BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

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IN THE MATTER OF ADVICE NO. 961-GAS OF PUBLIC SERVICE COMPANY OF COLORADO TO REVISE ITS COLORADO PUC NO. 6-GAS TARIFF TO INCREASE JURISDICTIONAL BASE RATE REVENUES, IMPLEMENT NEW BASE RATES FOR ALL GAS RATE SCHEDULES, AND MAKE OTHER PROPOSED TARIFF CHANGES EFFECTIVE MARCH 7, 2020	**)**	**PROCEEDING NO. 20AL-_____G**

DIRECT TESTIMONY AND ATTACHMENTS OF DANE A. WATSON

ON

BEHALF OF

PUBLIC SERVICE COMPANY OF COLORADO

February 5, 2020

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

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LIST OF ATTACHMENTS

Attachment DAW-1	Public Service Company of Colorado's Gas Plant Depreciation Rate Study as of June 30, 2019 ("Depreciation Study"), conducted by Alliance Consulting Group
Attachment DAW-2	A list of various regulatory proceedings in which Mr. Watson has testified.

GLOSSARY OF ACRONYMS AND DEFINED TERMS

Acronym/Defined Term	Meaning
Alliance	Alliance Consulting Group
ALG	Broad (Average) Life Group
CDP	Certified Depreciation Professional
Commission	Colorado Public Utilities Commission
Depreciation Study or the Study	Public Service Gas Plant Depreciation Rate Study
EEI	Edison Electric Institute
IEEE	Institute of Electrical and Electronics Engineers
Public Service or Company	Public Service Company of Colorado
The Society	The Society of Depreciation Professionals
TXU	Texas Utilities

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I. INTRODUCTION AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Dane A. Watson. My business address is 101 E. Park Blvd., Suite 220, Plano, Texas 75074.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT POSITION?

A. I am the Managing Partner of the Alliance Consulting Group ("Alliance"). Alliance provides consulting and expert services to the utility industry.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THE PROCEEDING?

A. I am testifying on behalf of Public Service Company of Colorado ("Public Service" or the "Company").

Q. PLEASE SUMMARIZE YOUR RESPONSIBILITIES AND QUALIFICATIONS.

A. As the Managing Partner of Alliance, I am responsible for performing and defending depreciation studies for clients across the United States in a variety of regulatory proceedings. My duties include assembling and analyzing

historical and simulated data, conducting field reviews, determining service life and net salvage estimates, calculating annual depreciation, presenting recommended depreciation rates to utility management for its consideration, and supporting such rates before regulatory bodies. I have performed more than 250 depreciation studies in my career, appeared in nearly 200 cases, and testified before more than 35 regulatory bodies, including the Colorado Public Utilities Commission ("Commission"), as an expert witness on the subject of depreciation. A description of my qualifications, duties, and responsibilities is set forth after the conclusion of my Direct Testimony in my Statement of Qualifications.

II. PURPOSE OF DIRECT TESTIMONY

Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY IN THIS PROCEEDING?

A. The purposes of my Direct Testimony are to:

- Sponsor and present Public Service's Gas Utility Plant Depreciation Rate Study ("Depreciation Study" or "Study"); and
- Support the recommended depreciation rate changes for Company assets based on the results of the Depreciation Study.

Q. ARE YOU SPONSORING ANY ATTACHMENTS IN THIS PROCEEDING?

A. Yes. I sponsor Attachments DAW-1 and DAW-2. Attachment DAW-1 is Public Service's Depreciation Study. Attachment DAW-2 lists the other proceedings in which I have testified before various regulatory bodies.

Q. WERE ATTACHMENTS DAW-1 AND DAW-2 PREPARED BY YOU OR UNDER YOUR SUPERVISION AND CONTROL?

A. Yes.

Q. PLEASE SUMMARIZE THE RESULTS OF YOUR ANALYSIS.

A. The Depreciation Study, which is included as Attachment DAW-1, supports Public Service's proposed depreciation rates. The Study shows Public Service's proposed rates applied to depreciable plant balances of gas utility assets as of June 30, 2019. The Study follows the Commission's long-standing precedent for straight-line depreciation. In this way, all current and future customers are charged for their appropriate share of the capital expended for their benefit. In order to ensure intergenerational equities

between current and future customers, the Commission should adopt the life and net salvage parameters proposed in the Study. Public Service's depreciation rates should be set at the levels supported by the Study in order to recover the Company's total investment in property over the estimated remaining life of the assets.

Q. PLEASE SUMMARIZE THE DEPRECIATION STUDY RESULTS WITH RESPECT TO DEPRECIATION RATES FOR GAS PROPERTY.

A. The analysis conducted in the Depreciation Study, which is based on updated service lives of gas assets and revised net salvage rates, resulted in an increase of approximately 7.1 percent compared to the Company's present depreciation rates for its gas utility assets. Please refer to Appendix B of Attachment DAW-1. Company witness Ms. Laurie J. Wold discusses the effect that the proposed rates have on Public Service's gas depreciation expense, and Company witness Ms. Deborah A. Blair incorporates that updated depreciation expense in his cost of service study (Attachment DAB-1 to her Direct Testimony).

