

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

San Diego Gas & Electric Company

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Docket No. ER25-___-000

PREPARED DIRECT TESTIMONY OF

DANE A. WATSON

ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY



October 30, 2024

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	PURPOSE OF TESTIMONY.....	3
III.	EXECUTIVE SUMMARY	4
IV.	DEPRECIATION AND THE DEPRECIATION STUDY.....	6
V.	DEPRECIATION RATES – TO6 FORMULA.....	16
VI.	SUMMARY	18

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
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**PREPARED DIRECT TESTIMONY OF
DANE A. WATSON
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

I. INTRODUCTION

Q. Please state your name, position, and business address.

A. My name is Dane A. Watson. I am a Partner of Alliance Consulting Group, which provides consulting and expert services to the utility industry. My business address is 101 E. Park Blvd., Suite 220, Plano, Texas 75074.

Q. Please describe your educational and professional background.

A. I hold a Bachelor of Science degree in Electrical Engineering from the University of Arkansas at Fayetteville and a Master's Degree in Business Administration from Amberton University. Since graduation from college in 1985, I have worked in the area of depreciation and valuation. I founded Alliance Consulting Group in 2004 and am responsible for conducting depreciation, valuation, and certain accounting-related studies for clients in various industries. My duties related to depreciation studies include (1) assembling and analyzing historical and simulated data, (2) conducting field reviews, (3) determining service life and net salvage estimates, (4) calculating annual depreciation, (5) presenting recommended depreciation rates to utility management for its consideration, and (6) supporting such rates before regulatory bodies.

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

1 depreciation responsibilities. My accounting responsibilities as Manager of
2 Property Accounting Services included ensuring the corporation followed
3 Generally Accepted Accounting Principles (“GAAP”) and the Federal Energy
4 Regulatory Commission (“FERC”) Uniform System of Accounts as it related to,
5 among other areas, the accounting for fixed asset capitalization, retirements and
6 related depreciation reserve transactions, in addition to supporting that compliance
7 before Internal and External Auditors and State Commissions.

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
10 Depreciation and Economic Issues Subcommittee. I am a Registered Professional
11 Engineer (“PE”) in the State of Texas and a Certified Depreciation Professional
12 (“CDP”). I am a Senior Member of the Institute of Electrical and Electronics
13 Engineers (“IEEE”) and have held numerous offices on the Executive Board of the
14 Dallas Section, Region and Worldwide offices of IEEE. I have twice served as
15 President of the Society of Depreciation Professionals most recently in 2015. I also
16 teach depreciation seminars on an annual basis for EEI and the American Gas
17 Association (both basic and advanced levels), and I developed and teach the
18 advanced training for the Society of Depreciation Professionals and other venues.

19 Q. Have you previously provided testimony?

20 A. Yes. In my 39-year career, I have testified in more than 350 proceedings before
21 approximately 40 regulatory commissions across North America. I have presented
22 expert testimony before FERC on behalf of SDG&E in Docket ER19-221; Florida
23 Gas Transmission Company, LLC in Docket Nos. RP10-21, RP15-101. and RP21-
24 441; Granite State Gas Transmission, Inc. in Docket No. RP10-896; American

1 Transmission Company, LLC in Docket Nos. ER12-212, ER17-191, ER17-1664,
2 and ER21-709; Progress Energy-Carolina in Docket No. ER13-1313; Sea Robin
3 Pipeline Company, LLC in Docket No. RP14-247 and RP19-352; Northeast
4 Transmission Development, LLC in Docket No. ER16-563; KOT Transmission in
5 Docket No. RP16-097; Alabama Power Company in Docket No. ER16-2312;
6 SEGCO in Docket No. ER16-2313; Southwestern Public Service Company in
7 Dockets ER15-949, ER18-228, ER19-404. ER20-277, and ER24-1431; Mississippi
8 Power in Dockets ER-20-1660 and ER24-1652; New York Power Authority in
9 Docket No. ER17-1010-000 and ER22-2581; Consumers Energy in Docket No.
10 ER18-56-000, and various divisions of Viridon in Dockets EL24-60, EL24-66,
11 EL24-67 and EL24-69. I also appeared in FERC Docket No. RM02-7 as an
12 industry panelist on asset retirement obligations. A listing of the various
13 proceedings in which I have appeared is provided in Attachment 1.

14 **II. PURPOSE OF TESTIMONY**

15 Q. What is the purpose of your testimony of your testimony?

16 A. The purpose of my testimony is to support SDG&E's TO6 Formula rate filing
17 before the FERC by: (1) describing the methods I used to determine the life and net
18 salvage characteristics of SDG&E's plant accounts; (2) presenting the results of the
19 average service life ("ASL"), Iowa curves, and future net salvage ("FNS")
20 analyses; and (3) support the resulting annual depreciation accrual expense and rate
21 calculations performed as part of the depreciation study I conducted for SDG&E
22 Electric Transmission Plant in this TO6 Formula rate filing.

23 Q. Other than your testimony, are you sponsoring any attachments in this proceeding?

1 A. Yes. I am sponsoring two attachments in this case. Attachment 1 is a listing of
2 cases in which I have provided testimony. Attachment 2 presents a description and
3 the results of the comprehensive depreciation study performed by the Alliance
4 Consulting Group in 2024 for SDG&E's depreciable transmission plant, as of
5 December 31, 2023. That attachment does not include rates for general or common
6 plant.

7 Q. Were these attachments prepared by you or under your supervision?

8 A. Yes.

9 **III. EXECUTIVE SUMMARY**

10 Q. Please summarize the key components of your testimony.

11 A. The key components of my testimony include the following:

- 12 • I recommend that the Commission approve the depreciation rates developed
13 for SDG&E's TO6 electric transmission plant accounts as set forth in Table
14 1 below, and as shown in Attachment 2 Depreciation Rate Study
15 ("Depreciation Study"), Appendix A. These rates result in an annual
16 depreciation expense accrual of \$252.2 million as shown below.
- 17 • I support an increase in the annual depreciation expense for SDG&E's
18 electric utility assets of approximately \$4.3 million per year. This amount
19 was determined by comparing the depreciation expense calculated by the
20 current (approved) depreciation rates and the proposed depreciation rates at
21 December 31, 2023. This comparison is shown in detail by account in
22 Appendix B of the Depreciation Study. The study also provides the
23 calculated overall composite rate of 3.11% at December 31, 2023 using
24 these parameters.
- 25 • I explain the standard depreciation processes and methods, followed in the
26 study, to determine SDG&E's proposed depreciation parameters for each
27 FERC Uniform System of Accounts ("USoA") account. The depreciation
28 study performs life and net salvage analyses from SDG&E's historical
29 database to assist in making appropriate recommendations for each account.
30 The parameter recommendations consist of an average service live ("ASL"),
31 the appropriate Iowa curve, and the net salvage factor all based upon the
32 analyses, interviews with SDG&E personnel, and expert judgment as part of
33 the depreciation study I performed. Consistent with the prior studies and
34 filings, my study combined the subaccounts into the primary FERC account

for life and net salvage analysis. This provides one ASL, curve, and net salvage factor recommendation to be applied to each respective subaccount within an account.

- Table 1 below displays the proposed TO6 depreciation expense and rates by account.

TABLE 1
Proposed TO6 Account Rates and Expense

Depreciation Study as of December 31, 2023

Account	Description	Plant Balance \$	Proposed Rates %	Proposed Expense \$
E351.00	Battery Energy Storage	\$0	11.50%	\$0
E352.10	Struct & Imprv-Other	704,205,884	2.53%	17,804,430
E352.20	Struct & Imprv-SWPL	58,968,996	2.49%	1,469,633
E352.60	Struct & Imprv-SRPL	121,696,150	2.57%	3,128,144
E353.10	Station Equip.-Other	1,873,830,309	3.47%	65,086,217
E353.20	Station Equip.-SWPL	336,248,084	3.47%	11,679,612
E353.40	Station Equip.-Palomar	1,420,393	3.62%	51,368
E353.60	Station Equip.-SRPL	167,340,617	3.50%	5,850,117
E354.10	Towers & Fxtrs-Other	107,354,620	2.20%	2,364,716
E354.20	Towers & Fxtrs-SWPL	65,635,780	1.78%	1,167,312
E354.60	Towers & Fxtrs-SRPL	766,913,154	2.39%	18,363,595
E355.10	Poles & Fxtrs-Other	1,217,780,404	5.08%	61,913,946
E355.20	Poles & Fxtrs-SWPL	10,337,209	3.86%	398,568
E355.60	Poles & Fxtrs-SRPL	3,343,704	4.99%	166,850
E356.10	Ovrhd Cnd & Dv-Other	785,479,744	3.06%	24,023,638
E356.20	Ovrhd Cnd & Dev-SWPL	46,810,210	1.25%	586,455
E356.60	Ovrhd Cnd & Dev-SRPL	173,822,757	3.08%	5,362,303
E357.00	Trans UG Conduit	590,292,519	1.93%	11,387,588
E357.60	UG Conduit-SRPL	80,541,403	1.96%	1,575,727
E358.00	Trans UG Conductor	507,869,900	2.14%	10,887,420
E358.60	UG Cond. & Dev-SRPL	126,452,463	2.15%	2,713,906
E359.10	Roads & Trails-Other	127,379,684	1.66%	2,119,918
E359.20	Roads & Trails-SWPL	5,610,160	1.54%	86,156
E359.60	Roads & Trails-SRPL	242,759,804	1.66%	4,038,011
	Total	\$ 8,122,093,949	3.11%	\$ 252,225,630

1 **IV. DEPRECIATION AND THE DEPRECIATION STUDY**

2 Q. Please define “depreciation.”

3 A. The Commission’s Uniform System of Accounts defines depreciation as “the loss
4 in service value not restored by current maintenance, incurred in connection with
5 the consumption or prospective retirement of electric plant in the course of service
6 from causes which are known to be in current operation and against which the
7 utility is not protected by insurance. Among the causes to be given consideration
8 are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes
9 in the art, changes in demand, and requirements of public authorities.”¹

10 Q. What is the purpose of depreciation?

11 A. Depreciation expense is an annual charge to reflect the declining remaining life of
12 each asset over time. SDG&E conducts its accounting consistent with the
13 Commission’s Uniform System of Accounts. Each group of like-kind assets
14 identified in the Commission’s 300 series plant subaccounts is assigned an
15 expected total average service life reflecting the total expected operating life of the
16 asset group. Over time, depreciation expense accumulates in a reserve account such
17 that at the end of its useful life, all amounts have been recovered and the asset’s net
18 book value is zero, once net salvage is considered. Once an asset’s useful life has
19 been exhausted, it is retired with the plant account credited and accumulated
20 depreciation account debited. Any salvage and costs to retire the assets are also
21 recorded in the accumulated depreciation account.

¹ 18 C.F.R. Part 101, *Definition*, No. 12.

1 Q. Is the depreciation methodology you used a prescribed method to calculate and
2 determine depreciation rates?

3 A. Yes. The depreciation rates proposed for SDG&E are calculated in accordance with
4 FERC guidelines and Standard Practice U-4. I used the straight-line, Average Life
5 Group (Broad Group) (“ALG”), remaining-life depreciation system to calculate
6 annual and accrue depreciation in the study. The straight-line method prorates the
7 recovery of service value in equal annual amounts. The ALG procedure (the most
8 widely used in the utility industry) groups assets in categories (typically plant
9 accounts and/or subaccounts) and depreciates all assets as if they had identical
10 mortality characteristics, while using a single depreciation rate for the entire
11 account. The ALG procedure also assumes that under-accruals resulting from early
12 retirements are offset by over-accruals on assets that outlive the average service
13 life. The remaining life technique accrues unrecovered service value over the
14 average remaining life of the plant account group. The remaining life technique
15 adjusts for any under or over accruals that may have occurred. The system being
16 used to calculate the TO6 Formula is reasonable, widely accepted in the industry
17 and its regulators, and is the same accepted methodology used in past depreciation
18 studies and approved in SDG&E’s TO5 Formula in Docket No. ER19-221-000.

19 Q. How did you calculate the proposed depreciation expense using this system?

20 A. After an average service life, dispersion, and net salvage are selected for each
21 account, the life parameters are used to estimate what portion of the surviving
22 investment of each vintage is expected to retire. The depreciation of the group
23 continues until all investment in the vintage group is retired. ALG is defined by
24 each group’s respective account dispersion, life, and salvage estimates. A straight-

1 line rate for each ALG is calculated by computing a composite remaining life for
2 each group across all vintages within the group, dividing the remaining investment
3 to be recovered by the remaining life to find the annual depreciation expense, and
4 then dividing the annual depreciation expense by the surviving investment. The
5 resulting rate for each account using the ALG procedure is designed to recover all
6 retirements less net salvage when the last unit retires. The ALG procedure recovers
7 net estimated book cost over the life of each account by averaging many
8 components.

9 Q. How is the remaining life annual accrual for each FERC account calculated?

10 A. The remaining life annual accruals are calculated for each plant account as follows:

11 **(plant balance - future net salvage - reserve) / (average remaining life)**

- 12 • Plant balance is the original installed cost of the assets, less any
13 contributions in aid of construction.
- 14 • The future net salvage is the projected gross salvage for recovered materials
15 less costs associated with retiring the assets. The future net salvage is
16 calculated by applying the net salvage rate to the surviving plant balance
17 (that plant yet to be retired).
- 18 • The reserve is the accumulation, since the inception of the plant account, of
19 the following booked entries: depreciation accruals, plus salvage, less cost
20 of removal, less the retirements, plus or minus any transfers in or out as
21 provided for by the USoA.
- 22 • The average remaining life is the future expected service in years of the
23 survivors at a given age. At any given age, the average remaining life is the
24 unrealized life divided by the proportion surviving at that age.

25 Q. What is the date of your proposed depreciation rate computation?

26 A. SDG&E's proposed depreciation rates are computed using plant and accumulated
27 depreciation as of December 31, 2023.

28 Q. Why did you choose that date?

1 A. The study date of December 31, 2023, contains the most recent fiscal year end plant
2 and reserve information.

3 Q. Can you explain the process you followed to conduct your depreciation study in
4 order to calculate the ALG depreciation rates being proposed in SDG&E's TO6
5 filing?

6 A. Yes. The depreciation study is performed in the following four phases:

- 7 1. **Data collection** consists of obtaining and reviewing SDG&E's historical
8 data base of recorded transactions. This database is then used to perform
9 individual account life and net salvage analysis.
- 10 2. **Analysis** consists of using statistical models to perform the actuarial life
11 analysis. The actuarial method was performed on all accounts where
12 sufficient history was available. For SDG&E, subaccounts of the same
13 FERC account class were combined and analyzed together. For net salvage,
14 I performed both an individual account and combined account analysis
15 because the assets in each subaccount are similar and provided a larger
16 database for analysis. One life and net salvage recommendation is made and
17 applied to all the subaccounts of the same FERC account. This is consistent
18 with my past studies.
- 19 3. **Evaluation** consists of reviewing the results from the life and net salvage
20 analysis. I also conducted interviews and site visits with SDG&E personnel.
21 The discussions with SDG&E personnel provide me the opportunity to
22 learn first-hand what is happening from an operations view and their
23 expectations and plans for the future. This phase brings together the past,
24 current and future pieces to assist in making the best estimate of life and net
25 salvage parameters for use in the calculation of depreciation rates.
- 26 4. **Calculation** is applying the life and net salvage recommendations, using the
27 ALG procedure and remaining life technique, to each subaccount plant
28 balance and reserve balance at the December 31, 2023, study date.

