YOU PERFORMED YOUR DEPRECIATION**
14 **STUDY.**

15 A. I used the straight line remaining life method of depreciation, with the average service
16 life procedure for all plant assets except some general plant accounts. The annual
17 depreciation is based on a method of depreciation accounting that seeks to distribute
18 the unrecovered cost of fixed capital assets over the estimated remaining useful life of
19 each unit, or group of assets, in a systematic and rational manner.

20 For General Plant Accounts 391.01, 391.08, 393.00, 394.00, 395.00, 397.01,
21 397.03, 398.00 and 398.08, I used the straight line remaining life method of
22 amortization. The annual amortization is based on amortization accounting that

1 distributes the unrecovered cost of fixed capital assets over the remaining
2 amortization period selected for each account and vintage.

3 **Q. HOW DID YOU DETERMINE THE RECOMMENDED ANNUAL**
4 **DEPRECIATION ACCRUAL RATES?**

5 A. I did this in two phases. In the first phase, I estimated the service life and net salvage
6 characteristics for each depreciable group, that is, each plant account or subaccount
7 identified as having similar characteristics. In the second phase, I calculated the
8 composite remaining lives and annual depreciation accrual rates based on the service
9 life and net salvage estimates determined in the first phase.

10 **Q. PLEASE DESCRIBE THE FIRST PHASE OF THE 2025 DEPRECIATION**
11 **STUDY, IN WHICH YOU ESTIMATED THE SERVICE LIFE AND NET**
12 **SALVAGE CHARACTERISTICS FOR EACH DEPRECIABLE GROUP.**

13 A. The service life and net salvage study consisted of compiling historic data from
14 records related to Black Hills Power's plant; analyzing this data to obtain historic
15 trends of survivor and net salvage characteristics; obtaining supplementary
16 information from Black Hills Power's management, and operating personnel
17 concerning practices and plans as they relate to plant operations; and interpreting the
18 above data and the estimates used by other electric utilities to form judgments
19 regarding average service life and net salvage characteristics.

20 **Q. WHAT HISTORIC DATA DID YOU ANALYZE FOR THE PURPOSE OF**
21 **ESTIMATING SERVICE LIFE CHARACTERISTICS?**

22 A. Generally speaking, I analyzed the Company's accounting entries that record plant
23 transactions during the period 1950 through 2024. These transactions included

1 additions, retirements, transfers, and the related balances. The Company records also
2 included the surviving dollar value by year installed for each plant account as of
3 December 31, 2024, for life analysis.

4 **Q. WHAT METHOD DID YOU USE TO ANALYZE THIS SERVICE LIFE**
5 **DATA?**

6 A. I used the retirement rate method. This is the most appropriate method when aged
7 retirement data are available because this method determines the average rates of
8 retirement actually experienced by the Company during the period of time covered by
9 the study.

10 **Q. PLEASE DESCRIBE HOW YOU USED THE RETIREMENT RATE**
11 **METHOD TO ANALYZE BLACK HILLS POWER'S SERVICE LIFE DATA.**

12 A. I applied the retirement rate method to each different group of property in the Study.
13 For each property group, I used the retirement rate method to form a life table which,
14 when plotted, shows an original survivor curve for that property group. Each original
15 survivor curve represents the average survivor pattern experienced by the different
16 vintage groups during the experience band studied. The survivor patterns do not
17 necessarily describe the life characteristics of the property group; therefore,
18 interpretation of the original survivor curves is required to use them as valid
19 considerations in estimating service life. The Iowa-type survivor curves were used to
20 perform these interpretations.

1 **Q. WHAT IS AN “IOWA-TYPE SURVIVOR CURVE” AND HOW DID YOU**
2 **USE SUCH CURVES TO ESTIMATE THE SERVICE LIFE**
3 **CHARACTERISTICS FOR EACH PROPERTY GROUP?**

4 A. Iowa-type curves are a widely accepted group of generalized survivor curves that
5 contain the range of survivor characteristics usually experienced by utilities and other
6 industrial companies. The Iowa curves were developed at the Iowa State College
7 Engineering Experiment Station through an extensive process of observing and
8 classifying the ages at which various types of property used by utilities and other
9 industrial companies had been retired.

