Company: Southern California Gas Company (U 904 G)
Proceeding: 2019 General Rate Case
Application: A.17-10-008
Exhibit: SCG-36-R

REVISED

SOCALGAS

DIRECT TESTIMONY OF FLORA NGAI

(DEPRECIATION)

December 2017

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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SUMMARY

I sponsor the Test Year (TY) 2019 depreciation and amortization expense and accumulated provision (reserve) of the Gas Plant depreciation area for Southern California Gas Company (SoCalGas). The purpose of depreciation and amortization expense is to provide for recovery of the original cost of plant (less estimated net salvage) over the used and useful life of the property by means of an equitable plan of charges to operating expenses.

Tangible assets, usually referred to as plant, property and equipment, are depreciated. Intangible assets, such as software, land rights and rights-of-way, are amortized. The technical definition for depreciation and related terms is provided in Section II of my testimony.

The cumulative depreciation costs recovered through depreciation rates is captured in the depreciation reserve. The reserve represents the return of the investment and provides an ongoing record of one of the major deductions from rate base. Rate base is sponsored in Exhibit SCG-35, direct testimony of Patrick Moersen.

SoCalGas is requesting the adoption of proposed service lives and net salvage rates, which were developed in accordance with the California Public Utilities Commission Standard Practice U-4. SoCalGas is also requesting approval of the resultant depreciation and amortization expense of $607 million and accumulated provision (reserve) of $8,081 million for TY 2019.

REVISED SOCALGAS DIRECT TESTIMONY OF FLORA NGAI
(DEPRECIATION)

I. INTRODUCTION

A. Summary of Proposals

I sponsor the Test Year (TY) 2019 depreciation parameters, and the resultant depreciation and amortization expense for Southern California Gas Company (SoCalGas). As shown in Table SCG-FN-1 below, the Gas Plant depreciation and amortization expense for Recorded Year 2016 is $463 million[1] and the expense requested for TY 2019 is $607 million. Table SCG-FN-2 below shows an accumulated provision (depreciation reserve) of $6,928 million at the end of Recorded Year 2016, and $8,081 million at the end of TY 2019.

TABLE SCG-FN-1

Southern California Gas Company
Summary of Depreciation Expense and Amortization
(Thousands of Dollars)

Line No.	Description	2016 Recorded (2016$)	2019 Test Year (2019$)
	Depreciation Expense		
1	Underground Storage	$ 26,979	$ 47,306
2	Transmission	45,461	61,961
3	Distribution	232,891	281,812
4	General Plant	60,692	81,367
5	Total Depreciation	366,023	472,446
	Amortization Expense		
6	Land Rights[2]	815	460
7	Software[3]	96,561	133,924
8	Total Amortization	97,375	134,384
9	Total Depreciation & Amortization Expense[4]	$ 463,398	$ 606,830

[1] Depreciation expense excludes non-GRC items (incremental projects). Reconciliation is provided in my workpapers, Exhibit SCG-36-WP, Schedule D.
[2] Exhibit SCG-36-WP, Schedule G.
[3] *Id*., Schedule H.
[4] *Id*., Schedule E.

TABLE SCG-FN-2

Southern California Gas Company
Summary of Year-End Depreciation and Amortization Reserves
(Thousands of Dollars)

Line No.	Description	2016 Recorded (2016$)	2019 Test Year (2019$)
	Depreciation Reserves		
1	Underground Storage	$ 428,438	$ 466,547
2	Transmission	798,867	893,553
3	Distribution	4,791,342	5,401,291
4	General Plant	362,514	406,831
5	Total Depreciation	6,381,161	7,168,022
	Amortization Reserves		
6	Land Rights[5]	34,303	35,670
7	Software[6]	512,783	877,145
8	Total Amortization	547,086	912,815
9	Total Depreciation & Amortization Reserves[7]	$ 6,928,247	$ 8,081,037

The Recorded Year 2016 depreciation and amortization expense is based on the application of depreciation parameters[8] authorized by the California Public Utilities Commission (Commission or CPUC) in SoCalGas' 2016 General Rate Case (GRC) Decision (D.) 16-06-054.[9] Beginning in TY 2019, the requested expense is calculated using new depreciation rates resulting from an updated depreciation study. Generally, and as explained below in more detail, the overall TY 2019 depreciation expense increase of $143 million is due to plant growth[10] from 2016 to 2019 ($136.9 million expense increase) and the impact of the new depreciation rates ($6.5 million expense increase). The depreciable plant growth and the investments for the Recorded Year 2016 through TY 2019 are addressed in the rate base testimony of Patrick Moersen (Exhibit SCG-35).

The increase in depreciation expense is reasonable and necessary to ensure appropriate recovery of plant and equipment costs. The depreciation study, analysis and results of the study

[5] *Id*., Schedule G.
[6] *Id*., Schedule H.
[7] *Id*., Schedule F.
[8] Depreciation parameters (or mortality characteristics) refer to the average service life, retirement dispersion, and future net salvage rate for a group of assets.
[9] D.16-06-054 at 273-274, Section 7.12.1 Depreciation.
[10] Exhibit SCG-36-WP, Section III, Workpapers, Asset Type: Total Utility Plant, 2017 Beg Month Plant Balance through 2019 End Month Plant Balance.

as described in this testimony support this increase. The accompanying workpapers (Exhibit SCG-36-WP) support the underlying depreciation rates.

B. Organization of Testimony

My testimony is organized as follows:

- Section II provides key terms and definitions relevant to depreciation accounting and depreciation studies;
- Section III presents the depreciation study procedures and methods followed;
- Section IV describes the methods applied in estimating service lives;
- Section V defines net salvage and the method used to determine future net salvage;
- Section VI explains how depreciation rates are calculated;
- Section VII presents the results of the depreciation study by accounts grouped by functional class (*i.e.*, Storage, Transmission, Distribution, and General Plant). Summary tables of these results and comparison of depreciation parameters are provided in Appendix A, hereto. Detailed statistical tabulations, charts and other workpapers are submitted separately in my workpapers (Exhibit SCG-36-WP);
- Section VIII concludes with a recap of my requests; and
- Section IX sets forth my witness qualifications.

II. DEPRECIATION DEFINITIONS

The Federal Energy Regulatory Commission (FERC), in its Uniform Systems of Accounts (USofA) defines depreciation as:

> Depreciation, as applied to depreciable gas plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of gas plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities.[11]

The USofA further defines service value as "the difference between original cost and net salvage value of gas plant."[12] Where "net salvage value means the salvage value of property retired less the cost of removal,"[13] and "salvage value means the amount received for property retired, less any expenses incurred in connection with the sale or in preparing the property for

[11] 18 Code of Federal Regulations (CFR) Part 201, Definition 12.B.
[12] 18 CFR Part 201, Definition 37.
[13] 18 CFR Part 201, Definition 23.

sale."[14] The cost of removal means the "cost of demolishing, dismantling, tearing down or otherwise removing gas plant, including the cost of transportation and handling incidental thereto,"[15] which is incurred when the utility plant is retired.

The emphasis in utility depreciation is recovery of the original cost of assets less net salvage. This is consistent with depreciation accounting which is the process of allocating the cost of a plant asset, over its service (useful) life in a rational and systematic manner.