29 A more detailed discussion of the process I followed to conduct the depreciation
30 study can be found in Attachment 2.

31 Q. What analyses did you conduct with the plant accounting database provided to you
32 by SDG&E?

1 A. As part of the Depreciation Study, I conducted a statistical life study, a net salvage
2 analysis, and an analysis of recorded depreciation reserves for all SDG&E's plant
3 and equipment. SDG&E maintains its plant accounting records according to the
4 USoA. For life analysis, SDG&E maintains vintage (aged data) plant accounting
5 records by plant subaccount for assets in service. They also maintain depreciation
6 reserves at the subaccount level with gross salvage and cost of removal recorded at
7 the same level from 1991 to 2023. However, consistent with the prior studies, the
8 subaccounts were combined into the major FERC account for life and net salvage
9 analysis.

10 Q. Please explain the life analyses you conducted.

11 A. The life analyses I performed is referred to as the retirement rate (actuarial) method
12 since SDG&E maintains what is referred to as aged data. This means it tracks the
13 year an asset was placed in service and year in which it is retired, and it records the
14 vintage year of the asset along with the year it is retired. This aged data is used in
15 the study to perform an actuarial analysis to assist in making average service life
16 and dispersion recommendations. This approach to life analysis was performed at
17 the major FERC account level (combining respective subaccounts) for a single
18 account analysis that has the historical detail and retirement history necessary to
19 support a thorough life study. Additional consideration is given to information
20 provided during interviews with SDG&E operations personnel, similarity and use
21 of assets of other utilities, and expert judgment. Table 2 below and Appendix C of
22 Attachment 2 provides a comparison of the approved life and the proposed life by
23 account.

1 Q. Please explain net salvage, the net salvage percentage, and why it is a component of
2 depreciation expense?

3 A. Net salvage is gross salvage less the costs incurred to retire the assets (removal
4 cost). If the salvage exceeds the removal costs, net salvage is considered positive.
5 When the removal costs exceed salvage, net salvage is considered negative. The
6 effect of net salvage, whether positive or negative, must be considered in the
7 calculation of depreciation. A net salvage percentage is designed to recover the
8 removal costs expected to be incurred at the end of an asset's useful life, where
9 such costs will often exceed the asset's salvage value. The expected net salvage
10 percentage is applied as a portion of depreciation expense such that, over the life of
11 the asset, all expected costs to operate and remove the asset (net of salvage
12 proceeds) are recovered from the customers who received the benefit of the asset's
13 service.

14 Q. Is there any authoritative guidance on determining net salvage percentages?

15 A. Yes. One of the most widely used publications on depreciation comes from the
16 NARUC publication, *Public Utility Depreciation Practices*, which states "salvage
17 and cost of removal analysis involves the determination of salvage and cost of
18 removal as a percentage of the cost of the retired property." In this study it is
19 referred to as a future net salvage factor or rate ("FNS").

20 Q. How many regulatory commissions handle salvage and cost of removal as a
21 component of the depreciation rate?

22 A. Historically, the majority of the regulatory commissions, including FERC, have
23 required that both gross salvage and the cost of removal be reflected in depreciation
24 rates. The theory behind this requirement is that physical plant placed in service can

1 have some residual value at the time of its retirement, so the original cost recovered
2 through depreciation should be reduced by that amount. Likewise, there can be
3 additional costs at retirement to remove and dispose of these assets that should be
4 borne by the ratepayer receiving the benefit or service from the assets. The cost to
5 retire is becoming more predominant over time for the industry. It was present for
6 SDG&E in its TO5 formula rate and continues in this TO6 formula rate.

7 Q. How does the handling of salvage and cost of removal in this manner affect the
8 utility customers?

9 A. There are two closely regarded principles that support the inclusion of net salvage
10 in regulated utility depreciation rates: (1) the accounting principle that revenues be
11 matched with costs; and (2) the regulatory principle that utility customers who
12 benefit from the consumption of plant pay for the cost of that plant, known as
13 “intergenerational equity.”

14 Q. Can you please explain the regulatory concept of intergenerational equity?

15 A. Yes. The regulatory concept of intergenerational equity applied to net salvage is to
16 assign costs for assets to the customers who have been served by those assets, no
17 more and no less. The application of these principles requires that the estimated
18 salvage and cost of removal of plant be recovered over its ASL.²

19 Q. What happens when property is retired and there is both positive salvage and cost
20 to remove the assets?

² *Public Utility Depreciation Practices, NARUC, August 1996, p. 157.*

1 A. NARUC also adds that when property is retired,³ the effect of both salvage and
2 removal costs are involved. The effect of net salvage, whether positive or negative,
3 must be considered in the calculation of depreciation.

4 Q. How does this all come together in the current SDG&E historical analysis of net
5 salvage?

6 A. In this depreciation study, net salvage factors (gross salvage less cost of removal as
7 a percentage of retired plant cost) are proposed for SDG&E by analyzing historical
8 data from 1991 through 2023. The analysis uses moving averages for a period of
9 two to fifteen year bands to assist in determining trends over a period of years and
10 allow for all the costs for projects of a long duration to be recorded.

11 Q. Is this historical analysis a recognized approach to determine net salvage?

12 A. Yes. All major utilities in California follow the approach specified in the Standard
13 Practice U-4 and recognized by NARUC, as cited above.

14 Q. Has there been a trend over time emerging from the recent SDG&E FNS analysis?

15 A. Yes. The prevailing trend in SDG&E's FNS analysis is towards more negative net
16 salvage factors. The proposed net salvage is expressed as a percentage of the
17 original historical cost⁴ of the associated retirement (a constant), and the current
18 pattern being experienced at SDG&E are increasingly negative net salvage factors.
19 Thus, while there may be a lengthening in life (ASL extension) that decreases

³ *Id.* at 18, "Salvage Considerations."

⁴ The future net salvage parameter is expressed as a percentage of the original historical cost because the ultimate depreciation rate is applied to the historical cost of surviving plant. All values (plant cost, cost of removal, gross salvage, and reserve) used in the depreciation rate computations are nominal dollars.

1 annual depreciation expense, any increase in a negative net salvage factor will
2 increase the depreciation expense.

3 Q. Is the historical cost of both positive salvage and removal activity available for
4 review and analysis?

5 A. Yes. SDG&E's recorded net salvage activity from 1991-2023 was used to perform
6 the analysis. Based on the analysis, the SDG&E's overall net salvage being
7 proposed in this TO6 filing is conservative in many of the accounts.

8 Q. Is the net salvage analysis for the TO6 Formula included in your testimony by
9 FERC account?

10 A. Yes. The specific TO6 FERC account's net salvage is included in an account-by-
11 account discussion in my Attachment 2. Appendix D of that Attachment provides
12 the historical analysis by account.

13 Q. Please briefly explain the net salvage reflected in the TO6 filing.

14 A. In this study, an analysis was performed for each major SDG&E FERC account
15 where there was historical retirement, salvage and cost of removal activity.
16 Consistent with TO5 filing, a combined analysis was performed so a net salvage
17 factor could be determined and applied to similar subaccounts. This combined
18 analysis provides a sound basis to apply a net salvage factor to all subaccounts.

19 Q. Are the net salvage recommendations you propose conservative relative to
20 SDG&E's actual history?

21 A. Yes. As is discussed in greater detail in Attachment 2, even the 15-year average
22 negative net salvage indications for all accounts are more negative than the existing
23 FNS factors. Accounts E352, E353, and E355 were adjusted incrementally in this
24 study. Please see Attachment 2, Appendix D for the net salvage analysis by

1 account. Appendix C of Attachment 2 provides a comparison of the approved net
2 salvage and the proposed net salvage by account.

3 Q. What are the depreciation parameters you propose to use in the calculation of
4 depreciation rates for the TO6 Formula accounts?

5 A. Table 2 below shows a comparison of the approved TO5 Formula parameters to the
6 proposed life and net salvage parameters used in calculating SDG&E's proposed
7 TO6 Formula rates.

8 **TABLE 2**
9 **Comparison of Life and Net Salvage Parameters**
10 **Depreciation Study as of December 31, 2023**

Account	Description	Approved TO5 Formula			Proposed		
		ASL	Curve	FNS%	ASL	Curve	FNS%
E351	Battery Energy Storage	NA	NA	NA	10	SQ	-15.00%
E352.10	Struct & Imprv-Other	74	R2.5	-75.00%	74	R2.5	-85.00%
E352.20	Struct & Improv-SWPL	74	R2.5	-75.00%	74	R2.5	-85.00%
E352.60	Struct & Improv-SRPL	74	R2.5	-75.00%	74	R2.5	-85.00%
E352	Total	74	R2.5		74	R2.5	-85.00%
E353.10	Station Equip.-Other	50	R1.5	-70.00%	53	R2	-80.00%
E353.20	Station Equip.-SWPL	50	R1.5	-70.00%	53	R2	-80.00%
E353.40	Station Equip.-Palomar	50	R1.5	-70.00%	53	R2	-80.00%
E353.60	Station Equip.-SRPL	50	R1.5	-70.00%	53	R2	-80.00%
E353	Total	50			53	R2	-80.00%
E354.10	Towers & Fxtrs-Other	70	R5	-75.00%	75	R5	-75.00%
E354.20	Towers & Fixtrs-SWPL	70	R5	-75.00%	75	R5	-75.00%
E354.60	Towers & Fixtrs-SRPL	70	R5	-75.00%	75	R5	-75.00%
E354	Total	70			75	R5	-75.00%
E355.10	Poles & Fixtrs-Other	45	R1.5	-100.00%	45	R1.5	-120.00%
E355.20	Poles & Fixturs-SWPL	45	R1.5	-100.00%	45	R1.5	-120.00%
E355.60	Poles & Fixturs-SRPL	45	R1.5	-100.00%	45	R1.5	-120.00%
E355	Total	45			45	R1.5	-120.00%
E356.10	Ovrhd Cnd & Dv-Other	64	R2	-100.00%	65	R1.5	-100.00%
E356.20	Ovrhd Cnd & Dev-SWPL	64	R2	-100.00%	65	R1.5	-100.00%
E356.60	Ovrhd Cnd & Dev-SRPL	64	R2	-100.00%	65	R1.5	-100.00%
E356	Total	64			65	R1.5	-100.00%
E357.00	Trans UG Conduit	60	R5	-30.00%	65	R2	-30.00%

Account	Description	Approved TO5 Formula			Proposed		
		ASL	Curve	FNS%	ASL	Curve	FNS%
E357.60	UG Conduit-SRPL	60	R5	-30.00%	65	R2	-30.00%
E357	Total	60			65	R2	-30.00%
E358.00	Trans UG Conductor	50	R2	-10.00%	50	R2	-10.00%
E358.60	UG Cond. & Dev-SRPL	50	R2	-10.00%	50	R2	-10.00%
E358	Total	50			50	R2	-10.00%
E359.10	Roads & Trails-Other	60	SQ	0.00%	60	SQ	0.00%
E359.20	Roads & Trails-SWPL	60	SQ	0.00%	60	SQ	0.00%
E359.60	Roads & Trails-SRPL	60	SQ	0.00%	60	SQ	0.00%
E359	Total	60			60	SQ	0.00%

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V. DEPRECIATION RATES – TO6 FORMULA

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Q. How do the current annual depreciation accrual expense and rates compare to the proposed annual accrual expense and rates for SDG&E's Transmission Accounts?

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A. A comparison of the annual dollar impact of the current accrual rates to the proposed accrual rates is shown below in Table 3. The cumulative difference between accrual expense amounts is an increase of \$4,266,562 between the current and proposed accrual expense based on December 31, 2023 balances.

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Q. What is the driving factor to this increase in depreciation rates when comparing the approved TO5 Formula with the proposed TO6 Formula?

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A. The primary driver is the increase of negative net salvage for three accounts. Specifically, I propose the following changes in net salvage: Account 352 moving from negative 75 percent to negative 85 percent net salvage, Account 353 moving negative 70 percent to negative 80 percent net salvage, and Account 355 moving from negative 100 percent to negative 120 percent net salvage. By contrast, I propose longer service lives for four accounts: Account 353 (three years); Account 354 (five years); Account 356 (one year); and Account 357 (five years). The increase in service lives for these four accounts compared to those Accounts'

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1 current service lives under the TO5 Formula provide some offset to the effects of
 2 an increase negative net salvage. Table 3 below provides a comparison by account
 3 of the change in annual depreciation expense.

4 **TABLE 3**
 5 **Comparison of Transmission Accounts**
 6 **Depreciation Accrual Rates at December 31, 2023**

Account	Description	Plant Balance \$	Current		Proposed		Difference \$
			Rate %	Expense \$	Rates %	Expense \$	
E351.00	Battery Energy Storage	\$0	NA	\$0	11.50%	\$0	\$0
E352.10	Struct & Imprv-Other	704,205,884	2.37%	16,689,679	2.53%	17,804,430	1,114,751
E352.20	Struct & Imprv-SWPL	58,968,996	2.18%	1,285,524	2.49%	1,469,633	184,109
E352.60	Struct & Imprv-SRPL	121,696,150	2.41%	2,932,877	2.57%	3,128,144	195,267
E353.10	Station Equip.-Other	1,873,830,309	3.49%	65,396,678	3.47%	65,086,217	(310,461)
E353.20	Station Equip.-SWPL	336,248,084	3.49%	11,735,058	3.47%	11,679,612	(55,446)
E353.40	Station Equip.-Palomar	1,420,393	3.64%	51,702	3.62%	51,368	(334)
E353.60	Station Equip.-SRPL	167,340,617	3.48%	5,823,453	3.50%	5,850,117	26,663
E354.10	Towers & Fxtrs-Other	107,354,620	2.36%	2,533,569	2.20%	2,364,716	(168,853)
E354.20	Towers & Fxtrs-SWPL	65,635,780	2.02%	1,325,843	1.78%	1,167,312	(158,531)
E354.60	Towers & Fxtrs-SRPL	766,913,154	2.57%	19,709,668	2.39%	18,363,595	(1,346,074)
E355.10	Poles & Fxtrs-Other	1,217,780,404	4.57%	55,652,564	5.08%	61,913,946	6,261,382
E355.20	Poles & Fxtrs-SWPL	10,337,209	3.40%	351,465	3.86%	398,568	47,103
E355.60	Poles & Fxtrs-SRPL	3,343,704	4.51%	150,801	4.99%	166,850	16,049
E356.10	Ovrhd Cnd & Dv-Other	785,479,744	3.03%	23,800,036	3.06%	24,023,638	223,602
E356.20	Ovrhd Cnd & Dev-SWPL	46,810,210	1.42%	664,705	1.25%	586,455	(78,250)
E356.60	Ovrhd Cnd & Dev-SRPL	173,822,757	3.22%	5,597,093	3.08%	5,362,303	(234,790)
E357.00	Trans UG Conduit	590,292,519	2.14%	12,632,260	1.93%	11,387,588	(1,244,672)
E357.60	UG Conduit-SRPL	80,541,403	2.20%	1,771,911	1.96%	1,575,727	(196,184)
E358.00	Trans UG Conductor	507,869,900	2.13%	10,817,629	2.14%	10,887,420	69,791
E358.60	UG Cond. & Dev-SRPL	126,452,463	2.19%	2,769,309	2.15%	2,713,906	(55,403)
E359.10	Roads & Trails-Other	127,379,684	1.69%	2,152,717	1.66%	2,119,918	(32,798)
E359.20	Roads & Trails-SWPL	5,610,160	1.51%	84,713	1.54%	86,156	1,443
E359.60	Roads & Trails-SRPL	242,759,804	1.66%	4,029,813	1.66%	4,038,011	8,198

Account	Description	Plant	Current		Proposed		
		Balance	Rate	Expense	Rates	Expense	Difference
		\$	%	\$	%	\$	\$
	Total	\$ 8,122,093,949	3.05%	\$247,959,068	3.11%	\$ 252,225,630	\$4,266,562
					Change in Expense		1.72%

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2 Q. What steps will the Company take to comply with FERC Order 898 which becomes
3 effective January 1, 2025?