10 Iowa-type curves are used to smooth and extrapolate original survivor curves
11 determined by the retirement rate method. The Iowa curves and truncated Iowa
12 curves were used in this study to describe the forecasted rates of retirement based on
13 the observed rates of retirement and the outlook for future retirements.

14 The estimated survivor curve designations for each depreciable property
15 group indicate the average service life, the family within the Iowa system to which
16 the property group belongs, and the relative height of the mode. For example, the
17 Iowa 50-R2.5 indicates an average service life of fifty years; a right-moded, or R,
18 type curve (the mode occurs after average life for right-moded curves); and a
19 moderate height, 2.5, for the mode (possible modes for R type curves range from 0.5
20 to 5).

1 **Q. WHAT APPROACH DID YOU USE TO ESTIMATE THE LIVES OF**
2 **SIGNIFICANT PRODUCTION FACILITIES?**

3 A. I used the life span technique to estimate the lives of significant facilities for which
4 concurrent retirement of the entire facility is anticipated. In this technique, the
5 survivor characteristics of such facilities are described using interim survivor curves
6 and estimated probable retirement dates. The interim survivor curve describes the
7 rate of retirement related to the replacement of elements of the facility, such as, for a
8 power plant, the retirement of assets such as pumps, motors and piping that occur
9 during the life of the facility. The probable retirement date provides the rate of final
10 retirement for each year of installation for the facility by truncating the interim
11 survivor curve for each installation year at its attained age at the date of probable
12 retirement. The use of interim survivor curves truncated at the date of probable
13 retirement provides a consistent method for estimating the lives of the several years
14 of installation for a particular facility inasmuch as a single concurrent retirement for
15 all years of installation will occur when it is retired.

16 **Q. IS THIS APPROACH WIDELY ACCEPTED FOR ESTIMATING THE**
17 **SERVICE LIVES OF PRODUCTION FACILITIES?**

18 A. Yes. The life span technique has been used previously for Black Hills Power. My
19 firm has also used the life span technique in performing depreciation studies
20 presented to many other public utility commissions across the United States and
21 Canada.

1 **Q. HOW ARE THE LIFE SPANS ESTIMATED FOR BLACK HILLS POWER'S**
2 **PRODUCTION FACILITIES?**

3 A. The life span estimates are based on informed judgment that incorporates factors for
4 each facility such as the technology of the facility, management plans and outlook for
5 the facility, and the estimates for similar facilities for other utilities. Most of the life
6 spans result in probable retirement years that are many years in the future. As a
7 result, the retirements of these facilities are not yet subject to specific management
8 plans. Such plans would be premature. At the appropriate time, studies of the
9 economics of rehabilitation and continued use or retirement of the structure will be
10 performed and the results incorporated into the estimation of the facility's life span.
11 Per discussions with Company personnel in prior studies and this study, the planning
12 and analysis which contributed to the determination of the probable retirement date of
13 each unit in the generation fleet are consistent with how each probable retirement date
14 has been established and currently in effect.

15 **Q. HAVE ANY LIFE SPAN ESTIMATES CHANGED SINCE THE**
16 **COMMISSION LAST APPROVED DEPRECIATION RATES?**

17 A. Yes. Numerous life spans have been revised to reflect changes in company plans as
18 well as changes in the asset investment mix. For example, steam facilities at Ben
19 French, Osage and Neil Simpson Unit 1 have been retired since the last study was
20 conducted. Also, the Ben French diesel units have stayed in service until the
21 anticipated probable retirement date of 2030. These units were originally planned to
22 be retired by end of 2020.

1 **Q. ARE THE NEW LIFE SPANS REASONABLE AND CONSISTENT WITH**
2 **COMPANY PLANS?**

3 A. Yes. During the conduct of this Depreciation Study and the previous depreciation
4 studies, Black Hills Power personnel identified any revised life spans for some
5 facilities as well as the plans to maintain the currently approved life spans for others.
6 These revised and planned life spans are consistent with Company planning
7 assumptions and industry expectations.

8 **Q. ARE THE FACTORS CONSIDERED IN YOUR ESTIMATES OF SERVICE**
9 **LIFE AND NET SALVAGE PERCENTS PRESENTED IN DIRECT EXHIBIT**
10 **JJS-2?**

11 A. Yes. A discussion of the factors considered in the estimation of service lives and net
12 salvage percents are presented in Part III and Part IV of Exhibit JJS-2.