III. DEPRECIATION STUDY

The purpose of a depreciation study is to determine depreciation rates that will allow for full recovery of the cost of assets, adjusted for net salvage, over the life of these assets. The procedures and methods used in arriving at SoCalGas' proposed depreciation rates are consistent with those described in professional and technical depreciation manuals.[16]

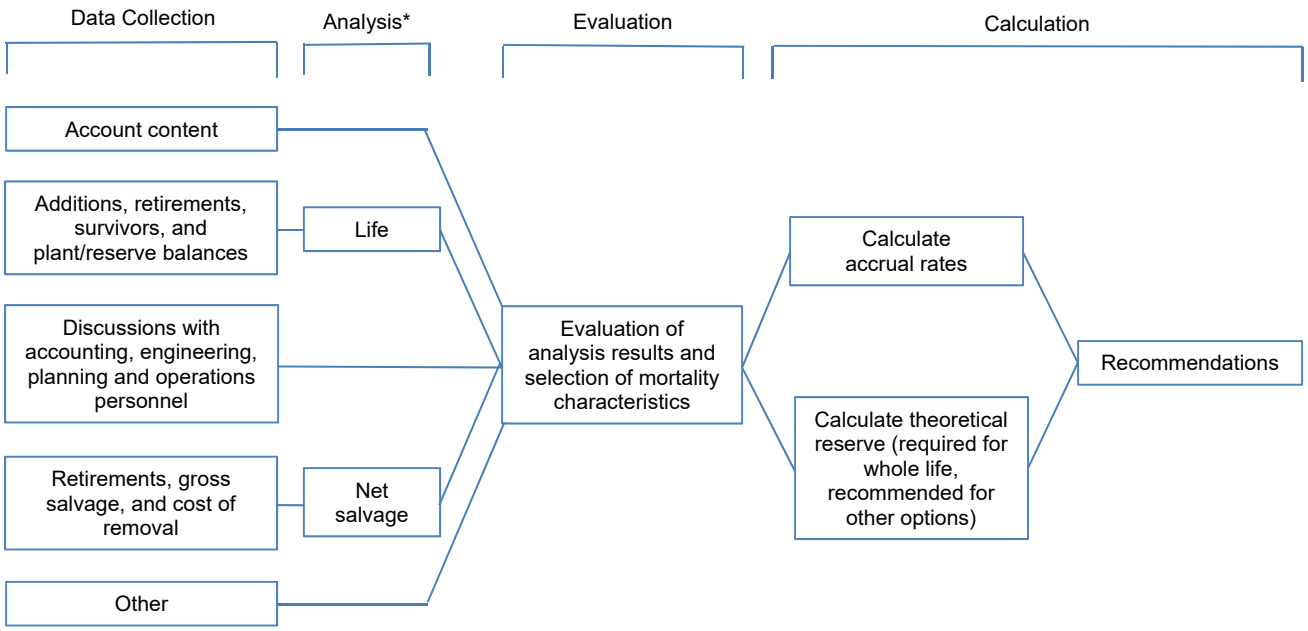
A. Depreciation Study Process

I performed the depreciation study in four phases: (1) data collection, (2) analysis, (3) evaluation, and (4) calculation. During the course of a depreciation study, it may be necessary to re-perform steps of a prior phase. The depreciation study was organized in a manner consistent with the process flow shown in EEI/AGA Introduction to Depreciation, and is set forth in Figure SCG-FN-1 below.

[14] 18 CFR Part 201, Definition 35.
[15] 18 CFR Part 201, Definition 10.
[16] Edison Electric Institute (EEI) and American Gas Association (AGA), Introduction to Depreciation For Public Utilities and Other Industries, 2013 (EEI/AGA Introduction to Depreciation); National Association of Regulatory Utility Commissioners (NARUC) Public Utility Depreciation Practices, 1996 (NARUC Depreciation Practices); Wolf and Fitch, Depreciation Systems, 1992; and CPUC Standard Practice U-4: Determination of Straight-Line Remaining Life Depreciation Accruals, 1961 (CPUC Standard Practice U-4).

FIGURE SCG-FN-1

Depreciation Study Process Flow



Source: Public Finance & Accounting: A Reader (Modified)

*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.)

During Phase 1, historical data was compiled from continuing property records and general ledger accounts stored in PowerPlan.[17] The data required for the depreciation study (*i.e.*, retirement transactions, plant balances, and asset transfers) were extracted from PowerPlan for each utility FERC account, reviewed, and validated against plant and reserve ledgers for 1999 through 2016. To gain a better understanding of the company's assets and their functions, and as part of data collection, discussions were held with accounting, engineering, planning, and operations personnel. The information gained from these discussions was incorporated in the life and salvage evaluation phase.

During Phase 2, the detailed property records in Phase 1 were compiled to develop mortality summaries, observed life tables, and survivor curves for analysis.[18] Historical gross

[17] PowerPlan is the asset subledger used by Sempra Energy, SoCalGas and San Diego Gas & Electric Company (SDG&E) to manage plant assets, which interfaces with SAP, the Companies' general ledger system.

[18] Best-fit curve results based on observed life tables and survivor curves are provided in my workpapers, by account, Exhibit SCG-36-WP, Section VI Mortality Studies.

salvage, cost of removal, and retirements were compiled by account for net salvage analysis.[19] Life analysis, a critical part of a depreciation study, is discussed in Section IV below. Net salvage analysis, another aspect of the depreciation study is discussed in Section V below.

Phase 3 is the evaluation phase where the life and net salvage analyses, together with other information obtained during Phase 1 lead to the final selection of lives and net salvage parameters. Evaluation of reasonableness of recommended lives and net salvage requires use of judgment, prior studies, studies of other utilities, input from company personnel, and at times re-examination of data and processes.

Finally, Phase 4 involves the calculation of accrual rates, making recommendations, and documentation. The annual depreciation rate calculation is discussed in the Section VI below. The current and proposed rates calculation can be found in my workpapers, Exhibit SCG-36-WP, Schedules A and B.

B. Methodology

The methods used to calculate the mortality characteristics (*i.e.*, service lives, retirement dispersions, and net salvage rates) and to calculate the straight-line remaining life depreciation rates are consistent with CPUC Standard Practice U-4.

IV. DEPRECIABLE LIVES FOR TY 2019

Depreciable lives were studied for four plant categories: (1) mortality accounts, (2) forecast accounts, (3) general plant amortization accounts, and (4) intangible assets. Mortality accounts, generally referred to as mass accounts, maintain records for related types of property grouped by vintage without regard to specific location. Examples of these property types are mains or services (FERC account 376 and 380). Forecast accounts are those for which accounting records are maintained by specific locations that will normally be retired as a single unit at one time. An example of this property type is structures and improvements (FERC account 390.1). General plant amortization accounts generally consist of large volume low dollar value items. These assets are maintained and depreciated at a group vintage level and are automatically retired at the end of their average service life. Examples of these property types are furniture and computer equipment (FERC account 391.1 and 391.2). As mentioned above, intangible assets, such as software and rights-of-way, are amortized. These assets are maintained

[19] Salvage data and statistics are provided in workpapers, Exhibit SCG-36-WP, Section VII Salvage Studies.

and amortized at an individual asset level. The methods employed for estimating average service lives for these four plant categories are described below.