4 A. Three new accounts will be set up: 351.1 Computer Hardware, 352.2 Computer
5 Software, and 351.3 Communication Equipment. As directed in FERC Order 898,
6 balances transferred into the accounts created under that order, included amounts
7 transferred into 351.1, 352.2, and 351.3, will retain the same depreciation rates that
8 are currently authorized at the state jurisdictional level.

9 **VI. SUMMARY**

10 Q. What is one of the greatest challenges in the depreciation rate calculation?

11 A. As stated in the NARUC’s *Public Utility Depreciation Practices*, one of the
12 greatest challenges is balancing the short-run and long-run interests affecting both
13 the ratepayer and the Company. If the depreciation rates prescribed are too low, the
14 revenue requirement in the short-run may be lower. However, these rates can be so
15 low that revenue fails to recoup the capital invested by the end of the asset’s life,
16 placing a burden on future ratepayers for assets that never served their interest. The
17 situation can be reversed by placing more of the burden on current ratepayers,
18 while future costs are minimal or non-existent.

19 Q. What objective should be taken into account to address this challenge?

1 A. The objective of computing depreciation is to allocate the cost or depreciation base
2 over the property's service life by charging the appropriate portion of the
3 consumption of plant taking place during each accounting period. The depreciation
4 methods used in this study and recommended here achieve this objective for
5 SDG&E and its customers.

6 Q. Do you have any summary remarks?

7 A. Yes. The Depreciation Study and analysis performed under my supervision was
8 performed using standard depreciation processes and methodologies. The study
9 followed standard depreciation rate calculation methods, which have been
10 repeatedly submitted and approved by the FERC. SDG&E should continue to
11 periodically review the annual depreciation rates for its property so that appropriate
12 rates are included in SDG&E revenue requirements to ensure intergenerational
13 equity to its customers. In this way, SDG&E's depreciation expense will more
14 accurately reflect its cost of operations and the rates for all customers will include
15 an appropriate share of the capital expended for their benefit. The proposed
16 depreciation rates contained in the Depreciation Study, Attachment 2 are the result
17 of a complete, comprehensive depreciation study. The depreciation rates are
18 reasonable and appropriate, given that they incorporate the service life and net
19 salvage parameters currently anticipated for each of SDG&E's Transmission
20 account investments over their average remaining lives and are based on the most
21 current year end plant and reserve balances. The methods follow SDG&E's prior
22 TO Formula filings, including the TO5 Formula, where FERC approved the current
23 depreciation rates. I recommend that the Commission approve the proposed TO6
24 Formula rates.

1 Q. Does this complete your testimony?

2 A. Yes.

VERIFICATION

Dane A. Watson hereby declares under penalty of perjury of the laws of the United States that the foregoing document is true and correct to the best of his knowledge and belief. *See* 28 U.S.C. § 1746.

Executed this 30th day of October, 2024

/s/ Dane A. Watson

Dane A. Watson

ATTACHMENT 1

LIST OF PRIOR TESTIMONY OF DANE A. WATSON

List of Prior Testimony of Dane A. Watson

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
South Carolina	South Carolina Public Service Commission	2024-179-G	Piedmont Natural Gas	2024	Natural Gas Depreciation Study
Michigan	Michigan Public Service Commission	U-21542	Upper Michigan Energy Resources Corporation	2024	Reciprocating Internal Combustion Engine (RICE) Units
California	California Public Utilities Commission	A2407003	California Water Service	2024	Water Depreciation Study
Alaska	Regulatory Commission of Alaska	U-24-017	Matanuska Electric Coop	2024	Electric Depreciation Study
New Mexico	Public Service of New Mexico	24-00089-UT	PNM Resources	2024	Electric Technical Update
Texas	Public Utility Commission of Texas	56665	Texas Water Utilities	2024	Water Depreciation Study
Texas	Railroad Commission of Texas	17816	West Texas Gas	2024	Gas Depreciation Study
Multi-state	FERC	EL24-60-000	Viridon Mid-Atlantic LLC	2024	Electric Transmission Depreciation Study
Multi-state	FERC	EL24-66-000	Viridon Southwest LLC	2024	Electric Transmission Depreciation Study
Multi-state	FERC	EL24-67-000	Viridon New York Inc.	2024	Electric Transmission Depreciation Study
Multi-state	FERC	EL24-69-000	Viridon Midcontinent LLC	2024	Electric Transmission Depreciation Study
North Carolina	North Carolina Utilities Commission	G-9, Sub 837	Piedmont Natural Gas	2024	Gas Depreciation Study
Mississippi	FERC	ER-24-1652-000	Mississippi Power Company	2024	Electric Depreciation Study
New Jersey	New Jersey Board of Public Utilities	GR24020158	Elizabethtown Gas Company	2024	Gas Depreciation Study
Texas New Mexico	FERC	ER24-1431-000	Southwestern Public Service Company	2024	Electric Technical Update
Missouri	Missouri Public Service Commission	WR-2024-0104	Liberty Utilities Missouri Water	2024	Water Depreciation Study
Missouri	Missouri Public Service Commission	SR-2024-0105	Liberty Utilities Missouri Waste Water	2024	Waste Water Depreciation Study
Texas	Public Utility Commission of Texas	56211	CenterPoint	2024	Electric Depreciation Study
California	California Public Utilities Commission	A.24-01-001	San Jose Water Co	2024	Water/Wastewater Depreciation Study
Missouri	Missouri Public Service Commission	GR-2024-0106	Liberty Utilities Midstates Gas	2024	Gas Depreciation Study
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

List of Prior Testimony of Dane A. Watson

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
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
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

List of Prior Testimony of Dane A. Watson

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
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
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

List of Prior Testimony of Dane A. Watson

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
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
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

List of Prior Testimony of Dane A. Watson

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
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
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

List of Prior Testimony of Dane A. Watson

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
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
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

List of Prior Testimony of Dane A. Watson

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
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
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

List of Prior Testimony of Dane A. Watson

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
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
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

List of Prior Testimony of Dane A. Watson

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
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
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

List of Prior Testimony of Dane A. Watson

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
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
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

List of Prior Testimony of Dane A. Watson

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
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
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

List of Prior Testimony of Dane A. Watson

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
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
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

List of Prior Testimony of Dane A. Watson

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
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
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

List of Prior Testimony of Dane A. Watson

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
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	Waste Water 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
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

List of Prior Testimony of Dane A. Watson

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
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
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

List of Prior Testimony of Dane A. Watson

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
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
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

List of Prior Testimony of Dane A. Watson

Asset Location	Commission	Docket (If Applicable)	Company	Year	Description
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
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

ATTACHMENT 2

ELECTRIC TRANSMISSION UTILITY PLANT DEPRECIATION RATE STUDY

**SAN DIEGO GAS & ELECTRIC
COMPANY**

**ELECTRIC TRANSMISSION UTILITY PLANT
DEPRECIATION RATE STUDY**

AT DECEMBER 31, 2023



<http://www.utilityalliance.com>

**SAN DIEGO GAS & ELECTRIC COMPANY
ELECTRIC TRANSMISSION UTILITY PLANT
DEPRECIATION RATE STUDY
EXECUTIVE SUMMARY**

San Diego Gas & Electric Company (“SDG&E” or “Company”) engaged Alliance Consulting Group to conduct a depreciation study of the Company’s Electric Transmission utility plant depreciable assets as of December 31, 2023. This study is to be used in SDG&E’s Transmission Owner’s (“TO”) rate proceeding for SDG&E’s TO6 formula rate.

This study was conducted under a traditional depreciation study approach for life and net salvage. The straight line, broad group (average life), remaining life depreciation system was used. This methodology has been adopted by the Federal Energy Regulatory Commission (“FERC”) and numerous state commissions.

This study recommends an overall increase of \$4.3 million in annual depreciation expense for transmission accounts compared to rates currently in effect under SDG&E’s TO5 formula rate. Appendix A shows the computation of the proposed depreciation rates. Appendix B demonstrates the change in depreciation expense for the various accounts. Appendix C compares the approved depreciation parameters to the proposed depreciation parameters. Appendix D shows the net salvage analysis.

**SAN DIEGO GAS & ELECTRIC COMPANY
ELECTRIC TRANSMISSION UTILITY PLANT
DEPRECIATION RATE STUDY
AT DECEMBER 31, 2023**

Table of Contents

PURPOSE	1
STUDY RESULTS	2
GENERAL DISCUSSION	3
Definition	3
Basis of Depreciation Estimates	3
Survivor Curves	5
Actuarial Analysis	7
Judgment	8
Average Life Group Depreciation	9
Theoretical Depreciation Reserve	10
DETAILED DISCUSSION	11
Depreciation Study Process	11
Depreciation Rate Calculation	14
Remaining Life Calculation	14
Account Calculation Process	15
LIFE ANALYSIS	17
NET SALVAGE ANALYSIS	38
APPENDIX A - Computation of Depreciation Accrual Rate	46
APPENDIX B - Comparison of Depreciation Accrual	48
APPENDIX C – Comparison of Mortality Characteristics	50
APPENDIX D - Net Salvage Analysis	52

PURPOSE

The purpose of this study is to develop depreciation rates for SDG&E's depreciable property to apply in SDG&E's TO6's formula rate as recorded on SDG&E's books at December 31, 2023. The account-based depreciation rates were designed to recover the total remaining undepreciated investment, adjusted for net salvage, over the remaining life of SDG&E's property on a straight-line basis. Non-depreciable property is excluded from this study.

SDG&E provides electric transmission service in a service territory that primarily includes San Diego and Orange counties of California. SDG&E has more than 2,008 miles of transmission lines and 157 substations that provide communities with access to local and regional energy sources. The transmission system connects power producers, or generators, with distribution companies who deliver power to where it is used in homes and businesses. SDG&E also has various other intangible and general plant assets utilized to serve its customers, but those are not included in this study.

STUDY RESULTS

Overall depreciation rates for all SDG&E depreciable property are shown in Appendix A. These rates translate into an annual depreciation accrual of \$252.2 million based on SDG&E's depreciable investment at December 31, 2023. The annual equivalent depreciation expense calculated by the same method using the approved rates is \$248.0 million.

Appendix A demonstrates the development of the annual depreciation rates and accruals. Appendix B presents a comparison of approved rates versus proposed rates by account. Appendix C presents a summary of mortality and net salvage estimates by account. Appendix D presents the net salvage analysis for all accounts. The change in depreciation expense is due to the recognition of more negative net salvage for some accounts for SDG&E transmission assets, which is partially offset by proposed longer service lives for some accounts.

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

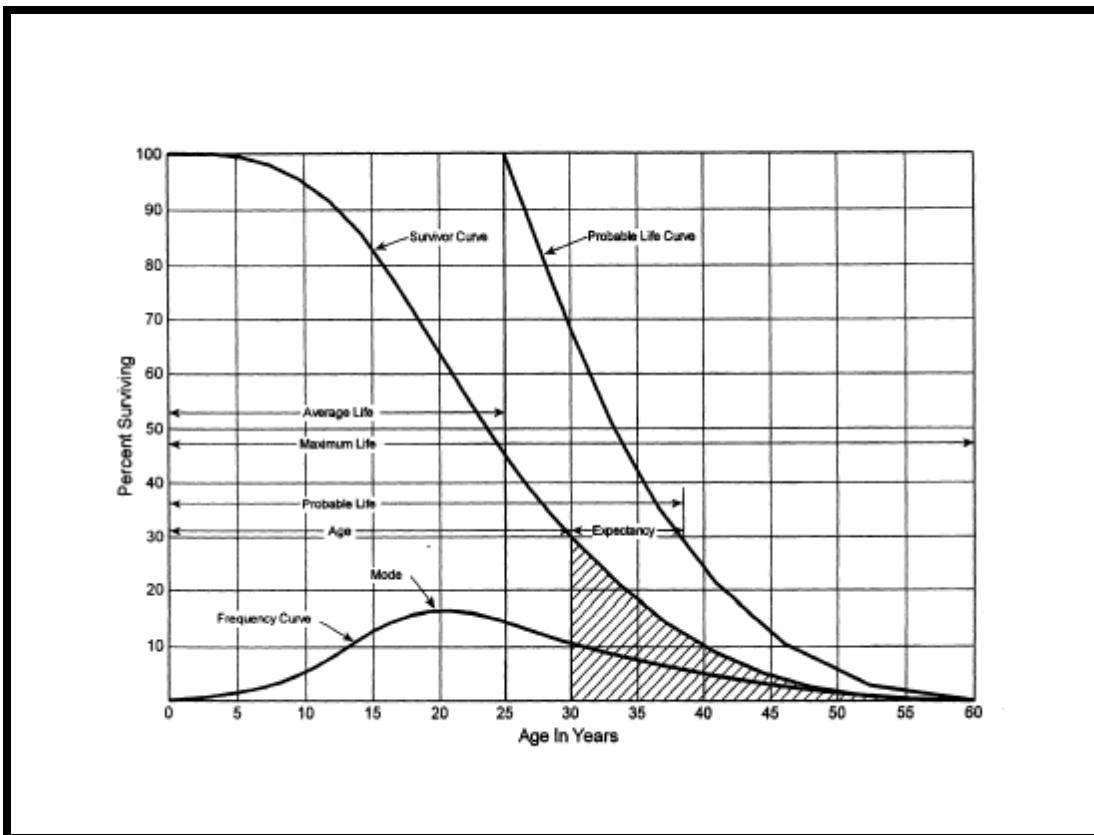
The straight-line, broad (average) life group, remaining-life depreciation system was employed to calculate annual and accrued depreciation in this study. In this system, the annual depreciation expense for each group is computed by dividing the original cost of the asset less allocated depreciation reserve less estimated net salvage by its respective average life group remaining life. The resulting annual accrual amounts of all depreciable property within a function were accumulated, and the total was divided by the original cost of all functional depreciable property 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. The computations of the annual account level depreciation rates are shown in Appendix A.

