Company: San Diego Gas & Electric Company (U 902 M)
Proceeding: 2016 General Rate Case
Application: A.14-11-003
Exhibit: SDG&E-28-R

REVISED

SDG&E

DIRECT TESTIMONY OF BOB J. WIECZOREK

(DEPRECIATION)

March 2015

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

A Sempra Energy utility®

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SUMMARY

I sponsor the Test Year ("TY") 2016 depreciation and amortization expense and accumulated provision (reserve) of the Gas Plant depreciation area for the San Diego Gas & Electric Company ("SDG&E"). 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 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 the testimony of Jesse Aragon (Ex. SDG&E-27-R). As discussed in detail below, SDG&E is requesting the adoption of proposed Iowa curves, average service lives, and net salvage rates which were developed in accordance with the Standard Practice U-4. SDG&E is also requesting approval of the resultant depreciation and amortization expense of $363.3 million for Electric and $57.6 million for Gas and an accumulated provision (reserve) of $3.589 billion for Electric and $1.080 billion for Gas.

SDG&E DIRECT TESTIMONY OF BOB J. WIECZOREK
(SDG&E DEPRECIATION)

I. INTRODUCTION

A. Summary of Proposals

The purpose of this testimony is to address the depreciation and amortization expense and accumulated reserve for depreciation and amortization of Electric Production Plant, Electric Distribution Plant, Gas Plant, and the related General and Common Plant of San Diego Gas & Electric Company ("SDG&E").

As shown in the Tables SDG&E-28-BW-1, depreciation and amortization expense for the Recorded Year 2013 is $267.1 million for Electric and $51.3 million for Gas, and for the Test Year ("TY") 2016 is $363.3 million for Electric and $57.6 million for Gas. As shown in the Tables SDG&E-28-BW-2, the accumulated provision (reserve) for depreciation and amortization at the end of the Recorded Year 2013 is $2.881 billion for Electric and $961 million for Gas, and for the TY 2016 it is $3.589 billion for Electric and $1.080 billion for Gas. (These tables are found in the appendix at the end of this testimony.)

B. Overview of Process

I am responsible for the preparation of the depreciation study for SDG&E. This includes coordination of data collection, ensuring reasonableness of the data and any accounting adjustments over time. I am responsible for capturing and displaying the statistical analyses needed in the preparation of the schedules that detail, reflect and support the results of this depreciation showing.

While my depreciation study is based on available history, it is also based on other factors, including, but not limited to, the following: field input, engineering input, changes in technology (historical and future), labor patterns, and past/future removal assessments. The importance of informed judgment and proposed projections as to the future cannot be over emphasized, knowing that depreciation accrual rates need to be set for the near-term future and not the past.

Many utilities continue to use the well-known Simulated Plant Records ("SPR") methodology because specific ongoing infrastructure history was not meticulously captured over time for and by each vintage year. At SDG&E, the effort to capture this specific historical detail has been part of our culture for years and that has allowed this utility to incorporate the more

definitive actuarial methodology when gathering history and applying that within our detailed depreciation studies. In simple terms, the data will represent actual occurrences/patterns as opposed to any simulation or theoretical forecast. Many utilities are attempting to move in this direction and will initiate the switch to the actuarial methodology when their specific historical data becomes available.

The proposed Iowa curves represented in my SDG&E proposals are also a result of the data derived from these actuarial analyses. The actuarial analyses are excellent in identifying these best curve choices along with the suggested Average Service Life ("ASL")[1] and the corresponding remaining life based on the actual vintage year pattern over time. These Iowa curves were developed in the 1930's at Iowa State University and are published empirical curves.[2] These tools will link the historical pattern to the future, specifying Average Service Life, age, and remaining life for those SDG&E Federal Energy Regulatory Commission ("FERC") accounts using the actuarial method. Iowa curves are widely accepted in the industry and will identify the appropriate depreciation parameters needed to complete the final analyses for each FERC account. For those SDG&E infrastructure assets that don't lend themselves to this actuarial methodology, forecasted judgment and proven end-lives, similar to those authorized for other California Utilities, are incorporated in my proposals.

Finally, detail is being provided related to SDG&E's past General Rate Cases ("GRCs") to show how patterns evolve where judgment is used. Each SDG&E FERC account is identified with its unique proposal for Average Service Life, Iowa curve, and where appropriate, Future Net Salvage.[3] These then are incorporated in the GRC models used to display the proposed SDG&E accruals by FERC account for the Test Year 2016.

C. Support To/ From others

As noted above, discussions took place with appropriate personnel to review my proposals and findings, confirming the proposed SDG&E direction noted for each FERC account. The intent of this effort is to confirm the proposed direction in this Application.

[1] Mathematical and Statistical models are used to estimate the life span (retirements and survivors) of infrastructure assets. The result is identified in the Industry as the Average Service Life ("ASL").
[2] See Supplemental Work Papers Ex. SDG&E-28-R-CWP.
[3] Future Net Salvage ("FNS") is defined as the positive salvage less any cost to remove an asset from the infrastructure. Many external pressures tend to increase this negative net salvage value over time.

II. OVERVIEW

A. Definitions

The FERC defines "depreciation" in the Code of Federal Regulations 18, Parts 101 and 201:

> *Depreciation*, as applied to depreciable electric (gas) plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of electric (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.

The FERC further defines service value: "Service value means the difference between original cost and net salvage value of electric (gas) plant." And the FERC defines net salvage value: "Net salvage value means the salvage value of property retired less the cost of removal."

The following are definitions of certain terms contained in the FERC Uniform System of Accounts ("USoA") related to depreciation:

1. *Service value* means the difference between original cost and net salvage value of utility plant.
2. *Original cost*, as applied to utility plant, means the cost of such property to the person first devoting it to public service, as previously mentioned.
3. *Net salvage value* means the salvage value of property retired less the cost of removal.
4. *Salvage value* means the amount received from property retired, less any expenses incurred in connection with the sale or in preparing the property for sale; or, if retained, the amount at which the material recoverable is chargeable to materials and supplies, or other appropriate accounts.
5. *Cost of removal* means the cost of demolishing, dismantling, tearing down or otherwise removing utility plant, including the cost of transportation and handling incidental thereto.
6. *Service life* means the time between the date utility plant is includible in utility plant in service, or utility plant leased to others, and the date of its

retirement. If depreciation is accounted for on a production basis rather than on a time basis, then service life should be measured in terms of the appropriate unit of production.

These definitions are ordered so that the depreciation concepts flow from one to the next. Service value is specifically linked to original cost. Depreciation accounting is the recovery of the original cost of assets and not the economic, market, or any other non-original cost measures of value. Under current practice, regulatory definitions (Standard Practice U-4) require that salvage and cost of removal be considered.

This Standard Practice U-4 has been prepared to assist engineers of the Utilities Division of the Commission staff and others in determining proper annual depreciation expense accruals. The practice was originally issued on April 9, 1952 with revisions in 1953, 1954, 1961, 1985, and 1986.[4] Over time, minor changes have been made including an expansion on the interim retirement determination and an enlargement of the material relating to typical average service lives. All essential material necessary to determine depreciation expenses by the straight-line remaining life method has been carried forward from the former issues.

In the continuing duties of the California Public Utilities Commission ("CPUC" or "Commission") in the fixing of rates and the supervision of accounts of utilities under its jurisdiction, a basic depreciation goal is that of recovering the original cost of fixed capital (less estimated net salvage) over the useful life of the property by means of an equitable plan of charges to operating expenses or clearing accounts. The straight-line remaining life method presented herein and used as standard procedure by the staff meets this objective.

More importantly, the regulatory definitions are specific in their requirement that salvage and cost of removal be included at the amounts expected to be received or incurred, i.e., at the price level expected at the time of receipt or incurrence. This is evident in the wording of the definitions. "Amount received" is stated in the salvage value definition and "cost of" in the cost of removal definition. The definition implies future amounts, not current price levels or present values.

[4] Determination of Straight-Line Remaining Life Depreciation Accruals – Standard Practice U-4, January 1986.

B. Methodology

A depreciation study was conducted in preparation for this SDG&E 2016 GRC. The methods used to calculate the mortality characteristics (service lives, retirement dispersions, and net salvage rates) and to calculate the straight-line remaining life depreciation rates are consistent with Standard Practice U-4, Determination of Straight-Line Remaining Life Depreciation Accruals ("Standard Practice U-4"). The Commission issued this standard practice in 1961 as a guide for determining proper depreciation accruals, and has consistently upheld its use[5] by the California utilities in computing service lives, retirement dispersions, and net salvage rates.

During the course of the depreciation study, results were reviewed and validated through a process which involved consulting the historical data for the assets as well as interacting with various operation departments to consider their observations and evaluations regarding SDG&E's capital assets and infrastructure. This process re-affirmed the study detail showing that existing infrastructure is lasting longer, resulting in the lengthening of lives in certain accounts.

Future net salvage has increased for some accounts, while others show a decrease. In some cases the physical removal is requested and/or mandated in lieu of abandonment. Mandated environmental constraints can also add to the costs to remove assets from the infrastructure. Then the historical pattern of positive salvage for removed assets have sometimes reversed course with expensive disposal costs. In addition, factors such as new technology, continued heightened focus on safety, and the need for increased reliability of the SDG&E system will have impacts to the Average Service Lives and Future Net Salvage of assets, which are either reflected in this GRC or are anticipated to have impacts which will be reflected in future cases.

For example, new technology can have the effect of either extending or reducing the lives of various assets. Technology can influence the study detail and that will be identified and discussed within the individual FERC account summaries. Future depreciation studies will continue to be conducted to weigh that influence and evaluate those effects on utility assets.

[5] D.13-05-010 (page 926) The Commission and the DRA have recognized the Standard Practice U-4 as the appropriate guide to determine ASLs and FNS rates.

The depreciation expense shown for Recorded Year 2013 directly results from the application of depreciation parameters[6] authorized by the Commission in SDG&E's TY 2012 GRC decision.[7] Beginning in TY 2016, SDG&E proposes depreciation expense as shown in Appendix A in the two tables for SDG&E-28-BW-1 (Electric and Gas), which were calculated using the updated depreciation rates per the current depreciation studies. These studies used historical data to analyze and adjust, where indicated, the assigned mortality characteristics of the plant accounts. The total TY 2016 depreciation expense increase of $102.5 million is due to plant growth from 2013 to 2016 and the impact of the proposed depreciation rates as a result of updating the three parameters (ASLs, Iowa Curves, and FNS). The depreciable plant growth and the investments for the Recorded Year 2013 through the TY 2016 are addressed in the Rate Base testimony of Jesse Aragon (Ex SDG&E-27-R).

III. DEPRECIABLE LIVES FOR TY 2016

Depreciable lives were studied for two categories of plant accounts: (1) mortality accounts and (2) forecast accounts. Mortality accounts, generally referred to as mass accounts, maintain records for related types of property grouped by vintage year without regard to specific location. Two examples of mass accounts for electric property types would be poles (FERC account E364) and service connections (FERC account E369). Two examples for gas property would be distribution mains (FERC account G376) and services (FERC account G380).

Utilities (including the California utilities PG&E and SCE) often apply the mass-asset convention of accounting known as the "group"[8] method, as defined by the National Association of Regulatory Utility Commissioners ("NARUC"), to certain fixed assets such as utility poles and other components of their transmission and distribution systems. Assets housed within these FERC accounts are too numerous to track on an individual basis given the small relative value of each individual asset. The group method is distinct from the convention of accounting known as the "unitary" method in that the unitary method considers each individual asset, regardless of size.

[6] "Depreciation parameters" (or "mortality characteristics") refer to the Average Service Life, retirement dispersion (i.e., Iowa curve), and Future Net Salvage rate for a group of assets.
[7] D.13-05-010, May 9, 2013 - see Pages 928 and 936 where ASLs, Iowa Curves, and FNS parameters were approved.
[8] Also, see U-4 Standard Practice (January 1986), Chapter 3 Asset Grouping Procedures, pages 11-14.

In addition, utilities often utilize a "composite" convention of accounting for component parts of larger assets such as electric generating stations, which also contain numerous components and parts which again are impractical to separately track. As opposed to the unitary convention of accounting for fixed assets, generally neither the group nor composite convention of accounting result in the recognition of a gain or loss upon the retirement of an asset. Rather, any difference between the net book value of the assets and the value realized at retirement (salvage proceeds less removal and disposal costs) are embedded in accumulated depreciation and considered in the determination of prospective depreciation rates.

Mortality characteristics were reviewed for the mortality accounts using historical data through 2013. Each of these accounts has been assigned a representative Iowa-type survivor curve[9] combined with an average service life. SDG&E's review indicated the need to modify the Average Service Lives for 39 (33 longer and 6 shorter) of the FERC accounts, while all others continue to exhibit the lives approved and authorized in SDG&E's 2012 GRC Decision. The lengthening of Average Service Lives ("ASL") has been the general trend for SDG&E assets.

There have been and will continue to be extensive technological improvements and changes that will directly affect Average Service Life and Future Net Salvage including the pattern suggested by proposed Iowa curves. To arbitrarily assume that lives will continue to lengthen, is irresponsible both to current and future ratepayers. Technology is and can allow "existing" infrastructure to reach longer lives, but that same infrastructure may show a pattern of being replaced with newer technological advancements that, in themselves, could see shorter and shorter lives as refreshment of new ideas continue to evolve.

Forecast accounts are those for which accounting records are maintained by specific locations that will normally be retired as a single unit, have service lives which are directly estimated individually, and then a composite rate is used for the total plant account. An example of a forecast account is FERC account C390 that includes utility-owned structures and the improvements on leased property. In addition, service lives of the forecast accounts were

[9]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. See additional Iowa Curve detail in the supplemental section of my work papers (Ex. SDG&E-28-R-CWP).

reviewed in accordance with the revised estimates of interim retirement rates[10] which is an additional ongoing factor that has an effect on Average Service Lives.

Again as noted above, technology related to "existing" forecast infrastructure may have the short term effect of lengthening lives but can quickly retreat as new technological advances are applied and are required (environmental, safety, compliance testing, customer needs, system reliability) with the result of shortening those very same lengthened Average Service Lives.

A. Retirement Rate Method of Actuarial Analysis (Actuarial Method)

Retirement rate actuarial analysis was used as a primary determinant of average service lives for the mortality accounts. Aged retirement data (i.e., the transaction year and the original vintage year) and exposures to retirement are required for this analysis. 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" also include adjustments for any major 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 that rate from one (1). 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 a good means of extrapolating incomplete survivor curves (known as "stub" or "truncated curves"). Average service lives are represented by the area under the survivor curve divided by the ordinate at age zero (100%). Vintage remaining lives are calculated by dividing the area under the survivor curve to the right of its age by the ordinate at that age[11].

[10] Forecast accounts will have their Average Service Life adjusted when large retirements occur during its useful life. In simple terms, specific focused retirements that occur prior to a forecasted asset's end-life are referred to as an interim retirement.

[11] NARUC's, August 1996 Publication, defines SPR (pages 92-109) and Actuarial (pages 111-129) methodologies.

More precise record-keeping is required to initiate and continue the use of this actuarial methodology. SDG&E painstakingly undertook this transition many years ago and has been consistently maintaining their system to accommodate going forward. The average remaining life for each FERC account was calculated by weighting the remaining life of each vintage year with its surviving plant balance as of December 31, 2013.

B. Forecast Method of Analysis (Forecast Method)

This forecast and/or life span method for specific assets in this grouping and/or FERC account will concurrently retire at a forecasted year in the future (i.e., assets for a specific location have same end life). There may be associated interim retirements being experienced by certain assets, however, all plant will eventually be subject to final retirement. Many times the groupings within the account have individual forecasted end lives by location. There can be a multiple number of groupings of different sizes, such as a structure or other building. In simple terms, forecast accounts contain various categories of property, each uniquely having its own identifiable final retirement at some future date. Examples of these types of assets that many utilities have are buildings, substations, switching stations, and gas compressor stations.