A. Mortality Accounts – Actuarial Analysis

SoCalGas used the Simulated Plant Record (SPR) Balances[20] method for mortality accounts to estimate average service lives in its 2008 and 2012 GRC proceedings. SPR analysis is used when only annual plant additions, retirements (without vintage data), and balances are available. SoCalGas moved from SPR analysis to the retirement rate method of actuarial analysis[21] for the 2016 GRC. While actuarial analysis yields more reliable results than other life analysis methods (*i.e.*, simulation), it requires considerably more detailed data. For example, aged retirement data (knowing both the transaction year and the original vintage year) and exposures to retirement are required. In this 2019 GRC, SoCalGas will continue to use actuarial analysis, now with three more years of aged data available, for a total of 18 years.

Under the actuarial analysis method, the retirements of a specified range of vintages (placement band) within a specified band of transactional calendar years (experience band) are identified, along with the age of each retirement. The retirements occurring at like-age intervals are grouped, with the same being done for the amounts exposed to retirements at the beginning of each age interval. These "exposures" were appropriately adjusted for any transfers between accounts. A survival rate is calculated for each age group by first dividing the retirements by the beginning exposures for a given age interval (to get a retirement rate) and then subtracting it from one. The survival rates (which represent the conditional probability of surviving the entire age interval) are multiplied successively, beginning with 100% at age zero, to arrive at percent surviving for the beginning of each age interval. These percentages are plotted and matched to standard survivor curves (Iowa-type survivor curves). The use of standard curves provides an excellent means of extrapolating incomplete survivor curves (known as "stub curves"). Average service lives are represented by the area under the survivor curve divided by the ordinate at age zero (100%). Selection of appropriate average service life and curve dispersion for each plant

[20] Simulated Plant Record Balances method is a trial and error procedure that attempts to duplicate the annual balances of a plant account by generating simulated retirements based on vintage additions and an assumed Iowa-type retirement dispersion and average service life.

[21] Actuarial analysis method uses statistics and probability to analyze retirements that take place at various ages in relationship to the property exposed to the risk of retirement.

account is a combination of statistical analyses, visual matching of Iowa curves, informed judgment, and expectations about the future.

Remaining lives for each vintage of plant account are calculated by dividing the area under the survivor curve to the right of its age by the ordinate at that age. The average remaining life for each account was calculated by weighting the remaining life of each vintage year with its surviving plant balance as of December 31, 2016. For SoCalGas, mortality characteristics were reviewed for 25 depreciation groups (or combined accounts) consisting of an additional 26 subaccounts. For example, depreciation group 376 consists of the following subaccounts: 376.1 steel mains, 376.2 plastic mains, and 376.5 deep well anodes. Plant subaccounts with similar life characteristics or operational functions may be combined to form a single account. Actuarial analysis was applied to depreciable tangible plant accounts in underground storage, transmission, distribution (excluding account 382.6), general plant structures and improvements (account 390.00) and Advanced Metering Infrastructure (AMI) communication poles (account 397.55). Each of these accounts has been assigned a representative Iowa-type survivor curve[22] combined with an average service life. The depreciation study indicated the need to modify the average service life of 15 accounts while 11 remain unchanged. The study supports lengthening the average service life of 11 accounts and shortening the average service life of 3 accounts.[23] The accounts excluded from actuarial analysis (accounts 382.6 and 390.10) are discussed below in Section VII Results of Depreciation Study.

B. Forecast Accounts – Life Span Method

As mentioned above, forecast accounts are for assets for which accounting records are maintained by specific locations that will normally be retired as a single unit. These accounts have service lives that are directly estimated individually, and then composited by plant account. SoCalGas uses the forecast method for only one account (390.10 GCT lease), which is tied to a terminable lease expiring in 2026. No change is recommended for this account.

[22] Iowa-type survivor curves plot the percent surviving (from an original asset placement group) versus the age of the group. The age is typically expressed as a percentage of average service life. The Iowa curves were developed from empirical industrial data, and are the most widely-used standardized survivor curves in the utility industry.

[23] Schedule J - Summary of Life and Survivor Curve (IOWA), Exhibit SCG-36-WP.

C. Vintage Group Accounting/Amortization

SoCalGas follows vintage group amortization for tangible general plant accounts 391 through 398 (excluding 397.55 AMI Poles). As described in FERC Accounting Release 15,[24] vintage group accounting is appropriate for accounts representing a small portion of total depreciable gas plant and consisting of numerous units of low value items. Assets that reach the average service life of the group are retired. The average remaining life for each account is calculated by weighting the remaining life of each vintage year with its surviving plant balance as of December 31, 2016. SoCalGas follows vintage group amortization for 15 plant accounts with an additional 3 subaccounts.

D. Amortization – Intangible Assets

SoCalGas requests that intangible assets (storage rights, rights-of-way, and software) be amortized, less any residual value, on a straight-line, remaining life unit basis while retaining the average service lives authorized by the Commission in D.16-06-054 (SoCalGas' TY 2016 GRC decision). Accruals are accumulated each month on the unit record. Re-appraisals using the remaining life principle are applied such that any reserve adjustments are amortized over the remaining life of each unit or trued-up. If the unit is retired ahead of its life expectancy, the deficiency is charged to depreciation expense. If the unit outlives its expected useful life, where accruals equal the full cost less net salvage, no further accruals are made for that unit. SoCalGas follows amortization for 12 FERC accounts.

V. NET SALVAGE RATES FOR TY 2019

Net salvage, as defined above, is the difference between gross salvage that will be received when the asset is disposed of and the cost of retiring it. Positive net salvage occurs when gross salvage exceeds cost of retirement, and negative net salvage occurs when cost of retirement exceeds gross salvage. Net salvage is expressed as a percentage of plant retired and is calculated by dividing the net salvage dollars by the dollars of the original plant retired. As stated in the definition of depreciation, the objective of accounting for net salvage is to allocate the net cost of an asset, allowing for net salvage, over its useful life.

The method of future net salvage analysis is based on that specified in CPUC Standard Practice U-4, and is a method consistent with nearly all other regulatory jurisdictions in the United States. An estimate of past experience is first determined before arriving at the final

[24] FERC Accounting Release 15 is provided in Appendix A of my workpapers, Exhibit SCG-36-WP.

future net salvage estimate. Events in past experience that may cause deviations in future estimates are considered along with input from operations personnel regarding future expectations on salvage, removal, and retirements.

For TY 2019, analysis of gross salvage, cost of removal, and net salvage presented as a percentage of annual retirements was performed for the past 15 years (2002 through 2016).[25] Although emphasis was placed on a 15-year average, examination of trends over time, such as net salvage rates for rolling five-year bands and 10-year shrinking bands were considered along with input from company personnel and limited project analyses. Accordingly, informed judgment is used in determining the future net salvage rate for each asset group or account. The 10 amortization accounts (land rights, rights-of-way, and software) have zero net salvage value. Net salvage analysis indicated the need to change the future net salvage rates for 16 asset groups, while the results of the remaining 25 groups continue to be consistent with the current rate approved in the 2016 GRC decision (D.16-06-054).

Generally, a change in net salvage rates is related to the change in service lives (which are continuing to lengthen at SoCalGas) and has an offsetting impact on depreciation rates and expense. When asset lives are lengthened, reuse salvage values decline because assets are older at retirement and cost of removal increases due to the increases in labor and non-labor costs over time. Since the future net salvage estimate is expressed as a percentage of the original historical cost[26] of the associated retirement (current future net salvage/original cost), the resultant rate incorporates change in price levels. While lengthening an average life decreases the annual depreciation expense, a more negative net salvage rate will increase depreciation expense.

