BEFORE THE NEBRASKA PUBLIC SERVICE COMMISSION

Docket No. NG-124

REBUTTAL TESTIMONY OF

JOHN J. SPANOS

ON BEHALF OF

BLACK HILLS NEBRASKA GAS, LLC

September 15, 2025

TABLE OF CONTENTS

I. INTRODUCTION AND PURPOSE

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

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

Q. ARE YOU THE SAME JOHN J. SPANOS WHO FILED DIRECT TESTIMONY IN THIS CASE?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. My rebuttal testimony addresses Nebraska Public Advocate witness William Dunkel's testimony regarding the Public Advocate's proposed adjustments and recommendations regarding the depreciation rates submitted by Black Hills Nebraska Gas, LLC d/b/a Black Hills Energy ("BH Nebraska Gas") in this case.

Q. PLEASE SUMMARIZE YOUR REBUTTAL TESTIMONY.

A. My testimony responds to the depreciation related proposals of Nebraska Public Advocate witness, William W. Dunkel. For most plant accounts, Mr. Dunkel has not challenged the life or net salvage estimates in my study. However, for those accounts that he has challenged my estimate, I disagree with his life proposal. Specifically, my testimony addresses the following:

- The Public Advocate has proposed different service lives for a few property accounts. These accounts are: Account 376, Mains; Account 380, Services; Account 381.00, Meters – Small Volume and Other; and Account 382.01, Meter Installations. Mr. Dunkel does not correctly interpret the entire historical data, and proposes lives that are not consistent with the overall life cycle of the asset classes for these accounts.

The Public Advocate has proposed changes to the net salvage estimates for two property accounts. These accounts are: Account 376, Mains and Account 380, Services. In contrast to the recommendations in my study which are based on the proper method and supported by depreciation texts, Mr. Dunkel's proposals for these two accounts are based on an arbitrary ratio of net salvage costs to net salvage accruals for which he provides very little support.

Q. IS THERE AN INITIAL ISSUE TO ADDRESS REGARDING NEBRASKA PUBLIC ADVOCATE WITNESS MR. DUNKEL'S TESTIMONY?

A. Yes. On page 5 of Mr. Dunkel's Direct Testimony, he states "I developed the Black Hills Nebraska Gas, LLC d/b/a Black Hills Energy ("BH Natural Gas", BHN, or "Company") depreciation rates which are currently in effect. This is quite misleading. Actually, I, on behalf of Black Hills Nebraska conducted the depreciation study based on all the same methodology that I have recommended in this case and the Public Advocate recommended a few adjustments to the parameters that changed a couple depreciation rates and expense for revenue requirements. That is quite different from stating that he was the one that developed the depreciation rates.

II. MASS PROPERTY SERVICE LIVES

Q. HOW ARE SERVICE LIVES ESTIMATED FOR MASS PROPERTY?

A. A mass property account is typically a group of assets for which there will be a range of service lives. For example, some poles will retire at early ages (for example, if hit by a car) and some will survive for much longer. The range of lives for a group of assets is referred to as the "dispersion" of lives or dispersion of

retirements. Service lives are estimated for mass property accounts using established survivor curves, which provide an estimate of both an average service life and a dispersion of lives around the average. This concept is discussed in more detail in Part II of Direct Exhibit JJS-2 -Depreciation Study of BH Nebraska Gas.

Q. PLEASE EXPLAIN THE PROCESS FOR ESTIMATING SERVICE LIVES.

A. The process for estimating service lives is based on informed judgment that incorporates a number of factors, including the statistical analysis of the historical data. The statistical analysis used in the study, which was also used by the Public Advocate, is known as the retirement rate method. I have described this method in Part II of the Depreciation Study. When using the retirement rate method, original life tables are developed from the Company's historical accounting data. The original life tables provide an indication of the percentage of assets that have historically survived to each age for which data is available.