An example of an interim retirement that can affect a forecasted account's ongoing remaining life balance would be a full roof replacement on a building. In that case, retirement of the previous roof would occur prior to the final building retirement. Likewise, the original building foundation would seldom be replaced and would typically be retired at its end life. For those forecast accounts that have them, the remaining life calculation will include the effect of these interim retirements. Contracts can also have a substantial effect on a particular location's remaining life (i.e., shorter or longer dependent on current extensions). Essentially, the individual end-life for assets in a particular forecasted account is blended and/or composited to arrive at a single remaining life for that FERC account.

C. End of Life (Life Span Method) - Electric Generation Assets

The "End of Life" method (basically a forecast method as identified above), and often referred to as the Life Span Method, is the least complex means of computing service life of property for depreciation purposes. A life span unit/group contains assets that are forecasted to concurrently retire in a specific number of years after placement. For these life span units, there can be interim additions and retirements; however, all plant will be subject to a final retirement. SDG&E has the following power generating plants designated with this Life Span concept:

Palomar, Desert Star, and the smaller units housed at Miramar and Cuyamaca. Other power plants can be acquired over time and subsequently included on this list. These will be discussed later in testimony by specific FERC account association.

Life Span property generally has the following characteristics:

1. Large individual units;
2. Forecasted overall life or estimated retirement date;
3. Units can be experiencing interim retirements; and
4. Future additions are an integral part of initial installation.

Essentially these units can contain various categories of property which have the common event of final retirement at the same forecasted date. Property studied using the Life Span method will usually have additions after the initial placement of the asset and retirements prior to the final retirement date of that same asset. Some interim additions may remain in service to the final retirement date, whereas others may be retired prior to this date. Appropriate estimates must be made for such interim retirements; however, interim additions are not considered in the depreciation base or rate until they occur. The concept here is to capture the appropriate costs during the asset's "used and useful" life.

Also, the general characteristic of property studied using the life span method is the gradual increase in the depreciation rate as the property ages. Costs for plant additions subsequent to the initial placement/acquisition usually exceed the interim retirements, even though the additions may replace plant retired, because they are made at a higher cost than the plant retired. The result is a shorter average service life of the life span property and the subsequent remaining life. This shortening of the average service life demonstrates the importance of frequent reviews of classes of property studied using the Life Span method. In simple terms, the definition of a final retirement using the Life Span method is the retirement of a major structural unit in its entirety.

IV. NET SALVAGE RATES FOR TY 2016

Salvage and cost of removal analysis involves the determination of salvage and cost of removal as a percentage of the cost of the retired property. The techniques employed depend upon the type of property being studied and the type of data available. These techniques can involve analysis of history, the anticipated future, or both. The procedures in general use have the ability to measure the salvage and cost of removal of the original installations, but rarely do

so because of data and timing limitations. If this situation is not recognized and compensated for, selected net salvage factors will be inconsistent with selected average service lives.

As stated in the NARUC publication, *Public Utility Depreciation Practices*:

> Historically, most regulatory commissions have required that both gross salvage and the cost of removal be reflected in depreciation rates. The theory behind this requirement is that, since most physical plant placed in service will have some residual value at the time of its retirement, the original cost recovered through depreciation should be reduced by that amount. Closely associated with this reasoning is the accounting principle that revenues be matched with costs and the regulatory principle that utility customers who benefit from the consumption of plant pay for the cost of that plant, as well as the concept of intergenerational equity, which assigns removal costs for assets to the customers who have been served by those assets, no more, no less. The application of the latter principles also requires that the estimated cost of removal of plant be recovered over its life.[12]

NARUC also adds that when property is retired, the effect of both salvage and removal costs are involved.[13] The net salvage gives consideration to both of these items and represents the salvage less the removal costs. If the salvage exceeds the removal costs, the net salvage is considered positive. When the removal costs exceed the salvage, the net salvage is negative. The effect of net salvage, whether positive or negative, must be considered in the calculation of depreciation.

In this depreciation study, estimated net salvage rates (equal to gross salvage less cost of removal as a percentage of retired plant cost) for SDG&E were determined after analyzing data for the past 15 years (1999 through 2013). SDG&E has also retained the historical patterns utilized during the 2008 and 2012 GRCs. Viewing this entire historical spectrum reinforces the proposed direction in this 2016 GRC. The analysis indicated the need to change and/or initiate the net salvage rates for 32 FERC accounts (sixteen(16) proposed increases, five(5) proposed decreases, and eleven(11) new), while results for the remainder of the accounts are still consistent with those approved and authorized in SDG&E's TY 2012 GRC decision. The method of analysis used is based on that specified in the Standard Practice U-4.

The prevailing trend of recent SDG&E studies is towards more negative net salvage rates. Generally, a change in net salvage rates is related to the change in service lives (which are generally lengthening at SDG&E) and has an offsetting impact on depreciation rates and

[12] Public Utility Depreciation Practices, NARUC, August 1996, p. 157.
[13] Public Utility Depreciation Practices, NARUC, August 1996, p. 18, "Salvage Considerations."

expense. For example, when asset lives are lengthened, positive salvage values decline or become negative as the physical item continues to deteriorate and cost to dispose of that item increases. Also, since the asset's vintage year reflects the original acquisition costs, the continually increasing cost of removal affects the ratio. Since the future net salvage estimate is expressed as a percentage of the original historical cost[14] of the associated retirement (a constant), the result can be a more negative net salvage rate. Thus, while a lengthening life decreases annual depreciation expense (extending additional years), the resulting more negative net salvage rate will typically increase the expense.

The specific TY 2016 GRC proposals for each FERC asset account's net salvage are included in the account-by-account detail included in my testimony, as well as in my work papers (Ex. SDG&E-28-R-CWP). For the generation assets, the decommission studies performed by Sargent & Lundy ("S&L")[15] addressed and estimated the end-life costs for Palomar ("PA") and Miramar ("MMI" & "MMII") as well as the Desert Star Energy Center ("DSEC"). The smaller peaker plants have been also linked to the appropriate Sargent & Lundy decommission study. Where it's appropriate, these estimated end-life costs have been escalated using the Global Insight wage/employment percentages with the result being allocated by FERC account and identified as the proposed negative net salvage. The expectation is that additional decommission studies will be coordinated during the remaining lives of these generation units.

V. DEPRECIATION RATE CALCULATION

Regulators are challenged by short-run and long-run interests affecting both the ratepayer and the Company. If the depreciation rates prescribed are too low, the revenue requirement in the short-run may be lower. These rates can be so low that revenue fails to recoup the capital invested by the end of the asset's end life, placing a burden on future ratepayers for assets that never served their interest. The situation can be reversed by placing more of the burden inappropriately on current ratepayers, while future costs are minimal or non-existent.

The objective of computing depreciation then is to allocate the cost or depreciation base over the property's service life by charging the appropriate portion of the consumption of plant

[14] 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.
[15] Sargent and Lundy were solicited to perform decommission studies and those are supplied in Work Papers.

taking place during each accounting period. The different depreciation methods incorporated by SDG&E achieve this objective. As these methods are applied, two estimates are required, one for Average Service Life and the other for Future Net Salvage. All proposed Average Service Lives will be assigned an Iowa curve that best fits the current retirement pattern as confirmed by the appropriate depreciation methodology.

The SDG&E depreciation rates are calculated in accordance with Standard Practice U-4, using the straight-line method, broad group procedure, and remaining life technique. The straight-line method prorates the recovery of service value in equal annual amounts. The broad group procedure (the most widely used[16] in the utility industry) 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:

(plant balance - future net salvage - reserve) / (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 (that plant yet to be retired). The reserve is the accumulation, since the inception of the plant account, of the following booked entries: depreciation accruals, plus salvage, less cost of removal, less the retirements, plus or minus any transfers in or out as provided by the FERC Uniform System of Accounts.

The annual depreciation rates were calculated based on recorded information as of December 31, 2013, for each FERC plant account by dividing the 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 proposed depreciation parameters generate the accrual identified for each FERC account established under the CPUC jurisdiction for this SDG&E GRC 2016 TY. Then, each

[16] CPUC- Standard Practice U-4, January 1961, chapter 3.6.b. In group accounting all units having like mortality characteristics or all units of an account are considered together . . . . It is the more generally used base among electric, gas, telephone and water utilities.

FERC account rate is determined by applying that individual accrual against each FERC accounts' recorded 2013 plant balance. Those individual rates are then composited as an overall rate stated below. One needs to be cognizant of the fact that this identified expense and rate is based on recorded 2013 year end plant balances, only. The calculation does not incorporate any additional forecasted and/or proposed 2014-2015-2016 additions/changes to 2013 plant balances. Knowing this, the CPUC-jurisdictional composite depreciation rate, on a total plant-in-service basis resulting from the new depreciation study, is 3.96% for the 2016 TY, compared to a rate of 3.36% for the 2013 Recorded Year.

Note that this 3.36% recorded 2013 depreciation rate was adjusted by and reflects the rate approved in SDG&E's 2012 GRC Decision (D.13-05-010) issued on May 9, 2013. A $26,848,480 depreciation expense reduction that occurred in May 2013 reflected the 2012 mandated changes as prescribed in D.13-05-010, which needed to be reflected in that current year (2013). Rebuilding the depreciation expense for the 2013 recorded year by extracting the influence of that 2012 $26,848,480 depreciation adjustment, results in a 3.69% rate.

VI. ACCOUNT BY ACCOUNT DETAIL FOR PROPOSED AVERAGE SERVICE LIVES AND FUTURE NET SALVAGE PERCENTAGES

The following account by account detail summarizes the proposed Average Service Lives, Iowa curves, and Future Net Salvage for each FERC account covered in this GRC. The method utilized in determining each FERC account's updated and proposed life is also specified.

Within the summary for each account, it will be noted whether the Actuarial or Forecast method (and/or Life Span) was used in the analysis. For those specific FERC accounts where the Actuarial method was used as a primary determinant of average service lives, aged retirement data and exposures to retirement were required. As described earlier, the retirements of a specified range of vintages (placement band) within a specified band of transactional calendar years (experience band) were 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. The work papers identify the authorized and proposed service life, remaining life, and the calculation of the depreciation rate (Ex. SDG&E-28-R-CWP).

For those specific FERC accounts using the Forecast method, the forecast, Life Span, or end-life method of life analysis was applied for the remaining life calculation. This method is outlined in Standard Practice U-4. Interim retirements are incorporated in the study, when

applicable. Then, the composite remaining life for the account is obtained by direct weighting with the dollars for each unit. The average service life weighting is often only appropriate in situations where only a few items occur in an account and there is a long time interval existing between probable retirement dates.

An updated 15-year historical future net salvage analysis was also completed for these FERC accounts. This analysis was conducted in accordance with the Standard Practice U-4 methodology. In addition, being cognizant of the previous 2012 GRC Decision and the 2008 GRC Settlement was incorporated in arriving at the future net salvage rates being proposed in this 2016 GRC case.

A. Electric Generation Accounts – Steam Production

1. Palomar Facility – PA

In operation since 2006, SDG&E operates a steam generation plant at Palomar. Palomar is located at the Palomar Energy Center, in northern San Diego County, Escondido, California, and consists of two GE Frame 7FA combustion turbine-generators ("CT") and a single steam turbine-generator ("ST"). The full-load continuous rating of a generator under specified conditions as designated by the manufacturer of Palomar is 550 megawatt ("MW"). Palomar is configured so that it may operate using either of the combustion turbines alone, or one combustion turbine and the steam turbine. The configuration is referred to as a "combined cycle" plant, and is typical of modern high-efficiency plant installations of this capacity in use by utilities and merchant generators throughout the U.S. and abroad.

The Life Span-Forecast method was used for Palomar and the assets in these groupings and/or FERC accounts will retire at a specific year in the future. The forecasted life for the Palomar generation unit was authorized during the 2008 GRC and re-confirmed in the 2012 GRC decision. The majority of these types of assets typically reflect a 30 year life in the utility industry. Because it is still early in its life cycle, historical information is not available that would deviate from the current authorized direction. Thus, SDG&E recommends that the end-life for these accounts and assets remain as currently authorized, forecasted for the year 2036 with an SQ Iowa curve.

<u>Account E311 – Structures and Improvements - PA</u>

This account includes structures and improvements used in connection with steam-power generation, specifically at the Palomar site. As supported in the previous 2012 GRC proceeding

and based on the Sargent & Lundy ("S&L") decommission study, the costs associated with structure and foundation removal, grading of the land, and restoring the land to its prior state will generate a future net salvage rate of <18%>. SDG&E requested and received the authorized change from the previous negative net salvage rate of <11%> to <18%> during the 2012 GRC. For this 2016 GRC, SDG&E is continuing to propose this same future net salvage.

Account E312 – Boiler Plant Equipment- PA

This account includes installed furnaces, boilers, steam and feed-water piping, boiler apparatus and accessories used in the production of steam primarily for generating electricity, specifically at the Palomar site. Based on the S&L Study for FERC account E312, the costs associated with removal and disposal of the furnaces, boilers, steam and feed-water piping, boiler apparatus and accessories used in the production of steam will generate future net salvage of <10%>. SDG&E requested and received the authorized change from the previous negative net salvage rate of <8%> to <10%> during the 2012 GRC. For this 2016 GRC, SDG&E is continuing to propose this same future net salvage.

Account E314 – Turbo Generator Units- PA

This account includes installed main turbine-driven units and accessory equipment used in generating electricity by steam, specifically at the Palomar site. Based on the S&L Study for FERC account E314, the costs associated with removing and disposing of the main turbine-driven units and accessory equipment will generate future net salvage of <2%>. SDG&E requested and received the authorized change from the previous negative net salvage rate of <7%> to <2%> during the 2012 GRC. For this 2016 GRC, SDG&E is continuing to propose this same future net salvage.

Account E315 – Accessory Electric Equipment- PA

This account includes installed auxiliary generating apparatus, conversion equipment, and equipment used primarily in connection with the control and switching of electric energy produced by steam power, and the protection of electric circuits and equipment, specifically at the Palomar site. Based on the S&L Study for this PA Steam FERC account E315, the costs associated with removing and disposing of the auxiliary generating apparatus, conversion equipment, and equipment used primarily in connection with the control and switching of electric energy produced by steam power, and the protection of electric circuits and equipment will generate future net salvage of <2%>. SDG&E requested and received the authorized change

from the previous negative net salvage rate of <6%> to <2%> during the 2012 GRC. For this 2016 GRC, SDG&E is continuing to propose this same future net salvage.

Account E316 – Miscellaneous Power Plant Equipment- PA

This account includes installed miscellaneous equipment (includes instrumentation, drainage, analyzers, platforms and tanks) in and about the steam generating plant devoted to general station use, and which is not properly included in any of the foregoing steam-power production accounts, specifically at the Palomar site. Based on the S&L Study for FERC account E316, the costs associated with removing and disposing of the miscellaneous equipment in and about the steam generating plant devoted to general station use will generate future net salvage of <3%>. SDG&E requested and received the authorized change from the previous negative net salvage rate of <5%> to <3%> during the 2012 GRC. For this 2016 GRC, SDG&E is continuing to propose this same future net salvage.

2. Desert Star Energy Center Facility - DSEC

SDG&E owns and operates the 480 MW power plant in Boulder City, Nevada and related assets previously known as El Dorado Energy. On October 1, 2011, upon transfer of ownership to SDG&E, the facility was renamed Desert Star Energy Center ("DSEC") and is connected to the Nevada Power Company at the Merchant Substation and, by means of an interconnection to Southern California Edison at Eldorado Substation. Initially placed in-service during 2000,[17] Desert Star Energy Center is a combined cycle facility similar to the Palomar facility. The actual contracted plant life is 29 years, a reduction by one year (normally 30 years) to accommodate the decommissioned activity specified in the current contract and planned during its 30th year.

