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Case No. GR-2018-0013
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Before the Public Service Commission of the State of Missouri

Rebuttal Testimony

of

Dane A. Watson

On Behalf Of

Liberty Utilities (Midstates Natural Gas) Corp. d/b/a Liberty Utilities

April 2018

REBUTTAL TESTIMONY
OF
DANE A. WATSON
LIBERTY UTILITIES
BEFORE THE
MISSOURI PUBLIC SERVICE COMMISSION
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REBUTTAL TESTIMONY
OF
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LIBERTY UTILITIES
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I. WITNESS IDENTIFICATION 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. I am a Partner of Alliance Consulting Group. Alliance Consulting Group provides consulting and expert services to the utility industry.

Q. ARE YOU THE SAME DANE A. WATSON THAT FILED DIRECT TESTIMONY IN THIS PROCEEDING ON BEHALF OF LIBERTY UTILITIES?

A. Yes.

II. PURPOSE AND SUMMARY OF REBUTTAL TESTIMONY

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

A. The purpose of my testimony is to:

- Respond to and explain the differences I have with Commission Staff's proposal for life parameters for Liberty Utilities Missouri assets and Shared Services assets;
- Respond to and explain differences I have with Commission Staff's proposal for net salvage parameters for Liberty Utilities Missouri assets; and

- Discuss the necessity under the whole life approach (as Staff has proposed) of trueing up the depreciation reserve if it is materially different from the required reserve.
- Present revised recommendations for Liberty Utilities Missouri assets and Shared Services depreciation rates.

Q. WHAT IS THE SOURCE OF THE COMPANY'S CURRENT DEPRECIATION RATES?

A. The existing depreciation rates have been retained by settlement in Case Nos. GM-2012-0037 and GR-2006-0387. The only rates that were added were in Case No. GR-2014-0152 for corporate hardware and software at the corporate office. The rates approved in docket GR-2006-0387 were retained from earlier cases before this Commission. At that time, the facilities were owned by Atmos Energy. As stated by then Staff Witness Guy Gilbert,[1] the rates ordered for this property by this Commission depend on the date Atmos acquired the property.

> Atmos depreciation rates are comprised of previously acquired Greeley Gas Company, United Cities Gas Company and Associated Natural Gas Company rates. Case No. 15.542, dated January 5, 1968, was the last time the Commission ordered Greeley Gas Company depreciation rates. United Cities Gas Company rates were last ordered effective March 31, 1997 in Case No. GM-97-70. Associated Natural Gas Company rates were also ordered in Case No. GR-97-272. There is one composite rate for each account, based on consolidated historic data.

There are no sources on the Commission's website that indicate what life and net salvage parameters were used in the prior cases, or even what depreciation system might have been used. Since the most recent sources of the Company's

[1] Docket GR2006-0387, Gilbert Direct, page 4, liens 1-8.

depreciation rates are at least 20 years old, it is important in this proceeding to set depreciation rates that reflect current and future operations of Liberty Utilities.

Q. WHAT ARE THE PRIMARY DIFFERENCES BETWEEN YOUR ORIGINAL DEPRECIATION STUDY AND THAT PERFORMED BY STAFF?

A. The first difference is the scope of each depreciation study. At the Company's direction, I performed a depreciation study combining all data for Liberty Mid-States, including assets in Missouri, Iowa and Illinois. Staff chose to perform a depreciation study on Missouri assets only, so the basis of the data relied upon by the two studies differs. In addition, Staff used net salvage Missouri data for their recommendations that had been updated through year end 2017 while our original study was as of year end 2015.

The second major difference is that my depreciation study used the average life group, remaining life depreciation system. Staff proposes the average life group, whole life depreciation system. I understand from Staff's testimony that whole life is the precedent in Missouri for gas cases. With that accepted, the difference between book depreciation and the theoretical reserve is substantial and I ask the Commission (consistent with the application of whole life rates) to include a component in the depreciation rates that will allow the Company to recover this shortfall.

III. SUMMARY OF THE LIBERTY UTILITIES STUDY DIFFERENCES

Q. PLEASE DESCRIBE THE DEPRECIATION STUDY ORIGINALLY PRESENTED IN THIS PROCEEDING.

A. I undertook a comprehensive analysis of annual depreciation for Liberty Utilities that was based on Liberty Utilities' depreciable plant in service as of September 30, 2015. The Depreciation Study combined the gas utility property of Illinois, Iowa, and Missouri. The proposed combined parameters and state specific depreciation rates based on state specific plant and accumulated depreciation amounts have been approved by the Illinois Commerce Commission and Iowa Utilities Board in Dockets GRM #16-208 and RPU-2016-0003, respectively. The Company believed that there were sufficient parallels in operations between Mid-States operations in the various states to make setting life and net salvage parameters for all operations appropriate and allow a more robust data analysis of the combined entity. This would result in an accurate representation of its operations, particularly in Missouri, which is the largest state as far as plant investment and number of customers. The actual depreciation rate calculations used those company-wide parameters with state specific asset and reserve balances.

