

Exhibit No.: _____
Issues: Depreciation Study
Witness: Dane A. Watson
Type of Exhibit: Direct Testimony
Sponsoring Party: Liberty Utilities
(Midstates Natural Gas) Corp. d/b/a Liberty
Case No.: GR-2024-0106
Date Testimony Prepared: February 2024

**Before the Public Service Commission
of the State of Missouri**

Direct Testimony

of

Dane A. Watson

on behalf of

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

February 9, 2024



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 LIBERTY UTILITIES (MIDSTATES NATURAL GAS) CORP. D/B/A LIBERTY
 BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION
 CASE NO. GR-2024-0106

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1 **I. INTRODUCTION**

2 **Q. Please state your name and business address.**

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

5 **Q. By whom are you employed and in what position?**

6 A. I am a Partner of Alliance Consulting Group. Alliance Consulting Group provides
7 consulting and expert services to the utility industry.

8 **Q. On whose behalf are you testifying in this proceeding?**

9 A. I am filing testimony on behalf of Liberty Utilities (Midstates Natural Gas) Corp. d/b/a
10 Liberty (“Liberty” or the “Company”).

11 **Q. Please describe your educational background.**

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

15 **Q. Please describe your professional experience.**

16 A. I was employed by Texas Utilities Electric Company and successor companies
17 (“TXU”) from 1985 to 2004. During my tenure with TXU, I was responsible for,
18 among other things, conducting valuation and depreciation studies for the domestic
19 TXU companies. During that time, I served as Manager of Property Accounting
20 Services and Records Management in addition to my depreciation responsibilities.

1 In 2004, I founded Alliance Consulting Group and I'm now responsible for
2 conducting depreciation, valuation, and certain accounting-related studies for clients in
3 various industries. My duties related to depreciation studies include the assembly and
4 analysis of historical and simulated data, conducting field reviews, determining service
5 life and net salvage estimates, calculating annual depreciation, presenting
6 recommended depreciation rates to utility management for its consideration, and
7 supporting such rates before regulatory bodies.

8 I have twice been Chair of the Edison Electric Institute ("EEI") Property
9 Accounting and Valuation Committee and have been Chairman of EEI's Depreciation
10 and Economic Issues Subcommittee. I am a Registered Professional Engineer in the
11 State of Texas and a Certified Depreciation Professional. I am a Senior Member of the
12 Institute of Electrical and Electronics Engineers ("IEEE") and served for several years
13 as an officer of the Executive Board of the Dallas Section of IEEE as well as national
14 and global IEEE offices. I served as President of the Society of Depreciation
15 Professionals twice, most recently in 2015.

16 **Q. Do you hold any special certification as a depreciation expert?**

17 A. Yes. The Society of Depreciation Professionals ("SDP") has established national
18 standards for depreciation professionals. The SDP administers an examination and has
19 certain required qualifications to become certified in this field. I met all requirements
20 and hold a Certified Depreciation Professional certification.

21 **Q. Are you sponsoring any schedules with your direct testimony?**

22 A. Yes. I am sponsoring the following schedules with my direct testimony:

- 23 • **Direct Schedule DAW-1** – List of testimony proceedings

1 • **Direct Schedule DAW-2** – Liberty Utilities (Midstates Natural Gas) Corp,
2 d/b/a Liberty Utilities State of Missouri Book Depreciation Accrual Rate
3 Study at December 31, 2021.

4 • **Direct Schedule DAW-3** – Liberty Utilities (Midstates Natural Gas) Corp,
5 d/b/a Liberty Utilities Shared Services Unit - Depreciation Rate Study as of
6 December 31, 2021.

7 **Q. Were Direct Schedules DAW-1 through DAW-3 prepared by you or under your**
8 **direct supervision and control?**

9 A. Yes.

10 **Q. Have you previously testified before the Missouri Public Service Commission**
11 **(“Commission”) or any other regulatory agency?**

12 A. Yes. I have conducted depreciation studies and filed testimony or testified on
13 depreciation and valuation issues before nearly forty utility commissions across North
14 America, including FERC. I appeared before this Commission in Docket Nos. ER-
15 2021-0312 and EO-2018-0092 on behalf of The Empire District Electric Company and
16 GR-2018-0013 on behalf of Liberty. A list of proceedings in which I have provided
17 testimony is provided in **Direct Schedule DAW-1**.

18 **II. ASSIGNMENT AND SUMMARY OF TESTIMONY AND RECOMMENDATIONS**

19 **Q. What is your assignment in this proceeding?**

20 A. The purpose of my testimony is to:

21 • discuss the recent Liberty Utilities Mid-States Natural Gas Corp. d/b/a Liberty
22 Utilities States of Missouri Book Depreciation Accrual Rate Study at December
23 31, 2021, completed for Liberty assets (“Depreciation Study”) (**Direct**
24 **Schedule DAW-2**);

- 1 • support and justify the recommended depreciation rate changes for Liberty’s
2 Missouri service area, based on the results of the Depreciation Study;
- 3 • discuss the recent Liberty Utilities Mid-States Natural Gas Corp. d/b/a Liberty
4 Utilities Shared Services Unit Depreciation Rate Study as of December 31,
5 2021, completed for Liberty assets (“Shared Services Depreciation Study”)
6 **(Direct Schedule DAW-3)**; and
- 7 • support and justify the recommended depreciation rate changes for Liberty
8 based on the results of the Shared Services Depreciation Study.

9 **Q. Please summarize your conclusions regarding depreciation rate changes for**
10 **Liberty assets based on the results of the Depreciation Study and the Shared**
11 **Services Depreciation Study (collectively, the “Studies”).**

12 A. The Depreciation Study, the Shared Services Depreciation Study, and analysis
13 performed under my supervision fully support Liberty’s proposed depreciation rates
14 applied to December 31, 2021 depreciable plant balances for Transmission plant,
15 Distribution plant, and General Property plant. The Studies follow regulated industry’s
16 long-standing precedent for Average Life Group (“ALG”) straight-line depreciation.
17 In this way, all customers are charged for their appropriate share of the capital expended
18 for their benefit. To ensure intergenerational equities, the Commission should adopt
19 the life characteristics and net salvage parameters proposed in this study. The
20 Depreciation Study also incorporates updated service lives, and accounts for increased
21 removal costs for Transmission and Distribution assets in the proposed depreciation
22 rates. Liberty’s depreciation rates should be set at the levels supported in the Studies
23 in order to recover Liberty’s total investment in property over the estimated remaining
24 life of the assets. The Depreciation Study and the Shared Services Depreciation Study

1 were conducted along the same principles.

2 **Q. How are the Studies used to determine Liberty's depreciation expense for the test**
3 **year?**

4 A. Liberty uses depreciation rates determined in each of the Studies to calculate the
5 appropriate depreciation expense going forward. The information presented in the
6 Studies is based on December 31, 2021 depreciable plant balances, and all of the
7 conclusions are based on those balances.

8 **III. DEPRECIATION ANALYSIS PHILOSOPHY**

9 **Q. Please describe the depreciation analysis philosophy reflected in the current**
10 **Depreciation Study.**

11 A. The objective of any sound depreciation philosophy should be the matching of expense
12 with revenue over the life of the asset. In general, the life of the asset is determined by
13 several factors including the rate of physical deterioration, obsolescence, weather,
14 maintenance, or (in some cases) the economic usefulness of an entire operating unit.
15 The function of depreciation is to recognize the cost of an asset spread over its useful
16 life. Book depreciation techniques should not accelerate or defer the recovery of an
17 asset in comparison to its appropriate useful life.

18 **Q. What objective should the Commission strive to achieve in setting depreciation**
19 **rates?**

20 A. The objective of computing depreciation is to ensure that all customers using the assets
21 pay their pro rata share for the investment, including the cost of retirement. This
22 objective is achieved by allocating the cost or depreciable base of a group of assets over
23 the service life of those assets, on a straight-line basis, by charging a portion of the
24 consumption of the assets to each accounting period.

1 **Q. What factors influence the depreciation rates for an account?**

2 A. The primary factors that include the depreciation rate for an account are: the remaining
3 investment to be recovered in the account, the depreciable life of the account, and the
4 net salvage for the account. The change in depreciation rates is influenced by all three
5 factors.

6 **IV. MISSOURI BOOK DEPRECIATION ACCRUAL RATE STUDY**

7 **A. Summary of the Depreciation Study (Direct Schedule DAW-2)**

8 **Q. Have you prepared a Depreciation Study for Liberty - Missouri?**

9 A. Yes. I undertook a comprehensive analysis of annual depreciation for Liberty that is
10 based on Liberty's depreciable plant in service as of December 31, 2021 for Missouri
11 operations. The Depreciation Study combined all of the gas utility property of
12 Missouri. I analyzed the property characteristics of Liberty's Transmission plant,
13 Distribution plant, and General plant. After developing life and net salvage parameters,
14 I computed depreciation rates for Missouri only. The Depreciation Study is provided
15 as **Direct Schedule DAW-2**.

16 **Q. What depreciation rates are you recommending in this proceeding?**

17 A. My recommended depreciation rates for Liberty - Missouri assets are provided in
18 Appendix B of the Depreciation Study in **Direct Schedule DAW-2**. Based on updated
19 service life and net salvage rates for Liberty - Missouri depreciable plant in-service as
20 of December 31, 2021, I derived the appropriate depreciation rates for Transmission
21 plant, Distribution plant, and General plant. Below is a table summarizing the results.

1

TABLE 1

LIBERTY UTILITIES (MIDSTATES NATURAL GAS) CORP
Missouri Assets
Comparison of Existing vs Proposed Depreciation Rates
As of December 31, 2021

<u>Acct</u>	<u>Depreciable Plant at 12/31/21</u>	<u>Current Annual Expense</u>	<u>Proposed Annual Expense</u>	<u>Expense Change</u>
Transmission	11,230,888	180,283	165,250	(15,034)
Distribution	154,743,156	5,210,808	5,248,169	37,361
General	13,407,060	976,691	800,398	(176,293)
Total Missouri	179,381,104	6,367,782	6,213,817	(153,965)

2 **Q. What accounts show the largest change in depreciation expense between the**
3 **current and proposed accrual rates?**

4 A. Within the Distribution function, the largest changes are as follows:

5 Account 3820 Meter Installations Decrease of \$310 thousand

6 Account 3800 Services Decrease of \$275 thousand

7 Account 3921 Transportation Equipment Decrease of \$176 thousand

8 Account 381 Meters Increase of \$555 thousand

9 **Q. When did the last change in Liberty depreciation rates occur?**

10 A. The Company last changed its depreciation rates in Case No. GR-2018-0013,
11 effective July 1, 2018.

12 **B. Overview of Depreciation Study Method**

13 **Q. What definition of depreciation did you use in preparing the Studies?**

14 A. The term “depreciation,” as I use it, is a system of accounting that distributes the cost
15 of assets, less net salvage (if any), over the estimated useful life of the assets in a
16 systematic and rational manner. It is a process of allocation, not valuation.

1 Depreciation expense is systematically allocated to accounting periods over the life of
2 the assets. The amount allocated to any one specific accounting period does not
3 necessarily represent the loss or decrease in value that will occur during that particular
4 period. Thus, depreciation is considered an expense or cost, rather than a loss or
5 decrease in value. Liberty accrues depreciation based on the original cost of all
6 property included in each depreciable plant account. On retirement, the full cost of
7 depreciable property, less any net salvage amount, is charged to the depreciation
8 reserve.

9 **Q. Please describe your Depreciation Study approach.**

10 A. I conducted the Depreciation Study in four phases, as shown in Direct Schedule DAW-
11 2. The four phases are: (1) Data Collection, (2) Analysis, (3) Evaluation, and (4)
12 Calculation. I began each of the studies by collecting historical data to be used in the
13 analysis. After the data had been assembled, I performed analyses to determine the life
14 and net salvage percentage for the different property groups being studied. As part of
15 the process for the study, I conferred with field personnel, engineers, and managers
16 responsible for the installation, operation, and removal of the assets to gain their input
17 into the operation, maintenance, and salvage of the assets. The information obtained
18 from field personnel, engineers, and managerial personnel, combined with the study
19 results is then evaluated to determine how the results of the historical asset activity
20 analysis, in conjunction with Liberty's expected future plans, should be applied. Using
21 these resources, I then calculated the depreciation rate for each function.

22 **Q. What property is included in the Depreciation Study?**

23 A. There are three distinct classes of property in this study: (1) Transmission, (2)
24 Distribution, and (3) General Property. The Transmission plant functional group

1 consists of mains, regulators, structures, and communication equipment to transmit
2 natural gas through the utility's distribution system. The Distribution plant functional
3 group consists of structures, distribution mains, regulating equipment, services, meters,
4 regulators, and other equipment to distribute natural gas across the distribution system.
5 The General Property plant functional group contains facilities associated with the
6 overall operation of the business such as buildings, office equipment, computers, and
7 transportation and power operated equipment rather than with a specific transmission
8 or distribution classification.

9 **Q. What depreciation methodology did you use?**

10 A. The ALG, straight-line, remaining-life depreciation system was employed to calculate
11 annual and accrued depreciation in the studies for all plant except assets found in FERC
12 Accounts 391, 393-395, 397-3995. The ALG methodology is widely used across the
13 utility industry within the United States.

14 **C. Transmission, Distribution, and General Property**

15 *1. Life of Transmission, Distribution, and General Assets*

16 **Q. What is the significance of an asset's useful life in your Depreciation Study?**

17 A. An asset's useful life is used to determine the remaining life over which the remaining
18 cost (original cost plus or minus net salvage, minus accumulated depreciation) can be
19 allocated to normalize the asset's cost and spread it ratably over future periods.

20 **Q. How did you determine the average service lives for each account?**

21 A. The establishment of appropriate average service lives for each account within each
22 functional group was determined by using actuarial analysis graphs and tables
23 supporting the actuarial analysis and the chosen Iowa Curves (which represent the
24 percentage of property remaining in service at various age intervals) used to determine

1 the average service lives for analyzed accounts are found in the Liberty’s Depreciation
2 Study (**Direct Schedule DAW-2**). As detailed in the study, I relied on my judgment
3 to incorporate any differences in the expected future life characteristics of the assets
4 into the selection of lives. The objective of life selection is to estimate the future life
5 characteristics of assets, not simply measure the historical life characteristics. More
6 information can be found in the life analysis section of the Liberty Depreciation Study
7 in **Direct Schedule DAW-2**.

8 **Q. What average services lives for Transmission, Distribution, and General Function**
9 **assets, do you recommend?**

10 A. The results are shown in Appendix C of **Direct Schedule DAW-2** as well as in Table
11 2 below.

12 **TABLE 2**
LIBERTY UTILITIES (MIDSTATES NATURAL GAS) CORP. - MISSOURI
PROPOSED DEPRECIATION PARAMETERS
BY ACCOUNT AT December 31, 2021

Acct	Description	Current Average Service Life	Proposed Average Service Life	Iowa Curve	Difference
3660	T&D-Structures & Improvements	50	50	S3	0
3661	T&D-Other Structures	50	50	S3	0
3670	T&D-Mains-STL-PLST-CI-Mixed	70	63	S6	-7
3671	T&D-Mains-STL	70	70	R2	0
3690	T&D-M&R Station Equipment	49	52	R2.5	3
3700	Communication Equipment	23	15	R2	-8
3750	Structures and Improvements	45	45	R2	0
3760	Mains	68	35	R4	-33
3761	T&D-Mains-STL	68	68	S0.5	0
3762	T&D-Mains-PLST	64	64	S2	0
3780	Measuring & regulating stn eqt-General	47	46	R3	-1
3790	Measuring & regulating stn eqt-City gate check stn	45	45	R4	0
3800	Services	33	45	R0.5	12
3810	Meters	28	15	L0	-13

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Acct	Description	Current	Proposed	Iowa	Difference
		Average Service Life	Average Service Life		
3820	Meters Installations	25	42	R0.5	17
3830	House regulators	44	45	R3	1
3840	House Regulatory installations	44	45	R3	1
3850	Industrial measuring & regulating stn eqt	45	44	L2	-1
3870	Other Equipment	22	22	R2	0
3900	General Structures & Improvmnt	39	39	L0	0
3901	GEN-Structure Frame	39	39	L0	0
3902	GEN-Improvements	39	39	L0	0
3903	GEN-Improvements Leased Premise	39	39	L0	0
3910	Office Furniture & Improvement	22	18	SQ	-4
3920	Transportation Equipment	8	10	L5	2
3921	Transportation Equip<12,000 LB	8	10	L5	2
3930	Stores Equipment	23	23	SQ	0
3940	Tools, Shop, and Garage Equipment	18	16	SQ	-2
3950	Laboratory Equipment	28	28	SQ	0
3960	Power Operated Equipment	12	11	L5	-1
3961	GEN- Ditchers	12	11	L5	-1
3962	GEN-Backhoes	12	11	L5	-1
3963	GEN- Welders	12	11	L5	-1
3970	Communications Equipment	16	17	SQ	1
3971	GEN-Comm Eq. Mob Radios	16	17	SQ	1
3972	GEN-Comm Eq. Fixed Radios	16	17	SQ	1
3973	GEN-Comm Eq. Telemetry	16	17	SQ	1
3980	Misc. Equipment	20	23	R1.5	3
3993	OTH-Oth Tang Prop - Network - H/W	8	7	SQ	-1
3994	OTH-Oth Tang Prop - PC Hardware	7	7	SQ	0

1 2. *Net Salvage Rates Transmission, Distribution, and General*

2 **Q. How did you determine the net salvage rates that you used in your Studies for**
3 **Transmission, Distribution, and General property?**

4 A. I examined the experience realized by Liberty by observing the average net salvage
5 rates for various bands (or combinations) of years. Using averages (such as the 5-year
6 average band) allows the smoothing of timing differences between when retirements,
7 removal cost, and salvage are booked and smooths the natural variations between years.

1 By looking at successive average bands, or “rolling bands,” an analyst can see trends
2 in the data that would signal the future net salvage in the account. This examination,
3 in combination with the feedback of Liberty’s personnel related to any changes in
4 operations or maintenance that would affect the future net salvage of Liberty, allowed
5 for the selection of the best estimate of future net salvage for each account.

6 **Q. Is this a reasonable method for determining net salvage rates?**

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

9 **Q. What are your net salvage recommendations for Liberty?**

10 A. My net salvage recommendations are found in Appendix C of **Direct Schedule DAW-**
11 **2** and each account is discussed in the body of the report. Detailed history for each
12 account is shown in Appendix D of **Direct Schedule DAW-2**. Table 3 below shows a
13 summary of those recommendations by account.

14

TABLE 3

**LIBERTY UTILITIES (MIDSTATES NATURAL GAS) CORP. - MISSOURI
PROPOSED DEPRECIATION PARAMETERS
BY ACCOUNT AT DECEMBER 31, 2021**

Acct	Description	Current Net Salv Percentage	Proposed Net Salv Percentage	Difference
3660	T&D-Structures & Improvements	-5	-5	0
3661	T&D-Other Structures	-5	-5	0
3670	T&D-Mains-STL-PLST-CI-Mixed	-10	0	10
3671	T&D-Mains-STL	-10	-25	-15
3690	T&D-M&R Station Equipment	0	0	0
3700	Communication Equipment	0	0	0
3742	T&D-Land Rights	0		0
3750	Structures and Improvements	0	0	0
3760	Mains	-34	-30	4
3761	T&D-Mains-STL	-34	-34	0

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Description	Current Net Salv Percentage	Proposed Net Salv Percentage	Difference
3762 T&D-Mains-PLST	-23	-23	0
3780 Measuring & regulating stn eqt-General	-25	-40	-15
3790 Measuring & regulating stn eqt-City gate check stn	-25	-25	0
3800 Services	-50	-75	-25
3810 Meters	-35	-35	0
3820 Meters Installations	-35	-35	0
3830 House regulators	0	0	0
3840 House Regulatory installations	0	0	0
3850 Industrial measuring & regulating stn eqt	-2	-25	-23
3870 Other Equipment	0	0	0
3900 General Structures & Improvmnt	0	0	0
3901 GEN-Structure Frame	0	0	0
3902 GEN-Improvements	0	0	0
3903 GEN-Improvements Leased Premise	0	0	0
3910 Office Furniture & Improvement	0	0	0
3920 Transportation Equipment	6	10	4
3921 Transportation Equip<12,000 LB	6	10	4
3930 Stores Equipment	0	0	0
3940 Tools, Shop, and Garage Equipment	0	0	0
3950 Laboratory Equipment	0	0	0
3960 Power Operated Equipment	10	11	1
3961 GEN- Ditchers	10	11	1
3962 GEN-Backhoes	10	11	1
3963 GEN- Welders	10	11	1
3970 Communications Equipment	0	0	0
3971 GEN-Comm Eq. Mob Radios	0	0	0
3972 GEN-Comm Eq. Fixed Radios	0	0	0
3973 GEN-Comm Eq. Telemetry	0	0	0
3980 Misc. Equipment	0	0	0
3993 OTH-Oth Tang Prop - Network - H/W	0	0	0
3994 OTH-Oth Tang Prop - PC Hardware	0	0	0

1 **D. Reserve Reallocation**

2 **Q. What is reserve reallocation?**

3 A. Reserve reallocation is when the book reserve is respread within a functional group
4 based on the theoretical reserve within each function.

1 **Q. As part of your depreciation analysis, have you taken any action to properly align**
2 **the Company's depreciation reserve with the life and net salvage characteristics**
3 **of the transmission, distribution, and general plant functions?**

4 A. Yes. In the process of analyzing the Company's depreciation reserve, I observed that
5 the depreciation reserve positions of the accounts were generally not in line with the
6 life characteristics found in the analysis of the Company's assets. To allow the relative
7 reserve positions of each account within a function to mirror the life characteristics of
8 the underlying assets, I reallocated the depreciation reserves for all accounts within
9 each function. Since the basis of the current depreciation rates is unknown, I believe
10 reserve reallocation is the best solution to the differences in reserve position.

11 **Q. Does the reallocation of the depreciation reserve change the total reserve?**

12 A. No. The depreciation reserve represents the amounts that customers have contributed
13 to the return of the investment. The reallocation process does not change the total
14 reserve for each function; rather, it simply reallocates the reserve between accounts in
15 the function.

16 **Q. Is depreciation reserve reallocation a sound depreciation practice?**

17 A. Yes. The practice of depreciation reserve allocation is endorsed in the 1968 publication
18 of "Public Utility Depreciation Practices", National Association of Regulatory Utility
19 Commissioners ("NARUC"), which explains that reallocation of the depreciation
20 reserve is appropriate "...where the change in the view concerning the life of property
21 is so drastic as to indicate a serious difference between the theoretical and the book
22 reserve."¹ Additionally, the 1996 edition of the NARUC publication states that

¹ Public Utility Depreciation Practices, 1968, NARUC Committee on Engineering, Depreciation, and Valuation of the National Association of Regulatory Utility Commissioners, p. 48.

1 “theoretical reserve studies also have been conducted for the purpose of allocating an
2 existing reserve among operating units or accounts.”² My depreciation study
3 demonstrates that there have been significant changes in the life of the property since
4 the approved accrual rates were authorized. These changes have created a significant
5 difference between the theoretical and book reserve within each functional group that
6 make the reallocation of the depreciation reserve appropriate in this instance. For
7 example, if a function consists of two accounts A and B with book reserves of 1 and 9,
8 the reallocated reserve will reach the same total of 10 but respread the 10 between the
9 two accounts based on the theoretical reserves of each account.

10 **Q. Why is it important for the depreciation reserve to conform to the theoretical**
11 **reserve?**

12 A. This is important because it sets the reserve at a level necessary to sustain the regulatory
13 concept of intergenerational equity among Liberty’s customers, as well as set the
14 depreciation rates at the appropriate level based on current parameters and
15 expectations.

16 **Q. How will the Company implement the reallocation of its depreciation reserve if its**
17 **proposed rates are approved?**

18 A. When the proposed depreciation rates are approved, the Company will reallocate the
19 reserves on its books to match the allocation performed in this study.

20 **E. Vintage Year Depreciation of General Plant Assets, FERC Accounts 391,**
21 **393-395, and 397-3995**

22 **Q. Please describe the Vintage Group methodology.**

² Public Utility Depreciation Practices, 1996, National Association of Regulatory Utility Commissioners, p. 188.

1 A. For general plant assets in Accounts 391, 393-395, and 397-3995, Liberty is requesting
2 to continue using a vintage year accounting method approved by the FERC in
3 Accounting Release Number 15 (“AR-15”), *Vintage Year Accounting For General*
4 *Plant Accounts*, dated January 1, 1997. In the Company’s last depreciation study, the
5 Company was given approval to use AR-15. AR-15 allowed utilities to use a simplified
6 method of accounting for general plant assets, excluding structures and improvements
7 (referred to as “general plant”). The AR-15 release allowed high-volume, low--cost
8 assets to be amortized over the associated useful life, eliminated the need to track
9 individual assets, and allows a retirement to be booked at the end of the depreciable
10 life. This method is often referred to as “amortization of general plant.”

11 Adopting the method of accounting allowed in AR-15 changes the level of
12 detail maintained in the asset records and performs the depreciation calculation at a
13 vintage level rather than at a total account level. The plant asset balances will be
14 maintained by vintage installed with the retirement being recorded when book
15 depreciation has been completed. The empirical retirement data for actuarial or semi-
16 actuarial analysis will no longer be reliable; however, the determination of useful life
17 can be made appropriately with the use of market forces, manufacturer expected life,
18 technological obsolescence, business planning, known causes of retirement, and
19 changes in expected future utilization.

20 The depreciation calculation uses a useful life applied to a vintage versus
21 the entire account. The depreciation recovery is complete when the vintage
22 accumulated depreciation is equal to the vintage plant adjusted for estimated salvage
23 and removal costs.

1 **Q. Please describe the methodology or technique employed in analyzing the life of**
2 **Vintage Group Property.**

3 A. Actuarial life analysis was performed on some accounts. Since those accounts have
4 been amortized for a short time, some accounts shown were analyzed to determine the
5 review if life characteristics changed from the Company's prior depreciation study.
6 Those results and judgment formed the basis of the proposed life for these accounts.
7 The lives being proposed reflect more recent experience and Liberty's information as
8 well as set an appropriate recovery period for the assets going forward.

9 **Q. Please describe the results of the Vintage Group Depreciation Study.**

10 A. Liberty's present depreciation rates were compared to the Depreciation Study
11 recommendations in Appendix B of **Direct Schedule DAW-2**. The rates proposed for
12 Vintage Group property represent an increase of \$8 thousand based on plant balances
13 as of December 31, 2021. The computations are shown in Appendix A-1 of **Direct**
14 **Schedule DAW-2**.

15 **V. LIBERTY MIDSTATES SHARED SERVICES UNIT DEPRECIATION RATE**
16 **STUDY**

17 **A. Summary of the Liberty Shared Services Depreciation Study (Direct**
18 **Schedule DAW-3)**

19 **Q. Have you prepared a Depreciation Study for Liberty Midstates Shared Services?**

20 A. Yes. I undertook a comprehensive analysis of annual depreciation for Liberty's
21 Midstates Shared Services based on its depreciable plant in service as of December 31,
22 2021. The Depreciation Study combined the shared services assets that serve all of
23 Midstates Gas. The study is provided as **Direct Schedule DAW-3**.

24 **Q. What depreciation rates are you recommending in this proceeding?**

25 A. My recommended depreciation rates for the Liberty Midstates Shared Services assets

1 are provided in Appendix B of Direct Schedule DAW-3. Below is a table
2 summarizing the results.

3
TABLE 4
LIBERTY UTILITIES (MIDSTATES NATURAL GAS) CORP.
Shared Services Assets
Comparison of Existing vs Proposed Depreciation Rates
As of December 31, 2021

Acct	Depreciable Plant at 12/31/21	Current Annual Expense	Proposed Annual Expense	Expense Change
General Depreciated	7,153,211	218,989	142,142	(76,846)
General Amortized	4,532,506	672,660	689,831	17,172
Non Depreciable	158,767	0	0	
Total Shared Services	11,685,716	891,648	831,974	(59,675)

4 **Q. What type of assets are in the Shared Services business unit?**

5 A. Shared Services includes items that benefit all of Liberty Midstates, not just Missouri.
6 These items include intangible software and other general plant assets. The largest item
7 that will go in service is the Customer First project in intangible plant. It will replace
8 older systems. Given the system's use across the entire enterprise it has been assigned
9 a life of 20 years, which is at the high end of intangible plant for the industry.

10 **Q. What average services lives for Intangible and General Function assets used by**
11 **Shared Services do you recommend?**

12 A. The results are shown in Appendix C of Direct Schedule DAW-3 as well as in Table
13 5 below.

1

TABLE 5
LIBERTY UTILITIES (MIDSTATES NATURAL GAS) CORP. - SHARED SERVICES
PROPOSED DEPRECIATION PARAMETERS
BY ACCOUNT AT December 31, 2021

Acct	Description	Current	Proposed		Difference
		Average Service Life	Average Service Life	Iowa Curve	
3030	Customer First Software	NA	20	SQ	NA
3740	Land and Land Rights	NA	NA	NA	NA
3900	General Structures & Improvement	40	40	R2	0
3910	Office Furniture & Improvement	20	15	R5	-5
3921	Transportation Equip<12,000 LB	10	10	L5	0
3940	Tools, Shop, and Garage Equipment	20	16	SQ	0
3980	Misc. Equipment	20	20	SQ	0
3993	OTH-Oth Tang Prop - Network - H/W	7	7	SQ	0
3994	OTH-Oth Tang Prop - PC Hardware	5	5	SQ	0

2 **Q. What are your net salvage recommendations for the Liberty's Shared Services'**
3 **assets?**

4 A. My net salvage recommendations are found in Appendix C of **Direct Schedule DAW-**
5 **3** and each account is discussed in the body of the report. Detailed history for each
6 account is shown in Appendix D of **Direct Schedule DAW-3**. Table 6 below shows a
7 summary of those recommendations by account.

1

TABLE 6

**LIBERTY UTILITIES (MIDSTATES NATURAL GAS) CORP. - SHARED SERVICES
PROPOSED DEPRECIATION PARAMETERS
BY ACCOUNT AT DECEMBER 31, 2021**

Acct	Description	Current Net Salv Percentage	Proposed Net Salv Percentage	Difference
3030	Customer First Software	NA	0	NA
3740	Land and Land Rights	NA	NA	NA
3900	General Structures & Improvement	0	0	0
3910	Office Furniture & Improvement	0	0	0
3921	Transportation Equip<12,000 LB	6	10	4
3940	Tools, Shop, and Garage Equipment	0	0	0
3980	Misc. Equipment	0	0	0
3993	OTH-Oth Tang Prop - Network - H/W	0	0	0
3994	OTH-Oth Tang Prop - PC Hardware	0	0	0

2 **VI. CONCLUSION**

3 **Q. Does this conclude your pre-filed Direct Testimony at this time?**

4 **A. Yes.**

VERIFICATION

I, Dane A. Watson, under penalty of perjury, on this 9th day of February, 2024, declare that the foregoing is true and correct to the best of my knowledge and belief.

/s/ Dane A. Watson

Dane A. Watson Testimony Appearances

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
Pennsylvania	Pennsylvania Public Utility Commission	R-2024-3045193	Veolia Pennsylvania	2024	WasteWater Depreciation Study
Pennsylvania	Pennsylvania Public Utility Commission	R-2024-3045192	Veolia Pennsylvania	2024	Water Depreciation Study
Arkansas	Arkansas Public Service Commission	23-079-U	Summit Utilities Arkansas	2024	Gas Depreciation Study
Colorado	Colorado Public Utilities Commission	23A-0632G	Atmos Energy	2023	Gas Clean Heat Plan
Oklahoma	Oklahoma Corporation Commission	2023-00087	Oklahoma Gas & Electric	2023	Electric Depreciation Study
Illinois	Illinois Commerce Commission	24-0043	Liberty Mid States Gas- Illinois	2023	Gas Depreciation Study
Michigan	Michigan Public Service Commission	U-21513	Upper Peninsula Power Company	2023	Electric Depreciation Study
Texas	Public Utility Commission of Texas	55867	Lower Colorado River Authority	2023	Electric Depreciation Study
Texas	Railroad Commission of Texas	Case No. OS-23-00015513	CenterPoint Texas Gas	2023	Gas Depreciation Study
Nevada	Public Utility Commission of Nevada	23-090-12	Southwest Gas	2023	Gas Depreciation Study - Nevada Division
Louisiana	Public Service Commission of Louisiana	36959	Entergy Louisiana	2023	Electric Depreciation Study
Texas	Railroad Commission of Texas	13758	Atmos Energy - APT	2023	Gas Depreciation Study
Florida	Florida Public Service Commission	20230023	People Gas System	2023	Gas Depreciation Study
Texas	Public Utility Commission of Texas	54565	Central States Water Resources (CSWR Texas)	2023	Water Depreciation Study
Louisiana	Louisiana Public Service Commission	U-36923	Cleco	2023	Electric Depreciation study
New York	New York State Public Service Commission	23-W-0111	Veolia New York	2023	Water Depreciation Study
Arkansas	Arkansas Public Service Commission	22-085-U	Empire District Electric Company	2023	Electric Depreciation Study
Alaska	Regulatory Commission of Alaska	TA50-733 (U-21-058)	Cook Inlet Natural Gas Storage Alaska	2023	Focused Study - Communication Equipment
Manitoba Canada	Manitoba Public Utilities Board		Manitoba Hydro Electric	2022	Electric Depreciation Study
Tennessee	Tennessee Public Utility Commission	20-00086	Piedmont Natural Gas	2022	Gas Depreciation Study - 3 State
Texas	Public Utility Commission of Texas	54634	Southwestern Public Service Company	2023	Electric Technical Update
Arkansas	Arkansas Public Service Commission	22-085-U	Liberty Empire Electric Arkansas	2023	Electric Depreciation Study

Dane A. Watson Testimony Appearances

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
Florida	Florida Public Service Commission	20220219	People Gas System	2022	Gas Depreciation Study
Michigan	Michigan Public Service Commission	U-21329	Michigan Gas Utilities Corporation	2022	Gas Depreciation Study
Dominica	Independent Regulatory Commission		Dominica Electricity Services LTD	2022	Electric Depreciation Study
New Mexico	New Mexico Public Regulation Commission	22-00270-UT	Public Service of New Mexico	2022	Electric Depreciation Study
New Mexico	New Mexico Public Regulation Commission	22-00286-UT	Southwestern Public Service Company	2022	Electric Technical Update
Minnesota	Minnesota Public Utilities Commission	22-299	Northern States Power-Minnesota	2022	Electric Gas and Common Depreciation Study
California	California Public Utilities Commission	A.22-08-010	Bear Valley Electric	2022	Electric Depreciation Study
Michigan	Michigan Public Service Commission	U-21294	SEMCO Gas	2022	Gas Depreciation Study
Arkansas	Arkansas Public Service Commission	22-064-U	Liberty Pine Bluff Water	2022	Water Depreciation Study
Colorado	Colorado Public Utilities Commission	22AL-0348G	Atmos Energy	2022	Gas Depreciation Study
New York	FERC	ER22-2581-000	New York Power Authority	2022	Transmission and General Depreciation Study
South Carolina	South Carolina Public Service Commission	2022-89-G	Piedmont Natural Gas	2022	Natural Gas Depreciation Study
California	California Public Utilities Commission	A.22-007-001	California American Water	2022	Water and Waste Water Depreciation Study
Alaska	Regulatory Commission of Alaska	U-22-034	Chugach Electric Association	2022	Electric Depreciation Study
Georgia	Georgia Public Service Commission	44280	Georgia Power Company	2022	Electric Depreciation Study
Texas	Public Utility Commission of Texas	53719	Entergy Texas	2022	Electric Depreciation Study
California	California Public Utilities Commission	22-005-xxx	San Diego Gas and Electric	2022	Electric Gas and Common Depreciation Study
California	California Public Utilities Commission	22-005-xxx	Southern California Gas	2022	Gas Depreciation Study
Colorado	Colorado Public Utilities Commission	22AL-0046G	Public Service of Colorado	2022	Gas Depreciation given potential for climate change
Texas	Public Utility Commission of Texas	53601	Oncor Electric Delivery	2022	Electric Depreciation Study

Dane A. Watson Testimony Appearances

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
New Jersey	New Jersey Board of Public Utilities	GR2222040253	South Jersey Gas	2022	Gas Depreciation Study
Oklahoma	Corporation Commission of Oklahoma	PUD 202100163	Empire District Electric Company	2022	Electric Depreciation Study
Michigan	Michigan Public Service Commission	U-21176	Consumers Gas	2021	Gas Depreciation Study
New Jersey	New Jersey Board of Public Utilities	GR21121254	Elizabethtown Natural Gas	2021	Gas Depreciation Study
Ontario Canada	Ontario Energy Board	EB-2021-0110	Hydro One	2021	Electric Depreciation Study
Alaska	Regulatory Commission of Alaska	TA116-118, TA115-97, TA160-37 and TA110-290	Fairbanks Water and Wastewater	2021	Water and Waste Water Depreciation Study
Colorado	Public Utilities Commission of Colorado	21AL-0317E	Public Service of Colorado	2021	Electric and Common Depreciation Study
Alaska	Regulatory Commission of Alaska	U-21-025	Golden Valley Electric Association	2021	Electric Depreciation Study
Wisconsin	Public Service Commission of Wisconsin	5-DU-103	WE Energies	2021	Electric and Gas Depreciation Study
Kentucky	Public Service Commission of Kentucky	2021-00214	Atmos Kentucky	2021	Gas Depreciation Study
Missouri	Missouri Public Service Commission	ER-2021-0312	Empire District Electric Company	2021	Electric Depreciation Study
Wisconsin	Public Service Commission of Wisconsin	4220-DU-111	Northern States Power Wisconsin	2021	Transmission, Distribution General and Common Depreciation Study
Louisiana	Louisiana Public Service Commission	U-35951	Atmos Energy	2021	Statewide Gas Depreciation Study
Minnesota	Minnesota Public Utilities Commission	E015-D-21-229	Allete Minnesota Power	2021	Intangible, Transmission, Distribution, and General Depreciation Study
Michigan	Michigan Public Service Commission	U-20849	Consumers Energy	2021	Electric and Common Depreciation Study
Texas	Texas Public Utility Commission	51802	Southwestern Public Service Company	2021	Electric Technical Update
MultiState	FERC	RP21-441-000	Florida Gas Transmission	2021	Gas Depreciation Study

Dane A. Watson Testimony Appearances

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
New Mexico	New Mexico Public Regulation Commission	20-00238-UT	Southwestern Public Service Company	2021	Electric Technical Update
Yukon Territory Canada	Yukon Energy Board	2021 General Rate Application	Yukon Energy	2020	Electric Depreciation Study
MultiState	FERC	ER21-709-000	American Transmission Company	2020	Electric Depreciation Study
Texas	Texas Public Utility Commission	51611	Sharyland Utilities	2020	Electric Depreciation Study
Texas	Texas Public Utility Commission	51536	Brownsville Public Utilities Board	2020	Electric Depreciation Study
New Jersey	New Jersey Board of Public Utilities	WR20110729	Suez Water New Jersey	2020	Water and Waste Water Depreciation Study
Idaho	Idaho Public Service Commission	SUZ-W-20-02	Suez Water Idaho	2020	Water Depreciation Study
Texas	Texas Public Utility Commission	50944	Monarch Utilities	2020	Water and Waste Water Depreciation Study
Michigan	Michigan Public Service Commission	U-20844	Consumers Energy/DTE Electric	2020	Ludington Pumped Storage Depreciation Study
Mexico	Comision Reguladora de Energia	G/352/TRA/2015 UH-250/125738/2019	Arguelles Depreciation Study	2020	Gas Depreciation Study
Tennessee	Tennessee Public Utility Commission	2000086	Piedmont Natural Gas	2020	Gas Depreciation Study
Texas	Railroad Commission of Texas	OS-00005136	CoServ Gas	2020	Gas Depreciation Study
Texas	Railroad Commission of Texas	GUD 10988	EPCOR Gas Texas	2020	Gas Depreciation Study
Florida	Florida Public Service Commission	20200166-GU	People Gas System	2020	Gas Depreciation Study
Mississippi	Federal Energy Regulatory Commission	ER20-1660-000	Mississippi Power Company	2020	Electric Depreciation Study
Texas	Public Utility Commission of Texas	50557	Corix Utilities	2020	Water and Waste Water Depreciation Study
Georgia	Georgia Public Service Commission	42959	Liberty Utilities Peach State Natural Gas	2020	Gas Depreciation Study
Texas	Public Utility Commission of Texas	50734	Oncor Electric Delivery	2020	Life of Intangible Plant
New Jersey	New Jersey Board of Public Utilities	GR20030243	South Jersey Gas	2020	Gas Depreciation Study
Kentucky	Kentucky Public Service Commission	2020-00064	Big Rivers	2020	Electric Depreciation Study

Dane A. Watson Testimony Appearances

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
Colorado	Colorado Public Utilities Commission	20AL-0049G	Public Service of Colorado	2020	Gas Depreciation Study
Texas	NA	NA	Pedernales Electric Coop	2019	Electric Depreciation Study
New York	Federal Energy Regulatory Commission	ER20-716-000	LS Power Grid New York, Corp.	2019	Electric Transmission Depreciation Study
Mississippi	Mississippi Public Service Commission	2019-UN-219	Mississippi Power Company	2019	Electric Depreciation Study
Texas	Public Utility Commission of Texas	50288	Kerrville Public Utility District	2019	Electric Depreciation Study
Texas	Railroad Commission of Texas	GUD 10920	CenterPoint Gas	2019	Gas Depreciation Study and Propane Air Study
Texas, New Mexico	Federal Energy Regulatory Commission	ER20-277-000	Southwestern Public Service Company	2019	Electric Production and General Plant Depreciation Study
New Mexico	New Mexico Public Regulation Commission		New Mexico Gas	2019	Gas Depreciation Study
Alaska	Regulatory Commission of Alaska	U-19-086	Alaska Electric Light and Power	2019	Electric Depreciation Study
Texas	Railroad Commission of Texas	GUD 10900	Atmos Energy West Texas Division - Triangle	2019	Depreciation Rates for Natural Gas Property
Delaware	Delaware Public Service Commission	19-0615	Suez Water Delaware	2019	Water Depreciation Study
California	California Public Utilities Commission	A.19-08-015	Southwest Gas Northern California	2019	Gas Depreciation Study
California	California Public Utilities Commission	A.19-08-015	Southwest Gas Southern California	2019	Gas Depreciation Study
Texas	Railroad Commission of Texas	GUD 10895	CenterPoint Propane Air	2019	Depreciation Rates for Propane Air Assets
Texas	Public Utility Commission of Texas	49831	Southwestern Public Service Company	2019	Electric Depreciation Study
New Mexico	New Mexico Public Regulation Commission	19-00170-UT	Southwestern Public Service Company	2019	Electric Depreciation Study
Georgia	Georgia Public Service Commission	42516	Georgia Power Company	2019	Electric Depreciation Study
Georgia	Georgia Public Service Commission	42315	Atlanta Gas Light	2019	Gas Depreciation Study
Arizona	Arizona Corporation Commission	G-01551A-19-0055	Southwest Gas Corporation	2019	Gas Removal Cost Study
New Hampshire	New Hampshire Public Service Commission	DE 19-064	Liberty Utilities	2019	Electric Distribution and General
New Jersey	New Jersey Board of Public Utilities	GR19040486	Elizabethtown Natural Gas	2019	Gas Depreciation Study