III. PUBLIC SERVICE'S GAS DEPRECIATION RATE STUDY

Q. WHAT DEFINITION OF DEPRECIATION HAVE YOU USED FOR THE PURPOSES OF CONDUCTING A DEPRECIATION STUDY AND PREPARING YOUR TESTIMONY?

A. The term "depreciation," as used herein, is considered in the accounting sense; that is, a system of accounting that distributes the cost of assets, less net salvage (if any), over the estimated useful life of the assets in a systematic and rational manner. Depreciation is a process of allocation, not valuation. Depreciation expense is systematically allocated to accounting periods over the lives of the properties. The amount allocated to any one accounting period does not necessarily represent the loss or decrease in value that will occur during that particular period. Thus, depreciation is considered an expense or cost of operations, rather than a loss or decrease in value. The Company accrues depreciation based on the original cost of all property included in each depreciable plant account. When an asset or group of assets is retired, the full cost of depreciable property, less the net salvage amount, if any, is charged to the depreciation reserve.

Q. WHAT IS A DEPRECIATION STUDY?

A. A depreciation study is a comprehensive analysis of the property characteristics of a utility's assets. A depreciation study is specific to each utility and that utility's assets in order to determine the appropriate annual depreciation accrual rate for each asset account.

Q. WHAT FACTORS INFLUENCE THE DEPRECIATION RATE FOR AN ACCOUNT?

A. The primary factors that influence the depreciation rate for an account are: the remaining investment to be recovered in the account, the depreciable life of the account, and the net salvage for the account.

Q. WHAT DEPRECIATION SYSTEM DID YOU USE IN YOUR DEPRECIATION STUDY?

A. I used the Straight-line Method, Average Life Group ("ALG") procedure and the Remaining-life technique depreciation systems in the Study. This is the same methodology used by Public Service and approved by this Commission for the depreciation rates established in Proceeding Nos. 12AL-1268G and 17AL-0363G.[1]

Q. HOW ARE THE DEPRECIATION RATES DETERMINED USING THE ALG PROCEDURE?

A. Under the ALG procedure, the annual depreciation expense for each group is computed by dividing the original cost of the asset, less allocated depreciation reserve, less estimated net salvage, by its respective average life group remaining life. The resulting annual accrual amounts of all depreciable property within an account are accumulated, and the total is divided by the original cost of all depreciable property within the account to determine the

[1] Most of the Company's current depreciation rates for gas plant accounts were established in Proceeding No. 12AL-1268G. In the Company's most recent gas rate case, which was Proceeding No. 17AL-0363G, the Commission approved new depreciation rates for transmission and distribution gas mains, and the Commission approved the Company's request to set intangible and general plant depreciation rates in accordance with the rates approved in Proceeding No. 16A-0231E.

depreciation rate. The calculated remaining lives and annual depreciation accrual rates are based on the attained ages of plant in service and the estimated service life and net salvage characteristics of each depreciable group. The computations of the annual depreciation rates are shown in Appendix A of Attachment DAW-1.

Q. PLEASE DESCRIBE YOUR DEPRECIATION STUDY APPROACH.

A. With the assistance of my staff, I conducted the depreciation study in four phases as shown in Attachment DAW-1. The four phases are: Data Collection, Analysis, Evaluation, and Calculation. During the initial phase of the study, I collected historical data through June 30, 2019, to be used in the analysis. After the data was assembled, I performed analyses to determine the life and net salvage percentage for the different property groups being studied. As part of this process, I conferred with field personnel, engineers, and managers responsible for the installation, operation, and removal of the assets to gain their input into the operation, maintenance, and salvage of the assets. Next, I evaluated the information obtained from these field personnel, engineers, and managerial personnel, combined with the study results, to determine how the results of the historical asset activity analysis, should be applied. Using all of these resources, I then calculated the depreciation rate for each asset account.

Q. WHAT DOES THE DEPRECIATION STUDY ANALYZE?

A. The Depreciation Study analyzes the lives and net salvage percentages for Public Service's gas plant assets as of June 30, 2019.[2]

Q. WHAT PROPERTY IS INCLUDED OR EXCLUDED IN THE GAS ASSETS IN THE DEPRECIATION STUDY?

A. For gas property, there are five general classes, or functional groups, of depreciable property that are analyzed in the Study: (1) Production and Gathering Plant, (2) Products Extraction Plant, (3) Underground Storage Plant, (4) Transmission Plant, and (5) Distribution Plant property. The Transmission Plant and Distribution Plant functional groups make up the vast majority of Company assets, and they account for 88 percent of Public Service's depreciation expense.

I did not analyze Intangible Plant and General Plant[3] as part of the Depreciation Study because the depreciation rates for those assets were approved in Proceeding No. 17AL-0363G. Because that proceeding is very recent, the Company has elected to propose the depreciation rates and parameters for the Intangible Plant and General Plant functions that were approved in that proceeding.