[25] Summary and historical data for future net salvage can be found in Exhibit SCG-36-WP, Section VII Salvage Studies.

[26] 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 in nominal dollars.

VI. DEPRECIATION RATE CALCULATION

Annual depreciation rates were calculated for TY 2019 in accordance with CPUC Standard Practice U-4 using the straight-line method, broad group procedure, and remaining life technique for depreciable tangible assets.[27] The straight-line method prorates the recovery of service value in equal annual amounts. The broad group procedure (widely used by utilities)[28] groups assets in categories (typically plant accounts and/or subaccounts) and depreciates all assets as if they all had identical mortality characteristics, while using a single depreciation rate for the entire category. The broad group procedure also assumes that under-accruals resulting from early retirements are offset by over-accruals on assets that outlive the average service life. The remaining life technique accrues unrecovered service value over the average remaining life of the group. The remaining life annual accruals are calculated for each plant account as follows:

$$\frac{\textit{(plant balance - future net salvage - reserve)}}{\textit{average remaining life}}$$

- Plant balance is the original installed cost of the assets less any contributions in aid of construction;
- The future net salvage is the projected gross salvage for recovered materials less costs associated with retiring the assets. The future net salvage is calculated by applying the net salvage rate to the surviving plant balance (the plant yet to be retired);
- The reserve is the accumulation, since the inception of the plant account, of the following booked entries: depreciation accruals (credit), plus salvage (credit), less cost of removal (debit), less the retirements (debit), plus or minus any transfers in or out. The accumulated reserve balance represents the costs recovered-to-date of the plant investment.

The annual depreciation rates were calculated based on recorded information as of December 31, 2016, for each FERC plant account by dividing the annual depreciation accrual by the plant balance. These remaining life rates are self-correcting for prior over- and under-accruals as the depreciation parameters are updated in accordance with each GRC study. The

[27] Refer to Section IV.C. regarding general plant amortization and Section IV. D. for amortization of depreciable intangible assets.
[28] Public Utility Depreciation Practices, NARUC, 1996, p. 62.

newly developed rates were then applied on a composite functional category (asset ID)[29] basis to the TY 2019 depreciable plant balances to obtain the proposed depreciation expense. The composite depreciation and amortization rate, on a total plant-in-service basis, resulting from the new study is 3.78% for the 2019 TY, compared to a rate of 3.73% for the 2016 Recorded Year.[30] The next section discusses the depreciation parameters for each account that contribute to this total composite rate.

VII. RESULTS OF DEPRECIATION STUDY

The proposed life and curve dispersion and net salvage rates by account, grouped by functional class, are presented below. Documentation in support of these results is found in my workpapers, Exhibit SCG-36-WP. The service life and curve dispersion selections and estimated net salvage rates for each account were derived from statistical analyses of historical data, visual matching to Iowa curves, informed judgment, discussions with field personnel, and expectations about the future projection of life and dispersion curve and net salvage.

A. Underground Storage Plant

Underground storage plant balance at December 31, 2016, is $978 million, excluding $5 million for land which is non-depreciable. The accumulated reserve is $446 million. The overall TY 2019 depreciation expense increase of $20 million is mostly a result of forecasted plant growth from 2016 to 2019.[31] Plant growth contributes $22 million of the increase offset by $2 million primarily due to lower depreciation rates associated with the lengthening of average service lives.

1. Account 350: Rights-of-Way

This account includes the cost of all interests in land on which underground storage lines, telephone poles, their associated lines, and like property used in connection with underground gas storage operations are located. Storage rights, recoverable oil, and rights-of-way are subaccounts within this account. Assets in this account are individually amortized over 40 years until fully amortized and will remain on the books until retired. Due to the nature of the asset, and the fact that there is very little activity in this account, SoCalGas recommends retaining a 40-year amortization period.

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[29] Schedule C – Summary of Depreciation Rates by Functional Category, Exhibit SCG-36-WP.
[30] Depreciation rates calculation provided in workpapers, SCG-36-WP, Section I.
[31] Exhibit SCG-36-WP, Section III Workpapers, Asset Type: Total Underground Storage, 2017 Beg Month Plant Balance through 2019 End Month Plant Balance.

There are no removal costs associated with rights-of way. The depreciation expense and accumulated reserve schedule for this account are provided in my workpapers, Exhibit SCG-36-WP, Section IV Amortization, Workpapers Land Rights.

2. Account 351: Structures and Improvements

This account includes the cost of structures and various improvements in connection with underground storage plant. Compressor station structures and other structures are subaccounts of this account. Besides long-lived assets such as buildings, this account consists of many short-lived assets such as roofs, generators, fencings, lightings, fixtures, generators, and other items. The current life/curve is 48 R1.5. The average age of the surviving plant balance is 9 years. The study supports increasing the average service life to 52 years and retaining the current R1.5 dispersion curve, ranked fourth on the best fit curve results.

The 15-year historical average for net salvage shows a net salvage rate of -140% which is higher than the 15-year band shown in the 2016 GRC of -75%. SoCalGas recommends an increase in the current future net salvage rate from -70% to -80%.

3. Account 352: Wells

This account includes the drilling cost of wells used for injection and withdrawal of gas from underground storage projects, including wells kept open and used for observation. This account is comprised of over 300 wells at four major locations ranging in age from 45 to 85 years, relative to when SoCalGas began storage operations. On average, components for wells require replacement every 10 years. In discussion with operations personnel, some assets will routinely be replaced every 5 to 7 years. The current life/curve is 49 R2.5. The average age of the surviving plant balance is 14 years. The depreciation study supports a 53 R1 life and dispersion curve, ranked first on the best fit curve results.

The 15-year historical average for net salvage shows a net salvage rate of -133%, which is more negative than the 15-year band shown in the in the 2016 GRC of -80%. SoCalGas recommends an increase in the current future net salvage rate from -70% to -80%.

4. Account 353: Lines

This account includes installed gas pipelines used for conveying gas from point of connection with transmission or field lines to underground storage wells and from underground storage wells to the point where the gas enters the transmission or distribution system. The average age of the surviving plant balance is 22 years. The depreciation study supports keeping the current 54 R3 life and dispersion curve for this account, ranked first on the best fit curve results.

The 15-year historical average for net salvage shows a net salvage rate of -55%. SoCalGas recommends an increase in the current future net salvage rate from -40% to -45%.

5. Account 354: Compressor Station Equipment

This account includes installed compressor station equipment used for the purpose of raising the pressure of gas for delivery to underground storage or to raise the pressure of gas withdrawn from underground storage for delivery to the transmission or distribution system. The current life/curve is 41 L0.5. The average age of the surviving plant balance is 15 years. SoCalGas recommends retaining the 41-year average service life but moving to the S-.5 dispersion curve, ranked third on the best fit curve. The L-type curves result in a maximum life more than 100 years which is too long for assets in this group based on informed judgment and input from field personnel.

The 15-year historical average for net salvage shows a net salvage rate of -20%. SoCalGas recommends increasing the current net salvage rate from -15% to -20%.