Actuarial analysis was used with each account within a function where

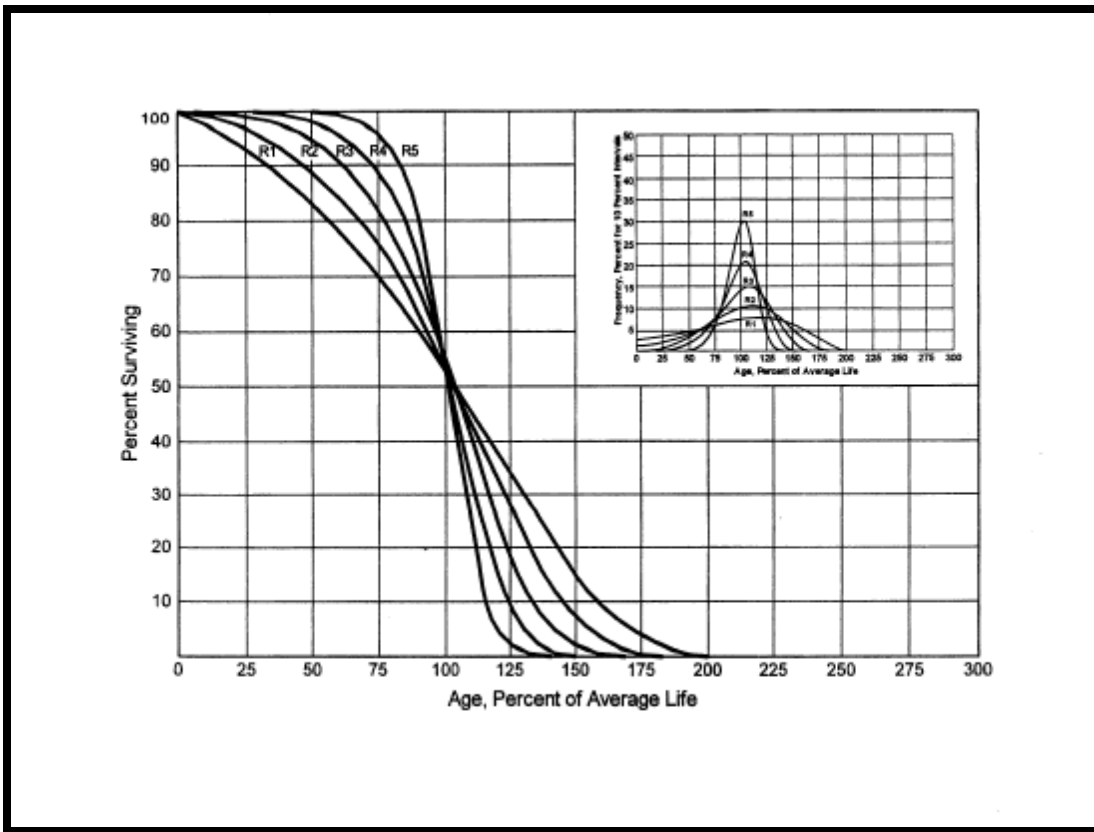
sufficient data was available, and judgment was used to some degree on all accounts.

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

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 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. Where data was available, 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. The results from these analyses for those accounts which had data sufficient to be analyzed using this method are shown in the Life Analysis section of this report.

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 this study 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 together they 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 each account 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

SDG&E's last transmission depreciation study for its TO5 Formula rate filing utilized the straight-line, average life group ("ALG"), remaining life methodology. At the request of SDG&E, this study continues to use the straight-line, average life group, remaining life depreciation system. 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. ALGs are defined by their respective account dispersion, life, and salvage estimates. A straight-line rate for each ALG 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 accumulated book depreciation reserve by account is maintained at an account level. The 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:

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

DETAILED DISCUSSION

Depreciation Study Process

This depreciation study encompassed four distinct phases. The first involved data collection and field interviews, the second was where the initial data analysis occurred, and the third was where the information and analysis was evaluated. Once the first three stages were complete, the fourth phase began, involving 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. This data was then audited to validate it against historical data from prior periods, historical general ledger sources, and field personnel discussions. From there, 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.

In addition, 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 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.

As noted, Phase 2 is where the actuarial analysis is performed. Phase 2

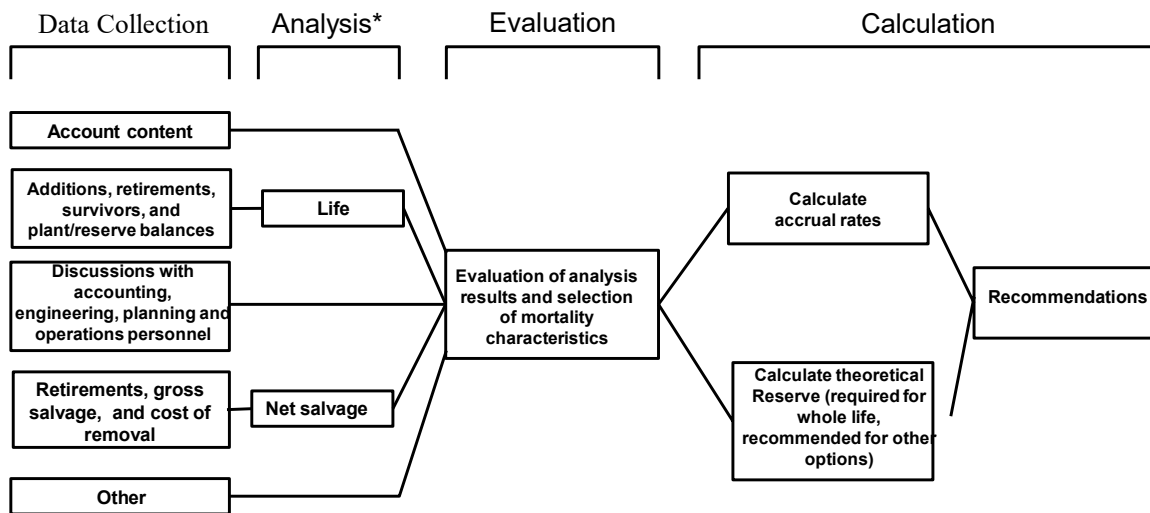
and 3 overlap to a significant degree. The detailed property records information is used in Phase 2 to develop observed life tables for life analysis. These tables are visually compared to industry standard tables to determine historical life characteristics. It is possible that the analyst would cycle 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. Again, in Phase 3 the analyst 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 A. 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 Systems,² page 289, documents the same basic processes in performing a depreciation study. Those are: statistical analysis, evaluation of statistical analysis, discussions with management, forecast assumptions, and document recommendations.

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

² Depreciation Systems, F.K. Wolf & W.C. Fitch, Iowa State University Press, 1994.



Source: Introduction to Depreciation for Public Utilities and Other Industries, AGA EEL , 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

**SAN DIEGO GAS & ELECTRIC COMPANY
DEPRECIATION STUDY PROCESS**

Depreciation Rate Calculation

As noted, annual depreciation expense amounts for the depreciable accounts of SDG&E were calculated by the straight-line method, average life group procedure, and remaining-life technique. With this approach, remaining lives were calculated according to standard ALG 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 A.

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 dispersions, a remaining life was computed for each account. The composite remaining life for each account was determined by direct weighting (i.e., by multiplying vintage investment by the vintage remaining life and dividing by the plant balance for each account).

Account Calculation Process

Annual depreciation expense amounts for accounts other than production 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.

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

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:

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

These calculations are shown in Appendix A.

LIFE ANALYSIS

The retirement rate actuarial analysis method was applied to all accounts for SDG&E. For each account, an actuarial retirement rate analysis was made with placement and experience bands of varying width. The historical observed life table was plotted and compared with various Iowa Survivor Curves to obtain the most appropriate match. A selected curve for each account is shown in the Life Analysis Section of this report. The observed life tables for all analyzed placement and experience bands are provided in workpapers.

For each account using the overall band (i.e., placement from earliest vintage year, which varied for each account, through 2023), approved lives were used as a starting point. Then using the same average life, various dispersion curves were plotted. Frequently, visual matching would confirm one specific dispersion pattern (i.e., L, S, or R) as an obviously better match than others.

The next step would be to determine the most appropriate life using that dispersion pattern. For each account, an overall experience band and shorter bands were analyzed. Next, placement bands of varying width were plotted with each experience band discussed above. For most accounts, an overall placement band was analyzed along with shorter bands. Repeated matching usually pointed to a focus on one dispersion family and small range of service lives. The goal of visual matching was to minimize the differential between the observed life table and Iowa curve in top and mid range of the plots. These results are used in conjunction with all other factors that may influence asset lives.

TRANSMISSION PLANT

Transmission Plant Accounts, FERC Accounts 351-359

In this study, all plant data within each subaccount of a major FERC account were combined by major FERC account for a single life analysis due to the similarity of the assets, their function, and their operational characteristics. This analysis results in one life/dispersion pattern and net salvage recommendation by FERC account to be applied individually in the calculation of each respective TO6 subaccount depreciation accrual expense and rate. Although the previous TO5 depreciation study relied solely on the life and net salvage results of the primary subaccount (“Other”) for each major FERC account to determine the life and net salvage for other subaccounts within each major FERC account. With more years of transactional data for the newer subaccounts, the combination of all subaccounts within a FERC account was a logical extension of the previous analysis. The following section gives an overall description of the major FERC account and discussion of the analysis and life recommendations as well as investment balances by subaccount at December 31, 2023. Finally, we include a graph, if available, of the Company’s combined account experience and proposed life and curve.

FERC Account 351 Battery Energy Storage Systems (BESS) (10 SQ)

This was a new account included in the last T05 depreciation study. Currently, there is no investment in this account. The current life for this account is 10 years with an SQ dispersion curve.

Based on discussions with Company personnel, these types of assets are expected to be added in the future. Some of the ancillary equipment to be placed in this account could have a longer life than the batteries. However, based on a study from Sargent & Lundy (“S&L”), the overall life of the facility is expected to be limited by battery service life, which S&L states to be approximately 10 years. Items in this account can include:

1. Lithium or lead acid based batteries.
2. Steel enclosures.

3. Concrete pedestal foundations.
4. Electrical equipment.
5. Fencing.

FERC Account 352 Structures & Improvements (74 R2.5)

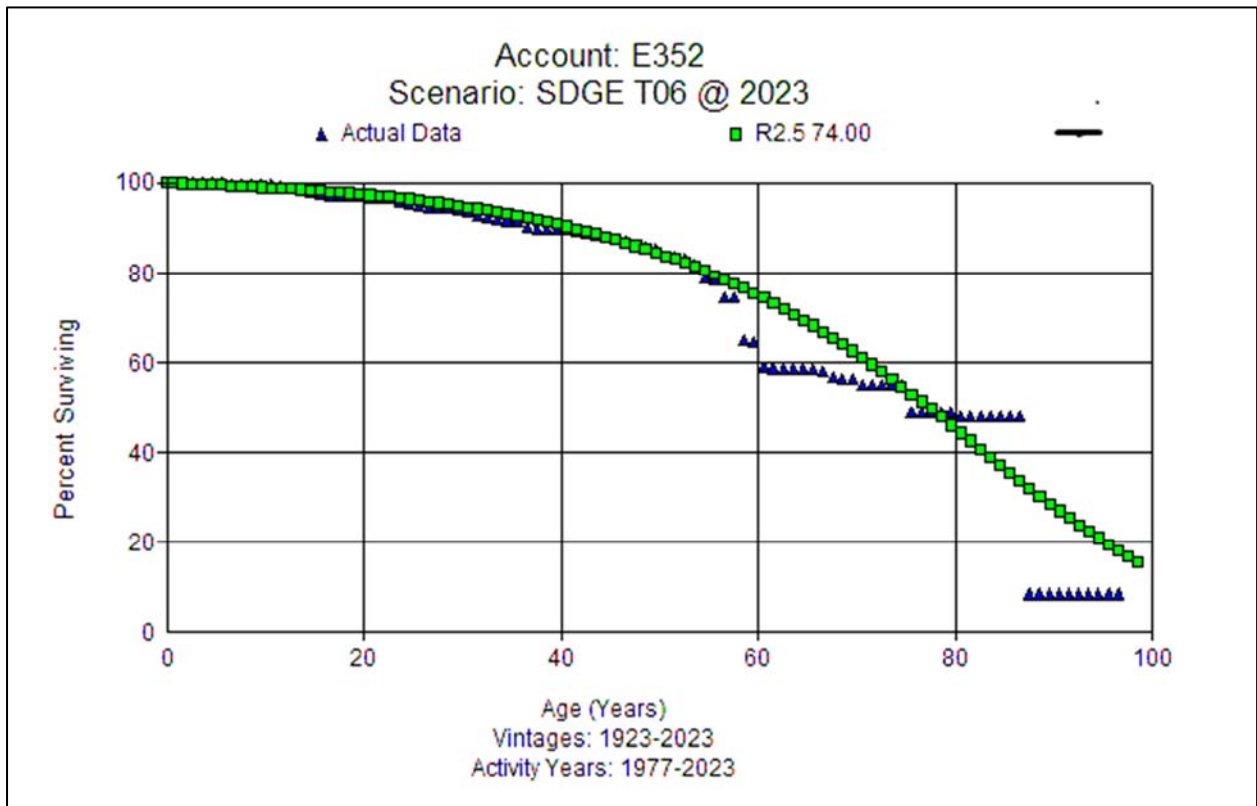
This account consists of substation assets such as control buildings, fencing, landscaping/yard surfacing, and station lighting. Items can include:

1. Buildings, roof, and HVAC.
2. Alarm, monitoring and security systems.
3. Lighting, walkways, and walls.
4. Landscaping, sprinklers, and irrigation.
5. Grading, roads, fences and gates.
6. Tanks, tower, vaults, and cable.
7. Foundations, concrete, and pad.
8. Platforms, railings, steps, gratings, etc.
9. Pumps.

The current life for this account is 74 R2.5. While many assets in this account will have a long life, discussions with Company personnel indicated that some assets, such as fences, will only last 20-30 years, while longer-lived walls are seen in newer substations. Short-lived security infrastructure is recorded in this account in some cases but may also be recorded to Account 353. Paving (asphalt) will also only last 20-30 years. The philosophy for aging transmission infrastructure is to proactively replace before failure when possible.

Account 352 currently has a balance of \$884.9 million. The shorter-lived assets in the account are moderating any outward movement in the life of this account. The actuarial analysis included subaccounts 352.10 Other, 352.20 South West Powerlink ("SWPL"), and 352.60 Sunrise Powerlink ("SRPL"). This analysis indicated retention of the current life across the bands analyzed. Subaccount 352.10 has a current balance of \$704.2 million and is related to substation structure assets other than those in Subaccounts 352.20 and 352.60. Subaccount 352.20 has a current balance of \$59.0 million and is related to substation structure assets for SWPL. Subaccount 352.60 has a current balance of \$121.7 million and is related to SRPL. Although a number of different bands were run, a full placement and experience band graph of the Company's combined

352 account experience and proposed curve is shown below.



FERC Account 353 Substation Equipment (53 R2)

This account consists of the installed cost of transforming, conversion, and switching equipment used for the purpose of changing the characteristics of electricity in connection with its transmission or for controlling transmission circuits. Items can include:

1. Bus compartments, concrete, brick, and sectional steel, including items permanently attached thereto.
2. Conduit, including concrete and iron duct runs not a part of a building.
3. Control equipment, including batteries, battery charging equipment, transformers, remote relay boards, and connections.
4. Conversion equipment, including transformers (indoor and outdoor), frequency changers, motor generator sets, rectifiers, synchronous converters, motors, cooling equipment, and associated connections.
5. Fences.
6. Fixed and synchronous condensers, including transformers, switching equipment blowers, motors, and connections.
7. Foundations and settings specially constructed for and not expected to outlast the apparatus for which they are provided.
8. General station equipment, including air compressors, motors, hoists, cranes, test equipment, ventilating equipment, etc.
9. Platforms, railings, steps, gratings, etc. appurtenant to apparatus listed herein.
10. Primary and secondary voltage connections, including bus runs and supports, insulators, potheads, lightning arresters, cable and wire runs from and to outdoor connections or to manholes, and the associated regulators, reactors, resistors, surge arresters, and accessory equipment.
11. Switchboards, including meters, relays, control wiring, etc.
12. Switching equipment, indoor and outdoor, including oil circuit breakers, operating mechanisms, and truck and disconnect switches.
13. Tools and appliances.