The Life Span-Forecast pattern (again based on current contract provisions) is consistent with the Palomar facility and there have been no indications to deviate from this direction. Accordingly, for the following Desert Star Energy Center FERC accounts, SDG&E recommends that the forecasted end life for this facility and its assets be established with the 29 year life (2029 end-life) using the SQ Iowa curve.

[17] El Dorado Energy, L.L.C. previously operated the El Dorado Energy Combined Cycle Gas Turbine Power Plant which has been renamed as the Desert Star Energy Center – DSEC.

Account E311 – Structures and Improvements - DSEC

This account includes structures and improvements used in connection with steam-power generation, specifically at the Desert Star Energy Center site. Based on the S&L Decommission Study for the Desert Star Energy Center, there will be additional end-life requirements generating future net salvage value. Assigning these decommissioning costs for each FERC Account is always difficult and subjective in nature. SDG&E has kept the current assignment of future net salvage simple and basically used a uniform rate across all the steam production Desert Star Energy Center FERC accounts. To properly reflect the S&L decommissioning study results, a <6%> future net salvage factor is being proposed and applied to this steam production FERC account. This would capture the estimated future costs associated with structure and foundation removal, grading of the land, and restoring the land to its prior state.

Account E312 – Boiler Plant Equipment - DSEC

This account includes installed furnaces, boilers, steam and feed-water piping, boiler apparatus and accessories used in the production of steam primarily for generating electricity. Again, based on the S&L Decommission Study for Desert Star Energy Center, there will be additional end-life requirements generating future net salvage value. To properly reflect the S&L decommissioning study results, a simple <6%> future net salvage factor is proposed and applied to this steam production FERC account.

Account E314 – Turbo Generator Units- DSEC

This account includes installed main turbine-driven units and accessory equipment used in generating electricity by steam. Again, based on the S&L Decommission Study for Desert Star Energy Center, there will be additional end-life requirements generating future net salvage value. To properly reflect the S&L decommissioning study results, a simple <6%> future net salvage factor was applied to this steam production FERC account.

Account E315 – Accessory Electric Equipment- DSEC

This account includes installed auxiliary generating apparatus, conversion equipment, and equipment used primarily in connection with the control and switching of electric energy produced by steam power, and the protection of electric circuits and equipment. Again, based on the S&L Decommission Study for Desert Star Energy Center, there will be additional end-life requirements generating future net salvage value. To properly reflect the S&L decommissioning study results, a simple <6%> FNS factor was applied to this steam production FERC account.

Account E316 – Miscellaneous Power Plant Equipment- DSEC

This account includes installed miscellaneous equipment (includes instrumentation, drainage, analyzers, platforms and tanks) in and about the steam generating plant devoted to general station use, and which is not properly included in any of the foregoing steam-power production accounts. Again, based on the S&L Decommission Study for Desert Star Energy Center, there will be additional end-life requirements generating future net salvage value. To properly reflect the S&L decommissioning study results, a simple <6%> future net salvage factor was applied to this steam production FERC account.

B. Nuclear Generation Accounts- SONGS

SDG&E owns a 20% interest in the San Onofre Nuclear Generating Station ("SONGS"). Southern California Edison ("SCE") is the agent for the owners of SONGS. As described in the testimony of Michael L. De Marco (Ex. SDG&E-12), for this current SDG&E 2016 GRC filing, SONGS-related costs are being established in both proceedings: SCE's 2015 GRC and this SDG&E 2016 GRC. As noted in SCE's 2015 GRC proceeding, SONGS costs, except for Marine mitigation, have been removed from that filing.

In SDG&E's 2016 GRC filing, Mr. De Marco's testimony describes the expected change for the regulatory ratemaking regarding SDG&E's 20% share of SONGS' expenses as reflected in the SCE 2015 GRC proceeding and addresses the remaining expenses to be recovered in the SDG&E 2016 GRC. Again as stated in Mr. De Marco's testimony, Southern California Edison publicly announced that SONGS Units 2 and 3 ceased operations on June 7, 2013.

Within Mr. De Marco's testimony, it is explained that despite the cessation of generation operations at SONGS, costs continue to be incurred during the SONGS' decommissioning phase. That testimony also addresses the unique costs that will be ongoing through and continue during this decommissioning. Those details have been identified and expanded in his SONGS testimony. Without repeating the details of Mr. De Marco's testimony, the detail presented in my testimony below simply identifies the SONGS FERC accounts reflected in SDG&E's previous 2012 GRC filing and their existence prior to the June 7, 2013 announced closure at SONGS. The proposed process that substantiates, captures, and records the additional decommissioning costs going forward are again addressed by Mr. De Marco in his testimony.

Account E321.3 – Structures and Improvements

This account includes installed structures and improvements used in connection with nuclear power generation, specifically at SONGS. Any SONGS-related costs reflected in this 2016 SDG&E GRC filing, will be based on SDG&E's share of those costs as filed by SCE in its current 2015 GRC and as specifically identified in Mr. De Marco's testimony (Ex. SDG&E-12).

Account E322.3 – Reactor Plant Equipment

This account includes installed reactor plant equipment used in connection with nuclear power generation, specifically at SONGS. Any SONGS-related costs reflected in this 2016 SDG&E GRC filing, will be based on SDG&E's share of those costs as filed by SCE in its current 2015 GRC and as specifically identified in Mr. De Marco's testimony (Ex. SDG&E-12).

Account E323.3 – Turbo Generator Units

This account includes installed main turbine-driven units and accessory equipment used in generating electricity by nuclear reaction, specifically at SONGS. Any SONGS-related costs reflected in this 2016 SDG&E GRC filing, will be based on SDG&E's share of those costs as filed by SCE in its current 2015 GRC and as specifically identified in Mr. De Marco's testimony (Ex. SDG&E-12).

Account E324.3 – Accessory Electric Equipment

This account includes installed auxiliary generating apparatus, conversion equipment, and equipment used primarily in connection with the control and switching of electric energy produced by nuclear power, and the protection of electric circuits and equipment, specifically at SONGS. Any SONGS-related costs reflected in this 2016 SDG&E GRC filing, will be based on SDG&E's share of those costs as filed by SCE in its current 2015 GRC and as specifically identified in Mr. De Marco's testimony (Ex. SDG&E-12).

Account E325.3 – Miscellaneous Power Plant Equipment

This account includes installed miscellaneous equipment in and about the nuclear generating plant devoted to general station use, and which is not properly includible in any of the foregoing nuclear-power production accounts, specifically at SONGS. Any SONGS-related costs reflected in this 2016 SDG&E GRC filing, will be based on SDG&E's share of those costs as filed by SCE in its current 2015 GRC and as specifically identified in Mr. De Marco's testimony (Ex. SDG&E-12).

C. Electric Generation Accounts – Other Production

1. Palomar Facilities – PA

As described in detail (A.1.) above, SDG&E operates a combined cycle generation plant at Palomar. The identified FERC accounts below include installed structures and improvements used in connection with the "other power" generation feature at the Palomar site. Palomar is configured so that it may operate using either of the combustion turbines alone (referred to as "other power"), or one combustion turbine and the steam turbine. The configuration is referred to as a combined cycle plant, and is typical of modern high-efficiency plant installations of this capacity in use by utilities and merchant generators throughout the U.S. and abroad.

The Life Span-Forecast method was used for this Palomar facility and the assets in these groupings and/or FERC accounts will concurrently retire at a forecasted year in the future. Along with other power generation, these FERC accounts capture the assigned combined-cycle portion of the Palomar site. These accounts have individually forecasted end-lives. The forecasted life for the Palomar generation unit was authorized during the 2008 GRC and re-confirmed in the 2012 GRC decision matching the steam generation PA FERC accounts at 30 years. Because it is still early in its life cycle, not enough historical information is available to deviate from this authorized direction. Thus, SDG&E recommends that the forecast lives for these assets remain at the current authorized life using the SQ Iowa curve.

Account E341 – Structures and Improvements - PA

This account includes installed structures and improvements used in connection with "other power" generation feature at the Palomar site. Assets can include foundations, buildings, containers, racks, cathodic protection, alarms, drainage and monitors. Based on the S&L Study for this FERC account E341, the costs associated with removing and disposing of the structures and improvements used in connection with "other power" generation at Palomar will generate a future net salvage value of <1%>. SDG&E is requesting to hold future net salvage value at the currently authorized negative rate of <1%>.

Account E342 – Fuel Holders, Producers, and Accessories - PA

This account includes installed fuel handling and storage equipment used between the point of fuel delivery to the station and the intake pipe through which fuel is directly drawn to the engine, also the cost of gas producers and accessories devoted to the production of gas for use in prime movers (main power source) driving main electric generators. Based on the S&L

Study for this FERC account E342, the costs associated with removing and disposing of the fuel handling and storage equipment, gas producers and accessories related to the main electric generators will generate a future net salvage value of <2%>. Thus, SDG&E is requesting to hold future net salvage at the currently authorized negative net salvage rate of <2%>.

Account E343 – Prime Movers - PA

This account includes installed diesel or other prime movers devoted to the generation of electric energy, together with their auxiliaries (air systems, water systems, & holding tanks). Based on the S&L Study for this FERC account E343, the costs associated with removing and disposing of the diesel or other prime movers devoted to the generation of electric energy, together with their auxiliaries will generate a future net salvage value of 0%. Thus, SDG&E is requesting to hold future net salvage at the currently authorized net salvage rate of 0%.

Account E344 – Generators - PA

This account includes installed diesel or other power driven main generators. Also included are the generator cooling system, air cooling and washing apparatus, air fans, accessories, air ducts, and field rheostats and connections for self-excited units and excitation system when identified with the generating unit. Based on the S&L Study for this FERC account E344, the costs associated with removing and disposing of the diesel or other power driven main generators, including generator cooling systems, air cooling and washing apparatus, air fans and accessories, and associated air ducts will generate a future net salvage value of <0.5%>. Thus, SDG&E is requesting to hold the currently authorized negative net salvage rate at <0.5%>.

Account E345 – Accessory Electric Equipment - PA

This account includes installed auxiliary generating apparatus, conversion equipment, and equipment used primarily in connection with the control and switching of electric energy produced in other power generating stations, and the protection of electric circuits and equipment, except electric motors used to drive equipment included in other accounts. Based on the S&L Study for this FERC account E345, the costs associated with removing and disposing of the auxiliary generating apparatus, conversion equipment, and equipment used primarily in connection with the control and switching of electric energy produced in other power generating stations will generate a future net salvage value of <2%>. Thus, SDG&E is requesting to hold the currently authorized negative net salvage rate at <2%>.

Account E346 – Miscellaneous Power Plant Equipment - PA

This account includes installed miscellaneous equipment in and about the other power generating plant, devoted to general station use, and not properly included in any of the foregoing other power production accounts. Based on the S&L Study for this FERC account E346, the costs associated with removing and disposing of the miscellaneous equipment in and about the other power generating plant, devoted to general station use will generate a future net salvage value of 0%. Thus, SDG&E is requesting to hold the currently authorized net salvage rate at 0%.

2. Miramar Facilities – MMI and MMII

There are two (2) smaller production generation units in service and operated by SDG&E. Both are at Miramar, which is located at the Miramar Energy Facility, in central San Diego, and consists of two simple-cycle GE LM 6000 combustion turbines. The Miramar facility is used for peaking duty and is capable of generating a combined 92 MW. The facility uses the latest generation of peaking turbines with selective catalytic reduction for NO_x reduction. The Miramar compressors and turbines can be started remotely from the Palomar control room and are operated and maintained by personnel based out of the Palomar Energy Center. MMI was brought on-line in 2005 while MMII was added in 2009.

The Life Span-Forecast method was used for these FERC accounts and the assets in these groupings will concurrently retire at a forecasted year in the future. These accounts have an individually forecasted end-life for each location. The average service life was authorized during the last GRC for these Miramar peaker generation units at 25 years. Because it is still early in their life cycles, not enough historical information is available to deviate from this authorized direction. Thus, SDG&E recommends that the forecast life for these assets remain at the current authorized life using the SQ Iowa Curve.

Account E341 – Structures and Improvements – MMI and MMII

This account includes installed structures and improvements used in connection with other power generation at Miramar. Based on the S&L Study for FERC account E341, the costs associated with removing and disposing of the structures and improvements used in connection with other power generation results in a future net salvage value of <1%>. Thus, SDG&E is requesting to hold the currently authorized negative net salvage rate at <1%>.

Account E342 – Fuel Holders, Producers, and Accessories – MMI and MMII

This account includes installed fuel handling and storage equipment used between the point of fuel delivery to the station and the intake pipe through which fuel is directly drawn to the engine, also the cost of gas producers and accessories devoted to the production of gas for use in prime movers driving main electric generators. Based on the S&L Study for FERC account E342, the costs associated with removing and disposing of the fuel handling and storage equipment, gas producers and accessories related to the main electric generators results in a future net salvage value of <2%>. Thus, SDG&E is requesting to hold the currently authorized negative net salvage rate at <2%>.

Account E343 – Prime Movers – MMI and MMII

This account includes installed diesel or other prime movers devoted to the generation of electric energy, together with their auxiliaries. Based on the S&L Study for FERC account E343, the costs associated with removing and disposing of the diesel or other prime movers devoted to the generation of electric energy, together with their auxiliaries results in a future net salvage value of 0%. Thus, SDG&E is requesting to hold the currently authorized net salvage rate at 0%.

Account E344 – Generators – MMI and MMII

This account includes installed diesel or other power driven main generators. Also included are the generator cooling system, air cooling and washing apparatus, air fans, accessories, air ducts, and field rheostats and connections for self-excited units and excitation system when identified with the generating unit. Based on the S&L Study for FERC account E344, the costs associated with removing and disposing of the diesel or "other power" driven main generators, including generator cooling systems, air cooling and washing apparatus, air fans and accessories, and associated air ducts results in a future net salvage value of <0.5%>. Thus, SDG&E is requesting to hold the currently authorized negative net salvage rate at <0.5%>.

Account E345 – Accessory Electric Equipment – MMI and MMII

This account includes installed auxiliary generating apparatus, conversion equipment, and equipment used primarily in connection with the control and switching of electric energy produced in other power generating stations, and the protection of electric circuits and equipment, except electric motors used to drive equipment included in other accounts. Based on the S&L Study for FERC account E345, the costs associated with removing and disposing of the

auxiliary generating apparatus, conversion equipment, and equipment used primarily in connection with the control and switching of electric energy produced in other power generating stations results in a future net salvage value of <2%>. Thus, SDG&E is requesting to hold the currently authorized negative net salvage rate at <2%>.

Account E346 – Miscellaneous Power Plant Equipment – MMI and MMII

This account includes installed miscellaneous equipment in and about the other power generating plant, devoted to general station use, and not properly included in any of the foregoing other power production accounts. Based on the S&L Study for FERC account E346, the costs associated with removing and disposing of the miscellaneous equipment in and about the other power generating plant, devoted to general station use results in a future net salvage value of 0%. Thus, SDG&E is requesting to hold the currently authorized net salvage rate at 0%.

3. Desert Star Energy Center Facility - DSEC

As described in detail above, SDG&E operates a combined cycle generation plant at Desert Star Energy Center.

The Life Span-Forecast method was used for these Desert Star Energy Center FERC accounts and assets in this grouping will concurrently retire at a forecasted year in the future. This represents the other power generation portion of the combined-cycle units at the DSEC site. As noted in the Steam generation accounts for Desert Star (E311-E316), the end-life is forecasted at 29 years of operation (i.e. 30 years less the final year needed for decommissioning) and is currently set for the year 2029 using the SQ Iowa curve. Because it is still early in its life cycle, not enough historical information is available to deviate from this proposed end-life. SDG&E recommends that the forecast life for these assets be based on those existing contract parameters (specific to the 2029 end-life) which are driving the SDG&E proposal.