Q. WHAT IS "MATHEMATICAL CURVE FITTING"?

A. When performing mathematical curve fitting, the difference between the smooth survivor curve and the original survivor curve is compared mathematically. This fitting is typically performed using computer software. For mathematical curve fitting I have used a measure of fit called the "residual measure." A lower residual measure indicates a better mathematical fit of the data (and a residual measure of 0.00 would indicate that every data point perfectly matches the fitted Iowa curve).

Q. SHOULD THE DEPRECIATION ANALYST RELY SOLELY ON "MATHEMATICAL CURVE FITTING" RESULTS FOR SERVICE LIFE ESTIMATES?

A. No. The best mathematical fit is not always the most appropriate survivor curve for an account. There are many other factors that go into choosing survivor curves for utility plant accounts. The correct and proper approach to estimating service lives is set forth in highly regarded depreciation texts such as the National Association of Regulatory Utility Commissioners' (NARUC) publication *Public Utility Depreciation Practices.* Mathematical curve fitting is the objective component to estimating service lives, but there is also a subjective component that must be considered. If all relevant factors and information are not considered, then it is difficult for the depreciation analyst to arrive at the most appropriate service life estimate. NARUC makes clear that there must be a subjective component to estimating service lives:

> Actuarial analysis objectively measures how the company has retired its investment. The analyst must then judge whether this historical view depicts the future life of the property in service. The analyst takes into consideration various factors, such as changes in technology, services provided, or capital budgets.[1]

Q. WHAT IS "VISUAL CURVE FITTING"?

A. For visual curve fitting, smooth survivor curves (normally Iowa survivor curves) are charted on the same graph as the original curve. By graphing the curves on the

[1] National Association of Regulatory Utility Commissioners, *Public Utility Depreciation Practices*, 1996, p. 111.

same graph, one can visually make a determination as to how close of a match the smooth curve is to the original curve.

Q. WHAT HAS MR. DUNKEL PROPOSED FOR MASS PROPERTY SERVICE LIVES?

A. Mr. Dunkel has proposed different survivor curve estimates for four plant accounts. For three of the plant accounts that Mr. Dunkel has proposed different life estimates for which are Account 376, Mains, Account 380, Services and Account 382.01, Meter Installations, it relates to review of all of the data. The fourth account is Account 381.00, Meters – Small Volume and Other which had other issues that will be discussed later in this section.

Q. WHAT ARE THE REASONS FOR THE DIFFERENCES IN LIFE ESTIMATES?

A. The primary reason for the life estimates differing from mine is that Mr. Dunkel has decided to ignore 15 years of Company data because the data was specific to only one of the predecessor companies and not both predecessor companies.[2] Mr. Dunkel does not provide a valid reason for ignoring data related to assets that are currently part of the Black Hills Nebraska system. Mr. Dunkel only uses a 12-year experience band for his life analysis, while I used a 27-year band (1998-2024) experience band for the life analysis in my depreciation study. When dealing with assets that have service lives in excess of 40 years, and sometimes up to 70 years, it is important to analyze as much data as possible.

[2] Dunkel Direct Testimony, pg. 38-39

Q. USING THE ENTIRE SET OF DATA AVAILABLE FOR ANALYSIS, PLEASE SHOW A COMPARISON OF YOUR SELECTED SURVIVOR CURVE AND MR. DUNKEL'S CURVE FOR EACH ACCOUNT WHERE THERE IS A DIFFERENCE OF OPINION?

A. Yes. Figures 1 through 3 below show a comparison of the curve I selected to the curve selected by Mr. Dunkel. For each Figure, my curve is black and Mr. Dunkel's curve is brown.