The current life for all subaccounts for this FERC account is 50 R1.5. There is a mix of longer and shorter-lived assets within this account. Discussions with Company personnel indicated that the various control and protection equipment have moved from analog to digital.

New assets in this area are expected to live 10-15 years before needing to be replaced. The Company is working toward replacing the last generation of relays, which will probably be around 15 years old when retired. Communications into substations is being upgraded and will affect station batteries and maybe other RTU components in this account.

Currently, the refresh cycle on batteries is around 10 years. The Company indicated that more will be spent to protect critical assets. The new transformers have condition-based monitoring installed and this monitoring equipment will have a shorter life. However, the goal is that the monitoring will help the transformers to last longer.

The Company recently switched to polymer bushing on transformers, which are not expected to last as long as the ceramic bushings. This may have a slightly shortening impact on the account in future years as more polymers are added to the account.

The Company expects the life of transformers to be between 40 and 60 years, with the newer transformers having a slightly shorter life. There is some underground cable in substations that are not expected to live longer than 30 years, especially for the terminations. Currently, over 90% of SDG&E's circuit breakers are SF6 and they have already replaced the first generation of SF6 breakers. The SF6 circuit breakers are expected to have a life of 30 years at most.

Capacitors/reactors are expected to last around 30 years. Relays have a life expectancy of up to 20 years. The necessary security equipment has a fairly short life, generally 5 years or less, and the costs are growing. The foundations for equipment and steel would be expected to last for the life of the substation, but some will have to be replaced with the equipment to meet IEEE 693 seismic rules. Growth will generally create the need for the addition of substations rather than upgrading existing equipment.

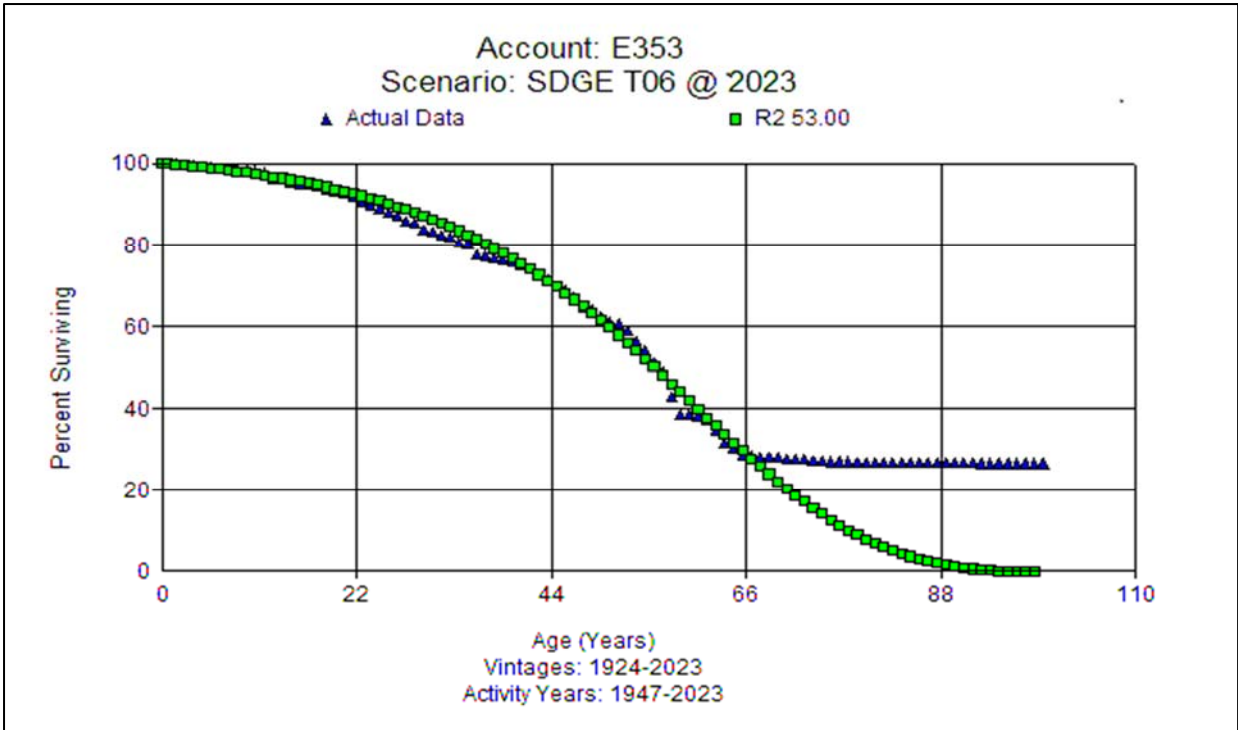
SDG&E has started installing some GIS substations, which are expected to have

a shorter life when compared to a normal substation. There are four synchronous condensers on the system. Disconnects and wave traps are all expected to last about 40-50 years . With the change in the type of assets and mix in the account, the overall average service life is expected to decline as more short-lived assets are added to the account in future years. This study does not reflect that future expectation at this point.

System protection equipment is also booked in this account. The company replace relays, digital fault recorders (“DFRs”), and remote terminal unit (“RTUs”) on a continuous cycle. When upgrading a substation, Company personnel report that they will replace the relays, RTUs, and DFRs in the control house. From an operations perspective, electromechanical relays may last 30 years or more. Microprocessor relays may have power supply issues and microprocessor failure, which are two of the largest failure modes. The newest models may last up to 20 years. RTUs are built on a similar platform as relays, and Company personnel estimate that the life is fairly comparable to microprocessor relays. DFRs are estimated to have a similar life to microprocessor relays and may last 20 years or more. There is more network equipment in substations (e.g., routers and switches) with shorter lives.

The current balance for Account 353 is \$2.4 billion. The actuarial analysis included Accounts 353.10 Other, 353.20 SWPL, 353.40 Palomar, and 353.60 SRPL. Depending on the bands analyzed, the fits generally were from 48 to 53 years. But the majority of the analysis pointed to around a 53-year life with an R2 dispersion.

Considering the information obtained from discussions with Company personnel and the indications in the life analysis, this study recommends a life of 53 years, while moving to a slightly steeper R2 dispersion. The current balance in subaccount 353.10 – Station Equipment Other is \$1.9 billion. The current balance for subaccount 353.20 Station Equipment - SWPL is \$336.2 million. The current balance for subaccount 353.40 – Station Equipment – Palomar is \$1.4 million. The current balance for subaccount 353.60 - Station Equipment – SRPL is \$167.3 million. A graph of the Company’s full band combined 353 accounts experience and proposed 53 R2 curve is shown below.



FERC Account 354 Transmission Towers & Fixtures (75 R5)

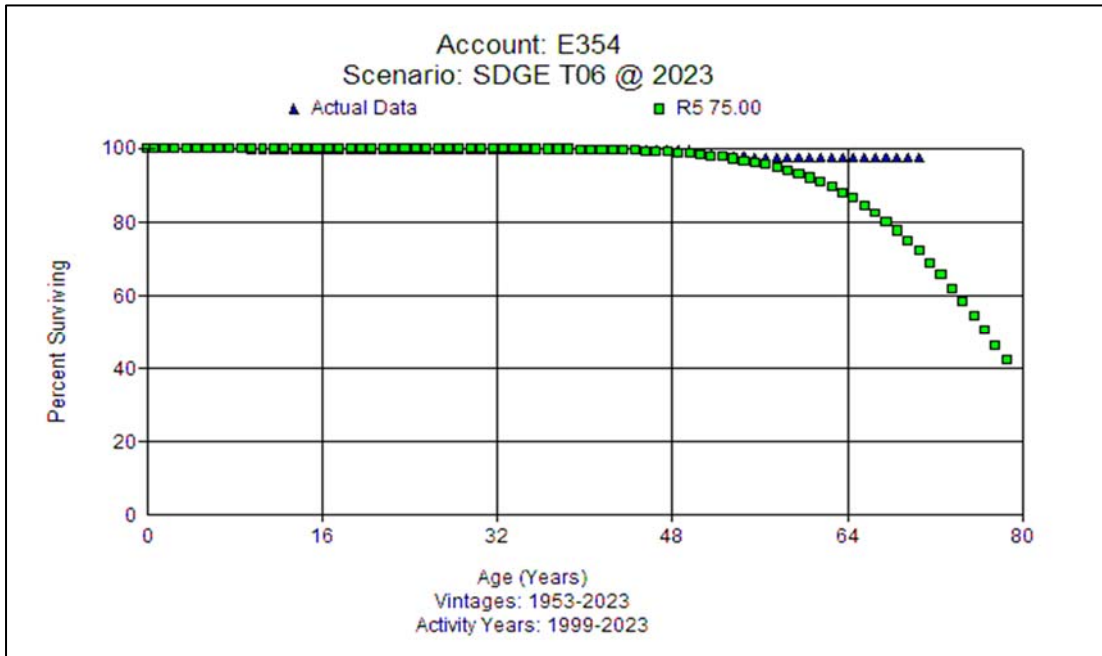
This account consists of the installed cost of towers and appurtenant fixtures used for supporting overhead transmission conductors including concrete foundations and lattice transmission structures. Items can include:

1. Anchors, guys, and braces.
2. Brackets.
3. Cross arms, including braces.
4. Excavation, backfill, and disposal of excess excavated material.
5. Foundations.
6. Guards.
7. Insulator pins and suspension bolts.
8. Ladders and steps.
9. Railings, etc.
10. Towers.

The current life for all subaccounts for this FERC Account is 70 R5. Discussions with Company personnel indicated that replacement needs can be driven by capacity increases, generation coming online, and/or normal failures. There are a few ISO approved upgrades that occur each year. There is also overhead (“OH”) to underground (“UG”) line moves that occur. While the assets may have a shorter original design life of around 50 years, moving the life slightly longer than the existing life (to 75 years) is reasonable based on past experience and the increasing age of the towers.

The current balance for Account 354 is \$939.9 million. The life analysis did not have enough historical retirement experience for a meaningful drop in the stub curve, as shown in the graph below. The limited indications demonstrate that a 75 R5 is the best fit to the full placement and experience band. Considering Company information, operations, type of assets, and my analysis, this study recommends a 75 R5 life and dispersion. The current balance in subaccount 354.10 Transmission Towers & Fixtures – Other is \$107.4 million. The current balance in subaccount 354.20 Transmission Towers & Fixtures – SWPL is \$65.6 million. The current balance in subaccount 354.60

Transmission Towers & Fixtures – SRPL is \$766.9 million. A graph of the Company’s experience and proposed 75 R5 curve is shown below.



FERC Account 355 Transmission Poles & Fixtures (45 R1.5)

This account consists of installed cost of poles made of wood, steel, concrete, or other material, together with appurtenant fixtures used for supporting overhead transmission conductors. Items can include:

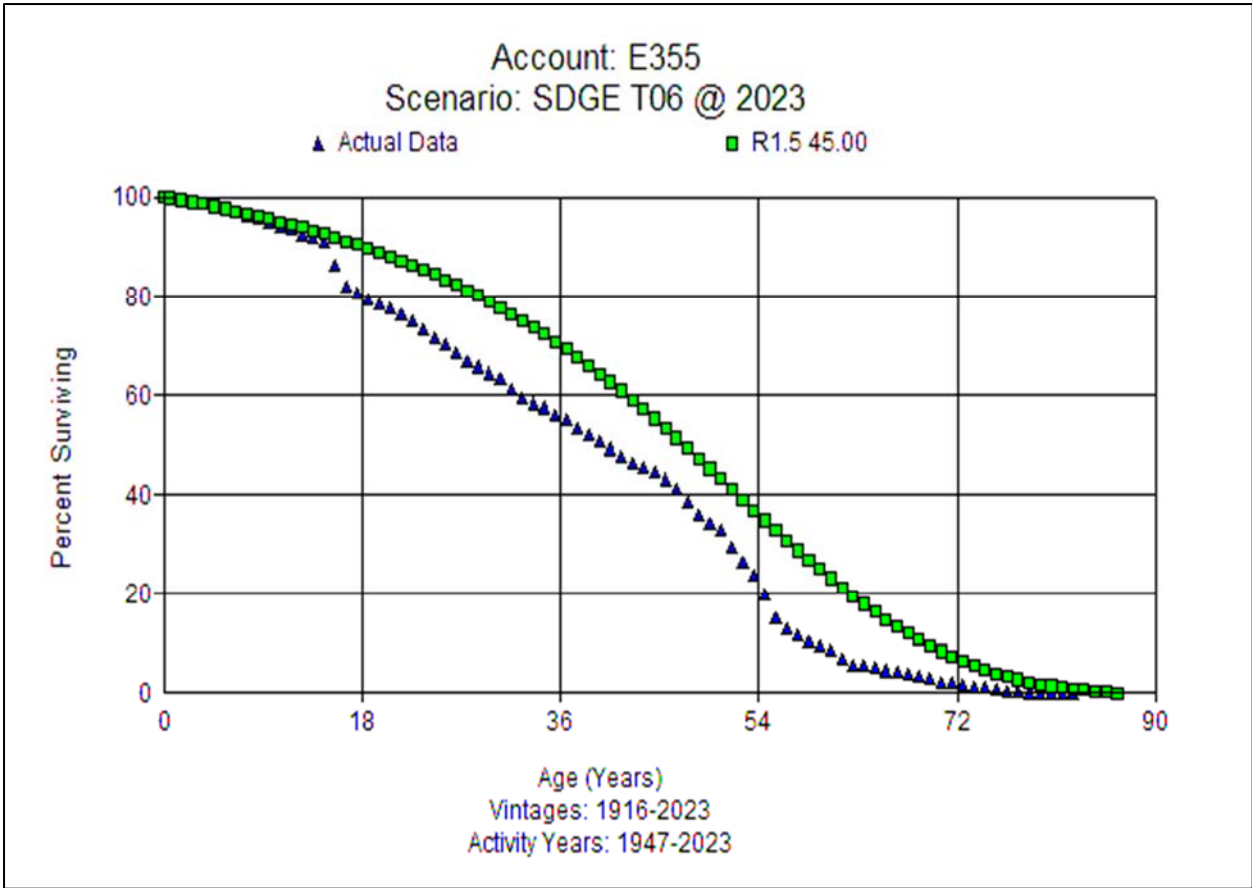
1. Anchors, head arm and other guys, including guy guards, guy clamps, strain insulators, pole plates, etc.
2. Brackets.
3. Cross arms and braces.
4. Excavation and backfill, including disposal of excess excavated material.
5. Extension arms.
6. Gaining, roofing stenciling, and tagging.
7. Insulator pins and suspension bolts.
8. Paving.
9. Pole steps.
10. Poles, wood, steel, concrete, or other material.
11. Racks complete with insulators.
12. Reinforcing and stubbing.
13. Settings.
14. Shaving and painting.

The current life of all subaccounts for this account is 45 R1.5. Discussions with Company personnel indicated there is an ongoing program to change out wood poles to steel poles in much of their territory as part of SDG&E's wildfire mitigation program. This change out is around 50% complete. The Company is seeing a shortening of the pole life based on the program with a lengthening life expected in future studies as more steel poles are added to the system. Prior to the start of this program (pre-2010) there were very few steel poles on the system. As of year-end 2017, there were approximately 8,125 wood poles, 4,126 steel poles, and 2,095 towers. As of 2020, 2,700 more poles were replaced.