Q. WHAT DOES STAFF RECOMMEND IN THIS PROCEEDING?

A. Staff advocates that it is more appropriate for Liberty Utilities Missouri customers to be charged depreciation expense based on a state specific study. Staff analyzed the life and net salvage parameters based solely on Missouri data and made alternative recommendations for all accounts. Staff also used more current (2017) data for net salvage analysis.

Q. HOW DID YOU RESPOND TO STAFF'S RECOMMENDATION?

A. In response, I re-analyzed the life and net salvage parameters based on Staff's

recommendation to use Missouri only data. Since Staff had updated retirements and removal cost to 2017 for its net salvage analysis, for consistency (and to follow depreciation theory) I used those same updated retirements in my life analysis as well. Due to the lower number of transactions within a single state, in some cases the information was not as statistically significant so the depreciation parameter estimation of necessity relied more heavily on expert judgment and Company specific information. Both Staff and I use informed judgment but for several accounts we reach different conclusions. Staff's informed judgment appears to consider the parameters of other Missouri gas utilities more heavily where my recommendations are more reliant on Company Subject Matter Expert opinions on the operations, specifically of Liberty Utilities Missouri.

Q. WHAT ARE YOUR RECOMMENDATIONS FOR LIBERTY UTILITIES MISSOURI AND SHARED SERVICES DEPRECIATION RATES?

A. My recommendations are shown in Appendix A which details the whole life rates and proposed accrual for each entity.

Q. IS THE SCOPE OF YOUR REBUTTAL BROADER THAN USUAL IN THIS CASE?

A. To be responsive to the approach taken by Staff in its direct case, it necessarily is. As discussed above, it was necessary for me to reanalyze life and net salvage for Liberty Mid-States using Missouri only plant investment and removal and salvage costs through 2017. This was the only way to confirm or rebut the validity of Staff's recommendations. In most accounts, I agree with Staff's recommendations. In a few accounts, I have reached a different conclusion than

Staff. I will address first the average service life for certain accounts where my recommendations vary from Staff's and later I will discuss where I differ for net salvage recommendations.

Q. WHAT FACTORS ARE INCORPORATED IN BOTH YOUR UPDATED DEPRECIATION STUDY AND STAFF'S PROPOSAL THAT ARE NOT IN LIBERTY'S CURRENT MISSOURI RATES?

A. Since the Company cannot determine the existing underlying life and net salvage parameters, it is first necessary to reset depreciation rates to incorporate the most current life expectations. Second, the removal costs for Transmission and Distribution plant must be accurately estimated. Liberty Utilities' proposed depreciation rates in this case reflect the most current estimates of net salvage.

Q. WHAT OTHER INFORMATION IS IMPORTANT TO FACTOR INTO THE LIFE AND NET SALVAGE SELECTION PROCESS?

A. It is essential in the evaluation phase of the depreciation study to confer 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. The information obtained from field personnel, engineers, and managerial personnel, combined with the study results, is then evaluated to determine how the results of the historical asset activity analysis, in conjunction with Liberty Utilities' expected future plans, should be applied. For the accounts where I have a different life proposal than Staff I will discuss the information from field personnel that factors into my decision making process.

IV. ACCOUNT LIFE ANALYSIS AND PARAMETERS

Q. WHAT IS THE SIGNIFICANCE OF AN ASSET'S USEFUL LIFE IN YOUR DEPRECIATION STUDY?

A. In the depreciation study presented in my direct testimony, the methodology used was remaining life. In that study, an asset's useful life was used to determine the remaining life over which the remaining cost (original cost plus or minus net salvage, minus accumulated depreciation) can be allocated to normalize the asset's cost and spread it ratably over future periods. This updated analysis is different in that the whole life depreciation system is used as per Missouri precedent and Staff recommendation. Any difference in reserve position will be discussed in a separate section.