Figure 1: Survivor curve with historical data comparison for Account 376, Mains

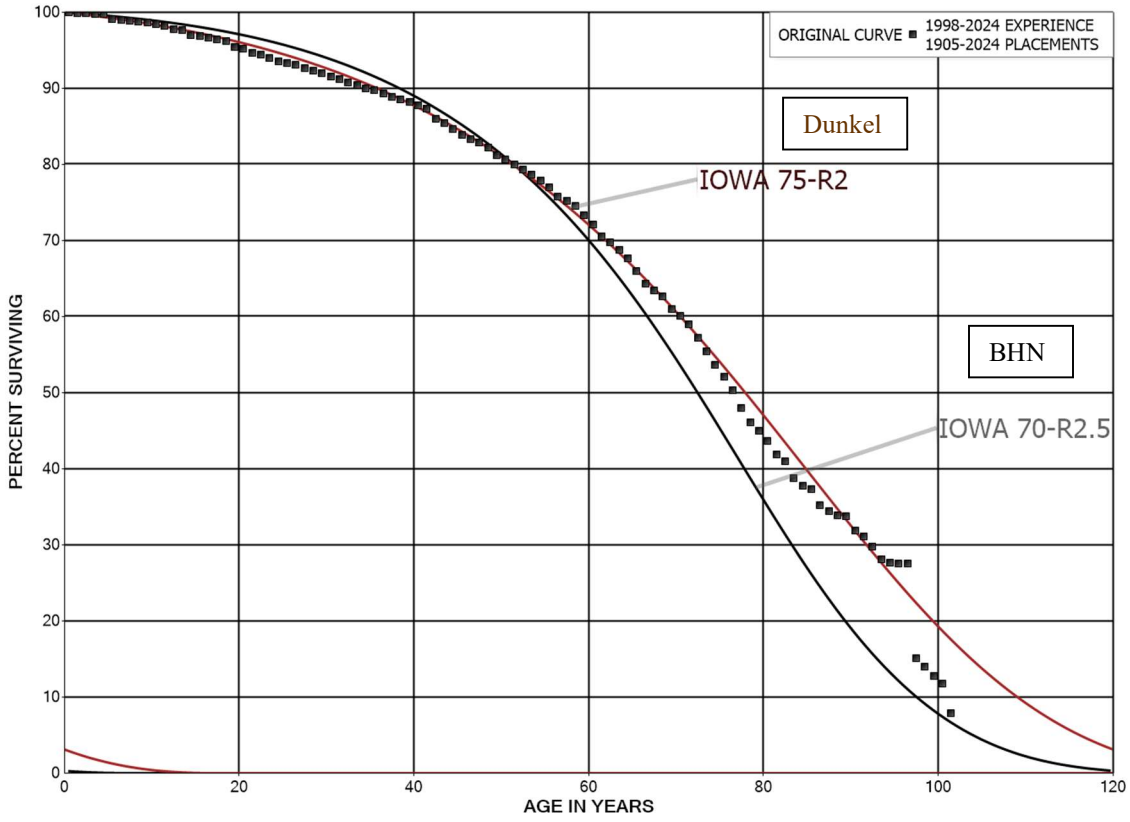


Figure 2: Survivor curve with historical data comparison for Account 380, Services