[2] Life analysis data from January 1, 2019 to June 30, 2019 was not included in the life analysis since that period does not represent a full calendar year, as the other transactional data does.
[3] Intangible Plant and General Plant are classified in Public Service's plant accounting system as gas only and common, as applicable.

Q. WHAT HISTORICAL INFORMATION DID YOU USE TO DEVELOP THE PROPOSED DEPRECIATION RATES?

A. I developed the depreciation rates based on the historical data available and the depreciable property recorded on the Company's books as of June 30, 2019. Existing Accrual rates for Intangible and General Property were used for those functional groups. Ms. Wold develops proposed depreciation expense by applying the depreciation rates I recommend to test year level plant balances.

A. The Depreciation Rate Formula

Q. HOW ARE THE DEPRECIATION RATES DETERMINED?

A. The formula to derive depreciation rates calculates annual depreciation accrual amounts for each group by dividing the original cost of the asset (gross plant), less allocated depreciation reserve, less estimated net salvage, by the group's respective remaining life. The resulting annual accrual amounts for all depreciable property within an account are accumulated, and the total is divided by the original cost (gross plant) of all depreciable property within the account to determine the depreciation rate.

Q. WHAT PORTION OF THE FORMULA USED TO DERIVE DEPRECIATION RATES IS SUPPORTED BY THE DEPRECIATION RATE STUDY?

A. The Depreciation Study determines several pieces of the overall formula used to derive depreciation rates. The portions of the formula derived by the Study are:

- **Remaining Life**: The Study incorporates the ALG, remaining life depreciation system, which is consistent with the Commission's precedent. The Study uses the proposed average service lives and retirement survivor curve to determine the composite remaining life for each account within a functional group.
- **Net Salvage Amounts or Percentages**: The Study calculates and recommends the net salvage percentages for the gas utility plant accounts. For these plant accounts, salvage and removal cost percentages are calculated by dividing the current cost of salvage or removal, as supported by the Study, by the original installed cost of the retired asset.
- **Depreciation Reserve Balance and Reserve Reallocation**: To calculate the depreciation reserve, the Company provided me with the plant balance amounts and the depreciation reserve as of June 30, 2019. Taking that data, the Study calculates a new depreciation reserve balance that is subtracted from gross plant after the reserve reallocation is conducted. As discussed below, to determine depreciation reserve, the theoretical reserve is calculated prior to the reserve reallocation. Both of these calculations (theoretical reserve and reserve reallocation) are supported by the Study.
- **Resulting Annual Depreciation Accrual and Depreciation Rates**: As discussed above, the Study calculates the depreciation rates, and the annual accrual amounts are then derived from these rates. The

computations of the annual depreciation rates and annual accrual amounts are shown in Appendix A of Attachment DAW-1.

I describe in more depth below how the Study determines each component of the formula, as well as the Study results for each component.

Q. DO YOU HAVE AN INITIAL OBSERVATION ABOUT PUBLIC SERVICE'S DEPRECIATION RATES IN GENERAL?

A. Yes. Public Service's depreciation expense is increasing from previously approved levels, primarily due to the changes in service lives and net salvage. The two largest increases are in the transmission and distribution functions.

Q. WHY IS PUBLIC SERVICE'S DEPRECIATION EXPENSE INCREASING IN THE TRANSMISSION FUNCTION?

A. Most of the change in depreciation expense in the transmission function is due to the changes in negative net salvage experienced in two accounts and a decrease in life for Account 368, Transmission Compressor Equipment. The projected service lives for Transmission Compressor Equipment are decreasing from 35 years to 30 years due to higher run times for the compressors. Higher removal cost is being experienced for both the Transmission Compressor account (exhibiting a net salvage change from the current negative 4 to negative 15 percent) and Account 367, Transmission Mains (where the experienced net salvage changed from the current negative 25 to negative 35 percent). More detail can be found in the Depreciation Study report (Attachment DAW-1).

Q. WHY IS PUBLIC SERVICE'S DEPRECIATION EXPENSE INCREASING IN THE DISTRIBUTION FUNCTION?

A. Most of the change in depreciation expense in the distribution function is due to the changes in negative net salvage experienced in two accounts and an increase in life for two accounts. The projected service lives for Distribution Accounts 380.1 Services-Metallic and 380.2 Services-Plastic are increasing from 55 years to 60 years. Higher removal cost is being experienced for both the Distribution Mains accounts: Account 376.1 Mains-Metallic exhibited a net salvage change from the current negative 50 percent to negative 85 percent net salvage, and Account 376.2, Mains-Plastic experienced a net salvage change from the current negative 35 to negative 50 percent. More detail can be found in the Depreciation Study report (Attachment DAW-1).