Most of these poles are direct embedded (i.e., no foundations). The steel

replacement poles directly embedded in the ground may have a reduced life expectancy when compared to steel poles on foundations. The system has very few concrete poles. Overall, without the early replacement, a 45-year life is a reasonable expectation for wood poles and longer for steel poles. Corrosion in highly irrigated areas and issues with galvanization are some causes of failure. Poles are also more likely to be relocated than towers.

The overall account balance for this account is \$1.2 billion. The life analysis indicates a shorter life across the bands analyzed, which supports the Company's expectation that the replacement program would shorten the life of the account. The Company's expectation is it will eventually lengthen the life as a larger percentage of the poles moved from wood to steel. Looking at the full placement and experience band, the R1.5 dispersion with a shorter life would result in a good fit. However, considering the information from Company personnel, the current replacement program and its impact, the analysis and future expectations for this account, this study recommends retention of the existing 45 R1.5. The current balance in subaccount 355.10 – Transmission Poles & Fixtures – Other is \$1.2 billion. The current balance in subaccount 355.20 – Transmission Poles & Fixtures – SWPL is \$10.3 million. The current balance in subaccount 355.60 – Transmission Poles & Fixtures – SRPL is \$3.3 million. A graph of the Company's full band experience and proposed 45 R1.5 curve is shown below.



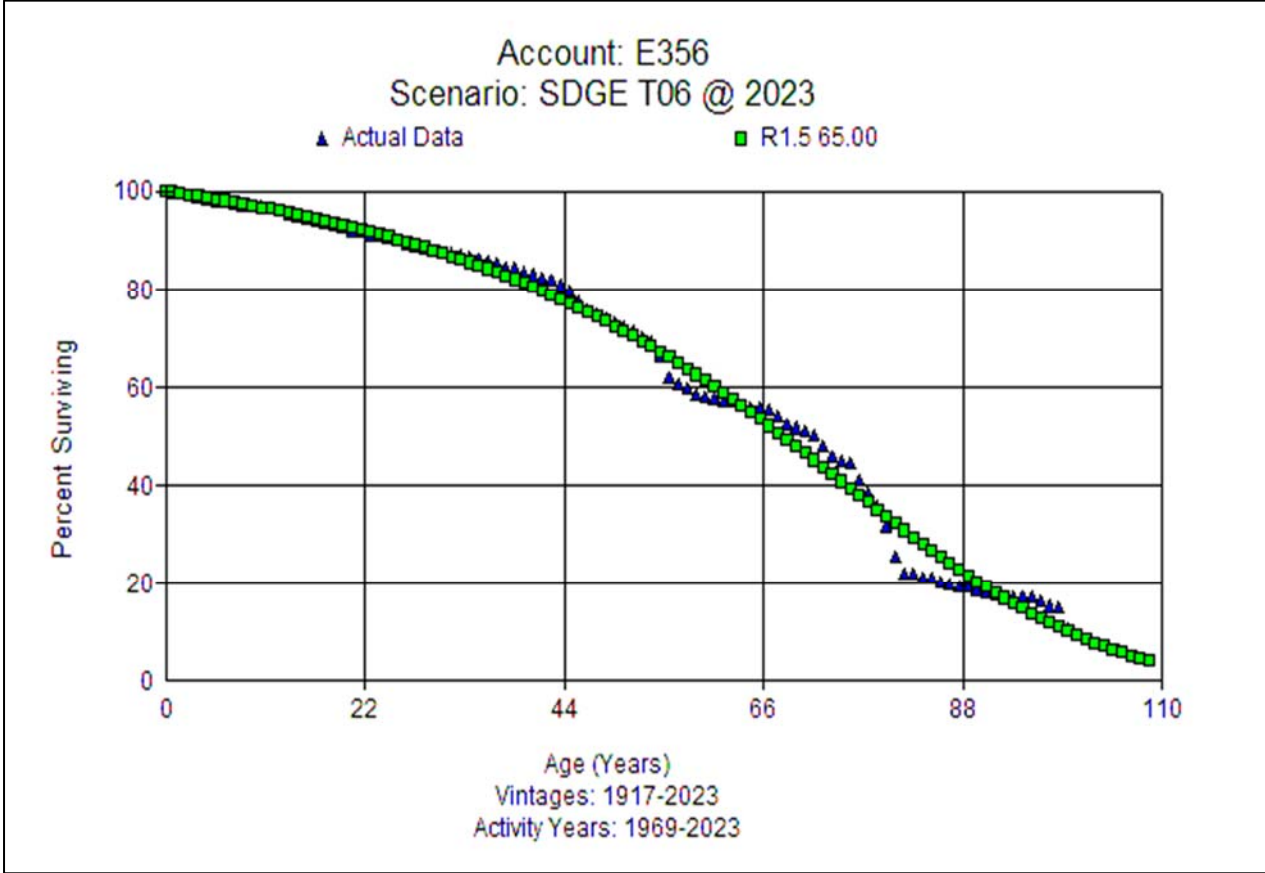
FERC Account 356 Overhead Conductors and Devices (65 R1.5)

This account consists of the installed cost of overhead conductors and devices used for transmission. Items can include:

1. Circuit breakers.
2. Conductors, including insulated and bare wires and cables.
3. Ground wires and ground clamps.
4. Insulators, including pin, suspension, and other types.
5. Lightning arresters.
6. Switches.
7. Other line devices.

The current life for all subaccounts is 64 R2. Discussions with Company personnel indicated that the change out of wood to steel pole program may also include replacing conductors. Undergrounding, wind fatigue, splice problems, capacity upgrades, and relocations are also causes for replacement. The Company expects that conductor should have a life at least as long as the poles, if not longer. Company personnel report that over the next 10 years they will be looking at adding capacity to meet the increasing demands of electrification. They have not gone far enough to fully understand how much this will impact their system. There is no reason to expect a long-term life change in life – same materials, etc. – as in the past unless electrification has a major impact.

Account 356 has a balance of \$1.0 billion. The life analysis indicated a small life increase as well as a change in dispersion pattern across the bands analyzed. Considering the discussions with Company personnel, replacement program impacts, the life analysis, and future expectations, this study recommends increasing the life to 65 years and changing to the R1.5 dispersion. The current balance for subaccount 356.10 Overhead Conductors and Devices – Other is \$785.5 million. The current balance for subaccount 356.20 Overhead Conductors and Devices – SWPL is \$46.8 million. The current balance for subaccount 356.60 Overhead Conductors and Devices – SRPL is \$173.8 million. A graph of the Company's full band experience and proposed 65 R1.5 curve is shown below.



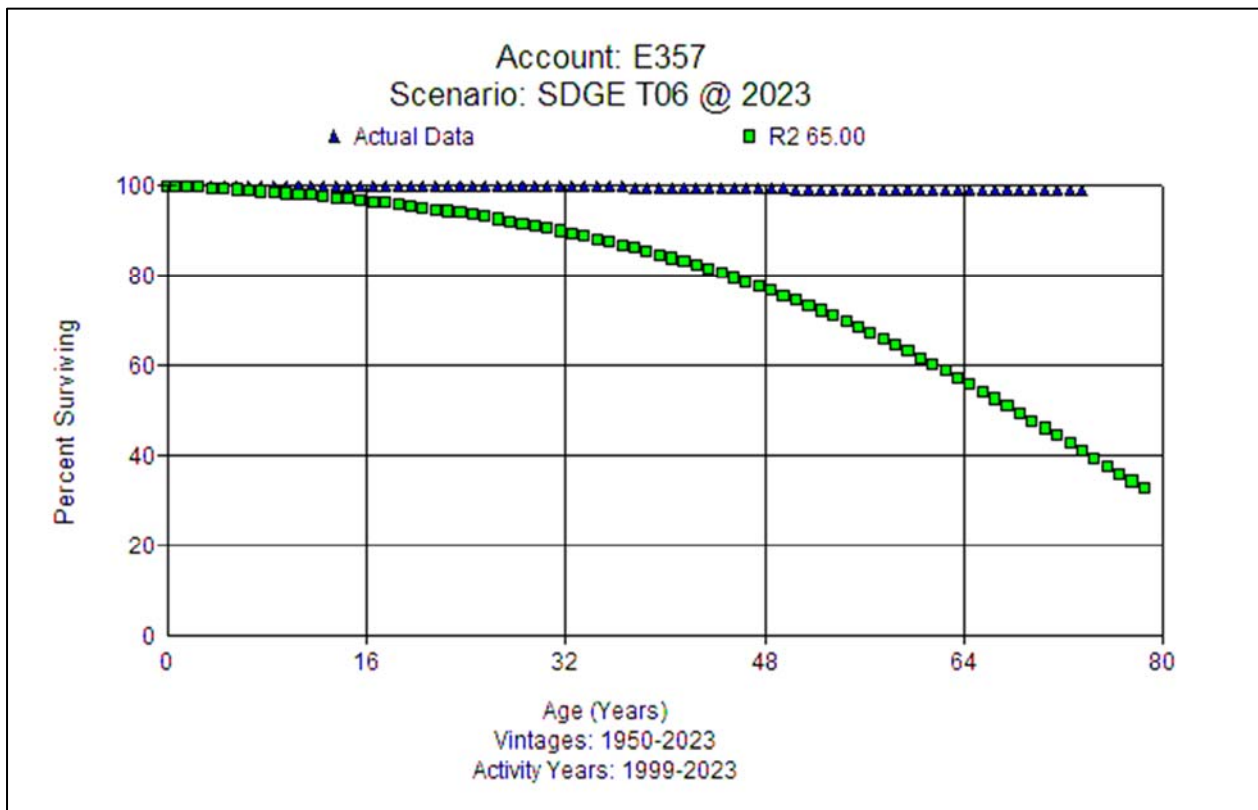
FERC Account 357 Underground Conduit (65 R2)

This account includes the cost installed of underground conduit, electric manholes, vaults, tunnels, and spreader head assembly used for housing transmission cables or wires. Items can include:

1. Conduit, concrete, brick or tile, including iron pipe, fiber pipe, Murray duct, and standpipe on pole or tower.
2. Excavation, including shoring, bracing, bridging, backfill, and disposal of excess excavated material.
3. Foundations and settings specially constructed for and not expected to outlast the apparatus for which provided.
4. Lighting systems.
5. Manholes, concrete or brick, including iron or steel, frames and covers, hatchways, gratings, ladders, cable racks and hangers, etc., permanently attached to manholes.
6. Municipal inspection.
7. Pavement disturbed, including cutting and replacing pavement, pavement base and sidewalks.
8. Permits
9. Protection of street openings.
10. Removal and relocation of subsurface obstructions.
11. Sewer connections, including drains, traps, tide valves, check valves, etc.
12. Sumps, including pumps.
13. Ventilating equipment.

The current life of all subaccounts is 60 R5. Discussions with Company personnel indicated underground conduit is normally laid with a spare conduit. For each trench package, plastic conduit is encased in concrete consisting of 2 columns of 3 stacked conduits with 6" spacing with a communications conduit. The Company expects conduit to last longer than the conductor. Assets in this account are not simply abandoned when retired. Vaults would be removed and potentially conduit filled.

Account 357 overall has a \$670.8 million balance. The life analysis did not have enough historical retirement experience for a meaningful stub curve for any bands analyzed. Feedback with Company personnel and this study indicate a lengthening of the life to 65 years and a flatter dispersion of R2. The current balance for subaccount 357.00 Underground Conduit is \$590.3 million. The current balance for subaccount 357.60 Underground Conduit - SRPL is \$80.5 million. A graph of the Company's experience and proposed 65 R2 curve is shown below.



FERC Account 358 Underground Conductors & Devices (50 R2)

This account consists of the installed cost of underground conductors, line potheads, pipeline oil pumps, underground cable, and devices used for transmission purposes. Items can include:

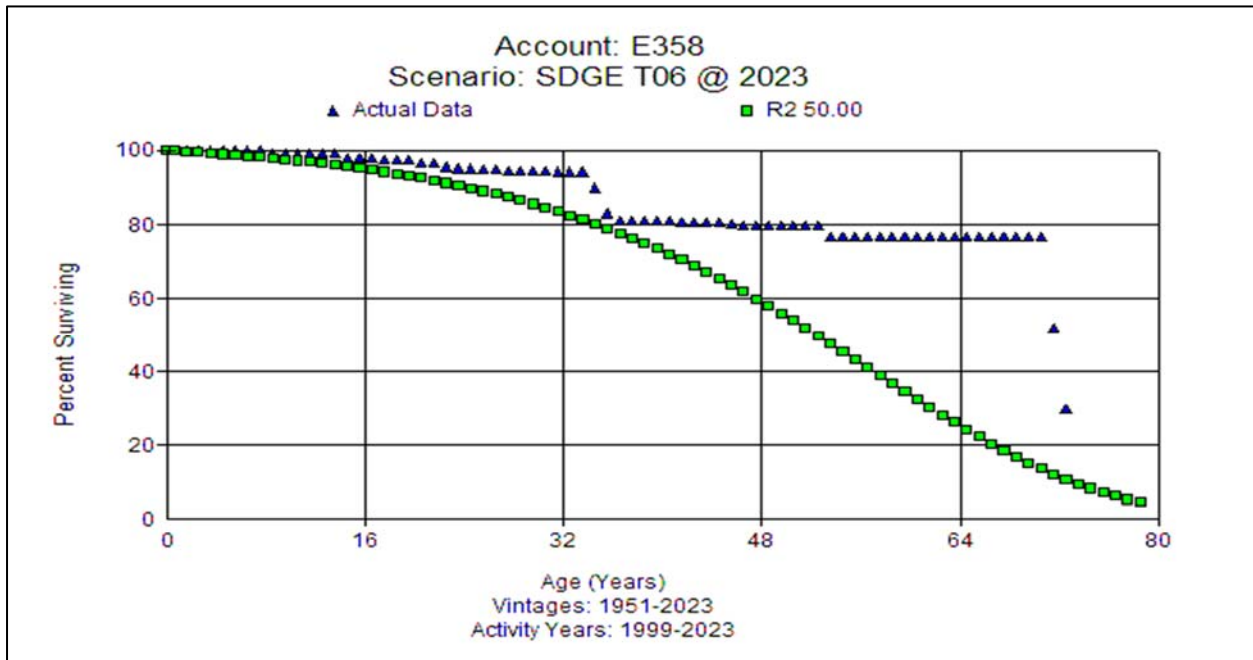
1. Armored conductors, buried, including insulators, insulating materials, splices, potheads, trenching, etc.
2. Armored conductors, submarine, including insulators, insulating materials, splices in terminal chambers, potheads, etc.
3. Cables in standpipe, including pothead and connection from terminal chamber of manhole to insulators on pole.
4. Circuit breakers.
5. Fireproofing, in connection with any items listed herein.
6. Hollow-core oil-filled cable, including straight or stop joints pressure tanks, auxiliary air tanks, feeding tanks, terminals, potheads and connections, ventilating equipment, etc.
7. Lead and fabric covered conductors, including insulators, compound filled, oil filled, or vacuum splices, potheads, etc.
8. Lightning arrestors.
9. Municipal inspection.
10. Permits.
11. Protection of street openings.
12. Racking of cables.
13. Switches.
14. Other line devices.

The current life of all subaccounts is 50 R2. Discussions with Company personnel indicated that there is approximately 154 miles of UG as of the study date. There were about 20 miles of direct buried that was replaced in 2022. SDG&E has been doing some direct buried replacement every year, replacing with conductor in conduit. There is some acceleration of this program in the last year or so. Most of the underground conductor is

XLPE material.