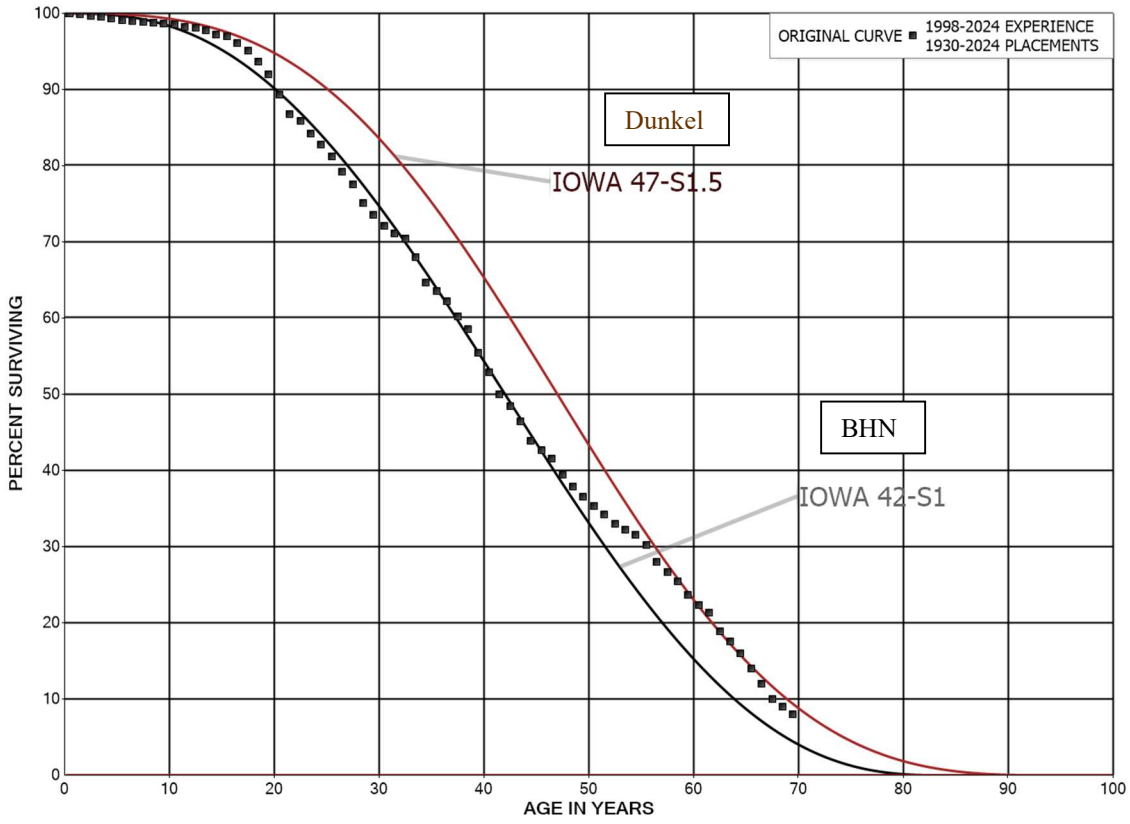
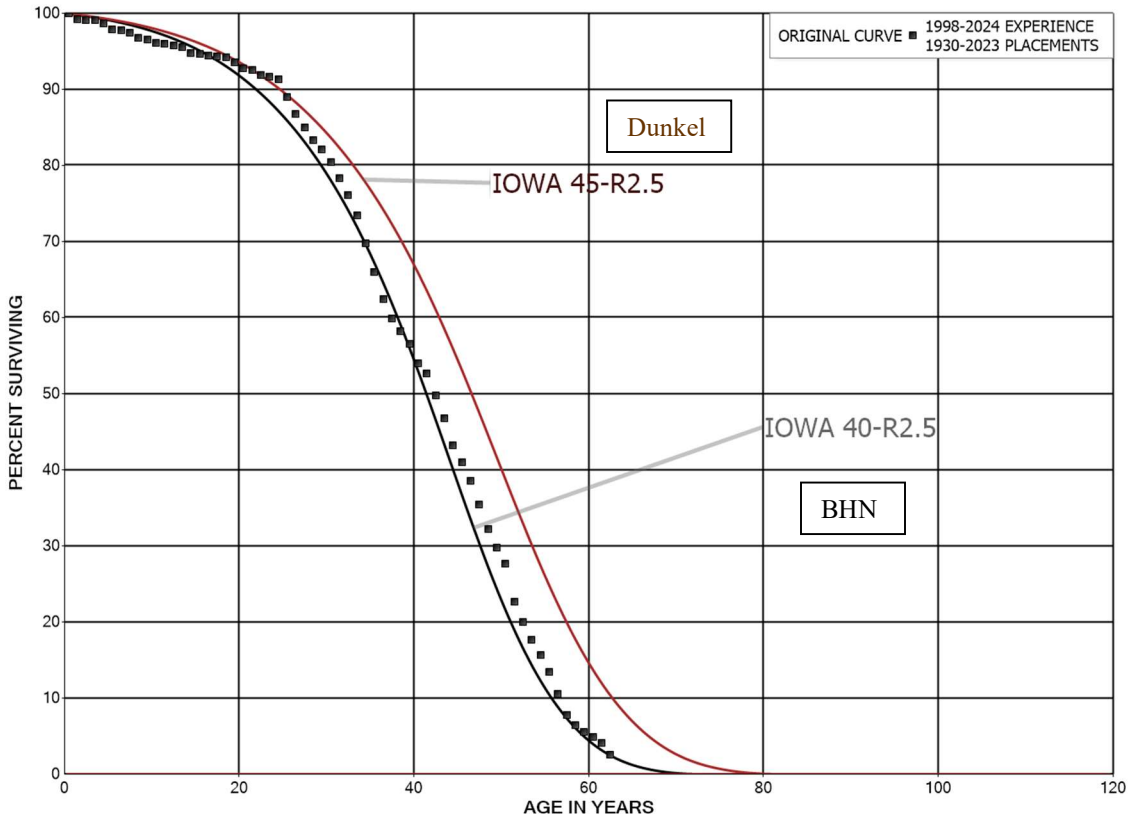