13 **Q. DID YOU PHYSICALLY OBSERVE BLACK HILLS POWER’S PLANT AND**
14 **EQUIPMENT AS PART OF YOUR DEPRECIATION STUDY?**

15 A. Yes. I made a field review of Black Hills Power’s property as part of this study
16 during September 2025. I have previously visited facilities in August 2013. Field
17 reviews are conducted to become familiar with Company operations and obtain an
18 understanding of the function of the plant and information with respect to the reasons
19 for past retirements and the expected future causes of retirements. This knowledge
20 was incorporated into the interpretation and extrapolation of the statistical analyses.

21 **Q. WOULD YOU PLEASE EXPLAIN THE CONCEPT OF “NET SALVAGE”?**

22 A. Net salvage is a component of the service value of capital assets that is recovered
23 through depreciation rates. The service value of an asset is its original cost less its net

1 salvage. Net salvage is the salvage value received for the asset upon retirement less
2 the cost to retire the asset. When the cost to retire exceeds the salvage value, the
3 result is negative net salvage.

4 Inasmuch as depreciation expense is the loss in service value of an asset
5 during a defined period, e.g., one year, it must include a ratable portion of both the
6 original cost and the net salvage. That is, the net salvage related to an asset should be
7 incorporated in the cost of service during the same period as its original cost so that
8 customers receiving service from the asset pay rates that include a portion of both
9 elements of the asset's service value, the original cost and the net salvage value.

10 For example, the full recovery of the service value of a \$5,000 line
11 transformer will include not only the \$5,000 of original cost, but also, on average,
12 \$550 to remove the breaker at the end of its life and \$50 in salvage value. In this
13 example, the net salvage component is negative \$500 ($\$50 - \550), and the net
14 salvage percent is negative 10% ($(\$50 - \$550)/\$5,000$).

15 **Q. PLEASE DESCRIBE HOW YOU ESTIMATED NET SALVAGE**
16 **PERCENTAGES.**

17 A. The net salvage percentages estimated in the 2025 Depreciation Study were based on
18 informed judgment that incorporated factors such as the statistical analyses of
19 historical net salvage data; information provided to me by the Company's operating
20 personnel, general knowledge and experience of industry practices; and trends in the
21 industry in general. The statistical net salvage analyses incorporate the Company's
22 actual historical data for the period 1997 through 2024 and considers the cost of
23 removal and gross salvage ratios to the associated retirements during the 28-year

1 period. Trends of these data are also measured based on three-year rolling averages
2 and the most recent five-year indications to support the selected net salvage
3 percentage estimates.

4 **Q. WERE THE NET SALVAGE PERCENTAGES FOR GENERATING**
5 **FACILITIES BASED ON THE SAME ANALYSES?**

6 A. Yes, for the interim net salvage estimates. The net salvage percentages for generating
7 facilities were based on two components, the interim net salvage percentage, and the
8 final net salvage percentage. The interim net salvage percentage is determined based
9 on the historical indications from the period 1997 to 2024 of the cost of removal and
10 gross salvage amounts as a percentage of the associated plant retired. The final net
11 salvage or dismantlement component was determined based on the retirement
12 activities associated with the assets anticipated to be retired at the concurrent date of
13 final retirement.

14 **Q. HAVE YOU INCLUDED A DISMANTLEMENT OR DECOMMISSIONING**
15 **COMPONENT INTO THE OVERALL RECOVERY OF GENERATING**
16 **FACILITIES?**

17 A. Yes. A dismantlement or decommissioning component has been incorporated into
18 the net salvage percentages for steam, wind, and other production facilities to ensure
19 that the full cost of retiring those assets is recovered over their service lives.