Account E341 – Structures and Improvements - DSEC

This account includes installed structures and improvements used in connection with other power generation specifically at Desert Star Energy Center. As previously discussed in the Steam accounts for the Desert Star Energy Center and based on the S&L Decommission Study for FERC account E341, the costs associated with removing and disposing of the structures and improvements used in connection with other power generation will generate a future net salvage value of <6%>. Thus, SDG&E is proposing a negative net salvage rate of <6%>.

Account E342 – Fuel Holders, Producers, and Accessories - DSEC

This account includes installed fuel handling and storage equipment used between the point of fuel delivery to the station and the intake pipe through which fuel is directly drawn to the engine, also the cost of gas producers and accessories devoted to the production of gas for use in prime movers driving main electric generators. As previously discussed in the Steam accounts and based on the S&L Decommission Study for this FERC account, the costs associated with removing and disposing of the fuel handling and storage equipment, gas producers and accessories related to the main electric generators will generate a future net salvage value of <6%>. Thus, SDG&E is proposing a negative net salvage rate of <6%>.

Account E343 – Prime Movers - DSEC

This account includes installed diesel or other prime movers devoted to the generation of electric energy, together with their auxiliaries. As previously discussed in the Steam accounts and based on the S&L Decommission Study for this FERC account, the costs associated with removing and disposing of the diesel or other prime movers devoted to the generation of electric energy, together with their auxiliaries will generate a future net salvage value of <6%>. Thus, SDG&E is proposing a net salvage rate of <6%>.

Account E344 – Generators - DSEC

This account includes installed diesel or other power driven main generators. Also included are the generator cooling system, air cooling and washing apparatus, air fans, accessories, air ducts, and field rheostats and connections for self-excited units and excitation system when identified with the generating unit. As previously discussed in the Steam accounts and based on the S&L Decommission Study for this FERC account, the costs associated with removing and disposing of the diesel or other power driven main generators, including generator cooling systems, air cooling and washing apparatus, air fans and accessories, and associated air ducts will generate a future net salvage value of <6%>. Thus, SDG&E is proposing a negative net salvage rate of <6%>.

Account E345 – Accessory Electric Equipment - DSEC

This account includes installed auxiliary generating apparatus, conversion equipment, and equipment used primarily in connection with the control and switching of electric energy produced in other power generating stations, and the protection of electric circuits and equipment, except electric motors used to drive equipment included in other accounts. As

previously discussed in the Steam accounts and based on the S&L Decommission Study for this FERC account, the costs associated with removing and disposing of the auxiliary generating apparatus, conversion equipment, and equipment used primarily in connection with the control and switching of electric energy produced in other power generating stations will generate a future net salvage value of <7%>. For this specific Desert Star Energy Center FERC account, the future net salvage value percentage is slightly higher to properly reflect the estimates presented by the S&L Decommission Study results. Thus, SDG&E is proposing a negative net salvage rate of <7%> for this Desert Star Energy Center FERC account.

Account E346 – Miscellaneous Power Plant Equipment - DSEC

This account includes installed miscellaneous equipment in and about the other power generating plant, devoted to general station use, and not properly included in any of the foregoing other power production accounts. Based on the S&L Decommission Study for this FERC account, the costs associated with removing and disposing of the miscellaneous equipment in and about the other power generating plant, devoted to general station use will generate a future net salvage value of <6%>. Thus, SDG&E is proposing a net salvage rate of <6%>.

4. Cuyamaca Peak Energy Plant - CPEP

On January 1st, 2012, SDG&E took ownership of this Cuyamaca facility. Placed in service in 2002, this CPEP facility is an existing peaker power plant located on SDG&E's property at its El Cajon substation. The facility is a 52 MW single unit simple-cycle peaking power plant, with a California Independent System Operator Net Qualified Capacity rating of 42.2 MW.

The Life Span-Forecast method was used for these FERC account and assets in these groupings will concurrently retire at a forecasted year in the future. These accounts have individually forecasted end-lives. The average service life is being matched to the other production units currently existing at Miramar at 25 years. Because it is still early in its life cycle, not enough historical information is available to deviate from this proposed direction. SDG&E recommends that the forecast life for these assets be established at 25 years using the SQ Iowa Curve.

Account E341 – Structures and Improvements - CPEP

This account includes installed structures and improvements used in connection with other power generation at Cuyamaca. Based on the S&L Decommission Study for this FERC account (see the two Miramar units), the costs associated with removing and disposing of the structures and improvements used in connection with other power generation results in a future net salvage value of <1%>. Thus, SDG&E is requesting the future net salvage for other production at Cuyamaca be also authorized at this <1%>.

Account E342 – Fuel Holders, Producers, and Accessories - CPEP

This account includes installed fuel handling and storage equipment used between the point of fuel delivery to the station and the intake pipe through which fuel is directly drawn to the engine, also the cost of gas producers and accessories devoted to the production of gas for use in prime movers driving main electric generators. Based on the S&L Decommission Study for this FERC account (see the two Miramar units), the costs associated with removing and disposing of the fuel handling and storage equipment used in connection with other power generation results in a future net salvage value of <2%>. Thus, SDG&E is requesting the future net salvage for other production at Cuyamaca be also authorized at this <2%>.

Account E343 – Prime Movers - CPEP

This account includes installed diesel or other prime movers devoted to the generation of electric energy, together with their auxiliaries. Based on the S&L Study for this FERC account (see the two Miramar units), the costs associated with removing and disposing of these diesel and/or other prime movers used in connection with other power generation results in a future net salvage value of 0%. Thus, SDG&E is requesting the future net salvage for other production at Cuyamaca be also authorized at this 0%.

Account E344 – Generators - CPEP

This account includes installed diesel or other power driven main generators. Also included are the generator cooling system, air cooling and washing apparatus, air fans, accessories, air ducts, and field rheostats and connections for self-excited units and excitation system when identified with the generating unit. Based on the S&L Decommission Study for this account (see the two Miramar units), the costs associated with removing and disposing of the diesel or other power driven main generators used in connection with other power generation

results in a future net salvage value of <0.50%>. Thus, SDG&E is requesting the future net salvage for other production at Cuyamaca be also authorized at this <0.50%>.

Account E345 – Accessory Electric Equipment - CPEP

This account includes installed auxiliary generating apparatus, conversion equipment, and equipment used primarily in connection with the control and switching of electric energy produced in other power generating stations, and the protection of electric circuits and equipment, except electric motors used to drive equipment included in other accounts. Based on the S&L Decommission Study for this FERC account (see the two Miramar units), the costs associated with removing and disposing of the auxiliary generating apparatus, conversion equipment, and equipment used primarily in connection with the control and switching of electric energy produced in other power generating stations used in connection with other power generation results in a future net salvage value of <2.0%>. Thus, SDG&E is requesting the future net salvage for other production at Cuyamaca be also authorized at this <2.0%>.

Account E346 – Miscellaneous Power Plant Equipment - CPEP

This account includes installed miscellaneous equipment in and about the other power generating plant, devoted to general station use, and not properly included in any of the foregoing other power production accounts. Based on the S&L Decommission Study for this FERC account (see the two Miramar units), the costs associated with removing and disposing of the miscellaneous equipment in and about the other power generating plant and other assets used in connection with other power generation results in a future net salvage value of 0%. Thus, SDG&E is requesting the future net salvage for other production at Cuyamaca be also authorized at this 0%.

5. Solar Generation Facilities

Solar generation is evolving within the SDG&E infrastructure. Photo-Voltaic units have and are being installed at specific locations throughout the SDG&E service territory. As of April 2013, numerous projects across the region generate nearly 4.4 MW of energy. These projects include energy systems owned by SDG&E that provide locally-generated energy, delivered to the grid to help power the local community. Through this Sustainable Communities Program, SDG&E is partnering with non-profit organizations, government, schools, universities, and businesses to help them integrate clean energy as part of their energy efficient and sustainably

designed buildings. Environmental impacts always play a key role during planning for these assets.

Current forecasted life for these assets has been established in the industry at 25 years using the SQ Iowa Curve. No future net salvage is being proposed nor requested due to the absence of data to the contrary.

Account E341.10 – Structures and Improvements – Solar

No assets have been acquired, installed nor identified for this specific solar FERC account through 12/31/2013.

Account E342.10 – Fuel Holders, Producers, and Accessories – Solar

No assets have been acquired, installed, nor identified for this specific solar FERC account through 12/31/2013.

Account E343.10 – Prime Movers – Solar

No assets have been acquired, installed, nor identified for this specific solar FERC account through 12/31/2013.

Account E344.10 – Generators – Solar

Typical assets installed in this Solar FERC account are the photo voltaic panels, racks to hold them, generators, chargers and fuel cells. Again, the current forecasted life for these assets has been established in the industry at 25 years using the SQ Iowa Curve which reflects the SDG&E proposal. No future net salvage is being proposed nor requested due to the absence of data to the contrary.

Account E345.10 – Accessory Electric Equipment – Solar

Typical assets installed in this Solar FERC account are the inverters, wire, conduits, and dataloggers. Again, the current forecasted life for these assets has been established in the industry at 25 years using the SQ Iowa Curve which reflects the SDG&E proposal. No future net salvage is being proposed nor requested due to the absence of data to the contrary.

Account E346.10 – Miscellaneous Power Plant Equipment – Solar

No assets have been acquired, installed, nor identified for this specific solar FERC account through 12/31/2013.

6. Wind Generation Facilities

Wind generation units are planned for installation at specific locations throughout the SDG&E service territory. The current infrastructure grid was not designed to accommodate

intermittent generation like wind and solar, which only provides energy when nature allows. Conventional generation like natural gas fired power plants can be throttled up or down to match demand. With wind and solar this is not the case. The CPUC has mandated that SDG&E have 33% renewable resources in its portfolio by 2020. Therefore, we need to prepare the grid now to be able to handle these increased levels of intermittent resources like wind and solar energy. Environmental impacts do play a key role during planning for these assets. Specifically, for wind generation, monitoring of the infrastructure's effect on the surrounding habitat continues, with concessions made to soften any adverse impact. Current forecasted life for these assets has been established in the industry at 20 years using the SQ Iowa Curve. No future net salvage is being proposed nor requested due to the absence of data to the contrary.

Account E341.20 – Structures and Improvements – Wind

No assets have been acquired, installed nor identified for this specific wind FERC account through 12/31/2013.

Account E342.20 – Fuel Holders, Producers, and Accessories – Wind

No assets have been acquired, installed nor identified for this specific wind FERC account through 12/31/2013.

Account E343.20 – Prime Movers – Wind

No assets have been acquired, installed nor identified for this specific wind FERC account through 12/31/2013.

Account E344.20 – Generators – Wind

At 12/31/2013, wind turbines with generators have been installed at the Santa Ysabel substation. Future plans continue to address more wind infrastructure assets at other SDG&E locations. Again, current forecasted life for these assets has been established in the industry at 20 years using the SQ Iowa Curve. No future net salvage is being proposed nor requested due to the absence of data to the contrary.

Account E345.20 – Accessory Electric Equipment – Wind

No assets have been acquired, installed nor identified for this specific wind FERC account through 12/31/2013.

Account E346.20 – Miscellaneous Power Plant Equipment – Wind

No assets have been acquired, installed nor identified for this specific wind FERC account through 12/31/2013.

7. Energy Storage – Batteries

The FERC has revised the accounting and reporting requirements for batteries under its Uniform System of Accounts for public utilities and licensees and its forms, statements, and reports.[18]

> 78. The existing primary plant accounts do not explicitly provide for recording the original cost of energy storage assets. This can lead to inconsistent accounting and reporting for these assets by utilities subject to the accounting and reporting requirements, making it difficult for the Commission and others to determine costs related to energy storage assets for cost-of-service rate purposes. In addition, the lack of transparency affects interested parties' and including the Commission's ability to monitor these companies operations to prevent and discourage cross-subsidization between cost-based and market-based activities.
>
> 79. To provide more transparency for the costs of energy storage assets, as well as to address the possibility of inconsistent accounting and reporting, we propose creating a new electric plant account and amending two existing electric plant accounts to record the installed cost of energy storage equipment owned by public utilities and licensees. Specifically, we propose a new account within the production functional classification and amending existing accounts within the transmission and distribution functional classifications."
>
> 80. The proposed plant account would be Account 348, Energy Storage Equipment-Production, and the accounts we propose to amend are existing Account 351, (renamed below) and Account 363, Storage Battery Equipment. Account 351 is a reserve account and is not currently being used. The Commission proposes to rename Account 351 as Energy Storage Equipment-Transmission. The current instructions of Account 363 provides for the inclusion of the cost of storage battery equipment used for the purpose of supplying electricity to meet emergency or peak demands. The Commission proposes to amend the instructions of Account 363 to expand the type of energy storage assets that can be recorded in the account and to recognize the unique operating characteristics of energy storage assets, which may provide services other than only supplying electricity. In addition, we also propose to rename Account 363 as Energy Storage Equipment- Distribution.
>
> 81. The Commission proposes that the instructions to the accounts provide for recording the cost of installed energy storage assets based on the function or purpose the equipment serves. Further, we propose that in instances where an

[18] July 18, 2013 - Item E-22: FERC revises rule for Sale of Ancillary Services, Reporting for Electric Storage Technologies Order No. 784

energy storage asset is used to perform more than one function or purpose, the cost of the asset shall be allocated among production, transmission, and distribution plant based on the services provided by the asset and the allocation of the asset's cost through cost based rates approved by a relevant regulatory agency, federal or state. For example, if a relevant State Commission under its own retail rate-setting authority approves the recovery of 25 percent of the cost installed of the storage device through the distribution component of retail rates, then we would expect 25 percent of the cost installed of the asset to be allocated to distribution plant for accounting and reporting purposes and we would expect distribution-related O&M and other accounting and reporting entries to likewise match relevant decisions made in the State Commission rate proceeding. If other portions of the cost installed are also approved for inclusion in cost-based rates at either a state or federal level, then the relevant decisions in those state or federal proceedings would apply to accounting and reporting entries as well. The Commission seeks comments on these aspects of our proposal.