Dane A. Watson Testimony Appearances

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
Texas	Public Utility Commission of Texas	49421	CenterPoint Houston Electric LLC	2019	Electric Depreciation Study
North Carolina	North Carolina Utilities Commission	Docket No. G-9, Sub 743	Piedmont Natural Gas	2019	Gas Depreciation Study
Minnesota	Minnesota Public Utilities Commission	E-015/D-18-226	Allete Minnesota Power	2018	Electric Compliance Filing
Colorado	Colorado Public Utilities Commission	19AL-0063ST	Public Service of Colorado	2019	Steam Depreciation Study
Texas	NA	NA	CenterPoint Texas	2019	Propane Air Depreciation Study
Various	NA	NA	Enable Midstream Partners	2019	Gas Depreciation Study
Alaska	Regulatory Commission of Alaska	U-18-121	Municipal Power and Light City of Anchorage	2018	Electric Depreciation Study
Various	NA	NA	Pattern Energy	2018	Renewable Asset Capital Accounting
New York	NA	NA	Long Island Electric Utility Servco LLC	2018	Electric Depreciation Study
Various	FERC	RP19-352-000	Sea Robin	2018	Gas Depreciation Study
Texas New Mexico	Federal Energy Regulatory Commission	ER19-404-000	Southwestern Public Service Company	2018	Electric Transmission Depreciation Study
California	Federal Energy Regulatory Commission	ER19-221-000	San Diego Gas and Electric	2018	Electric Transmission Depreciation Study
Kentucky	Kentucky Public Service Commission	2018-00281	Atmos Kentucky	2018	Gas Depreciation Study
Texas	Public Utility Commission of Texas	48500	Golden Spread Electric Coop	2018	Electric Depreciation Study
Alaska	Regulatory Commission of Alaska	U-18-054	Matanuska Electric Coop	2018	Electric Generation Depreciation Study
California	California Public Utilities Commission	A17-10-007	San Diego Gas and Electric	2018	Electric and Gas Depreciation Study
Texas	NA	NA	Lower Colorado River Authority	2018	Electric Transmission and General Study
Texas	Public Utility Commission of Texas	48401	Texas New Mexico Power	2018	Electric Depreciation Study
Nevada	Public Utility Commission of Nevada	18-05031	Southwest Gas	2018	Gas Depreciation Study
Texas	Public Utility Commission of Texas	48231	Oncor Electric Delivery	2018	Depreciation Rates
Texas	Public Utility Commission of Texas	48371	Entergy Texas	2018	Electric Depreciation Study
Kansas	Kansas Corporation Commission	18-KCPE-480-RTS	Kansas City Power and Light	2018	Electric Depreciation Study
Louisiana	Louisiana Public Service Commission	U-34803	Atmos LGS	2018	Gas Depreciation Study

Dane A. Watson Testimony Appearances

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
Arkansas	Arkansas Public Service Commission	18-027-U	Liberty Pine Bluff Water	2018	Water Depreciation Study
Minnesota	Minnesota Public Utilities Commission	E-015/D-18-226	Allete Minnesota Power	2018	Electric Depreciation Rate
Kentucky	Kentucky Public Service Commission	2017-00349	Atmos KY	2018	Gas Depreciation Rates
Tennessee	Tennessee Public Utility Commission	18-00017	Chattanooga Gas	2018	Gas Depreciation Study
Texas	Railroad Commission of Texas	10679	Si Energy	2018	Gas Depreciation Study
Texas	City of Dallas Statement of Intent	NA	Atmos Mid-Tex	2017-2018	Gas Depreciation Study
Alaska	Regulatory Commission of Alaska	U-17-104	Anchorage Water and Wastewater	2017	Water and Waste Water Depreciation Study
Michigan	Michigan Public Service Commission	U-18488	Michigan Gas Utilities Corporation	2017	Gas Depreciation Study
New Mexico	FERC	ER18-228-000	Southwestern Public Service Company	2017	Electric Production Depreciation Study
Texas	Railroad Commission of Texas	10669	CenterPoint South Texas	2017	Gas Depreciation Study
New Mexico	New Mexico Public Regulation Commission	17-00255-UT	Southwestern Public Service Company	2017	Electric Production Depreciation Study
Arkansas	Arkansas Public Service Commission	17-061-U	Empire District Electric Company	2017	Depreciation Rates for New Wind Generation
Kansas	Kansas Corporation Commission	18-EPDE-184-PRE	Empire District Electric Company	2017	Depreciation Rates for New Wind Generation
Oklahoma	Oklahoma Corporation Commission	PUD 201700471	Empire District Electric Company	2017	Depreciation Rates for New Wind Generation
Missouri	Missouri Public Service Commission	EO-2018-0092	Empire District Electric Company	2017	Depreciation Rates for New Wind Generation
Michigan	Michigan Public Service Commission	U-18457	Upper Peninsula Power Company	2017	Electric Depreciation Study
Florida	Florida Public Service Commission	20170179-GU	Florida City Gas	2017	Gas Depreciation Study
Iowa	NA		Cedar Falls Utility	2017	Telecommunications, Water, and Cable Utility
Michigan	FERC	ER18-56-000	Consumers Energy	2017	Electric Depreciation Study
Missouri	Missouri Public Service Commission	GR-2018-0013	Liberty Utilities	2017	Gas Depreciation Study

Dane A. Watson Testimony Appearances

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
Michigan	Michigan Public Service Commission	U-18452	SEMCO	2017	Gas Depreciation Study
Texas	Public Utility Commission of Texas	47527	Southwestern Public Service Company	2017	Electric Production Depreciation Study
Minnesota	Minnesota Public Utilities Commission	17-581	Minnesota Northern States Power	2017	Electric, Gas and Common Transmission, Distribution and General
Colorado	Colorado Public Utilities Commission	17AL-0363G	Public Service of Colorado-Gas	2017	Gas Depreciation Study
MultiState	FERC	ER17-1664	American Transmission Company	2017	Electric Depreciation Study
Alaska	Regulatory Commission of Alaska	U-17-008	Municipal Power and Light City of Anchorage	2017	Generating Unit Depreciation Study
Louisiana	Louisiana Public Service Commission	U-34343	Atmos Trans Louisiana	2017	Gas Depreciation Study
Mississippi	Mississippi Public Service Commission	2017-UN-041	Atmos Energy	2017	Gas Depreciation Study
New York	FERC	ER17-1010-000	New York Power Authority	2017	Electric Depreciation Study
Oklahoma	Oklahoma Corporation Commission	PUD 201700078	CenterPoint Oklahoma	2017	Gas Depreciation Study
Texas	Railroad Commission of Texas	GUD 10580	Atmos Pipeline Texas	2017	Gas Depreciation Study
Texas	Public Utility Commission of Texas	46957	Oncor Electric Delivery	2017	Electric Depreciation Study
Alabama	FERC	ER16-2312-000	Alabama Power Company	2016	Electric Depreciation Study
Alabama	FERC	ER16-2313-000	SEGCO	2016	Electric Depreciation Study
Alaska	Regulatory Commission of Alaska	U-16-067	Alaska Electric Light and Power	2016	Generating Unit Depreciation Study
Arizona	Arizona Corporation Commission	G-01551A-16-0107	Southwest Gas	2016	Gas Depreciation Study
California	California Public Utilities Commission	A 16-07-002	California American Water	2016	Water and Waste Water Depreciation Study
Colorado	Colorado Public Utilities Commission	16A-0231E	Public Service Company of Colorado	2016	Electric Depreciation Study
Mississippi	Mississippi Public Service Commission	2016 UN 267	Willmut Gas	2016	Gas Depreciation Study
Florida	Florida Public Service Commission	160170-EI	Gulf Power	2016	Electric Depreciation Study

Dane A. Watson Testimony Appearances

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
Georgia	N/A	N/A	Dalton Utilities	2016	Electric, Gas, Water, Wastewater & Fiber Depreciation Study
Georgia	NA	NA	Oglethorpe Power	2016	Electric Depreciation Study
Illinois	Illinois Commerce Commission	GRM #16-208	Liberty-Illinois	2016	Natural Gas Depreciation Study
Iowa	Iowa Utilities Board	RPU-2016-0003	Liberty-Iowa	2016	Natural Gas Depreciation Study
Kentucky	FERC	RP16-097-000	KOT	2016	Natural Gas Depreciation Study
Michigan	Michigan Public Service Commission	U-18195	Consumers Energy/DTE Electric	2016	Ludington Pumped Storage Depreciation Study
Michigan	Michigan Public Service Commission	U-18127	Consumers Energy	2016	Natural Gas Depreciation Study
MultiState	FERC	ER17-191-000	American Transmission Company	2016	Electric Depreciation Study
Hawaii			Hawaii American Water	2015	Wastewater and Water Depreciation Study
New Jersey	New Jersey Board of Public Utilities	GR16090826	Elizabethtown Natural Gas	2016	Gas Depreciation Study
New York	NA		New York Power Authority	2016	Electric Transmission and General Study
North Carolina	North Carolina Utilities Commission	Docket G-9 Sub 77H	Piedmont Natural Gas	2016	Gas Depreciation Study
Texas	Railroad Commission of Texas	GUD 10567	CenterPoint Texas	2016	Gas Depreciation Study
Texas	Public Utility Commission of Texas	45414	Sharyland	2016	Electric Depreciation Study
Alaska	Regulatory Commission of Alaska	U-15-089	Fairbanks Water and Wastewater	2015	Water and Waste Water Depreciation Study
Arkansas	Arkansas Public Service Commission	15-098-U	CenterPoint Arkansas	2015	Gas Depreciation Study and Cost of Removal Study
Arkansas	Arkansas Public Service Commission	15-031-U	Source Gas Arkansas	2015	Underground Storage Gas Depreciation Study
Hawaii			Hawaii American Water	2015	Wastewater and Water Depreciation Study
Arkansas	Arkansas Public Service Commission	15-011-U	Source Gas Arkansas	2015	Gas Depreciation Study
Atmos Energy Corporation	Tennessee Regulatory Authority	14-00146	Atmos Tennessee	2015	Natural Gas Depreciation Study

Dane A. Watson Testimony Appearances

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
Colorado	Colorado Public Utilities Commission	15-AL-0299G	Atmos Colorado	2015	Gas Depreciation Study
Kansas	Kansas Corporation Commission	16-ATMG-079-RTS	Atmos Kansas	2015	Gas Depreciation Study
Kansas	Kansas Corporation Commission	15-KCPE-116-RTS	Kansas City Power and Light	2015	Electric Depreciation Study
Montana	NA	NA	Energy Keepers	2015	Property Units/ Depreciation Rates Hydro Facility
Multi-State NE US	FERC	16-453-000	Northeast Transmission Development, LLC	2015	Electric Depreciation Study
New Mexico	New Mexico Public Regulation Commission	15-00261-UT	Public Service Company of New Mexico	2015	Electric Depreciation Study
New Mexico	New Mexico Public Regulation Commission	15-00296-UT	Southwestern Public Service Company	2015	Electric Depreciation Study
New Mexico	New Mexico Public Regulation Commission	15-00139-UT	Southwestern Public Service Company	2015	Electric Depreciation Study
Texas	Railroad Commission of Texas	GUD 10432	CenterPoint- Texas Coast Division	2015	Gas Depreciation Study
Texas	Public Utility Commission of Texas	44704	Entergy Texas	2015	Electric Depreciation Study
Texas	Public Utility Commission of Texas	44746	Wind Energy Transmission Texas	2015	Electric Depreciation Study
Texas, New Mexico	FERC	ER15-949-000	Southwestern Public Service Company	2015	Electric Depreciation Study
Alaska	Regulatory Commission of Alaska	U-14-120	Alaska Electric Light and Power	2014-2015	Electric Depreciation Study
Alabama	State of Alabama Public Service Commission	U-5115	Mobile Gas	2014	Gas Depreciation Study
Alaska	Regulatory Commission of Alaska	U-14-045	Matanuska Electric Coop	2014	Electric Generation Depreciation Study
Alaska	Regulatory Commission of Alaska	U-14-054	Sand Point Generating LLC	2014	Electric Depreciation Study
Alaska	Regulatory Commission of Alaska	U-14-055	TDX North Slope Generating	2014	Electric Depreciation Study
California	California Public Utilities Commission	A.14-07-006	Golden State Water	2014	Water and Waste Water Depreciation Study
Colorado	Public Utilities Commission of Colorado	14AL-0660E	Public Service Company of Colorado	2014	Electric Depreciation Study
Louisiana	Louisiana Public Service Commission	U-28814	Atmos Energy Corporation	2014	Gas Depreciation Study

Dane A. Watson Testimony Appearances

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
Michigan	Michigan Public Service Commission	U-17653	Consumers Energy Company	2014	Electric and Common Depreciation Study
Multi State – SE US	FERC	RP15-101	Florida Gas Transmission	2014	Gas Transmission Depreciation Study
Nebraska	Nebraska Public Service Commission	NG-0079	Source Gas Nebraska	2014	Gas Depreciation Study
New Mexico	New Mexico Public Regulation Commission	14-00332-UT	Public Service of New Mexico	2014	Electric Depreciation Study
Texas	Public Utility Commission of Texas	43950	Cross Texas Transmission	2014	Electric Depreciation Study
Texas	NA	NA	Hughes Natural Gas	2014	Gas Depreciation Study
Texas	Public Utility Commission of Texas	42469	Lone Star Transmission	2014	Electric Depreciation Study
Texas	Public Utility Commission of Texas	43695	Southwestern Public Service Company	2014	Electric Depreciation Study
Wisconsin	Wisconsin	05-DU-102	WE Energies	2014	Electric, Gas, Steam and Common Depreciation Studies
Texas, New Mexico	Public Utility Commission of Texas	42004	Southwestern Public Service Company	2013-2014	Electric Production, Transmission, Distribution and General Plant Depreciation Study
Virginia	Virginia Corporation Commission	PUE-2013-00124	Atmos Energy Corporation	2013-2014	Gas Depreciation Study
Arkansas	Arkansas Public Service Commission	13-078-U	Arkansas Oklahoma Gas	2013	Gas Depreciation Study
Arkansas	Arkansas Public Service Commission	13-079-U	Source Gas Arkansas	2013	Gas Depreciation Study
California	California Public Utilities Commission	Proceeding No.: A.13-11-003	Southern California Edison	2013	Electric Depreciation Study
Kentucky	Kentucky Public Service Commission	2013-00148	Atmos Energy Corporation	2013	Gas Depreciation Study
Minnesota	Minnesota Public Utilities Commission	13-252	Allete Minnesota Power	2013	Electric Depreciation Study
New Hampshire	New Hampshire Public Service Commission	DE 13-063	Liberty Utilities	2013	Electric Distribution and General
New Jersey	New Jersey Board of Public Utilities	GR13111137	South Jersey Gas	2013	Gas Depreciation Study
North Carolina/South Carolina	FERC	ER13-1313	Progress Energy Carolina	2013	Electric Depreciation Study
Oklahoma and TX Panhandle	NA	NA	Enable Midstream Partners	2013	Gas Depreciation Study
Texas	Public Utility Commission of Texas	41474	Sharyland	2013	Electric Depreciation Study
Texas	Railroad Commission of Texas	10235	West Texas Gas	2013	Gas Depreciation Study

Dane A. Watson Testimony Appearances

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
Various	FERC	RP14-247-000	Sea Robin	2013	Gas Depreciation Study
Wisconsin	Public Service Commission of Wisconsin	4220-DU-108	Northern States Power Company - Wisconsin	2013	Electric, Gas and Common Transmission, Distribution and General
Alaska	Regulatory Commission of Alaska	U-12-154	Alaska Telephone Company	2012	Telecommunications Utility
Alaska	Regulatory Commission of Alaska	U-12-141	Interior Telephone Company	2012	Telecommunications Utility
Alaska	Regulatory Commission of Alaska	U-12-149	Municipal Power and Light City of Anchorage	2012	Electric Depreciation Study
Colorado	Colorado Public Utilities Commission	12AL-1269ST	Public Service Company of Colorado	2012	Gas and Steam Depreciation Study
Colorado	Colorado Public Utilities Commission	12AL-1268G	Public Service Company of Colorado	2012	Gas and Steam Depreciation Study
Kansas	Kansas Corporation Commission	12-ATMG-564-RTS	Atmos Kansas	2012	Gas Depreciation Study
Kansas	Kansas Corporation Commission	12-KCPE-764-RTS	Kansas City Power and Light	2012	Electric Depreciation Study
Michigan	Michigan Public Service Commission	U-17104	Michigan Gas Utilities Corporation	2012	Gas Depreciation Study
Minnesota	Minnesota Public Utilities Commission	12-858	Northern States Power Company - Minnesota	2012	Electric, Gas and Common Transmission, Distribution and General
Nevada	Public Utility Commission of Nevada	12-04005	Southwest Gas	2012	Gas Depreciation Study
New Mexico	New Mexico Public Regulation Commission	12-00350-UT	Southwestern Public Service Company	2012	Electric Depreciation Study
North Carolina	North Carolina Utilities Commission	E-2 Sub 1025	Progress Energy Carolina	2012	Electric Depreciation Study
North Dakota	North Dakota Public Service Commission	PU-12-0813	Northern States Power	2012	Electric, Gas and Common Transmission, Distribution and General
South Carolina	Public Service Commission of South Carolina	Docket 2012-384-E	Progress Energy Carolina	2012	Electric Depreciation Study
Texas	Railroad Commission of Texas	10170	Atmos Mid-Tex	2012	Gas Depreciation Study

Dane A. Watson Testimony Appearances

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
Texas	Railroad Commission of Texas	10147, 10170	Atmos Mid-Tex	2012	Gas Depreciation Study
Texas	Railroad Commission of Texas	10174	Atmos West Texas	2012	Gas Depreciation Study
Texas	Railroad Commission of Texas	10182	CenterPoint Beaumont/ East Texas	2012	Gas Depreciation Study
Texas	Texas Public Utility Commission	40604	Cross Texas Transmission	2012	Electric Depreciation Study
Texas	Texas Public Utility Commission	40020	Lone Star Transmission	2012	Electric Depreciation Study
Texas	Texas Public Utility Commission	40606	Wind Energy Transmission Texas	2012	Electric Depreciation Study
Texas	Texas Public Utility Commission	40824	Xcel Energy	2012	Electric Depreciation Study
California	California Public Utilities Commission	A1011015	Southern California Edison	2011	Electric Depreciation Study
Colorado	Public Utilities Commission of Colorado	11AL-947E	Public Service Company of Colorado	2011	Electric Depreciation Study
Michigan	Michigan Public Service Commission	U-16938	Consumers Energy Company	2011	Gas Depreciation Study
Michigan	Michigan Public Service Commission	U-16536	Consumers Energy Company	2011	Wind Depreciation Rate Study
Mississippi	Mississippi Public Service Commission	2011-UN-184	Atmos Energy	2011	Gas Depreciation Study
MultiState	FERC	ER12-212	American Transmission Company	2011	Electric Depreciation Study
MultiState			Atmos Energy	2011	Shared Services Depreciation Study
MultiState			CenterPoint	2011	Shared Services Study
MultiState			CenterPoint	2011	Depreciation Reserve Study (SAP)
Pennsylvania	NA	NA	Safe Harbor	2011	Hydro Depreciation Study
Texas	Texas Public Utility Commission	39896	Entergy Texas	2011	Electric Depreciation Study
Texas	Public Utility Commission of Texas	38929	Oncor	2011	Electric Depreciation Study
Texas	Texas Commission on Environmental Quality	Matter 37050-R	Southwest Water Company	2011	WasteWater Depreciation Study
Texas	Texas Commission on Environmental Quality	Matter 37049-R	Southwest Water Company	2011	Water Depreciation Study
Alaska	Regulatory Commission of Alaska	U-10-070	Inside Passage Electric Cooperative	2010	Electric Depreciation Study

Dane A. Watson Testimony Appearances

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
Georgia	Georgia Public Service Commission	31647	Atlanta Gas Light	2010	Gas Depreciation Study
Maine/ New Hampshire	FERC	10-896	Granite State Gas Transmission	2010	Gas Depreciation Study
Multi State – SE US	FERC	RP10-21-000	Florida Gas Transmission	2010	Gas Depreciation Study
Multistate	NA	NA	Constellation Energy	2010	Fossil Generation Depreciation Study
Multistate	NA	NA	Constellation Energy Nuclear	2010	Nuclear Generation Depreciation Study
Texas	Texas Railroad Commission	10041	Atmos Amarillo	2010	Gas Depreciation Study
Texas	Texas Railroad Commission	10000	Atmos Pipeline Texas	2010	Gas Depreciation Study
Texas	Railroad Commission of Texas	10038	CenterPoint South TX	2010	Gas Depreciation Study
Texas	Public Utility Commission of Texas	36633	City Public Service of San Antonio	2010	Electric Depreciation Study
Texas	Public Utility Commission of Texas	38339	CenterPoint Electric	2010	Electric Depreciation Study
Texas	Public Utility Commission of Texas	38147	Southwestern Public Service Company	2010	Electric Technical Update
Texas	Public Utility Commission of Texas	38480	Texas New Mexico Power	2010	Electric Depreciation Study
Alaska	Regulatory Commission of Alaska	U-09-015	Alaska Electric Light and Power	2009-2010	Electric Depreciation Study
Alaska	Regulatory Commission of Alaska	U-10-043	Utility Services of Alaska	2009-2010	Water Depreciation Study
California	California Public Utility Commission	A10071007	California American Water	2009-2010	Water and Waste Water Depreciation Study
Michigan	Michigan Public Service Commission	U-16054	Consumers Energy	2009-2010	Electric Depreciation Study
Michigan	Michigan Public Service Commission	U-16055	Consumers Energy/DTE Energy	2009-2010	Ludington Pumped Storage Depreciation Study
Wyoming	Wyoming Public Service Commission	30022-148-GR10	Source Gas	2009-2010	Gas Depreciation Study
Colorado	Colorado Public Utilities Commission	09AL-299E	Public Service of Colorado	2009	Electric Depreciation Study
Iowa	NA		Cedar Falls Utility	2009	Telecommunications, Water, and Cable Utility
Michigan	Michigan Public Service Commission	U-15963	Michigan Gas Utilities Corporation	2009	Gas Depreciation Study
Michigan	Michigan Public Service Commission	U-15989	Upper Peninsula Power Company	2009	Electric Depreciation Study

Dane A. Watson Testimony Appearances

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
Michigan	Michigan Public Service Commission	In Progress	Edison Sault	2009	Electric Depreciation Study
Mississippi	Mississippi Public Service Commission	09-UN-334	CenterPoint Energy Mississippi	2009	Gas Depreciation Study
New York	New York Public Service Commission		Key Span	2009	Generation Depreciation Study
North Carolina	North Carolina Utilities Commission		Piedmont Natural Gas	2009	Gas Depreciation Study
South Carolina	Public Service Commission of South Carolina		Piedmont Natural Gas	2009	Gas Depreciation Study
Tennessee	Tennessee Regulatory Authority	09-000183	AGL – Chattanooga Gas	2009	Gas Depreciation Study
Tennessee	Tennessee Regulatory Authority	11-00144	Piedmont Natural Gas	2009	Gas Depreciation Study
Texas	Railroad Commission of Texas	9869	Atmos Energy	2009	Shared Services Depreciation Study
Texas	Railroad Commission of Texas	9902	CenterPoint Energy Houston	2009	Gas Depreciation Study
Arizona	NA	NA	Arizona Public Service	2008	Fixed Asset Consulting
Louisiana	Louisiana Public Service Commission	U-30689	Cleco	2008	Electric Depreciation Study
Multiple States	NA	NA	Constellation Energy	2008	Generation Depreciation Study
New Mexico	New Mexico Public Regulation Commission	07-00319-UT	Southwestern Public Service Company	2008	Testimony – Depreciation
North Dakota	North Dakota Public Service Commission	PU-07-776	Northern States Power Company - Minnesota	2008	Net Salvage
Texas	Public Utility Commission of Texas	35717	Oncor	2008	Electric Depreciation Study
Texas	Public Utility Commission of Texas	35763	Southwestern Public Service Company	2008	Electric Production, Transmission, Distribution and General Plant Depreciation Study
Wisconsin	Wisconsin	05-DU-101	WE Energies	2008	Electric, Gas, Steam and Common Depreciation Studies
Colorado	Colorado Public Utilities Commission	Filed – no docket to date	Public Service Company of Colorado	2007-2008	Electric Depreciation Study
Colorado	Colorado Public Utilities Commission	10AL-963G	Public Service Company of Colorado	2007-2008	Gas Depreciation Study
Minnesota	Minnesota Public Utilities Commission	E015/D-08-422	Minnesota Power	2007-2008	Electric Depreciation Study

Dane A. Watson Testimony Appearances

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
Multiple States	Railroad Commission of Texas	9762	Atmos Energy	2007-2008	Shared Services Depreciation Study
Multiple States	None		Tennessee Valley Authority	2007-2008	Electric Generation and Transmission Depreciation Study
Michigan	Michigan Public Service Commission	U-15629	Consumers Energy	2006-2009	Gas Depreciation Study
Multiple States	NA	NA	Constellation Energy	2007	Generation Depreciation Study
Texas	Public Utility Commission of Texas	34040	Oncor	2007	Electric Depreciation Study
Arkansas	Arkansas Public Service Commission	06-161-U	CenterPoint Energy – Arkla Gas	2006	Gas Distribution Depreciation Study and Removal Cost Study
Colorado	Colorado Public Utilities Commission	06-234-EG	Public Service Company of Colorado	2006	Electric Depreciation Study
Multiple States	Multiple	NA	CenterPoint Energy	2006	Shared Services Depreciation Study
Nevada	NA	NA	Nevada Power/Sierra Pacific	2006	ARO Consulting
Pennsylvania	NA	NA	Safe Harbor	2006	Hydro Depreciation Study
Utah, Nevada, California	NA	NA	Intermountain Power Authority	2006	Generation Depreciation Study
Texas	Railroad Commission of Texas	9670/9676	Atmos Energy Corp	2005-2006	Gas Distribution Depreciation Study
Texas, New Mexico	Public Utility Commission of Texas	32766	Southwestern Public Service Company	2005-2006	Electric Production, Transmission, Distribution and General Plant Depreciation Study
Texas	Railroad Commission of Texas	9400	TXU Gas	2003-2004	Gas Distribution Depreciation Study
Texas	Railroad Commission of Texas	9313	TXU Gas	2002	Gas Distribution Depreciation Study
Texas	Railroad Commission of Texas	9225	TXU Gas	2002	Gas Distribution Depreciation Study
Texas	Public Utility Commission of Texas	24060	TXU	2001	Line Losses
Texas	Public Utility Commission of Texas	23640	TXU	2001	Line Losses
Texas	Public Utility Commission of Texas	22350	TXU	2000-2001	Electric Depreciation Study, Unbundling
Texas	Railroad Commission of Texas	9145-9148	TXU Gas	2000-2001	Gas Distribution Depreciation Study

Dane A. Watson Testimony Appearances

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
Texas	Public Utility Commission of Texas	20285	TXU	1999	Fuel Company Depreciation Study
Texas	Railroad Commission of Texas	8976	TXU Pipeline	1999	Pipeline Depreciation Study
Texas	Public Utility Commission of Texas	18490	TXU	1998	Transition to Competition
Texas	Public Utility Commission of Texas	16650	TXU	1997	Customer Complaint
Texas	Public Utility Commission of Texas	15195	TXU	1996	Mining Company Depreciation Study
Texas	Public Utility Commission of Texas	12160	TXU	1993	Fuel Company Depreciation Study
Texas	Public Utility Commission of Texas	11735	TXU	1993	Electric Depreciation Study

**LIBERTY UTILITIES (MID-
STATES NATURAL GAS) CORP.
D/B/A LIBERTY UTILITIES
State of Missouri
Book Depreciation Accrual Rate
Study
At December 31, 2021**



**LIBERTY UTILITIES (MID-STATES NATURAL GAS) CORP.
D/B/A LIBERTY UTILITIES
State of Missouri
DEPRECIATION RATE STUDY
EXECUTIVE SUMMARY**

Liberty Utilities (Mid-States Natural Gas) Corp. d/b/a Liberty Utilities (“Mid-States Gas Missouri” or “Company”), engaged Alliance Consulting Group to conduct a depreciation study of the Company’s Gas plant depreciable assets as of December 31, 2021.

The study proposes depreciation parameters, including Average Service Life, Iowa Curve, and Net Salvage percentages as set forth in Appendix C, which are a result of actuarial analysis, statistical analysis, and professional judgement after meeting with various company experts. The Company has currently been using accrual rates adjudicated in Docket GR-2018-0013.

All annual accrual rates were determined using the straight-line method, average life group (“ALG”) procedure, and remaining life technique. Depreciation and amortization rates reflect any imbalance between actual and theoretical reserves. Use of the remaining life depreciation system includes a self-correcting mechanism, which accounts for any differences between theoretical and book depreciation reserve over the remaining life of each depreciable group.

Given the many changes in life and net salvage in this study, this study recommends a reallocation of book reserve by plant account within each function. This reallocation does not change the total reserve within each function. Rather, reallocating the reserve within a function realigns the depreciation reserve balances within each function using the proposed life and net salvage parameters. Reallocation occurred within each functional group, such as, transmission, distribution, and general property. All accounts were reallocated using the theoretical reserve model.

This study recommends an overall decrease of approximately \$154 thousand in

annual depreciation expense, compared to the depreciation rates currently in effect. Appendix B demonstrates the change in depreciation expense for the various Gas Plant accounts. The overall change in depreciation expense is also driven by changes in life and net salvage as well as treatment of any book and theoretical reserve imbalance.

LIBERTY UTILITIES (MID-STATES NATURAL GAS) CORP.
D/B/A LIBERTY UTILITIES
State Of Missouri
DEPRECIATION RATE STUDY
AT DECEMBER 31, 2021

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PURPOSE

The purpose of this study is to develop depreciation rates for gas and thermal depreciable property as recorded on the books of Liberty Utilities Mid-States Natural Gas d/b/a Liberty Utilities, State of Missouri ("Mid-States Gas Missouri" "Company") as of December 31, 2021.

The depreciation rates in this study were designed to recover the total remaining undepreciated investment, adjusted for net salvage, over the remaining life of Mid-States Gas Missouri's property on a straight-line basis. Mid-States Gas Missouri is a regulated gas utility principally engaged in providing production and delivery services to customers in Missouri. Mid-States Gas Missouri provides the essential service of producing and delivering natural gas safely, reliably, and economically to end-use consumers through its transmission and distribution systems. Mid-States Gas Missouri also uses general plant to support its natural gas operations.

STUDY RESULTS

Recommended depreciation rates for Mid-States Gas Missouri depreciable property are shown in Appendix A. Appendix A contains the following sections: A Computation of depreciation accrual rates for Mid-States Gas Missouri depreciable property, A-1 Computation of amortization rates for Mid-States Gas Missouri amortized accounts. The proposed rates translate into an annual depreciation accrual of approximately \$6.2 million based on Mid-States Gas Missouri's depreciable gas plant investment at December 31, 2021. A comparison between depreciation rates and annual accruals at current levels versus the proposed rates and resulting annual accruals is shown in Appendix B. As shown in Appendix B, the annual depreciation expense calculated by the same method using the existing approved depreciation rates is approximately \$6.4 million for Mid-States Gas Missouri's gas assets, resulting in a \$154 thousand decrease in annual depreciation expense. The proposed lives and net salvage parameters on which these calculations are based is shown in Appendix C. Net Salvage analysis is shown in Appendix D. A summary of accumulated depreciation is shown in Appendix D.

GENERAL DISCUSSION

Definition

The term "depreciation" as used in this study 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. It is a process of allocation, not valuation. This expense is systematically allocated to accounting periods over the life 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. The Company accrues depreciation on the basis of the original cost of all depreciable property included in each functional property group. At retirement, the full cost of depreciable property, less the net salvage value, is charged to the depreciation reserve.

Basis of Depreciation Estimates

Annual and accrued depreciation were calculated in this study by the straight-line, vintage group, remaining-life depreciation system. In this system, the annual depreciation expense for each vintage is computed by dividing the original cost of the asset vintage (less allocated depreciation reserve less estimated net salvage) by its respective average remaining life. The resulting annual accrual amounts were divided by the original cost of the depreciable property in each account to determine the depreciation rate. The calculated remaining lives and annual depreciation accrual rates were based on attained ages of plant in service and the estimated service life and salvage characteristics of each depreciable group and were computed in a direct weighting by multiplying each vintage or account balance times its remaining life and dividing by the plant investment in service at December 31, 2021. The computations of the annual depreciation rates are shown in Appendix A through A-1, and the comparison of proposed vs current depreciation rates is shown in Appendix B.

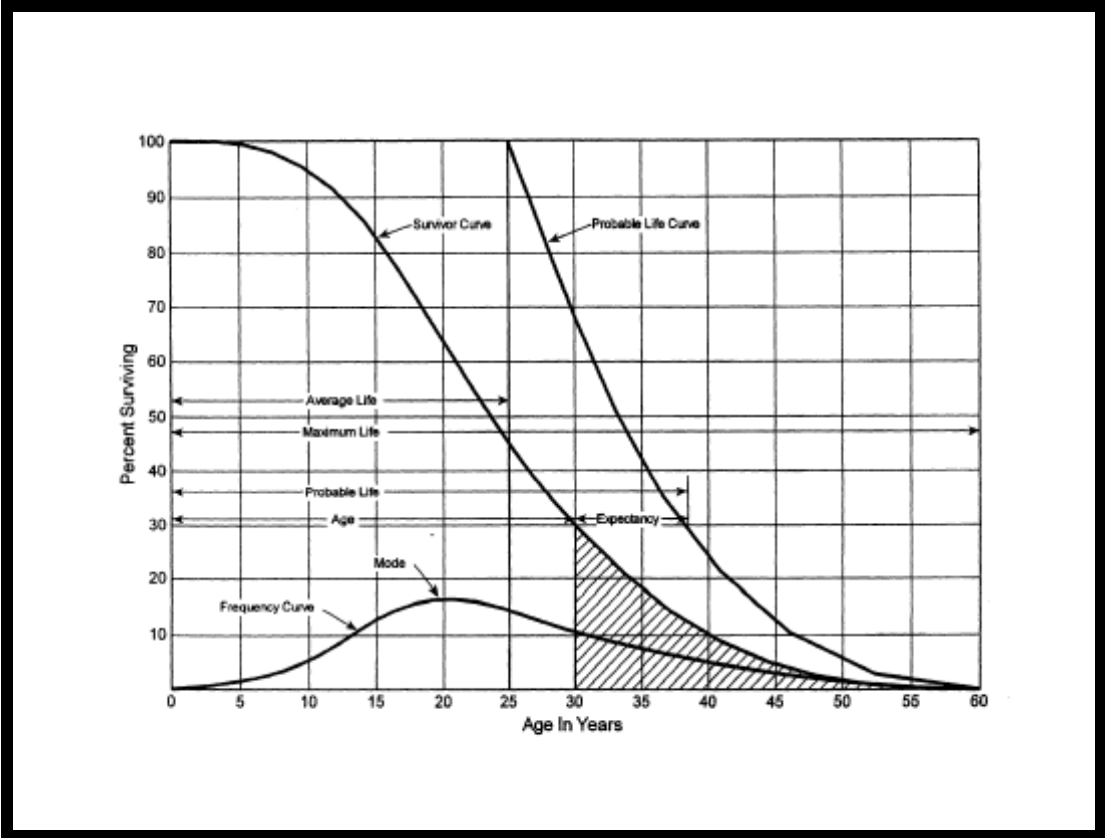
An actuarial analysis approach was incorporated into the analyses of Mid-States Gas Missouri data. This method has been used by utility companies across the regulated industry. Vintaged information was assembled in this study to allow

actuarial analysis to be performed. Judgment was used to a greater or lesser degree on each account. This approach is more fully described in a later section.

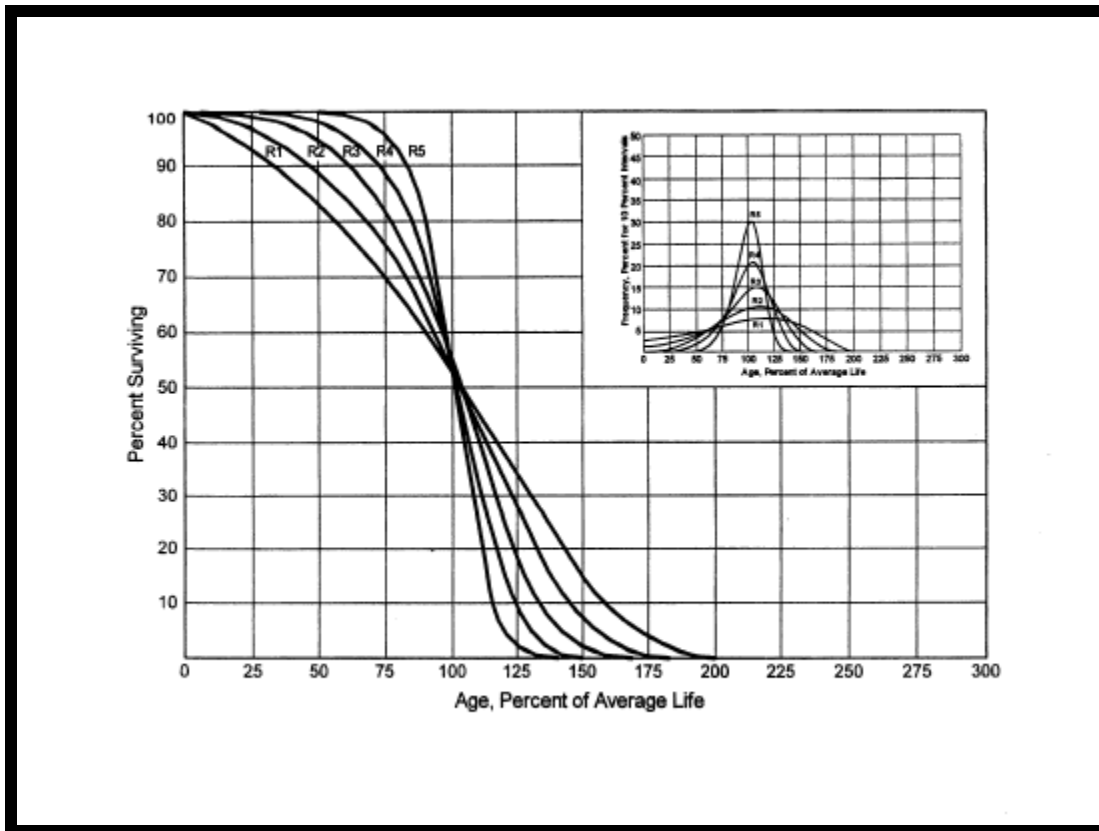
Survivor Curves

To fully understand depreciation projections in a regulated utility setting, there must be a basic understanding of Survivor Curves. Individual assets within a group do not normally have identical lives or investment amounts. The average life of a group can be determined by comparing actual experience against various Survivor Curves. A Survivor Curve represents the percentage of property remaining in service at various age intervals. The most widely used set of representative Survivor Curves are the Iowa Survivor Curves (Iowa Curves). The Iowa Curves are the result of an extensive investigation of life characteristics of physical property made at the Iowa State College Engineering Experiment Station in the first half of the twentieth century.

Through common usage, revalidation, and regulatory acceptance, these curves have become a descriptive standard for the life characteristics of industrial property. An example of an Iowa Curve is shown below.



There are four families in the Iowa Curves which are distinguished by the relation of the age at the retirement mode (largest annual retirement frequency) and the average life. The four families are designated as “R”— Right, “S” — Symmetric, “L” — Left, and “O” — Origin Modal. First, for distributions with the mode age greater than the average life, an "R" designation (i.e., Right modal) is used. The family of “R” moded curves is shown below.



Second, an "S" designation (i.e., Symmetric modal) is used for the family whose mode age is symmetric about the average life. Third, an "L" designation (i.e., Left modal) is used for the family whose mode age is less than the average life. Fourth, a special case of left modal dispersion is the "O" or origin modal curve family. Within each curve family, numerical designations are used to describe the relative magnitude of the retirement frequencies at the mode. A "6" indicates that the retirements are not greatly dispersed from the mode (i.e., high mode frequency) while a "1" indicates a large dispersion about the mode (i.e., low mode frequency). For example, a curve with an average life of 30 years and an "L3" dispersion is a moderately dispersed, left modal curve that can be designated as a 30 L3 Curve. An SQ, or square, Survivor Curve occurs where no dispersion is present (i.e., units of common age retire simultaneously).

For all depreciable accounts, a Survivor Curve pattern was selected based on analyses of historical data, as well as other factors, such as general changes relevant to the Company's operations. The blending of professional judgment concerning current conditions and future trends, along with the matching of historical data permits the depreciation analyst to make an informed selection of an account's average life and retirement dispersion pattern. Iowa Curves were used to depict the estimated Survivor Curves for each account.

Actuarial Analysis

Actuarial analysis (retirement rate method) was used in evaluating historical asset retirement experience where vintage data were available and sufficient retirement activity was present. In an actuarial analysis, interval exposures (total property subject to retirement at the beginning of the age interval, regardless of vintage) and age interval retirements are calculated. The complement of the ratio of interval retirements to interval exposures establishes a survivor ratio. The survivor ratio is the fraction of property surviving to the end of the selected age interval, given that it has survived to the beginning of that age interval. Survivor ratios for all of the available age intervals were chained by successive multiplications to establish a series of survivor factors, collectively known as an observed life table. The observed life table shows the experienced mortality characteristic of the account and may be compared to standard mortality curves such as the Iowa Curves. Many accounts were analyzed using this method. Placement bands were used to illustrate the composite history over a specific era, and experience bands were used to focus on retirement history for all vintages during a set period. Matching data in observed life tables for each experience and placement band to an Iowa Curve requires visual examination. As stated in widely cited text, Depreciation Systems by Wolf and Fitch, "the analyst must decide which points or sections of the curve should be given the most weight. Points at the end of the curve are often based on fewer exposures and may be given less weight than those points based on larger samples" (page 46). Some analysts chose to use mathematical fitting as a tool to narrow the population of

curves using a least squares technique. Use of the least squares approach does not imply a statistical validity; however, because the underlying data does not meet the criteria for independence between vintages and the same average price for property units through time. Thus, Depreciation Systems cautions, "... the results of mathematical fitting should be checked visually and the final determination of best fit made by the analyst" (page 48). This study uses the visual matching approach to match Iowa Curves, since mathematical fitting produces theoretically possible curve matches. Visual examination and experienced judgment allow the depreciation professional to make the final determination as to the best curve type.

Detailed information for each account is shown later in this study and in workpapers.

In this study all assets in the data for Missouri was analyzed. There were data limitations in modeling actuarial data for Liberty Mid-States Gas assets. All properties currently operated by Liberty were owned by Atmos Energy. Detailed historical records of transactional activity were available only from 2000 forward. Data extracted from the Atmos Energy plant accounting system provided data from 2000-2012, and data from Liberty's records was provided from 2012-2021. For these reasons, an experience band of 2000-2021 was run for each account where retirement data was available. In general three placement bands were run: overall, mid-range, and 2000-2021.

Judgment

Any depreciation study requires informed judgment by the analyst conducting the study. A knowledge of the property being studied, company policies and procedures, general trends in technology and industry practice, and a sound basis of understanding depreciation theory are needed to apply this informed judgment. In this depreciation study, judgment was used in areas such as Survivor Curve modeling and selection, depreciation method selection, simulated plant record method analysis, and actuarial analysis.

Where there are multiple factors, activities, actions, property characteristics,

statistical inconsistencies, property mix in accounts or a multitude of other considerations that affect the analysis (potentially in various directions), judgment is used to take into account all of these considerations and synthesize them into a general direction or understanding of the characteristics of the property. Individually, no one consideration in these cases may have a substantial impact on the analysis, but overall, the collective effect of these considerations may shed light on the use and characteristics of assets. Judgment may also be defined as deduction, inference, wisdom, common sense, or the ability to make sensible decisions. There is no single correct result from statistical analysis; hence, there is no answer absent the application of informed professional judgment and experience.

Average Life Group Depreciation

In recent cases, the Missouri Public Service Commission has authorized the use of the average life group (“ALG”) depreciation procedure, broad group, remaining life depreciation system.¹ At the request of the Utility, this study continues to use the ALG depreciation procedure to group the assets within each account. After an average service life and dispersion were selected for each account, these parameters were used to estimate what portion of the surviving investment of each vintage was expected to retire. The depreciation of the group continues until all investment in the vintage group is retired. ALG groups are defined by their respective account dispersion, life, and salvage estimates. A straight-line rate for each ALG group is calculated by computing a composite remaining life for each group across all vintages within the group, dividing the remaining investment to be recovered by the remaining life to find the annual depreciation expense and dividing the annual depreciation expense by the surviving investment. The resultant rate for each ALG group is designed to recover all retirements less net salvage when the last unit retires. The ALG depreciation procedure recovers net book cost over the life of each account by averaging many components.

The Company’s depreciation rates in Docket GR-2018-0013 were determined

¹ Empire Electric District, Docket ER-2021-0312.

using the whole-life depreciation system, and no true-up was computed to align book reserves and theoretical depreciation reserves.