20 **Q. CAN YOU EXPLAIN HOW THE FINAL NET SALVAGE COMPONENT IS**
21 **INCLUDED IN THE DEPRECIATION STUDY?**

22 A. Yes. The dismantlement component is part of the overall net salvage for each location
23 within the production assets. Based on studies for other utilities and the cost

1 estimates of some Black Hills Power facilities, it was determined that the
2 dismantlement or decommissioning costs for steam, wind and other production
3 facilities are best calculated at a common industry \$/KW level of the assets subject to
4 final retirement. For steam facilities the decommissioning cost values is a \$130/KW
5 amount. The wind decommissioning cost is \$10/KW, combustion turbines is either
6 \$12/KW or \$13/KW and the Cheyenne Prairie Combined Cycle decommissioning
7 cost is estimated at \$20/KW. These amounts at a location basis are added to the
8 interim net salvage percentage of the assets anticipated to be retired on an interim
9 basis to produce the weighted net salvage percentage for each location. The detailed
10 calculation for each location is set forth on pages VIII-2 and VIII-3 Exhibit JJS-2.

11 **Q. IS IT APPROPRIATE TO ESCALATE THE**
12 **DISMANTLEMENT/DECOMMISSIONING COMPONENT TO THE DATE**
13 **OF RETIREMENT?**

14 A. Yes.

15 **Q. SHOULD NET SALVAGE BE BASED ON THE FUTURE COSTS EXPECTED**
16 **TO BE INCURRED, NOT ON TODAY'S COSTS?**

17 A. Yes. Because net salvage must be based on future costs,
18 dismantlement/decommissioning costs for net salvage must also be estimates of the
19 future cost at the time of decommissioning. For this reason, if decommissioning
20 estimates are developed using the cost to decommission a plant today, then these costs
21 must be escalated to the time period in which they are expected to be incurred to
22 achieve adequate recovery.

1 **Q. SHOULD NET SALVAGE BE RECOVERED IN TODAY’S COST (THAT IS,**
2 **THE COST IN TODAY’S DOLLARS)?**

3 A. No. In order to recover the service value of the Company’s assets, net salvage must
4 be determined at the cost that will be incurred in the future when the plant is retired.
5 When using the straight-line method of depreciation, these costs are recovered
6 ratably, or in equal amounts each year, over the life of the Company’s plant.

7 **Q. IS RECOVERING THE FUTURE COST OF NET SALVAGE CONSISTENT**
8 **WITH THE FEDERAL ENERGY REGULATORY COMMISSION’S**
9 **UNIFORM SYSTEM OF ACCOUNTS (FERC USOA)?**

10 A. Yes. The FERC USOA specifically defines net salvage as follows:

11 19. Net salvage value means the salvage value of property retired less
12 the cost of removal.

13 Cost of removal is defined as:

14 10. Cost of removal means the cost of demolishing, dismantling, tearing
15 down or otherwise removing electric plant, including the cost of
16 transportation and handling incidental thereto. It does not include the
17 cost of removal activities associated with asset retirement obligations
18 that are capitalized as part of the tangible long-lived assets that give rise
19 to the obligation. (See General Instruction 25).

20 Finally, cost is defined as (emphasis added):

21 9. Cost means the amount of money actually paid for property or
22 services. When the consideration given is other than cash in a purchase
23 and sale transaction, as distinguished from a transaction involving the
24 issuance of common stock in a merger or a pooling of interest, the value
25 of such consideration shall be determined on a cash basis.

26 Read together, it should be clear from these definitions that the USOA
27 specifies cost of removal, as part of net salvage, must be recovered through
28 depreciation expense and is the actual amount paid at the time of the transaction.

1 Because net salvage will occur in the future, it is an estimate of the future cost that
2 must be included in depreciation rates.

3 **Q. DO GENERALLY ACCEPTED DEPRECIATION CONCEPTS SUPPORT**
4 **THAT THE NET SALVAGE IN DEPRECIATION SHOULD BE INCLUDED**
5 **AT THE COST THAT WILL BE INCURRED?**

6 A. Yes. Including the future cost of net salvage for plant accounts is consistent with
7 established depreciation concepts. Depreciation is a cost allocation concept, in which
8 the full cost of an asset (original cost less net salvage) is allocated on a straight-line
9 basis over the period of time an asset will be in service.