Figure 3: Survivor curve with historical data comparison for Account 382.01 Meter Installations



Q. HOW DO YOUR ESTIMATES COMPARE TO MR. DUNKEL'S FOR THESE ACCOUNTS?

A. It is clear from the figures above that when analyzing the entire set of data available Mr. Dunkel's estimates are not as good a fit of the data as my estimates. His estimates for Accounts 380.00 and 382.01 are clearly showing longer service lives than the Company historical data. For Account 376, Mr. Dunkel's estimate is a good fit, however, he does not consider the reasonable life cycle for mains nor the replacement practices going forward to replace the older mains. There are other reasons that the 75-R2 for Account 376, Mains, is not a good estimate for this account as well.

Q. IS THE HISTORICAL DATA THE ONLY CONSIDERATION IN ESTIMATING SERVICE LIVES?

A. No. It is imperative that informed judgment is used that incorporates not only the statistical analysis of historical data, but other relevant factors, such as the mortality characteristics of the property studied and Company-specific information. These factors also support my estimates over those of Mr. Dunkel. As can be observed in Figure 1 above, Mr. Dunkel's estimate for Account 376, Mains assumed that 20% of mains will remain in service until at least 100 years of age and 10% of mains will remain in service until at least 110 years of age. That is not a supportable assumption for this type of asset, especially considering that currently the oldest mains on the system are 94 years old and account for less than 1% of the entire system of mains for the Company.

Q. ARE THERE OTHER COMPONENTS THAT MR. DUNKEL HAS NOT CONSIDERED COMPLETELY?

A. Yes**.** First, Mr. Dunkel does not consider all the historical information available to analyze. There were two predecessor companies that were merged together with data of various transactional periods, however, the individual data is important to understand the life cycle of the asset classes. It also should be clear this is the same data for all asset classes not restricted to the accounts for which Mr. Dunkel proposes a different estimate. Second, when comparing to other estimates in the industry it is important to know how assets in other companies in the industry are recorded to make sure an apples to apples comparison is made. For example, what is typical service line footage where the segregation between main and service

affects the retirement unit in each account. This understanding will also allow for proper informed judgment with regards to life cycles, mortality curves and understanding of the data being analyzed. This understanding is critical for interpreting data when merging two companies when some assets may be recorded differently. Finally, it is important for the depreciation expert to distinguish between life estimation and life analysis. Life estimation relates to establishing the future life characteristics of an asset class not to only determine what has happened historically.

Q. HAS MR. DUNKEL ANALYZED ALL AVAILABLE COMPANY DATA WHEN DETERMINING HIS SERVICE LIFE ESTIMATES?

A. No. Mr. Dunkel has decided to omit 15 years of company data, and instead only analyze the most recent 12 years of data. His justification for this is that analysis should only be done for years of data in which data was available for both prior companies. He provides no actual evidence that the 1998-2012 Aquila/Black Hills Legacy Nebraska data would not be representative of the combined company data, other than the fact that the older data shows a shorter life than the more recent data. Analyzing only 12 years of data, when 27 years of data is available is not justifiable, especially when dealing with longer-lived assets. Absent any specific reason that the older data is not representative of the current assets, or that the old data is tainted in some way, this data should be used to analyze historical retirements and inform an analyst's decision when estimating the service lives of the BH Nebraska Gas assets. Using Mr. Dunkel's logic, if we were to run a two-year experience band of 2018-2019, and that were to show a longer life than the