Theoretical Depreciation Reserve

The book depreciation reserve was derived from Mid-States Gas Missouri records where the provision for depreciation is maintained on a state and plant account level. As a point of comparison, a theoretical depreciation reserve model was computed for each analyzed account. This study used a reserve model that relied on a prospective concept relating future retirement and accrual patterns for property, given current life and salvage estimates. The theoretical reserve of a group is developed from the estimated remaining life, total life of the property group, and estimated net salvage. The theoretical reserve represents the portion of the group cost that would have been accrued if current forecasts were used throughout the life of the group for future depreciation accruals. The computation involves multiplying the vintage balances within the group by the theoretical reserve ratio for each vintage. The average life group method requires an estimate of dispersion and service life to establish how much of each vintage is expected to be retired in each year until all property within the group is retired. Estimated average service lives and dispersion determine the amount within each average life group. The straight-line remaining-life theoretical reserve ratio at any given age (RR) is calculated

$$RR = 1 - \frac{(Average\ Remaining\ Life)}{(Average\ Service\ Life)} * (1 - Net\ Salvage\ Ratio)$$

DETAILED DISCUSSION

Depreciation Study Process

This depreciation study encompassed four distinct phases. The first phase involved data collection and field interviews. The second phase was where the initial data analysis occurred. The third phase was where the information and analysis was evaluated. After the first three stages were complete, the fourth phase began. This phase involved the calculation of deprecation rates and documenting the corresponding recommendations.

During the Phase I data collection process, historical data was compiled from continuing property records and general ledger systems. Data was validated for accuracy by extracting and comparing to multiple financial system sources: Projects System (construction ledger), Fixed Asset System (continuing property ledger), General Ledger, and interfaces from other operating systems. Audit of this data was validated against historical data from prior periods, historical general ledger sources, and field personnel discussions. This data was reviewed extensively so that it could be put in the proper format for a depreciation study. Further discussion on data review and adjustment is found in the Salvage Consideration section of this study. Also as part of the Phase I data collection process, numerous discussions were conducted with engineers and field operations personnel to obtain information that would be helpful in formulating life and salvage recommendations in this study. One of the most important elements in performing a proper depreciation study is to understand how the Company utilizes assets and the environment of those assets. Understanding industry and geographical norms for mortality characteristics are important factors in selecting life and salvage recommendations; however, care must be used not to apply them rigorously to any particular company since no two companies would have the same exact forces of retirement acting upon their assets. Interviews with engineering and operations personnel are important ways to allow the analyst to obtain information that is helpful when evaluating the output from the life and net salvage programs in relation to the Company's actual asset utilization and environment. Information that was gleaned in these discussions is found both in the

Detailed Discussion portions of the Life Analysis and Salvage Analysis sections and also in workpapers. In addition, Alliance personnel possess a significant understanding of the property and its forces of retirement due to years of day-to-day exposure to property and the operations of gas utility property.

Phase 2 is where the actuarial analysis was performed. Phase 2 and Phase 3 overlap to a significant degree. The detailed property records information was used in Phase 2 to develop observed life tables, graphs and statistics for analysis. Net salvage analysis consists of compiling historical salvage and removal data by account to determine values and trends in gross salvage and removal cost. This information was then carried forward into Phase 3 for the evaluation process.

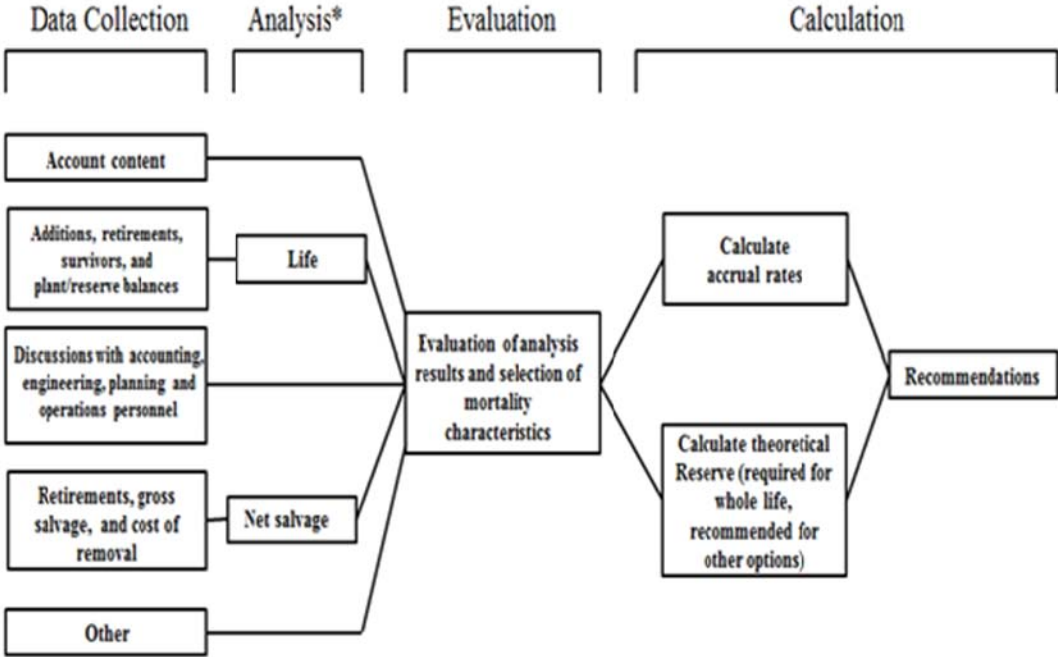
Phase 3 is the evaluation process, which synthesized analysis, interviews, and operational characteristics into a final selection of asset lives and net salvage parameters. The historical analysis from Phase 2 was further enhanced by the incorporation of recent or future changes in the characteristics or operations of assets that were revealed in Phase 1. The preliminary results were then reviewed and discussed with Company accounting and operations personnel. Phases 2 and 3 validated the asset characteristics as seen in the accounting transactions with actual Company operational experience.

Finally, Phase 4 involved the calculation of accrual rates, making recommendations and documenting the conclusions in a final report. The calculation of accrual rates is found in Appendix A. Recommendations for the various accounts are contained within the Detailed Discussion of this report. The depreciation study flow diagram shown as Figure 1² documents the steps used in conducting this study. Depreciation Systems³, a well-respected scholarly treatise on the topic of depreciation, documents the same basic processes in performing a depreciation study, including statistical analysis, evaluation of statistical analysis, discussions with management, forecast assumptions, and document recommendations.

² Introduction to Depreciation for Public Utilities and Other Industries, AGA EEI, 2013

³ Wolf, F. K. and Fitch, W. C. Depreciation Systems, Iowa State University Press, 1994, page 289.

Book Depreciation Study Flow Diagram



Source: Introduction to Depreciation for Public Utilities and Other Industries, AGA EEI, 2013.

*Although not specifically noted, the mathematical analysis may need some level of input from other sources (for example, to determine analysis bands for life and adjustments to data used in all analysis).

MID-STATES GAS MISSOURI DEPRECIATION STUDY PROCESS

Depreciation Rate Calculation

Annual depreciation expense amounts for the depreciable accounts of Mid-States Gas- Missouri were calculated by the straight-line method, ALG procedure, and the remaining life technique. With this approach, remaining lives were calculated according to standard ALG group expectancy techniques, using the Iowa Curves noted in the calculation. For each account, the difference between the surviving investment, adjusted for estimated net salvage, and the book depreciation reserve, was divided by the average remaining life to yield the annual depreciation expense. These calculations are shown in Appendix A and A-1.

Remaining Life Calculation

The establishment of appropriate average service lives and retirement dispersions for each account within a functional group was based on engineering judgment that incorporated available accounting information analyzed using the Retirement Rate actuarial methods. After establishment of appropriate average service lives and retirement dispersion, remaining life was computed for each account. Theoretical depreciation reserve with zero net salvage was calculated using theoretical reserve ratios as defined in the theoretical reserve portion of the General Discussion section. The difference between account balance and theoretical reserve was then spread over the ALG depreciation accruals. Remaining life computations are found for each account in the workpapers.

Depreciation Calculation Process

Annual depreciation expense amounts for depreciable accounts were calculated by the vintage group, straight line, remaining life procedure.

In a whole life representation, the annual accrual rate is computed by the following equation,

$$AnnualAccrualRate = \frac{(100\% - NetSalvagePercent)}{AverageServiceLife}$$

The vintage group procedure considers each year of plant placement as a separate group, unlike the broad group model which combines all placement years into one group. The vintage group model uses a unique Survivor Curve for each vintage to combine observed and forecast survivor ratios rather than a single curve for each vintage as the broad group model does.

Use of the remaining life depreciation system adds a self-correcting mechanism, which accounts for any differences between theoretical and book depreciation reserve over the remaining life of the group. With the straight line, remaining life, average life group system using Iowa Curves, composite remaining lives were calculated according to standard broad group expectancy techniques, noted in the formula below:

$$Composite\ Remaining\ Life = \frac{\sum Vintage\ Original\ Cost * Remaining\ Life}{\sum Total\ Original\ Cost}$$

For each plant account, the difference between the surviving investment, adjusted for estimated net salvage, and the allocated book depreciation reserve, was divided by the composite remaining life to yield the annual depreciation expense as noted in this equation.

$$Annual\ Depreciation\ Expense = \frac{Original\ Cost - Book\ Reserve - (Original\ Cost) * (1 - Net\ Salvage\ \%)}{Composite\ Remaining\ Life}$$

where the net salvage percent represents future net salvage.

Within a group, the sum of the group annual depreciation expense amounts, as

a percentage of the depreciable original cost investment summed, gives the annual depreciation rate as shown below:

$$\text{AnnualDepreciationRate} = \frac{\sum \text{AnnualDepreciationExpense}}{\sum \text{OriginalCost}}$$

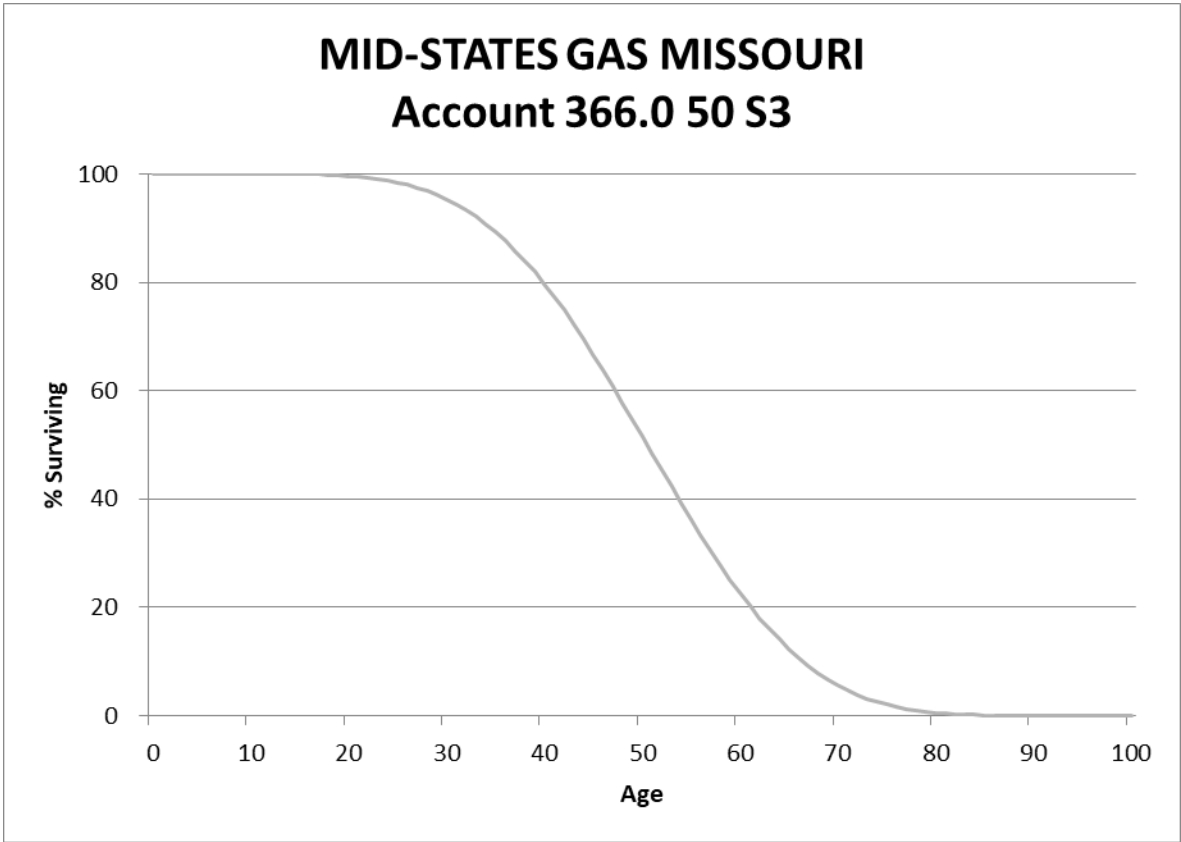
Average salvage was assumed equal to future net salvage when computing reserve ratios. These calculations are shown in Appendix D. The calculations of the theoretical depreciation reserve values and the corresponding remaining life calculations are shown in workpapers. Book depreciation reserves are maintained on an account level and were used to compute depreciation rates for each account.

LIFE ANALYSIS

Gas Transmission Accounts, FERC Accounts 366.0-370.0

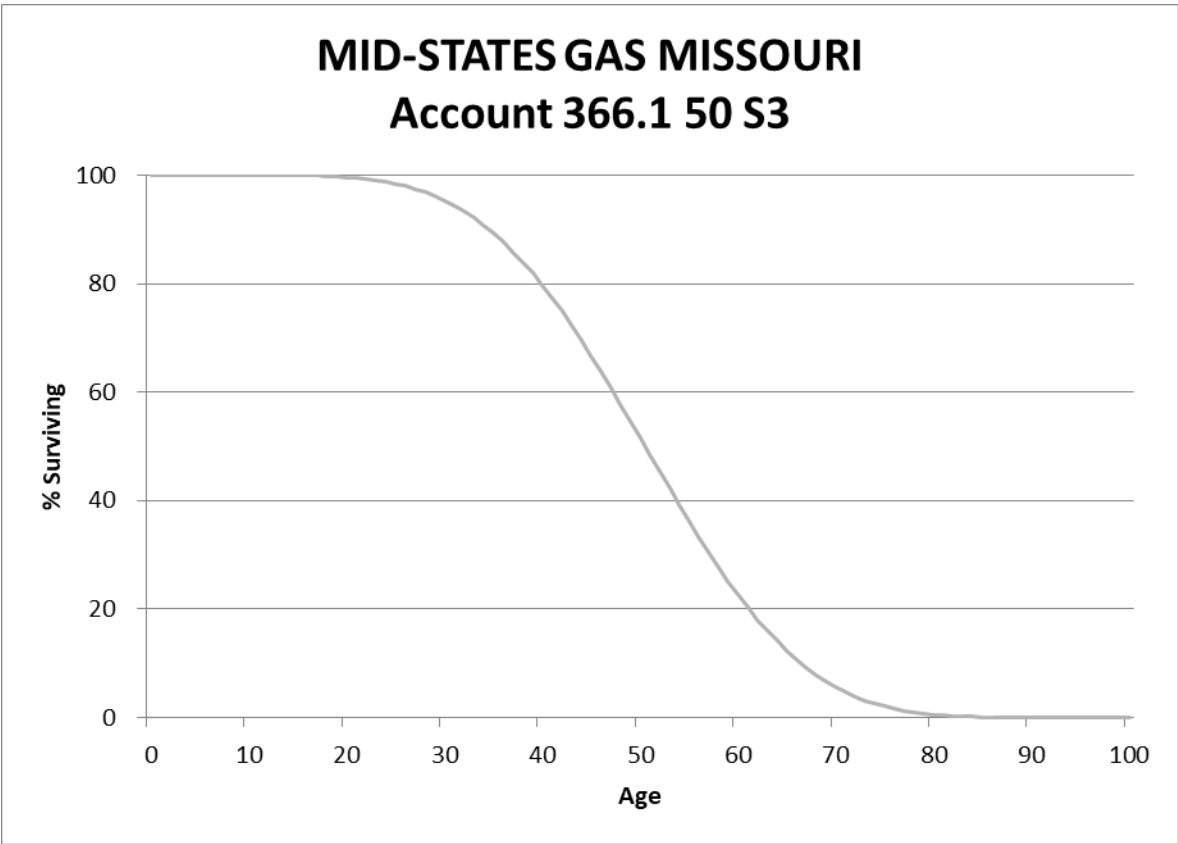
FERC Account 366.0 Structures and Improvements (50 S3)

This account consists of buildings and other related structures and improvements related to transmission operations. There is currently \$4 thousand in total plant for Mid-States Gas Missouri. The current life is 50 years. There were no retirements in this account from 2000-2021. Based on judgment, this study recommends retaining a 50 S3 curve for this account. A generic curve shape is shown below.



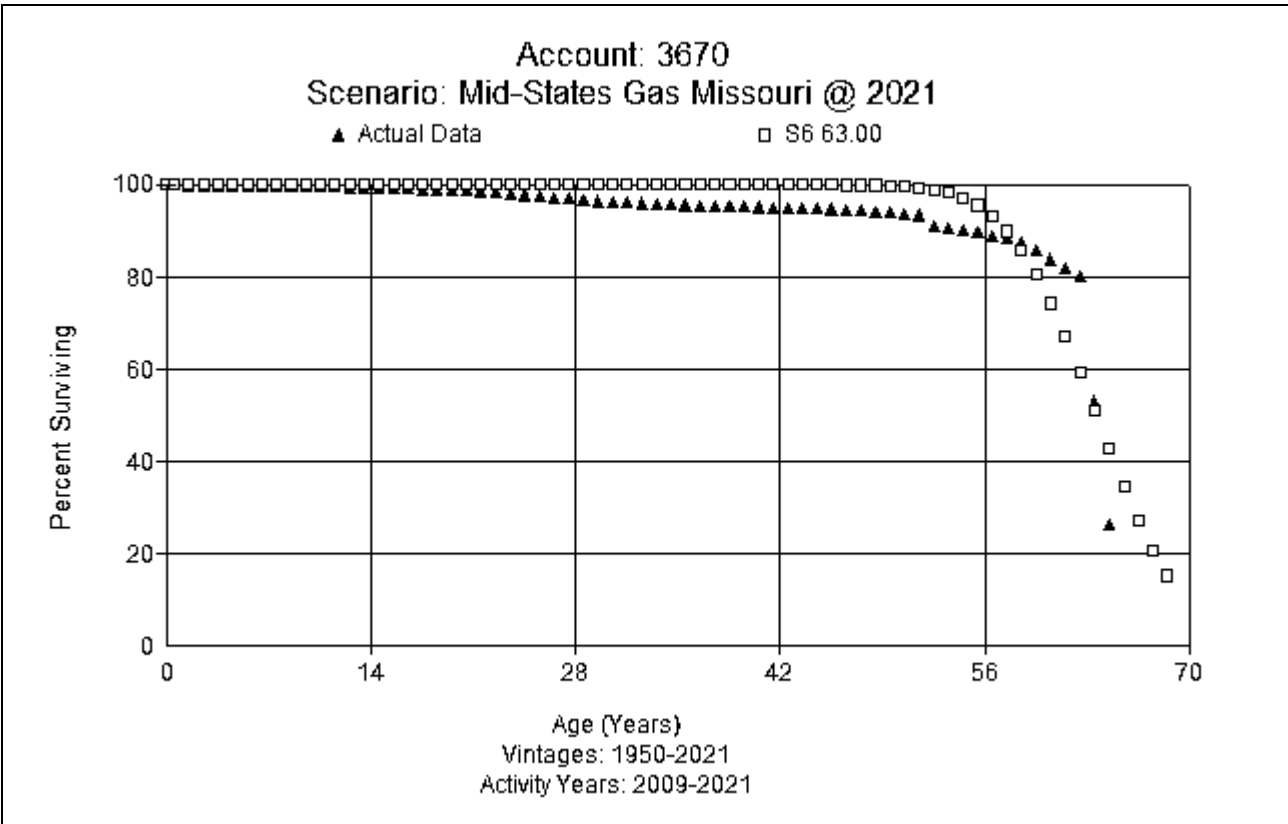
FERC Account 366.1 T&D-Other Structures (50 S3)

This account consists primarily of fences and pipeline rebranding related to control of the transmission systems. There is currently \$61 thousand in total plant for Mid-States Gas Missouri. The current life is 50 years. There were no retirements in this account from 2000-2021. The largest asset in this account is \$44 thousand in pipeline rebranding. When Liberty acquired these assets, signage was changed across the system to reflect new ownership. Any additional costs would be booked to operating and maintenance expense. Based on judgment, this study recommends retaining a 50 S3 curve for this account. A generic curve shape is shown below.



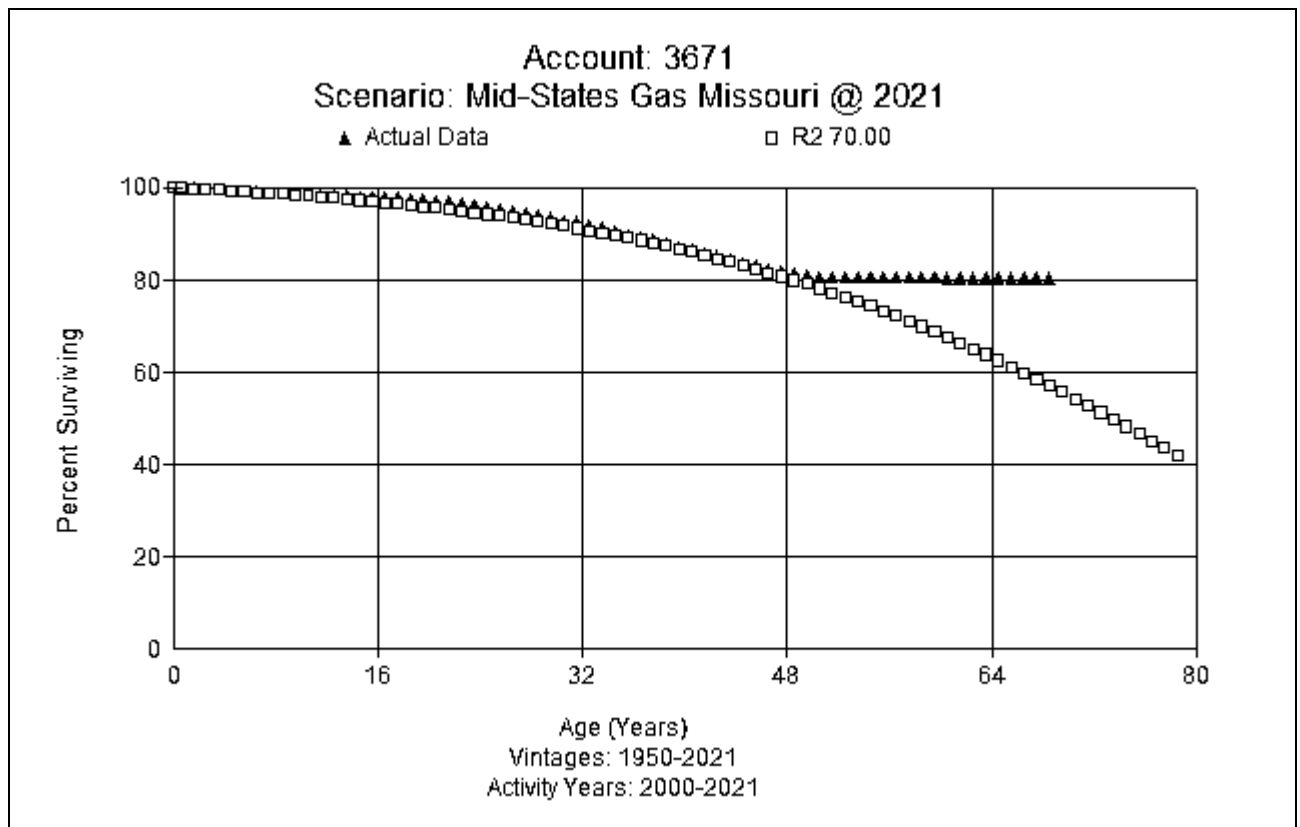
FERC Account 367.0 Transmission Mains Cathodic Protection (63 S6)

This account consists of cathodic protection assets for transmission mains such as anodes, ground beds, and rectifiers. There is currently \$336 thousand in total plant for Mid-States Gas Missouri. The current life is 70 years. The basis for the existing life was being combined with Account 367.1 This study reexamined those assets as a separated account. There are no blanket retirements used for cathodic protection in the transmission function. The actuarial analysis shows that a 63 year life with a S6 dispersion is a good visual fit. The expectation is that cathodic protection assets would have a shorter life in many cases than the underlying pipe. Based on judgment and actuarial analysis, this study recommends a 63 S6 curve for this account. A graph of the actual experience and the selected Iowa Survivor Curve is shown below.



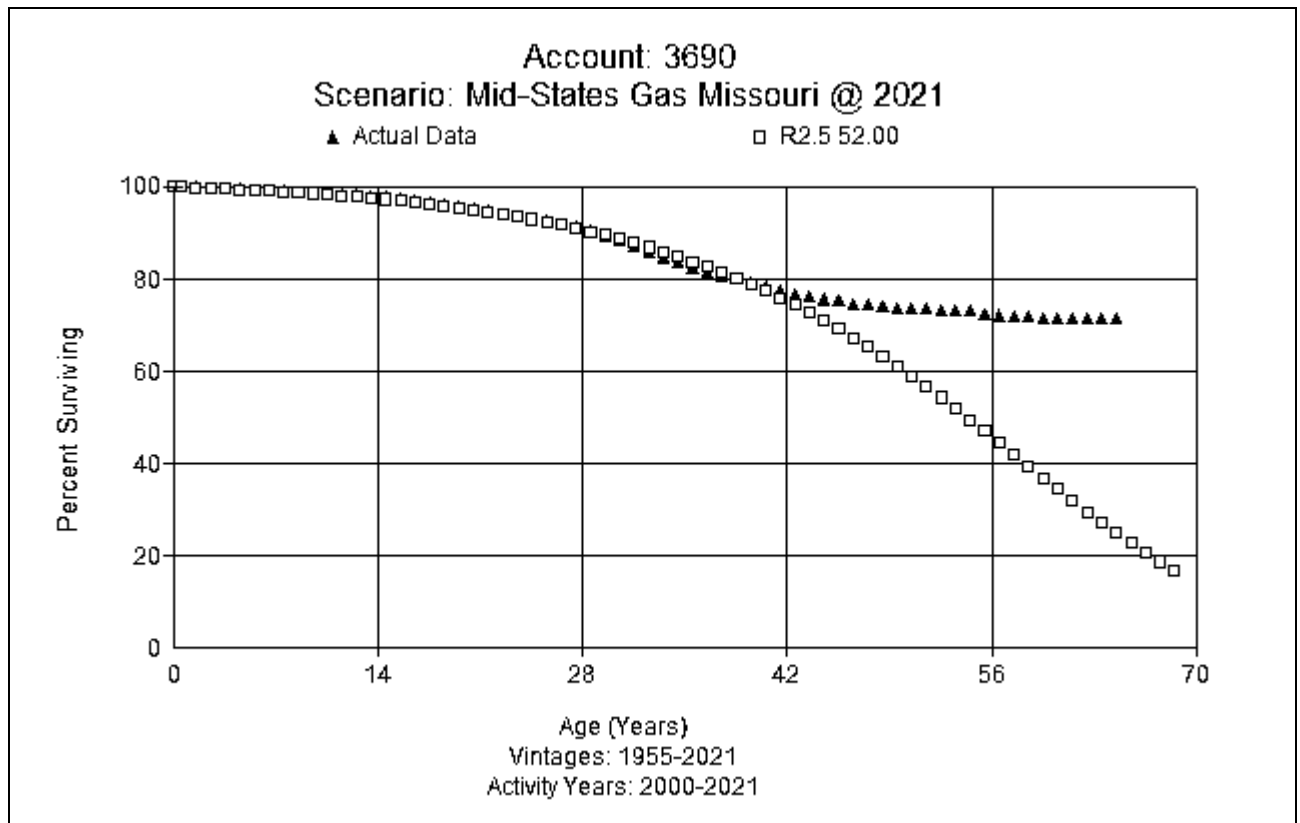
FERC Account 367.1 Transmission Mains Steel (70 R2)

This account consists of steel transmission mains of various diameters and related assets such as clamps, odorant equipment, and vaults. There is currently \$10.1 million in total plant for Mid-States Gas Missouri. The current life is 70 years. Liberty operations personnel report that they see little deterioration in mains, and that most of the transmission mains were originally installed in the 1950s and 1960s. The current average age of survivors in this account is 37.69 years. Company SMEs believe that 70 years operationally is a reasonable life for this account. Based on actuarial analysis and input from Company personnel, this study recommends retaining a 70 R2 curve for this account. A graph of the actual experience and the selected Iowa Survivor Curve is shown below.



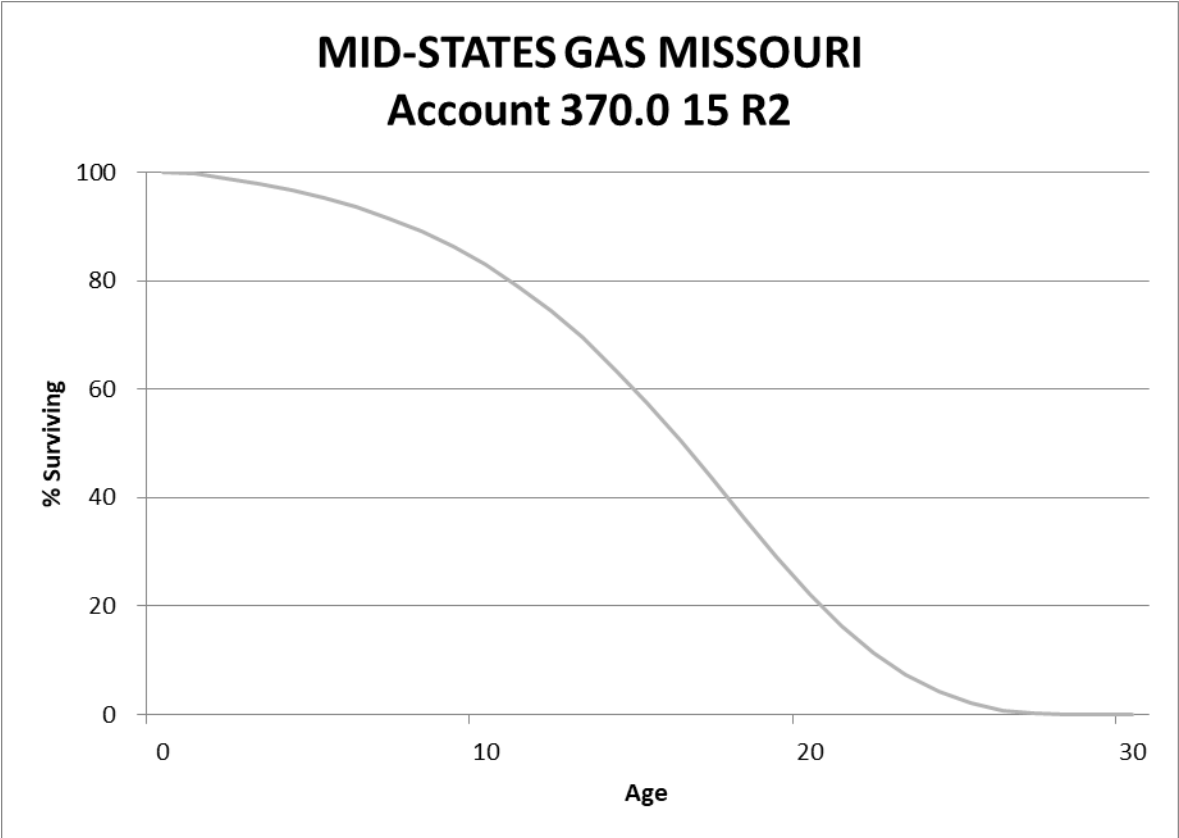
FERC Account 369.0 M&R Station Equipment (52 R2.5)

This account consists of transmission metering and regulating station equipment such as odorizers, chart recorders, and regulators. There is currently \$677 thousand in total plant for Mid-States Gas Missouri. The current life is 49 years. Liberty operations personnel report that transmission equipment generally operates at higher pressure than distribution assets. Some equipment such as control valves and regulators would generally be the same as distribution, in-line heaters are generally found only on transmission. SCADA equipment is always installed on transmission assets, but not necessarily on distribution. Company SMEs support a slight increase in the life of this account. Based on judgment, actuarial analysis, and input from Company SMEs, this study recommends a 52 R2.5 curve for this account. A graph of the actual experience and the selected Iowa Survivor Curve is shown below.



FERC Account 370.0 Communication Equipment (15 R2)

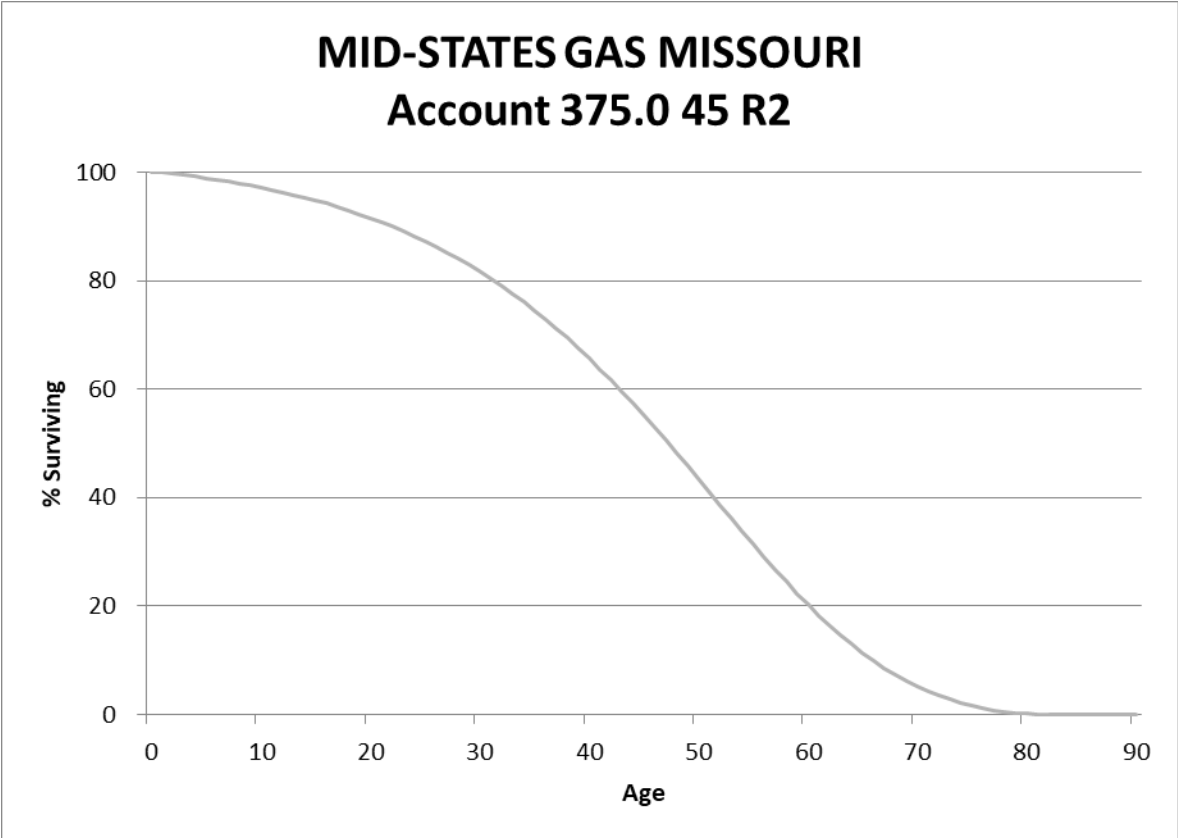
This account consists of microwave and radio communication equipment and related assets. There is currently \$16 thousand in total plant for Mid States Gas Missouri. The current life is 23 years. Operations personnel understand that communication equipment is impacted by technology change which is occurring at a faster rate. Company SMEs recommend moving to a 15 year operational life for this account. Based on judgment and input from Company experts, this study recommends a 15 R2 curve for this account. A generic curve shape is shown below.



Gas Distribution Accounts, FERC Accounts 375.0- 387.0

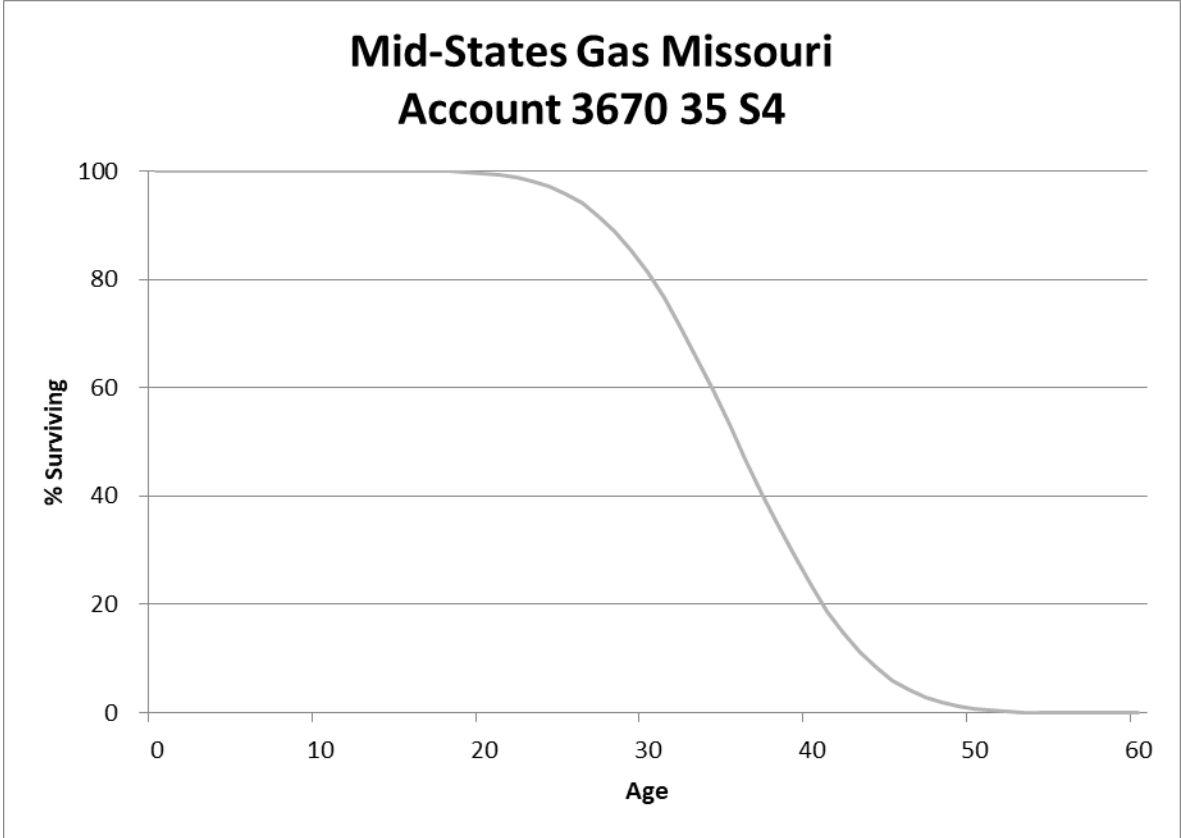
FERC Account 375.0 Structures and Improvements (45 R2)

This account consists of structures and improvements, fences and buildings related to distribution operations. There is currently \$217 thousand in total plant for Mid-States Gas Missouri. The current life of this account is 45 years. There were no retirements in this account from 2000-2021. Based on judgment, this study recommends a 45 R2 curve for this account. A generic curve shape is shown below.



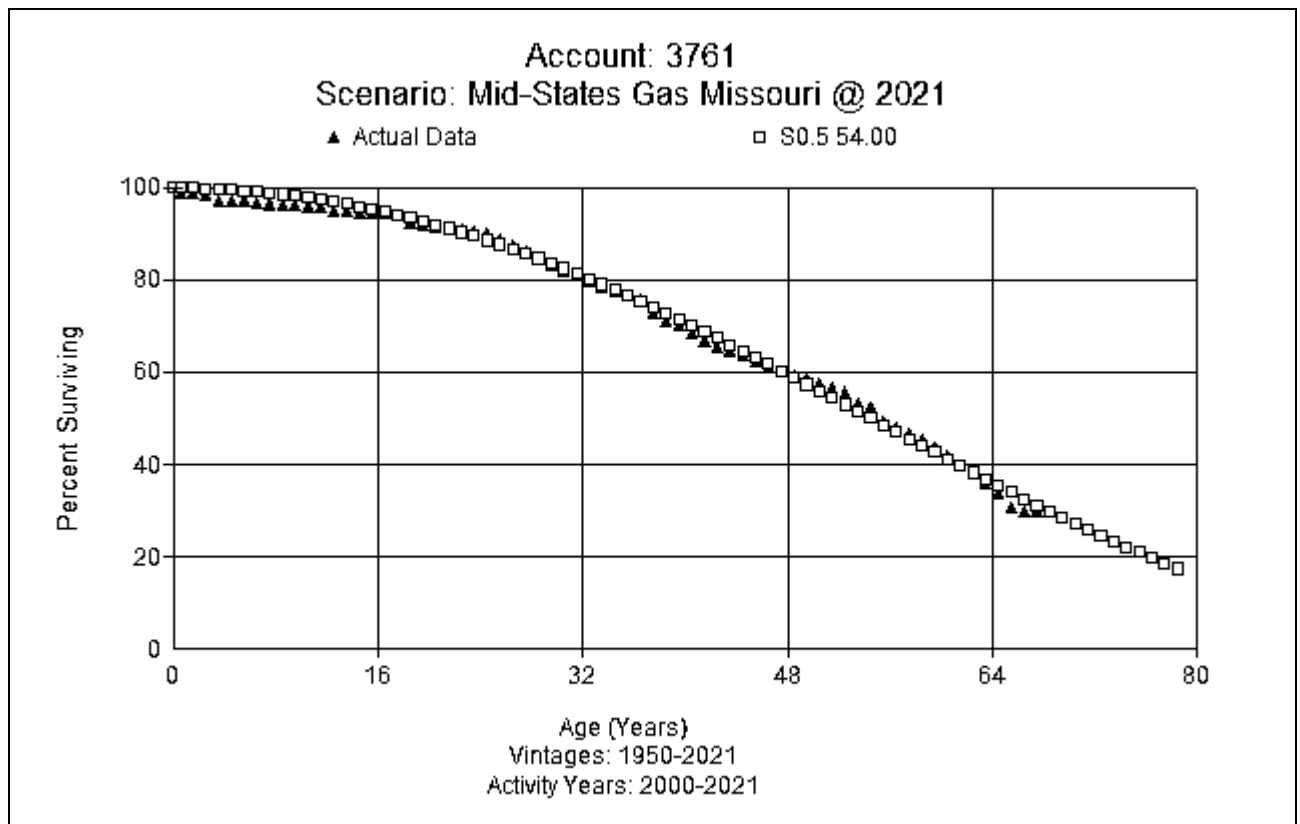
FERC Account 376.0 Distribution Mains Cathodic Protection (35 S4)

This account consists of cathodic protection equipment, such as anodes, valves, clamps, rectifiers, and groundbeds associated with distribution mains. There is currently \$2.7 million in total plant for Mid-States Gas Missouri. The current life of this account is 68 years. In the last study the life was determined from a combination of Accounts 3760 and 3761. Company personnel report that cathodic protection equipment in this account is a combination of Rectifiers and anodes. They life of rectifiers would be in the 35 year range but will increase in life as more is applied to protected steel. Company personnel do not expect cathodic protection to last as long as the mains in Accounts 376.1. There is an anode blanket which creates a process where the addition of an anode generates a retirement which be priced by FIFO. Based on operations input and characteristics of the assets, this study recommends a 35 S4 curve for this account. A generic curve shape is shown below.