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

A. The establishment of appropriate average service lives for each account within each functional group was determined by using actuarial analysis. Graphs and tables supporting the actuarial analysis and the chosen Iowa Curves (which represent the percentage of property remaining in service at various age intervals) are found in my workpapers. The selected Iowa Curve used to determine the average service lives for the analyzed accounts are found in the Appendix C- Life Analysis and the workpapers accompanying this testimony. The objective of life selection is to estimate the future life characteristics of assets (which I have done), not simply measure the historical life characteristics.

Q. WHAT METHOD OF LIFE ANALYSIS DID YOU USE IN THIS STUDY?

A. I used actuarial analysis of Liberty Missouri's aged plant records. In some accounts, there was limited aged data and in some cases no historical retirement data. After performing the actuarial analysis on the limited-aged database, it was apparent there was not enough activity and historical data in some of the accounts for the sole reliance on the actuarial method. This was evidenced by short stub curves with as much as 90% surviving in some accounts and only a very few that came close or met NARUC's desired drop to at least 50% for reliability.[2] To help understand the best life recommendation for future life-cycles in the account, we then incorporated information from Company personnel and future expectations (as well as bringing in an engineering understanding of the nature of the assets themselves) to provide more comprehensive information to be used in the study.

Q. CAN YOU PLEASE EXPLAIN WHAT YOU MEAN BY LIMITED AGED DATABASE?

A. Yes. The data used in actuarial analysis is referred to as aged data because we have both the year (vintage year) that assets were placed in service and the year in which the assets were retired. The length of time a company has been recording both the year of installation and the year of retirement is one factor in producing an actuarial analysis that would be meaningful to the depreciation analyst. For some accounts, there is history going into the 1950s. For other accounts, there may be a very small amount of retirement activity. Assets that last 40 or 50 years

[2] NARUC Public Utility Depreciation Practices, p. 120. An observed survivor curve that does not reach 0% surviving is a stub, the longer the stub the more reliable the resulting curve fit is, which ultimately represents the area under the curve as the average life. It is generally considered desirable to have the stub curve drop below 50% surviving.

will not start to retire in a statistically meaningful quantity until much closer to their average lives.

Q. YOU STATE THAT LENGTH OF TIME IS ONLY ONE FACTOR IN PRODUCING A MEANINGFUL ACTUARIAL ANALYSIS. CAN YOU EXPLAIN FURTHER?

A. Yes. Even if you had always been tracking both installation and retirement years for your assets, other factors can be present that would not produce enough information for an actuarial analysis. Examples of this are: no retirements had been recorded; only a few retirements had been recorded; or retirements had occurred only in the last year or two; changes to the type of assets recorded in an account. Any of these situations do not provide enough data or historical retirement experience to produce meaningful information in an actuarial life analysis and the depreciation analyst must use other information and judgment to assist in making life recommendations. Finally, as is the case for any depreciation analysis, an understanding of what has occurred, is occurring, and is expected to occur operationally must be considered in any life recommendation.[3]

Q. DO YOU HAVE A SUMMARY SCHEDULE LISTING THE ACCOUNTS FOR WHICH YOU ACCEPT STAFF'S PROPOSED LIFE PARAMETERS?

A. Yes. Table 1 below represents a summary of the accounts where the Company accepts the life or net salvage parameter proposed by Staff. There are some

[3] NARUC Public Utility Depreciation Practices, p. 111.

accounts where the Company accepts only one of the parameters proposed by Staff. If a cell refers to a different Table, then the Company will be rebutting the life parameter. For example, Account 3690 T&D-M&R Station Equipment is listed. The Company accepts Staff's proposed 44 year life, but will be rebutting the net salvage percent proposed by Staff. That account will also be listed on Table 4 later in my testimony, which lists the accounts where I recommend a different net salvage percent than Staff.