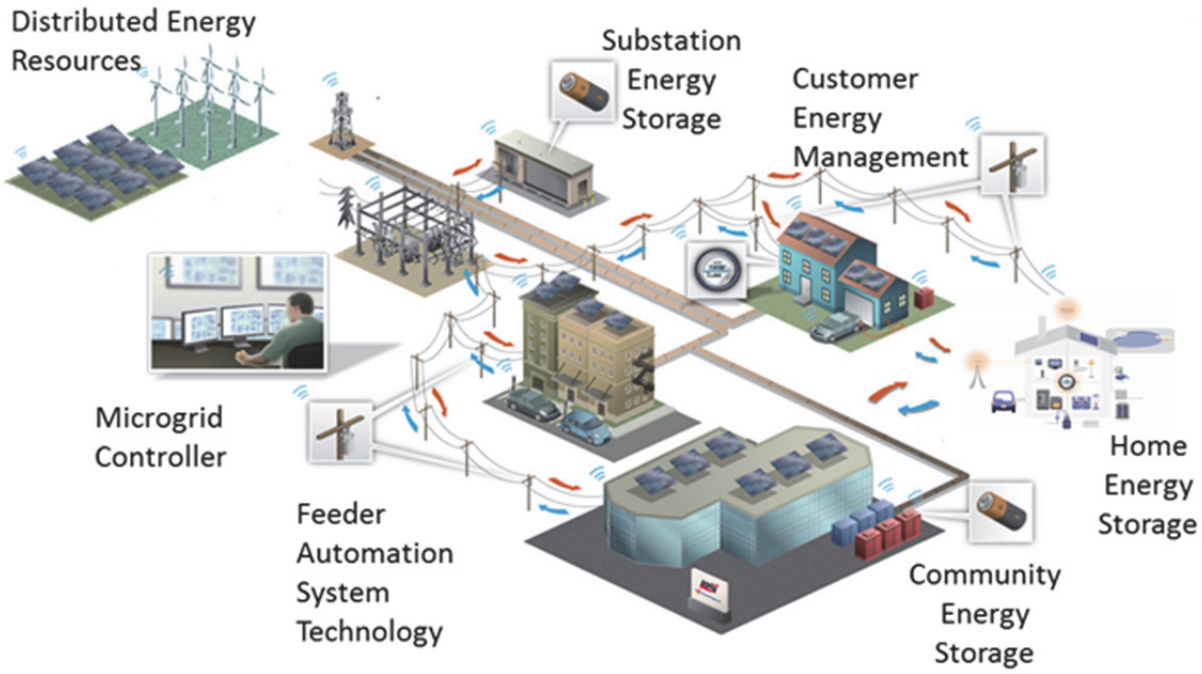
82. Additionally, the Commission proposes that the original cost of an energy storage asset and other amounts associated with the original cost of the asset (e.g., accumulated depreciation expenses and accumulated deferred income taxes) initially allocated to specific FERC accounts and later reallocated to other FERC accounts based on services provided by the asset and cost recovery be accounted for in accordance with Electric Plant Instruction No. 12, Transfers of Property. Accordingly, we propose that if the costs of an energy storage asset are included in the development of cost-based rates, then the same allocation of costs the primary rate-setting body used for rate development will also be used to allocate the original cost of the energy storage asset among the various functions for accounting and reporting purposes. The Commission seeks comment on these proposals, including the accounting for the transfer of costs associated with an energy storage asset from one functional classification to another. Finally, we propose that the cost of energy storage assets be charged to depreciation expense using the depreciation rates developed for each function."

"83. Since some energy storage equipment may perform multiple functions on the grid, we propose that public utilities be required to maintain records identifying the types of functions each individual energy storage asset supports and performs.[19].

At the Borrego Springs site, SDG&E set out to create a single circuit "microgrid," an innovative, alternative service delivery model in which distributed energy resources are integrated into the grid and provide support and power in times of emergency. The SDG&E microgrid included diesel generators, substation energy storage, community energy storage, and Price-Driven Load Management ("PDLM"). PDLM refers to a unique demand response method

[19] FERC Docket No. RM11-24-000 & AD10-13-000, Electric Plant, Sections 78-83, pages 54-57.

in which customers establish pre-defined energy consumption rules for their appliances which then automatically respond to price signals received from the utility. Energy storage is critical to the success of the microgrid. For example, batteries play a huge role in meeting demand and preventing outages. The Borrego Springs Microgrid offers a powerful example of what new smart grid technology can do.



As storage (i.e., batteries) begins to be utilized in the SDG&E infrastructure system, it will be established on the books as prescribed by the Uniform System of Accounts (as stated by the aforementioned FERC guidelines). Additions to specified plant accounts (E348, E351, & E363) will occur as the needed functions and system purposes are defined, such as production, transmission, and distribution. Very few batteries have been installed through 2013, but as performance and functions improve, more will be utilized over time.

Account E348 – Energy Storage Equipment-Production - Batteries

As stated by the Uniform System of Accounts:

> A. This account shall include the cost installed of energy storage equipment used to store energy for load managing purposes. Where energy storage equipment can perform more than one function or purpose, the cost of the equipment shall be allocated among production, transmission, and distribution plant based on the services provided by the asset and the allocation of the asset's cost through rates approved by a relevant regulatory agency.

B. Labor costs and power purchase and generation costs incurred to install and energize the equipment are includible on the first installation only.
C. The records supporting this account shall show, by months, the function(s) each energy storage asset supports or performs.

Items would include various battery types (chemical, compressed air, flywheels, superconducting magnetic storage, thermal, and other materials). This list is not exhaustive. No batteries have been established in FERC 348 through December 31, 2013.

351 Energy Storage Equipment -Transmission – Batteries[20]

As stated by the Uniform System of Accounts:

A. This account shall include the cost installed of energy storage equipment used to store energy for load managing purposes. Where energy storage equipment can perform more than one function or purposes, the cost of the equipment shall be allocated among production, transmission, and distribution plant based on the services provided by the asset and the allocation of the asset's cost through rates approved by a relevant regulatory agency.
B. Labor costs and power purchase and generation costs incurred to install and energize the equipment are includible on the first installation only.
C. The records supporting this account shall show, by months, the function(s) each energy storage asset supports or performs.

Items would include various battery types (chemical, compressed air, flywheels, superconducting magnetic storage, thermal, and other materials). This list is not exhaustive. No batteries have been established in FERC 351 through December 31, 2013.

D. Electric FERC Accounts – Electric Distribution

The Distribution System captures all land, structures, conversion equipment, lines, line transformers, and other facilities employed between the primary source of supply (i.e., generating station, or point of receipt in the case of purchased power) and of delivery to customers, which are not includible in the transmission system, whether or not such land, structures, and facilities are operated as part of a transmission system or as part of a distribution system.[21]

The Actuarial method was used as a primary determinant of the average service life for most of the following mortality Electric Distribution FERC accounts, the exceptions being FERC accounts like E363 Batteries, E370.11 Smart Meters, and E370.21 Smart Meter Installations. If

[20] Note that FERC account 'E363 Energy Storage Equipment – Distribution' will be discussed in the section "C. Electric FERC Accounts – Distribution".
[21] Electronic Code of Federal Regulations, e-CFR Data, current as of May 29, 2014.

a methodology other than actuarial is used for any of the following Electric Distribution FERC accounts, it will be noted and addressed. The average remaining lives for these FERC Accounts were then calculated by weighting the remaining life of each vintage year with its surviving plant balance as of December 31, 2013.

Account E361 – Structures and Improvements

This account includes structures and improvements used in connection with electric distribution operations. This would include but is not exclusive to initial grading and clearing of land, foundations, buildings, permanent fixtures, and improvements thereon. The authorized life and Iowa curve resulting from the 2012 GRC is currently 54 R3[22]. Based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 63 R2.5 life/curve. A change in the Iowa curve type is proposed, and the average service life is extended nine (9) years, continuing a trend.

SDG&E is requesting a change from the currently authorized net salvage rate from <100%> to <125%>. The Standard Practice U-4 method of net salvage analysis results in a computed net salvage rate of <332%> (15 year history). More specifically, for eleven of the past twelve years, the percent net salvage rate has been much more negative than the requested <125%> level. Since only 6% of the current plant balance is reflected in retirements for the past 15 years and because the most current year is showing a downward-trend, SDG&E is being very conservative in proposing a limited increase of <25%> above the current authorized future net salvage for FERC account E361, thus proposing <125%>.

Account E362 – Station Equipment

This account includes the cost of installed station equipment, including transformer banks, etc., which are used for the purpose of changing the characteristics of electricity in connection with its distribution. The authorized life and Iowa curve resulting from the 2012 GRC is currently 49 R1.5. Based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 51 R1.5 life/curve. A change in the Iowa curve type is not being proposed, but the average service life is extending two (2) years, continuing a trend.

[22] Iowa Curve historical background and guides for the reader are included as additional WPs in the Supplemental Section of Ex. SDG&E-28-R-CWP.

SDG&E is requesting a change from the currently authorized net salvage rate from <100%> to <125%>. The Standard Practice U-4 method of net salvage analysis results in a computed net salvage rate of <198%> (15 year history). More specifically, for twelve of the past thirteen years, the percent net salvage rate has been much more negative than the requested <125%> level. The current year historical pattern is still showing levels twice that proposed. Since less than 5% of the current plant balance is reflected in retirements for the past 15 years, SDG&E is being very conservative in proposing a limited increase of <25%> above the current authorized future net salvage for FERC account E362, thus proposing <125%>.

Account E363 – Energy Storage Equipment - Distribution - Batteries

As stated by the Uniform System of Accounts (USofA):[23]

> A. This account shall include the cost installed of energy storage equipment used to store energy for load managing purposes. Where energy storage equipment can perform more than one function or purpose, the cost of the equipment shall be allocated among production, transmission, and distribution plant based on the services provided by the asset and the allocation of the asset's cost through rates approved by a relevant regulatory agency.
>
> B. Labor costs and power purchase and generation costs incurred to install and energize the equipment are includible on the first installation only.
>
> C. The records supporting this account shall show, by months, the function(s) each energy storage asset supports or performs.

Items would include various battery types (chemical, compressed air, flywheels, superconducting magnetic storage, thermal, and other materials). This list is not exhaustive.

As storage (i.e. batteries) is utilized in the SDG&E infrastructure system, it will be established on the books as prescribed by the Uniform System of Accounts (as stated by the aforementioned FERC guidelines). Additions to specified plant accounts (E348, E351, & E363) will occur as the needed functions and system purposes are defined, such as generation, storage, and distribution. Very few batteries have been installed through 2013 but as performance and functions improve, more will be utilized over time.

The Average Service Life (ASL) for this FERC account was authorized in the SDG&E 2012 GRC at 10 years. As contained in their May 1st, 2011 submittal to the CPUC, PG&E also

[23] July 18, 2013 - Item E-22: FERC revises rule for Sale of Ancillary Services, Reporting for Electric Storage Technologies (USofA) Order No. 784

established a 10 year life reflecting what was authorized in their 2011 GRC settlement.[24] Absent any available historical SDG&E information to the contrary, SDG&E continues to forecast and propose this same ASL for these assets at 10 years using the SQ Iowa Curve. As more batteries are installed and utilized in the SDG&E infrastructure and the history evolves, the average service life will become more apparent. No future net salvage value is being proposed nor requested due to the absence of data to the contrary.

Account E364 – Poles, Towers and Fixtures

This account includes the cost to install poles, towers, and appurtenant fixtures used for supporting overhead distribution conductors and service wires. Fixture components included items such as anchors, head arms, and other guys, including guy guards, guy clamps, strain insulators, pole plates, brackets, cross-arms and braces. The authorized life and Iowa curve resulting from the 2012 GRC is currently 44 R0.5. Based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 47 R0.5 life/curve. A change in the Iowa curve type is not being proposed, but the average service life is extending three (3) years, continuing a trend.

SDG&E is requesting a change from the currently authorized net salvage rate from <95%> to <100%>. The Standard Practice U-4 method of net salvage analysis results in a computed net salvage rate of <109%> (15 year history). More specifically, for six of the past seven years, the percent net salvage rate has been more negative than the requested <100%> level. The current year historical pattern is still showing levels above that proposed. Since less than 12% of the current plant balance is reflected in retirements for the past 15 years, SDG&E is being conservative in proposing a limited increase of <5%> to the current authorized future net salvage for FERC account E364, thus proposing <100%>.

Account E365 – Overhead Conductor and Devices

This account includes the cost to install overhead conductors and devices used for distribution purposes. Items include circuit breakers, conductors, including insulated and bare wires and cables, ground wires, clamps, insulators, including pin, suspension, and other types, and tie wire or clamps. The authorized life and Iowa curve resulting from the 2012 GRC is currently 48 R0.5. Based on additional historic 2010 through 2013 recorded plant account

[24] See May 1st, 2013 letter from PG&E to Ms. Julie Fitch. PG&E submits the authorized current year rates annually to the CPUC.

activity, the 2016 study supports the proposed 55 R0.5 life/curve. A change in the Iowa curve type is not being proposed, but the average service life is extending seven (7) years, continuing a trend.

SDG&E is not requesting a change from the currently authorized net salvage rate of <70%>. The Standard Practice U-4 method of net salvage analysis results in a computed net salvage rate of <72%> (15 year history). More specifically, for six of the past seven years, the percent net salvage rate has been more negative than the requested <70%> level. Since only 9% of the current plant balance is reflected in retirements for the past 15 years, SDG&E is being conservative in proposing no change to the current authorized future net salvage value for this FERC account.

Account E366 – Underground Conduit

This account includes installed underground conduit and tunnels used for housing distribution cables or wires such as conduit, concrete, brick and tile, including iron pipe, fiber pipe, Murray duct, and standpipe on a pole or tower. The authorized life and Iowa curve resulting from the 2012 GRC is currently 53 R2.5. Based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 57 R3 life/curve. A change in the Iowa curve type is being proposed, and the average service life is extending four (4) years, continuing a trend.

SDG&E is requesting a change from the currently authorized net salvage rate of <40%> to <50%>. The Standard Practice U-4 method of net salvage analysis results in a computed net salvage rate of <53%> (15 year history). More specifically, for seven of the past eight years, the percent net salvage rate has been more negative than the requested <50%> level. Since only 7% of the current plant balance is reflected in retirements for the past 15 years, SDG&E is being conservative in proposing a <50%> future net salvage value for this FERC account.

Account E367 – Underground Conductors and Devices

This account includes installed underground conductors and devices used for distribution purposes. Components include such items as circuit breakers, armored conductors, including insulators, insulating materials, splices, potheads, cables in standpipe, and connection from terminal chamber or manhole to insulators on pole. The authorized life and Iowa curve resulting from the 2012 GRC is currently 40 R3. Based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 45 R3 life/curve. A change in the

Iowa curve type is not being proposed, but the average service life is extending five (5) years, continuing a trend.

SDG&E is requesting a change from the currently authorized net salvage rate of <55%> to <65%>. The Standard Practice U-4 method of net salvage analysis results in a computed net salvage rate of <67%> (15 year history). More specifically, for the last five years, the percent net salvage rate has been more negative than the requested <65%> level. Since less than 5% of the current plant balance is reflected in retirements for the past 15 years, SDG&E is being conservative in proposing <65%> future net salvage value for this FERC account.

Account E368.1 – Line Transformers

This account includes installed overhead and underground distribution line transformers and pole type and underground voltage regulators, for use in transforming electricity to the voltage at which it is to be used by the customer, whether actually in service or held in reserve. Components include transformer cut-out boxes, transformer lightning arresters, transformers, line and network, capacitors and network protectors. The authorized life and Iowa curve resulting from the 2012 GRC is currently 33 L0.5. Based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 34 L0.5 life/curve. A change in the Iowa curve type is not being proposed, but the average service life is extending one (1) year, continuing a trend.

SDG&E is requesting a change from the currently authorized net salvage rate of <45%> to <70%>. The Standard Practice U-4 method of net salvage analysis results in a computed net salvage rate of <85%> (15 year history). More specifically, for the last six of the last seven years, the percent net salvage rate has been more negative than the requested <70%> level. Since more than 20% of the current plant balance is reflected in retirements for the past 15 years, SDG&E needs to be less conservative (i.e. less focused on current ratepayer) and more cognizant of intergenerational equity in proposing a more moderate change to the current authorized future net salvage value for this FERC account. Thus, SDG&E is increasing the future net salvage beyond the limit suggested for other FERC accounts to essentially protect the future ratepayer.

Account E368.2 – Capacitors

This account includes items like capacitors and network protectors. Unlike other utilities, SDG&E isolates capacitors in their FERC account analysis. The authorized life and Iowa curve resulting from the 2012 GRC is currently 13 L0. Based on additional historic 2010 through 2013

recorded plant account activity, the 2016 study supports the proposed 12 L0 life/curve. A change in the Iowa curve type is not being proposed, but the average service life is reduced one (1) year.