10 **Q. DO ANY AUTHORITATIVE DEPRECIATION TEXTS SUPPORT THAT THE**
11 **NET SALVAGE AMOUNT SHOULD REPRESENT THE FUTURE COST?**

12 A. Yes. Two preeminent depreciation texts are the National Association of Regulatory
13 Utility Commissioners' Public Utility Depreciation Practices (typically referred to as
14 "NARUC¹") and *Depreciation Systems* by Wolf and Fitch (Wolf and Fitch²). Both
15 texts are clear that net salvage should be included in depreciation as a future cost.

16 NARUC states the following:

17 [U]nder presently accepted concepts, the amount of depreciation to be
18 accrued over the life of an asset is its original cost less net salvage. Net
19 salvage is difference between the gross salvage that will be realized
20 when the asset is disposed of and the cost of retiring it.³ (Emphasis
21 added)

22 NARUC also explains that:

23 The goal of accounting for net salvage is to allocate the net cost of an
24 asset to accounting periods, making due allowance for the net salvage,

¹ National Association of Regulatory Utility Commissioners, *Public Utility Depreciation Practices* (1996).

² Frank K. Wolf and W. Chester Fitch, *Depreciation Systems* (1994).

³ NARUC Manual at 18.

1 positive or negative, that will be obtained when the asset is retired. This
2 concept carries with it the premise that property ownership includes the
3 responsibility for the property’s ultimate abandonment or removal.
4 Hence, if users benefit from its use, they should pay their *pro rata* share
5 of the costs involved in the abandonment or removal of the property and
6 also receive their *pro rata* share of the benefits of the proceeds
7 received.⁴ (Emphasis added)

8 Wolf and Fitch explain that:

9 The matching principle specifies that all cost incurred to produce a
10 service should be matched against the revenue produced. Estimated
11 future costs of retiring an asset currently in service must be accrued and
12 allocated as part of the current expenses.⁵

13 **Q. PLEASE DESCRIBE THE SECOND PHASE OF THE PROCESS THAT YOU**
14 **USED IN THE 2025 DEPRECIATION STUDY IN WHICH YOU**
15 **CALCULATED COMPOSITE REMAINING LIVES AND ANNUAL**
16 **DEPRECIATION ACCRUAL RATES.**

17 A. After I estimated the service life and net salvage characteristics for each depreciable
18 property group, I calculated the annual depreciation accrual rates for each depreciable
19 group based on the straight line remaining life method, using remaining lives
20 weighted consistent with the average service life procedure. The calculation of
21 annual depreciation accrual rates was developed as of June 30, 2025.

22 **Q. PLEASE DESCRIBE THE STRAIGHT LINE REMAINING LIFE METHOD**
23 **OF DEPRECIATION.**

24 A. The straight line remaining life method of depreciation allocates the original cost of
25 the property, less both accumulated depreciation and future net salvage, in equal
26 amounts to each year of remaining service life.

⁴ NARUC Manual at 18.

⁵ Wolf and Fitch, p. 7.

1 **Q. PLEASE DESCRIBE AMORTIZATION ACCOUNTING.**

2 A. Amortization accounting is used for accounts with many units, but small asset values.

3 In amortization accounting, units of property are capitalized in the same manner as
4 they are in depreciation accounting. However, depreciation accounting is difficult for
5 these assets because periodic inventories are required to properly reflect plant in-
6 service. Consequently, retirements are recorded when a vintage is fully amortized
7 rather than as the units are removed from service. That is, all retirements occur
8 simultaneously at the end of the amortization period, with no dispersion of retirement.

9 All units are retired when the age of the vintage reaches the amortization period.

10 Each plant account or group of assets is assigned a fixed period which represents an
11 anticipated life during which the asset will render service. For example, in
12 amortization accounting, assets that have a 20-year amortization period will be fully
13 recovered after 20 years of service and taken off the Company books but not
14 necessarily removed from service. In contrast, assets that are taken out of service
15 before 20 years remain on the books until the amortization period for that vintage has
16 expired.

17 **Q. AMORTIZATION ACCOUNTING IS CURRENTLY BEING USED FOR**
18 **WHICH PLANT ACCOUNTS?**

19 A. Amortization accounting is only appropriate for certain General Plant accounts.

20 These accounts are 391.01, 391.08, 393.00, 394.00, 395.00, 397.01, 397.03, 398.00
21 and 398.08, which collectively represent slightly more than one percent of the
22 Company's total depreciable plant.