TABLE 1
LIBERTY UTILITIES MID-STATES GAS
ACCEPTED STAFF LIFE PARAMETERS

		STAFF PROPOSED	
		Average	
		Service	**Net Salvage**
Acct	**Description**	**Life**	**Percentage**
3660	T&D-Structures & Improv	50	-5%
3661	T&D-Other Structures	50	-5%
3690	T&D-M&R Station Equipment	44	Table 4
3700	Communication Equipment	23	0%
3750	Structures and Improvements	47	0%
3761	T&D-Mains-STL	Table 2	-33%
3762	T&D-Mains-PLST	Table 2	-33%
3780	M &R Station Eqt-General	Table 2	-15%
3790	M & R Station Eqt-City Gate	Table 2	-25%
3800	Services	33	-50%
3830	House regulators	Table 2	0%
3840	House Regulatory installations	Table 2	0%
3850	Industrial M & R Station Eqt	45	Table 4
3870	Other Equipment	22	0%
3900	General Structures & Improv	33	0%
3901	GEN-Structure Frame	33	0%
3902	GEN-Improvements	33	0%
3903	GEN-Improvmts Leased Premise	33	0%
3910	Office Furniture & Improv	20	0%
3920	Transportation Equipment	8	6%
3921	Transport Equip<12,000 lbs.	8	6%
3930	Stores Equipment	22	0%
3940	Tools, Shop, and Garage Equip	17	0%
3950	Laboratory Equipment	25	0%
3960	Power Operated Equipment	11	18%
3961	GEN- Ditchers	11	18%
3962	GEN-Backhoes	11	18%
3963	GEN- Welders	22	0%
3980	Miscellaneous Equipment	17	0%
3993	OTH-Tang Prop - Network - H/W	8	0%
3994	OTH-Tang Prop - PC Hardware	7	0%
3995	OTH-Tang Prop - PC Software	Table 2	0%

Q. DO YOU HAVE A SUMMARY SCHEDULE LISTING THE ACCOUNTS WHERE YOU RECOMMEND A DIFFERENT AVERAGE SERVICE LIFE THAN STAFF PROPOSES?

A. Yes. Tables 2 and 3 below represent summaries of the accounts where I recommend an average service life that is different from the life proposed by Staff. Table 2 lists the accounts for Missouri Gas and Table 3 lists the accounts for the Shared Services.

TABLE 2

LIBERTY UTILITIES MID-STATES GAS
MODIFIED DEPRECIATION LIFE PARAMETERS

				Modified
		Original	Staff	Company
Acct	Description	Proposal	Proposal	Recommendation
3670	T&D-Mains-STL-PLST-CI-Mixed	25	75	25
3671	T&D-Mains-STL	70	75	70
3672	T&D-Mains-PLST	N/A	75	N/A
3760	Mains	25	71	25
3761	T&D-Mains-STL	63	71	63
3762	T&D-Mains-PLST	65	71	65
3780	M & R Station Equip	40	58	48
3790	M & R Station Eqt- City Gate	45	39	45
3810	Meters	31	39	31
3820	Meters Installations	27	34	27
3830	House regulators	27	22	27
3840	House Regulatory installations	27	30	27
3970	Communications Equipment	11	22	16
3971	GEN-Comm Eq. Mob Radios	11	22	16
3972	GEN-Comm Eq. Fixed Radios	11	22	16
3973	GEN-Comm Eq. Telemetering	11	22	16
3995	OTH-Tang Prop - PC Software	5	8	5

Q. CAN YOU PLEASE GIVE A BRIEF EXPLANATION SUPPORTING WHY YOU ARE RECOMMENDING A DIFFERENT AVERAGE SERVICE LIFE FOR EACH OF THE ACCOUNTS LISTED ON TABLE 2?

A. Yes, I will provide a brief summary supporting my different life parameter recommendations for each account in this section of my rebuttal testimony. A general discussion of using actuarial analysis to select lives is included in Appendix B of this rebuttal testimony and a detailed discussion and graphical analysis for each account is included in Appendix C.

- Account 367 (including 3670/1/2) – Staff combined the historical plant data for all the subaccounts in Account 367 while performing life analysis to develop one average service life. I disagreed with that approach. I analyzed each subaccount separately and proposed unique life parameters for each subaccount. The Company maintains plant, reserve and net salvage records at the subaccount level, which I believe is the proper basis to estimate life for this account. The mix of assets, retirement patterns, and life characteristics are different for the assets in each subaccount when analyzed together.
- For Account 367.0 – Transmission Mains Cathodic Protection – I continue to recommend a 25 year life. The assets in Account 367.0 are cathodic protection equipment such as anodes (dissolving over 15-20 years) which will have a much shorter life than the 75 year average recommended by Staff.
- For Account 367.1 – Steel Transmission Mains – The actuarial analysis continues to support a 70 year life as compared to the 75 years recommended by Staff.
- Account 367.2 – Plastic Transmission Mains should have a zero balance. The small dollars of investment should be in Steel Transmission Mains and will be transferred. No depreciation rate is needed for this account.