The combined full band analysis indicates a longer life than Company expectations. After reviewing various analysis bands, the account's asset characteristics, and information from Company personnel, this study recommends retention of the 50-year life with a R2 dispersion.

The current balance for subaccount 358.0 Underground Conductors & Devices is \$507.9 million. The current balance for subaccount 358.60 Underground Conductors & Devices - SRPL is \$126.5 million. A graph of the Company's experience and proposed 50 R2 curve is shown below.



FERC Account 359 Roads and Trails (60 SQ)

This account includes the installed cost of roads, trails, and bridges used primarily as transmission facilities. Items can include:

1. Bridges, including foundation piers, girders, trusses, flooring, etc.
2. Clearing land.
3. Roads, including grading, surfacing, culverts, etc.
4. Structures constructed and maintained in connection with other items included in this account.
5. Trails, including grading, surfacing, culverts, etc.

The current life for all subaccounts is 60 SQ. There is insufficient history to analyze this account with actuarial analysis. The life was set at 60 SQ in the TO5 settlement and has been retained in this study. No analysis or fits were performed. The current balance for subaccount 359.10 Roads and Trails - Other is \$127.4 million. The current balance for subaccount 359.20 Roads and Trails - SWPL is \$5.6 million. The current balance for subaccount 359.60 Roads and Trails - SRPL is \$242.8 million. No graph is shown.

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).

Salvage and removal cost percentages are calculated by dividing the current cost of salvage or removal by the original installed cost of the asset. Some plant assets can experience significant negative removal cost percentages due to the timing of the original addition versus the retirement. For example, a transmission asset in FERC Account 355 with a current installed cost of \$500 (2023) would have had an installed cost of \$104.40³ in 1978 (which is the proposed 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 48 percent removal cost for that asset (\$50/\$104.40). 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. The net salvage analysis uses the history of the individual accounts to estimate the future net salvage that SDG&E can expect in its operations. As a result, the analysis not only looks at the historical experience of SDG&E, but also takes into account recent and expected changes in operations that could reasonably lead to different future expectations for net salvage than were experienced in the past.

³ Using the Handy-Whitman Bulletin No. 199, E-6, line 36, $\$104.40 = \$500 \times 171/819$.

Salvage Characteristics

For each account, data for retirements, gross salvage, and cost of removal were derived from 1991-2023.

Moving averages, which remove timing differences between retirement and salvage and removal cost, were analyzed over periods varying from one to 10 years. The analysis of net salvage is shown in Appendix D.

TRANSMISSION PLANT

Transmission Plant Accounts, FERC Accounts 351-359

In this study, all plant data by TO5 subaccount were combined for a single net salvage analysis into the major FERC account. This is reasonable due to the similarity of the assets and the processes followed at the time of retirement and replacement. This is also consistent with the life analysis and prior studies. This analysis results in the application of one net salvage factor to be applied individually in the calculation of each TO5 subaccount depreciation accrual expense and rate. This study gives an overall description of the major FERC account and then describes certain details that support the net salvage proposal.

FERC Account 351 Battery Energy Storage Systems (BESS) (-15%)

This was a new account in the last depreciation study. Currently there is no investment in this account. Negative 15 percent net salvage is currently modeled for this account. However, based on discussions with Company personnel, these types of assets are expected to be added in the future. It is expected at retirement that the BESS sites will incur cost of removal that will exceed any gross salvage. Sargent & Lundy conducted a Decommissioning Study for the Company's future BESS sites. Based on the independent study, estimated installed cost of the BESS sites, discussions with Company personnel, and judgment, retention of negative 15 net salvage for this account is recommended for retention.

FERC Account 352 Structures & Improvements (-85%)

This account consists of control building, fencing, landscaping/yard surfacing, and station lighting. Similar to the life analysis for this account, a combined net salvage analysis was performed. The net salvage analysis included subaccounts 352.10 Other, 352.20 SWPL, and 352.60 SRPL. The existing net salvage percent for this account is negative 75 percent. Discussions with Company personnel indicated that the assets and retirement processes are similar for all three accounts, making the combined analysis reasonable and consistent with past studies. Discussions with Company personnel further indicated that the normal flow of capital expenditures (capex) is to record cost of removal at the beginning of a project, then normal construction capex until completion; then, once the project is completed, the retirements are processed. With larger transmission projects, the necessary information to unitize or process retirements can come in for months, up to three years, before unitizing and processing is complete. This is not unique to SDG&E but common to the industry and is the reason for utilizing moving averages in the analysis.

The combined 352 (352.10 Other, 352.20 SWPL, and 352.60 SRPL) net salvage historic experience shows five and ten year moving averages to be negative 178 and negative 168 percent, respectively. The existing negative 75 percent is well below the indications across the bands. To move incrementally toward expectations of the future and recognizing the timing differences in the recording of removal cost and retirements, this study conservatively recommends a negative 85 percent net salvage factor for this account supported by the combined net salvage analysis.

FERC Account 353 Substation Equipment (-80%)

This account consists of transforming, conversion, and switching equipment used for the purpose of changing the characteristics of electricity. Similar to the life analysis, a combined net salvage analysis was performed. The net salvage analysis included subaccounts 353.10 Other, 353.20 SWPL, 353.40 Palomar, and 353.60 SRPL. The

existing net salvage percent for this account is negative 70 percent net salvage. Discussions with Company personnel indicated that the assets and retirement processes are similar for all four accounts, making the combined analysis reasonable. It is also consistent with past studies.

In this study, the combined analysis of Accounts 353.10 Other, 353.20 SWPL, 353.40 Palomar, and 353.60 SRPL net salvage historic experience shows five and ten year moving averages to be negative 241 and negative 121 percent, respectively. There was one significant retirement in 2016 related to removing a 500kV capacitor from Imperial Valley Substation; this is related to the big synchronous condenser projects being installed at that site and others. Removal cost is directly charged to accumulated depreciation work orders. Permitting has become very expensive, and those costs are expected to increase due to requirements for environmental assessments, CPUC alternative comparisons, data requests, and other activities. It takes nearly as long to remove an asset as it does to install the new one. Since the COVID pandemic and inflation, parts are more expensive, as there is more demand, and require longer lead times. Overhead costs are also rising.

This study recommends moving incrementally toward expectations of the future and recommends a negative 80 percent net salvage rate supported by the combined analysis for all 353 subaccounts in the study.

FERC Account 354 Transmission Towers & Fixtures (-75%)

This account consists of towers and appurtenant fixtures used for supporting overhead transmission conductors including concrete foundations and lattice transmission structures. Similar to the life analysis and the TO5 Formula, a combined net salvage analysis was performed. The net salvage analysis included subaccounts 354.10 Other, 354.20 SWPL, and 354.60 SRPL. The existing net salvage percent for this account is negative 75 percent. Discussions with Company personnel indicated that the assets and retirement processes are similar for all three accounts, making the combined analysis reasonable and consistent with past studies.

In the combined analysis of Accounts 354.10 Other, 354.20 SWPL and 354.60 SRPL net salvage historic experience shows the five and ten year moving averages for net salvage in this account to be 0 (due to no retirements from 2012-2023). Discussions with Company personnel indicated that, similar to the other accounts, work orders tracking retirements, salvage, and removal remain open collecting charges over numerous months and years. The Company has installed new software and continues to evaluate the process to refine how retirements and associated cost of removal are recorded. Based upon the analysis indications and the information provided by Company personnel, this study recommends retention of negative 75 percent net salvage to apply overall and to all subaccounts at this time.

FERC Account 355 Transmission Poles & Fixtures (-120%)

This account consists of installed cost of poles made of wood, steel, concrete, or other material, together with appurtenant fixtures used for supporting overhead transmission conductors. Similar to the life analysis and the TO5 Formula, a combined net salvage analysis was performed. The net salvage analysis included subaccounts 355.10 Other, 355.20 SWPL, and 355.60 SRPL. The existing net salvage is negative 100 percent. Discussions with Company personnel indicated that the assets and retirement processes are similar for all three accounts, making the combined analysis reasonable and consistent with past studies.

Discussions with Company personnel indicated there are several replacement programs to change out wood poles to steel poles in much of their territory due to their placement in high fire threat districts as part of the Company's wildfire mitigation plan. There has been a large increase to cost of removal charged on capital jobs due to the replacement programs, and the work orders are often open for many months, so it is not unusual to see removal cost recorded years ahead of retirements. The combined 355 net salvage historic experience shows five and ten year moving averages for net salvage in this account to be negative 164 and negative 154 percent, respectively. The analysis suggests cost of removal is increasing, making the net salvage more negative when

compared to the existing. There is some impact from the various replacement programs and the timing differences that occur. Based upon information provided by Company personnel regarding timing differences and the analysis, this study recommends making an incremental change to the existing net salvage at this time. This study recommends a net salvage rate of negative 120 percent, which is proposed to be applied to all 355 subaccounts.

FERC Account 356 Overhead Conductors and Devices (-100%)

This account consists of overhead conductors and devices used for transmission. Similar to my life analysis and analysis for SDG&E's TO5 Formula rate filing, a combined net salvage analysis was performed. The net salvage analysis included subaccounts 356.10 Other, 356.20 SWPL, and 356.60 SRPL. The existing net salvage percent is negative 100 percent. Discussions with Company personnel indicated that the assets and retirement processes are similar for all three accounts, making the combined analysis reasonable and consistent with past studies.

Discussions with Company personnel indicated that there are several replacement programs. Because there has been a large increase to cost of removal charged on capital jobs due to the replacement programs, and the work orders are often open for many months, it is not unusual to see removal cost being recorded years ahead of retirements. The combined 356 net salvage historic experience shows five and ten year moving averages for net salvage in this account to be negative 101 and negative 133 percent, respectively.

The analysis suggests cost of removal is increasing slightly, making the net salvage more negative when compared to the existing. There is some impact from the various replacement programs. However, due to the replacement programs and the timing differences in recording net salvage and retirements, this study recommends not making any changes at this time, so the existing net salvage rate of negative 100 percent is retained and is proposed to be applied to all 356 subaccounts.

FERC Account 357.00 Underground Conduit (-30%)

This account includes underground conduit, electric manholes, vaults, tunnels, and spreader head assembly used for housing transmission cables or wires. The net salvage included subaccounts 357.00 and 357.60 SRPL. The existing net salvage is negative 30 percent. Discussions with Company personnel indicated that the assets and retirement processes are similar, making the combined analysis reasonable and consistent with past studies.

Discussions with Company personnel indicated underground conduit is normally laid with a spare conduit. Plastic conduit is encased in concrete consisting of 2 columns of 3 stacked conduits with 6" spacing with a communications conduit as well for each trench package.

The combined 357 net salvage historic experience shows five and ten year moving averages for net salvage in this account to be negative 43 and negative 214 percent, respectively. Similar to Accounts 355 and 356, work orders can remain open for a long time and there are timing differences in the recording of net salvage costs and the retirements.

The most recent retirements were recorded in 2017 and 2019, but removal cost had been recorded over the last 10 years. This was noted by Company personnel. Based on the timing differences and the analysis, the most recent activity does not provide a good indication of current trends. This study recommends making no changes at this time and retains the existing negative 30 percent and proposes it to be applied to all 357 subaccounts.

FERC Account 358 Underground Conductors and Devices (-10%)

This account consists of underground conductor, line potheads, pipeline oil pumps, and underground cable. The net salvage included accounts 358.00 and 358.60 SRPL. The existing net salvage percent is negative 10 percent.

There has been a large increase in cost of removal, with sporadic retirements recorded over the last few years). Discussions with Company personnel indicated that

there are some timing differences in recording cost of removal and retirements. The combined 358 net salvage historic experience shows five and ten year moving averages for net salvage in this account to be negative 1059 and negative 354 percent, respectively. Sporadic charges for cost of removal make it appear that net salvage is becoming more negative when compared to the existing. There is some impact from the various replacement programs. Due to the replacement programs and the timing differences in recording net salvage and retirements, this study recommends not making any changes at this time. The existing net salvage rate of negative 10 percent is retained and is proposed to be applied to all 358 subaccounts.

FERC Account 359 Roads and Trails (0%)

This account consists of bridges, trails, and roads. Similar to my life analysis and my analysis for SDG&E's TO5 Formula rate filing, a combined net salvage analysis was performed. The net salvage analysis is 0 percent. The combined analysis indicates some cost of removal had been recorded. Discussions with Company personnel indicated that this was a result of moving to a new system and the rules for allocation. Based on the characteristics of the assets in this account and past history, this study recommends retention of a 0 percent net salvage, which is proposed to be applied to all 359 subaccounts.