2013-2019 experience band, then we should rely solely on 2 years of data. To quote NARUC from Mr. Dunkel's own testimony in the prior Black Hills Nebraska case:

> Banding is the compositing of a number of years of data in order to merge them into a single data set for further analysis. Often several bands are analyzed.[3]

There is a reason that multiple years of data are banded together to analyze service lives. Service lives show trends throughout years of data. The same account could have a shorter service life trend one decade, and then a longer service life trend the next decade. That is why we refer to it as AVERAGE service life. It is not an exact life developed from only the most recent data available, but rather an estimate of the average service life over as many years of data that are available to analyze coupled with informed judgment to come up with the most accurate possible estimate.

Q. DOES MR. DUNKEL MAKE A CONVINCING ARGUMENT REGARDING OLDER SERVICES BEING OMITTED FROM THE AQUILA/BLACK HILLS LEGACY NEBRASKA SERVICE LIFE DATA?

A. No. Mr. Dunkel quotes a BH Nebraska Gas discovery response which states that some older services were booked to the mains account. I believe his point to making this argument is that the exclusion of this data means that the Aquila/Black Hills Legacy Nebraska data is not representative of the overall data for the newly merged company, and thus the data should not be used. However, he makes no quantitative or substantive argument to support his point. For example, he does

[3] NARUC Public Utility Depreciation Practices, pg. 113

not present what the Aquila/Black Hills Legacy Nebraska data would show if this data was included in the services account. How much of an overall impact to the service life data, and thus service life estimation process, would the inclusion of this data create? He has no proof that suggests that if the data for the older services was included that the 1998-2012 Aquila/Black Hills Legacy Nebraska data would show a service life longer than 35 years.

Further, if Mr. Dunkel's position is that this data is incorrectly trending the service life estimate for gas services to be shorter, then it should follow that he believes the service life estimate for the mains account would be too long. If he believes the data is impactful enough to seriously skew the services data, and these older retirements were included in the mains account instead of the services account, then I would expect him to propose a shorter average service life than the data suggests for the mains account. However, he does not do this which leads me to believe he is making this argument to simply increase service lives, and thus decrease depreciation expense, regardless of if his reasons are valid.

Q. PLEASE ADDRESS THE ISSUE CONCERNING ACCOUNT 381, METERS – SMALL VOLUME AND OTHER.

A. There was some surviving balance data that was mistakenly omitted from the analysis done in the depreciation study filing. This caused a change to the exposures calculated in the life table for that account (see pages VII-38 and VII-39 of the depreciation study for reference). As part of the response to PA-23-338, which is referenced in Exhibit WWD-2, I updated the life analysis for that account to include the proper balance data and thus calculate the proper exposures in the

life table for that account. After that analysis, it was determined that a slightly longer average service life was appropriate. Therefore, as part of the response to PA-23-338 I updated my life estimate for that account to the 24-S0.5 from the 21-S0.5 survivor curve. This reflects the same dispersion pattern (S0.5) but a slightly longer average life in order to be able to retire the assets according to plans.

Q. MR. DUNKEL ERRONEOUSLY ATTEMPTS TO CONNECT THIS DATA UPDATE TO A CASE INVOLVING THE OKLAHOMA COMMISSION. IS THAT A REASONABLE COMPARISON?

A. No. That is a completely separate case in a different state, for a different company, with a completely different set of circumstances. Mr. Dunkel's attempt to connect the two cases is fleeting at best and should be disregarded.

III. NET SALVAGE

Q. WHAT IS NET SALVAGE?

A. Net salvage, as used in depreciation, is defined as gross salvage less cost of removal. When an asset is retired it may have scrap or reuse value, which is gross salvage. There is also a cost to retire the asset. For example, the retirement of a gas service typically requires a multiple person crew and heavy equipment to retire the service. This can include cost to remove and dispose but, in many cases, just cost to abandon in place. The net salvage needs to consider likelihood of both. All of these costs associated with the retirement are cost of removal.