6. Account 355: Measuring and Regulating Equipment

This account includes installed gas pipelines used for the purpose of measuring and regulating deliveries of gas to underground storage, and withdrawals of gas from underground storage. The current life/curve is 22 L0. The average age of the surviving plant balance is 11 years. The depreciation study supports a 29 R0.5 life and dispersion curve, ranked second on the best fit curve results. The L-type curve results in a maximum life more than 100 years which is too long for assets in this group based on informed judgment and input from field personnel.

The 15-year historical average for net salvage shows a net salvage rate below 5%. However, SoCalGas recommends retaining the current authorized net salvage of 5% since no retirements were recorded in the recent four years.

7. Account 356: Purification Equipment

This account includes installed apparatus used for the removal of impurities from and the conditioning of gas delivered to or removed from underground storage fields. The current life/curve is 39 R2.5. The average age of the surviving plant balance is 14 years. The depreciation study supports increasing the average service life to 40 and retaining the R2.5 curve. The 40 R2.5 life and dispersion curve is ranked first on the best fit curve results.

The 15-year historical average supports retaining the current future net salvage rate of -30%.

8. Account 357: Other Equipment

This account includes installed equipment used in connection with underground storage of gas, when not assignable to any of the foregoing accounts. The current life/curve is 37 R2.5. The average age of the surviving plant balance is 7 years. The depreciation study supports increasing the average service life to 39 and a lower mode dispersion curve of R1.5, ranked fourth on the best fit curve results.

The 15-year historical average for net salvage shows a net salvage rate of -185%, which is less negative than the 15-year band in the 2016 GRC of -205%. SoCalGas recommends retaining the current net salvage rate of -100%.

B. Transmission Plant

Transmission plant balance at December 31, 2016, was $1,931 million, excluding $2 million for land which is non-depreciable. The accumulated reserve was $814 million. The overall TY 2019 depreciation expense increase of $18 million is a result of forecasted plant growth from 2016 to 2019[32] ($15 million) and changes to depreciation parameters ($3 million) primarily associated with more negative future net salvage.

1. Account 365.29: Rights-of-Way

This account includes the cost of rights-of-way used in connection with transmission operations. Assets in this account are individually amortized over 40-years until fully amortized and will remain on the books until retired. SoCalGas recommends retaining the 40-year amortization period. In addition, based on input from operations personnel, there may be acquisitions of future rights-of-way which are tied to a fixed term agreement. Thus, along with

[32] Exhibit SCG-36-WP, Section III Workpapers, Asset Type: Total Underground Storage, 2017 Beg Month Plant Balance through 2019 End Month Plant Balances.

the current account, SoCalGas is recommending amortizing potential future fixed-term acquisitions over the specified period of such agreements (*e.g.*, 15 years). This will ensure an appropriate cost allocation over the useful life of these plant assets.

There are no removal costs associated with rights-of way. The depreciation expense and accumulated reserve schedule for this account are provided in my workpapers, Exhibit SCG-36-WP, Section IV Amortization, Workpapers Land Rights.

2. Account 366: Structures and Improvements

This account includes the cost of structures and various improvements in connection with transmission plant. Compressor station structures, measuring and regulating structures, and other structures are subaccounts included in this account. The current life/curve is 47 R2. The average age of the surviving plant balance is 18 years. The depreciation study supports increasing the average service life to 53 and retaining the current R2 dispersion curve.

The 15-year historical average for net salvage shows a net salvage rate of -210%. SoCalGas recommends increasing the current future net salvage rate from -40% to -45%.

3. Account 367: Mains

This account includes the cost of installed transmission system mains. Assets include large high pressured gas mains of different sizes and types, cathodic protection equipment, drip lines and pots, pipe coating, pipe and fittings, pipe supports, anchors, and valves. The current life/curve is 64 R3. The average age of the surviving plant balance is 16 years. The depreciation study supports retaining a 64 R3 life and dispersion curve, ranked 14th on the best fit curve results.

The 15-year historical average for net salvage shows a net salvage rate of -135%. SoCalGas recommends increasing the current net salvage rate from -60% to -65%.

4. Account 368: Compressor Station Equipment

This account includes the cost of installed compressor station equipment and associated appliances used in connection with transmission system operations. Due to the high pressures used at compressor stations, replacement of engines, gas turbines, and compressors may occur after 15 years. The current life/curve is 50 R1. The average age of the surviving plant balance is 18 years. In discussion with operations personnel, the current average service life of 50 years seems high. Based on informed judgment and input from field personnel, SoCalGas recommends the 49 R1.5 life and dispersion curve, ranked seventh on the best fit curve results.

The 15-year historical average for net salvage shows a net salvage rate of -50% which is more negative than the 15-year band in the 2016 GRC of -30%. SoCalGas recommends increasing the current net salvage rate from -15% to -25%.

5. Account 369: Measuring and Regulating Station Equipment

This account includes the cost of installed meters, gauges, and other equipment used in measuring or regulating gas in connection with transmission system operations. The current life/curve is 46 S0. The average age of the surviving plant balance is 11 years. Per discussion with operations personnel, measuring and regulating station equipment will have a shorter average life than compressor station equipment. Based on informed judgment and input from field personnel, SoCalGas recommends a 45 R1 life and dispersion curve, ranked fourth on the best fit curve results.

The 15-year historical average for net salvage shows a net salvage rate of -120%, which is more negative than the 15-year band shown in the 2016 GRC of -60%. SoCalGas recommends increasing the current future net salvage rate from -50% to -60%.

6. Account 370: Transmission Communication Equipment

This account includes installed communication equipment used in the operation and maintenance of the gas transmission system, including supervisory control and data acquisition (SCADA). This account was added to SoCalGas' asset ledger in 2016 and predominantly includes SCADA equipment. Assets capitalized to the general plant communication account 397 that wholly support the transmission function were transferred to account 370. The average age of the surviving plant balance is two years. SoCalGas recommends adopting the 15 Square (SQ) life and dispersion curve used for the 397 General Plant Communication account and the future net salvage rate of 0%.

7. Account 371: Other Equipment

This account includes installed equipment used in transmission system operations, when not assignable to any of the foregoing accounts. The current life/curve is 21 L0.5. The average age of the surviving plant balance is 14 years. The depreciation study supports a 23 L0.5 life and dispersion curve for this account, ranked first on the best fit curve results.

The 15-year historical average for net salvage shows a net salvage rate of -10%. SoCalGas recommends retaining the current authorized future net salvage rate of -10%.

C. Distribution Plant

Distribution plant balance at December 31, 2016 is $8,416 million, excluding $29 million for land which is non-depreciable. The accumulated reserve is $4,793 million. The overall TY 2019 depreciation expense increase of $47 million is a result of forecasted plant growth from 2016 to 2019[33] ($41 million) and changes to depreciation parameters ($6 million) primarily associated with more negative future net salvage.

1. Account 374.2: Land Rights

This account includes the cost of land rights used in connection with distribution operations. Assets in this account are individually amortized over 40-years until fully amortized and will remain on the books until retired. Due to the nature of the asset and that fact that there is very little activity in this account, SoCalGas recommends retaining a 40-year amortization period.

There are no removal costs associated with rights-of way. The depreciation expense and accumulated reserve schedule for this account are provided in my workpapers, Exhibit SCG-36-WP, Section IV Amortization, Workpapers Land Rights.