- Account 376 (including 3760/1/2) – The same explanation for Account 367 related to analyzing the subaccounts separately applies to this account. Staff performed life analysis combining plant data and I analyzed each subaccount separately.
- For Account 376.0 – Distribution Mains Cathodic Protection – With the same logic I noted for 367.0, I continue to recommend a 25 year life for Account 376.0. The assets in Account 376.0 are cathodic protection equipment such as anodes (dissolving over 15-20 years) which will have a much shorter life than the 71 year average recommended by Staff.
- For Account 376.1 – Steel Distribution Mains, the actuarial analysis continues to support a 63 year life as compared to the 71 years recommended by Staff.
- For Account 376.2 – Plastic Distribution Mains – the actuarial analysis is fairly close between my 63 year recommendation and Staff's 71 years – although the 63 year match is slightly better. Given the life indications for Steel Mains and the shorter life indications in more recent experience, the 63 year life is more appropriate than the 71 year Staff recommendation.
- For Account 378 – Distribution M&R Station Equipment (District Regulator Stations or DRS) – The 58 year life Staff proposes is too long based on the historical retirement data and the mix of assets in that account. I propose moving from my original 40 year life recommendation to 48 years based on the Missouri-only data analysis through year end 2017. In addition, the life characteristic for Account 378 are not significantly different from those of Account 379 – Distribution M&R Station Equipment - City Gates. Staff recommended a 39 year

life (and I recommend a 45 year life) for Account 379 so a 48 year life is more reasonable for DRS when compared to City Gates.

- For Account 379 – Distribution M&R Station Equipment – City Gates, the life Staff proposes is significantly different from that of the similar DRS assets. Additionally, although the actuarial analysis does not have enough data to be definitive, the results do indicate that the 45 year life is a better selection than Staff's 39 year life. Moving to a 45 year life also brings the life of DRS (48 years) and City Gates (45 years) closer into parallel which is appropriate since the assets in Account 378 are generally similar to those in Account 379.
- For Account 381 – Meters – After analyzing historical data through December 2017, I continue to recommend a 31 year life for meters. The actuarial analysis is not conclusive but the 31 year life appears a slightly better choice than the Staff's 39 year recommendation. Also, nearly half of meters in recent years have been retired at a life shorter than my 31 year recommendation. Additionally, short-lived communication devices are capitalized in this account (bringing down the average life for the overall account).
- For Account 382 – Meter Installations – I continue to recommend a 27 year life. The actuarial analysis results point to the 27 year life over the 34 years recommended by Staff.
- For Accounts 383 and 384 – Regulators and Regulator Installations – staff proposes a 22 and 30 year life, respectively. Typically, the life of regulators (and regulator installation) is closely aligned with the meter bar on which the regulator is attached. When the meter bar is replaced, the regulator will likely also be

replaced. There is not sufficient information to use actuarial analysis effectively. Therefore, I have recommended using the life for Account 382 for these accounts.

- For Account 397 (Including 3970/2/3) – Communication Equipment – Both Staff and I combined the plant investment to perform life analysis for the assets in these subaccounts. I agree with this approach for these assets because they are homogenous assets with similar life characteristics unlike the Mains subaccounts discussed above. The 16 year life I propose is closely aligned with the Company specific historical data analysis and is significantly better than the 22 year life proposed by Staff. Additionally, the assets in these subaccounts are subject to frequent changes in technology creating a shorter life.

Q. ARE THERE ANY OTHER ACCOUNTS WHERE YOU RECOMMEND A DIFFERENT SERVICE LIFE THAN STAFF?

A. Yes. Table 3 shows two subaccounts in General plant in the Shared Services function where I recommend different service lives from Staff's proposed lives.

TABLE 3

LIBERTY UTILITIES SHARED SERVICES
MODIFIED DEPRECIATION LIFE PARAMETERS

				Modified
		Original	Staff	Company
Acct	Description	Proposal	Proposal	Recommendation
3995	Other Tangible Property - Software 3 Yr Life	3	7	3
3995	Other Tangible Property - Software 5 Yr Life	5	7	5

Q. CAN YOU PLEASE GIVE A BRIEF EXPLANATION SUPPORTING WHY YOU ARE RECOMMENDING A DIFFERENT AVERAGE SERVICE LIFE FOR THE SUBACCOUNTS LISTED ON TABLE 3?

A. Yes I will give a brief explanation for these subaccounts in this section of my testimony, but I will discuss my proposed position for life analysis for each account in detail in Appendix C.

- For Account 3995 – Software, currently, the Company has all software combined with one average service life. The Company intends to track software separately in these subaccounts and assign unique lives based on criteria such as amount of total investment, how quickly technology is changing, and how closely integrated the software is with other Company systems.