B. Depreciable Service Lives

Q. WHAT METHOD DID YOU USE TO ANALYZE HISTORICAL DATA FOR GAS PLANT TO DETERMINE LIFE CHARACTERISTICS?

A. All Gas depreciable accounts were analyzed using actuarial analysis (retirement rate method) to estimate the life of the property in each account. In much the same manner as human mortality is analyzed by actuaries, depreciation analysts use models of property mortality characteristics that have been validated in research and empirical applications. Further detail is found in the life analysis section of Attachment DAW-1.

Q. HOW DID YOU DETERMINE THE AVERAGE SERVICE LIVES FOR EACH ASSET GROUP?

A. The appropriate average service lives for each account for gas properties were determined by using actuarial analysis. Graphs and tables supporting the actuarial analysis and the chosen Iowa Curves used to determine the average service lives for analyzed accounts are found in the Life Analysis section of Attachment DAW-1. A summary comparison of the approved depreciable lives and the proposed depreciable lives is shown in Table DAW-D-1 below.

Table DAW-D-1
Public Service Gas Assets Life Parameters

Acct	Description	Approved Life	Approved Curve	Proposed Life	Proposed Curve
	INTANGIBLE				
303.3	Computer Software- 3 Year	3	SQ	3	SQ
303.4	Computer Software- 7 Year	7	SQ	7	SQ
303.1	Computer Software– 10 Year	10	SQ	10	SQ
303.5	Computer Software-15 Year	15	SQ	15	SQ
	PRODUCTION & GATHERING				
325.4	Land Rights	33	R4	40	R4
327	Field Compressor Station Structures	40	L0.5	40	L0.5
328	Field Measuring & Regulating Station Structures	27	L0	27	L0
329	Other Structures	40	SQ	40	SQ
332	Field Lines	37	L0	37	L0
333	Field Compressor Station Equipment	30	R2.5	37	R2
334	Field Measuring & Regulating Station Equipment	21	L0	21	L0
337	Other Equipment	20	SQ	20	SQ
	PRODUCTS EXTRACTION				
341	Structures & Improvements	30	SQ	30	SQ
342	Extraction & Refining Equipment	35	R1.5	41	R2.5
343	Pipe Lines	NA	NA	40	R0.5
344	Extracted Product Storage Equipment	31	R0.5	40	R0.5
345	Compressor Equipment	35	R3	35	R4
346	Gas Measuring & Regulating Equipment	23	L1.5	20	L2

Acct	Description	Approved Life	Approved Curve		Proposed Life	Proposed Curve
	UNDERGROUND STORAGE					
351	Structures & Improvements	50	R1		65	R1.5
352.1	Storage Leaseholds & Rights	50	R1		59	R2
352.2	Reservoirs	50	R1		59	R2
352.3	Non-recoverable Natural Gas	50	R1		59	R2
353	Lines	55	R3		43	R3
354	Compressor Station Equipment	55	R4		48	R4
355	Measuring & Regulating Equipment	28	R1		38	R2
356	Purification Equipment	50	R3		33	R2
357	Other Equipment	16	L1.5		25	L0
	TRANSMISSION PLANT					
365.2	Land Rights	65	R4		80	R4
366	Structures & Improvements	55	R1.5		55	R1.5
366.3	Other Structures	38	S5		45	R5
367	Mains	72	R3		72	R3
368	Compressor Station Equipment	35	L2		30	L2.5
369	Measuring & Regulating Station Equipment	50	R2		55	R1.5
370	Communication Equipment	25	R1.5		35	R3
	DISTRIBUTION PLANT					
374.2	Land Rights	80	R3		80	R3
375	Structures & Improvements	60	R3		60	R3
376	Mains	60	R0.5		58	R1.5
376.1	Mains – Metallic	72	R3		72	R4
376.2	Mains – Plastic	68	R3		68	R4
377	Compressor Station Equipment	32	R1		30	R2
378	Measuring & Regulating Station Equipment - General	58	R1.5		50	R1.5
379	Measuring & Regulating Station Equipment - City Gate	51	R0.5		60	R0.5
380.1	Services – Metallic	55	R3		60	R2.5
380.2	Services – Plastic	55	R3		60	R2.5
381	Meters	45	R4		43	L3
381 AMR	Meters – AMR	15	SQ		15	SQ
382	Meter Installations	45	R4		43	L3
383	House Regulators	45	R4		43	L3
387	Other Equipment	25	R0.5		22	R2.5

Acct	Description	Approved Life	Approved Curve		Proposed Life	Proposed Curve
	GENERAL PLANT					
389.1	Land Rights	60	R4		60	R4
390	Structures & Improvements	45	R1.5		45	R1.5
390.6	Structures & Improvements – Remodeling	NA	NA		NA	NA
391	Office Furniture & Equipment	20	SQ		20	SQ
391.4	Network Equipment	6	SQ		6	SQ
392.1	Transportation- Automobiles	12	SQ		12	SQ
392.2	Transportation- Light Trucks	12	SQ		12	SQ
392.3	Transportation- Trailers	25	SQ		25	SQ
392.4	Transportation- Heavy Trucks	14	SQ		14	SQ
393	Stores Equipment	30	SQ		30	SQ
394	Tools, Shop & Garage Equipment	25	SQ		25	SQ
395	Laboratory Equipment	10	SQ		10	SQ
396	Power Operated Equipment	14	SQ		14	SQ
397	Communication Equipment	15	SQ		15	SQ
398	Miscellaneous Equipment	20	SQ		20	SQ