2. Account 375: Structures and Improvements

This account includes the cost of structures and improvements used in connection with distribution operations. Besides long-lived assets such as buildings and structures, this account consists of many short-lived assets such as roofs, interior office improvements, wiring upgrades, and other items. The current life/curve is 40 S0. The average age of the surviving plant balance is 14 years. SoCalGas recommends increasing the average service life to 44 and retaining the S0 dispersion curve, ranked second on the best fit curve results.

The 15-year historical average for net salvage shows a net salvage rate of -25%. SoCalGas recommends increasing the current net salvage rate from -10% to -15%.

3. Account 376: Mains

This account includes the cost of installed distribution system mains. Steel mains, plastic mains, and deep well anodes are subaccounts included in this account. The current life/curve is 68 R2.5. The average age of the surviving plant balance is 19 years. Per input from gas engineering, the design life of plastic mains, which makes up more than 50 percent of the asset

[33] Exhibit SCG-36-WP, Section III Workpapers, Asset Type: Total Underground Storage, 2017 Beg Month Plant Balance through 2019 End Month Plant Balances.

balance, has a design life of 50 years, although actual service life is expected to be longer. The depreciation study supports retaining the current 68 life but moving to an R3 curve dispersion, ranked 13th on the best fit curve results

The 15-year historical average for net salvage shows a net salvage rate of -125%. SoCalGas recommends increasing the current future net salvage rate from -80% to -85%.

4. Account 378: Measuring and Regulating Equipment

This account includes the cost of installed meters, gauges, and other equipment used in measuring and regulating gas in connection with distribution system operations other than measurement of gas deliveries to customers. The current life/curve is 47 S0.5. The average age of the surviving plant balance is 13 years. SoCalGas recommends increasing the life to 52 years and retaining the current S0.5 dispersion curve, ranked first on the best fit curve results.

The 15-year historical average for net salvage shows a net salvage rate of -125%. SoCalGas recommends increasing the current future net salvage rate from -95% to -100%.

5. Account 380: Services

This account includes the cost of installed service pipes and accessories leading to customers' premises. The current life/curve is 67 R2. The average age of the surviving plant balance is 21 years. The depreciation study supports retaining the 67 R2 life and dispersion curve, ranked sixth on the best fit curve results.

The 15-year historical average for net salvage shows a net salvage rate of -150%. SoCalGas recommends retaining the current future net salvage rate of -115%.

6. Account 381: Meters

This account includes the cost of installed meters, or devices and appurtenances thereto, for use in measuring gas delivered to users, whether actually in service or held in reserve. The current life/curve is 25 S0.5. The average age of the surviving plant balance is 10 years. The depreciation study supports retaining the current 25 S0.5 life and dispersion curve, ranked first in the best fit curve results.

The 15-year historical average for net salvage shows a net salvage rate of 5%. SoCalGas recommends retaining the current future net salvage rate of 5%.

7. Accounts 381.15: AMI Modules and Account 382.15: Module Installations

These accounts include the cost of gas modules used to provide daily meter reads and the cost to install these modules on gas meters as part the Advanced Metering Infrastructure (AMI) deployment. The average age of the surviving plant balance is 2 years. Currently these accounts have a of 20 SQ life/curve consistent with the AMI business case.[34] As stated in the business case and confirmed with operations personnel, the battery life of these modules is expected to last 20 years. With insufficient retirement history, SoCalGas recommends retaining the current 20 SQ life and dispersion curve.

8. Account 382: Meter Installations

This account includes the cost of labor and materials used, and expenses incurred in connection with the original installation of customer meters. The current life/curve is 30 S1. The average age of the surviving plant balance is 10 years. The depreciation study supports a 29 S1.5 life and dispersion curve, ranked first on the best fit curve results.

The 15-year historical average for net salvage shows a net salvage rate of -5%. SoCalGas recommends a decrease in the future net salvage rate of -10% to -5%.

9. Account 382.6: Meter Installation-Other

This account includes the cost of the installed Gas Energy Measurement Systems (GEMS), which are automated metering devices attached to customers' meters. These assets are automatically retired when the average service life is attained. Based on input from field personnel, these devices advance quickly and are upgraded over a 15-year life cycle. The current life/curve is 15 SQ. SoCalGas recommends maintaining the existing life/curve of 15 SQ and retaining the current future net salvage rate of 0%.

10. Account 383: House Regulators

This account includes the cost of installed house regulators, whether actually in service or held in service. The current life/curve is 33 L5. The average age of the surviving plant balance is 15 years. The depreciation study supports retaining the 33 life and moving to an R5 dispersion curve, ranked second on the best fit curve results.

The 15-year historical average for net salvage shows a net salvage rate of 5%. SoCalGas recommends retaining the current future net salvage rate of 5%.

[34] Application (A.) 08-09-023 Direct Testimony of Edward Fong at II-14.

11. Account 387: Other Equipment

This account includes the cost of installed distribution system equipment not provided for in the foregoing accounts, including street lighting equipment. The current life/curve is 21 O1. The average age of the surviving plant balance is 12 years. The depreciation study supports a 22 L0 life and dispersion curve, ranked first on the best fit curve results.

The 15-year historical average for net salvage shows a net salvage rate of 0%. SoCalGas recommends decreasing the current future net salvage rate from 5% to 0%.

D. General Plant

General plant balance at December 31, 2016 is $1,547 million, excluding $1 million for land which is non-depreciable. The accumulated reserve is $875 million. The overall TY 2019 depreciation expense increase of $58 million is primarily associated with forecasted plant growth from 2016 to 2019.[35]

1. Account 389.2: Land Rights

This account includes the cost of general plant land rights used for utility purposes, the cost of which is not properly includible in other land rights accounts. Assets in this account are individually amortized over 40 years until fully amortized and will remain on the books until retired. The depreciation expense and accumulated reserve schedule for the individual assets in this account are provided in my workpapers, Exhibit SCG-36-WP, Section IV Amortization, Workpapers Land Rights. SoCalGas recommends retaining the 40-year amortization period.

There are no removal costs associated with rights-of way.

2. Account 390.0: Structures and Improvements

This account includes the cost in place of structures and improvements used for utility purposes. The current life/curve is 33 R1.5. The average age of the surviving plant balance is 15 years. SoCalGas recommends increasing the average service life to 38 years and retaining the current R1.5 dispersion curve, ranked third on the best fit curve result.

The 15-year historical average for net salvage shows a net salvage rate of -15%. SoCalGas recommends retaining the current future net salvage rate of -15%.

[35] Exhibit SCG-36-WP, Section III Workpapers, Asset Type: Total Underground Storage, 2017 Beg Month Plant Balance through 2019 End Month Plant Balances.

3. Account 390.1 GCT Leasehold Structures and Improvements

This account includes the cost in place of structures and improvements used for utility purposes for the Gas Company Tower (GCT). The assets in this account are tied to the GCT lease which will expire in the year 2026. SoCalGas recommends retaining the life span of 15 years for this account, which has a beginning vintage year of 2011 and an end year of 2026.

SoCalGas recommends a net salvage rate of -15%, consistent with account 390.0 General Plant Structures and Improvements account.