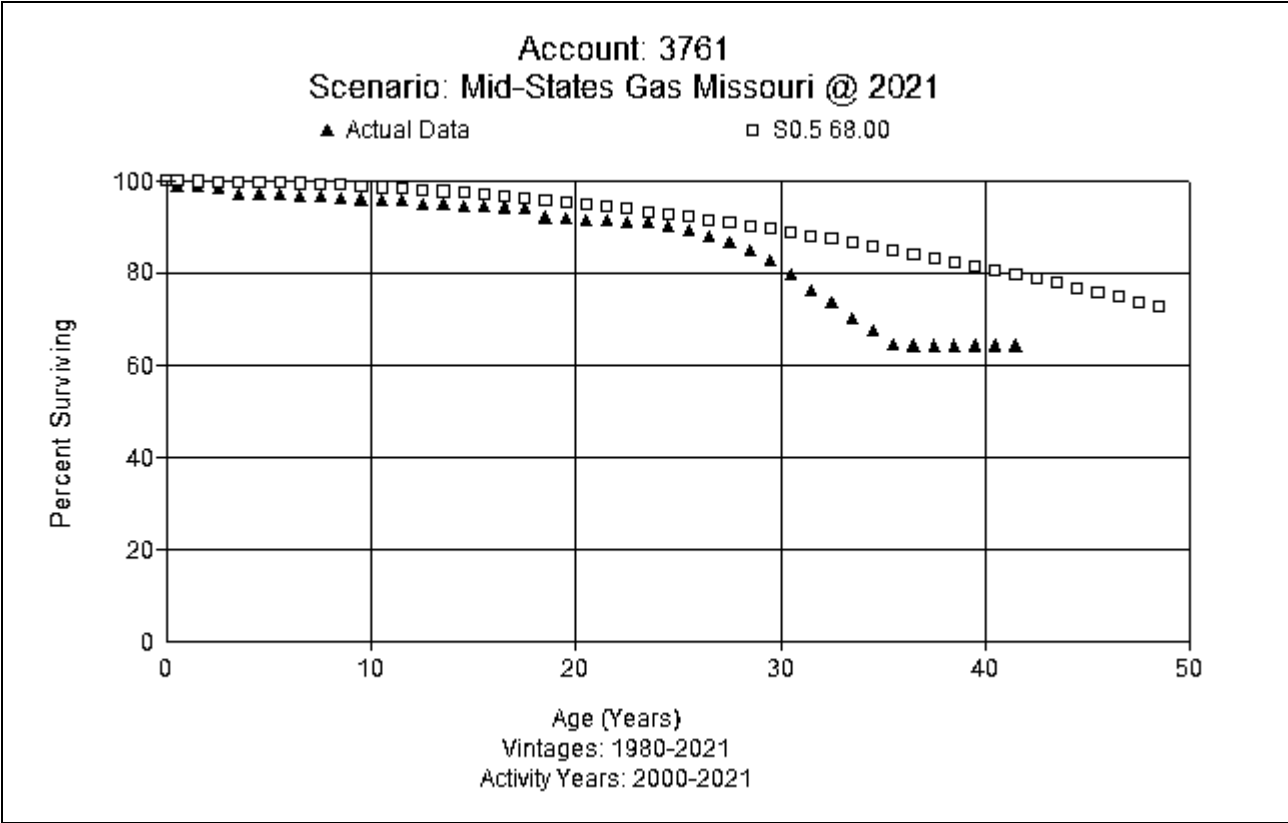
FERC Account 376.1 Distribution Mains Steel (68 S0.5)

This account consists of distribution mains and associated equipment. There is currently \$20.0 million in total plant for Mid-States Gas Missouri. The material types in this account are cast iron, bare steel, bare unprotected steel, and protected steel. The current life of this account is 68 years. Operations personnel expect the life if this account to be shorter than transmission mains in 3671, because there is more bare steel, and the material is not as robust. For protected steel, operations expect a 65 to 70 year life. The Company has replaced three systems in Missouri, that is showing a much shorter life than currently approved or suggested by Company SMEs. The overall band is shown below.



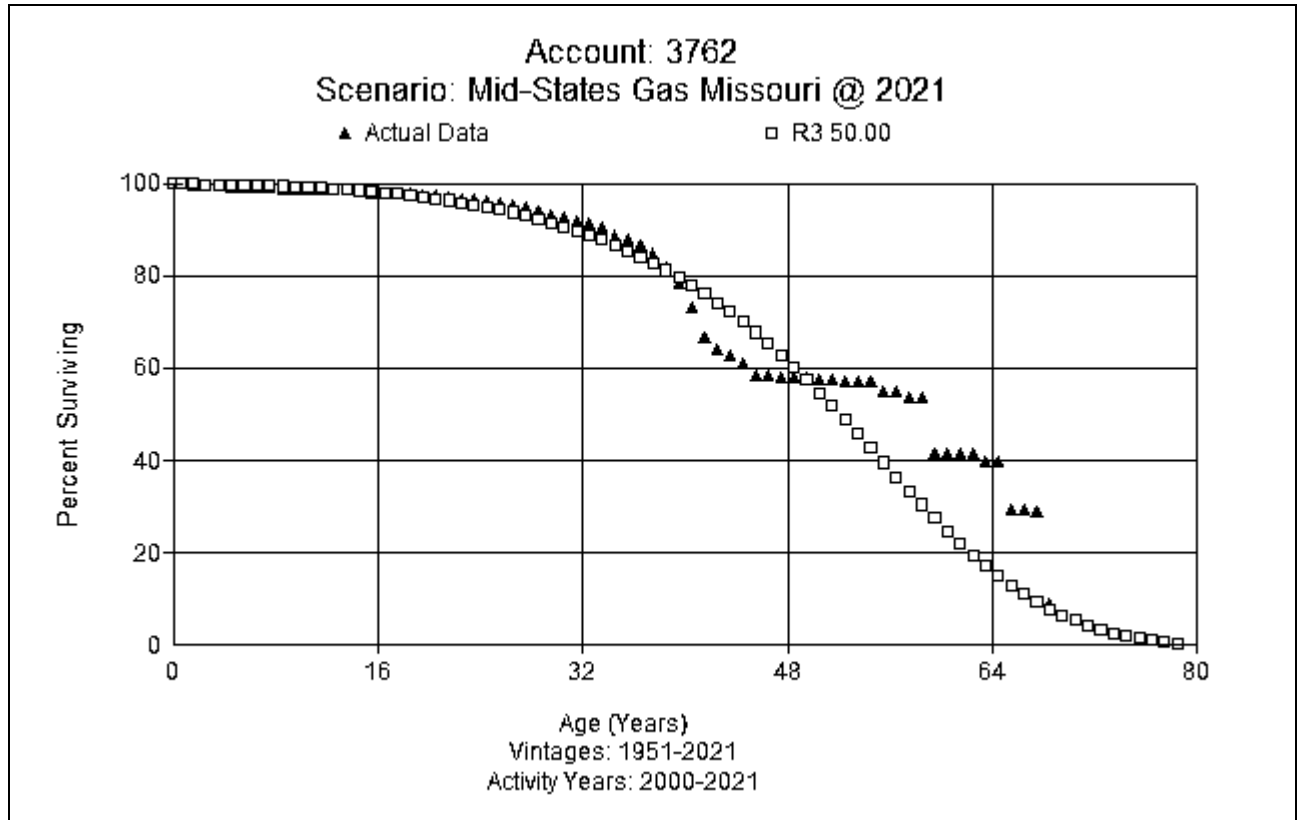
The overall band showing a life in the mid 50 year range is not in line with industry norms or Company expectations. The Company plans to complete many replacements in the next five years. Based on judgment, history, and input from Company personnel, this study recommends retention of the existing 68 year life coupled with a S0.5 curve for this account. A graph of the actual more recent

experience and the selected Iowa Survivor Curve is shown below.



FERC Account 376.2 Distribution Mains Plastic (64 S2)

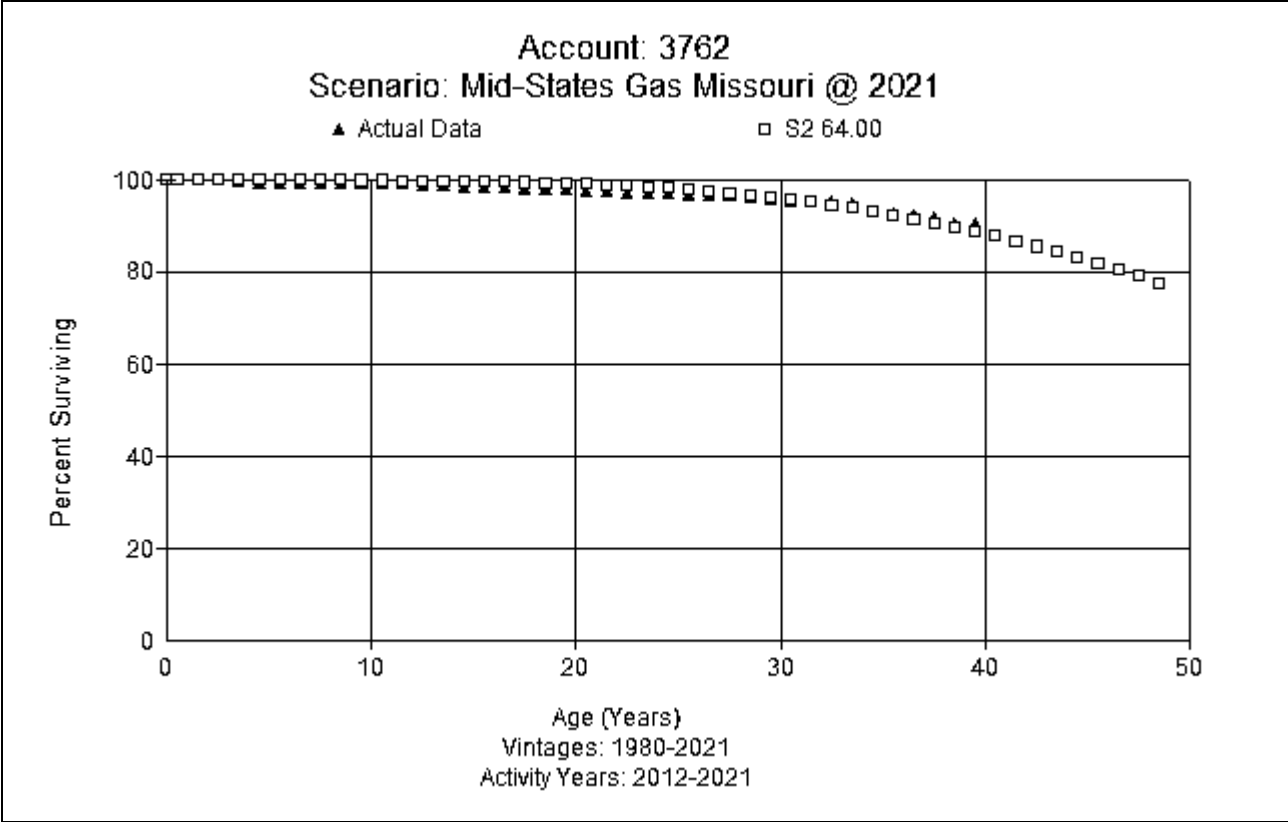
This account consists of plastic distribution mains and associated equipment. There is currently \$44.2 million in total plant for Mid-States Gas Missouri. The current life of this account is 64 years. A graph of the overall band is shown below.



The Company began installed plastic pipe in the 1970s. Some first-generation plastic pipe and pre-1983 pipe needs to be removed. Aldel-A, PVC, early generation PE all had long life expectations but did not live up to the expectations. It is thought that the later generations of PE will last longer, but there are no conclusive evidence that it will. They would expect the life of plastic to last as long as the currently approved life.

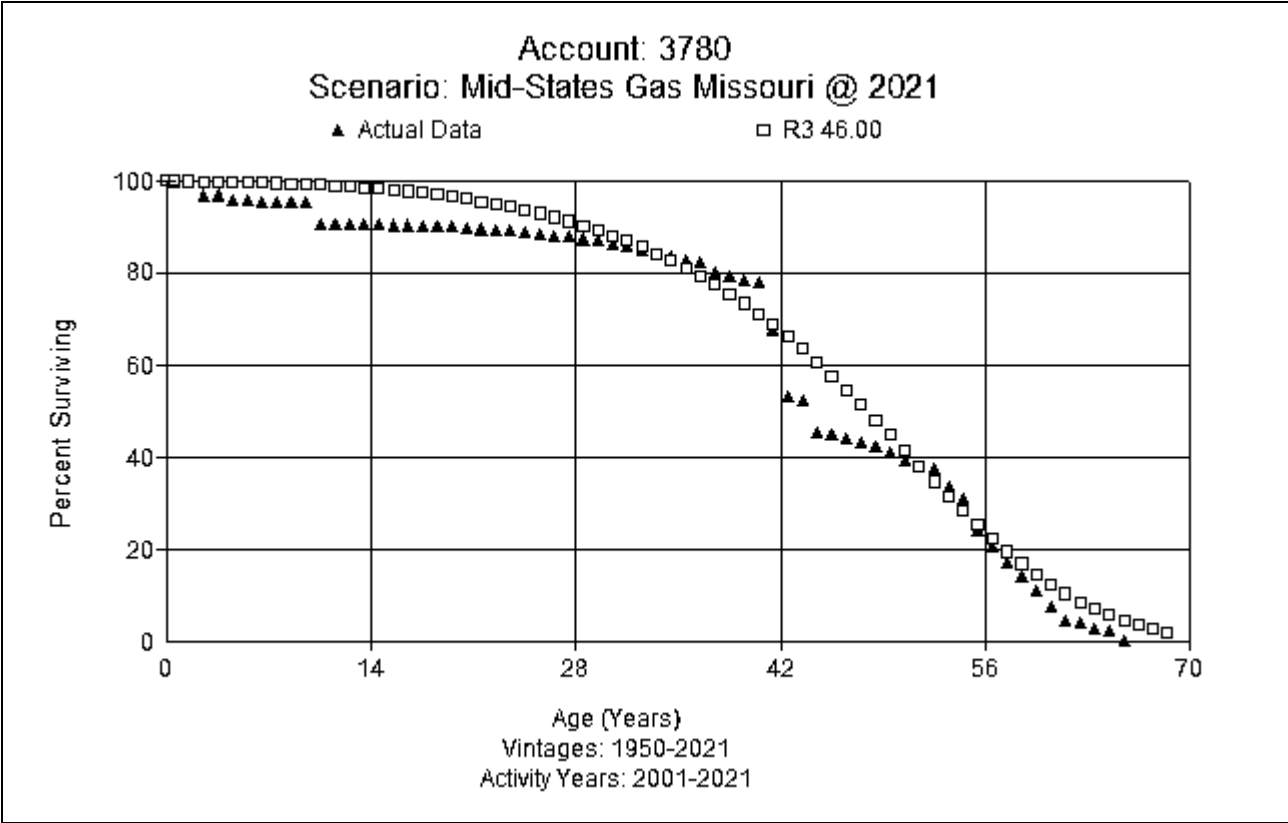
The results from the overall band do not mirror expectations from the industry or Company personnel. To get a picture of more recent experience, actuarial analysis was performed using a more recent placement band and an experience band which incorporated Liberty’s ownership of those facilities from 2012-2021. Based on more

recent actuarial analysis and input from Company personnel, this study recommends a 64 S2 curve for this account. A graph of the actual experience and the selected Iowa Survivor Curve is shown below



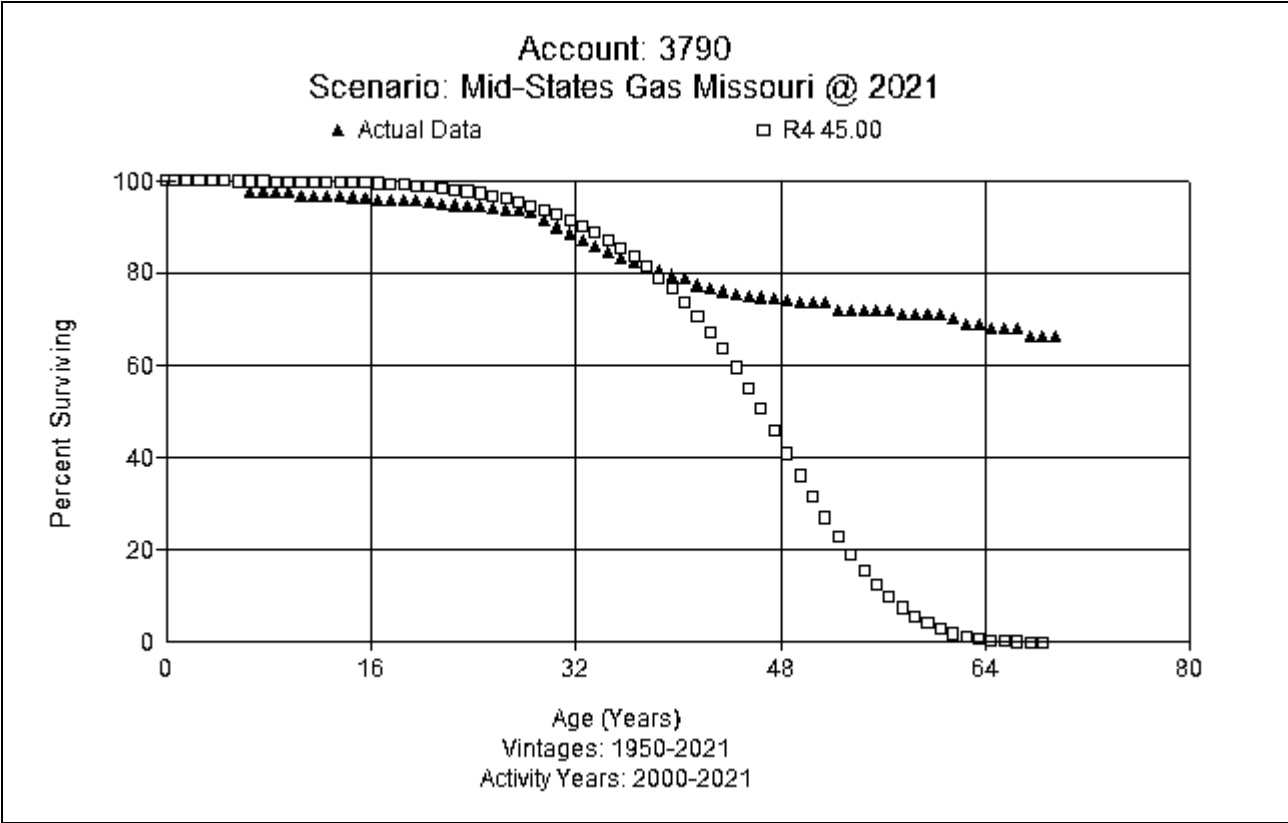
FERC Account 378.0 M&R Station Equipment – General (46 R3)

This account consists of M&R station piping, regulators, controls, odorizers and other equipment used in distribution measuring and regulating stations. There is currently \$5.8 million in total plant for Mid-States Gas Missouri. The current life of this account is 47 years. Company SMEs expect the life of this account would be in line with the current life. Based on judgment, input from Company SMEs, and actuarial analysis, this study recommends a 46 R3 curve for this account. A graph of the actual experience and the selected Iowa Survivor Curve is shown below.



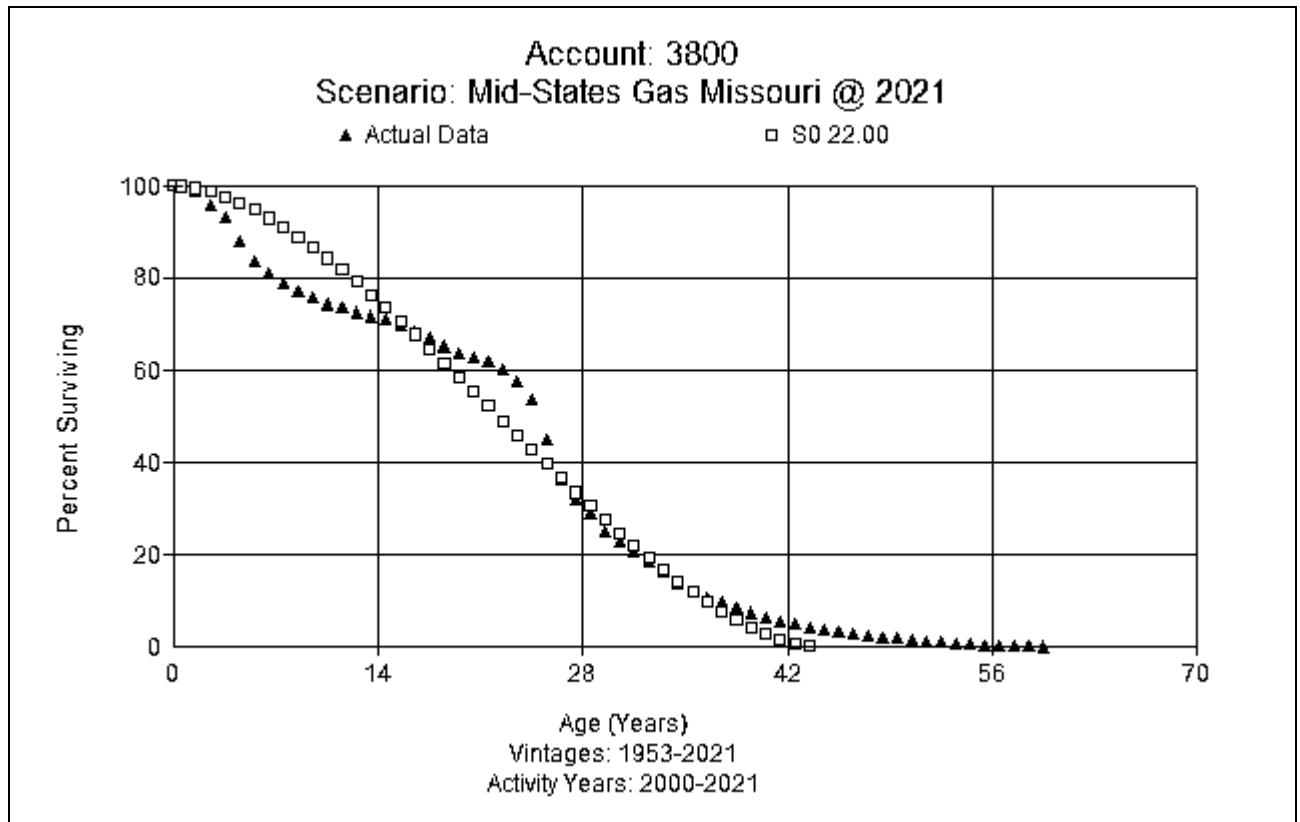
FERC Account 379.0 M&R Station Equipment – City Gate (45 R4)

This account consists of M&R station piping, regulators, controls, odorizers, and other equipment used in city gate distribution measuring and regulating stations. There is currently \$2.9 million in total plant for Mid-States Gas Missouri. The current life of this account is 45 years. Operationally, Company SMEs expect the life to be in line with the currently approved life. Based on judgment, actuarial analysis, and input from Company SMEs, this study recommends retaining a 45 R4 curve for this account. A graph of the actual experience and the selected Iowa Survivor Curve is shown below.



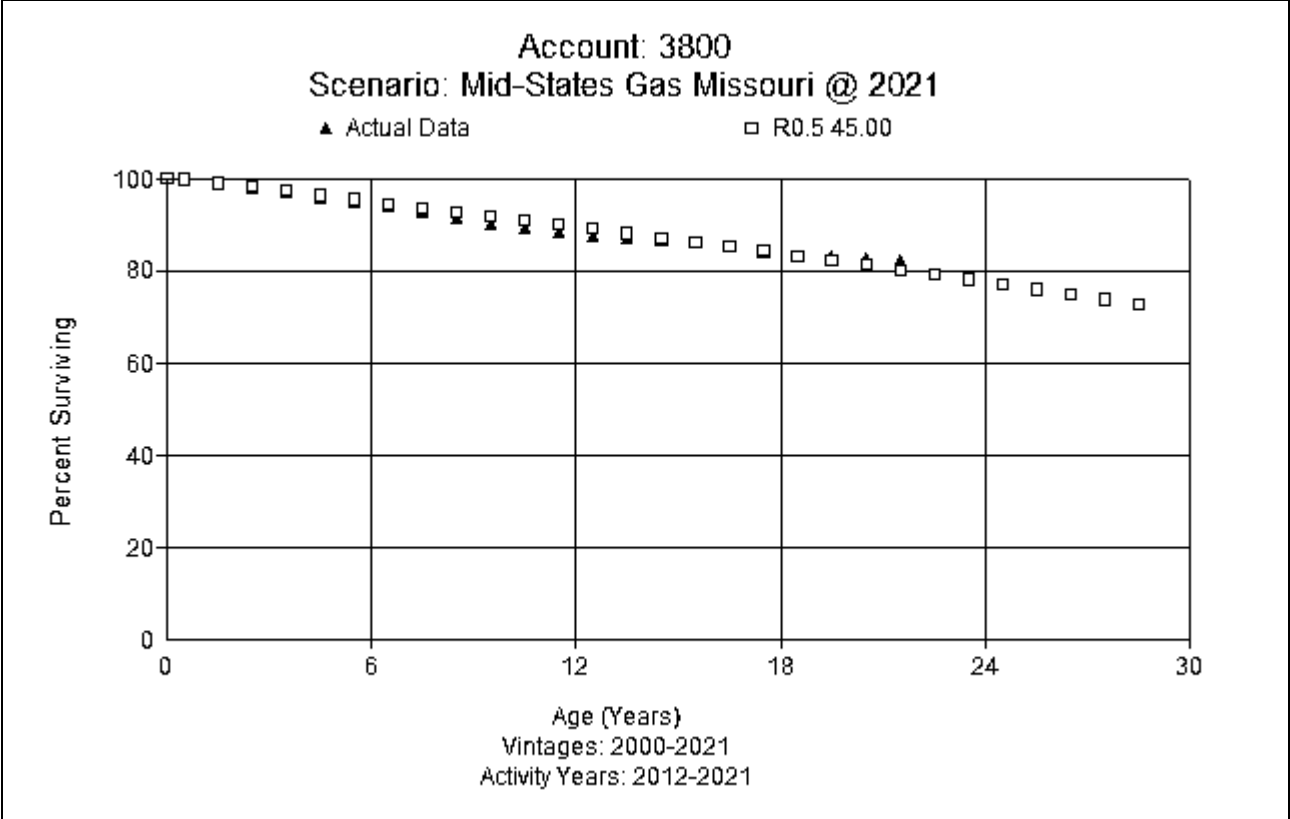
FERC Account 380.0 Services (45 R0.5)

This account consists of assets related to distribution services. There is currently \$41.3 million in total plant for Mid-States Gas Missouri. This account includes various material types: copper, plastic and steel. The current life of this account is 33 years. After performing actuarial analysis in the widest band, the life of this account is even shorter than the current life, and much shorter the Company SMEs feel operationally reasonable. A graph of the overall band is shown below.



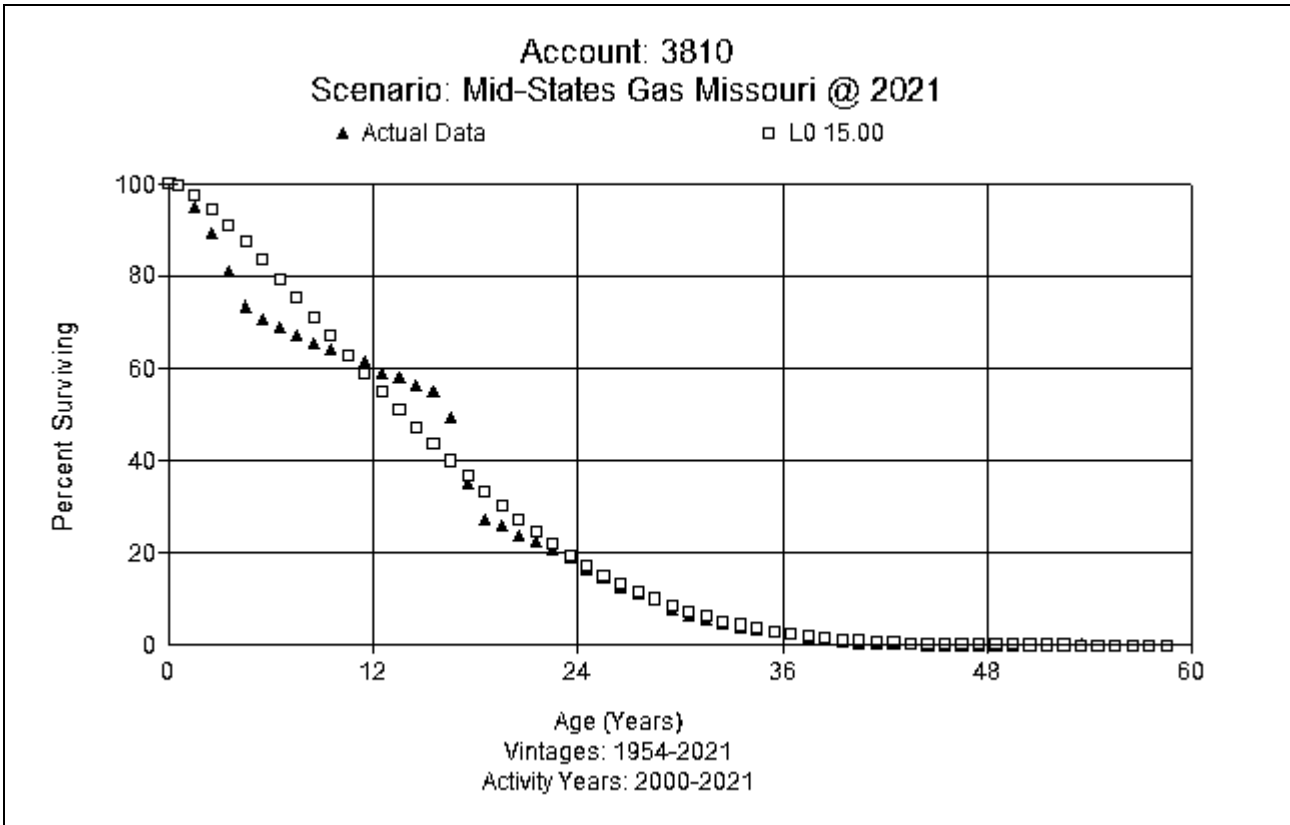
Company personnel report that services are damaged by third parties and relocations. For the past 35 years, plastic has been the predominant material in this account. Company personnel expect the life of services to be shorter than the life of mains. There is a slow decline in services across the system as rural locations become vacant. The Company will remove a service after it has been unused for 1-2 years. They would likely replace the service if cut by customer (50/50 likely). Operationally, they would expect a much closer life to mains (plastic being 64 years) than the short 22-33 from the analytics. To get a picture of more recent experience, actuarial

analysis was performed using a more recent placement band and an experience band which incorporated Liberty's ownership of those facilities from 2012-2021. Based on more recent actuarial analysis and input from Company personnel, this study recommends a 45 R0.5 curve for this account. A graph of the actual experience and the selected Iowa Survivor Curve is shown below



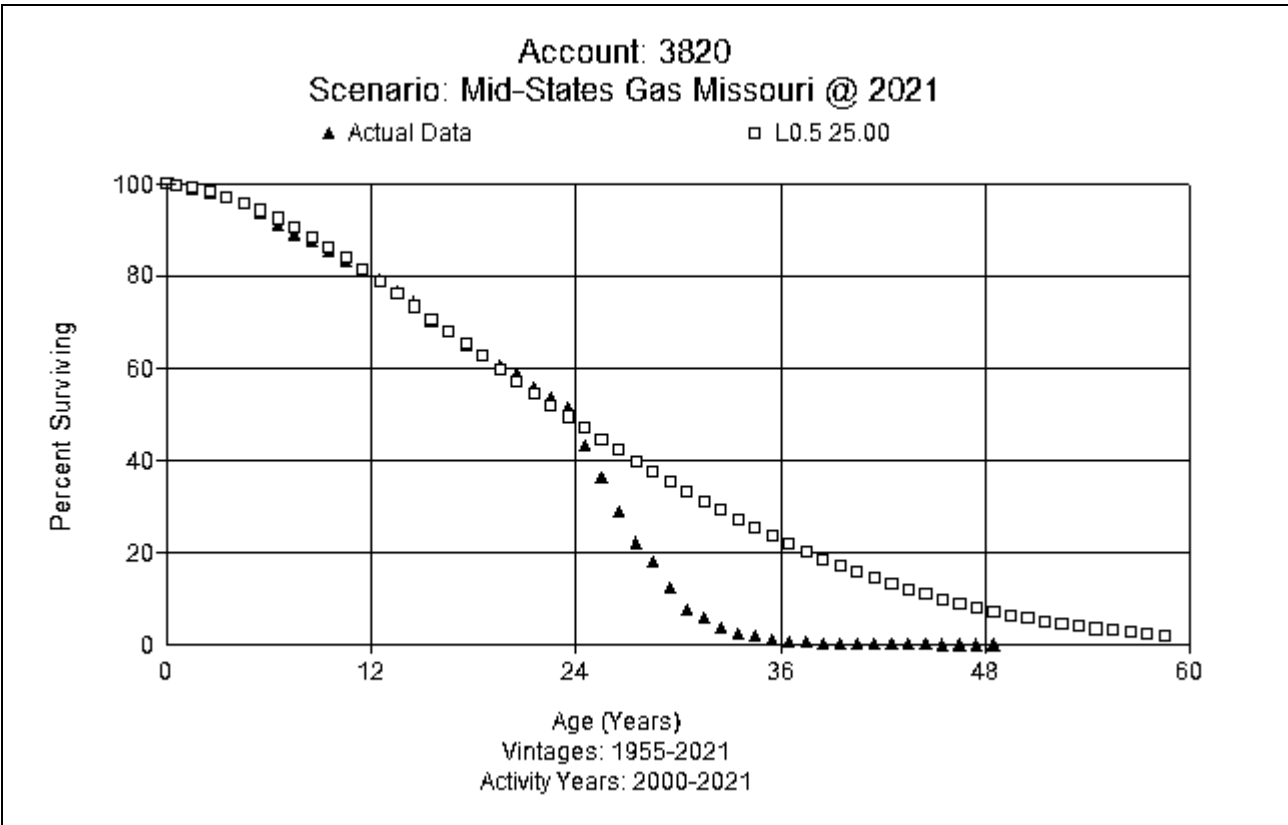
FERC Account 381.0 Meters (15 L0)

This account consists of meters and meter reading equipment. There is currently \$13.4 million in total plant for Mid-States Gas. The current life of this account is 28 years. Meters and ERTS are both booked in this account. A meter will be retired when its ERT fails. The ERTS are in the same account and would have a shorter life (around 15 for ERTS due to batter life). Company personnel report that that fact would drive the life expectation of the account shorter, similar to the 15 years seen in the analytics. Based on Company personnel’s input, history, and judgment, this study recommends a 15 L0 curve for this account. A graph of the actual experience and the selected Iowa Survivor Curve is shown below.



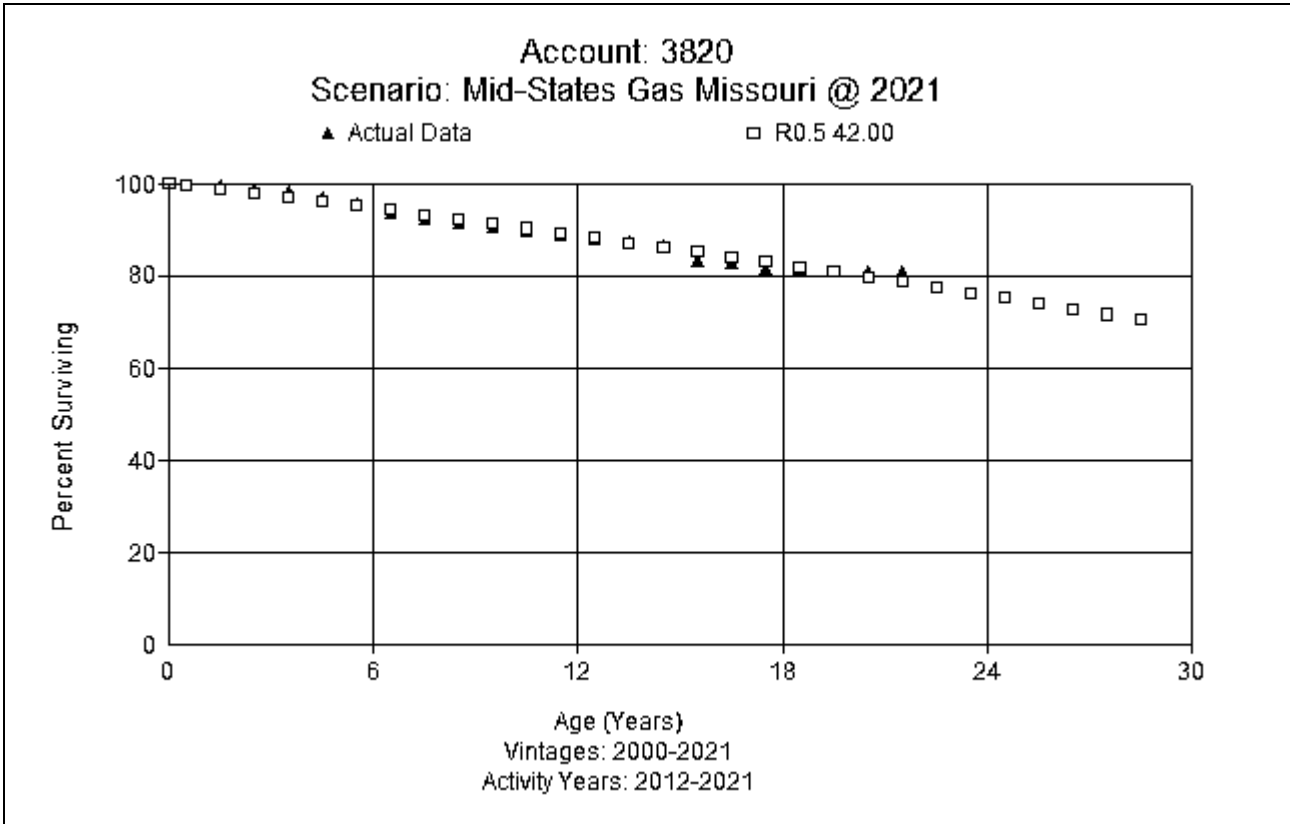
FERC Account 382.0 Meter Installations (42 R0.5)

This account consists of meter installation equipment. There is currently \$20.4 million in total plant for Mid-States Gas. The current life of this account is 25 years. Company operations personnel that they use primarily prefab meters since the mid-1990s. They anticipate meter bars operationally would last nearly as long as the life of services, however, there might be more corrosion from weed-eaters, sprinklers, and other intrusions. After performing actuarial analysis in the widest band, the life of this account is similar to the current life, but much shorter the Company SMEs feel operationally reasonable. A graph of the overall band is shown below.



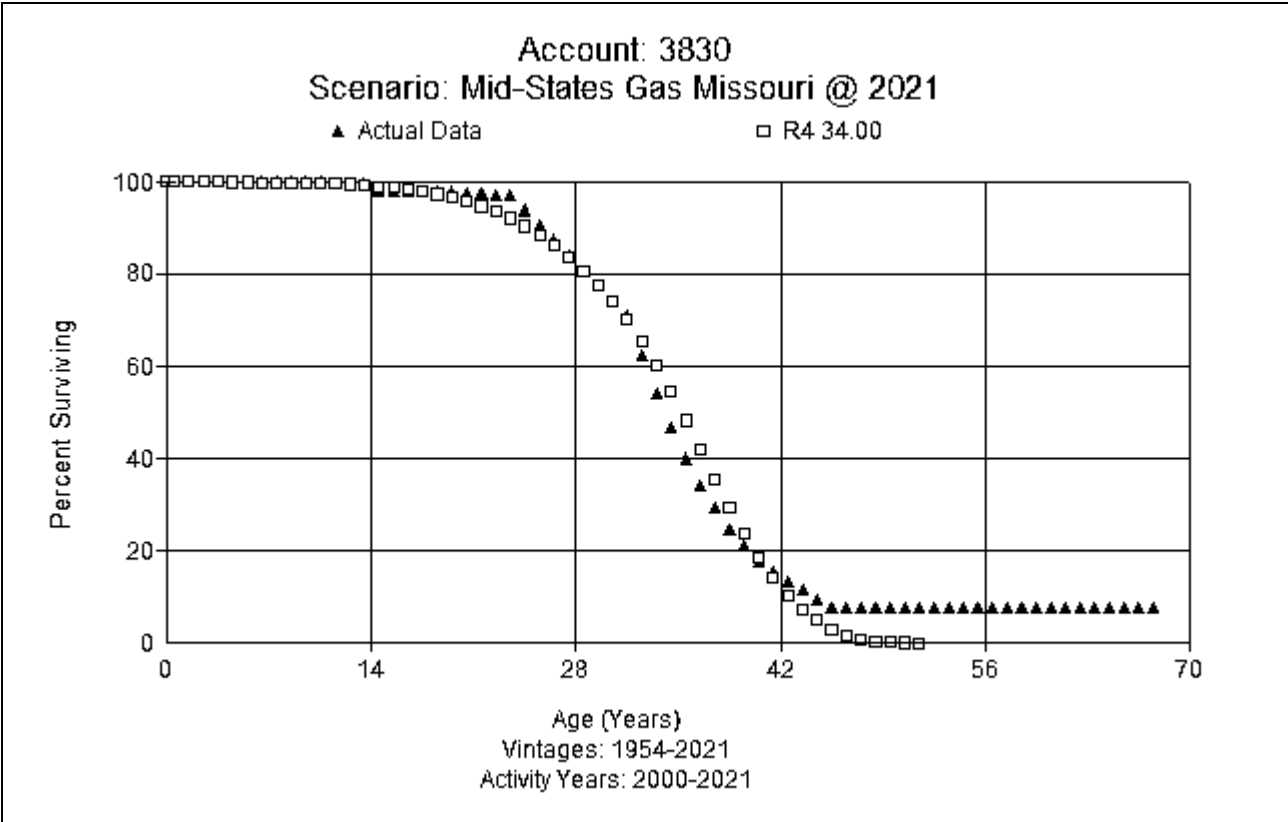
Company personnel report that there is a loop blanket. They use a SSD (Single Source Document) to indicate a loop retirement, then they would retire off the blanket. Operationally, the loop should have a life closer to 3800. As was done for Account 3800, actuarial analysis was performed using a more recent placement band and an experience band which incorporated Liberty’s ownership of those facilities from 2012-

2021. Based on more recent actuarial analysis and input from Company personnel, this study recommends a 42 R0.5 curve for this account. A graph of the actual experience and the selected Iowa Survivor Curve is shown below

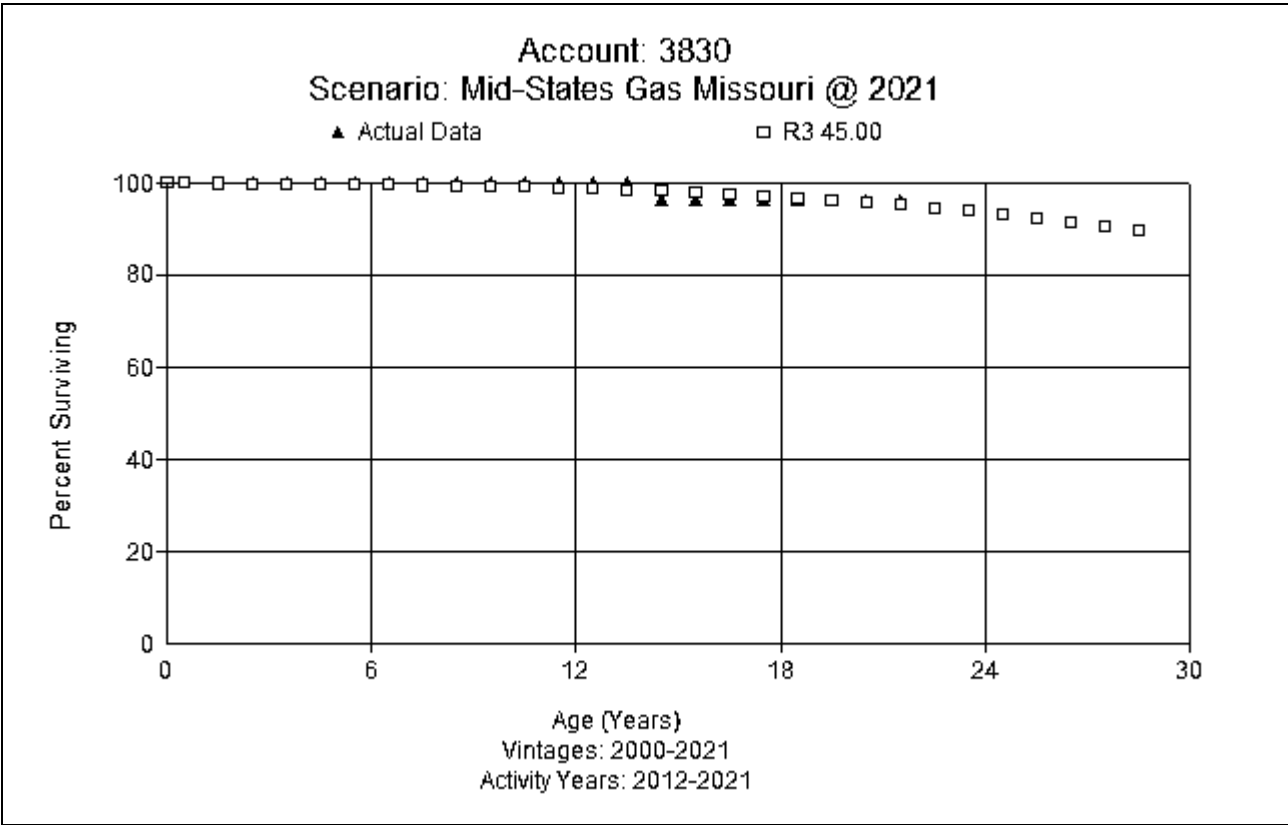


FERC Account 383.0 House Regulators (45 R3)

This account consists of house regulators and equipment. There is currently \$3.2 million in total plant for Mid-States Gas. The current life of this account is 44 years. Looking at actuarial results, the observed life table for the widest bands produces a life much lower than the current life. Company operations personnel do not support a life which is much shorter than the current life. A graph of the overall band is shown below.