SDG&E is requesting a change from the currently authorized net salvage rate of <50%> to <70%>. The Standard Practice U-4 method of net salvage analysis results in a computed net salvage rate of <71%> (15 year history). More specifically, for the last five years, the percent net salvage rate has been more negative than the requested <70%> level. Since more than 100% of the current plant balance is reflected in retirements for the past 15 years, SDG&E needs to be less conservative and more cognizant of intergenerational equity in proposing a more moderate change to the current authorized future net salvage for this FERC account. Thus, SDG&E is increasing the future net salvage beyond the limit suggested for other FERC accounts to essentially protect the future ratepayer.

Account E369.1 – Services Overhead

This account includes installed overhead conductors leading from a point where wires leave the last pole of the overhead system or the top of the pole of the distribution line, to the point of connection with the customer's outlet or wiring. Conduit used for overhead service conductors are included. Included items are conduit, insulators, brackets, cables and wires. The authorized life and Iowa curve resulting from the 2012 GRC is currently 50 R1. Based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 55 R0.5 life/curve. A change in the Iowa curve type is being proposed and the average service life is being extended five (5) years.

SDG&E is requesting a change from the currently authorized net salvage rate of <90%> to <110%>. The Standard Practice U-4 method of net salvage analysis results in a computed net salvage rate of <124%> (15 year history). More specifically, for the last five years, the percent net salvage rate has been more negative than the requested <110%> level. Since less than 13% of the current plant balance is reflected in retirements for the past 15 years, SDG&E is being conservative in proposing to limit the future net salvage value increase to <20%> above the current authorized future net salvage value for this FERC account.

Account E369.2 – Services Underground

This account includes installed underground conductors leading from a point where wires leave the last distribution box or manhole to the point of connection with the customer's outlet or wiring. Items include conduit used for underground service, conductors, cables, insulators, and

wires. The authorized life and Iowa curve resulting from the 2012 GRC is currently 48 R3. Based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 53 L4 life/curve. A change in the Iowa curve type is being proposed and the average service life is being extended five (5) years.

SDG&E is requesting a change from the currently authorized net salvage rate of <70%> to <75%>. The Standard Practice U-4 method of net salvage analysis results in a computed net salvage rate of <78%> (15 year history). More specifically, for the last five years, the percent net salvage rate has been more negative than the requested <75%> level. Since less than 5% of the current plant balance is reflected in retirements for the past 15 years, SDG&E is being conservative in proposing to limit the future net salvage value increase to <5%> above the current authorized future net salvage value for this FERC account.

Account E370.1 Meters

This account includes installed meters for use in measuring the electricity delivered to its users, whether actually in service or held in reserve. Historical numbers are directly influenced by the Smart Meter installations that have occurred throughout the SDG&E service territory. Current balances and quantity of meters in this account have dropped dramatically, but the life of the remaining and future assets should continue to reflect the current authorized 2012 GRC parameters. The authorized life and Iowa curve resulting from the 2012 GRC is currently 48 SQ. Based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study continues to support the proposed 48 year average service life but a change in the Iowa curve type is being proposed to reflect the forecasted prospective pattern (R0.5). Thus, a change in the Iowa curve type is being proposed.

SDG&E is not requesting a change from the currently authorized net salvage rate of 0%. There has been a tremendous change in this account over the last few years as Smart Meters have been installed over the entire service territory replacing these legacy meters. The actual recent historical pattern in this account will not represent future activity. This subaccount will continue to house meters (other than Smart Meters) that are needed within the service territory. Without a distinct historical pattern for these remaining meters, the original forecasted average service life at 48 years will continue through this 2016 GRC period, absent future net salvage and until the pattern manifests a change. SDG&E is again being conservative in proposing not to identify any future net salvage value increase for this FERC account.

Account E370.2 Meters Installations

This account includes installation costs for meters used in measuring the electricity delivered to its users. Historical numbers are directly influenced by the Smart Meter installations that have occurred throughout the SDG&E service territory. As noted above, current balances of meter installation costs in this account have dropped dramatically but the life of the remaining and future assets should continue to reflect the current authorized 2012 GRC average service life. The authorized life and Iowa curve resulting from the 2012 GRC is currently 48 SQ. Based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study continues to support the proposed 48 year average service life but a change is warranted for the Iowa curve to more correctly match the forecasted prospective pattern (R0.5). Thus, a change in the Iowa curve type is being proposed.

SDG&E is not requesting a change from the currently authorized net salvage rate of 0%. There has been a tremendous change in this account over the last few years as smart meters have been installed over the entire service territory replacing these legacy meters. The actual recent historical pattern in this account will not represent future activity. This account will continue to house meter installation costs (other than smart) that are needed within the service territory. Without a distinct ongoing historical pattern for these meter installation costs, the original forecasted average service life at 48 years will continue through this 2016 GRC period absent future net salvage until the pattern manifests a change. SDG&E is being conservative in proposing not to identify any future net salvage value increase for this FERC account.

Account E370.11 & .21 Smart Meters ("SM") and SM Installations

These two accounts include installed Smart Meters or devices and appurtenances thereto, used in a more precise measuring of the electricity delivered to its users, whether actually in service or held in reserve. Smart Meter installations have continually occurred throughout the SDG&E service territory from 2009 to present day. Current balances and quantity of smart meters in this account have been consistent with the parallel replacement of legacy meters and their associated installation costs.

Normally the actuarial method would be used to determine the average service life and Iowa curve for these two accounts. That methodology would then calculate the average remaining life for these accounts by weighting the remaining life of each vintage year with its surviving plant balance as of December 31, 2013. But knowing the lack of historical activity,

SDG&E is forecasting the average service life and Iowa curve to remain as authorized in the 2012 GRC. The authorized life and Iowa curve resulting from the 2012 GRC is currently 15 SQ. No changes are proposed for this 2016 GRC from those current authorized parameters.

SDG&E is not requesting a change from the currently authorized net salvage rate of 0%. There has been a tremendous change in this account over the last few years as smart meters have been installed over the entire service territory. The actual recent historical FNS pattern in this account will not represent future activity. But without a distinct historical FNS pattern for these smart meters and their installation costs, the original forecasted average service life at 15 years will continue through this GRC period absent future net salvage until the pattern manifests a change. SDG&E is being very conservative in proposing not to identify any future net salvage value for FERC accounts E370.11 and 370.21.

Account E371 – Installations on Customer Premises

This account includes installed equipment such as cable vaults, commercial lamp equipment, foundations and settings specially provided for equipment included herein, frequency changer sets, motor generator sets, motors, switchboard panels, high or low tension, and wire and cable connections to incoming cables that reside on the customer's side of a meter when the utility incurs such cost and when the utility retains title to and assumes full responsibility for maintenance and replacement of such property. The authorized life and Iowa curve resulting from the 2012 GRC is currently 19 R0.5. Based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 34 R0.5 life/curve. No change in the Iowa curve type is being proposed but the average service life is being extended fifteen (15) years.

SDG&E is not requesting a change from the currently authorized net salvage rate of <90%>. The Standard Practice U-4 method of net salvage analysis results in a computed net salvage rate of <249%> (the 15 year history is influenced greatly by 1999-2001 historical activity). More specifically, for the last four (4) years, the percent net salvage rate has been slightly more negative than the authorized <90%> level. Since only 13% of the current plant balance is reflected in retirements for the past 15 years, SDG&E is being conservative in not proposing any future net salvage value increase above the current authorized future net salvage value for this FERC account.

Account E373.2 – Street Lighting and Signal Systems

This account shall include the cost installed of equipment used wholly for Public Street and highway lighting or traffic, fire alarm, police, and other signal systems. Items can include armored conductors, automatic control equipment, conductors, lamps, ornamental lamp posts, relays, time clocks, switches, and transformers. The authorized life and Iowa curve resulting from the 2012 GRC is currently 32 L0. Based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 36 L0 life/curve. A change in the Iowa curve type is not being proposed, but the average service life is increasing four (4) years.

SDG&E is requesting a change from the currently authorized net salvage rate of <70%> to <85%>. The Standard Practice U-4 method of net salvage analysis results in a computed net salvage rate of <138%> (15 year history). More specifically, for the last six years, the percent net salvage rate has been more negative than the requested <85%> level. Since less than 17% of the current plant balance is reflected in retirements for the past 15 years, SDG&E is being conservative in proposing a moderate change to the current authorized future net salvage value for this FERC account.

E. Electric FERC Accounts – Electric General

The Actuarial method was used as a primary determinant of the average service life for the following Electric General Mortality accounts, with the exception of utilizing the Forecast methodology for FERC account E390 Structures and Improvements. The average remaining life for these FERC accounts is calculated by weighting the remaining life of each vintage year with its surviving plant balance as of December 31, 2013.

Many of the Electric General FERC accounts below have historically been assigned the SQ Iowa Curve, suggesting a similar end-life for all assets within that FERC account. If the current Life/Iowa curve studies reflect a needed departure from that SQ Iowa curve, SDG&E is responsibly reflecting and proposing that change, which in many cases extends the remaining life of those FERC accounts.

Account E390 – Structures and Improvements

This account for structures and improvements shall include the cost of all buildings and facilities to house, support, or safeguard property or persons, including all fixtures permanently attached to and made a part of buildings and which cannot be removed therefrom without cutting into the walls, ceilings, or floors, or without in some way impairing the buildings, and

improvements of a permanent character on or to land. Also include those costs incurred in connection with the first clearing and grading of land and rights-of-way and the damage costs associated with construction and installation of plant.

The Forecast method was used for this FERC account. Assets in this grouping and/or FERC account will retire at a forecasted year in the future. There is no associated interim retirement ratio being experienced by this account at this time. This account has an individually forecasted end-life using a composite from all its locations. Recorded Year 2013 plant record balances were used for this account in the depreciation study, which updated historical plant additions, transfers, and retirements. The work papers detail the authorized and proposed average service life, remaining life, and the calculation of the depreciation rate. The change in the remaining life from the prior 2012 GRC study is influenced by the additional historical years of plant additions and retirements (2010 through 2013) being added to the database. The 2012 GRC authorized life/curve was 30 SQ. For this 2016 GRC, a minimal number of retirements are reflected during the last four years and thus, SDG&E is recommending an extension of the forecasted life to 34 years. Note that, historical records show 3% of the plant balance with vintages greater than 34 years and with that knowledge, a change in the Iowa curve to S4 reflects and accommodates this perspective. SDG&E is now proposing a 34 S4 life/curve for this 2016 GRC. A change in the Iowa curve type is being proposed and the average service life is increasing four (4) years.

The historical negative net salvage in this account has not increased over time as confirmed by the 15 years of statistical data, specifically the last four years since the 2012 GRC. The current 15 year statistical future net salvage study supports a change in negative net salvage for this account downward to <10%> from <25%>. SDG&E proposes this negative net salvage of <10%>.

Account E392 – Transportation Equipment – Trailers

This account includes transportation vehicles used for utility purposes. Items can include automobiles, electrical vehicles, repair cars or trucks, tractors and trailers. The authorized life and Iowa curve resulting from the 2012 GRC is currently 27 SQ. Based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the current authorized life at 27 years but with a new proposed Iowa curve L5 extending the remaining life.

The current net salvage study does not reflect a change in net salvage. Thus, SDG&E requests that net salvage remain at 0% for this FERC account.

Account E393 – Stores Equipment – Other

This account includes equipment used for the receiving, shipping, handling, and storage of materials and supplies. Items can include chain falls, counters, cranes (portable), elevating and stacking equipment (portable), hoists, scales, shelving, storage bins, hand and power driven equipment. The authorized life and Iowa curve resulting from the 2012 GRC is currently 25 SQ and based on additional historic 2010 through 2013 recorded plant account activity. The 2016 study supports the proposed 25 S5 life/curve. While the average service life remains at 25 years, a change in the Iowa curve type is being proposed extending the remaining life.

The current net salvage study does not reflect a change in net salvage. SDG&E requests that net salvage remain at 0% for this FERC account.

Account E394.11 – Portable Tools – Other

This account includes tools, implements, and equipment used in construction, repair work, general shops and garages and not specifically provided for or included in other accounts. Items include air compressors, cable pulling equipment, and concrete mixers. The authorized life and Iowa curve resulting from the 2012 GRC is currently 27 SQ. Based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 27 S6 life/curve. While a change in the Iowa curve type is proposed extending the remaining life, the average service life remains at 27 years.

The current net salvage study does not reflect a change in net salvage. SDG&E requests that net salvage remain at 0% for this FERC account.

Account E394.2 – Shop Equipment

This account includes tools, implements, and equipment used in construction, repair work, general shops and garages and not specifically provided for or included in other accounts. Items include automobile repair shop equipment, battery charging equipment, belts, shafts and countershafts and drill presses. The authorized life and Iowa curve resulting from the 2012 GRC is currently 24 SQ. Based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 26 L4 life/curve. A change in the Iowa curve type is proposed and the average service life increases by two (2) years to 26.

Salvage activity is minimal for this account as reflected in the 15 years of historical data. SDG&E proposes no change in net salvage from the authorized 0% for this FERC account.

Account E395.1 – Laboratory Equipment

This account includes installed laboratory equipment used for general laboratory purposes and not specifically provided for or included in other departmental or functional plant accounts. Items such as ammeters, small batteries, frequency changers, galvanometers, meter-testing equipment, testing panels, voltmeters and other testing, laboratory, or research equipment not provided for elsewhere. The authorized life and Iowa curve resulting from the 2012 GRC is currently 20 SQ. Based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports a change to the proposed 22 L3 life/curve. Thus, a change in the Iowa curve type is proposed, as well as an increase of two (2) years to the proposed average service life of 22 years.

Salvage activity is minimal for this account as reflected in the 15 years of historical data. SDG&E proposes to remain at the current authorized net salvage of 0% for this FERC account.

Account E397.1 – Communication Equipment – Other

This account includes installed other infrastructure assets namely, telephone, telegraph, and wireless equipment for general use in connection with poles and fixtures used wholly for telephone or telegraph wire. Items can include radio transmitting and receiving sets, remote control equipment and lines, small storage batteries, telephone and telegraph circuits, testing instruments, and underground conduit used wholly for telephone or telegraph wires and cable wires. The authorized life and Iowa curve resulting from the 2012 GRC is currently 28 R2. Based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 30 R2 life/curve. No change in the Iowa curve type is proposed, but the proposed average service life extends two (2) years.

The historical negative net salvage in this account is increasing over time as confirmed by the 15 years of statistical historical data. The 2012 GRC authorized amount is a negative net salvage of <15%>. The current 15 year statistical study supports a change in negative net salvage for this account to at least <50%>. Note that nine out of the last eleven years, this proposed level has been exceeded and that the oldest 1999 data is skewing the numbers lower. SDG&E proposes a lesser change (proposed at <50%>) than that currently reflected in the historical study which is reflecting a higher <61%> future net salvage for this FERC account. Though this

proposed future net salvage increase exceeds the conservative limitations as reflected in other FERC accounts, SDG&E has responsibly weighed current and future ratepayer considerations in its proposal for this FERC account.

Account E397.2 – Communication Equipment – SWPL[25]

This account includes installed assets for the Southwest Pipeline ("SWPL") namely, telephone, telegraph, and wireless equipment for general use in connection with poles and fixtures used wholly for telephone or telegraph wire. Items can include radio transmitting and receiving sets, remote control equipment and lines, storage batteries, telephone and telegraph circuits, testing instruments, and underground conduit used wholly for telephone or telegraph wires and cable wires.

The life pattern in this FERC account E397.2 matches closely to that experienced in E397.1 above. While not being able to utilize the actuarial method for this subaccount, its life and curve will be established the same as E397.1. The average remaining life for this account was calculated by weighting the remaining life of each vintage year with its surviving plant balance as of December 31, 2013. The authorized life and Iowa curve resulting from the 2012 GRC is currently 28 R2. Based on the detail presented for E397.1 above, SDG&E proposes the same 30 R2 life/curve. No change in the Iowa curve type is proposed, but the average service life is extending two (2) years.