Most types of utility property typically experience negative net salvage, meaning that cost of removal exceeds gross salvage. This is true of many of the BH Nebraska Gas assets. The actual experience of BH Nebraska Gas demonstrates

that for many types of assets there are significant costs to retire the assets and that these costs generally exceed any gross salvage value.

Q. HOW IS NET SALVAGE ESTIMATED?

A. Net salvage estimates are expressed as a percentage of the original cost retired. For example, if an account has a net salvage estimate of negative 50%, then a $1,000 asset would be expected to, on average, cost $500 to retire, net of any gross salvage. Net salvage is estimated in different ways depending on the type of property. For mass property, net salvage estimates are developed in a similar manner to the service life estimates and are based on a combination of statistical analysis of historical data as well as informed judgment that incorporates other factors.

Q. IS NET SALVAGE TO BE RECOVERED IN TODAY'S COST (I.E. THE COST IN TODAY'S DOLLARS)?

A. No. As I discussed earlier, in order to recover the service value of the Company's assets, net salvage must be determined at the cost that will be incurred in the future. When using the straight-line method of depreciation, these costs are recovered ratably, or in equal amounts each year, over the life of the Company's plant.

Q. IS RECOVERING THE FUTURE COST OF NET SALVAGE CONSISTENT WITH THE UNIFORM SYSTEM OF ACCOUNTS?

A. Yes. The USofA specifically defines net salvage as follows:

> 23. Net salvage value means the salvage value of property retired less the cost of removal.

Cost of removal is defined as:

> 10. Cost of removal means the cost of demolishing, dismantling, tearing down or otherwise removing gas plant, including the cost

> of transportation and handling incidental thereto. It does not include the cost of removal activities associated with asset retirement obligations that are capitalized as part of the tangible long-lived assets that give rise to the obligation. (See General Instruction 24).

Finally, cost is defined as (emphasis added):

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

Read together, it should be clear from these definitions that the USofA specifies that cost of removal, which as part of net salvage must be recovered through depreciation expense, is the actual amount that is paid at the time of the transaction. Because net salvage will occur in the future, it is an estimate of the future cost that must be included in depreciation rates.

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

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

Q. HOW IS NET SALVAGE ESTIMATED IN A DEPRECIATION STUDY?

A. The method of estimation depends on the type of property. For mass property accounts such as transmission and distribution accounts, net salvage estimates are based in part on statistical analyses of historical net salvage data. In this analysis,

net salvage (as well as its components of gross salvage and cost of removal) are expressed as a percentage of retirements. This approach, which is widely-accepted in the industry and supported by depreciation textbooks, is referred to as the traditional method.

Q. DOES NARUC EXPLAIN HOW NET SALVAGE SHOULD BE ESTIMATED AND INCLUDED IN DEPRECIATION?

A. Yes. In the section titled "Salvage Considerations," NARUC states:

> Under presently accepted accounting concepts, the amount of depreciation to be accrued over the life of an asset is its original cost less net salvage. Net salvage is the difference between the gross salvage that will be realized when the asset is disposed of and the cost of retiring it. Positive net salvage occurs when gross salvage exceeds cost of retirement, and negative net salvage occurs when cost of retirement exceeds gross salvage. Net salvage is expressed as a percentage of plant retired by dividing the dollars of net salvage by the dollars of original cost of plant retired. The goal of accounting for net salvage is to allocate the net cost of an asset to accounting periods, making due allowance for the net salvage, positive or negative, that will be obtained when the asset is retired. This concept carries with it the premise that property ownership includes the responsibility for the property's ultimate abandonment or removal. Hence, if users benefit from its use, they should pay their pro rata share of the costs involved in the abandonment or removal of the property and also receive their pro rata share of the benefits of the proceeds received.[4]

Thus, NARUC supports the method of net salvage that I have utilized. Additionally, NARUC is clear that net salvage are the amounts "that will be obtained when the asset is retired." That is, the net salvage amount is the future cost to be incurred at the time of retirement.