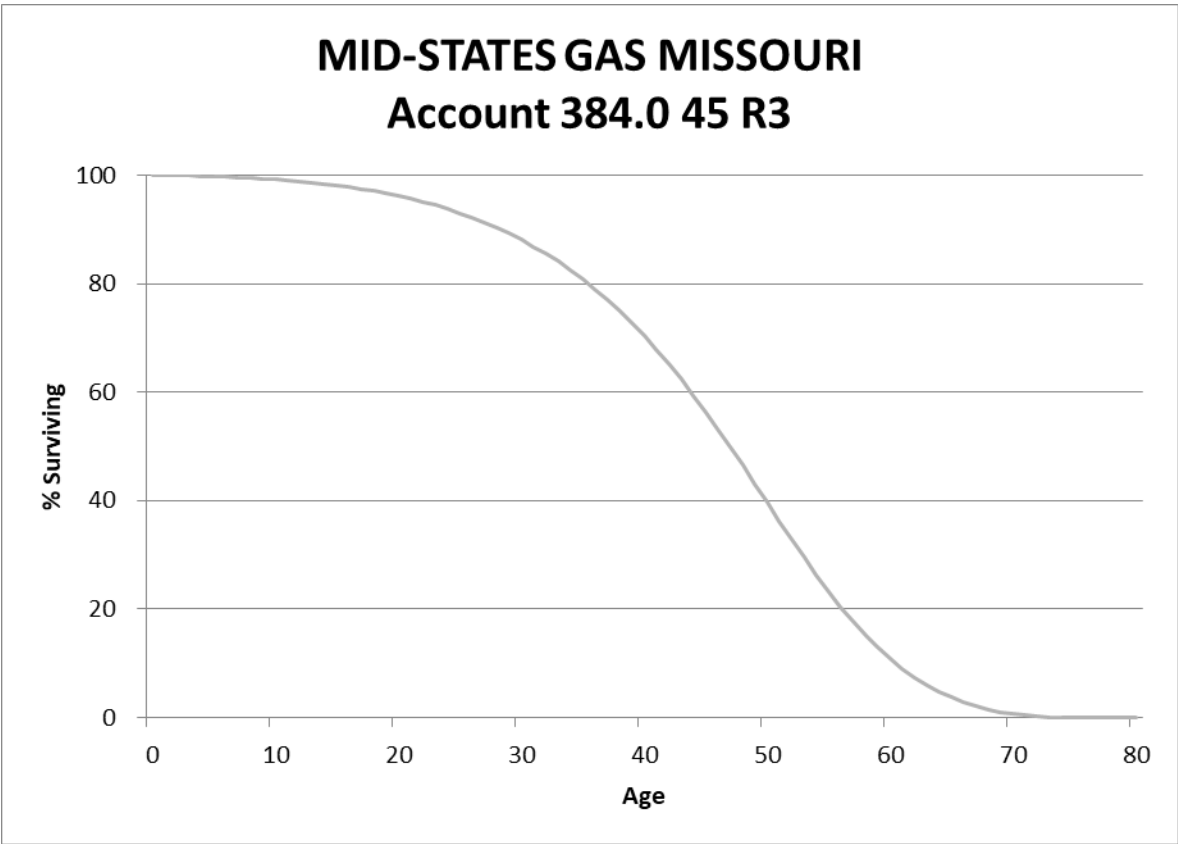


Similar to Account 380 and 382, actuarial analysis was performed using a more recent placement band and an experience band which incorporated Liberty’s ownership of those facilities from 2012-2021. Operations personnel report that if a meter loop in Account 382 is retired, the regulator would also be retired. Based on more recent actuarial analysis and input from Company personnel, this study recommends a 45 R3 curve for this account, the same as account 382.0. A graph of the actual experience and the selected Iowa Survivor Curve is shown below.



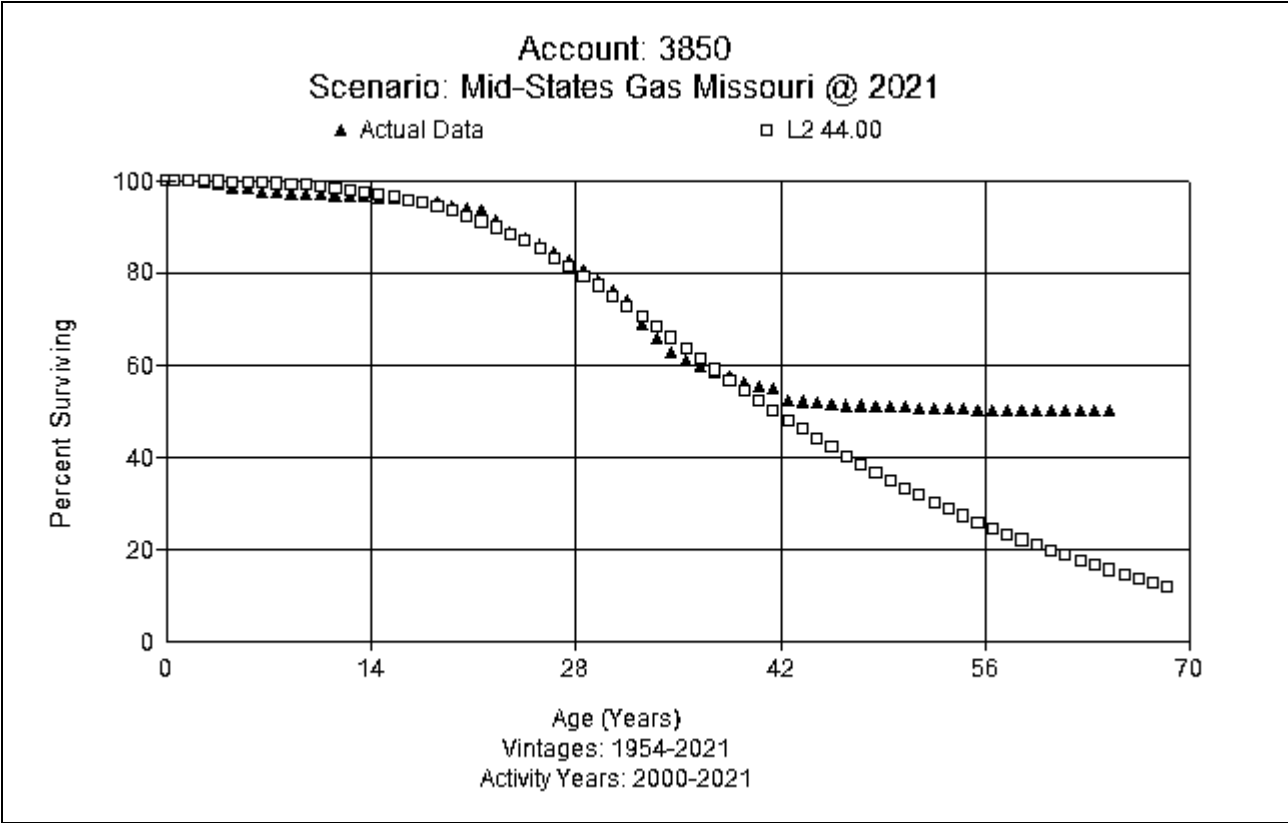
FERC Account 384.0 House Regulatory Installations (45 R3)

This account consists of house regulatory installation equipment. There is currently \$732 thousand in total plant for Mid States Gas Missouri. The current life of this account is 44 years. There is limited history to analyze. Company operations personnel believe the life of this account should be the same as Account 383, House Regulators. Based on judgment, this study recommends a 45 R3 curve for this account, the same as account 383.0. A generic curve shape is shown below.



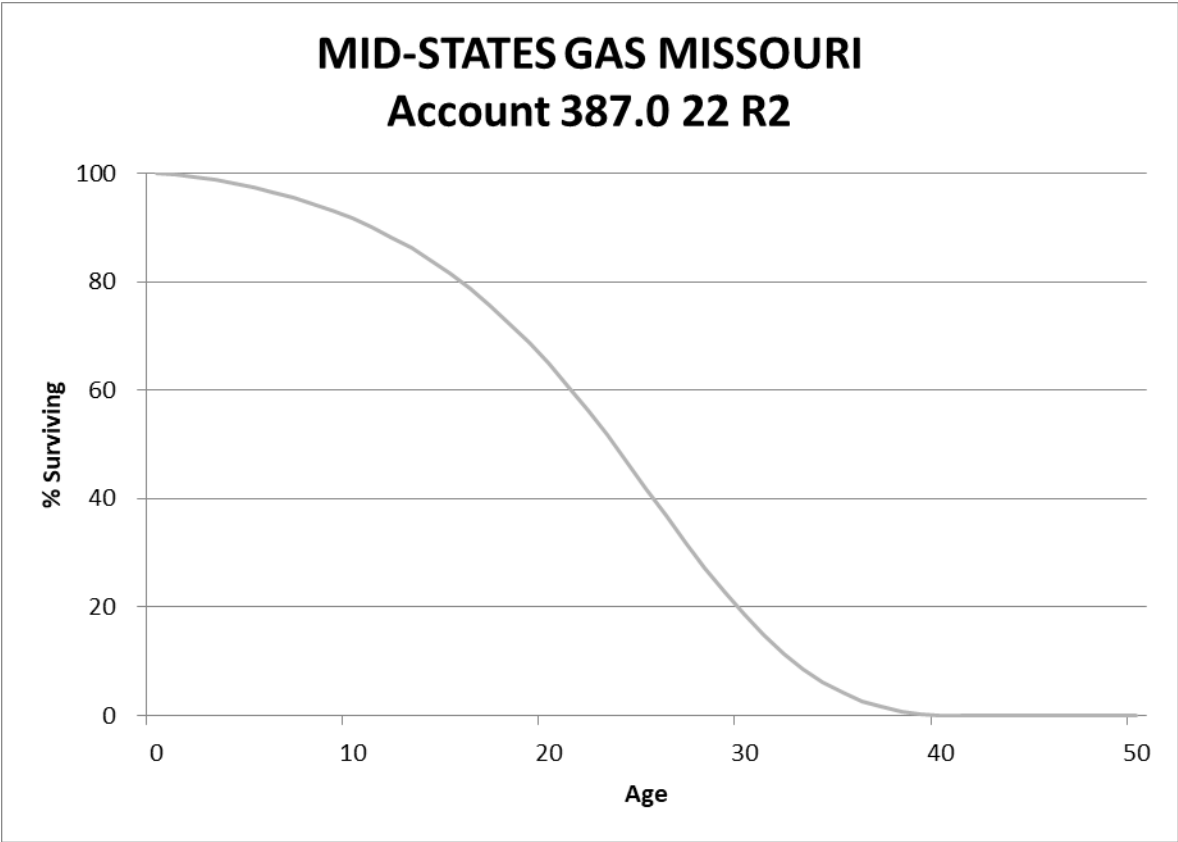
FERC Account 385.0 Industrial M&R Station Equipment (44 L2)

This account consists of industrial measuring and regulating station equipment. There is currently \$948 thousand in total plant for Mid-States Gas Missouri. The current life of this account is 45 years. The Company is upgrading a number of meter sets. Company personnel believe there should not be much difference between the life of this account and 378, Measuring and Regulating Equipment, and 379, City Gate Equipment. Based on the analysis, results with other accounts and judgment, this study recommends a 44 L2 curve for this account. A graph of the actual experience and the selected Iowa Survivor Curve is shown below.



FERC Account 387.0 Other Equipment (22 R2)

This account consists of other equipment related to distribution operations. There is currently \$14 thousand in total plant for Mid-States Gas Missouri. The assets in this account include tools, calibration equipment, software, and locators. The current life of this account is 22 years. There is no retirement history for this account. Based on judgment, this study recommends retaining a 22 R2 curve for this account. A graph of the actual experience and the selected Iowa Survivor Curve is shown below. A generic curve shape is shown below.

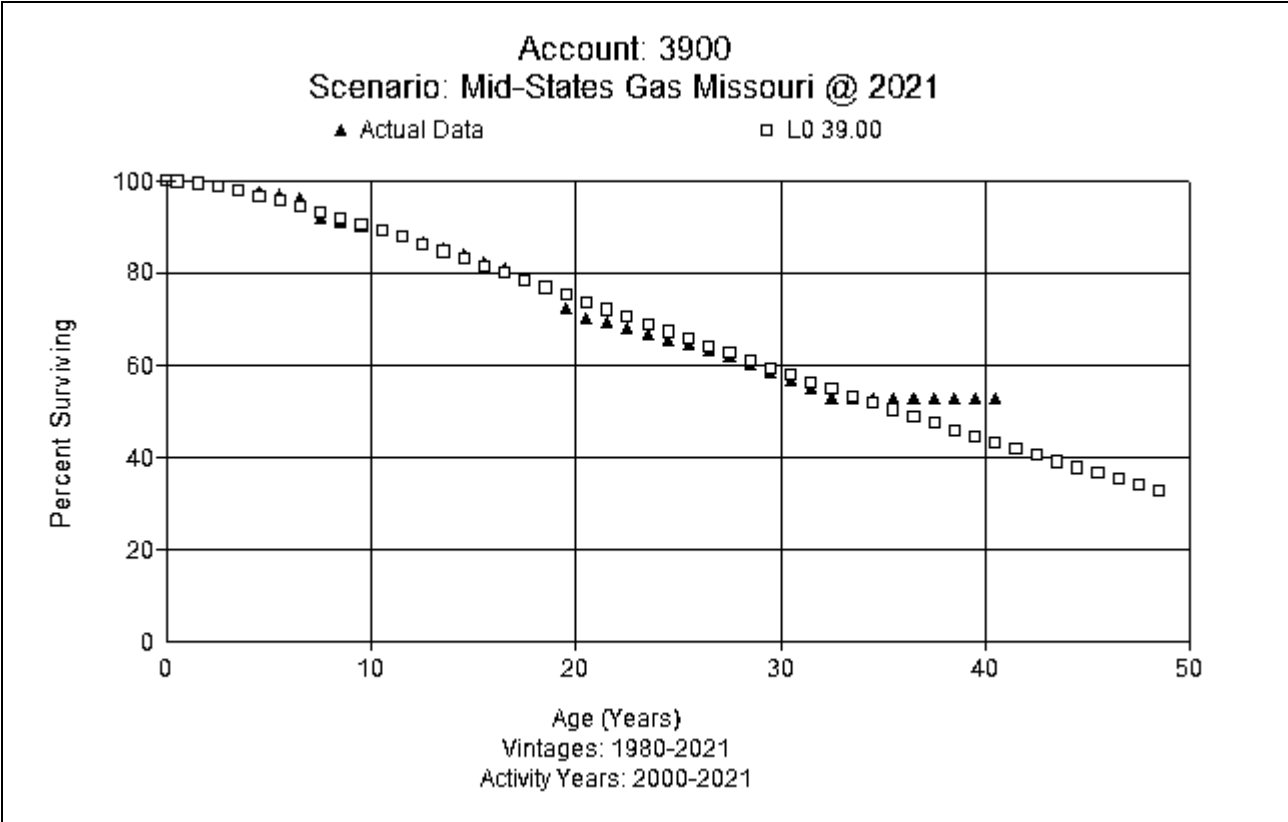


Gas General Accounts, FERC Accounts 390.0-399.5

GENERAL PLANT DEPRECIATED ACCOUNTS

FERC Account 390 General Structures & Improvements (39 L0)

This account consists of general office structures, and other components such as roofs, cabinets, HVAC equipment, yard improvements, and security systems. There is currently \$2.1 million in total plant for Mid-States Gas Missouri. The current life of this account is 33 years. After reviewing actuarial analysis for this account, this study recommends a 39 L0 curve for this account. A graph of the actual experience and the selected Iowa Survivor Curve is shown below.



FERC Account 390.1 General Structure Frame (39 L0)

This account consists of frame structures in general plant. There is currently \$529 thousand in total plant for Mid-States Gas Missouri. The current life of this account is 33 years. Based on the recommendation for Account 390.0, this study recommends a 39 L0 curve for this account.

FERC Account 390.2 General Improvements (39 L0)

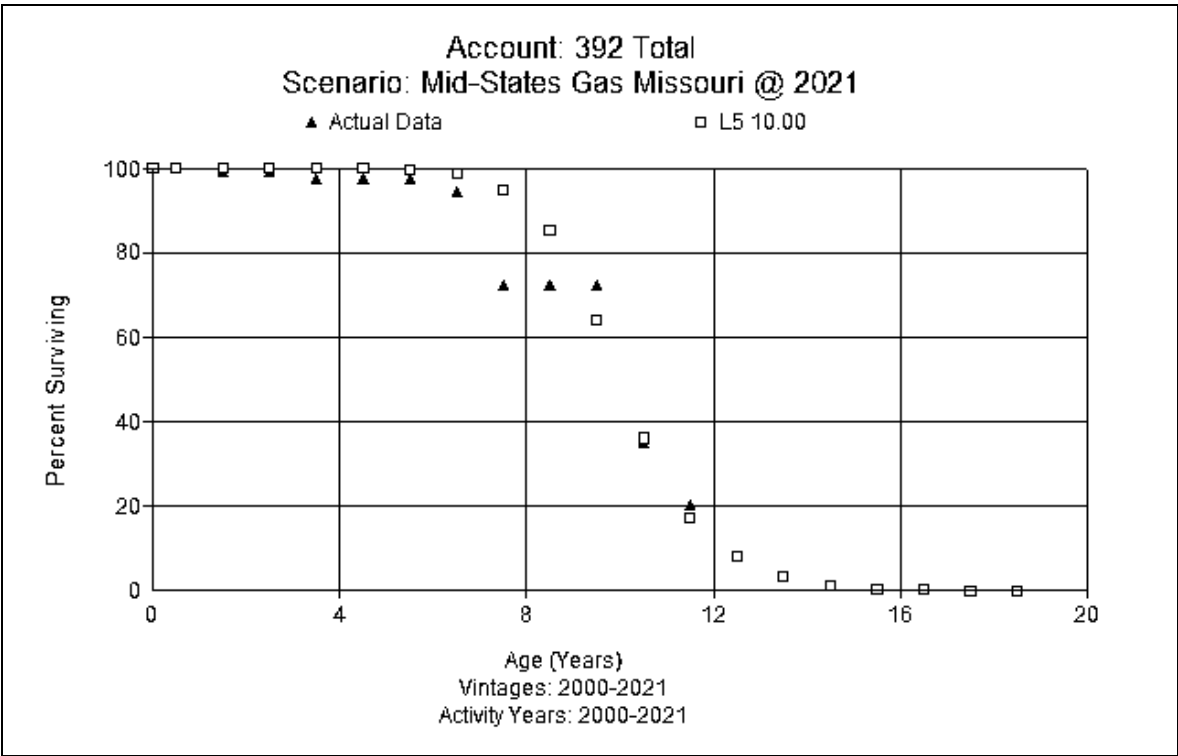
This account consists of leasehold improvements. There is currently no plant in Missouri. The current life of this account is 33 years. Based on the recommendation for Account 390.0, this study recommends a 39 L0 curve for this account.

FERC Account 390.3 General Improvements – Leased Premise (39 L0)

This account consists of improvements such as cooling equipment related to leased buildings. There is currently \$416 thousand in total plant for Mid States Gas Missouri. Based on the recommendation for Account 390.0, this study recommends a 39 L0 curve for this account.

FERC Account 392.0 Transportation Equipment (10 L5)

This account consists of gas transportation equipment. There is currently \$415 thousand in total plant for Mid-States Gas Missouri. All 392 accounts were combined for this study. Based on historical analysis and judgment, this study recommends a 10 L5 curve for this account. A graph of the actual experience and the selected Iowa Survivor Curve is shown below.

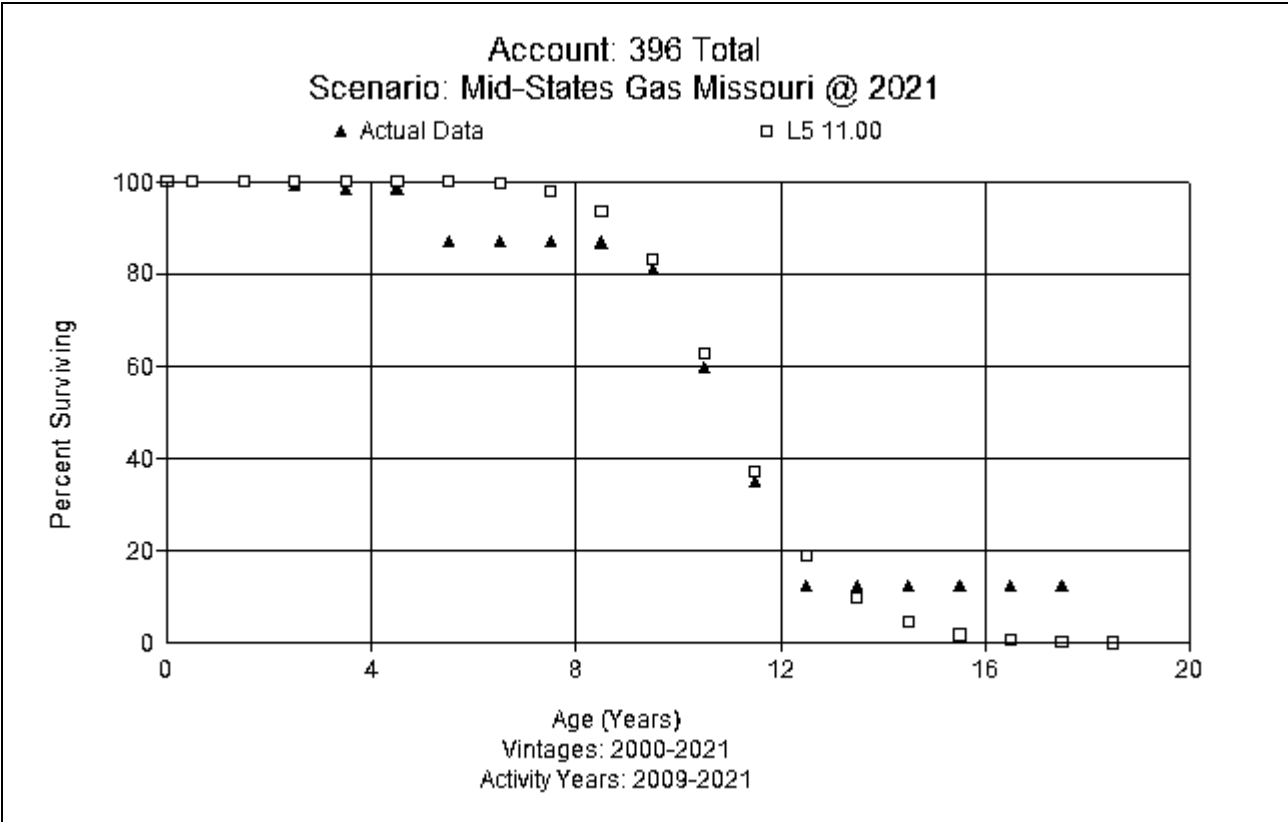


FERC Account 392.1 Transportation Equipment <12,000 LB (10 L5)

This account consists of transportation equipment weighing less than 12,000 pounds. There is currently \$4.4 million in total plant for Mid-States Gas Missouri. Based on actuarial analysis of the combined account, this study recommends a 10 L5 curve for this account based on results for the combined 392 assets. A graph of the actual experience and the selected Iowa Survivor Curve is shown with Account 392.0.

FERC Account 396.0 Power Operated Equipment (11 L5)

This account consists of power operated equipment. There is currently \$1.3 million in total plant for Mid-States Gas Missouri. All assets for the 396 accounts were combined for life analysis. Based on life analysis and judgment, this study recommends an 11 L5 curve for this account. A graph of the actual experience and the selected Iowa Survivor Curve is shown below.



FERC Account 396.1 Gen - Ditchers (11 L5)

This account consists of ditchers. There is currently no plant in Missouri. All assets for the 396 accounts were combined for life analysis. Based on life analysis and judgment of the combined account, this study recommends an 11 L5 curve for this account. A graph of the actual experience and the selected Iowa Survivor Curve is shown with Account 396.0.

FERC Account 396.2 Gen - Backhoes (11 L5)

This account consists of backhoes. There is currently \$626 thousand in plant for Mid-States Gas Missouri. This study recommends a 11 L5 curve for this account based on the combined 396 analysis. A graph of the actual experience and the selected Iowa Survivor Curve is shown with Account 396.0.

FERC Account 396.3 Gen - Welders (11 L5)

This account consists of welders. There is currently no plant in Missouri. This study recommends a 11 L5 curve for this account based on the combined 396 analysis. A graph of the actual experience and the selected Iowa Survivor Curve is shown with Account 396.0.

GENERAL PLANT AMORTIZED ACCOUNTS

Adoption of Vintage Group Amortization

This study recommends continuing the use of vintage group amortization for certain General plant accounts. FERC adopted Accounting Release 15 in 1997 using the following criteria:

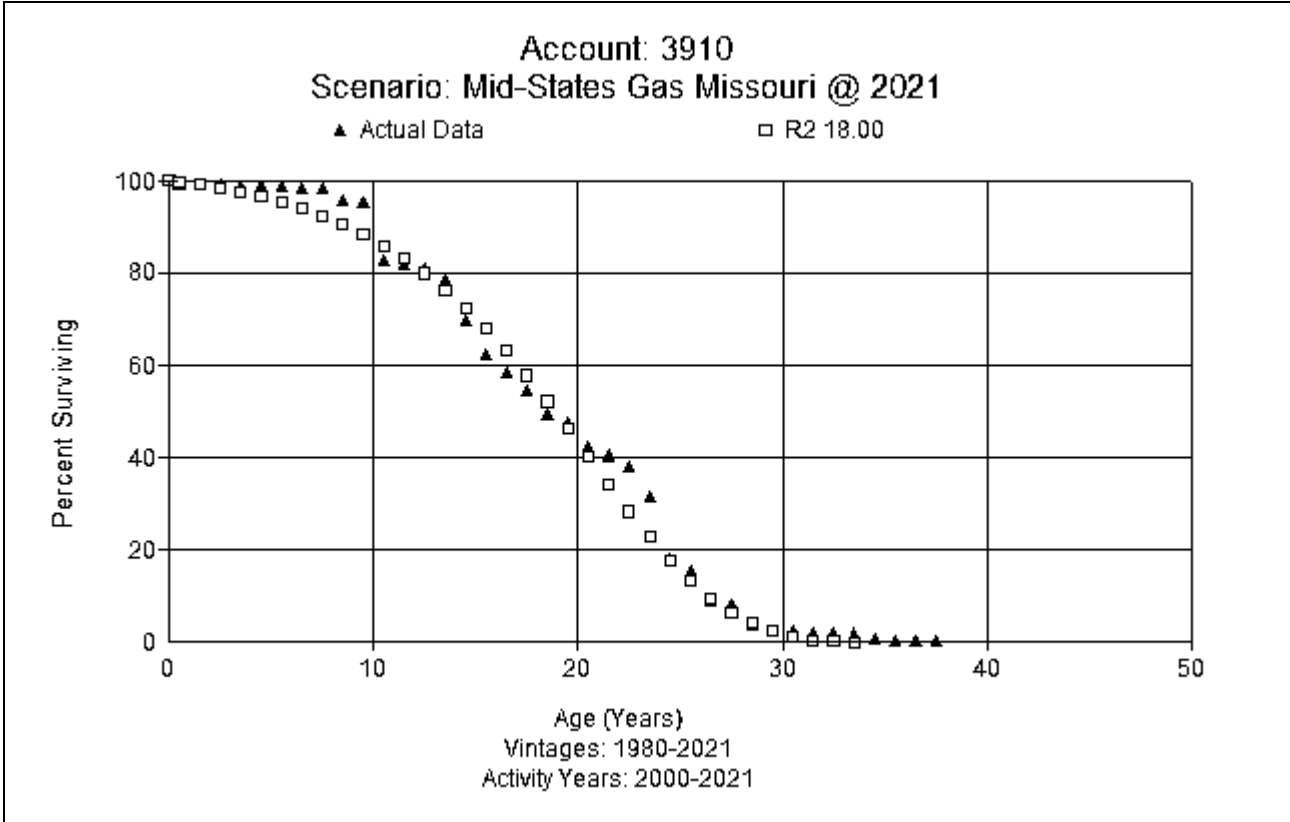
- The individual classes of assets for which vintage year accounting is followed are high volume, low value items;
- There is no change in existing retirement unit designations, for purposes of determining when expenditures are capital or expense;
- The cost of the vintage groups is amortized to depreciation expense over their useful lives and there is no change in depreciation rates resulting from the adoption of the vintage year accounting;
- Interim retirements are not recognized;
- Salvage and removal cost relative to items in the vintage categories are included in the accumulated depreciation account and assigned to the oldest vintage first; and
- Properties are retired from the affected accounts that, at the date of the adoption of vintage year accounting, meet or exceed the average service life of properties in that account.
- A vintage year method of accounting for the general plant accounts that meets all of the foregoing requirements may be implemented without obtaining specific authorization from the Commission to do so.

When AR-15 is implemented (or lives under this approach change), it is necessary to first retire the assets whose age is longer than the recommended service life for each

group. It will no longer be necessary to track of the location and retirement of those assets. Those amounts are shown for each account in Appendix A-1. After those assets are retired, the remaining plant in service for each account will be amortized using the amortization rates shown in Appendix A-1 and B. Annually, assets which reach the average service life of each account will be retired when the assets reach their average service life.

FERC Account 391.0 Office Furniture & Equipment (18 SQ)

This account consists of general office furniture and equipment. There is currently \$734 thousand in plant for Mid-States Gas Missouri. After retirement of fully accrued assets, the plant balance in Missouri will be \$665 thousand. The current life for this account is 22 years. Since it has been a short time since AR15 was implemented, actuarial analysis was performed on some accounts to get an indication of historical life cycles. After reviewing actuarial analysis for this account, the 18 R2 is an excellent visual match. Since this study uses AR15 for this account, this study recommends an 18 SQ curve for this account. A graph of the actual experience is shown below.

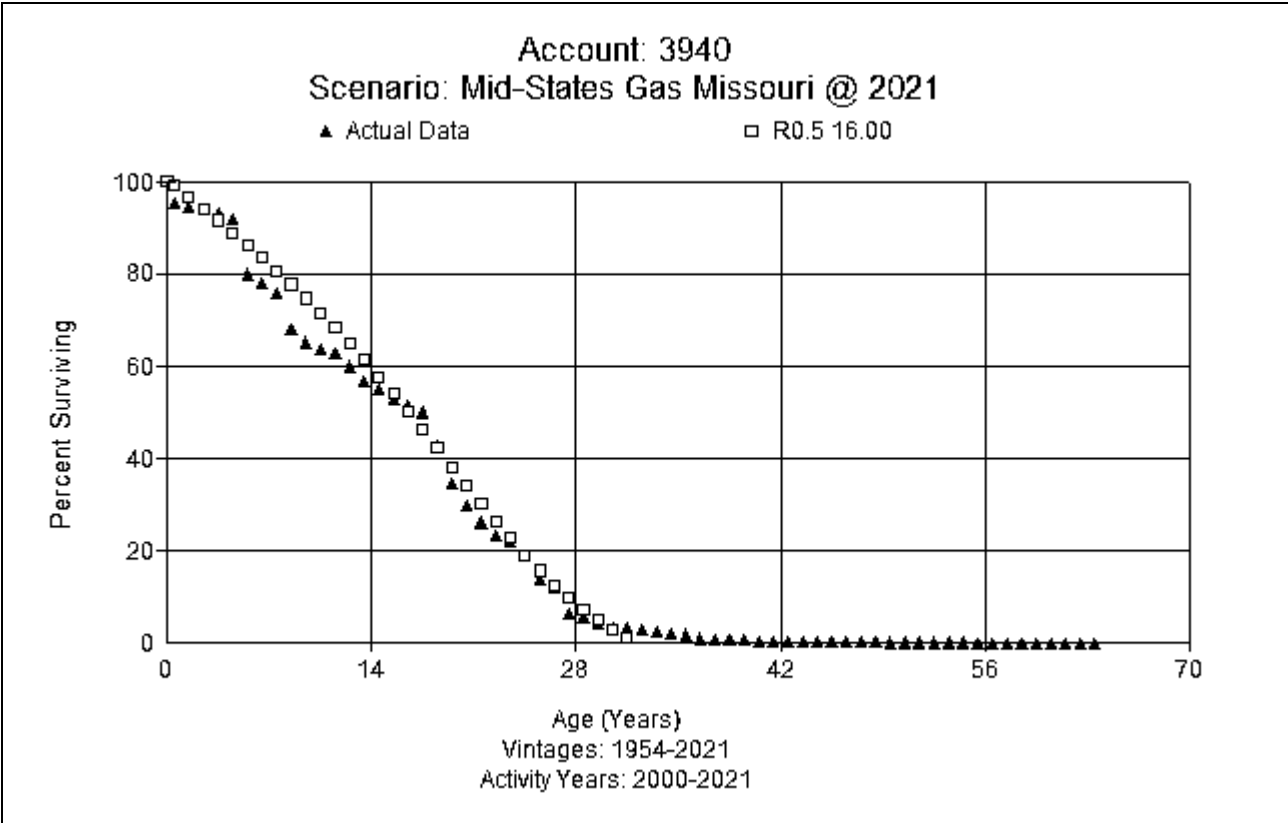


FERC Account 393.0 Stores Equipment (23 SQ)

This account consists of stores equipment. There is currently \$3 thousand in total plant for Mid-States Gas Missouri. The current life of this account is 23 years. Based on judgment, this study recommends retention of the 23 SQ curve for this account.

FERC Account 394.0 Tools, Shop, & Garage Equipment (16 SQ)

This account consists of various tools and shop equipment. There is currently \$1.5 million in total plant for Mid-States Gas Missouri. After the retirement of fully accrued plant, the balance in this account will be \$1.4 million. The current life of this account is 18 years. Since it has been a short time since AR15 was implemented, actuarial analysis was performed on some accounts to get an indication of historical life cycles. In reviewing actuarial analysis for this account, the 16 R0.5 is an excellent visual match. Since this study uses AR15 for this account, this study recommends a 16 SQ curve for this account. A graph of the actual experience is shown below.

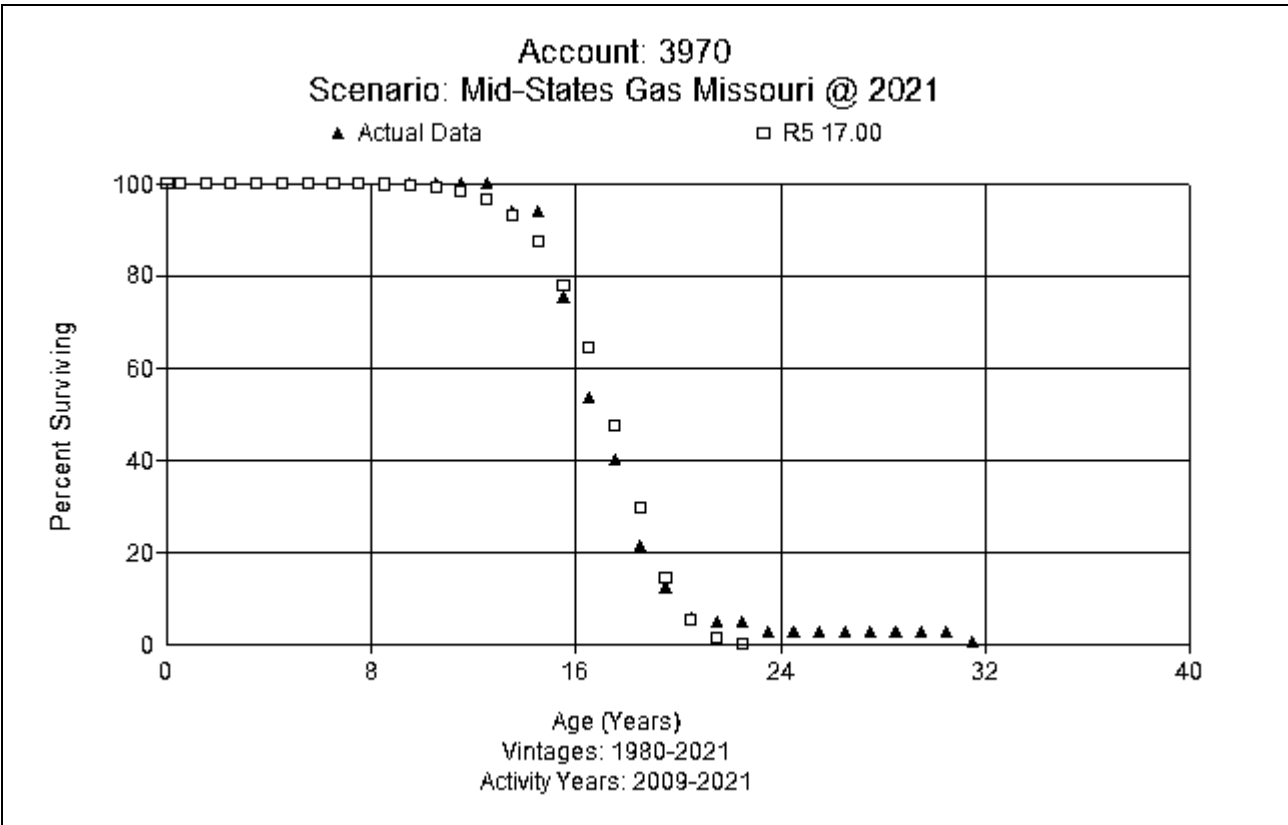


FERC Account 395.0 Laboratory Equipment (28 SQ)

This account consists of laboratory equipment. There is no plant for Mid-States Gas Missouri. The current life for his account is 28 years. There was insufficient information to perform any life analysis. Based on judgment and the use of AR15 for this account, this study recommends a 28 SQ curve for this account.

FERC Account 397.0 Communications Equipment (17 SQ)

This account consists of general plant communications equipment. There is currently \$39 thousand in total plant for Mid-States Gas Missouri. Of that amount, the plant balance in Missouri is \$39 thousand. The current life of this account is 16 years. Since it has been a short time since AR15 was implemented, actuarial analysis was performed on some accounts to get an indication of historical life cycles. In reviewing actuarial analysis for this account, the 17 R5 is an excellent visual match. Since this study uses AR15 for this account, this study recommends a 17 SQ curve for this account. A graph of the actual experience is shown below.



FERC Account 397.1 General Comm Eq Mob Radios (17 SQ)

This account consists of general plant communications equipment – mobile radios. There is currently no plant located in Missouri. The current life of this account is 16 years. Based on the recommendation for Account 397.0, this study recommends a 17 SQ curve for this account.

FERC Account 397.2 General Comm Eq Fixed Radios (17 SQ)

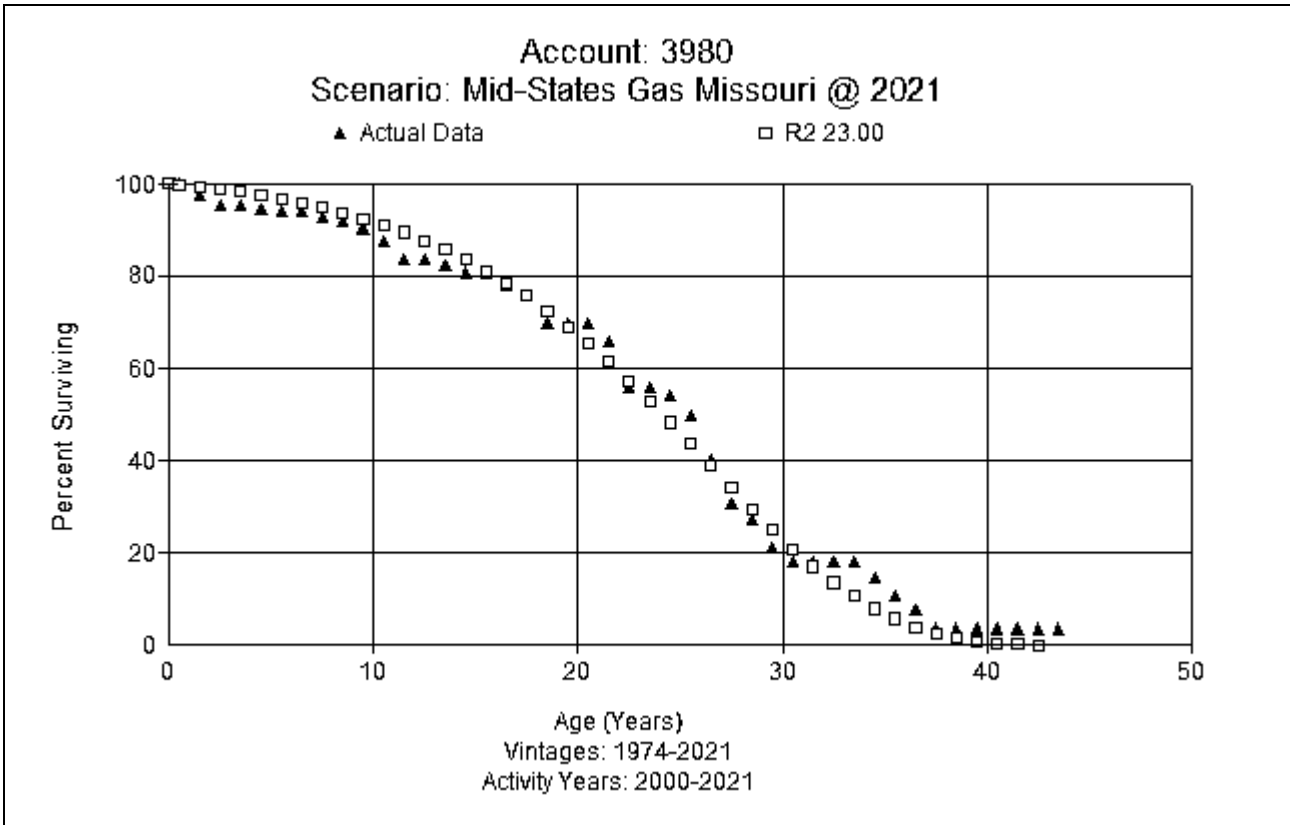
This account consists of general plant communications equipment – fixed radios. There is currently \$13 thousand in total plant for Mid-States Gas Missouri. The current life of this account is 16 years. Based on the recommendation for Account 397.0, this study recommends a 17 SQ curve for this account.

FERC Account 397.3 General Comm Eq Telemetry (17 SQ)

This account consists of general plant communications equipment – telemetry. There is currently no plant located in Missouri. The current life of this account is 16 years. Based on the recommendation for Account 397.0, this study recommends a 17 SQ curve for this account.

FERC Account 398 Miscellaneous Equipment (23 SQ)

This account consists of miscellaneous general plant equipment. There is currently \$1.3 million in total plant for Mid-States Gas Missouri. After the retirement of fully accrued plant, the balance in this account remains at \$1.3 million. The current life of this account is 20 years. After reviewing actuarial analysis for this account, the 23 R2 is an excellent visual match. Since this study uses AR15 for this account, this study recommends a 23 SQ curve for this account. A graph of the actual experience is shown below.



FERC Account 399.3 Other Tang Prop – Network – H/W (7 SQ)

This account consists of other tangible property such as networking hardware. There is currently \$10 thousand in total plant for Mid States Gas Missouri. After the retirement of fully accrued plant, the balance in this account will be \$6 thousand. The current life of this account is 7 years. Based on judgment and the type of assets in this account, this study recommends retention of the existing 7 SQ dispersion.

FERC Account 399.4 Other Tang Prop – PC Hardware (7 SQ)

This account consists of other tangible property such as PC hardware. There is currently \$230 thousand in total plant for Mid States Gas Missouri. After the retirement of fully accrued plant, the balance in this account will be \$169 thousand. The current life of this account is 7 years. Based on judgment and the type of assets in this account, this study recommends retention of the existing 7 SQ dispersion.

FERC Account 399.5 Other Tang Prop – PC Software (Out of Scope)

At the Company's direction, Account 399.5 is excluded from this study. Assets in this account, which are intangible software, were booked in a tangible account and used group depreciation as of the date of the study. Property Accounting intends to move them at conversion in 2023 to the appropriate account, 303, where they will continue as individually depreciated assets until they achieve a net book value of \$0. Further, Property Accounting began accounting for new software assets for Mid-States Gas in 2022 as intangible plant in account 303, consistent with our other FERC regulated utilities. As such, this account is omitted from developing draft depreciation accrual rates.