Q. PLEASE DESCRIBE SOME OF THE CHANGES IN THE AVERAGE SERVICE LIVES FOR THE VARIOUS GAS ACCOUNTS.

A. For production and gathering, products extraction, underground storage, transmission, and distribution accounts, there are 17 accounts with increasing lives, 12 accounts with decreasing lives, and 15 accounts remain the same. The detailed analysis of each account is described fully in Attachment DAW-1. Examples of some of the significant changes in average service lives for production and gathering, products extraction, underground storage, transmission, and distribution accounts are:

- The largest increases in life were in: Underground Storage Account 351, Structures and Improvements, which increased by 15 years; Transmission Plant Account 365.2, Land Rights, which also increased by 15 years; Underground Storage Account 355, Measuring and Regulating Equipment, which increased by 10 years; and Transmission

Plant Account 370, Communication Equipment, which increased by 10 years. Thirteen other accounts saw life increases of less than 10 years.

- The largest decreases in life were in Underground Storage Account 356, Purification Equipment, which decreased by 17 years; Underground Storage Account 353, Lines, which decreased by 12 years; and Distribution Account 378, Measuring and Regulating Equipment, which decreased by 8 years. Nine other accounts saw life decreases of less than 8 years.

Q. HOW DO THE LIFE SELECTIONS YOU PROPOSE REFLECT FUTURE EXPECTATIONS?

A. The Company is engaged in replacement programs for its transmission and distribution mains for pipeline integrity. Older assets will be replaced, and the retention or reduction of the current lives for Accounts 367 and 376 combine future expectations of replacement and life projected for assets that will be added in the future.

C. Net Salvage Amounts or Percentages

Q. WHAT IS NET SALVAGE?

A. While discussed more fully in the Study itself, net salvage is the difference between the gross salvage (what the asset was sold for) and the removal cost (cost to remove and dispose of the asset). Salvage and removal cost percentages are calculated by dividing the current cost of salvage or removal by the original installed cost of the asset. Some plant assets can experience significant negative removal cost percentages due to the amount of removal cost and the timing of the addition versus the retirement. For example, a

distribution asset in Federal Energy Regulatory Commission Account 376.1 Steel Mains with a current installed cost of $500 (2019) would have had an installed cost of $15.54[4] in 1947 (which is the average life of the account). A removal cost of $50 for the asset calculated (incorrectly) on current installed cost would only have a negative 10 percent removal cost ($50/$500). However, a correct removal cost calculation would show a negative 322 percent removal cost for that asset ($50/$15.54). Inflation from the time of installation of the asset until the time of its removal must be taken into account in the calculation of the removal cost percentage because the depreciation rate, which includes the removal cost percentage, will be applied to the original installed cost of assets.

Q. HOW DID YOU DETERMINE THE NET SALVAGE PERCENTAGES FOR EACH ASSET GROUP IN GAS PLANT?

A. I established appropriate net salvage percentages for each account by using the industry-standard method discussed above. The net salvage as a percent of retirements for various bands (*i.e.*, groupings of years such as the five-year average) for each account is shown in Attachment DAW-1, Appendix E. I then exercised judgment to select a net salvage percentage that represents the future expectations for each account. A more detailed discussion of the net salvage analysis performed for Public Service's gas assets is provided in Attachment DAW-1, in the Net Salvage Analysis section. A summary

[4] Using the Handy-Whitman Bulletin No. 190, G-5, line 44, $15.54 = $500 x 27/869.

comparison of the currently authorized net salvage percentages and the proposed net salvage percentages for gas plant is shown below in Table DAW-D-2.

Table DAW-D-2
Public Service Gas Assets Net Salvage

Acct	Description	Approved Net Salvage	Proposed Net Salvage
	INTANGIBLE PLANT		
303.3	Computer Software- 3 Year	0%	0%
303.4	Computer Software- 7 Year	0%	0%
303.1	Computer Software- 10 Year	0%	0%
303.5	Computer Software- 15 Year	0%	0%
	PRODUCTION & GATHERING		
325.4	Land Rights	0%	0%
327	Field Compressor Station Structures	0%	0%
328	Field Measuring & Regulating Station Structures	0%	0%
329	Other Structures	0%	0%
332	Field Lines	-3%	-5%
333	Field Compressor Station Equipment	0%	0%
334	Field Measuring & Regulating Station Equipment	0%	-3%
337	Other Equipment	0%	0%
	PRODUCTS EXTRACTION		
341	Structures & Improvements	0%	0%
342	Extraction & Refining Equipment	-2%	-10%
343	Pipe Lines		
344	Extracted Product Storage Equipment	0%	0%
345	Compressor Equipment	0%	0%
346	Gas Measuring & Regulating Equipment	0%	0%