Again, the historical negative net salvage in this account is increasing over time as confirmed by the 15 years of statistical historical data summarized for both FERC 397 subaccounts. The 2012 GRC authorized amount is a negative net salvage of <15%>. The current 15 year statistical future net salvage value study (combining both E397.1 and E397.2) does support a change in negative net salvage to at least <50%>. Note that nine out of the last eleven years, this proposed level has been exceeded and that the oldest 1999 data is skewing the numbers lower. SDG&E proposes a lesser change (proposed at <50%>) than that currently reflected in the historical study which is reflecting a higher future net salvage value of <61%> for this FERC account. Though this proposed future net salvage increase exceeds the conservative limitations as reflected in other FERC accounts, SDG&E has responsibly weighed current and future ratepayer considerations in its proposal for this FERC account.

[25] SWPL – Southwest Pipeline (Electric Transmission).

Account E397.6 – Communication Equipment – SRPL (Sunrise)[26]

This account includes installed assets for the Sunrise Pipeline ("SRPL") project, namely telephone, telegraph, and wireless equipment for general use in connection with poles and fixtures used wholly for telephone or telegraph wire. Items can include radio transmitting and receiving sets, remote control equipment and lines, small storage batteries, telephone and telegraph circuits, testing instruments, and underground conduit used wholly for telephone or telegraph wires and cable wires.

A recent addition to SDG&E infrastructure with limited history, the life pattern in this FERC account E397.6 is matched to that proposed for E397.1 and E397.2 above. For the 2016 GRC, this Sunrise FERC account will reflect the same proposed 30 R2 life/curve. The average remaining life for this account was calculated by weighting the remaining life of each vintage year with its surviving plant balance as of December 31, 2013.

Though history shows the trend in future net salvage value for both E397.1 and E397.2, there is no current historical data for this subaccount E397.6 to establish either positive or negative salvage. SDG&E is proposing 0% future net salvage for this subaccount in this current 2016 GRC.

Account E398.1 – Miscellaneous Equipment

This account can typically include hospital and infirmary equipment, kitchen equipment, recreation equipment, radios, food service equipment, furnishings, other miscellaneous equipment, and apparatus used in the utility operations, which is not included in any other account as identified in the FERC system of accounts. The authorized life and Iowa curve resulting from the 2012 GRC is currently 15 SQ. Based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 16 L4 life/curve. A change in the Iowa curve type is proposed extending the remaining life, and the average service life increases one (1) year to 16.

Salvage activity is very minimal for this account as reflected in the 15 years of historical data. SDG&E requests that net salvage remain at 0% for this account.

[26] SRPL – Sunrise Pipeline (Electric Transmission).

Account E398.6 – Miscellaneous Equipment – SRPL (Sunrise)

This account includes Sunrise equipment and apparatus used in the utility operations (similar to E398.1 above), which is not included in any other account as identified in the FERC system of accounts.

The life pattern in this FERC account E398.6 will be matched to that proposed for E398.1 above. For the 2016 GRC, this Sunrise account will reflect the same proposed 16 L4 life/curve. Though currently without a plant balance at December 2013, eventually the average remaining life for this account will be calculated by weighting the remaining life of each vintage year with its surviving plant balance.

There is no current historical data for this subaccount E398.6 to establish either positive or negative salvage. SDG&E is proposing 0% future net salvage for this subaccount in the current 2016 GRC.

F. Gas FERC Account – Liquefied Natural Gas ("LNG") Storage

Account G363.6 – LNG Distribution Storage Equipment

This account includes installed equipment used to receive, hold, and re-gasify liquefied natural gas for delivery into the utility's transmission or distribution system. Items can include after-coolers, air compressors, air coolers, alarm systems, blowers, cold box, condensers and control apparatus.

The Forecast method was used for this FERC account. Assets in this grouping and/or FERC account will retire at a forecasted year in the future. There is no current associated interim retirement ratio being experienced by this account. This account has an individually forecasted end life using a composite from all its locations. Recorded Year 2013 plant record balances were used for this account in the depreciation study which updated historical plant additions, transfers, and retirements. The 2012 GRC authorized life/curve was 20 SQ, and the 2016 study continues to forecast the same life at 20 years but SDG&E proposes a change in the Iowa curve to S4 extending the remaining life.

Salvage activity is very minimal for this account as reflected in the 15 years of historical data. SDG&E requests that net salvage remain at 0% for this account.

G. Gas FERC Accounts – Transmission

The Forecast method was used for these FERC accounts. Assets in these groupings and/or FERC accounts will retire at a forecasted year in the future. There is no current associated

interim retirement ratio being experienced by these accounts. These accounts have an individually forecasted end life resulting in a composite derived from all its locations. Recorded Year 2013 plant record balances were used for these accounts in the depreciation study which updated historical plant additions, transfers, and retirements.

Account G366 – Transmission - Structures and Improvements

This account includes structures and improvements used in connection with transmission operations, assets very similar to those reflected in FERC account E390. The change in the remaining life from the 2012 GRC study is influenced by more years of plant additions and very limited retirements (2010 through 2013) being reflected in the database.

The average service lives for structures and improvements at these transmission operation facilities are very difficult to forecast. Unlike some electric generation plants where the entire facility can be reasonably expected to retire at a specific year in the future, these facilities are constantly undergoing specific and focused improvements over time, which can result in very specific retirements. Experience shows that these facilities can support SDG&E for years, but that the refreshments that take place need to be accounted for during their useful lives. The proposed 2016 changes in the Iowa curve (from SQ to S3) will extend the remaining lives of the multiple identifiable assets existing at these facilities to more closely match history. The effect of minimal historical retirements is extending the life four (4) more years to 34. The 2012 GRC authorized life/curve was 30 SQ, and the 2016 study is forecasting the life/curve at 34 S3.

Salvage activity is very minimal for this account as reflected in the 15 years of historical data. While removal activity occurred in 2013, no set pattern can justify a change from the 2012 GRC authorized future net salvage. SDG&E requests that net salvage remain at 0% for this FERC account.

Account G367 – Transmission Mains

This account includes installed transmission system gas mains. Generally, this account consists of large high pressured gas mains of different sizes and types. Items can also include cathodic protection equipment, drip lines and pots, pipe coating, other pipe and fittings, pipe supports, anchors and valves. The 2012 GRC authorized life/curve was 45 SQ and the 2016 study continues to forecast the average service life at 45 but is identifying a new Iowa Curve S4, which extends the remaining life to more closely match history.

SDG&E filed its Pipeline Safety Enhancement Plan ("PSEP") in August 2011[27], proposing a comprehensive two-phase plan to enhance pipeline safety over the utility's 250 miles of gas transmission lines. Phase 1 is focused on populated areas and would be implemented over a ten-year period (through 2022). Phase 2 would cover unpopulated areas and will be filed in detail at a later date. Records will be updated, pigs will be launched to inspect the system, and subsequent system changes will evolve from this activity. Subsequent GRCs will be capturing this activity and studies will be updated reflecting the depreciation impact.

Initial activity related to the PSEP project is being reflected in the 2011-2013 recorded numbers. While removal costs are also starting to be captured in the recorded numbers, the subsequent timing related to the associated retirements is expected as each phase of the project is completed. This current mismatch is skewing the future net salvage value ratios in the 15 year historical view. Thus, SDG&E will stay conservative in this 2016 GRC to minimize the current impact and will be in a better position to update future net salvage value in the next GRC. Knowing that retirements will follow as projects are completed, SDG&E is limiting its proposed future net salvage value at <25%> from the previous level of <5%> which was authorized in the recent 2012 GRC decision. Though this proposed future net salvage increase exceeds the conservative limitations as reflected in other FERC accounts, SDG&E has responsibly weighed current and future ratepayer considerations in its proposal for this FERC account. SDG&E needs to be less conservative (i.e. less focused on current ratepayer) and more cognizant of intergenerational equity in proposing a more moderate change to the current authorized future net salvage value for this FERC account. Thus, SDG&E is increasing the future net salvage beyond the limit suggested for other FERC accounts to essentially protect the future ratepayer.

Account G368 – Compressor Station Equipment

This account includes installed compressor station equipment and associated appliances used in connection with transmission system operations. Items can include boiler plant, coal handling and ash handling equipment for steam powered compressor stations, compressed air system equipment including auxiliaries, foundations, guard rails and enclosures. Other items are electric system equipment, including generating equipment and driving units, power wiring, transformers, regulators, and battery equipment.

[27] The Pipeline Safety Enhancement Plan (PSEP) was filed August 2011, Rulemaking 11-02-09, and SCG & SDG&E requested approval and recovery of revenue requirements for years 2011-2015.

The average service life for Compressor Station assets at the gas transmission operation facilities are also very difficult to forecast. Unlike some electric generation plants where the entire facility can reasonably be expected to retire at a specific year in the future, these gas facilities are constantly undergoing specific and focused improvements over time along with their corresponding retirements. Experience shows that these facilities can support SDG&E for years, but that the refreshments that take place need to be accounted for during their lives. The proposed 2016 changes in the Iowa curve (from SQ to S3) will extend the remaining lives of the multiple identifiable assets existing at these compressor facilities, more closely matching history. The historical retirement pattern is extending the life eight (8) more years to 35. The 2012 GRC authorized life/curve was 27 SQ, and the 2016 GRC study is both forecasting and SDG&E is proposing a change to the life/curve at 35 S3.

There has been no retirement or removal pattern to support a solid net salvage rate going forward (less than 1% of the current plant balance is reflected in retirements for the past 15 years). SDG&E will remain conservative in their proposed net salvage rate. Thus, while the actual salvage study definitely reflects a negative net salvage rate closer to <45%>, SDG&E is requesting that negative net salvage be reduced from the authorized <25%> level to <10%>, reflecting the more current pattern.

Account G369 – Measuring and Regulating Station Equipment

This account includes installed meters, gauges, and other equipment used in measuring or regulating gas in connection with transmission system operations. Items can include automatic control equipment, boilers, odorizing equipment, heaters, gas cleaners, scrubbers, separators, dehydrators, gauges and instruments, including piping, fittings, wiring, and panel boards.

The Forecast method was used for this FERC account. Assets in this grouping and/or FERC account will retire at a forecasted year in the future. There is no current associated interim retirement ratio being experienced by this account. This account has an individually forecasted end life resulting in a composite derived from all its locations. Recorded Year 2013 plant record balances were used for this account in the depreciation study which updated historical plant additions, transfers, and retirements. The change in the remaining life from the 2012 GRC study is influenced by more years of plant additions and very limited retirements (2010 through 2013) being added to the database.

The average service lives for Measuring and Regulating Station assets at gas transmission operation facilities are historically very difficult to forecast. These gas facilities are constantly undergoing specific and focused improvements over time along with their corresponding retirements. Experience shows that these facilities can support SDG&E for years, but that the refreshments that take place need to be accounted for during their lives. Equipment at these sites is closely monitored and constantly updated to support the safety and reliability required. The proposed 2016 changes in the Iowa curve (from SQ to S3) will extend the remaining lives of the multiple identifiable assets existing at these M&R Station facilities, more closely matching history. While the pattern of historical retirements has accelerated the last few years, the constant surveillance (as noted above at these sites) is extending the life eight (8) years to 31. The 2012 GRC authorized life/curve was 23 SQ, and based on the 2016 GRC study, a life/curve at 31 S3 is proposed.

There has been no retirement or removal pattern to support a solid net salvage rate going forward (less than 1% of the current plant balance is reflected in retirements for the past 15 years). SDG&E will remain conservative in their proposed net salvage rate. While the actual salvage study definitely reflects a negative net salvage rate closer to <17%>, SDG&E is requesting that negative net salvage remain at the current authorized <5%> level for this FERC account.

H. Gas FERC Accounts – Distribution

The Distribution System includes the gas mains which are provided primarily for distributing gas within a distribution area, together with land, structures, valves, regulators, services and measuring devices, including the mains for transportation of gas from production plants or points of receipt located within such distribution area to other points therein. For companies like SDG&E which own both transmission and distribution facilities on a continuous line, the distribution system begins at the outlet side of the equipment which meters or regulates the entry of gas into the distribution system and ends with and can include property on the customer's premises. The distribution system does not include storage land, structures, or equipment.

Unless noted differently within each FERC account discussion below, the Actuarial method was used as a primary determinant of the average service life for these mortality

accounts. The average remaining life for these accounts was calculated by weighting the remaining life of each vintage year with its surviving plant balance as of December 31, 2013.

Account G375 – Structures and Improvements

This account includes structures and improvements used in connection with gas distribution operations. Structures and improvements shall include the cost of all buildings and facilities to house, support, or safeguard property or persons, including all fixtures permanently attached to and made a part of buildings and which cannot be removed therefrom without cutting into the walls, ceilings, or floors, or without in some way impairing the buildings, and improvements of a permanent character on or to land. Also include those costs incurred in connection with the first clearing and grading of land and rights-of-way, and the damage costs associated with construction and installation of plant.

The Forecast method not actuarial was used for this FERC account. Assets in this FERC account will retire at a forecasted year in the future. There is no current associated interim retirement ratio being experienced by this account. This account has an individually forecasted end life resulting in a composite derived from all its locations. Recorded Year 2013 plant record balances were used for this account in the depreciation study which updated historical plant additions, transfers, and retirements.

This particular FERC account has shown minimal and/or no additions, or retirements during the recent past. The 2012 GRC authorized life/curve is 44 SQ, and while the average service life remains proposed at 44 years, the Iowa curve moves to S3, essentially extending the remaining life.

Salvage activity is non-existent for this account as reflected in the 15 years of historical data. SDG&E requests that net salvage remain at 0% for this FERC account.

Account G376 – Gas Mains

Typical construction costs involve pipe, fittings, and wrap, drip lines and pots, electrolysis tests, pipe coating, as well as, cathodic protection, rectifier and anode bed installations. The authorized life and Iowa curve resulting from the 2012 GRC is currently 60 S1 and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 GRC study supports the proposed 69 R3 life/curve. A change in the Iowa curve type is proposed, and the average service life increases nine (9) years to 69.

Removal costs typically involve excavation, re-compaction, vegetation removed and replaced, asbestos issues, extraction of pipe, salvage disposition of that pipe, slurry added to any abandoned pipe, and replacement of native dirt to ensure proper compaction and support of permanent paving. Environmental issues will also be addressed by safely containing and removing brine and liquid sediment from operations, dirt sent to appropriate landfill, and proper disposal of the non-reusable pipe and fittings. While the current net salvage study supports a negative net salvage rate closer to <70%>, SDG&E, being observant of the fact that the recent years' recorded activity does not display a uniform pattern and that any dramatic swing in future net salvage can/will have an impact on current ratepayers, proposes that negative net salvage move to a more conservative <55%> from the authorized <45%> for this FERC account.

Account G378 – Measuring and Regulating Station Equipment

This account includes installed meters, gauges and other equipment used in measuring and regulating gas in connection with distribution system operations other than the measurement of gas deliveries to customers. Items include automatic control equipment, gauges and instruments, governors or regulators, meters, odorizing equipment, piping and pressure relief equipment.

The authorized life and Iowa curve resulting from the 2012 GRC is currently 42 R1.5 and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 GRC study supports the newly proposed 47 R2 life/curve. A change in the Iowa curve type is proposed, and the average service life increases five (5) years to 47.

There has been no retirement or removal pattern to support a solid net salvage rate going forward (less than 1% of the current plant balance is reflected in retirements for the past 15 years). There may be additional retirement and removal activity available for the next GRC, but right now SDG&E will remain conservative in its proposed net salvage rate. While the actual salvage study does reflect a negative net salvage rate higher than proposed, SDG&E is requesting that negative net salvage be limited to <25%> from the current authorized <15%> level for this FERC account. SDG&E needs to be less conservative (i.e. less focused on current ratepayer) and more cognizant of intergenerational equity in proposing a more moderate change to the current authorized future net salvage value for this FERC account. Thus, SDG&E is increasing the future net salvage beyond the limit suggested for other FERC accounts to essentially protect the future ratepayer.