NET SALVAGE ANALYSIS

When a capital asset is retired, physically removed from service, and finally disposed of, terminal retirement is said to have occurred. The residual value of a terminal retirement is called gross salvage. 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).

Gross salvage and cost of removal related to retirements are recorded to the general ledger in the accumulated provision for depreciation at the time retirements occur within the system.

Removal cost percentages are calculated by dividing the current cost of removal by the original installed cost of the asset. Some plant assets can experience significant negative removal cost percentages due to the timing of the addition versus the retirement. For example, a distribution asset in FERC Account 367 with a current installed cost of \$500 (2021) would have had an installed cost of \$22.87⁴ in 1951 (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 ($\$50/\500). However, a correct removal cost calculation would show a negative 219 percent removal cost for that asset ($\$50/\22.87). 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.

Since Liberty acquired these assets from Atmos, they have maintained net salvage data in their records from 2013-2021. No data was available for years 2011 and 2012 during Atmos' ownership. Alliance Consulting and Liberty diligently attempted to obtain such information, but it was not provided to either group. For 2005-2010, historical net salvage was available and the period since Liberty's acquisition of those assets 2012-2021. Those results are shown in Appendix D.

⁴ Using the Handy-Whitman Bulletin No. 196, G-3, line 27, $\$22.87 = \$500 \times 37/809$.

Gas Transmission Accounts, FERC Accounts 366.0-370.0**FERC Account 366.0 Structures and Improvements (-5% net salvage)**

This account consists of any gross salvage and removal cost associated with buildings and other related structures and improvements related to transmission operations. The approved net salvage for this account is negative 5 percent. There has been no retirement or net salvage activity over the study period. Generally, there is a small amount of removal cost in removing structures and improvements. To model net salvage in the future, this study recommends retention of negative five percent net salvage for this account.

FERC Account 366.1 Other Structures (-5% net salvage)

This account consists of any gross salvage and removal cost associated with primarily structures and assets related to control of the transmission system. The approved net salvage for this account is negative 5 percent. There has been no retirement or net salvage activity over the study period. Generally, there is a small amount of removal cost in removing structures and improvements. To model net salvage in the future, this study recommends negative five percent net salvage for this account.

FERC Account 367.0 Transmission Mains Cathodic Protection (0% net salvage)

This account consists of any gross salvage and removal cost associated with transmission mains such as anodes, ground beds, and rectifiers. The approved net salvage for this account is negative 10 percent. The overall moving average for this account is zero percent net salvage as shown in Appendix D. To model net salvage in the future, this study recommends zero percent net salvage for this account.

FERC Account 367.1 Transmission Mains Steel (-25% net salvage)

This account consists of any gross salvage and removal cost associated with steel transmission mains and related assets. The approved net salvage for this

account is negative 10 percent. The five-year and ten-year moving averages are negative 64 percent and negative 25 percent, respectively. To move in the direction of the more recent net salvage indications, this study recommends negative 25 percent net salvage for this account.

FERC Account 369.0 M & R Station Equipment (0% net salvage)

This account consists of any gross salvage and removal cost associated with transmission metering and regulating station equipment. The approved net salvage for this account is 0 percent. The five-year and ten-year moving averages are both 0 percent. To model net salvage in the future, this study recommends retention of 0 percent net salvage for this account.

FERC Account 370.0 Communication Equipment (0% net salvage)

This account consists of any gross salvage and removal cost associated with microwave and radio communication equipment and related assets. The approved net salvage for this account is 0 percent. There has been no retirement and only a small amount of removal cost salvage activity over the study period. To model net salvage in the future, this study recommends retention of 0 percent net salvage for this account.

Gas Distribution Accounts, FERC Accounts 375.0- 387.0**FERC Account 375.0 Structures and Improvements (0% net salvage)**

This account consists of any gross salvage and removal cost associated with structures and controls related to distribution operations. The approved net salvage for this account is 0 percent. Retirements occurred in 2016 with removal cost in 2020. The activity is sparse, and insufficient to predict the future. Generally, there is no removal cost associate with structures and improvements. To model net salvage in the future, this study recommends 0 percent net salvage for this account.

FERC Account 376.0 Distribution Mains Cathodic Protection (-30% net salvage)

This account consists of any gross salvage and removal cost associated with cathodic protection equipment for distribution mains and associated equipment. The approved net salvage for this account is negative 34 percent. The overall moving average varies from negative 20 percent to negative 152 percent as shown in Appendix D. Given the fluctuations in the data and the indications, this study recommends a negative 30 percent net salvage for this account

FERC Account 376.1 Distribution Mains Steel (-34% net salvage)

This account consists of any gross salvage and removal cost associated with steel distribution mains and associated equipment. The approved net salvage for this account is negative 34 percent. The overall moving average varies from negative 13 percent to negative 115 percent as shown in Appendix D. Given the fluctuations in the data, this study recommends retention of negative 34 percent net salvage for this account

FERC Account 376.2 Distribution Mains Plastic (-23% net salvage)

This account consists of any gross salvage and removal cost associated with plastic distribution mains and associated equipment. The approved net salvage for this account is negative 23 percent. The moving averages in the most recent period

range from -9 to negative 66 percent as shown in Appendix D. Given the fluctuation in the data, this study recommends retaining the negative 23 percent net salvage for this account

FERC Account 378.0 M & R Station Equipment – General (-40% net salvage)

This account consists of any gross salvage and removal cost associated with M&R station piping, regulators, controls, odorizers and other equipment used in distribution measuring and regulating stations. The approved net salvage for this account is negative 25 percent. The five-year and ten-year moving averages are negative 56 percent and negative 54 percent respectively as shown in Appendix D. To model net salvage in the future, this study recommends negative 40 percent net salvage for this account

FERC Account 379.0 M & R Station Equipment – City Gate (-25% net salvage)

This account consists of any gross salvage and removal cost associated with M&R station piping, regulators, controls, odorizers and other equipment used in city gate distribution measuring and regulating stations. The approved net salvage for this account is negative 25 percent. The overall moving average for this account is negative 25 percent net salvage as shown in Appendix D. To model net salvage in the future, this study recommends retention of negative 25 percent net salvage for this account.

FERC Account 380.0 Services (-75% net salvage)

This account consists of any gross salvage and removal cost associated with assets related to distribution services. The approved net salvage for this account is negative 50 percent. The five-year and ten-year moving averages are negative 113 percent and negative 116 percent respectively as shown in Appendix D. To model net salvage in the future, this study recommends negative 75 percent net salvage for this account.

FERC Account 381.0 Meters (-15% net salvage)

This account consists of any gross salvage and removal cost associated with electromechanical distribution meters. The approved net salvage for this account is negative 35 percent. The five-year and ten-year moving averages are negative 17 percent and negative 21 percent respectively as shown in Appendix D. To model net salvage in the future, this study recommends negative 15 percent net salvage for this account.

FERC Account 382.0 Meter Installations (-35% net salvage)

This account consists of any gross salvage and removal cost associated with equipment and installation costs related to meter installations. The approved net salvage for this account is negative 35 percent. The overall moving average for this account varies between negative 41 percent net salvage to negative 74 percent between the five and 10 year periods as shown in Appendix D. To model net salvage in the future, this study recommends retention of negative 35 percent net salvage for this account.

FERC Account 383.0 House Regulators (0% net salvage)

This account consists of any gross salvage and removal cost associated with house regulators. The approved net salvage for this account is 0 percent. Generally, there is little or no removal cost associated with house regulators. There was a small amount of removal cost booked in years 2008-2010. To model net salvage in the future, this study recommends 0 percent net salvage for this account.

FERC Account 384.0 House Regulators Installations (0% net salvage)

This account consists of any gross salvage and removal cost associated with house regulator installations. The approved net salvage for this account is 0 percent. The overall moving average for this account is 0 percent net salvage as shown in Appendix D. To model net salvage in the future, this study recommends 0 percent net salvage for this account.

FERC Account 385.0 Industrial M&R Station Equip (-25% net salvage)

This account consists of any gross salvage and removal cost associated with industrial measuring and regulating stations. The approved net salvage for this account is negative 2 percent. The five-year and ten-year moving averages are negative 77 percent and negative 57 percent respectively. To move in the direction of this trend and model net salvage in the future, this study recommends negative 25 percent net salvage for this account.

FERC Account 387.0 Other Equipment (0% net salvage)

This account consists of any gross salvage and removal cost associated with other distribution equipment. The approved net salvage for this account is 0 percent. There has been no retirement or net salvage experienced over the study period. To model net salvage in the future, this study recommends 0 percent net salvage for this account.

Gas General Accounts, FERC Accounts 390.0-399.5**FERC Account 390.0 General Structures & Improvements (0% net salvage)**

This account consists of any gross salvage and removal cost associated with general office structures. The approved net salvage for this account is 0 percent. There was a small amount of negative removal cost in 2010, but there has been little other activity in this account. To model net salvage in the future, this study recommends retention of 0 percent net salvage for this account.

FERC Account 390.1 General Structure Frame (0% net salvage)

This account consists of any gross salvage and removal cost associated with structure frames. The approved net salvage for this account is 0 percent. There has been a small retirement with no net salvage experienced over the study period. To model net salvage in the future, this study recommends retention of 0 percent net salvage for this account.

FERC Account 390.2 General Improvements (0% net salvage)

This account consists of any gross salvage and removal cost associated with general improvements. The approved net salvage for this account is 0 percent. There has been no retirement or net salvage experienced over the study period. Based on experience in Accounts 390.0 and 390.1. this study recommends retention of 0 percent net salvage for this account.

FERC Account 390.3 General Improvements Leased Premise (0% net salvage)

This account consists of any gross salvage and removal cost associated with general improvements on leased property. The approved net salvage for this account is 0 percent. There has been no retirement or net salvage experienced over the study period. Based on experience in Accounts 390.0 and 390.1. this study recommends retention of 0 percent net salvage for this account.

FERC Account 391.0 Office Furniture & Equipment (0% net salvage)

This account consists of any gross salvage and removal cost associated with general office furniture and equipment. The approved net salvage for this account is 0 percent. The overall moving average for this account is 0 percent net salvage as shown in Appendix D. To model net salvage in the future, this study recommends retention of 0 percent net salvage for this account.

FERC Account 392.0 Transportation Equipment (10% net salvage)

This account consists of any gross salvage and removal cost associated with transportation equipment. The approved net salvage for this account is 6 percent. The overall moving averages show fluctuations over time. To model net salvage in the future, this study recommends moving to 10 percent net salvage for this account.

FERC Account 392.1 Transportation Equipment <12,000 LB (10% net salvage)

This account consists of any gross salvage and removal cost associated with transportation equipment. The approved net salvage for this account is 6 percent. There has been no retirement or net salvage experienced over the study period. To model net salvage in the future, this study recommends 10 percent net salvage for this account. This is the same recommendation for account 392.0.

FERC Account 393.0 Stores Equipment (0% net salvage)

This account consists of any gross salvage and removal cost associated with stores equipment. The approved net salvage for this account is 0 percent. The overall moving average for this account is 0 percent net salvage as shown in Appendix D. To model net salvage in the future, this study recommends retention of 0 percent net salvage for this account.

FERC Account 394.0 Tools, Shop, & Garage Equipment (0% net salvage)

This account consists of any gross salvage and removal cost associated with various tools and shop equipment. The approved net salvage for this account is 0

percent. The overall moving average for this account is 0 percent net salvage for most of this account's history as shown in Appendix D. To model net salvage in the future, this study recommends retention of 0 percent net salvage for this account.

FERC Account 395.0 Laboratory Equipment (0% net salvage)

This account consists of any gross salvage and removal cost associated with laboratory equipment. The approved net salvage for this account is 0 percent. The overall moving average for this account is 0 percent net salvage as shown in Appendix D. To model net salvage in the future, this study recommends retention of the 0 percent net salvage for this account.

FERC Account 396.0 Power Operated Equipment (11% net salvage)

This account consists of any gross salvage and removal cost associated with power operated equipment. The approved net salvage for this account is positive 18 percent. All 396 accounts were combined to predict net salvage. The overall moving average for this account is for 10 years is positive 11 percent net salvage as shown in Appendix D. To model net salvage in the future, this study recommends moving to 11 percent net salvage for this account.

FERC Account 396.1 General - Ditchers (11% net salvage)

This account consists of any gross salvage and removal cost associated with general equipment like ditchers. The approved net salvage for this account is positive 18 percent. This account was combined with all other 396 accounts as shown in Appendix D. Based on the analysis discussed in Account 396.0, this study recommends 11 percent net salvage for this account.

FERC Account 396.2 General - Backhoes (11% net salvage)

This account consists of any gross salvage and removal cost associated with general equipment like backhoes. The approved net salvage for this account is positive 18 percent. This account was combined with all other 396 accounts as shown

in Appendix D. Based on the analysis discussed in Account 396.0, this study recommends 11 percent net salvage for this account.

FERC Account 396.3 General - Welders (11% net salvage)

This account consists of any gross salvage and removal cost associated with general equipment like welders. The approved net salvage for this account is positive 18 percent. This account was combined with all other 396 accounts as shown in Appendix D. Based on the analysis discussed in Account 396.0, this study recommends 11 percent net salvage for this account.

FERC Account 397.0 Communication Equipment (0% net salvage)

This account consists of any gross salvage and removal cost associated with general plant communications equipment. The approved net salvage for this account is 0 percent. The overall moving average for this account is 0 percent net salvage as shown in Appendix D. To model net salvage in the future, this study recommends retention of 0 percent net salvage for this account.

FERC Account 397.1 General Communication Eq Mob Radios (0% net salvage)

This account consists of any gross salvage and removal cost associated with general plant communications equipment such as mobile radios. The approved net salvage for this account is 0 percent. The overall moving average for this account is in year 2020 is 0 percent net salvage as shown in Appendix D. Based on experience in Account 397.0, this study recommends retention of 0 percent net salvage for this account.

FERC Account 397.2 General Communication Eq Fixed Radios (0% net salvage)

This account consists of any gross salvage and removal cost associated with general plant communications equipment such as fixed radios. The approved net salvage for this account is 0 percent. The overall moving average for this account is 0 percent net salvage as shown in Appendix D. Based on experience in Account 397.0,

this study recommends retention of 0 percent net salvage for this account.

FERC Account 397.3 General Communication Eq Telemetry (0% net salvage)

This account consists of any gross salvage and removal cost associated with general plant communications equipment such as telemetry. The approved net salvage for this account is 0 percent. The overall moving average for this account is 0 percent net salvage as shown in Appendix D. Based on experience in Account 397.0 and 397.2, this study recommends retention of 0 percent net salvage for this account.

FERC Account 398.0 Miscellaneous Equipment (0% net salvage)

This account consists of any gross salvage and removal cost associated with miscellaneous general plant equipment. The approved net salvage for this account is 0 percent. The overall moving average for this account is ranges from 0 to 3 percent net salvage as shown in Appendix D. To model net salvage in the future, this study recommends retention of 0 percent net salvage for this account.

FERC Account 399.3 Oth Tang Prop – Network – H/W (0% net salvage)

This account consists of any gross salvage and removal cost associated with other tangible property such as network hardware. The approved net salvage for this account 0 percent. The overall moving average for this account is 0 percent net salvage as shown in Appendix D. To model net salvage in the future, this study recommends retention of 0 percent net salvage for this account.

FERC Account 399.4 Oth Tang Prop – PC Hardware (0% net salvage)

This account consists of any gross salvage and removal cost associated with other tangible property such as PC hardware. The approved net salvage for this account is 0 percent. The overall moving average for this account is 0 percent net salvage as shown in Appendix D. To model net salvage in the future, this study recommends retention of 0 percent net salvage for this account.

FERC Account 399.5 Oth Tang Prop – PC Software (Out of Scope)

At the Company's direction, Account 399.5 is excluded from this study. Assets in this account, which are intangible software, were booked in a tangible account and used group depreciation as of the date of the study. Property Accounting intends to move them at conversion in 2023 to the appropriate account, 303, where they will continue as individually depreciated assets until they achieve a net book value of \$0. Further, Property Accounting began accounting for new software assets for Mid-States Gas in 2022 as intangible plant in account 303, consistent with our other FERC regulated utilities. As such, this account is omitted from developing draft depreciation accrual rates.

APPENDIX A
Proposed Depreciation Rates

LIBERTY UTILITIES (MID-STATES NATURAL GAS) CORP.
D/B/A LIBERTY UTILITIES
State of Missouri

Appendix A

Computation of Proposed Depreciation Accrual Rates
Using Average Life Group Depreciation
As of December 31, 2021

Acct	Description	Plant Balance	Book Reserve	Net Salvage %	Net Salvage Amount	Unaccrued Balance	Average Remaining Life	Annual Accrual Amount	Proposed Annual Accrual Rate
3660	T&D-Structures & Improvements	3,379.86	2,864.10	-5.00%	(168.99)	684.75	17.10	40.05	1.19%
3661	T&D-Other Structures	61,081.38	14,973.85	-5.00%	(3,054.07)	49,161.60	40.70	1,208.01	1.98%
3670	T&D-Mains-STL-PLST-CI-Mixed	336,085.70	54,712.63	0.00%	0.00	281,373.07	54.63	5,150.14	1.53%
3671	T&D-Mains-STL	10,137,844.19	6,768,145.24	-25.00%	(2,534,461.05)	5,904,160.00	40.20	146,855.50	1.45%
3690	T&D-M&R Station Equipment	676,820.83	320,244.61	0.00%	0.00	356,576.22	32.34	11,024.45	1.63%
3700	Communication Equipment	15,676.18	7,006.08	0.00%	0.00	8,670.10	8.92	971.49	6.20%
3750	Structures and Improvements	217,101.79	67,618.05	0.00%	0.00	149,483.74	31.06	4,812.01	2.22%
3760	Mains	2,650,430.09	1,385,686.72	-30.00%	(795,129.03)	2,059,872.39	21.04	97,908.11	3.69%
3761	T&D-Mains-STL	20,013,867.59	7,659,172.19	-34.00%	(6,804,714.98)	19,159,410.38	48.74	393,110.98	1.96%
3762	T&D-Mains-PLST	44,182,083.00	10,917,836.35	-23.00%	(10,161,879.09)	43,426,125.74	51.25	847,389.24	1.92%
3780	Measuring & regulating stn eqt-General	5,845,033.91	1,173,022.08	-40.00%	(2,338,013.56)	7,010,025.40	39.46	177,650.22	3.04%
3790	Measuring & regulating stn eqt-City gate check stn	2,883,926.44	1,157,884.47	-25.00%	(720,981.61)	2,447,023.58	30.66	79,801.66	2.77%
3800	Services	41,254,477.61	12,276,929.06	-75.00%	(30,940,858.21)	59,918,406.76	37.41	1,601,667.94	3.88%
3810	Meters	19,577,331.54	4,213,040.40	-15.00%	(2,936,599.73)	18,300,890.87	12.22	1,498,119.80	7.65%
3820	Meters Installations	14,160,962.51	3,256,169.14	-35.00%	(4,956,336.88)	15,861,130.25	34.90	454,414.00	3.21%
3830	House regulators	2,264,456.48	1,404,723.18	0.00%	0.00	859,733.30	17.31	49,660.39	2.19%
3840	House Regulatory installations	731,832.37	327,234.26	0.00%	0.00	404,598.11	25.04	16,156.51	2.21%
3850	Industrial measuring & regulating stn eqt	948,020.51	295,154.41	-25.00%	(237,005.13)	889,871.23	33.13	26,859.84	2.83%
3870	Other Equipment	13,631.97	3,576.08	0.00%	0.00	10,055.89	16.28	617.85	4.53%
3900	General Structures & Improvement	2,055,903.25	475,140.51	0.00%	0.00	1,580,762.74	31.14	50,765.78	2.47%
3901	GEN-Structure Frame	528,648.62	44,566.19	0.00%	0.00	484,082.43	36.13	13,397.50	2.53%
3902	GEN-Improvements				0.00	0.00			
3903	GEN-Improvements Leased Premise	439,941.96	43,763.52	0.00%	0.00	396,178.44	35.62	11,123.56	2.53%
3920	Transportation Equipment	415,901.20	147,563.68	10.00%	41,590.12	226,747.40	6.56	34,565.47	8.31%
3921	Transportation Equip<12,000 LB	4,354,442.09	2,206,424.19	10.00%	435,444.21	1,712,573.69	5.09	336,504.98	7.73%
3960	Power Operated Equipment	1,356,388.63	590,040.01	11.00%	149,202.75	617,145.87	6.31	97,797.20	7.21%
3961	GEN- Ditchers				0.00	0.00			
3962	GEN-Backhoes	625,793.45	288,249.92	11.00%	68,837.28	268,706.25	6.02	44,623.29	7.13%

APPENDIX A-1
Proposed Amortization Rates

**LIBERTY UTILITIES (MID-STATES NATURAL GAS) CORP.
D/B/A LIBERTY UTILITIES
State of Missouri**

**Computation of Proposed Depreciation Amortization Rates
Using Average Life Group Depreciation
As of December 31, 2021**

Acct	Description	Plant Balance 12/31/2021	Allocated Reserve 12/31/2021	Theoretical Reserve 12/31/2021	Reserve Difference	Remaining Life	Assets to Retire > ASL
3910	Office Furniture & Improvement	734,480.79	352,129.66	352,129.66	0.00	9.28	69,019.38
3930	Stores Equipment	3,429.39	372.76	372.76	0.00	20.50	0.00
3940	Tools, Shop, and Garage Equip	1,548,210.91	665,834.16	665,834.16	0.00	9.05	100,903.42
3950	Laboratory Equipment				0.00		
3970	Communications Equipment	39,368.87	20,649.56	20,649.56	0.00	8.08	0.00
3971	GEN-Comm Eq. Mob Radios				0.00		
3972	GEN-Comm Eq. Fixed Radios	13,453.05	8,654.66	8,654.66	0.00	6.06	0.00
3973	GEN-Comm Eq. Telemetry				0.00		
3980	Misc. Equipment	1,286,426.15	523,597.48	523,597.48	0.00	13.64	0.00
3993	OTH-Oth Tang Prop - Network - H/W	10,104.64	8,017.31	8,017.31	0.00	1.02	4,260.12
3994	OTH-Oth Tang Prop - PC Hardware	229,724.62	145,860.34	145,860.34	0.00	2.29	60,974.24

After Retirement of Fully Accrued Assets

Acct	Description	Balance 12/31/2021	Allocated Reserve 12/31/2021	Proposed Life	Annual Amortization	Proposed Annual Accrual Rate	Accrual For Reserve Deficiency
3910	Office Furniture & Improvement	665,461.41	283,110.28	18	36,999.65	5.56%	0.00
3930	Stores Equipment	3,429.39	372.76	23	149.18	4.35%	0.00
3940	Tools, Shop, and Garage Equip	1,447,307.49	564,930.74	16	90,456.72	6.25%	0.00
3950	Laboratory Equipment	0.00	0.00	28	0.00	3.57%	0.00
3970	Communications Equipment	39,368.87	20,649.56	17	2,314.89	5.88%	0.00
3971	GEN-Comm Eq. Mob Radios	0.00	0.00	17	0.00	5.88%	0.00
3972	GEN-Comm Eq. Fixed Radios	13,453.05	8,654.66	17	791.04	5.88%	0.00
3973	GEN-Comm Eq. Telemetry	0.00	0.00	17	0.00	5.88%	0.00
3980	Misc. Equipment	1,286,426.15	523,597.48	23	55,959.54	4.35%	0.00
3993	OTH-Oth Tang Prop - Network - H/W	5,844.52	3,757.19	7	835.18	14.29%	0.00
3994	OTH-Oth Tang Prop - PC Hardware	168,750.38	84,886.10	7	24,114.43	14.29%	0.00

APPENDIX B
Comparison of Accrual Rates

LIBERTY UTILITIES (MID-STATES NATURAL GAS) CORP.
D/B/A LIBERTY UTILITIES
State of Missouri

Comparison of Existing vs Proposed Depreciation Rates
Using Average Life Group Depreciation
As of December 31, 2021

Acct	Description	Plant 12/31/2021	Current Rate	Annual Expense	Proposed Rate	Proposed Expense	Expense Change
3660	T&D-Structures & Improvements	3,379.86	2.10%	70.98	1.19%	40.05	(30.92)
3661	T&D-Other Structures	61,081.38	2.10%	1,282.71	1.98%	1,208.01	(74.70)
3670	T&D-Mains-STL-PLST-CI-Mixed	336,085.70	1.57%	5,276.55	1.53%	5,150.14	(126.40)
3671	T&D-Mains-STL	10,137,844.19	1.57%	159,164.15	1.45%	146,855.50	(12,308.65)
3690	T&D-M&R Station Equipment	676,820.83	2.04%	13,807.14	1.63%	11,024.45	(2,782.69)
3700	Communication Equipment	15,676.18	4.35%	681.91	6.20%	971.49	289.57
3750	Structures and Improvements	217,101.79	2.22%	4,819.66	2.22%	4,812.01	(7.65)
3760	Mains	2,650,430.09	1.97%	52,213.47	3.69%	97,908.11	45,694.64
3761	T&D-Mains-STL	20,013,867.59	1.97%	394,273.19	1.96%	393,110.98	(1,162.21)
3762	T&D-Mains-PLST	44,182,083.00	1.92%	848,295.99	1.92%	847,389.24	(906.76)
3780	Measuring & regulating stn eqt-General	5,845,033.91	2.66%	155,477.90	3.04%	177,650.22	22,172.32
3790	Measuring & regulating stn eqt-City gate check stn	2,883,926.44	2.78%	80,173.16	2.77%	79,801.66	(371.50)
3800	Services	41,254,477.61	4.55%	1,877,078.73	3.88%	1,601,667.94	(275,410.79)
3810	Meters	19,577,331.54	4.82%	943,627.38	7.65%	1,498,119.80	554,492.42
3820	Meters Installations	14,160,962.51	5.40%	764,691.98	3.21%	454,414.00	(310,277.98)
3830	House regulators	2,264,456.48	2.27%	51,403.16	2.19%	49,660.39	(1,742.77)
3840	House Regulatory installations	731,832.37	2.27%	16,612.59	2.21%	16,156.51	(456.08)
3850	Industrial measuring & regulating stn eqt	948,020.51	2.27%	21,520.07	2.83%	26,859.84	5,339.77
3870	Other Equipment	13,631.97	4.55%	620.25	4.53%	617.85	(2.41)
3900	General Structures & Improvement	2,055,903.25	2.56%	52,631.12	2.47%	50,765.78	(1,865.34)
3901	GEN-Structure Frame	528,648.62	2.56%	13,533.40	2.53%	13,397.50	(135.91)
3902	GEN-Improvements	0.00	2.56%	0.00	0.00%	0.00	0.00
3903	GEN-Improvements Leased Premise	439,941.96	2.56%	11,262.51	2.53%	11,123.56	(138.95)
3920	Transportation Equipment	415,901.20	11.75%	48,868.39	8.31%	34,565.47	(14,302.92)
3921	Transportation Equip<12,000 LB	4,354,442.09	11.75%	511,646.95	7.73%	336,504.98	(175,141.97)
3960	Power Operated Equipment	1,356,388.63	6.83%	92,641.34	7.21%	97,797.20	5,155.85
3961	GEN- Ditchers	0.00	6.83%	0.00	0.00%	0.00	0.00
3962	GEN-Backhoes	625,793.45	6.83%	42,741.69	7.13%	44,623.29	1,881.60
3963	GEN- Welders	0.00	4.00%	0.00		0.00	0.00
Amortized Accts after Retirement of Fully Accrued Assets							
3910	Office Furniture & Improvement	665,461.41	4.55%	30,278.49	5.56%	36,999.65	6,721.16
3930	Stores Equipment	3,429.39	4.35%	149.18	4.35%	149.18	0.00
3940	Tools, Shop, and Garage Equipment	1,447,307.49	5.56%	80,470.30	6.25%	90,456.72	9,986.42
3950	Laboratory Equipment	0.00	3.57%	0.00	3.57%	0.00	0.00
3970	Communications Equipment	39,368.87	6.25%	2,460.55	5.88%	2,314.89	(145.66)
3971	GEN-Comm Eq. Mob Radios	0.00	6.25%	0.00	5.88%	0.00	0.00
3972	GEN-Comm Eq. Fixed Radios	13,453.05	6.25%	840.82	5.88%	791.04	(49.78)
3973	GEN-Comm Eq. Telemetering	0.00	6.25%	0.00	5.88%	0.00	0.00
3980	Misc. Equipment	1,286,426.15	5.00%	64,321.31	4.35%	55,959.54	(8,361.77)
3993	OTH-Oth Tang Prop - Network - H/W	5,844.52	12.50%	730.57	14.29%	835.18	104.62
3994	OTH-Oth Tang Prop - PC Hardware	168,750.38	14.29%	24,114.43	14.29%	24,114.43	0.00
Total Missouri		179,381,104.41		6,367,782.04		6,213,816.60	(153,965.43)

APPENDIX C
Depreciation Parameters

LIBERTY UTILITIES (MID-STATES NATURAL GAS) CORP.
D/B/A LIBERTY UTILITIES
State of Missouri

PROPOSED DEPRECIATION PARAMETERS
As of December 31, 2021

Acct	Description	Current		Proposed		Difference		
		Average Service Life	Net Salvage Percentage	Average Service Life	Curve	Net Salvage Percentage	Average Service Life	Net Salvage Percentage
3660	T&D-Structures & Improvements	50	-5.00%	50	S3	-5.00%	0	0.00%
3661	T&D-Other Structures	50	-5.00%	50	S3	-5.00%	0	0.00%
3670	T&D-Mains-STL-PLST-CI-Mixed	70	-10.00%	63	S6	0.00%	-7	10.00%
3671	T&D-Mains-STL	70	-10.00%	70	R2	-25.00%	0	-15.00%
3690	T&D-M&R Station Equipment	49	0.00%	52	R2.5	0.00%	3	0.00%
3700	Communication Equipment	23	0.00%	15	R2	0.00%	-8	0.00%
3750	Structures and Improvements	45	0.00%	45	R2	0.00%	0	0.00%
3760	Mains	68	-34.00%	35	R4	-30.00%	-33	4.00%
3761	T&D-Mains-STL	68	-34.00%	68	S0.5	-34.00%	0	0.00%
3762	T&D-Mains-PLST	64	-23.00%	64	S2	-23.00%	0	0.00%
3780	Measuring & regulating stn eqt-General	47	-25.00%	46	R3	-40.00%	-1	-15.00%
3790	Measuring & regulating stn eqt-City gate check str	45	-25.00%	45	R4	-25.00%	0	0.00%
3800	Services	33	-50.00%	45	R0.5	-75.00%	12	-25.00%
3810	Meters	28	-35.00%	15	L0	-15.00%	-13	20.00%
3820	Meters Installations	25	-35.00%	42	R0.5	-35.00%	17	0.00%
3830	House regulators	44	0.00%	45	R3	0.00%	1	0.00%
3840	House Regulatory installations	44	0.00%	45	R3	0.00%	1	0.00%
3850	Industrial measuring & regulating stn eqt	45	-2.00%	44	L2	-25.00%	-1	-23.00%
3870	Other Equipment	22	0.00%	22	R2	0.00%	0	0.00%

LIBERTY UTILITIES (MID-STATES NATURAL GAS) CORP.
D/B/A LIBERTY UTILITIES
State of Missouri

PROPOSED DEPRECIATION PARAMETERS
As of December 31, 2021

Acct	Description	Current		Proposed			Difference	
		Average Service Life	Net Salvage Percentage	Average Service Life	Curve	Net Salvage Percentage	Average Service Life	Net Salvage Percentage
3900	General Structures & Improvement	39	0.00%	39	L0	0.00%	0	0.00%
3901	GEN-Structure Frame	39	0.00%	39	L0	0.00%	0	0.00%
3902	GEN-Improvements	39	0.00%	39	L0	0.00%	0	0.00%
3903	GEN-Improvements Leased Premise	39	0.00%	39	L0	0.00%	0	0.00%
3910	Office Furniture & Improvement	22	0.00%	18	SQ	0.00%	-4	0.00%
3920	Transportation Equipment	8	6.00%	10	L5	10.00%	2	4.00%
3921	Transportation Equip<12,000 LB	8	6.00%	10	L5	10.00%	2	4.00%
3930	Stores Equipment	23	0.00%	23	SQ	0.00%	0	0.00%
3940	Tools, Shop, and Garage Equipment	18	0.00%	16	SQ	0.00%	-2	0.00%
3950	Laboratory Equipment	28	0.00%	28	SQ	0.00%	0	0.00%
3960	Power Operated Equipment	12	18.00%	11	L5	11.00%	-1	-7.00%
3961	GEN- Ditchers	12	18.00%	11	L5	11.00%	-1	-7.00%
3962	GEN-Backhoes	12	18.00%	11	L5	11.00%	-1	-7.00%
3963	GEN- Welders	12	18.00%	11	L5	11.00%	-1	-7.00%
3970	Communications Equipment	16	0.00%	17	SQ	0.00%	1	0.00%
3971	GEN-Comm Eq. Mob Radios	16	0.00%	17	SQ	0.00%	1	0.00%
3972	GEN-Comm Eq. Fixed Radios	16	0.00%	17	SQ	0.00%	1	0.00%
3973	GEN-Comm Eq. Telemetry	16	0.00%	17	SQ	0.00%	1	0.00%
3980	Misc. Equipment	20	0.00%	23	R1.5	0.00%	3	0.00%
3993	OTH-Oth Tang Prop - Network - H/W	8	0.00%	7	SQ	0.00%	-1	0.00%
3994	OTH-Oth Tang Prop - PC Hardware	7	0.00%	7	SQ	0.00%	0	0.00%

APPENDIX D
Net Salvage Analysis

LIBERTY UTILITIES (MID-STATES NATURAL GAS) CORP.
D/B/A LIBERTY UTILITIES
State of Missouri
Net Salvage Missouri Assets
Data for 2005-2021

Acct	Year	Retirements	Gross Salvage	Cost of Removal	Net Salvage	Net Salvage %	2 Yr Salvage %	3 Yr Salvage %	4 Yr Salvage %	5 Yr Salvage %	6 Yr Salvage %	7 Yr Salvage %	8 Yr Salvage %	9 Yr Salvage %	10 Yr Salvage %
3030	2017	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3030	2018	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3030	2019	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3030	2020	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3030	2021	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3650	2005	-	-	-	-	NA									
3650	2006	-	-	-	-	NA	NA								
3650	2007	-	-	-	-	NA	NA	NA							
3650	2008	-	-	-	-	NA	NA	NA	NA						
3650	2009	-	-	-	-	NA	NA	NA	NA	NA					
3650	2010	-	-	-	-	NA	NA	NA	NA	NA	NA				
3650	2013	-	-	-	-	NA	NA	NA	NA	NA	NA	NA			
3650	2014	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA		
3650	2015	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3650	2016	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3650	2017	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3650	2018	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3650	2019	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3650	2020	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3650	2021	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3651	2005	-	-	-	-	NA									
3651	2006	-	-	-	-	NA	NA								
3651	2007	-	-	-	-	NA	NA	NA							
3651	2008	-	-	-	-	NA	NA	NA	NA						
3651	2009	-	-	-	-	NA	NA	NA	NA	NA					
3651	2010	-	-	-	-	NA	NA	NA	NA	NA	NA				
3651	2013	-	-	-	-	NA	NA	NA	NA	NA	NA	NA			
3651	2014	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA		
3651	2015	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3651	2016	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3651	2017	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3651	2018	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3651	2019	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3651	2020	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3651	2021	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3660	2005	-	-	-	-	NA									
3660	2006	-	-	-	-	NA	NA								
3660	2007	-	-	-	-	NA	NA	NA							
3660	2008	-	-	-	-	NA	NA	NA	NA						

LIBERTY UTILITIES (MID-STATES NATURAL GAS) CORP.
 D/B/A LIBERTY UTILITIES
 State of Missouri
 Net Salvage Missouri Assets
 Data for 2005-2021

Acct	Year	Retirements	Gross Salvage	Cost of Removal	Net Salvage	Net Salvage %	2 Yr Salvage %	3 Yr Salvage %	4 Yr Salvage %	5 Yr Salvage %	6 Yr Salvage %	7 Yr Salvage %	8 Yr Salvage %	9 Yr Salvage %	10 Yr Salvage %
3750	2019	-	-	-	-	NA	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3750	2020	-	-	3,150.27	(3,150.27)	NA	NA	NA	NA	-123.47%	-123.47%	-123.47%	-123.47%	-123.47%	-123.47%
3750	2021	-	-	-	-	NA	NA	NA	NA	NA	-123.47%	-123.47%	-123.47%	-123.47%	-123.47%
3760	2005	-	-	-	-	NA									
3760	2006	-	-	-	-	NA	NA								
3760	2007	-	-	-	-	NA	NA	NA							
3760	2008	-	-	-	-	NA	NA	NA	NA						
3760	2009	-	-	-	-	NA	NA	NA	NA	NA					
3760	2010	-	-	-	-	NA	NA	NA	NA	NA	NA				
3760	2013	644.46	-	10,853.67	(10,853.67)	-1684.15%	-1684.15%	-1684.15%	-1684.15%	-1684.15%	-1684.15%	-1684.15%	-1684.15%	-1684.15%	-1684.15%
3760	2014	-	-	1,796.64	(1,796.64)	NA	-1962.93%	-1962.93%	-1962.93%	-1962.93%	-1962.93%	-1962.93%	-1962.93%	-1962.93%	-1962.93%
3760	2015	-	-	-	-	NA	NA	-1962.93%	-1962.93%	-1962.93%	-1962.93%	-1962.93%	-1962.93%	-1962.93%	-1962.93%
3760	2016	3,069.91	-	31,702.42	(31,702.42)	-1032.68%	-1032.68%	-1091.21%	-1194.08%	-1194.08%	-1194.08%	-1194.08%	-1194.08%	-1194.08%	-1194.08%
3760	2017	-	-	588.88	(588.88)	NA	-1051.86%	-1051.86%	-1110.39%	-1209.94%	-1209.94%	-1209.94%	-1209.94%	-1209.94%	-1209.94%
3760	2018	80,588.23	-	-	-	0.00%	-0.73%	-38.60%	-38.60%	-40.75%	-53.31%	-53.31%	-53.31%	-53.31%	-53.31%
3760	2019	71,740.28	-	-	-	0.00%	0.00%	-0.39%	-20.78%	-20.78%	-21.94%	-28.80%	-28.80%	-28.80%	-28.80%
3760	2020	21,245.57	-	-	-	0.00%	0.00%	0.00%	-0.34%	-18.28%	-18.28%	-19.30%	-25.35%	-25.35%	-25.35%
3760	2021	-	-	32,322.91	(32,322.91)	NA	-152.14%	-34.76%	-18.62%	-18.96%	-36.58%	-36.58%	-37.60%	-43.58%	-43.58%
3761	2005	40,736.30	-	294.00	(294.00)	-0.72%									
3761	2006	183,849.87	-	13,801.00	(13,801.00)	-7.51%	-6.28%								
3761	2007	120,243.41	-	36,790.00	(36,790.00)	-30.60%	-16.64%	-14.76%							
3761	2008	83,717.27	-	178,836.00	(178,836.00)	-213.62%	-105.72%	-59.16%	-53.60%						
3761	2009	124,549.14	-	30,748.00	(30,748.00)	-24.69%	-100.63%	-75.00%	-50.78%	-47.09%					
3761	2010	260,053.06	-	67,610.00	(67,610.00)	-26.00%	-25.57%	-59.19%	-53.35%	-42.44%	-40.35%				
3761	2013	34,145.33	-	15,766.38	(15,766.38)	-46.17%	-28.34%	-27.25%	-58.30%	-52.95%	-42.59%	-40.58%			
3761	2014	635.53	-	16,492.75	(16,492.75)	-2595.12%	-92.75%	-33.87%	-31.15%	-61.51%	-55.55%	-44.60%	-42.50%		
3761	2015	1,220,041.30	-	37,151.05	(37,151.05)	-3.05%	-4.39%	-5.53%	-9.04%	-10.23%	-20.11%	-20.80%	-19.59%	-19.22%	
3761	2016	195,430.11	-	14,221.65	(14,221.65)	-7.28%	-3.63%	-4.79%	-5.77%	-8.84%	-9.92%	-18.81%	-19.50%	-18.51%	-18.19%
3761	2017	62,599.28	-	7,148.48	(7,148.48)	-11.42%	-8.28%	-3.96%	-5.07%	-6.00%	-8.93%	-9.97%	-18.57%	-19.26%	-18.32%
3761	2018	16,878.27	-	10,615.34	(10,615.34)	-62.89%	-22.35%	-11.63%	-4.62%	-5.73%	-6.63%	-9.44%	-10.43%	-18.95%	-19.61%
3761	2019	17,673.02	-	15,525.82	(15,525.82)	-87.85%	-75.66%	-34.27%	-16.24%	-5.60%	-6.68%	-7.56%	-10.21%	-11.14%	-19.55%
3761	2020	17,824.35	-	18,914.15	(18,914.15)	-106.11%	-97.02%	-86.02%	-45.40%	-21.40%	-6.77%	-7.84%	-8.68%	-11.15%	-12.01%
3761	2021	101,216.73	-	115,986.76	(115,986.76)	-114.59%	-113.32%	-110.03%	-104.85%	-77.80%	-44.32%	-13.46%	-14.46%	-15.11%	-16.58%
3762	2005	9,812.66	-	539.00	(539.00)	-5.49%									
3762	2006	17,723.28	-	3,744.00	(3,744.00)	-21.12%	-15.55%								
3762	2007	21,353.72	-	11,540.00	(11,540.00)	-54.04%	-39.11%	-32.36%							
3762	2008	1,571.57	-	7,379.00	(7,379.00)	-469.53%	-82.52%	-55.75%	-45.98%						
3762	2009	49,497.24	-	5,216.00	(5,216.00)	-10.54%	-24.66%	-33.33%	-30.93%	-28.43%					