V. NET SALVAGE OF ASSETS TRANSMISSION, DISTRIBUTION, AND GENERAL PROPERTY

Q. HOW DID YOU DETERMINE THE NET SALVAGE RATES THAT YOU USED IN YOUR STUDY FOR TRANSMISSION, DISTRIBUTION, AND GENERAL PROPERTY?

A. In the original study filed in my direct testimony, I combined data for all three states together using data as of September 2015. In this update, I examined the experience realized by Liberty Utilities Missouri by observing the average net salvage rates for various bands (or combinations) of years. Using averages (such as the 5 year average band) allows the smoothing of timing differences from when retirements, removal cost, and salvage are booked and smooth's the natural variations between years. By looking at successive average bands, or "rolling bands," an analyst can see trends in the data that would signal the future net salvage in the account. This examination, in combination with the feedback of Liberty Utilities' personnel related to any changes in operations or maintenance that would affect the future net salvage of Liberty Utilities, allowed for the

selection of the best estimate of future net salvage for each account. Like Staff, I used data through year end 2017 to form my conclusions.

Q. IS THIS A REASONABLE METHOD FOR DETERMINING NET SALVAGE RATES?

A. Yes. This methodology is commonly employed throughout the industry and is the method recommended in authoritative texts.

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS.

A. My proposals are shown in Table 4 below. I will discuss each account in more detail below.

TABLE 4
LIBERTY UTILITIES MISSOURI
MODIFIED NET SALVAGE PARAMETERS

				Modified
		Original	Staff	Company
Acct	Description	Proposal	Proposal	Recommendation
3670	T&D-Mains-STL-PLST-CI-Mixed	0	-1	0
3671	T&D-Mains-STL	-20	-1	-20
3672	T&D-Mains-PLST	N/A	-1	N/A
3690	T&D-M&R Station Equipment	-10	0	-10
3760	Mains	0	-33	0
3810	Meters	-35	0	-35
3820	Meters Installations	-35	0	-35
3850	Industrial M & R Station Equip	-10	0	-10

Q. CAN YOU BRIEFLY EXPLAIN THE BASIS FOR THE POSITION YOU NOW RECOMMEND FOR THE ACCOUNTS LISTED ABOVE IN TABLE 4?

A. Yes. I will briefly summarize the basis for my proposed position for net salvage in this section of my testimony, but I discuss my position for each account in more detail in Appendix D.

- For Account 367 (Including 3670/1/2) – Transmission Mains, staff combined the net salvage data for the subaccounts in account 367 to develop one net salvage percent. I disagree with that approach as discussed in the life section. The removal and salvage costs associated with the retirements in each of the accounts is very different. Anodes in account 3670 decay and are abandoned in place; therefore, resulting in zero removal or salvage costs. However, significant removal and salvage costs are typically associated with removing and replacing transmission main.
- For Account 369 – M&R Station Equipment – There has been one retirement and zero removal and salvage costs during the study period in this account; however, typically there are net salvage costs associated with retirements of station equipment. The activities related to removing mains from service are similar between transmission mains and distribution mains. I recommend a small amount of negative net salvage for this account as retirements will result in the future as assets continue to age. Staff proposes zero net salvage for transmission station equipment, but recommends negative 15 and negative 25 percent net salvage for distribution stations. I believe the zero percent recommended by Staff is not appropriate given its recommendation for distribution assets and I recommend a negative 10 percent net salvage.
- For Account 376.0 – Distribution Mains Cathodic Protection – Very similar to my summary for account 367, Staff combined the subaccounts while performing net salvage analysis. The net salvage costs associated with retiring and replacing cathodic protection and anode beds in subaccount 376.0 is very different from net

salvage costs associated with retirements of distribution mains. I recommend a 0 percent net salvage for cathodic protection equipment.

- For Account 381 – Meters – My recommendation relies on historical Company specific data and Staff seems to rely on what other Missouri gas companies are using. Historical net salvage ranges between negative 28 and negative 40 percent, using the 5 year and 10 year moving averages. There are specific activities to remove meters from service (such as actually disconnecting the meter, probing, transporting the meter, logging the meter and fees for shipping and testing the meter). These activities are reflected in the net salvage analysis. Based on the Company's actual experience, I continue to recommend a negative 35 net salvage as compared to Staff's zero percent net salvage recommendation for this account. DR 318 is included as Appendix E. This data response details the retirement process for this account and an example project is given.
- For Account 382 – Meter Installation – Very similar to my reasoning for account 381, Company specific net salvage data is showing between negative 30 and negative 61 percent net salvage using the 5 year and 10 year moving averages. There are specific activities required to remove a meter bar from service. These activities are reflected in the net salvage analysis. I continue to recommend a negative 35 percent based on the Company's historical analysis as compared to Staff's zero percent net salvage recommendation.
- For Account 385 – Industrial M&R Stations – There is very limited net salvage data incurred during the period of the study. Generally, there is expected to be a small amount of removal cost associated with these assets. This is supported by