APPENDIX A - Computation of Depreciation Accrual Rate

**San Diego Gas and Electric
T06
Computation of Transmission Account
Depreciation Accrual Rates at December 31, 2023**

Account	Description	Plant Balance \$	Book Depreciation \$	Proposed		Unaccrued Balance \$	Proposed		Annual Accrual \$	Annual Accrual Rate %	Life		COR Reserve \$	COR Reserve \$	Life		COR Reserve \$
				Net Salvage %	Net Salvage Amount \$		Remaining Life	Life Reserve \$			Accrual Rate %	Accrual Rate %					
E352.10	Struct & Imprv-Other	704,205,884	118,605,605	-85.00%	(598,575,001)	1,184,175,280	66.51	17,804,430	2.53%	79,076,526	39,529,079	1.33%	1.19%				
E352.20	Struct & Improv-SWPL	58,968,996	12,544,629	-85.00%	(50,123,647)	96,548,014	65.70	1,469,633	2.49%	9,288,162	3,256,467	1.28%	1.21%				
E352.60	Struct & Improv-SRPL	121,696,150	26,982,457	-85.00%	(103,441,728)	198,155,422	63.35	3,128,144	2.57%	19,935,539	7,046,918	1.32%	1.25%				
E353.10	Station Equip.-Other	1,873,830,309	489,274,710	-80.00%	(1,499,064,247)	2,883,619,846	44.30	65,086,217	3.47%	351,122,566	138,152,144	1.83%	1.64%				
E353.20	Station Equip.-SWPL	336,248,084	137,586,290	-80.00%	(268,998,467)	467,660,262	40.04	11,679,612	3.47%	98,617,871	38,968,418	1.76%	1.71%				
E353.40	Station Equip.-Palomar	1,420,393	648,597	-80.00%	(1,136,314)	1,908,110	37.15	51,368	3.62%	434,253	214,344	1.87%	1.75%				
E353.60	Station Equip.-SRPL	167,340,617	47,920,290	-80.00%	(133,872,494)	253,292,821	43.30	5,850,117	3.50%	36,434,634	11,485,657	1.81%	1.69%				
E354.10	Towers & Fxtrs-Other	107,354,620	54,170,086	-75.00%	(80,515,965)	133,700,498	56.54	2,364,716	2.20%	30,854,469	23,315,617	1.26%	0.94%				
E354.20	Towers & Fixtrs-SWPL	65,635,780	70,908,324	-75.00%	(49,226,835)	43,954,292	37.65	1,167,312	1.78%	39,900,826	31,007,498	1.04%	0.74%				
E354.60	Towers & Fixtrs-SRPL	766,913,154	175,889,488	-75.00%	(575,184,865)	1,166,208,531	63.51	18,363,595	2.39%	130,186,150	45,703,338	1.31%	1.09%				
E355.10	Poles & Fixtrs-Other	1,217,780,404	227,473,505	-120.00%	(1,461,336,485)	2,451,643,384	39.60	61,913,946	5.08%	130,959,575	96,513,930	2.25%	2.83%				
E355.20	Poles & Fixturs-SWPL	10,337,209	14,033,749	-120.00%	(12,404,651)	8,708,111	21.85	398,568	3.86%	7,543,585	6,490,164	1.24%	2.62%				
E355.60	Poles & Fixturs-SRPL	3,343,704	1,383,111	-120.00%	(4,012,445)	5,973,038	35.80	166,850	4.99%	811,117	571,994	2.12%	2.87%				
E356.10	Ovrhd Cnd & Dv-Other	785,479,744	199,261,649	-100.00%	(785,479,744)	1,371,697,840	57.10	24,023,638	3.06%	106,199,947	93,061,702	1.51%	1.54%				
E356.20	Ovrhd Cnd & Dev-SWPL	46,810,210	71,504,636	-100.00%	(46,810,210)	22,115,784	37.71	586,455	1.25%	36,605,935	34,898,702	0.58%	0.67%				
E356.60	Ovrhd Cnd & Dev-SRPL	173,822,757	48,651,898	-100.00%	(173,822,757)	298,993,617	55.76	5,362,303	3.08%	34,270,174	14,381,724	1.44%	1.65%				
E357.00	Trans UG Conduit	590,292,519	110,715,663	-30.00%	(177,087,756)	656,664,611	57.66	11,387,588	1.93%	80,680,802	30,034,862	1.50%	0.43%				
E357.60	UG Conduit-SRPL	80,541,403	18,278,202	-30.00%	(24,162,421)	86,425,621	54.85	1,575,727	1.96%	15,043,118	3,235,084	1.48%	0.47%				
E358.00	Trans UG Conductor	507,869,900	97,204,931	-10.00%	(50,786,990)	461,451,959	42.38	10,887,420	2.14%	91,220,635	5,984,296	1.94%	0.21%				
E358.60	UG Cond. & Dev-SRPL	126,452,463	30,707,517	-10.00%	(12,645,246)	108,390,193	39.94	2,713,906	2.15%	29,206,454	1,501,063	1.93%	0.22%				
E359.10	Roads & Trails-Other	127,379,684	20,123,763	0.00%	0	107,255,921	50.59	2,119,918	1.66%	21,201,139	(1,077,376)	1.65%	0.02%				
E359.20	Roads & Trails-SWPL	5,610,160	3,259,241	0.00%	0	2,350,919	27.29	86,156	1.54%	3,259,241	0	1.54%	0.00%				
E359.60	Roads & Trails-SRPL	242,759,804	44,905,090	0.00%	0	197,854,715	49.00	4,038,011	1.66%	44,905,090	0	1.66%	0.00%				
	Total	8,122,093,949	2,022,033,431		(6,108,688,269)			252,225,630		1,397,757,806	624,275,626						

E351.00 Battery Energy Storage Systems -15% 10 11.50% *

* To be used if plant is added to that account

APPENDIX B - Comparison of Depreciation Accrual

San Diego Gas and Electric
T06
Comparison of Transmission Account
Depreciation Accrual Rates at December 31, 2023

Account	Description	Plant Balance \$	Current Depreciation Rates %	Current Depreciation \$	Proposed Depreciation Rates %	Proposed Depreciation \$	Difference \$
E352.10	Struct & Imprv-Other	704,205,883.51	2.37%	16,689,679	2.53%	17,804,430	1,114,751
E352.20	Struct & Improv-SWPL	58,968,996.18	2.18%	1,285,524	2.49%	1,469,633	184,109
E352.60	Struct & Improv-SRPL	121,696,150.38	2.41%	2,932,877	2.57%	3,128,144	195,267
E353.10	Station Equip.-Other	1,873,830,308.53	3.49%	65,396,678	3.47%	65,086,217	(310,461)
E353.20	Station Equip.-SWPL	336,248,084.19	3.49%	11,735,058	3.47%	11,679,612	(55,446)
E353.40	Station Equip.-Palomar	1,420,392.88	3.64%	51,702	3.62%	51,368	(334)
E353.60	Station Equip.-SRPL	167,340,617.33	3.48%	5,823,453	3.50%	5,850,117	26,663
E354.10	Towers & Fxtrs-Other	107,354,619.70	2.36%	2,533,569	2.20%	2,364,716	(168,853)
E354.20	Towers & Fixtrs-SWPL	65,635,780.39	2.02%	1,325,843	1.78%	1,167,312	(158,531)
E354.60	Towers & Fixtrs-SRPL	766,913,153.67	2.57%	19,709,668	2.39%	18,363,595	(1,346,074)
E355.10	Poles & Fixtrs-Other	1,217,780,404.17	4.57%	55,652,564	5.08%	61,913,946	6,261,382
E355.20	Poles & Fixturs-SWPL	10,337,209.17	3.40%	351,465	3.86%	398,568	47,103
E355.60	Poles & Fixturs-SRPL	3,343,703.96	4.51%	150,801	4.99%	166,850	16,049
E356.10	Ovrhd Cnd & Dv-Other	785,479,744.46	3.03%	23,800,036	3.06%	24,023,638	223,602
E356.20	Ovrhd Cnd & Dev-SWPL	46,810,210.01	1.42%	664,705	1.25%	586,455	(78,250)
E356.60	Ovrhd Cnd & Dev-SRPL	173,822,757.29	3.22%	5,597,093	3.08%	5,362,303	(234,790)
E357.00	Trans UG Conduit	590,292,518.89	2.14%	12,632,260	1.93%	11,387,588	(1,244,672)
E357.60	UG Conduit-SRPL	80,541,402.53	2.20%	1,771,911	1.96%	1,575,727	(196,184)
E358.00	Trans UG Conductor	507,869,900.22	2.13%	10,817,629	2.14%	10,887,420	69,791
E358.60	UG Cond. & Dev-SRPL	126,452,463.41	2.19%	2,769,309	2.15%	2,713,906	(55,403)
E359.10	Roads & Trails-Other	127,379,684.42	1.69%	2,152,717	1.66%	2,119,918	(32,798)
E359.20	Roads & Trails-SWPL	5,610,159.86	1.51%	84,713	1.54%	86,156	1,443
E359.60	Roads & Trails-SRPL	242,759,804.21	1.66%	4,029,813	1.66%	4,038,011	8,198
Total		8,122,093,949.36	3.05%	247,959,068	3.11%	252,225,630	4,266,562

E351.00* Battery Energy Storage Systems

11.50%

* To be used if plant is added to that Account

APPENDIX C – Comparison of Mortality Characteristics

**San Diego Gas and Electric
T06
Comparison of Transmission Depreciation
Parameters at December 31, 2023**

Account	Description	TO5			Proposed		
		Life	Curve	Net Salvage	Life	Curve	Net Salvage
E351.00	Struct & Imprv-Other				10 SQ		-15.00%
E351	Total	NA	NA	NA	10 SQ		-15.00%
E352.10	Struct & Imprv-Other	74	R2.5	-75.00%	74 R2.5		-85.00%
E352.20	Struct & Improv-SWPL	74	R2.5	-75.00%	74 R2.5		-85.00%
E352.60	Struct & Improv-SRPL	74	R2.5	-75.00%	74 R2.5		-85.00%
E352	Total	74	R2.5		74 R2.5		-85.00%
E353.10	Station Equip.-Other	50	R1.5	-70.00%	53 R2		-80.00%
E353.20	Station Equip.-SWPL	50	R1.5	-70.00%	53 R2		-80.00%
E353.40	Station Equip.-Palomar	50	R1.5	-70.00%	53 R2		-80.00%
E353.60	Station Equip.-SRPL	50	R1.5	-70.00%	53 R2		-80.00%
E353	Total	50			53 R2		-80.00%
E354.10	Towers & Fxtrs-Other	70	R5	-75.00%	75 R5		-75.00%
E354.20	Towers & Fixtrs-SWPL	70	R5	-75.00%	75 R5		-75.00%
E354.60	Towers & Fixtrs-SRPL	70	R5	-75.00%	75 R5		-75.00%
E354	Total	70			75 R5		-75.00%
E355.10	Poles & Fixtrs-Other	45	R1.5	-100.00%	45 R1.5		-120.00%
E355.20	Poles & Fixturs-SWPL	45	R1.5	-100.00%	45 R1.5		-120.00%
E355.60	Poles & Fixturs-SRPL	45	R1.5	-100.00%	45 R1.5		-120.00%
E355	Total	45			45 R1.5		-120.00%
E356.10	Ovrhd Cnd & Dv-Other	64	R2	-100.00%	65 R1.5		-100.00%
E356.20	Ovrhd Cnd & Dev-SWPL	64	R2	-100.00%	65 R1.5		-100.00%
E356.60	Ovrhd Cnd & Dev-SRPL	64	R2	-100.00%	65 R1.5		-100.00%
E356	Total	64			65 R1.5		-100.00%
E357.00	Trans UG Conduit	60	R5	-30.00%	65 R2		-30.00%
E357.60	UG Conduit-SRPL	60	R5	-30.00%	65 R2		-30.00%
E357	Total	60			65 R2		-30.00%
E358.00	Trans UG Conductor	50	R2	-10.00%	50 R2		-10.00%
E358.60	UG Cond. & Dev-SRPL	50	R2	-10.00%	50 R2		-10.00%
E358	Total	50			50 R2		-10.00%
E359.10	Roads & Trails-Other	60	SQ	0.00%	60 SQ		0.00%
E359.20	Roads & Trails-SWPL	60	SQ	0.00%	60 SQ		0.00%
E359.60	Roads & Trails-SRPL	60	SQ	0.00%	60 SQ		0.00%
E359	Total	60			60 SQ		0.00%

APPENDIX D - Net Salvage Analysis

SAN DIEGO GAS AND ELECTRIC T06
RETIREMENT AND NET SALVAGE
AS ADJUSTED
DATA THROUGH DECEMBER 2023

Acct	Year	Adjusted Retirements	Adjusted Salvage	Adjusted Removal Cost	Net Salvage	Net Salv. %	2-yr Net Salv. %	3-yr Net Salv. %	4-yr Net Salv. %	5-yr Net Salv. %	6-yr Net Salv. %	7-yr Net Salv. %	8-yr Net Salv. %	9-yr Net Salv. %	10-yr Net Salv. %	15-yr Net Salv. %
E353.40	1991	0.00	0.00	0.00	0.00	NA										
E353.40	1992	0.00	0.00	0.00	0.00	NA	NA									
E353.40	1993	0.00	0.00	0.00	0.00	NA	NA	NA								
E353.40	1994	0.00	0.00	0.00	0.00	NA	NA	NA	NA							
E353.40	1995	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA						
E353.40	1996	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA					
E353.40	1997	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA				
E353.40	1998	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA			
E353.40	1999	5,820,982.67	0.00	6,515,112.74	(6,515,112.74)	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%
E353.40	2000	0.00	0.00	0.00	0.00	NA	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%
E353.40	2001	0.00	0.00	0.00	0.00	NA	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%
E353.40	2002	0.00	0.00	0.00	0.00	NA	NA	NA	0.00%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%
E353.40	2003	0.00	0.00	0.00	0.00	NA	NA	NA	NA	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%
E353.40	2004	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%
E353.40	2005	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	-111.92%	-111.92%	-111.92%	-111.92%	-111.92%
E353.40	2006	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	-111.92%	-111.92%	-111.92%	-111.92%
E353.40	2007	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	-111.92%	-111.92%	-111.92%
E353.40	2008	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-111.92%
E353.40	2009	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.40	2010	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.40	2011	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.40	2012	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.40	2013	179,607.12	0.00	9,096.00	(9,096.00)	-5.06%	-5.06%	-5.06%	-5.06%	-5.06%	-5.06%	-5.06%	-5.06%	-5.06%	-5.06%	-5.06%
E353.40	2014	0.00	0.00	1,123.11	(1,123.11)	NA	-5.69%	-5.69%	-5.69%	-5.69%	-5.69%	-5.69%	-5.69%	-5.69%	-5.69%	-5.69%
E353.40	2015	0.00	0.00	1,675.50	(1,675.50)	NA	NA	-6.62%	-6.62%	-6.62%	-6.62%	-6.62%	-6.62%	-6.62%	-6.62%	-6.62%
E353.40	2016	0.00	0.00	2,049.46	(2,049.46)	NA	NA	-7.76%	-7.76%	-7.76%	-7.76%	-7.76%	-7.76%	-7.76%	-7.76%	-7.76%
E353.40	2017	0.00	0.00	0.00	0.00	NA	NA	NA	NA	-7.76%	-7.76%	-7.76%	-7.76%	-7.76%	-7.76%	-7.76%
E353.40	2018	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	-7.76%	-7.76%	-7.76%	-7.76%	-7.76%	-7.76%
E353.40	2019	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	-7.76%	-7.76%	-7.76%	-7.76%	-7.76%
E353.40	2020	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	-7.76%	-7.76%	-7.76%	-7.76%
E353.40	2021	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	-7.76%	-7.76%	-7.76%
E353.40	2022	0.00	0.00	9.13	(9.13)	NA	NA	NA	NA	NA	NA	NA	NA	NA	-7.77%	-7.77%
E353.40	2023	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-7.77%
E353.60	1991	0.00	0.00	0.00	0.00	NA										
E353.60	1992	0.00	0.00	0.00	0.00	NA	NA									
E353.60	1993	0.00	0.00	0.00	0.00	NA	NA	NA								
E353.60	1994	0.00	0.00	0.00	0.00	NA	NA	NA	NA							
E353.60	1995	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA						
E353.60	1996	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA					
E353.60	1997	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA				
E353.60	1998	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA			
E353.60	1999	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA		
E353.60	2000	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
E353.60	2001	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.60	2002	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.60	2003	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.60	2004	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.60	2005	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.60	2006	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.60	2007	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.60	2008	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.60	2009	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.60	2010	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.60	2011	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.60	2012	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.60	2013	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.60	2014	0.00	0.00	(478.71)	478.71	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.60	2015	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.60	2016	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.60	2017	0.00	0.00	14,432.08	(14,432.08)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
E353.60	2018	833,409.22	0.00	142.51	(142.51)	-0.02%	-1.75%	-1.75%	-1.75%	-1.69%	-1.69%	-1.69%	-1.69%	-1.69%	-1.69%	-1.69%
E353.60	2019	0.00	0.00	1,988.76	(1,988.76)	NA	-0.26%	-1.99%	-1.99%	-1.93%	-1.93%	-1.93%	-1.93%	-1.93%	-1.93%	-1.93%
E353.60	2020	11,460.35	0.00	461.74	(461.74)	-4.03%	-21.38%	-2.02%	-2.02%	-2.02%	-2.02%	-1.96%	-1.96%	-1.96%	-1.96%	-1.96%
E353.60	2021	14,300.68	0.00	171.14	(171.14)	-1.20%	-2.46%	-10.18%	-0.31%	-2.00%	-2.00%	-2.00%	-1.95%	-1.95%	-1.95%	-1.95%
E353.60	2022	0.00	0.00	351.57	(351.57)	NA	-3.66%	-3.82%	-3.82%	-2.04%	-2.04%	-2.04%	-2.04%	-1.99%	-1.99%	-1.99%
E353.60	2023	56,834.87	0.00	3,485.20	(3,485.20)	-6.13%	-6.75%	-5.63%	-4.85%	-7.82%	-0.72%	-2.30%	-2.30%	-2.30%	-2.24%	-2.24%