[4] National Association of Regulatory Utility Commissioners, Public Utility Depreciation Practices, 1996, p. 18. (Emphasis added)

Q. HAS MR. DUNKEL RECOMMENDED DIFFERENT NET SALVAGE PERCENTAGES FOR SOME ACCOUNTS?

A. Yes. Mr. Dunkel has recommended different net salvage percentages for Account 376, Mains and Account 380, Services. Mr. Dunkel recommends a change from negative 30% net salvage to negative 20% net salvage for Account 376 and a change from negative 60% net salvage to negative 40% net salvage for Account 380, Services. It should be noted that in the prior study for BH Nebraska that was done five years ago, Mr. Dunkel was vehemently opposed to the negative 40% net salvage estimate that the Company proposed, and instead proposed a negative 20% net salvage estimate for Account 380, Services. Now after only five more years of data a negative 40% net salvage estimate is acceptable to him.

Q. IS MR. DUNKEL'S NET SALVAGE PERCENTAGE REASONABLE FOR ACCOUNT 376, MAINS?

A. Based on the statistical analysis, estimates of other gas companies, the current estimate and the Company's plan for expected cost of removal activities in the future, the negative 20% is somewhat reasonable.

Q. WHAT INFORMATION SUPPORTS THE BH NEBRASKA GAS ESTIMATE OVER THAT OF MR. DUNKEL?

A. Company personnel have indicated that in recent years there has been a re-assessment towards allocating more cost of removal dollars to the mains account in order to more accurately capture the effort of cost of retiring assets related to this account. This shift in accounting procedure can be seen when looking at the last 5 years of data. The 5-year average for net salvage is negative 30% and the

most recent two years is averaging over negative 34%. This average, and the overall data average, is closer to the BH Nebraska Gas estimate of negative 30% than Mr. Dunkel's negative 20%. When considering the fact that the company is making an effort to record more cost of removal dollars, and the fact that is being seen in the recent data, I would expect these percentages could become even more negative in future years. An estimate below the recent and total averages as Mr. Dunkel proposes is not appropriate for this account.

Q. IS MR. DUNKEL'S NET SALVAGE PERCENTAGE REASONABLE FOR ACCOUNT 380, SERVICES?

A. Based on the statistical analysis, comparable factors discussed for mains, and industry ranges for net salvage for this account, Mr. Dunkel's recommended net salvage change is not necessarily the most appropriate percentage for future expectations. The overall average for the years 2010-2024 for annual net salvage is negative 88%, and the most recent 5-year average is negative 244%. The Company is proposing a conservative estimate of negative 60%. Mr. Dunkel's estimate of negative 40% is not supportable by either the more recent data or the overall data.

Q. ARE MR. DUNKEL'S NET SALVAGE ESTIMATES MORE REASONABLE THAN YOUR NET SALVAGE ESTIMATES?

A. No. In Part IX of his testimony Mr. Dunkel claims that his estimates are more reasonable than the estimates I proposed because a superfluous ratio of net salvage costs to net salvage accrued is less for his estimate than it is for my estimate.[5] As

[5] Dunkel Testimony, pg. 29 Figure 4

can be seen from Figure 4 in his testimony, for Account 380, Services, the ratio of the net salvage accrued divided by the net salvage costs is 2.5 for my estimate and 1.6 for his. Those numbers are meaningless as doing that type of analysis isn't supported by any depreciation texts. His only basis for his "ratio" being better than mine is because it is lower. There is no support or information as to what that ratio should be, or an acceptable range for that ratio.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

COMMONWEALTH OF PENNSYLVANIA)
) SS.
COUNTY OF CUMBERLAND)

I, John J. Spanos, being first duly sworn on oath, depose and state that I am the witness identified in the foregoing prepared testimony, and I am familiar with its contents, and that the facts set forth are true to the best of my knowledge, information and belief.

John J. Spanos

Subscribed and sworn to before me this 8th day of September, 2025.

Notary Public

My Commission Expires: February 20, 2027

Commonwealth of Pennsylvania - Notary Seal
Cheryl Ann Rutter, Notary Public
Cumberland County
My commission expires February 20, 2027
Commission number 1143028
Member, Pennsylvania Association of Notaries