Acct	Description	Approved Net Salvage	Proposed Net Salvage
	UNDERGROUND STORAGE		
351	Structures & Improvements	-10%	-3%
352.1	Storage Leaseholds & Rights	0%	0%
352.2	Reservoirs	-35%	-30%
352.3	Nonrecoverable Natural Gas	0%	0%
353	Lines	0%	-20%
354	Compressor Station Equipment	-10%	-15%
355	Measuring & Regulating Equipment	-10%	-10%
356	Purification Equipment	0%	-10%
357	Other Equipment	0%	0%
	TRANSMISSION PLANT		
365.2	Land Rights	0%	0%
366	Structures & Improvements	-4%	-4%
366.3	Other Structures	0%	0%
367	Mains	-25%	-35%
368	Compressor Station Equipment	-4%	-15%
369	Measuring & Regulating Station Equipment	-10%	-15%
370	Communication Equipment	0%	0%
	DISTRIBUTION PLANT		
374.2	Land Rights	0%	0%
375	Structures & Improvements	-10%	-10%
376	Mains	-50%	-50%
376.1	Mains - Metallic	-50%	-85%
376.2	Mains - Plastic	-35%	-50%
377	Compressor Station Equipment	0%	-10%
378	Measuring & Regulating Station Equipment – General	-35%	-35%
379	Measuring & Regulating Station Equipment - City Gate	-20%	-30%
380.1	Services - Metallic	-125%	-150%
380.2	Services - Plastic	-125%	-125%
381	Meters	-10%	-10%
381 AMR	Meters - AMR	0%	0%
383	House Regulators	0%	0%
387	Other Equipment	0%	0%

Acct	Description	Approved Net Salvage	Proposed Net Salvage
	GENERAL PLANT		
389.1	Land Rights	0%	0%
390	Structures & Improvements	-10%	-10%
390.007	Structures & Improvements - Remodeling	0%	0%
391	Office Furniture & Equipment	0%	0%
391.4	Network Equipment	0%	0%
392.1	Transportation- Automobiles	10%	10%
392.2	Transportation- Light Trucks	10%	10%
392.3	Transportation- Trailers	20%	20%
392.4	Transportation- Heavy Trucks	10%	10%
393	Stores Equipment	0%	0%
394	Tools, Shop & Garage Equipment	0%	0%
395	Laboratory Equipment	0%	0%
396	Power Operated Equipment	15%	15%
397	Communication Equipment	0%	0%
398	Miscellaneous Equipment	0%	0%

Q. PLEASE DESCRIBE SOME OF THE CHANGES IN THE NET SALVAGE PERCENTAGES FOR THE VARIOUS ACCOUNTS.

A. The detailed analysis of each account is described fully in Attachment DAW-1. Net salvage is trending toward higher negative net salvage due to increased cost of labor, safety, and environmental issues related to retiring utility assets and the longer lives experienced by many assets. For Public Service, 14 accounts decreased (more negative), while 3 accounts increased (less negative or more positive). Examples of some of the changes in net salvage are:

- The most significant decrease (more negative) in net salvage percentages were in: Distribution Account 376.1, Mains Metallic, which decreased from negative 50 percent to negative 85 percent, and Distribution Account 380.1, Services Metallic, which decreased from

negative 125 percent to negative 150 percent. There were 12 other accounts where net salvage decreased and 26 accounts where net salvage remained unchanged.

- The most significant increases (less negative or more positive) in net salvage were in: Underground Storage Account 351, Structures and Improvements, where net salvage moved from negative 10 percent to negative 3 percent.

D. Theoretical Reserve and Reserve Reallocation

Q. WHAT IS A RESERVE REALLOCATION?

A. A reserve reallocation occurs when the depreciation book reserve is realigned among accounts within a functional group based on the theoretical reserve for each account within that function.

Q. PLEASE EXPLAIN WHAT YOU MEAN WHEN YOU REFER TO THE "THEORETICAL RESERVE."

A. The theoretical reserve represents the portion of a property group's cost that would have been accrued as depreciation reserve if current expectations were used throughout the life of the property group for future depreciation accruals. The theoretical reserve for the asset group serves as a point of comparison to the book reserve to determine if the unrecovered investment of the asset and its removal cost are over or under-accrued.

Q. IS IT IMPORTANT FOR THE DEPRECIATION RESERVE TO CONFORM TO THE THEORETICAL RESERVE?

A. Yes. It is important for the depreciation reserve to conform to the theoretical reserve because this sets the reserve at a level necessary to sustain the regulatory concept of intergenerational equity among customers. It also sets the depreciation rates at the appropriate level based on current parameters and expectations.