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3762	2010	41,043.21	-	1,799.00	(1,799.00)	-4.38%	-7.75%	-15.63%	-22.86%	-22.62%	-21.43%				
3762	2013	94,241.49	-	-	-	0.00%	-1.33%	-3.80%	-7.72%	-12.49%	-13.17%	-12.85%			
3762	2014	1,626.57	-	-	-	0.00%	0.00%	-1.31%	-3.76%	-7.66%	-12.39%	-13.07%	-12.76%		
3762	2015	113,768.24	-	3,327.69	(3,327.69)	-2.92%	-2.88%	-1.59%	-2.05%	-3.45%	-5.87%	-9.06%	-9.68%	-9.57%	
3762	2016	31,080.71	-	15,005.13	(15,005.13)	-48.28%	-12.66%	-12.52%	-7.62%	-7.15%	-7.65%	-9.83%	-12.50%	-12.91%	-12.72%
3762	2017	50,332.40	54,500.00	20,981.67	33,518.33	66.59%	22.74%	7.78%	7.72%	5.22%	4.03%	2.14%	0.21%	-2.66%	-3.43%
3762	2018	29,859.74	-	15,979.30	(15,979.30)	-53.51%	21.87%	2.28%	-0.35%	-0.35%	-0.25%	-0.72%	-1.90%	-3.68%	-6.15%
3762	2019	19,078.18	-	36,116.81	(36,116.81)	-189.31%	-106.45%	-18.71%	-25.76%	-15.12%	-15.02%	-10.86%	-10.16%	-10.20%	-11.87%
3762	2020	33,142.83	-	61,072.29	(61,072.29)	-184.27%	-186.11%	-137.87%	-60.15%	-57.90%	-35.34%	-35.13%	-26.26%	-24.09%	-22.64%
3762	2021	108,297.86	-	9,440.90	(9,440.90)	-8.72%	-49.85%	-66.43%	-64.40%	-37.01%	-38.30%	-27.86%	-27.74%	-22.31%	-20.91%
3780	2005	-	-	9,252.00	(9,252.00)	NA									
3780	2006	-	-	-	-	NA	NA								
3780	2007	-	-	-	-	NA	NA	NA							
3780	2008	-	-	11,707.00	(11,707.00)	NA	NA	NA	NA						
3780	2009	123,799.01	-	(5,268.00)	5,268.00	4.26%	-5.20%	-5.20%	-5.20%	-12.67%					
3780	2010	-	-	-	-	NA	4.26%	-5.20%	-5.20%	-5.20%	-12.67%				
3780	2013	-	-	-	-	NA	NA	4.26%	-5.20%	-5.20%	-5.20%	-12.67%			
3780	2014	-	-	-	-	NA	NA	NA	4.26%	-5.20%	-5.20%	-5.20%	-12.67%		
3780	2015	8,043.30	-	745.84	(745.84)	-9.27%	-9.27%	-9.27%	-9.27%	3.43%	-5.45%	-5.45%	-5.45%	-12.47%	
3780	2016	14,070.21	-	7,748.31	(7,748.31)	-55.07%	-38.41%	-38.41%	-38.41%	-38.41%	-2.21%	-10.23%	-10.23%	-10.23%	-16.58%
3780	2017	69,403.21	-	2,358.50	(2,358.50)	-3.40%	-12.11%	-11.86%	-11.86%	-11.86%	-11.86%	-2.59%	-8.03%	-8.03%	-8.03%
3780	2018	11,305.03	-	75,146.34	(75,146.34)	-664.72%	-96.03%	-89.95%	-83.64%	-83.64%	-83.64%	-83.64%	-35.62%	-40.79%	-40.79%
3780	2019	69,778.48	-	541.16	(541.16)	-0.78%	-93.35%	-51.86%	-52.14%	-50.14%	-50.14%	-50.14%	-50.14%	-27.42%	-31.37%
3780	2020	7,074.83	-	3,589.62	(3,589.62)	-50.74%	-5.37%	-89.93%	-51.81%	-52.08%	-50.16%	-50.16%	-50.16%	-50.16%	-27.96%
3780	2021	7,949.81	-	11,636.08	(11,636.08)	-146.37%	-101.34%	-18.59%	-94.59%	-56.35%	-56.25%	-54.24%	-54.24%	-54.24%	-54.24%
3790	2005	-	-	-	-	NA									
3790	2006	-	-	-	-	NA	NA								
3790	2007	-	-	-	-	NA	NA	NA							
3790	2008	-	-	-	-	NA	NA	NA	NA						
3790	2009	-	-	-	-	NA	NA	NA	NA	NA					
3790	2010	-	-	-	-	NA	NA	NA	NA	NA	NA				
3790	2013	-	-	-	-	NA	NA	NA	NA	NA	NA	NA			
3790	2014	-	-	282.40	(282.40)	NA	NA	NA	NA	NA	NA	NA	NA		
3790	2015	98.26	-	-	-	0.00%	-287.40%	-287.40%	-287.40%	-287.40%	-287.40%	-287.40%	-287.40%	-287.40%	-287.40%
3790	2016	22,072.96	-	1,349.01	(1,349.01)	-6.11%	-6.08%	-7.36%	-7.36%	-7.36%	-7.36%	-7.36%	-7.36%	-7.36%	-7.36%
3790	2017	-	-	1,511.84	(1,511.84)	NA	-12.96%	-12.90%	-14.18%	-14.18%	-14.18%	-14.18%	-14.18%	-14.18%	-14.18%
3790	2018	493.98	-	10,489.77	(10,489.77)	-2123.52%	-2429.57%	-59.16%	-58.90%	-60.15%	-60.15%	-60.15%	-60.15%	-60.15%	-60.15%
3790	2019	4,245.44	-	210.24	(210.24)	-4.95%	-225.77%	-257.67%	-50.58%	-50.39%	-51.44%	-51.44%	-51.44%	-51.44%	-51.44%
3790	2020	28,703.89	-	-	-	0.00%	-0.64%	-31.99%	-36.52%	-24.43%	-24.38%	-24.89%	-24.89%	-24.89%	-24.89%
3790	2021	-	-	73.94	(73.94)	NA	-0.26%	-0.86%	-32.22%	-36.74%	-24.56%	-24.52%	-25.02%	-25.02%	-25.02%

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3800	2005	1,685,037.22	-	22,024.00	(22,024.00)	-1.31%									
3800	2006	3,020,330.04	-	290,903.00	(290,903.00)	-9.63%	-6.65%								
3800	2007	1,373,766.26	301.00	491,050.00	(490,749.00)	-35.72%	-17.79%	-13.22%							
3800	2008	1,379,738.30	-	334,888.00	(334,888.00)	-24.27%	-29.98%	-19.34%	-15.26%						
3800	2009	1,947,543.62	-	(15,138.00)	15,138.00	0.78%	-9.61%	-17.24%	-14.26%	-11.94%					
3800	2010	729,234.95	-	969,277.00	(969,277.00)	-132.92%	-35.65%	-31.78%	-32.78%	-24.50%	-20.65%				
3800	2013	25,473.30	-	118,676.48	(118,676.48)	-465.89%	-144.16%	-39.70%	-34.49%	-34.80%	-25.83%	-21.76%			
3800	2014	17,251.53	-	134,027.63	(134,027.63)	-776.90%	-591.47%	-158.30%	-44.38%	-37.61%	-37.14%	-27.36%	-23.04%		
3800	2015	332,296.45	-	121,190.74	(121,190.74)	-36.47%	-73.01%	-99.70%	-121.64%	-43.52%	-37.52%	-37.10%	-27.70%	-23.47%	
3800	2016	418,793.85	-	201,235.95	(201,235.95)	-48.05%	-42.93%	-59.41%	-72.45%	-101.40%	-44.06%	-38.43%	-37.84%	-28.62%	-24.41%
3800	2017	412,075.92	-	256,992.48	(256,992.48)	-62.37%	-55.15%	-49.81%	-60.44%	-69.00%	-93.09%	-46.01%	-40.31%	-39.36%	-30.06%
3800	2018	323,767.65	-	266,159.76	(266,159.76)	-82.21%	-71.10%	-62.74%	-56.87%	-65.13%	-71.80%	-91.53%	-48.79%	-42.74%	-41.35%
3800	2019	219,505.93	-	307,590.47	(307,590.47)	-140.13%	-105.61%	-86.96%	-75.10%	-67.58%	-74.68%	-80.37%	-95.83%	-53.32%	-46.42%
3800	2020	162,122.19	-	407,871.20	(407,871.20)	-251.58%	-187.48%	-139.16%	-110.84%	-93.72%	-83.54%	-89.89%	-94.90%	-105.40%	-60.33%
3800	2021	109,194.37	-	393,105.58	(393,105.58)	-360.01%	-295.22%	-225.86%	-168.76%	-133.02%	-111.39%	-98.81%	-104.67%	-109.22%	-115.51%
3810	2005	-	-	7,095.00	(7,095.00)	NA									
3810	2006	117,337.19	-	186,169.00	(186,169.00)	-158.66%	-164.71%								
3810	2007	130,322.09	-	325,454.00	(325,454.00)	-249.73%	-206.58%	-209.45%							
3810	2008	90,424.14	-	86,636.00	(86,636.00)	-95.81%	-186.68%	-176.96%	-179.05%						
3810	2009	78,220.68	-	803.00	(803.00)	-1.03%	-51.85%	-138.11%	-143.90%	-145.60%					
3810	2010	294,261.07	-	65,129.00	(65,129.00)	-22.13%	-17.70%	-32.96%	-80.58%	-93.47%	-94.47%				
3810	2013	18,868.23	-	84,978.07	(84,978.07)	-450.38%	-47.94%	-38.56%	-49.31%	-91.98%	-102.71%	-103.68%			
3810	2014	18,868.23	-	91,483.84	(91,483.84)	-484.86%	-467.62%	-72.77%	-59.09%	-65.72%	-103.73%	-112.34%	-113.29%		
3810	2015	458,068.62	-	203,310.39	(203,310.39)	-44.38%	-61.81%	-76.60%	-56.31%	-51.33%	-55.53%	-78.77%	-86.54%	-87.13%	
3810	2016	1,289,934.39	-	318,769.37	(318,769.37)	-24.71%	-29.87%	-34.73%	-39.12%	-36.71%	-35.42%	-37.85%	-49.46%	-54.59%	-54.87%
3810	2017	1,885,677.23	-	252,082.55	(252,082.55)	-13.37%	-17.98%	-21.31%	-23.70%	-25.89%	-25.61%	-25.14%	-26.68%	-33.50%	-36.85%
3810	2018	1,912,800.60	-	183,744.20	(183,744.20)	-9.61%	-11.47%	-14.83%	-17.27%	-18.86%	-20.31%	-20.40%	-20.15%	-21.28%	-26.10%
3810	2019	1,606,490.49	-	246,480.43	(246,480.43)	-15.34%	-12.22%	-12.62%	-14.95%	-16.84%	-18.07%	-19.20%	-19.32%	-19.13%	-20.04%
3810	2020	1,049,174.21	-	272,904.40	(272,904.40)	-26.01%	-19.56%	-15.39%	-14.80%	-16.45%	-18.01%	-19.08%	-20.07%	-20.14%	-19.97%
3810	2021	731,459.18	-	233,672.92	(233,672.92)	-31.95%	-28.45%	-22.23%	-17.68%	-16.55%	-17.79%	-19.15%	-20.13%	-21.04%	-21.07%
3820	2005	179,963.77	-	36,819.00	(36,819.00)	-20.46%									
3820	2006	216,029.87	-	74,478.00	(74,478.00)	-34.48%	-28.11%								
3820	2007	92,373.03	-	86,026.00	(86,026.00)	-93.13%	-52.04%	-40.40%							
3820	2008	134,637.15	-	110,079.00	(110,079.00)	-81.76%	-86.39%	-61.07%	-49.34%						
3820	2009	209,091.64	-	(5,711.00)	5,711.00	2.73%	-30.36%	-43.66%	-40.62%	-36.26%					
3820	2010	76,589.92	-	403,495.00	(403,495.00)	-526.83%	-139.24%	-120.83%	-115.84%	-91.72%	-77.61%				
3820	2013	-	-	-	-	NA	-526.83%	-139.24%	-120.83%	-115.84%	-91.72%	-77.61%			
3820	2014	-	-	-	-	NA	NA	-526.83%	-139.24%	-120.83%	-115.84%	-91.72%	-77.61%		
3820	2015	-	-	-	-	NA	NA	NA	-526.83%	-139.24%	-120.83%	-115.84%	-91.72%	-77.61%	

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3820	2016	325,790.17	-	72,844.89	(72,844.89)	-22.36%	-22.36%	-22.36%	-22.36%	-118.38%	-76.97%	-77.83%	-79.52%	-70.29%	-63.03%
3820	2017	151,746.36	-	61,617.66	(61,617.66)	-40.61%	-28.16%	-28.16%	-28.16%	-28.16%	-97.08%	-69.74%	-71.54%	-73.55%	-66.56%
3820	2018	231,948.92	-	23,308.15	(23,308.15)	-10.05%	-22.13%	-22.24%	-22.24%	-22.24%	-22.24%	-71.40%	-55.83%	-58.92%	-61.50%
3820	2019	115,852.70	-	56,585.00	(56,585.00)	-48.84%	-22.97%	-28.33%	-25.97%	-25.97%	-25.97%	-25.97%	-68.50%	-55.10%	-57.98%
3820	2020	29,759.65	-	45,307.28	(45,307.28)	-152.24%	-69.98%	-33.16%	-35.29%	-30.37%	-30.37%	-30.37%	-30.37%	-71.18%	-57.63%
3820	2021	4,690.50	-	30,097.83	(30,097.83)	-641.68%	-218.88%	-87.82%	-40.63%	-40.62%	-33.70%	-33.70%	-33.70%	-33.70%	-74.04%
3830	2005	-	-	-	-	NA									
3830	2006	-	-	-	-	NA	NA								
3830	2007	-	-	-	-	NA	NA	NA							
3830	2008	-	-	(6,393.00)	6,393.00	NA	NA	NA	NA						
3830	2009	-	-	(803.00)	803.00	NA	NA	NA	NA	NA					
3830	2010	-	-	1,440.00	(1,440.00)	NA	NA	NA	NA	NA	NA				
3830	2013	-	-	-	-	NA	NA	NA	NA	NA	NA	NA			
3830	2014	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA		
3830	2015	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3830	2016	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3830	2017	9,303.08	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	-15.48%	-6.85%	61.87%	61.87%	61.87%
3830	2018	-	-	-	-	NA	0.00%	0.00%	0.00%	0.00%	0.00%	-15.48%	-6.85%	61.87%	61.87%
3830	2019	131.89	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-15.26%	-6.75%	61.01%
3830	2020	-	-	-	-	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-15.26%	-6.75%
3830	2021	204.47	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-14.94%
3840	2005	-	-	-	-	NA									
3840	2006	-	-	-	-	NA	NA								
3840	2007	-	-	-	-	NA	NA	NA							
3840	2008	-	-	-	-	NA	NA	NA	NA						
3840	2009	-	-	-	-	NA	NA	NA	NA	NA					
3840	2010	-	-	-	-	NA	NA	NA	NA	NA	NA				
3840	2013	468.09	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
3840	2014	-	-	-	-	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		
3840	2015	-	-	-	-	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
3840	2016	-	-	-	-	NA	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3840	2017	0.41	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3840	2018	-	-	-	-	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3840	2019	-	-	-	-	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3840	2020	-	-	-	-	NA	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3840	2021	-	-	-	-	NA	NA	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3850	2005	-	-	-	-	NA									
3850	2006	-	-	-	-	NA	NA								
3850	2007	-	-	-	-	NA	NA	NA							

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3890	2020	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3890	2021	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3900	2005	-	-	-	-	NA									
3900	2006	-	-	-	-	NA	NA								
3900	2007	-	-	-	-	NA	NA	NA							
3900	2008	-	-	-	-	NA	NA	NA	NA						
3900	2009	-	-	-	-	NA	NA	NA	NA	NA					
3900	2010	20,297.49	-	(10,818.00)	10,818.00	53.30%	53.30%	53.30%	53.30%	53.30%	53.30%				
3900	2013	-	-	-	-	NA	53.30%	53.30%	53.30%	53.30%	53.30%	53.30%			
3900	2014	3,236.32	-	-	-	0.00%	0.00%	45.97%	45.97%	45.97%	45.97%				
3900	2015	-	-	-	-	NA	0.00%	0.00%	45.97%	45.97%	45.97%	45.97%	45.97%		
3900	2016	-	-	-	-	NA	NA	0.00%	0.00%	45.97%	45.97%	45.97%	45.97%	45.97%	45.97%
3900	2017	15,997.35	-	80.65	(80.65)	-0.50%	-0.50%	-0.50%	-0.42%	-0.42%	27.16%	27.16%	27.16%	27.16%	27.16%
3900	2018	-	-	-	-	NA	-0.50%	-0.50%	-0.50%	-0.42%	-0.42%	27.16%	27.16%	27.16%	27.16%
3900	2019	-	-	-	-	NA	NA	-0.50%	-0.50%	-0.50%	-0.42%	-0.42%	27.16%	27.16%	27.16%
3900	2020	67,436.42	-	-	-	0.00%	0.00%	0.00%	-0.10%	-0.10%	-0.10%	-0.09%	-0.09%	10.04%	10.04%
3900	2021	-	-	-	-	NA	0.00%	0.00%	0.00%	-0.10%	-0.10%	-0.10%	-0.09%	-0.09%	10.04%
3901	2005	-	-	-	-	NA									
3901	2006	-	-	-	-	NA	NA								
3901	2007	-	-	-	-	NA	NA	NA							
3901	2008	-	-	-	-	NA	NA	NA	NA						
3901	2009	-	-	-	-	NA	NA	NA	NA	NA					
3901	2010	-	-	-	-	NA	NA	NA	NA	NA	NA				
3901	2013	-	-	-	-	NA	NA	NA	NA	NA	NA	NA			
3901	2014	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA		
3901	2015	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3901	2016	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3901	2017	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3901	2018	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3901	2019	355.06	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3901	2020	-	-	-	-	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3901	2021	-	-	-	-	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3902	2005	-	-	-	-	NA									
3902	2006	-	-	-	-	NA	NA								
3902	2007	-	-	-	-	NA	NA	NA							
3902	2008	-	-	-	-	NA	NA	NA	NA						
3902	2009	-	-	-	-	NA	NA	NA	NA	NA					
3902	2010	-	-	-	-	NA	NA	NA	NA	NA	NA				
3902	2013	-	-	-	-	NA	NA	NA	NA	NA	NA	NA			

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3920	2006	522,678.71	25,260.00	(3,816.00)	29,076.00	5.56%	6.08%								
3920	2007	103,681.15	14,720.00	-	14,720.00	14.20%	6.99%	7.37%							
3920	2008	68,191.03	11,667.00	500.00	11,167.00	16.38%	15.06%	7.91%	8.22%						
3920	2009	244,625.09	-	-	-	0.00%	3.57%	6.22%	5.85%	6.14%					
3920	2010	48,355.07	11,780.00	14,673.00	(2,893.00)	-5.98%	-0.99%	2.29%	4.95%	5.27%	5.56%				
3920	2013	-	-	-	-	NA	-5.98%	-0.99%	2.29%	4.95%	5.27%	5.56%			
3920	2014	-	-	-	-	NA	NA	-5.98%	-0.99%	2.29%	4.95%	5.27%	5.56%		
3920	2015	-	-	-	-	NA	NA	NA	-5.98%	-0.99%	2.29%	4.95%	5.27%	5.56%	
3920	2016	-	-	-	-	NA	NA	NA	NA	-5.98%	-0.99%	2.29%	4.95%	5.27%	5.56%
3920	2017	168,007.43	3,500.00	-	3,500.00	2.08%	2.08%	2.08%	2.08%	2.08%	0.28%	0.13%	2.22%	4.19%	4.81%
3920	2018	-	-	-	-	NA	2.08%	2.08%	2.08%	2.08%	2.08%	0.28%	0.13%	2.22%	4.19%
3920	2019	-	-	-	-	NA	NA	2.08%	2.08%	2.08%	2.08%	0.28%	0.13%	2.22%	4.19%
3920	2020	28,500.00	-	-	-	0.00%	0.00%	0.00%	1.78%	1.78%	1.78%	1.78%	1.78%	0.25%	0.12%
3920	2021	2,410.00	-	2,844.11	(2,844.11)	-118.01%	-9.20%	-9.20%	-9.20%	0.33%	0.33%	0.33%	0.33%	0.33%	-0.90%
3921	2005	-	-	-	-	NA									
3921	2006	-	-	-	-	NA	NA								
3921	2007	-	-	-	-	NA	NA	NA							
3921	2008	-	-	-	-	NA	NA	NA	NA						
3921	2009	-	-	-	-	NA	NA	NA	NA	NA					
3921	2010	-	-	-	-	NA	NA	NA	NA	NA	NA				
3921	2013	-	-	-	-	NA	NA	NA	NA	NA	NA	NA			
3921	2014	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA		
3921	2015	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3921	2016	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3921	2017	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3921	2018	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3921	2019	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3921	2020	69,401.13	36,216.28	-	36,216.28	52.18%	52.18%	52.18%	52.18%	52.18%	52.18%	52.18%	52.18%	52.18%	52.18%
3921	2021	174,749.18	31,800.00	-	31,800.00	18.20%	27.86%	27.86%	27.86%	27.86%	27.86%	27.86%	27.86%	27.86%	27.86%
392 Combined	2005	29,100.81	4,000.00	(498.00)	4,498.00	15.46%									
392 Combined	2006	522,678.71	25,260.00	(3,816.00)	29,076.00	5.56%	6.08%								
392 Combined	2007	103,681.15	14,720.00	-	14,720.00	14.20%	6.99%	7.37%							
392 Combined	2008	68,191.03	11,667.00	500.00	11,167.00	16.38%	15.06%	7.91%	8.22%						
392 Combined	2009	244,625.09	-	-	-	0.00%	3.57%	6.22%	5.85%	6.14%					
392 Combined	2010	48,355.07	11,780.00	14,673.00	(2,893.00)	-5.98%	-0.99%	2.29%	4.95%	5.27%	5.56%				
392 Combined	2013	-	-	-	-	NA	-5.98%	-0.99%	2.29%	4.95%	5.27%	5.56%			
392 Combined	2014	-	-	-	-	NA	NA	-5.98%	-0.99%	2.29%	4.95%	5.27%	5.56%		
392 Combined	2015	-	-	-	-	NA	NA	NA	-5.98%	-0.99%	2.29%	4.95%	5.27%	5.56%	
392 Combined	2016	-	-	-	-	NA	NA	NA	NA	-5.98%	-0.99%	2.29%	4.95%	5.27%	5.56%

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392 Combined	2017	168,007.43	3,500.00	-	3,500.00	2.08%	2.08%	2.08%	2.08%	2.08%	2.08%	0.13%	2.22%	4.19%	4.81%
392 Combined	2018	-	-	-	-	NA	2.08%	2.08%	2.08%	2.08%	2.08%	0.28%	0.13%	2.22%	4.19%
392 Combined	2019	-	-	-	-	NA	NA	2.08%	2.08%	2.08%	2.08%	2.08%	0.28%	0.13%	2.22%
392 Combined	2020	97,901.13	36,216.28	-	36,216.28	36.99%	36.99%	36.99%	14.94%	14.94%	14.94%	14.94%	14.94%	11.72%	6.59%
392 Combined	2021	177,159.18	31,800.00	2,844.11	28,955.89	16.34%	23.69%	23.69%	23.69%	15.50%	15.50%	15.50%	15.50%	15.50%	13.39%
3930	2005	-	-	-	-	NA									
3930	2006	3,633.92	-	-	-	0.00%	0.00%								
3930	2007	663.56	-	-	-	0.00%	0.00%	0.00%							
3930	2008	14,215.46	-	-	-	0.00%	0.00%	0.00%	0.00%						
3930	2009	-	-	-	-	NA	0.00%	0.00%	0.00%	0.00%					
3930	2010	3,086.24	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%				
3930	2013	-	-	-	-	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
3930	2014	-	-	-	-	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		
3930	2015	-	-	-	-	NA	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
3930	2016	-	-	-	-	NA	NA	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3930	2017	8,619.01	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3930	2018	605.67	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3930	2019	-	-	-	-	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3930	2020	-	-	-	-	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3930	2021	-	-	-	-	NA	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3940	2005	-	-	-	-	NA									
3940	2006	330,137.86	-	-	-	0.00%	0.00%								
3940	2007	7,204.86	-	-	-	0.00%	0.00%	0.00%							
3940	2008	53,185.04	-	-	-	0.00%	0.00%	0.00%	0.00%						
3940	2009	163,937.52	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%					
3940	2010	89,305.34	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%				
3940	2013	-	-	-	-	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
3940	2014	-	-	-	-	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		
3940	2015	4,741.26	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
3940	2016	399.75	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3940	2017	-	-	-	-	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3940	2018	335,006.76	2,264.60	-	2,264.60	0.68%	0.68%	0.68%	0.67%	0.67%	0.67%	0.53%	0.38%	0.35%	0.35%
3940	2019	22,607.80	2,648.56	-	2,648.56	11.72%	1.37%	1.37%	1.37%	1.35%	1.35%	1.35%	1.09%	0.80%	0.73%
3940	2020	74,869.13	4,000.00	-	4,000.00	5.34%	6.82%	2.06%	2.06%	2.06%	2.04%	2.04%	2.04%	1.69%	1.29%
3940	2021	-	-	-	-	NA	5.34%	6.82%	2.06%	2.06%	2.06%	2.04%	2.04%	2.04%	1.69%
3950	2005	-	-	-	-	NA									
3950	2006	6,490.08	-	-	-	0.00%	0.00%								
3950	2007	88.14	-	-	-	0.00%	0.00%	0.00%							

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3950	2008	2,170.42	-	-	-	0.00%	0.00%	0.00%	0.00%						
3950	2009	7,899.04	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%					
3950	2010	3,682.30	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%				
3950	2013	-	-	-	-	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
3950	2014	-	-	-	-	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		
3950	2015	-	-	-	-	NA	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
3950	2016	-	-	-	-	NA	NA	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3950	2017	1,062.20	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3950	2018	414.28	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3950	2019	154.55	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3950	2020	-	-	-	-	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3950	2021	-	-	-	-	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3960	2005	-	-	-	-	NA									
3960	2006	87,050.63	-	-	-	0.00%	0.00%								
3960	2007	36,704.91	1,600.00	-	1,600.00	4.36%	1.29%	1.29%							
3960	2008	452.14	32.00	13.00	19.00	4.20%	4.36%	1.30%	1.30%						
3960	2009	88,616.53	-	-	-	0.00%	0.02%	1.29%	0.76%	0.76%					
3960	2010	8,593.93	-	5,839.00	(5,839.00)	-67.94%	-6.01%	-5.96%	-3.14%	-1.91%	-1.91%				
3960	2013	-	-	-	-	NA	-67.94%	-6.01%	-5.96%	-3.14%	-1.91%	-1.91%			
3960	2014	-	-	-	-	NA	NA	-67.94%	-6.01%	-5.96%	-3.14%	-1.91%	-1.91%		
3960	2015	-	-	-	-	NA	NA	NA	-67.94%	-6.01%	-5.96%	-3.14%	-1.91%	-1.91%	
3960	2016	3,480.83	-	-	-	0.00%	0.00%	0.00%	0.00%	-48.36%	-5.80%	-5.75%	-3.06%	-1.88%	-1.88%
3960	2017	46,766.05	10,000.00	-	10,000.00	21.38%	19.90%	19.90%	19.90%	19.90%	7.07%	2.82%	2.83%	3.13%	2.13%
3960	2018	29,741.36	-	-	-	0.00%	13.07%	12.50%	12.50%	12.50%	12.50%	4.70%	2.35%	2.35%	2.70%
3960	2019	-	-	-	-	NA	0.00%	13.07%	12.50%	12.50%	12.50%	12.50%	4.70%	2.35%	2.35%
3960	2020	53,590.33	-	-	-	0.00%	0.00%	0.00%	7.69%	7.49%	7.49%	7.49%	7.49%	2.93%	1.80%
3960	2021	-	-	-	-	NA	0.00%	0.00%	0.00%	7.69%	7.49%	7.49%	7.49%	7.49%	2.93%
3961	2005	-	-	-	-	NA									
3961	2006	1,373.31	-	-	-	0.00%	0.00%								
3961	2007	-	1,500.00	-	1,500.00	NA	109.23%	109.23%							
3961	2008	40,484.14	18,365.00	(487.00)	18,852.00	46.57%	50.27%	48.62%	48.62%						
3961	2009	81,538.44	500.00	(1,083.00)	1,583.00	1.94%	16.75%	17.98%	17.78%	17.78%					
3961	2010	7,006.10	-	4,760.00	(4,760.00)	-67.94%	-3.59%	12.15%	13.31%	13.17%	13.17%				
3961	2013	-	-	-	-	NA	-67.94%	-3.59%	12.15%	13.31%	13.17%	13.17%			
3961	2014	-	-	-	-	NA	NA	-67.94%	-3.59%	12.15%	13.31%	13.17%	13.17%		
3961	2015	18,160.56	-	-	-	0.00%	0.00%	0.00%	-18.91%	-2.98%	10.65%	11.67%	11.56%	11.56%	
3961	2016	56,386.03	19,030.00	-	19,030.00	33.75%	25.53%	25.53%	25.53%	17.50%	9.72%	17.05%	17.78%	17.67%	17.67%
3961	2017	58,330.21	-	-	-	0.00%	16.59%	14.32%	14.32%	14.32%	10.20%	7.16%	13.25%	13.82%	13.75%
3961	2018	79,676.61	-	-	-	0.00%	0.00%	9.79%	8.95%	8.95%	8.95%	6.50%	5.27%	10.16%	10.60%
3961	2019	-	-	-	-	NA	0.00%	0.00%	9.79%	8.95%	8.95%	8.95%	6.50%	5.27%	10.16%

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3961	2020	-	-	-	-	NA	NA	0.00%	0.00%	9.79%	8.95%	8.95%	8.95%	6.50%	5.27%
3961	2021	-	-	-	-	NA	NA	NA	0.00%	0.00%	9.79%	8.95%	8.95%	8.95%	6.50%
3962	2005	-	-	-	-	NA									
3962	2006	62,449.93	-	-	-	0.00%	0.00%								
3962	2007	-	-	-	-	NA	0.00%	0.00%							
3962	2008	-	-	-	-	NA	NA	0.00%	0.00%						
3962	2009	45,398.87	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%					
3962	2010	-	-	-	-	NA	0.00%	0.00%	0.00%	0.00%	0.00%				
3962	2013	-	-	-	-	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%			
3962	2014	-	-	-	-	NA	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%		
3962	2015	50,733.84	37,958.40	-	37,958.40	74.82%	74.82%	74.82%	74.82%	39.49%	39.49%	39.49%	23.94%	23.94%	
3962	2016	-	-	-	-	NA	74.82%	74.82%	74.82%	74.82%	39.49%	39.49%	39.49%	23.94%	23.94%
3962	2017	86,020.38	-	-	-	0.00%	0.00%	27.76%	27.76%	27.76%	27.76%	20.84%	20.84%	20.84%	15.52%
3962	2018	-	-	-	-	NA	0.00%	0.00%	27.76%	27.76%	27.76%	27.76%	20.84%	20.84%	20.84%
3962	2019	-	-	-	-	NA	NA	0.00%	0.00%	27.76%	27.76%	27.76%	27.76%	20.84%	20.84%
3962	2020	-	-	-	-	NA	NA	NA	0.00%	0.00%	27.76%	27.76%	27.76%	27.76%	20.84%
3962	2021	-	-	-	-	NA	NA	NA	NA	0.00%	0.00%	27.76%	27.76%	27.76%	27.76%
3963	2005	-	-	-	-	NA									
3963	2006	-	-	-	-	NA	NA								
3963	2007	-	-	-	-	NA	NA	NA							
3963	2008	-	-	-	-	NA	NA	NA	NA						
3963	2009	-	-	-	-	NA	NA	NA	NA	NA					
3963	2010	-	-	-	-	NA	NA	NA	NA	NA	NA				
3963	2013	-	-	-	-	NA	NA	NA	NA	NA	NA	NA			
3963	2014	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA		
3963	2015	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3963	2016	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3963	2017	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3963	2018	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3963	2019	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3963	2020	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3963	2021	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3964	2005	-	-	-	-	NA									
3964	2006	-	-	-	-	NA	NA								
3964	2007	-	-	-	-	NA	NA	NA							
3964	2008	-	-	-	-	NA	NA	NA	NA						
3964	2009	-	-	-	-	NA	NA	NA	NA	NA					
3964	2010	-	-	-	-	NA	NA	NA	NA	NA	NA				
3964	2013	-	-	-	-	NA	NA	NA	NA	NA	NA	NA			

LIBERTY UTILITIES (MID-STATES NATURAL GAS) CORP.
 D/B/A LIBERTY UTILITIES
 State of Missouri
 Net Salvage Missouri Assets
 Data for 2005-2021

Acct	Year	Retirements	Gross Salvage	Cost of Removal	Net Salvage	Net Salvage %	2 Yr Salvage %	3 Yr Salvage %	4 Yr Salvage %	5 Yr Salvage %	6 Yr Salvage %	7 Yr Salvage %	8 Yr Salvage %	9 Yr Salvage %	10 Yr Salvage %
3991	2007	-	-	-	-	NA	NA	NA							
3991	2008	-	-	-	-	NA	NA	NA	NA						
3991	2009	-	-	-	-	NA	NA	NA	NA	NA					
3991	2010	-	-	-	-	NA	NA	NA	NA	NA	NA				
3991	2013	-	-	-	-	NA	NA	NA	NA	NA	NA	NA			
3991	2014	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA		
3991	2015	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3991	2016	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3991	2017	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3991	2018	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3991	2019	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3991	2020	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3991	2021	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3992	2005	-	-	-	-	NA									
3992	2006	-	-	-	-	NA	NA								
3992	2007	-	-	-	-	NA	NA	NA							
3992	2008	-	-	-	-	NA	NA	NA	NA						
3992	2009	-	-	-	-	NA	NA	NA	NA	NA					
3992	2010	-	-	-	-	NA	NA	NA	NA	NA	NA				
3992	2013	-	-	-	-	NA	NA	NA	NA	NA	NA	NA			
3992	2014	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA		
3992	2015	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	
3992	2016	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3992	2017	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3992	2018	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3992	2019	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3992	2020	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3992	2021	-	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3993	2005	-	-	-	-	NA									
3993	2006	-	-	-	-	NA	NA								
3993	2007	78,666.76	-	-	-	0.00%	0.00%	0.00%							
3993	2008	-	-	-	-	NA	0.00%	0.00%	0.00%						
3993	2009	-	-	-	-	NA	NA	0.00%	0.00%	0.00%					
3993	2010	-	-	-	-	NA	NA	NA	0.00%	0.00%	0.00%				
3993	2013	-	-	-	-	NA	NA	NA	NA	0.00%	0.00%	0.00%			
3993	2014	4,682.58	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		
3993	2015	-	-	-	-	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
3993	2016	-	-	-	-	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3993	2017	-	-	-	-	NA	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3993	2018	-	-	-	-	NA	NA	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

APPENDIX E
Accumulated Depreciation Summary

LIBERTY UTILITIES (MID-STATES NATURAL GAS) CORP.
D/B/A LIBERTY UTILITIES
State of Missouri
Summary of Book Reserve and Reallocated Reserve
At December 31, 2021

Acct	Per Book			Total Reallocated Reserve	Theoretical Reserve	Theo Reserve Life	Theo Reserve COR	Proposed Net Salvage %	Allocated Life Reserve	Allocated COR reserve
	Life Reserve	Cor Reserve	Total Reserve							
3010	(894.00)		(894.00)						894.00	
3020	(75,761.68)		(75,761.68)						75,761.68	
3030	(17,585.04)		(17,585.04)						17,585.04	
3110	1,184.33		1,184.33						(1,184.33)	
Total	(93,056.39)	-	(93,056.39)						93,056.39	-
Transmission										
3650	(73.00)		(73.00)						-	-
3651	(2,232.25)	136.13	(2,368.38)						-	-
3660	(3,136.39)	8.59	(3,144.98)	2,864.10	2,335.42	2,224.21	111.21	-5.00%	2,713.39	150.71
3661	(11,668.40)	196.81	(11,865.21)	14,973.85	11,933.87	11,365.59	568.28	-5.00%	14,203.75	770.10
3670	(39,263.19)	12,063.74	(51,326.93)	54,712.63	44,629.79	44,629.79	-	0.00%	54,712.63	-
3671	(5,185,639.99)	1,497,403.83	(6,683,043.82)	6,768,145.24	5,394,080.02	4,315,264.01	1,078,816.00	-25.00%	5,306,186.07	1,461,959.17
3672	(15,537.06)		(15,537.06)			-	-	-25.00%	-	-
3690	(443,262.64)	(46,929.11)	(396,333.53)	1,385,686.72	-	-	-	0.00%	320,244.61	-
3700	(4,253.60)		(4,253.60)	7,659,172.19	-	-	-	0.00%	7,006.08	-
Total Transmission	(5,705,066.52)	1,462,879.98	(7,167,946.50)	15,885,554.72	5,452,979.09	4,373,483.60	1,079,495.49		5,705,066.52	1,462,879.98
Distribution										
3740	(10,285.00)		(10,285.00)							
3741	-		-							
3742	(72,310.75)		(72,310.75)							
3750	(77,283.91)		(77,283.91)	67,618.05	67,618.05	67,618.05	-	0.00%	67,618.05	-
3760	(522,910.79)	174,241.96	(697,152.75)	1,385,686.72	1,385,686.72	1,065,912.86	319,773.86	-30.00%	1,056,132.50	329,554.22
3761	(7,889,449.61)	1,099,667.45	(8,989,117.06)	7,659,172.19	7,659,172.19	5,715,800.14	1,943,372.05	-34.00%	5,656,361.64	2,002,810.55
3762	(10,671,371.48)	1,347,466.11	(12,018,837.59)	10,917,836.35	10,917,836.35	8,876,289.71	2,041,546.63	-23.00%	8,813,848.52	2,103,987.83
3770	(22,142.65)		(22,142.65)	1,173,022.08	1,173,022.08	837,872.91	335,149.17	-40.00%	827,622.30	345,399.78
3780	(745,404.39)	52,503.63	(797,908.02)			-	-		-	-
3790	(1,048,296.98)	37,720.14	(1,086,017.12)	1,157,884.47	1,157,884.47	926,307.57	231,576.89	-25.00%	919,224.74	238,659.73
3800	(5,408,319.66)	9,785,163.40	(15,193,483.06)	12,276,929.06	12,276,929.06	7,015,388.03	5,261,541.03	-75.00%	6,854,462.54	5,422,466.51
3810	2,248,752.87	252,083.57	1,996,669.30	4,213,040.40	4,213,040.40	3,663,513.39	549,527.01	-15.00%	3,646,705.98	566,334.42
3820	(5,383,538.39)	(705,493.54)	(4,678,044.85)	3,256,169.14	3,256,169.14	2,411,977.14	844,192.00	-35.00%	2,386,157.33	870,011.81
3830	(1,708,173.36)	(94,985.01)	(1,613,188.35)	1,404,723.18	1,404,723.18	1,404,723.18	-	0.00%	1,404,723.18	-
3840	(569,248.57)	(1,204.96)	(568,043.61)	327,234.26	327,234.26	327,234.26	-	0.00%	327,234.26	-
3850	(306,954.18)	(7,101.54)	(299,852.64)	295,154.41	295,154.41	236,123.53	59,030.88	-25.00%	234,318.05	60,836.36
3870	(11,048.32)		(11,048.32)	3,576.08	3,576.08	3,576.08	-	0.00%	3,576.08	-
Total Distribution	(32,197,985.17)	11,940,061.21	(44,138,046.38)	44,138,046.38	44,138,046.38	32,552,336.86	11,585,709.51		32,197,985.17	11,940,061.21

LIBERTY UTILITIES (MID-STATES NATURAL GAS) CORP.
D/B/A LIBERTY UTILITIES
State of Missouri
Summary of Book Reserve and Reallocated Reserve
At December 31, 2021

Acct	Per Book			Total Reallocated Reserve	Theoretical Reserve	Theo Reserve Life	Theo Reserve COR	Proposed Net Salvage %	Allocated Life Reserve	Allocated COR reserve
	Life Reserve	Cor Reserve	Total Reserve							
General										
3890	(9,016.00)		(9,016.00)							
3900	(920,800.29)	(3,989.54)	(916,810.75)	475,140.51	475140.5064			0.00%	512,231.59	(37,091.09)
3901	(62,597.57)	-	(62,597.57)	44,566.19	44566.1902			0.00%	44,566.19	
3903	(77,240.70)		(77,240.70)	43,763.52	43763.52202			0.00%	43,763.52	
3910	(254,583.64)	(569.81)	(254,013.83)	352,129.66	352129.66			0.00%	352,129.66	
3920	(224,763.29)	10,882.27	(235,645.56)	147,563.68	147563.6789			0.00%	147,563.68	
3921	(2,587,730.62)		(2,587,730.62)	2,206,424.19	2206424.192			10.00%	2,206,424.19	
3930	(637.07)	(2.93)	(634.14)	372.76	372.7597826			10.00%	372.76	
3940	(304,657.50)	(1,893.21)	(302,764.29)	665,834.16	665834.1622			0.00%	665,834.16	
3950	(2,116.60)	(2,763.77)	647.17	-				0.00%	-	
3960	(437,492.53)	4,580.01	(442,072.54)	590,040.01	590040.0119			0.00%	590,040.01	
3961	9,364.52		9,364.52	-				11.00%	-	
3962	(262,442.39)		(262,442.39)	288,249.92	288249.9234			11.00%	288,249.92	
3963	(136.63)		(136.63)	-				11.00%	-	
3970	(18,587.03)	(408.13)	(18,178.90)	20,649.56	20649.55618			11.00%	20,649.56	
3972	(10,521.92)		(10,521.92)	-				0.00%	-	
3973	2,251.23		2,251.23	8,654.66	8654.660294			0.00%	8,654.66	
3975	(5,660.44)		(5,660.44)	-				0.00%	-	
3980	(478,810.27)	(42,909.17)	(435,901.10)	-				0.00%	-	
3990	364.90	-	364.90	523,597.48	523597.4763			0.00%	523,597.48	
3993	(11,236.89)		(11,236.89)	8,017.31	8017.311429			0.00%	8,017.31	
3994	99,095.69	(16.80)	99,112.49	145,860.34	145860.3443			0.00%	145,860.34	
									-	
Total General	(5,557,955.04)	(37,091.09)	(5,520,863.95)	5,520,863.95	5,520,863.95	-			5,557,955.04	(37,091.09)
Total Company	(43,554,063.12)	13,365,850.11	(56,919,913.23)	65,544,465.06	55,111,889.42	36,925,820.46			43,554,063.12	13,365,850.11

**LIBERTY UTILITIES (MIDSTATES NATURAL
GAS) CORP. D/B/A LIBERTY UTILITIES
SHARED SERVICES UNIT
DEPRECIATION RATE STUDY
As of December 31, 2021**



<http://www.utilityalliance.com>

**LIBERTY UTILITIES (MIDSTATES NATURAL GAS) CORP.
D/B/A LIBERTY UTILITIES
SHARED SERVICES UNIT
DEPRECIATION RATE STUDY
EXECUTIVE SUMMARY**

Liberty Utilities (Midstates Natural Gas) Corp. d/b/a Liberty Utilities (“Liberty” or “Company”) engaged Alliance Consulting Group to conduct a depreciation study of the Company’s Shared Services Unit (“SSU” or “Shared Services”) operations depreciable assets as of fiscal year end December 31, 2021. SSU provides support to Liberty’s regulated utility divisions.

The regulated natural gas utility divisions during the year ended December 31, 2021 were:

- Liberty Illinois Division
- Liberty Iowa Division
- Liberty Missouri Division

The study proposes depreciation parameters, including Average Service Life, Iowa Curve, and Net Salvage percentages as set forth in Appendix C, which are a result of statistical analysis, and professional judgment after meeting with various company experts. The depreciation study developed depreciation parameters at an account level.

The depreciation rates are based on the straight-line method, average life group (“ALG”) procedure, and remaining-life technique. This study results in an annual depreciation expense accrual of \$832 thousand when applied to depreciable plant balances as of December 31, 2021.

LIBERTY UTILITIES (MIDSTATES NATURAL GAS) CORP.

D/B/A LIBERTY UTILITIES

SHARED SERVICES UNIT

DEPRECIATION RATE STUDY

As of December 31, 2021

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PURPOSE

The purpose of this study is to develop depreciation rates for the depreciable property as recorded on Shared Services' books at December 31, 2021. The account based depreciation rates were designed to recover the total remaining undepreciated investment, adjusted for net salvage, over the remaining life of Shared Services' property on a straight-line basis. Non-depreciable property was excluded from this study.

Shared Services is a division of the Company dedicated to providing various support services to three of its natural gas operating companies. As of the study date, Shared Services supported regulated gas utility divisions operating in Illinois, Iowa, and Missouri.

STUDY RESULTS

The existing and current study annual depreciation expense results from the use of Iowa Curve dispersion patterns with average service life, the average life group (“ALG”) procedure and remaining-life technique, and consideration of net salvage in the development of the study recommended depreciation rates. Detailed information for each of these factors will follow in this report.

Overall depreciation rates for Shared Services depreciable property are shown in Appendix A. These rates translate into an annual depreciation accrual of \$832 thousand based on Shared Services' depreciable investment at December 31, 2021.

The accrual at existing rates based on Shared Services' depreciable investment at December 31, 2021 is \$892 thousand. The study recommendation thus results in a decrease of \$60 thousand in annual depreciation expense.

Appendix A presents the recommended study annual accrual rates and amounts. Appendix B presents the comparison of the depreciation rates and annual accruals. Appendix C presents the recommended study mortality and net salvage parameters by account. Appendix D presents the net salvage history for Shared Services by account.

GENERAL DISCUSSION

Definition

The term "depreciation" as used in this study 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. It is a process of allocation, not valuation. This expense is systematically allocated to accounting periods over the life 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. The Company accrues depreciation on the basis of the original cost of all depreciable property included in each functional property group. On retirement the full cost of depreciable property, less the net salvage value, is charged to the depreciation reserve.

Basis of Depreciation Estimates

The straight-line, average life group ("ALG"), remaining-life depreciation system was employed to calculate annual and accrued depreciation in this study. In this system, the annual depreciation expense for each vintage is computed by dividing the original cost of the asset vintage (less allocated depreciation reserve less estimated net salvage) by its respective average remaining life. The resulting annual accrual amounts were divided by the original cost of the depreciable property in each account to determine the depreciation rate. The calculated remaining lives and annual depreciation accrual rates were based on attained ages of plant in service and the estimated service life and salvage characteristics of each depreciable group, and were computed in a direct weighting by multiplying each vintage or account balance times its remaining life and dividing by the plant investment in service at December 31, 2021. The computations of the annual depreciation rates are shown in Appendix A, and the weighted remaining life calculations are shown in the study's workpapers. A comparison of current vs.