4. Accounts 391.3-391.6 Software Amortization

These accounts include costs of installed software programs of various estimated useful lives, as determined by information technology operations staff. Software programs may include shelf software and self-developed software used for accounting, customer accounts, workforce scheduling, dispatching, and mapping, among others. With advances in technology, the tendency is towards an increase in shorter lived software.

Assets for each subaccount are amortized over the average service life of that subaccount: 3, 5, 6, 10, 15, and 20 years. However, amortization periods could range from 2 years to 20 years. For example, assets in subaccount 391.3 2-4 Years Software may have assets amortized over two years, three years or four years. But the default will be the average service life of each subaccount for ease of administration.

SoCalGas recommends retaining the current subaccounts and average service lives. These assets are amortized on a straight-line remaining life, unit basis. Fully amortized software will stop accruing amortization expense but remain on the asset ledger until retired. There is no net salvage associated with software accounts.

The depreciation expense and accumulated reserve schedules are provided in my workpapers, Exhibit SCG-36-WP, Section IV Amortization, Workpapers Software.

5. Accounts 391 through 398: Vintage Group Amortization (excluding account 397.55)

As discussed in Section IV.C above, SoCalGas follows FERC Accounting Release 15 for certain general plant accounts. Assets are automatically retired when the average service life assigned is reached, except for account 392 Transportation Equipment. Fleet services notifies Plant Accounting when assets are retired and when gross salvage is received for transportation equipment. Vintage group accounting is applied to the following accounts:

Account	Description	Current Life/Curve
391.1	Office Furniture and Eqt	14 SQ
391.2	Computer Hardware	5 SQ
392	Transportation Eqt	7 SQ
393	Stores Eqt	20 SQ
394.13 & 394.2	Shop and Garage Eqt	29 SQ
394.19	Large Portable Tools	24 SQ
395	Laboratory Eqt	25 SQ
396	Construction Eqt	12 SQ
397	Communication Eqt	15 SQ
397.1	General Network Eqt	5 SQ
397.2	PBX and Voice Eqt	7 SQ
397.3	Microwave and Radio Eqt	10 SQ
397.4	Communication Structures	15 SQ
398	Miscellaneous Eqt	20 SQ

Operations personnel were consulted and they confirmed the current average service lives for the vintage groups remains appropriate. Although some computer hardware assets will have a service life of two years, such as PACER MDTs[36] being replaced by mobile phones, the asset costs are not material relative to the entire account of 391.2, which has an average service life of five years. SoCalGas recommends retention of the average service lives authorized in the 2016 GRC.

Net salvage studies were performed on all accounts. Retaining the current future net salvage rate is recommended for the above general plant amortization accounts with the following exceptions:

- Account 392: Transportation – net salvage analysis supports increasing the future net salvage rate from 5% to 15%;
- Account 396: Construction Equipment – this account shows no salvage activity in the most recent seven years. SoCalGas recommends decreasing the future net salvage rate from 25% to 0%; and
- Account 397.4: Communication Structures – net salvage analysis supports retaining the current future net salvage rate of -5%.

[36] Portable Automated Centralized Electronic Retrieval (PACER) system used by SoCalGas to manage Customer Services Field (CSF) work orders. Mobile Data Terminals (MDTs) are computer hardware used by CSF employees to receive and track work orders.

6. Account 397.55: AMI Communication Poles

This account was established in 2012. It includes the cost installed of poles used in connection with the AMI deployment. AMI data collection units (DCU's in account 397) are attached to these communication poles. There are approximately 2,700 poles in this account, mostly concrete and wood and 5% steel. The current life/curve is 40 SQ. The average age of the surviving plant balance is 2 years. SoCalGas recommends the same life/curve used for the 397.4 General Plant Communication Structures account of 40 SQ since there is insufficient history for actuarial analysis.

Adoption of the future net salvage rate of -5% consistent with the 397.4 account is also recommended.

VIII. CONCLUSION

SoCalGas' proposed service lives and net salvage rates, which were developed in accordance with CPUC Standard Practice U-4, are reasonable and should be adopted. The resulting depreciation expense and reserves set forth in Tables SCG-FN-1 and SCG-FN-2 above, should be approved by the CPUC for use in TY 2019 for determination of SoCalGas' revenue requirement.

The estimated depreciation expense increase of $143 million for TY 2019, when compared to Recorded Year 2016, represents the combined impact of plant growth, $136.9 million, and change in proposed depreciation parameters, $6.5 million. The proposed level of depreciation expense should be adopted to ensure customers are charged an appropriate cost allocation related to consumption of plant assets, and that SoCalGas recovers an appropriate amount of plant invested.

Account-level detail workpapers[37] (historical data, statistical tables and charts) are submitted separately with this testimony in support of the proposed underlying depreciation rates.

This concludes my prepared direct testimony.

[37] Exhibit SCG-36-WP.

IX. WITNESS QUALIFICATIONS

My name is Flora Ngai. My business address is 555 West Fifth Street, Los Angeles, California. I am employed by SoCalGas as a Principal Accountant in the Accounting Operations Department. In my current role, I am responsible for depreciation analysis, rate calculations, depreciation estimates, monitoring of depreciation and valuation practices, and special projects.

In my 23 years with SoCalGas, SDG&E or Sempra Energy, I have held various positions in Gas Accounting, Financial Accounting, Health Management Services, Capital Asset and Management Accounting, Financial Reporting, Business Policies and Controls, and Customer Operations. Prior to joining the Company, I was employed as a Financial and Reporting Systems Manager for a manufacturing firm in Orange County from 2000-2004; and as a registered nurse from 1984-1990, licensed by the state of California.

I earned my Bachelor of Science in Business Administration with an option in Accounting and my Masters in Business Administration with an option in Finance, both from the California State University, Los Angeles. I am a Certified Public Accountant and a Certified Management Accountant. I am a member of the American Institute of Certified Public Accountants, the Institute of Management Accountants and the Society of Depreciation Professionals (SDP). I attended depreciation training programs sponsored by SDP in 2011, and 2013 through 2017. I have met all the requirements to become a Certified Depreciation Professional.

I have previously testified before the Commission.

APPENDIX A

Southern California Gas Company
Comparison of Authorized vs Proposed Depreciation Parameters
(Life-Years / Net Salvage-Percent)

Account	Account Description	2016 Authorized		2019 Proposed		Change	
		Life/ Curve (1)	Future Net Salvage (2)	Life/ Curve (3)	Future Net Salvage (4)	Life (3)-(1)	Future Net Salvage (4)-(2)
Underground Storage Plant							
350x	Rights-of-Way	40 Amort	0	40 Amort	0	0	0
351x	Structures and Improvements	48 R1.5	-70	52 R1.5	-80	4	-10
352x	Wells	49 R2.5	-70	53 R1	-80	4	-10
353x	Lines	54 R3	-40	54 R3	-45	0	-5
354	Compressor Station Equipment	41 L0.5	-15	41 S-.5	-20	0	-5
355	Meas and Reg Equipment	22 L0	5	29 R0.5	5	7	0
356x	Purification Equipment	39 R2.5	-30	40 R2.5	-30	1	0
357x	Other Equipment	37 R2.5	-100	39 R1.5	-100	2	0
Transmission							
365.29	Rights-of-Way	40 Amort	0	40 Amort	0	0	0
366x	Structures and Improvements	47 R2	-40	53 R2	-45	6	-5
367x	Mains	64 R3	-60	64 R3	-65	0	-5
368x	Compressor Station Equipment	50 R1	-15	49 R1.5	-25	-1	-10
369	Meas and Reg Equipment	46 S0	-50	45 R1	-60	-1	-10
370	Communication Equipment			15 SQ	0		
371x	Other Equipment	21 L0.5	-10	23 L0.5	-10	2	0
Distribution							
374.2	Land Rights	40 Amort	0	40 Amort	0	0	0
375	Structures and Improvements	40 S0	-10	44 S0	-15	4	-5
376x	Mains	68 R2.5	-80	68 R3	-85	0	-5
378	Meas and Reg Equipment	47 S0.5	-95	52 S0.5	-100	5	-5
380x	Services	67 R2	-115	67 R2	-115	0	0
381x	Meters	25 S0.5	5	25 S0.5	5	0	0
381.15	AMI Modules			20 SQ	0		
382x	Meter Installations	30 S1	-10	29 S1.5	-5	-1	5
382.6	Meter Installations (Other)	15 SQ	0	15 SQ	0	0	0