Q. IS DEPRECIATION RESERVE REALLOCATION A SOUND PRACTICE?

A. Yes, depreciation reserve reallocation is a sound depreciation practice. The National Association of Regulatory Utility Commissioners endorsed the practice in its 1968 publication of PUBLIC UTILITY DEPRECIATION PRACTICES, explaining that reallocation of the depreciation reserve is appropriate "…where the change in the view concerning the life of property is so drastic as to indicate a serious difference between the theoretical and the book reserve."[5] Additionally, the 1996 edition of PUBLIC UTILITY DEPRECIATION PRACTICES states that "theoretical reserve studies also have been conducted for the purpose of allocating an existing reserve among operating units or accounts."[6]

[5] PUBLIC UTILITY DEPRECIATION PRACTICES, published by the National Association of Regulatory Utility Commissioners, at page 48 (1968).
[6] PUBLIC UTILITY DEPRECIATION PRACTICES, published by the National Association of Regulatory Utility Commissioners, at page 188 (1996).

Q. HAS THE COMPANY REALLOCATED ITS DEPRECIATION RESERVE IN PRIOR CASES?

A. Yes. The Company incorporated that approach in the depreciation rates approved for its Gas assets in Proceeding No. 12AL-1268G.

Q. DOES THE DEPRECIATION STUDY YOU PERFORMED FOR THIS CASE CONTAIN A RESERVE REALLOCATION?

A. Yes. In the process of analyzing the Company's depreciation reserve, I observed that the depreciation reserve positions of the accounts were generally not in line with the life and net salvage characteristics found in the analysis of the Company's assets. To allow the relative reserve positions of each account within a function to mirror the life and net salvage characteristics of the underlying assets, I reallocated the depreciation reserves for all accounts within each function. Because most of the current depreciation rates date from cases that occurred eight years ago, I believe reserve reallocation is the best approach based upon sound depreciation practice to resolve the differences in reserve position.

Q. HOW DID YOU DETERMINE THE THEORETICAL RESERVE?

A. I calculated the theoretical reserve using a reserve model that relies on a prospective concept relating future retirement and accrual patterns for property, given current life and salvage estimates. More specifically, I determined the theoretical reserve of a property group from the estimated remaining life of the group, the total life of the group, and estimated net salvage. This computation for the straight-line, remaining-life theoretical

reserve ratio, which I describe in more detail in the Depreciation Study, involves multiplying the vintage balances within the property group by the theoretical reserve ratio for each vintage. The calculation used in the Study is the same calculation the Company used to develop the depreciation rates approved by the Commission in the Company's gas rate case in Proceeding No. 12AL-1268G.

Q. PLEASE EXPLAIN IN MORE DETAIL HOW THE REALLOCATION OF DEPRECIATION RESERVES IS CONDUCTED IN THE STUDY.

A. The first step is to compute the total theoretical reserve, and then the unrecovered costs must be segregated into life and net salvage components for asset groups within each function. Then, to reallocate depreciation reserves within each function between life and the net salvage components using the theoretical reserve model, I computed a proration factor by developing a ratio of the total book reserve to the total theoretical reserve by functional class. After each theoretical reserve was computed, I multiplied it by the proration factor to derive the reallocated book reserve of each functional group. Next, I computed transfers between book life and net salvage reserves within each functional group. After computing the reserve reallocation, I calculated recommended depreciation rates and expense in Appendix A of Attachment DAW-1 for Public Service's plant in service assets. The comparison of book reserves to reallocated reserves appears in Appendix D of Attachment DAW-1.

Q. DID THE REALLOCATION OF THE DEPRECIATION RESERVE CHANGE THE TOTAL RESERVE?

A. No, the reallocation of the depreciation reserve did not change the total reserve. The depreciation reserve represents the amounts that have been collected as a systematic allocation of the cost of an asset over its useful life, including any net salvage that may be required to remove that asset from service upon retirement. The reallocation process does not change the total

reserve for each function; it simply reallocates the reserve between accounts in the function. The reallocated depreciation reserves in the Depreciation Study for plant assets as of June 30, 2019, agree in total to the reserve balances at June 30, 2019.

E. Depreciation Rates

Q. HAVING DETERMINED THE REMAINING LIVES THROUGH THE STUDY, CALCULATED NET SALVAGE, DETERMINED THE THEORETICAL RESERVE, AND CONDUCTED THE RESERVE REALLOCATION, PLEASE DESCRIBE THE FINAL STEPS, CALCULATION OF THE DEPRECIATION RATES.

A. As discussed previously to determine depreciation rates, the following processes occurred:

First, historical data through June 30, 2019 was obtained from the continuing property records and general ledger systems for Public Service and field interviews were conducted with engineers and field operations personnel for Public Service.

Second, an actuarial analysis was performed using the detailed property records and information gathered to create observed life tables, graphs and statistics for service life analysis. Historical salvage and removal data were compiled by account to determine values and trends in gross salvage and removal costs.

Third, the historical information, field interviews, actuarial analyses, and operational characteristics were evaluated, using informed judgement, to select the appropriate service lives and net salvage values identified above.