1 **Q. PLEASE USE AN EXAMPLE TO ILLUSTRATE THE DEVELOPMENT OF**
2 **THE ANNUAL DEPRECIATION ACCRUAL RATE FOR A PARTICULAR**
3 **GROUP OF PROPERTY IN YOUR DEPRECIATION STUDY.**

4 A. I will use Account 362.00, Station Equipment, as an example because it is one of the
5 largest depreciable groups.

6 The retirement rate method was used to analyze the survivor characteristics of
7 this property group. Aged plant accounting data were compiled from 1946 through
8 2024 and analyzed in periods that best represent the overall service life of this
9 property. The life tables for the 1946-2024 and 2005-2024 experience bands are
10 presented in the depreciation study on pages VII-76 through VII-79. Each life table
11 displays the retirement and surviving ratios of the aged plant data exposed to
12 retirement by age interval. For example, page VII-76 of Exhibit JJS-2, shows
13 \$58,626 retired during age interval 0.5-1.5 with \$102,106,341 exposed to retirement
14 at the beginning of the interval. Consequently, the retirement ratio is 0.0006
15 ($\$58,626/\$102,106,341$) and the survivor ratio is 0.9994 ($1-0.0006$). The life tables,
16 or original survivor curves, are plotted along with the estimated smooth survivor
17 curve, the 50-R2, on page VII-75 of Exhibit JJS-2.

18 The net salvage percent is presented on pages VIII-29 and VIII-30. The
19 percentage is based on the result of annual gross salvage minus the cost to remove
20 plant assets as compared to the original cost of plant retired during the period 1997
21 through 2024. The 28-year period experienced \$1,096,319 ($\$942,271-\$2,038,590$) in
22 net salvage for \$11,058,020 plant retired. The result is net salvage of 10%
23 ($\$1,096,319/\$11,058,020$). However, the three-year rolling averages and most recent

1 five years show a trend to a much more negative net salvage. Therefore, net salvage
2 for station equipment is set at negative 15 %.

3 My calculation of the annual depreciation related to original cost of electric
4 utility plant as of June 30, 2025 for Account 362.00 is presented on pages IX-55 and
5 IX-56 of Exhibit JJS-2. The calculation is based on the 50-R2 survivor curve, 15 %
6 negative net salvage, the attained age, and the allocated book reserve. The tabulation
7 sets forth the installation year, the original cost, calculated accrued depreciation,
8 allocated book reserve, future accruals, remaining life, and annual accrual. These
9 totals are brought forward to Table 1 on page VI-7.

10 **Q. HAVE YOU DEVELOPED DEPRECIATION RATES FOR FUTURE**
11 **ASSETS?**

12 A. Yes. There are plans to add six new Reciprocating Internal Combustion Engines
13 (“RICE”) at the current Lange generation facility which will be collectively named
14 Lange II. The rates for these assets in Accounts 341.00 through 346.00 will be based
15 on interim survivor curves for each account, a weighted net salvage percent for each
16 account and a 30-year life span for the location from the date of construction. There
17 are plans to add assets into Account 397.02, Communication Equipment – Software,
18 which will have a life of five years.

19 Additionally, depreciation rates for assets that have been reclassified due to
20 FERC Order 898 have been established into the new account or subaccount. Many of
21 these asset classes are amortized accounts so the rate is based on the established
22 amortization period.

1 **IV. CONCLUSION**

2 **Q. IN YOUR OPINION, ARE THE DEPRECIATION AND AMORTIZATION**
3 **RATES SET FORTH IN EXHIBIT JJS-2 THE APPROPRIATE RATES FOR**
4 **THE COMMISSION TO ADOPT IN THIS PROCEEDING FOR BLACK**
5 **HILLS POWER?**

6 A. Yes. These rates appropriately reflect the rates at which the costs of Black Hills
7 Power's assets are being consumed over their useful lives. These rates are an
8 appropriate basis for setting electric rates in this matter and for the Company to use
9 for booking depreciation and amortization expense going forward.

10 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

11 A. Yes.

VERIFICATION

This Direct Testimony and Exhibits of John J. Spanos is true and accurate to the best of my knowledge, information, and belief.

/s/ John J. Spanos

John J. Spanos