Account	Account Description	2016 Authorized		2019 Proposed		Change	
		Life/ Curve (1)	Future Net Salvage (2)	Life/ Curve (3)	Future Net Salvage (4)	Life (3)-(1)	Future Net Salvage (4)-(2)
382.15	AMI Module Installations			20 SQ	0		
383	House Regulators	33 L5	5	33 R5	5	0	0
387x	Other Equipment	21 O1	5	22 L0	0	1	-5
General Plant							
389.2	Land Rights	40 Amort	0	40 Amort	0	0	0
390	Structures and Improvements	33 R1.5	-15	38 R1.5	-15	5	0
390.1	Gas Company Tower Lease	15 EL	-15	15 EL	-15	0	0
391.1	Office Furniture & Equipment	14 SQ	0	14 SQ	0	0	0
391.2	Computer Equipment	5 SQ	0	5 SQ	0	0	0
391.3	Software 2-4 Yrs (3yr ASL)	3 Amort	0	3 Amort	0	0	0
391.35	Software 5 Yrs (AMI)	5 Amort	0	5 Amort	0	0	0
391.4	Software 5-8 Yrs (6yr ASL)	6 Amort	0	6 Amort	0	0	0
391.5	Software 9-12 Yrs (10yr ASL)	10 Amort	0	10 Amort	0	0	0
391.55	Software 15 Yrs (15yr ASL)	15 Amort	0	15 Amort	0	0	0
391.6	Software 20 Yrs (20yr ASL)	20 Amort	0	20 Amort	0	0	0
392x	Transportation Equipment	7 SQ	5	7 SQ	15	0	10
393	Stores Equipment	20 SQ	0	20 SQ	0	0	0
394x	Shop and Garage Equipment	29 SQ	0	29 SQ	0	0	0
394.19	Large Portable Tools	24 SQ	0	24 SQ	0	0	0
395	Laboratory Equipment	25 SQ	0	25 SQ	0	0	0
396.1	Construction Equipment	12 SQ	25	12 SQ	0	0	-25
397x	Communication Equipment	15 SQ	0	15 SQ	0	0	0
397.1	General Network Equip-5yr ASL	5 SQ	0	5 SQ	0	0	0
397.2	PBX and Voice Equip-7yr ASL	7 SQ	0	7 SQ	0	0	0
397.3	Microwave and Radio-10yr ASL	10 SQ	0	10 SQ	0	0	0
397.4	Communication Structures	15 SQ	-5	15 SQ	-5	0	0
397.55	AMI Communication Poles			40 SQ	-5		
398	Miscellaneous Equipment	20 SQ	0	20 SQ	0	0	0

APPENDIX B

Glossary of Terms

Below is a list of acronyms and its definition used in my testimony.

A.: Application
AGA: American Gas Association
AMI: Advanced Metering Infrastructure
Amort: Amortization
ASL: Average Service Life
CFR: Code of Federal Regulations
CPUC: California Public Utilities Commission
CSF: Customer Services Field
D.: Decision
EEI: Edison Electric Institute
FERC: Federal Energy Regulatory Commission
GCT: Gas Company Tower
GEMS: Gas Energy Measurement Systems
GRC: General Rate Case
NARUC: National Association of Regulatory Utility Commissioners
PACER: Portable Automated Centralized Electronic Retrieval system
MDTs: Mobile Data Terminal
SCADA: Supervisory Control and Data Acquisition
SDG&E: San Diego Gas & Electric Company
SCG: Southern California Gas Company
SoCalGas: Southern California Gas Company
SPR: Simulated Plant Record
SQ: Square
TY: Test Year
USofA: Uniform Systems of Account

SCG 2019 GRC Testimony Revision Log – December 2017

Exhibit	Witness	Page	Line or Table	Revision Detail
SCG-36	Flora Ngai	FN-iii	Summary	Last sentence, change $606 to $607 and change $8,080 to $8,081
SCG-36	Flora Ngai	FN-1	8	Change $606 to $607
SCG-36	Flora Ngai	FN-1	10	Change $8,080 to $8,081
SCG-36	Flora Ngai	FN-1	Table SCG-FN-1, line 1	Change $47,304 to $47,306
SCG-36	Flora Ngai	FN-1	Table SCG-FN-1, line 2	Change $61,960 to $61,961
SCG-36	Flora Ngai	FN-1	Table SCG-FN-1, line 3	Change $281,807 to $281,812
SCG-36	Flora Ngai	FN-1	Table SCG-FN-1, line 4	Change $81,206 to $81,367
SCG-36	Flora Ngai	FN-1	Table SCG-FN-1, line 5	Change $472,277 to $472,446
SCG-36	Flora Ngai	FN-1	Table SCG-FN-1, line 7	Change $133,647 to $133,924
SCG-36	Flora Ngai	FN-1	Table SCG-FN-1, line 8	Change $134,107 to $134,384
SCG-36	Flora Ngai	FN-1	Table SCG-FN-1, line 9	Change $606,385 to $606,830
SCG-36	Flora Ngai	FN-2	Table SCG-FN-2, line 1	Change $466,549 to $466,547
SCG-36	Flora Ngai	FN-2	Table SCG-FN-2, line 2	Change $893,556 to $893,553
SCG-36	Flora Ngai	FN-2	Table SCG-FN-2, line 4	Change $406,632 to $406,831
SCG-36	Flora Ngai	FN-2	Table SCG-FN-2, line 5	Change $7,168,028 to $7,168,022
SCG-36	Flora Ngai	FN-2	Table SCG-FN-2, line 7	Change $876,725 to $877,145
SCG-36	Flora Ngai	FN-2	Table SCG-FN-2, line 8	Change $912,395 to $912,815
SCG-36	Flora Ngai	FN-2	Table SCG-FN-2, line 9	Change $8,080,423 to $8,081,037
SCG-36	Flora Ngai	FN-2	11	Change $136.5 to $136.9
SCG-36	Flora Ngai	FN-8	12	Change “386.2” to “382.6”
SCG-36	Flora Ngai	FN-13	18-19	Change “…with an average service life ranging from 40 to 80 years.” to “…ranging in age from 45 to 85 years, relative to when SoCalGas began storage operations.”
SCG-36	Flora Ngai	FN-24	18	Change from $136.5 to $136.9