PURPOSE

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GENERAL DISCUSSION

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Basis of Depreciation Estimates

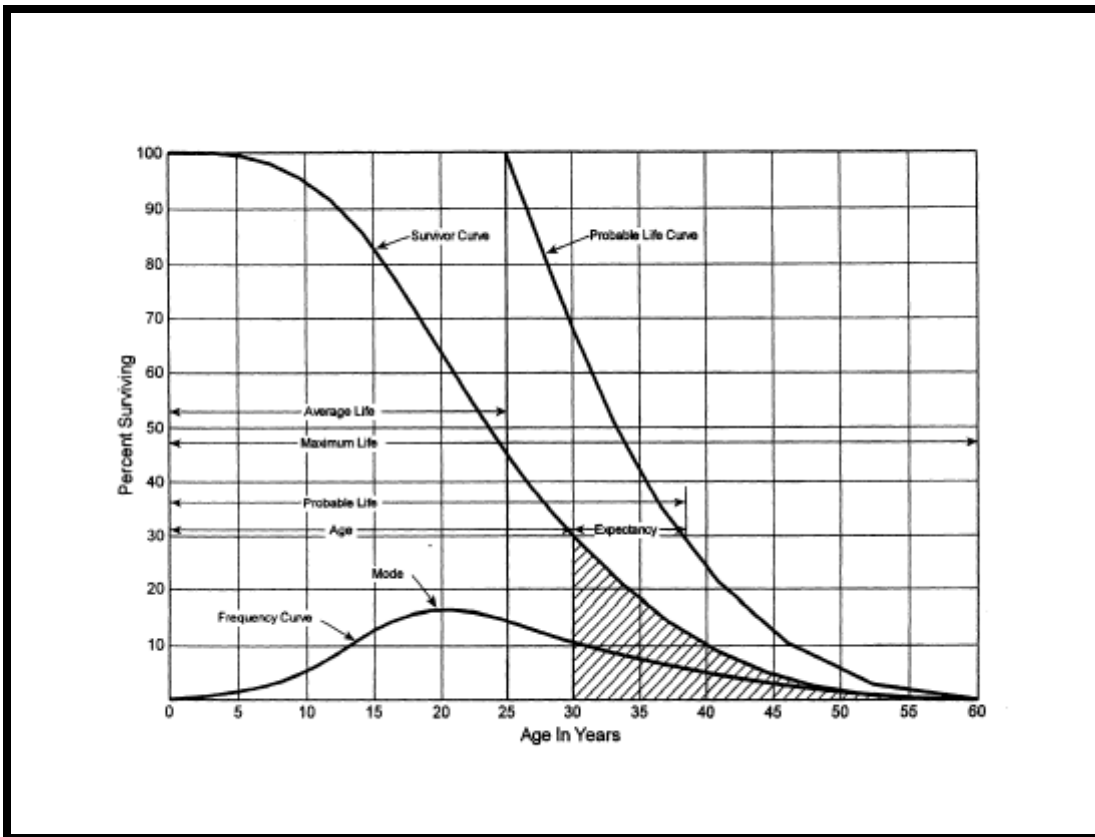
The straight-line, average life group ("ALG"), remaining-life depreciation system was employed to calculate annual and accrued depreciation in this study. In this system, the annual depreciation expense for each vintage is computed by dividing the original cost of the asset vintage (less allocated depreciation reserve less estimated net salvage) by its respective average remaining life. The resulting annual accrual amounts were divided by the original cost of the depreciable property in each account to determine the depreciation rate. The calculated remaining lives and annual depreciation accrual rates were based on attained ages of plant in service and the estimated service life and salvage characteristics of each depreciable group, and were computed in a direct weighting by multiplying each vintage or account balance times its remaining life and dividing by the plant investment in service at December 31, 2021. The computations of the annual depreciation rates are shown in Appendix A, and the weighted remaining life calculations are shown in the study's workpapers. A comparison of current vs.

proposed rates is shown in Appendix B.

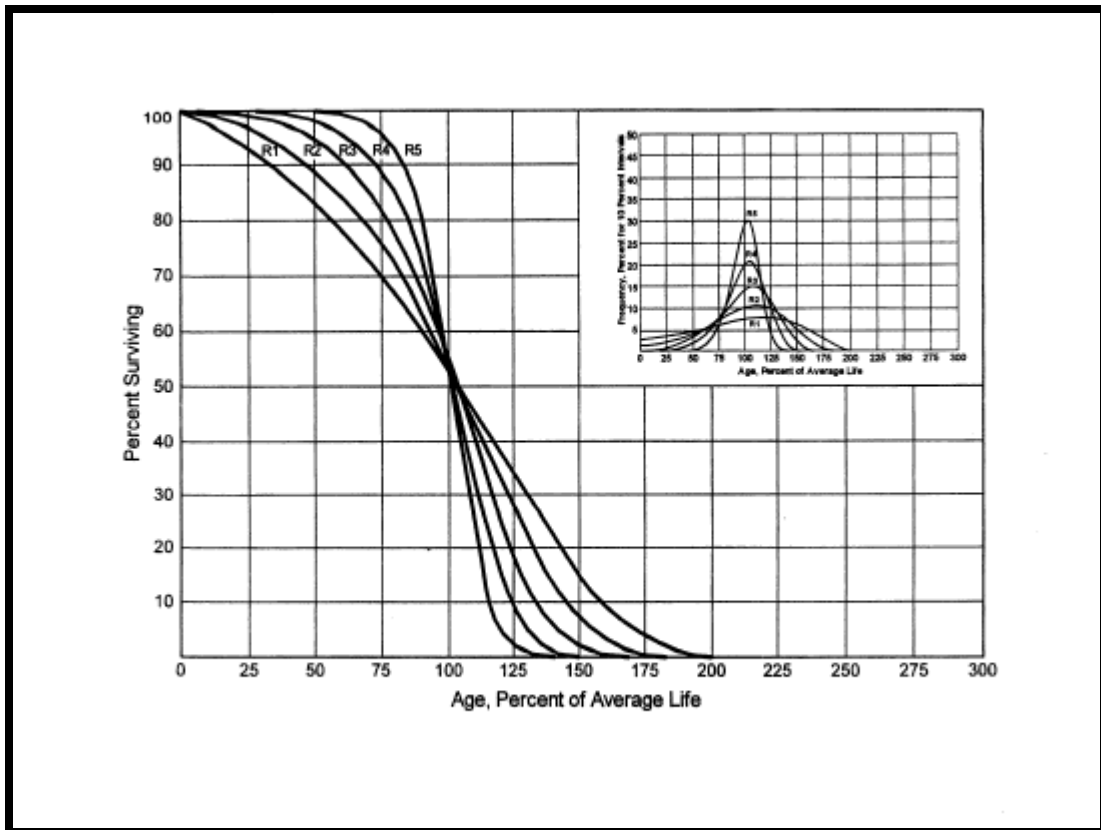
It was not possible to perform actuarial analysis on the assets in Shared Services. All assets in Shared Services were added as new items after Liberty purchased the Atmos properties in 2012. As of December 31, 2021, a small amount of retirement data had been booked in Shared Services. Thus, judgment was used to some degree on all accounts.

Survivor Curves

To fully understand depreciation projections in a regulated utility setting, there must be a basic understanding of survivor curves. Individual property units within a group do not normally have identical lives or investment amounts. The average life of a group can be determined by first constructing a survivor curve which is plotted as a percentage of the units surviving at each age. A survivor curve represents the percentage of property remaining in service at various age intervals. The Iowa Curves are the result of an extensive investigation of life characteristics of physical property made at Iowa State College Engineering Experiment Station in the first half of the prior century. Through common usage, revalidation and regulatory acceptance, these curves have become a descriptive standard for the life characteristics of industrial property. An example of an Iowa Curve is shown below.



There are four families in the Iowa Curves that are distinguished by the relation of the age at the retirement mode (largest annual retirement frequency) and the average life. For distributions with the mode age greater than the average life, an "R" designation (i.e., Right modal) is used. The family of "R" moded curves is shown below.



Similarly, an "S" designation (i.e., Symmetric modal) is used for the family whose mode age is symmetric about the average life. An "L" designation (i.e., Left modal) is used for the family whose mode age is less than the average life. A special case of left modal dispersion is the "O" or origin modal curve family. Within each curve family, numerical designations are used to describe the relative magnitude of the retirement frequencies at the mode. A "6" indicates that the retirements are not greatly dispersed from the mode (i.e., high mode frequency) while a "1" indicates a large dispersion about the mode (i.e., low mode frequency). For example, a curve with an average life of 30 years and an "L3" dispersion is a moderately dispersed, left modal curve that can be designated as a 30 L3 Curve. An SQ, or square, survivor curve occurs where no dispersion is present (i.e., units of common age retire simultaneously).

Most property groups can be closely fitted to one Iowa Curve with a unique average service life. The blending of judgment concerning current conditions and

future trends along with the matching of historical data permits the depreciation analyst to make an informed selection of an account's average life and retirement dispersion pattern.

Actuarial Analysis

There was no retirement data available for Shared Services to perform actuarial analysis. When sufficient data exists to do so, actuarial analysis (retirement rate method) will be used in evaluating historical asset retirement experience where vintage data are available and sufficient retirement activity is present. In actuarial analysis, interval exposures (total property subject to retirement at the beginning of the age interval, regardless of vintage) and age interval retirements are calculated. The complement of the ratio of interval retirements to interval exposures establishes a survivor ratio. The survivor ratio is the fraction of property surviving to the end of the selected age interval, given that it has survived to the beginning of that age interval. Survivor ratios for all of the available age intervals were chained by successive multiplications to establish a series of survivor factors, collectively known as an observed life table. The observed life table shows the experienced mortality characteristic of the account and may be compared to standard mortality curves such as the Iowa Curves. When data is available, accounts will be analyzed using this method.

Judgment

Any depreciation study requires informed judgment by the analyst conducting the study. A knowledge of the property being studied, company policies and procedures, general trends in technology and industry practice, and a sound basis of understanding depreciation theory are needed to apply this informed judgment. Judgment was used in areas such as survivor curve modeling and selection, depreciation method selection, simulated plant record method analysis, and actuarial analysis.

Judgment is not defined as being used in cases where there are specific, significant pieces of information that influence the choice of a life or curve. Those cases would simply be a reflection of specific facts into the analysis. Where there are multiple factors, activities, actions, property characteristics, statistical inconsistencies, implications of applying certain curves, property mix in accounts or a multitude of other considerations that impact the analysis (potentially in various directions), judgment is used to take all of these factors and synthesize them into a general direction or understanding of the characteristics of the property. Individually, no one factor in these cases may have a substantial impact on the analysis, but overall, may shed light on the utilization and characteristics of assets. Judgment may also be defined as deduction, inference, wisdom, common sense, or the ability to make sensible decisions. There is no single correct result from statistical analysis; hence, there is no answer absent judgment. At the very least for example, any analysis requires choosing which bands to place more emphasis.

The establishment of appropriate average service lives and retirement dispersions for Shared Services' accounts requires judgment to incorporate the understanding of the operation of the system with the available accounting information analyzed using the Retirement Rate actuarial methods. The appropriateness of lives and curves depends not only on statistical analyses, but also on how well future retirement patterns will match past retirements.

Current applications and trends in use of the equipment also need to be factored into life and survivor curve choices in order for appropriate mortality characteristics to be chosen.

Average Life Group Depreciation

The average life group (“ALG”) depreciation procedure was used to group the assets within each account. After an average service life and dispersion were selected for each account, those parameters were used to estimate what portion of the surviving investment of each vintage was expected to retire. The depreciation of the group continues until all investment in the vintage group is retired. ALG groups are defined by their respective account dispersion, life, and salvage estimates. A straight-line rate for each ALG group is calculated by computing a composite remaining life for each group across all vintages within the group, dividing the remaining investment to be recovered by the remaining life to find the annual depreciation expense and dividing the annual depreciation expense by the surviving investment. The resultant rate for each ALG group is designed to recover all retirements less net salvage when the last unit retires. The ALG procedure recovers net book cost over the life of each account by averaging many components.

Theoretical Depreciation Reserve

The book depreciation reserve was allocated among accounts within a function through use of the theoretical depreciation reserve model. This study used a reserve model that relied on a prospective concept relating future retirement and accrual patterns for property, given current life and salvage estimates. The theoretical reserve of a group is developed from the estimated remaining life, total life of the property group, and estimated net salvage. The theoretical reserve represents the portion of the group cost that would have been accrued if current forecasts were used throughout the life of the group for future depreciation accruals.

The computation involves multiplying the vintage balances within the group by the theoretical reserve ratio for each vintage. The average life group method requires

an estimate of dispersion and service life to establish how much of each vintage is expected to be retired in each year until all property within the group is retired. Estimated average service lives and dispersion determine the amount within each average life group. The straight-line remaining-life theoretical reserve ratio at any given age (RR) is calculated as:

$$RR = 1 - \frac{(Average\ Remaining\ Life)}{(Average\ Service\ Life)} * (1 - Net\ Salvage\ Ratio)$$

DETAILED DISCUSSION

Depreciation Study Process

This depreciation study encompassed four distinct phases. The first phase involved data collection and field interviews. The second phase was where the initial data analysis occurred. The third phase was where the information and analysis were evaluated. Once the first three stages were complete, the fourth phase began. This phase involved calculating depreciation rates and documenting the corresponding recommendations.

During the Phase 1 data collection process, historical data was compiled from continuing property records and general ledger systems. Data was validated for accuracy by extracting and comparing to multiple financial system sources. Audit of this data was validated against historical data from prior periods, historical general ledger sources, and field personnel discussions. This data was reviewed extensively to put in the proper format for a depreciation study. Further discussion on data review and adjustment is found in the Salvage Considerations Section of this study. Also as part of the Phase 1 data collection process, numerous discussions were conducted with engineers and field operations personnel to obtain information that would assist in formulating life and salvage recommendations in this study. One of the most important elements of performing a proper depreciation study is to understand how the Company utilizes assets and the environment of those assets. Interviews with engineering and operations personnel are important ways to allow the analyst to obtain information that is beneficial when evaluating the output from the life and net salvage programs in relation to the Company's actual asset utilization and environment. Information that was gleaned in these discussions is found both in the Detailed Discussion of this study in the life analysis and salvage analysis sections and also in workpapers.

Phase 2 is where the actuarial analysis is performed. Phase 2 and 3 overlap to a significant degree. The detailed property records information is used in phase 2 to develop observed life tables for life analysis. These tables are visually compared to industry standard tables to determine historical life characteristics. It is possible that the analyst would cycle back to this phase based on the evaluation process performed in Phase 3. Net salvage analysis consists of compiling historical salvage and removal data by functional group to determine values and trends in gross salvage and removal cost. This information was then carried forward into Phase 3 for the evaluation process.

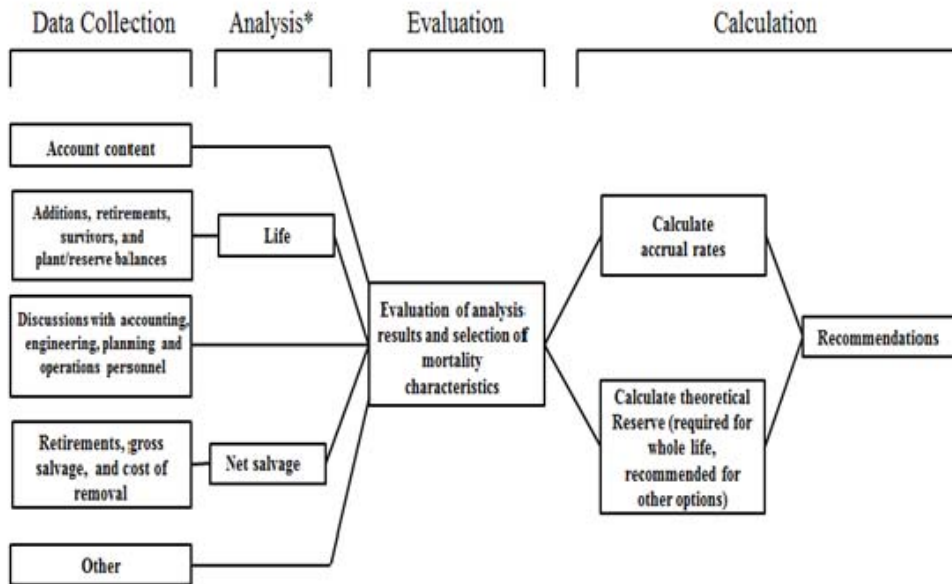
Phase 3 is the evaluation process which synthesizes analysis, interviews, and operational characteristics into a final selection of asset lives and net salvage parameters. The historical analysis from Phase 2 is further enhanced by the incorporation of recent or future changes in the characteristics or operations of assets that were revealed in Phase 1. Phases 2 and 3 allow the depreciation analyst to validate the asset characteristics as seen in the accounting transactions with actual Company operational experience.

Finally, Phase 4 involved the calculation of accrual rates, making recommendations and documenting the conclusions in a final report. The calculation of accrual rates is found in Appendix B. Recommendations for the various accounts are contained within the Detailed Discussion of this report. The depreciation study flow diagram shown as Figure 1¹ documents the steps used in conducting this study. Depreciation Systems², page 289, documents the same basic processes in performing a depreciation study, which are: statistical analyses, evaluation of statistical analysis, discussions with management, forecast assumptions, write logic supporting forecasts and estimation, and write final report.

¹INTRODUCTION TO DEPRECIATION FOR PUBLIC UTILITIES & OTHER INDUSTRIES, AGA EEI (2013).

²W. C. Fitch and F.K.Wolf, DEPRECIATION SYSTEMS, Iowa State Press, at page 289 (1994).

Book Depreciation Study Flow Diagram



Source: Introduction to Depreciation for Public Utilities and Other Industries, AGA EEI, 2013.

*Although not specifically noted, the mathematical analysis may need some level of input from other sources (for example, to determine analysis bands for life and adjustments to data used in all analysis).

Figure 1

SHARED SERVICES DEPRECIATION STUDY PROCESS

Depreciation Rate Calculation

Annual depreciation expense amounts for the depreciable property accounts of Shared Services were calculated by the straight line, equal life group, and remaining-life system. With this approach, remaining lives were calculated according to standard ALG group expectancy techniques, using the Iowa Survivor Curves noted in the calculation. For each plant account, the difference between the surviving investment, adjusted for estimated net salvage and the allocated book depreciation reserve, was divided by the average remaining life to yield the annual depreciation expense. These calculations are shown in Appendix B.

Remaining Life Calculation

The establishment of appropriate average service lives and retirement dispersions for each account within a functional group was based on engineering judgment that incorporated available accounting information analyzed using the Retirement Rate actuarial methods. After establishment of appropriate average service lives and retirement dispersion, remaining life was computed for each account. Theoretical depreciation reserve with zero net salvage was calculated using theoretical reserve ratios as defined in the theoretical reserve portion of the General Discussion section. The difference between plant balance and theoretical reserve was then spread over the ALG depreciation accruals. Remaining life computations are found for each account in the study's workpapers.

Calculation Process

Annual depreciation expense amounts for all accounts were calculated by the straight line, remaining life procedure.

In a whole life representation, the annual accrual rate is computed by the following equation,

$$\text{Annual Accrual Rate} = \frac{(100\% - \text{Net Salvage Percent})}{\text{Average Service Life}}$$

Use of the remaining life depreciation system adds a self-correcting

mechanism, which accounts for any differences between theoretical and book depreciation reserve over the remaining life of the group. With the straight line, remaining life, average life group system using Iowa Curves, composite remaining lives were calculated according to standard broad group expectancy techniques, noted in the formula below:

$$\text{Composite Remaining Life} = \frac{\sum \text{Original Cost} - \text{Theoretical Reserve}}{\sum \text{Whole Life Annual Accrual}}$$

For each plant account, the difference between the surviving investment, adjusted for estimated net salvage, and the allocated book depreciation reserve, was divided by the composite remaining life to yield the annual depreciation expense as noted in this equation where the net salvage percent represents future net salvage.

$$\text{Annual Depreciation Expense} = \frac{\text{Original Cost} - \text{Book Reserve} - (\text{Original Cost}) * (1 - \text{Net Salvage \%})}{\text{Composite Remaining Life}}$$

Within a group, the sum of the group annual depreciation expense amounts, as a percentage of the depreciable original cost investment summed, gives the annual depreciation rate as shown below:

$$\text{Annual Depreciation Rate} = \frac{\sum \text{Annual Depreciation Expense}}{\sum \text{Original Cost}}$$

These calculations are shown in Appendix B. The calculations of the theoretical depreciation reserve values and the corresponding remaining life calculations are shown in workpapers. Book depreciation reserves were allocated to individual accounts and the theoretical reserve computation was used to compute a composite remaining life for each account.

Vintage Group Amortization

Shared Services proposes to continue to use vintage group amortization for assets in Accounts 391, 393-395, and 397-399. Under vintage group amortization, assets in those accounts will be retired when they reach the average service life of the group. Shared Services has reviewed the life and net salvage parameters for all accounts in this group. In the life analysis and salvage analysis sections, recommended changes to each account describe the depreciation parameters requested for those accounts. The amortization accrual for General Property plant can change to reflect the reserve position of the various accounts and small changes in life parameters and net salvage percentages. This allows Shared Services to continue to track small dollar General Property plant items in a cost-efficient manner. The amortization accrual calculations for vintage group amortization are reflected in Appendix A-1.

At this point, the reserve position for these accounts is being set equal to the theoretical reserve. If a reserve difference exists in the future, this study recommends that the remaining life of each plant be used to recover the General Property plant reserve deficiency for each account in this study.

LIFE ANALYSIS

For Shared Services, it was not possible to apply the retirement rate actuarial analysis method. Shared Services assets were added after Liberty's acquisition of Atmos Energy Corporation in 2013. Since the assets were all added in 2012-2015, there was no life analysis history available to perform life analysis for these assets.

NET SALVAGE CONSIDERATIONS

When a capital asset is retired, physically removed from service and finally disposed of, terminal retirement is said to have occurred. The residual value of a terminal retirement is called gross salvage. 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).

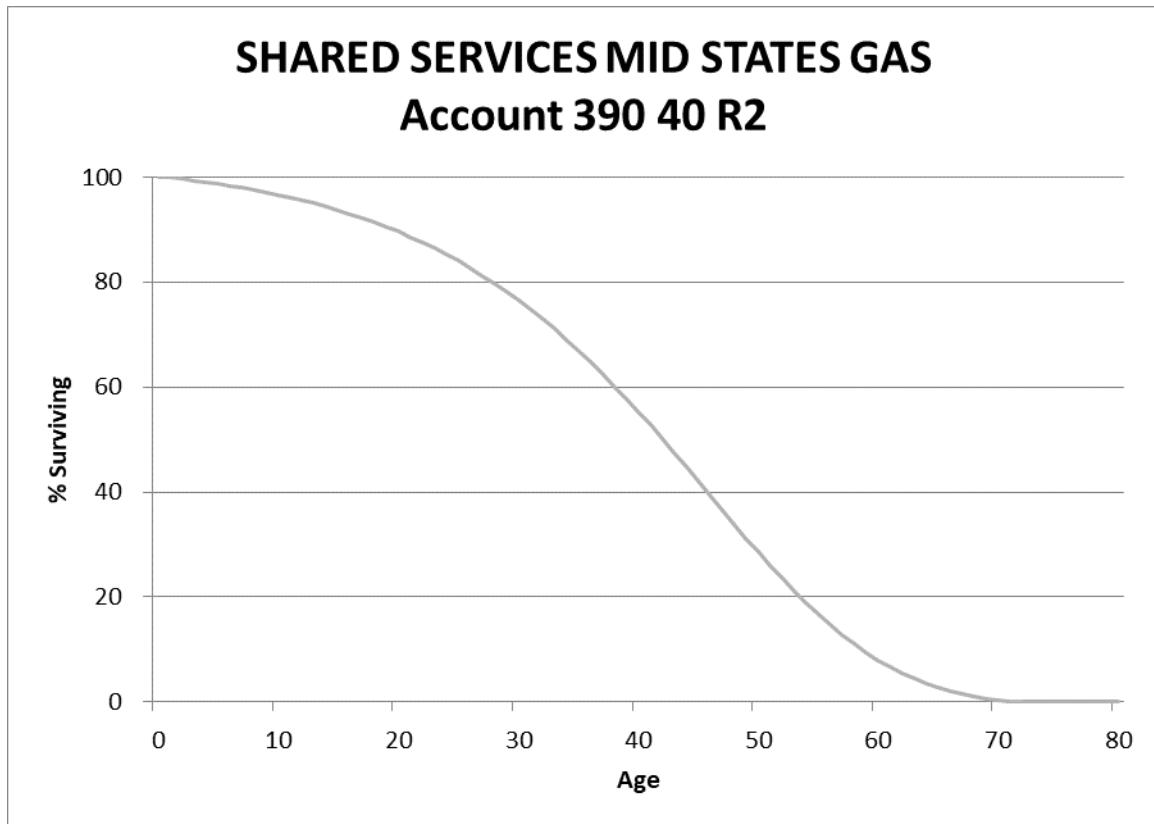
Net Salvage Characteristics

The disposal of general plant assets generally does not incur cost of removal and salvage has declined in recent years. There has been limited asset retirement activity for Shared Services.

Account Life and Net Salvage Analysis- Depreciated Assets

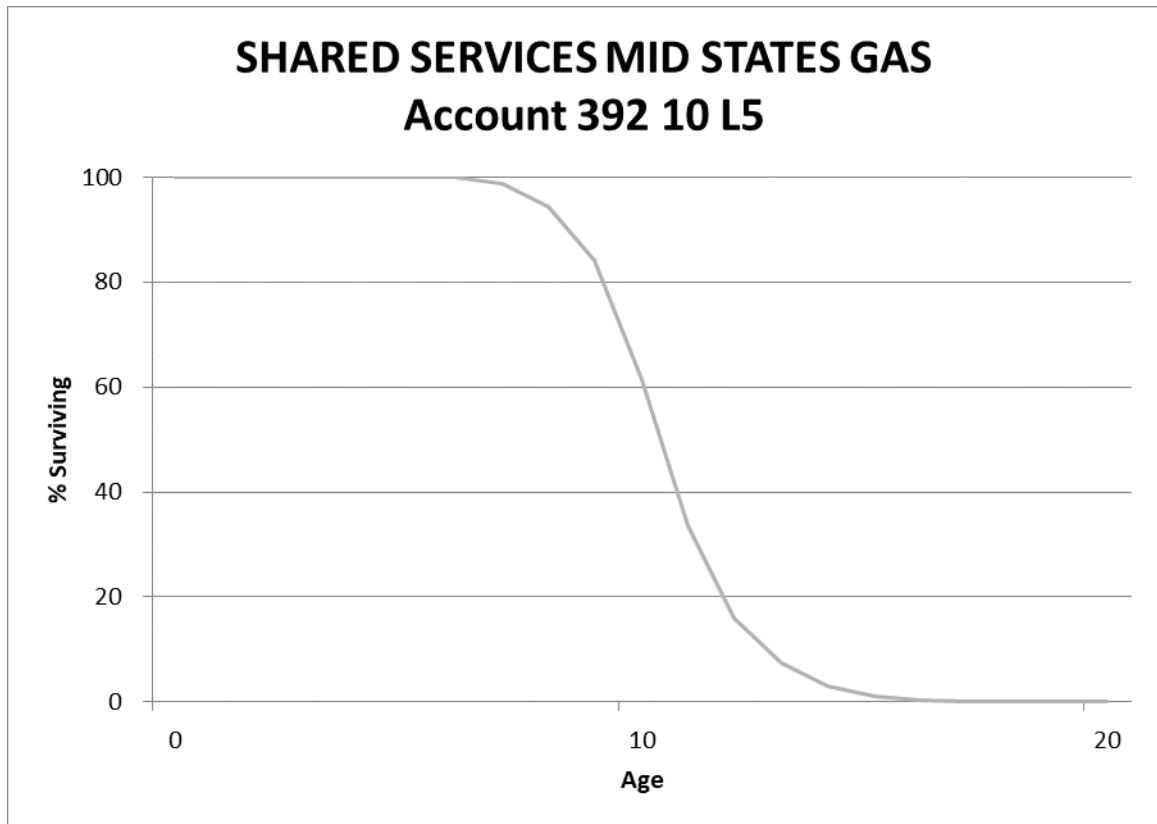
3900 – Structures & Improvements (Proposed 40 R2, 0% net salvage)

This account includes the cost of buildings and improvements including the new Missouri Headquarters office and the third Jackson office expansion. The account balance is \$6.6 million. Based on judgment and type of assets, this study recommends a 40 year life with the R2 dispersion pattern. Little to no salvage is expected. Some cost of removal at the end of life is expected for some of the assets, but none has been recorded. Therefore, a zero percent net salvage is recommended at this time.



3921 – Transportation Equipment < 12,000 LB (Proposed 10 L5, 10% Net salvage)

This account consists of all transportation equipment. These items include SUVs and trucks. The balance is \$575 thousand. The current life for this account is 10 L5. There have been no retirements and a small amount of gross salvage for Shared Services. A recent study of Mid-States Missouri yielded a proposed life and net salvage of 10 L5 and 10% positive net salvage for this account. Based on the proxy of Mid-States Missouri, this study recommends a life of 10 years with an L5 dispersion. Based on results for Mid-State Missouri, this study recommends positive 10 percent net salvage for this account.



Account Life and Net Salvage Analysis- Amortized Assets

3030 – Software Customer First (Proposed 20 SQ, 0% Net Salvage)

This account is a new software system that the Company will use for its customer service function. It has not gone in service as yet. Input from Company personnel is that a 20 year life is appropriate based on information from software developers. Based on judgment and type of assets, this study recommends a 20 year life and vintage group amortization. No graph is provided. Old software has no value at the end of its life. Therefore, a zero percent net salvage is recommended at this time.

3910 – Office Furniture and Equipment (Proposed 15 SQ, 0% Net Salvage)

This account consists of office furniture such as desks, chairs, bookcases, credenzas, file cabinets, office machines, and other miscellaneous equipment. The balance is \$1.0 million. The current life for this account is 10 years. Based on judgment and type of assets, this study recommends a 15 year life and vintage

group amortization. No graph is provided. Little to no salvage is expected. Therefore, a zero percent net salvage is recommended at this time.

3940 – Tools, Shop & Garage Equipment (Proposed 20 SQ, 0% Net Salvage)

This account consists of various small tools and equipment used in shops and garages such as metal detectors, cylinder racks, and weld testers. The balance is \$190 thousand in this account. Based on judgment and type of assets, this study recommends a 20 year life and vintage group amortization. No graph is provided. Little to no salvage is expected. Therefore, a zero percent net salvage is recommended at this time.

Account 3980 – Miscellaneous Equipment (Proposed 20 SQ, 0% Net Salvage)

This account consists of various signage items for the office building. The balance is \$157 thousand. Based on judgment and type of assets, this study recommends a 20 year life and vintage group amortization. No graph is provided. Little to no salvage is expected. Therefore, a zero percent net salvage is recommended at this time.

Account 3990 – Other Tangible Property (7 SQ, 0% net salvage)

The other tangible property account holds implementation costs for website and other shared services information technology projects. The account balance is \$250 thousand. Based on judgment and type of assets, this study recommends a 7 year life and vintage group amortization. No graph is provided. Little to no salvage is expected. Therefore, a zero percent net salvage is recommended at this time.

Account 3993 – Other Tangible Property Network Hardware (7 SQ, 0% net salvage)

The other tangible property account holds various computer related assets such as port switches, antennas, IT cabling, and telecommunications hardware. The account balance is \$226 thousand. Based on judgment and type of assets, this

study recommends a 7 year life and vintage group amortization. No graph is provided. Little to no salvage is expected. Therefore, a zero percent net salvage is recommended at this time.

Account 3994 – Other Tangible Property PC Hardware (5 SQ, 0% net salvage)

The other tangible property account holds some laptops, monitors, conference room projectors, and various types of hardware for Arcgis, Gas Control, Itron, and infrastructure. The account balance is \$2.7 million. Based on judgment and type of assets, this study recommends a 5 year life and vintage group amortization. No graph is provided. Little to no salvage is expected. Therefore, a zero percent net salvage is recommended at this time.

Account 3995 – Other Tangible Property Software (Out of Scope)

This account was included in the prior depreciation study. In 2023, investment was transferred out of this account, so no accrual rate is proposed for this account in the future.

APPENDIX A
Computed Depreciation Rates

LIBERTY UTILITIES MID-STATES
SHARED SERVICES
USING REALLOCATED DEPRECIATION RESERVES
Computation of Proposed Depreciation Accrual Rates
Using Average Life Group Depreciation
As of December 31, 2021

Account	Description	Plant Balance	Allocated Reserve	Net Salvage %	Net Salvage Amount	Unaccrued Balance	Average Remaining Life	Annual Accrual Amount	Proposed Annual Accrual Rate
3900	General Structures & Improvmnt	6,577,878.66	2,028,190.78	0.00%	0.00	4,549,687.88	33.41	136,188.55	2.07%
3921	Transportation Equip<12,000 LB	575,332.65	495,170.41	10.00%	57,533.27	22,628.98	3.80	5,953.67	1.03%

APPENDIX A-1
Computed Amortization Rates

LIBERTY UTILITIES (MIDSTATES NATURAL GAS) CORP.
D/B/A LIBERTY UTILITIES
SHARED SERVICES UNIT
PROPOSED AMORTIZATION PARAMETERS
USING AVERAGE LIFE GROUP DEPRECIATION AT DECEMBER 31, 2021

Account	Description	Plant Balance 12/31/2021	Allocated Reserve 12/31/2021	Theoretical Reserve 12/31/2021	Reserve Difference	Remaining Life	Assets to Retire Where Age > ASL
391	Office Furniture & Improvement	1,030,300.84	455,931.48	455,931.48	0.00	8.36	0.00
394	Tools, Shop, and Garage Equipment	190,045.90	40,256.24	40,256.24	0.00	15.76	0.00
398	Misc. Equipment	157,494.73	65,862.30	65,862.30	0.00	11.64	0.00
399	Other Tangible Property	249,555.28	249,555.28	249,555.28	0.00	0.00	249,555.28
3993	Other Tangible Property - Network H/W	226,189.52	226,189.52	226,189.52	0.00	0.00	226,189.52
3994	Other Tangible Property - PC Hardware	2,678,919.26	2,377,476.29	2,377,476.29	0.00	2.66	2,111,371.67
	Total	4,532,505.53	3,415,271.11	3,415,271.11	0.00		2,587,116.47

After Retirement of Fully Accrued Assets

Account	Description	Balance 12/31/2021	Allocated Reserve 12/31/2021	Proposed Life	Annual Amortization	Accrual For Reserve Deficiency	Proposed Annual Accrual Rate
(a)	(b)	(c)	(d)	(e)	(f)= (c)/(e)	(g)	(h)= 1/ e
391	Office Furniture & Improvement	1,030,300.84	455,931.48	15	68,686.72	0.00	6.67%
394	Tools, Shop, and Garage Equipment	190,045.90	40,256.24	20	9,502.30	0.00	5.00%
398	Misc. Equipment	157,494.73	65,862.30	20	7,874.74	0.00	5.00%
399	Other Tangible Property	0.00	0.00	7	0.00	0.00	14.29%
3993	Other Tangible Property - Network H/W	0.00	0.00	7	0.00	0.00	14.29%
3994	Other Tangible Property - PC Hardware	567,547.59	266,104.62	5	113,509.52	0.00	20.00%
	Total Amortized Acct	1,945,389.06	828,154.64		199,573.27	0.00	

APPENDIX B

Comparison of Rates and Accrual

LIBERTY UTILITIES (MIDSTATES NATURAL GAS) CORP.
D/B/A LIBERTY UTILITIES
Shared Services
Using Reallocated Depreciation Reserves
Comparison of Existing vs Proposed Depreciation Rates
Using Average Life Group Depreciation
As of December 31, 2021

Acct	Description	Plant at 12/31/2021	Current Rate	Annual Expense	Proposed Rate	Proposed Expense	Expense Change
3030	Software Customer First				5.00%	0.00	0.00
3740	Land and Land Rights	158,767.08					
3900	General Structures & Improvmt	6,577,878.66	2.50%	164,446.97	2.07%	136,188.55	(28,258.42)
3910	Office Furniture & Improvement	1,030,300.84	5.00%	51,515.04	6.67%	68,686.72	17,171.68
3921	Transportation Equip<12,000 LB	575,332.65	9.48%	54,541.54	1.03%	5,953.67	(48,587.87) *
3940	Tools, Shop, and Garage Equipment	190,045.90	5.00%	9,502.30	5.00%	9,502.30	0.00
3980	Misc. Equipment	157,494.73	5.00%	7,874.74	5.00%	7,874.74	0.00
3990	Other Tangible Property	249,555.28	14.29%	35,661.45	14.29%	35,661.45	0.00
3993	Other Tangible Property - Network H/W	226,189.52	14.29%	32,322.48	14.29%	32,322.48	0.00
3994	Other Tangible Property - PC Hardware	2,678,919.26	20.00%	535,783.85	20.00%	535,783.85	0.00
	Plus Amortization for Reserve Difference					0.00	0.00
	Total Excluding Non Depreciable Land	<u>11,685,716.84</u>		<u>891,648.36</u>		<u>831,973.75</u>	<u>(59,674.61)</u>

* This account is almost fully accrued. If ratio of accumulated depreciatio divided by plant balance is 90% or greater, the proposed depreciation accrue 9.00%

APPENDIX C

Life and Net Salvage Parameters

LIBERTY UTILITIES (MIDSTATES NATURAL GAS) CORP.
D/B/A LIBERTY UTILITIES
SHARED SERVICES UNIT
PROPOSED DEPRECIATION PARAMETERS
BY ACCOUNT AT DECEMBER 31, 2021

<u>Acct</u>	<u>Description</u>	<u>Current</u>			<u>Proposed</u>		
		<u>Average Service Life</u>	<u>Iowa Curve</u>	<u>Net Salvage Percentage</u>	<u>Average Service Life</u>	<u>Iowa Curve</u>	<u>Net Salvage Percentage</u>
3030	Software Customer First	NA	NA	NA	20	SQ	0%
3740	Land and Land Rights	NA	NA	NA	NA	NA	NA
3900	General Structures & Improvmnt	40	R2	0%	40	R2	0%
3910	Office Furniture & Improvement	20	SQ	0%	15	R5	0%
3921	Transportation Equip<12,000 LB	10	L5	6%	10	L5	10%
3940	Tools, Shop, and Garage Equipment	20	SQ	0%	20	SQ	0%
3980	Misc. Equipment	20	SQ	0%	20	SQ	0%
3990	OTH-Other Tangible Property	7	SQ	0%	7	SQ	0%
3993	Other Tangible Property - Network H/W	7	SQ	0%	7	SQ	0%
3994	Other Tangible Property - PC Hardware	5	SQ	0%	5	SQ	0%
Omitted from Study							
3995	Other Tangible Property - Software	7	SQ	0.00%	Exclude		

APPENDIX D

Net Salvage Analysis by Account

Mid States Shared Services
Data As Adjusted
Data for 2015-2021

Acct	Year	Retirements	Gross Salvage	Cost of Removal	Net Salvage	Net Salvage %	2 Yr Salvage %	3 Yr Salvage %	4 Yr Salvage %	5 Yr Salvage %	6 Yr Salvage %	7 Yr Salvage %
3900	2015	-	-	-	-	NA						
3900	2016	-	-	-	-	NA	NA					
3900	2017	-	-	-	-	NA	NA	NA				
3900	2018	-	-	-	-	NA	NA	NA	NA			
3900	2019	37,735.10	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%		
3900	2020	-	-	-	-	NA	0.00%	0.00%	0.00%	0.00%	0.00%	
3900	2021	-	-	-	-	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%
3910	2015	-	-	-	-	NA						
3910	2016	-	-	-	-	NA	NA					
3910	2017	-	-	-	-	NA	NA	NA				
3910	2018	-	-	-	-	NA	NA	NA	NA			
3910	2019	2,635.71	2,503.93	-	2,503.93	95.00%	95.00%	95.00%	95.00%	95.00%		
3910	2020	-	-	-	-	NA	95.00%	95.00%	95.00%	95.00%	95.00%	
3910	2021	23,044.28	-	-	-	0.00%	0.00%	9.75%	9.75%	9.75%	9.75%	9.75%
3920	2015	-	-	-	-	NA						
3920	2016	-	-	-	-	NA	NA					
3920	2017	-	-	-	-	NA	NA	NA				
3920	2018	-	-	-	-	NA	NA	NA	NA			
3920	2019	-	-	-	-	NA	NA	NA	NA	NA		
3920	2020	-	28,263.78	-	28,263.78	NA	NA	NA	NA	NA	NA	
3920	2021	-	-	-	-	NA	NA	NA	NA	NA	NA	NA
3921	2015	-	-	-	-	NA						
3921	2016	-	-	-	-	NA	NA					
3921	2017	-	-	-	-	NA	NA	NA				
3921	2018	33,369.57	27,467.34	-	27,467.34	82.31%	82.31%	82.31%	82.31%			
3921	2019	-	-	-	-	NA	82.31%	82.31%	82.31%	82.31%		
3921	2020	48,392.83	-	-	-	0.00%	0.00%	33.59%	33.59%	33.59%	33.59%	
3921	2021	-	-	-	-	NA	0.00%	0.00%	33.59%	33.59%	33.59%	33.59%
3940	2015	-	-	-	-	NA						
3940	2016	1,369.21	-	-	-	0.00%	0.00%					
3940	2017	-	-	-	-	NA	0.00%	0.00%				
3940	2018	1,161.09	-	-	-	0.00%	0.00%	0.00%	0.00%			
3940	2019	-	-	-	-	NA	0.00%	0.00%	0.00%	0.00%		
3940	2020	-	-	-	-	NA	NA	0.00%	0.00%	0.00%	0.00%	
3940	2021	-	-	-	-	NA	NA	NA	0.00%	0.00%	0.00%	0.00%

Mid States Shared Services
Data As Adjusted
Data for 2015-2021

Acct	Year	Retirements	Gross Salvage	Cost of Removal	Net Salvage	Net Salvage %	2 Yr Salvage %	3 Yr Salvage %	4 Yr Salvage %	5 Yr Salvage %	6 Yr Salvage %	7 Yr Salvage %
3980	2015	-	-	-	-	NA						
3980	2016	-	-	-	-	NA	NA					
3980	2017	-	-	-	-	NA	NA	NA				
3980	2018	-	-	-	-	NA	NA	NA	NA			
3980	2019	-	-	-	-	NA	NA	NA	NA	NA		
3980	2020	-	-	-	-	NA	NA	NA	NA	NA	NA	
3980	2021	-	-	-	-	NA	NA	NA	NA	NA	NA	NA
3990	2015	-	-	-	-	NA						
3990	2016	-	-	-	-	NA	NA					
3990	2017	-	-	-	-	NA	NA	NA				
3990	2018	-	-	-	-	NA	NA	NA	NA			
3990	2019	-	-	-	-	NA	NA	NA	NA	NA		
3990	2020	-	-	-	-	NA	NA	NA	NA	NA	NA	
3990	2021	-	-	-	-	NA	NA	NA	NA	NA	NA	NA
3991	2015	-	-	-	-	NA						
3991	2016	-	-	-	-	NA	NA					
3991	2017	-	-	-	-	NA	NA	NA				
3991	2018	-	-	-	-	NA	NA	NA	NA			
3991	2019	30,325.81	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%		
3991	2020	-	-	-	-	NA	0.00%	0.00%	0.00%	0.00%	0.00%	
3991	2021	-	-	-	-	NA	NA	0.00%	0.00%	0.00%	0.00%	0.00%
3993	2015	-	-	-	-	NA						
3993	2016	-	-	-	-	NA	NA					
3993	2017	-	-	-	-	NA	NA	NA				
3993	2018	-	-	-	-	NA	NA	NA	NA			
3993	2019	-	-	-	-	NA	NA	NA	NA	NA		
3993	2020	-	-	-	-	NA	NA	NA	NA	NA	NA	
3993	2021	122,520.63	-	-	-	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3994	2015	-	-	-	-	NA						
3994	2016	1,656.21	-	-	-	0.00%	0.00%					
3994	2017	-	-	-	-	NA	0.00%	0.00%				
3994	2018	17,335.93	-	-	-	0.00%	0.00%	0.00%	0.00%			
3994	2019	734,621.40	1,364.69	-	1,364.69	0.19%	0.18%	0.18%	0.18%	0.18%		
3994	2020	17,124.65	-	-	-	0.00%	0.18%	0.18%	0.18%	0.18%	0.18%	
3994	2021	-	-	-	-	NA	0.00%	0.18%	0.18%	0.18%	0.18%	0.18%