the net salvage recommendations for the reasonably similar district regulator stations (DRS) and City Gates (where Staff recommended a negative 15 and negative 25 percent net salvage, respectively). While there are some operational differences between Industrial M&R Stations and DRS/City Gates, the equipment is similar and removal cost would be required to remove or replace the assets in each of the three categories. Removal cost for this category can be caused by replacing or upgrading equipment, reacting to changing capacity needs of the customer (either existing or if the customer served changes) or meter pulled and meter set capped if there is no customer for an 18 month period. Therefore, I continue to recommend a negative 10 percent net salvage as compared to the zero percent recommended by Staff.

VI. DEPRECIATION SYSTEM

Q. WHAT ARE THE TWO DIFFERENT DEPRECIATION SYSTEMS BEING PRESENTED IN THIS CASE?

A. The original depreciation study I presented used the remaining life depreciation system. Staff's proposal is using the whole life depreciation system.

Q. PLEASE DESCRIBE THE WHOLE LIFE DEPRECIATION SYSTEM.

A. As described in the Staff Cost of Service Report, Appendix C, page 83, Staff used the following formula to calculate depreciation rates for each plant account:

Depreciation Rate = (100% - Net Salvage %) ÷ (Average Service Life)

Staff correctly incorporates the net salvage percentage into the rate computation. In Public Utility Depreciation Practices (1996) which was co-authored by a member of the Missouri Public Service Commission, the whole life depreciation

system is described as a technique. That phrase is still applicable to its definition as follows[4]:

> The Whole Life technique based the depreciation rate on the established average service life of the plant category. Whole life depreciation results in the allocation of a gross plant base over the total life of the investment. However, to the extent that the estimate average service life assigned turns out to be incorrect, (and precision in these estimates cannot reasonably be expected), the Whole Life technique will result in a depreciation reserve imbalance. For example, such over-accrual or under-accrual may remain in the reserve indefinitely unless offset by later overages or underages in the opposite direction. However, when a depreciation reserve excess or deficiency is reasonably certain, the Whole Life technique may be modified to include an adjustment to the accrual rate designed to eliminate the reserve imbalance in the future. **For example, a special amortization of the difference may be allowed. (Emphasis Added).**

In the NARUC publication, the inclusion of net salvage in the depreciation accrual rate had not been introduced into the discussion.

Q. HOW DO YOU MEASURE WHAT THE RESERVE SHOULD BE TO DETERMINE IF AN IMBALANCE EXITS?

A. The industry accepted approach is to use a prospective model to determine what the depreciation reserve would be if the proposed life and net salvage parameters were applied to the existing asset base. The computations are described in detail in Public Utility Depreciation Practices (P. 189-190), and a PDF of the text is shown in my rebuttal work papers. This prospective model is called a theoretical reserve or the calculated accumulated depreciation.

Q. IS THERE A RESERVE IMBALANCE IN THE CASE OF LIBERTY UTILITIES' MISSOURI ASSETS?

[4] Public Utility Depreciation Practices, 1996.63.

A. Yes, there is a substantial imbalance. I have computed the reserve imbalance in three different scenarios based on plant balances at September 30, 2015. The first scenario is with the proposed depreciation parameters I originally suggested. Those detailed calculations are shown in Appendix F-1. The second scenario uses Staff proposed lives and net salvage parameters. Those detailed calculations are shown in Appendix F-2. The third scenario is the Company Rebuttal position with detailed computations shown in Appendix F-3.

TABLE 5

Scenario	**Book Reserve**[5]	**Theoretical Reserve**	**Difference**	**% Difference**
Company Direct	38,433,465.82	$51,924,455.92	($13,490,990.10)	-35%
Staff Proposed	38,433,465.82	$46,674,766.11	($8,241,300.29)	-21.4%
Company Rebuttal	38,433,465.82	$54,364,507.87	($15,931,042.05)	-41.5%

In each case, there is a substantial variance between the book reserve and the theoretical reserve. This imbalance is so large, that I believe it is necessary to modify the accrual rate computation to recover the reserve imbalance that exists.