Finally, after incorporating all of the above information, analysis and evaluation, the depreciation rates were computed using the same methodology as was used in developing the depreciation rates approved by the Commission in Proceeding Nos. 12AL-1268G and 17AL-0363G. The proposed life and net salvage parameters were applied to plant and reserve balances as of June 30, 2019. Those computations of depreciation rates are shown in Appendix A of Attachment DAW-1. A more detailed description of each step of the process is contained within the Depreciation Study.

IV. CONCLUSION

Q. WHAT ACCOUNT DEPRECIATION RATES ARE YOU RECOMMENDING, AND HOW DO THEY COMPARE WITH THE CURRENT RATES?

A. I am recommending the Commission approve the depreciation rates resulting from the Depreciation Study. Detailed calculations of the recommended rates are found in the Study, Attachment DAW–1 Appendix A. A comparison between the current rates and the rates I am recommending is found in the Study, Attachment DAW-1, Appendix B. A further breakdown of the changes in service lives and net salvage is found in the Study, Attachment DAW–1 Appendix C. The Company is proposing to change the depreciation rates consistent with my recommendations and the results of the Study.

Q. DO YOU HAVE ANY OTHER CONCLUDING REMARKS?

A. Yes. The depreciation study and analysis fully support setting depreciation rates at the level I have indicated in my Direct Testimony. The Company should continue to periodically review the annual depreciation rates for its property. In this way, the Company's depreciation expense will more accurately reflect its cost of operations, and the rates for all customers will include an appropriate share of the capital expended for their benefit. The depreciation study for Public Service's Gas depreciable property as of June 30, 2019 describes the extensive analysis performed and the resulting rates that are now appropriate for the Company's utility property. The Company's depreciation rates should be set at these recommended amounts in order to

recover the Company's total investment and the related cost of removal in property over the estimated remaining life of the assets.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.

Statement of Qualifications

Dane A. Watson

I hold a Bachelor of Science degree in Electrical Engineering from the University of Arkansas at Fayetteville and a Master's Degree in Business Administration from Amberton University.

The Society of Depreciation Professionals ("the Society") has established national standards for depreciation professionals. The Society administers an examination and has certain required qualifications to become certified in this field. I met all requirements and have become a Certified Depreciation Professional ("CDP").

Since graduation from college in 1985, I have worked in the area of depreciation and valuation. I founded Alliance Consulting Group in 2004 and am responsible for conducting depreciation, valuation and certain accounting-related studies for utilities in various industries. My duties related to depreciation studies include the assembly and analysis of historical and simulated data, conducting field reviews, determining service life and net salvage estimates, calculating annual depreciation, presenting recommended depreciation rates to utility management for its consideration, and supporting such rates before regulatory bodies.

My prior employment from 1985 to 2004 was with Texas Utilities ("TXU"). During my tenure with TXU, I was responsible for, among other things, conducting valuation and depreciation studies for the domestic TXU companies. During that time, I served as Manager of Property Accounting Services and Records Management in addition to my depreciation responsibilities.

I have twice been Chair of the Edison Electric Institute ("EEI") Property

Accounting and Valuation Committee and have been Chairman of EEI's Depreciation and Economic Issues Subcommittee. I am a Registered Professional Engineer in the State of Texas and a Certified Depreciation Professional. I am a Senior Member of the Institute of Electrical and Electronics Engineers ("IEEE") and have held numerous offices on the Executive Board of the Dallas Section of IEEE as well as national and world-wide IEEE offices. I have served twice as President of the Society of Depreciation Professionals.

A list of my testimony appearances before various regulatory bodies is provided in Attachment DAW-2.

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

* * * *

IN THE MATTER OF ADVICE NO. 961-GAS OF	)	
PUBLIC SERVICE COMPANY OF COLORADO TO	)	
REVISE ITS COLORADO PUC NO. 6-GAS TARIFF	)	
TO INCREASE JURISDICTIONAL BASE RATE	)	**PROCEEDING NO. 20AL-_____G**
REVENUES, IMPLEMENT NEW BASE RATES	)	
FOR ALL GAS RATE SCHEDULES, AND MAKE	)	
OTHER PROPOSED TARIFF CHANGES	)	
EFFECTIVE MARCH 7, 2020.	)	

AFFIDAVIT OF DANE A.WATSON
ON BEHALF OF
PUBLIC SERVICE COMPANY OF COLORADO

I, Dane A. Watson, being duly sworn, state that the Direct Testimony and attachments were prepared by me or under my supervision, control, and direction; that the Direct Testimony and attachments are true and correct to the best of my information, knowledge and belief; and that I would give the same testimony orally and would present the same attachments if asked under oath.

Dated at Plano, Texas, this 22nd day of January, 2020.

Dane A. Watson

Dane A. Watson
Managing Partner, Alliance Consulting Group

Subscribed and sworn to before me this 22nd day of January, 2020.

Notary Public

FREDERICK MAY
Notary Public
STATE OF TEXAS
ID#10872567
My Comm. Exp. Aug. 12, 2020

My Commission expires AUG. 12, 2020