Q. WON'T STAFF'S PROPOSED RESERVE ADJUSTMENTS ALLEVIATE THE RESERVE IMBALANCE?

[5] This total excludes shared services assets as well as accounts 301-303, 365, 374, and 389.

A. No. As shown in Accounting Schedule No. 6, the proposed increase in the reserve is $955,141 for Liberty Missouri excluding Shared Services. That change of 2.4[6]% is not sufficient to alleviate the reserve imbalance for Liberty Gas.

Q. WHAT IS A RECOMMENDED TREATMENT FOR A RESERVE IMBALANCE WITH THE WHOLE LIFE DEPRECIATION SYSTEM?

A. As stated in Depreciation Systems, by Drs. F.K. Wolf and W. C. Fitch[7], "whole life depreciation is a general term used to describe any system not using the remaining life method of adjustment. Though whole life describes the length of time from initial installation to final retirement, the average life is used to calculate the accrual rate. Whole life depreciation commonly, but not necessarily implies use of the amortization method of adjustment. As previously discussed, the amortization method of adjustment required the calculation of the various differences between the calculated accumulated depreciation and the accumulated provision for depreciation.

Q. HOW WOULD THE REMAINING LIFE DEPRECIATION SYSTEM HANDLE THIS SITUATION?

A. As stated in support of my original proposal in this case, the remaining life depreciation system has a self-correcting mechanism where any reserve imbalance, positive or negative, would be added to or subtracted from the whole life accrual and collected over the remaining life of each plant account.

[6] 2.4% = 955,141/38,608,999 Source Staff Accounting Schedule No. 6.
[7] Depreciation Systems, by Drs. F.K. Wolf and W.C. Fitch, 1994, Iowa State University Press, p. 176.

Q. CAN YOU GIVE AN EXAMPLE OF HOW THE WHOLE LIFE RATE WOULD DIFFER FROM THE REMAINING LIFE RATE?

A. The best example of the difference between the two depreciation systems is an account where the Company and Staff recommend the same life and net salvage parameter. Account 380, Services, is a good example of that situation. My proposed remaining life rate (based on a reallocated depreciation reserve) was 5.32% and the Staff's proposed whole life rate is 4.55%. The reallocated reserve was substantially different than the book reserve.[8] If the book reserve was not reallocated, the remaining life accrual rate would be 5.82%. The difference is the inherent true-up mechanism in the remaining life depreciation rate calculation that must necessarily be done independently in a whole life calculation.

Q. HOW DOES THE THEORETICAL RESERVE VARY FOR ACCOUNT 380?

A. Account 380, where Staff and the Company agree on life and net salvage parameters shows a theoretical reserve of $14.4 million, as compared to a book reserve of $6.6 million. Thus the variance is a shortfall of $7.7 million for this account. For an account with $28.0 million in plant, this significant difference requires some sort of adjustment.

Q. HOW DO YOU PROPOSE TO ADJUST THIS VARIANCE?

A. Since it has been 20 plus years since the depreciation rates for Liberty were reset, it is my opinion that it is imperative to include an additional component to the

[8] Book reserve for account 380 is $6,649,714.80 and the reallocated reserve was $9,662,186.62.

Company's accrual rate to recover the reserve difference. I proposed to use the whole life accrual as shown as Appendix A and a 10 year amortization of the reserve difference for any account with a reserve excess or deficiency over 10% based on the Company revised parameters. In some cases the total accrual will be negative and in other cases it will be positive. Those computations are shown in Appendix A using the book and theoretical reserves shown in Appendix F-3.

VII. CONCLUSION

Q. IN SUMMARY, WHAT ARE YOUR RECOMMENDATIONS FOR LIBERTY UTILITIES?

A. I recommend that the Commission approve the modified life and net salvage parameters shown in Table 2, Table 3, and Table 4 that I support in my rebuttal testimony. Additionally, I recommend the Commission approve the whole life depreciation rates shown in Appendix A. These proposed rates reflect the whole life depreciation system.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes

AFFIDAVIT OF DANE WATSON

STATE OF TEXAS)
) **ss**
COUNTY OF COLLIN)

On the 11th day of April, 2018, before me appeared Dane Watson, to me personally known, who, being by me first duly sworn, states that he a partner at Alliance Consulting Group and acknowledges that he has read the above and foregoing document and believes that the statements therein are true and correct to the best of his information, knowledge and belief.

Dane Watson

Dane Watson

Subscribed and sworn to before me this 11th day of April, 2018.

Notary Public

My commission expires: 02/20/2021