Account G380 – Gas Services

This account includes installed service pipes and accessories leading to the customers' premises. A complete service begins with the connection on the main and extends to but does not include the connection with the customer's meter. A stub service extends from the main to the property line, or the curb stop. Items can include curb valves and curb boxes, pipe and fittings, including saddle, tee, or other fittings on street mains, pipe coating, service drips, and service valves. The authorized life and Iowa curve resulting from the 2012 GRC is currently 48 R2.5 and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 GRC study supports the proposed 65 R2.5 life/ curve. No change in the Iowa curve type is proposed, but the average service life increases seventeen (17) years to 65.

The net salvage study in the 2012 GRC filing substantiated and resulted in an authorized <75%>. In the current net salvage study, negative net salvage reflects <74%>. SDG&E is conservatively proposing a reduction to <70%> from the current authorized <75%> for this FERC account.

Account G381 – Meters and Regulators

This account includes installed meters or devices and appurtenances thereto, for use in measuring gas delivered to users, whether actually in service or held in reserve. Items can include meters, including badging and initial testing. The authorized life and Iowa curve resulting from the 2012 GRC is currently 44 L1.5 and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 GRC study supports the proposed reduction to 41 L1.5 life/ curve. No change in the Iowa curve type is proposed, but the average service life decreases three (3) years to 41.

Salvage activity is very minimal for this account as reflected in the 15 years of historical data. Thus, SDG&E requests that net salvage remain at 0% for this account.

Account G382 – Meter and Regulator Installations

This account includes the cost of labor and materials used, and expenses incurred in connection with the original installation of customer meters. Components can include stop cocks, locks, meter bars, pipe and fittings, seals, swivels and bushings. The authorized life and Iowa curve resulting from the 2012 GRC is currently 38 L1.5 and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 GRC study supports the proposed

reduction to 35 L2 life/ curve. A change in the Iowa curve type is proposed, and the average service life decreases three (3) years to 35.

The negative net salvage pattern in this account has trended lower the last two years. While the 15 year history continues to show a negative net salvage exceeding <40%>, SDG&E will be conservative by proposing future net salvage at <30%> (average for past 4 years) below the current authorized level of <45%>.

Account G381.01 & G382.01 – Smart Gas Modules & Installations

The Forecast method not actuarial was used for these FERC accounts. As the new smart gas modules are installed within the SDG&E infrastructure, the proposed life and curve for these installations is being established at the current authorized 15 years with an SQ Iowa curve. SDG&E continues to propose this same life/curve 15 SQ for the 2016 GRC. Future net salvage is also proposed to remain at the current authorized level of 0%.

Account G385 – Industrial Measuring and Regulating Station Equipment.

This account includes the cost of measuring and regulating station equipment, located on the distribution system, serving large industrial customers.

The Forecast method not actuarial was used for this FERC account. The authorized life and Iowa curve resulting from the 2012 GRC is currently 24 SQ and because there has been minimal additional historic 2010 through 2013 recorded plant account activity, the 2016 GRC review of historical data supports the proposed 28 S6 life/ curve. A change in the Iowa curve type is proposed, and the average service life increases four (4) years to 28.

With minimal retirements, salvage activity is non-existent for this account as reflected in the 15 years of historical data. Thus, SDG&E requests that net salvage remain at 0% for this FERC account.

Account G387.11 & G387.12 – Other Equipment and CNG

The G387.11 account includes distribution system equipment not provided for in the foregoing accounts, including some gas street lighting equipment. Items can include carbon monoxide testers and indicators, explosimeters, fire extinguishers, portable pumps, recording gauges and test meters. The G387.12 account includes the cost installed of Compressed Natural Gas ("CNG") distribution system equipment utilizing items similar to Account G387.11.

The Actuarial method was used as a primary determinant of the average service life for these two mortality accounts. The average remaining life for these two (2) accounts were then

calculated by weighting the remaining life of each vintage year with its surviving plant balance as of December 31, 2013. The authorized life and Iowa curve resulting from the 2012 GRC for both accounts is currently 11 L2 and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 16 L0 life/curve. A change in the Iowa curve type for both accounts is proposed, and the average service life is extending five (5) years.

Salvage activity is minimal for this account as reflected in the 15 years of historical data. SDG&E requests that net salvage remain at 0% for these two FERC accounts.

Account G392.20 – Transportation Equipment - Trailers

This account includes transportation vehicles used for gas utility purposes. Items can include tractors and trailers, and other transportation vehicles. The authorized life and Iowa curve resulting from the 2012 GRC is currently 21 SQ and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 21 R5 life/curve. A change in the Iowa curve type is proposed, and the average service life remains at 21 years.

Salvage activity is minimal for this account as reflected in the 15 years of historical data. SDG&E requests that net salvage remain at 0% for this FERC account.

Account G394.10 – Portable Tools

This account includes tools, implements, and equipment used in construction, and repair work. Items can include air compressors, cable pulling equipment, concrete mixers, hoists, ladders, pipe threading and cutting tools, and pneumatic tools. The authorized life and Iowa curve resulting from the 2012 GRC is currently 23 SQ and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 24 L5 life/curve. A change in the Iowa curve type is proposed, and the average service life increases one (1) year to 24 years.

Salvage activity is minimal for this account as reflected in the 15 years of historical data. SDG&E requests that net salvage remain at 0% for this FERC account.

Account G394.20 – Shop Equipment

This account includes tools, implements, and equipment used in general shops and garages and not specifically provided for or included in other accounts. Items can include automobile repair shop equipment, battery charging equipment, drill presses, gasoline pumps, oil

pumps, and storage tanks, lathes, machine tools, tool racks, and work benches. The authorized life and Iowa curve resulting from the 2012 GRC is currently 23 SQ and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 24 R1.5 life/curve. A change in the Iowa curve type is proposed, and the average service life increases one (1) year to 24 years.

Salvage activity is minimal for this account as reflected in the 15 years of historical data. SDG&E requests that net salvage remain at 0% for this FERC account.

Account G395 – Laboratory Equipment

This account includes installed laboratory equipment used for general laboratory purposes and not specifically provided for or included in other departmental or functional plant accounts. Items such as ammeters, batteries, frequency changers, galvanometers, meter-testing equipment, testing panels, voltmeters and other testing, laboratory, or research equipment not provided for elsewhere. The authorized life and Iowa curve resulting from the 2012 GRC is currently 14 SQ and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 19 L1 life/curve. A change in the Iowa curve type is proposed, and the average service life increases five (5) years to 19 years.

Salvage activity is minimal for this account as reflected in the 15 years of historical data. SDG&E requests that net salvage remain at 0% for this FERC account.

Account G396 – Power Operated Equipment

This account includes power operated equipment used in construction or repair work exclusive of equipment included in other accounts. Also included are the tools and accessories acquired for use with such equipment and the vehicle on which such equipment is mounted. Additional items are air compressors, back filling machines, boring machines, bulldozers, cranes and hoists, pipe coating or wrapping machines and other necessary power operated equipment.

The Forecast method was used as a primary determinant of the average service life for this mortality account. The authorized life and Iowa curve resulting from the 2012 GRC is currently 20 SQ and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 20 S6 life/curve. The proposed change in the Iowa curve type extends the remaining life while the average service life remains at the current authorized 20 years.

Salvage activity is minimal for this account as reflected in the 15 years of historical data. SDG&E proposes that net salvage be authorized at 0% for this FERC account.

Account G397 – Communication Equipment

This account includes installed telephone, telegraph, and wireless equipment for general use in connection with poles and fixtures used wholly for telephone or telegraph wire. Items can include radio transmitting and receiving sets, remote control equipment and lines, small storage batteries, telephone and telegraph circuits, testing instruments, underground conduit used wholly for telephone or telegraph wires and cable wires. These assets are needed to relay gas infrastructure performance and activity. The authorized life and Iowa curve resulting from the 2012 GRC is currently 15 SQ and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 15 S6 life/curve. The proposed change in the Iowa curve type extends the remaining life while the average service life remains at the current authorized 15 years.

Salvage activity is minimal for this account as reflected in the 15 years of historical data. SDG&E requests that net salvage remain at 0% for this FERC account.

Account G398 – Miscellaneous Equipment

This account includes medical emergency equipment, kitchen equipment, recreation equipment, radios, food processing equipment, furnishings, other miscellaneous equipment, and apparatus used in the utility operations, which is not included in any other account as identified in the FERC system of accounts. The authorized life and Iowa curve resulting from the 2012 GRC is currently 19 SQ and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 19 R2.5 life/ curve. A change in the Iowa curve type is proposed extending the remaining life while the average service life remains at 19 years.

Salvage activity is minimal for this account as reflected in the 15 years of historical data. SDG&E requests that net salvage remain at 0% for this FERC account.

I. Common FERC Accounts

Unless noted differently within each FERC account discussion below, the Actuarial method was used as a primary determinant of the average service life for these mortality accounts. The average remaining life for these accounts was calculated by weighting the remaining life of each vintage year with its surviving plant balance as of December 31, 2013.

Account C390 – Structures and Improvements

This account includes structures and improvements used in connection with both electric and gas operations.

The Forecast method not actuarial was used for this FERC account. Assets in this grouping and/or FERC account will retire at a forecasted year in the future. There is an associated interim retirement ratio being experienced by this account. This account has an individually forecasted end life using a composite from all its locations. Recorded Year 2013 plant record balances were used for this account in the depreciation study which updated historical plant additions, transfers, and retirements. The change in the remaining life from the 2012 GRC study is influenced by more years of plant additions and retirements (2010 through 2013) being added to the database. At the same time, there are quite a few existing contracts with limited horizons pulling both the forecasted average service life and remaining life lower. The overall effect has the effect of substantiating yet limiting the extension in the composite average service life (4 years), while at the same time, the proposed Iowa curve also extends the remaining life. The 2012 GRC authorized life/curve was 26 SQ, and based on the 2016 study, SDG&E proposes a change to 30 S1 for this FERC account.

The 15 year historical pattern in this account is reflecting an increase in negative net salvage at <24%>. While not a strong trend, the last four years since the 2012 GRC is reflecting <22%>. SDG&E requests a conservative change from the currently authorized net salvage rate from <10%> to a proposed <15%> for this FERC account. Though this proposed future net salvage increase exceeds the conservative limitations as reflected in other FERC accounts, SDG&E has responsibly weighed current and future ratepayer considerations in its proposal for this FERC account. SDG&E needs to be less conservative (i.e. less focused on current ratepayer) and more cognizant of intergenerational equity in proposing a more moderate change to the current authorized future net salvage value for this FERC account. Thus, SDG&E is increasing the future net salvage beyond the limit suggested for other FERC accounts to essentially protect the future ratepayer.

Account C391.10 – Office Furniture and Equipment

The authorized life and Iowa curve resulting from the 2012 GRC is currently 18 SQ and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study

supports the proposed 18 S6 life/curve. A change in the Iowa curve type is proposed extending the remaining life while the average service life remains at 18 years.

The 15 year historical pattern in this account is reflecting minimal positive net salvage. SDG&E does not request a change from the currently authorized net salvage rate of 0%.

Account C391.20 – Office Furniture, Equipment, and Computers

The authorized life and Iowa curve resulting from the 2012 GRC is currently 5 SQ and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 5 S6 life/curve. A change in the Iowa curve type is proposed extending the remaining life while the average service life remains at 5 years.

The 15 year historical pattern in this account is reflecting minimal positive net salvage. SDG&E does not request a change from the currently authorized net salvage rate of 0%.

Account C392.20 – Transportation Equipment -Trailers

The authorized life and Iowa curve resulting from the 2012 GRC is currently 20 SQ and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 20 L0 life/curve. A change in the Iowa curve type is proposed extending the remaining life while the average service life remains at 20 years.

The 15 year historical pattern in this account is reflecting minimal positive net salvage. SDG&E does not request a change from the currently authorized net salvage rate of 0%.

Account C393.10 – Stores Equipment

Items can include chain falls, counters, cranes (portable), elevating and stacking equipment (portable), hoists, lockers, scales, shelving, storage bins, trucks, hand and power driven, & wheelbarrows. The authorized life and Iowa curve resulting from the 2012 GRC is currently 20 SQ and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 19 L0 life/curve. A change in the Iowa curve type is proposed, and the average service life is reduced by one (1) year to 19 years.

The 15 year historical pattern in this account is reflecting minimal positive net salvage. SDG&E does not request a change from the currently authorized net salvage rate of 0%.

Account C394.11 – Portable Tools

Items can include (not an exhaustive list) air compressors, cable pulling equipment, concrete mixers, ladders, pneumatic tools, and riveters. The authorized life and Iowa curve resulting from the 2012 GRC is currently 23 SQ and based on additional historic 2010 through

2013 recorded plant account activity, the 2016 study supports the proposed 23 R2.5 life/curve. A change in the Iowa curve type is proposed extending the remaining life while the average service life remains at 23 years.

The 15 year historical pattern in this account continues to reflect minimal salvage activity. SDG&E is not proposing a change from the currently authorized net salvage rate of 0%.

Account C394.21 – Shop Equipment

Items can include (not an exhaustive list) anvils, drill presses, forges, lathes, machine tools, pipe threading and cutting tools, blacksmith equipment, tool racks, vises, and welding apparatus. The authorized life and Iowa curve resulting from the 2012 GRC is currently 29 SQ and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 35 L1.5 life/ curve. A change in the Iowa curve type is proposed, and the average service life increases six (6) years to 35 years both extending the remaining life.

The 15 year historical pattern in this account continues to reflect minimal salvage activity. SDG&E is not proposing a change from the currently authorized net salvage rate of 0%.

Account C394.31 – Garage Equipment

Items can include (not an exhaustive list) auto repair equipment, battery chargers, pumps, tanks, hoists, floor jacks, and greasing equipment. The authorized life and Iowa curve resulting from the 2012 GRC is currently 21 SQ and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 19 R3 life/curve. A change in the Iowa curve type is proposed, and the average service life is reduced two (2) years to 19 years.

The 15 year historical pattern in this account continues to reflect minimal salvage activity. SDG&E is not proposing a change from the currently authorized net salvage rate of 0%.

Account C395.1 – Laboratory Equipment

Items can include balances and scales, barometers, calorimeters-bomb, flow, recording types, etc., electric furnaces, gas burning equipment, gauges, glassware, beakers, burettes, etc., humidity testing apparatus, laboratory hoods, laboratory tables and cabinets, muffles, oil analysis apparatus, piping, specific gravity apparatus, standard bottles for meter prover testing, stills, sulphur and ammonia apparatus, tar analysis apparatus, and thermometers—indicating and recording. The authorized life and Iowa curve resulting from the 2012 GRC is currently 26 SQ and based on additional historic 2010 through 2013 recorded plant account activity, the 2016

study supports the proposed 25 R5 life/curve. A change in the Iowa curve type is proposed, and the average service life is reduced one (1) year to 25 years.

The 15 year historical pattern in this account continues to reflect minimal salvage activity. SDG&E is not proposing a change from the currently authorized net salvage rate of 0%.

Account C397.1 – Communication Equipment

This account includes installed telephone, telegraph, and wireless equipment for general use in connection with poles and fixtures used wholly for telephone or telegraph wire. Items can include radio transmitting and receiving sets, remote control equipment and lines, small storage batteries, telephone and telegraph circuits, testing instruments, underground conduit used wholly for telephone or telegraph wires and cable wires. The authorized life and Iowa curve resulting from the 2012 GRC is currently 13 SQ and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 13 S6 life/curve. A change in the Iowa curve type is proposed extending the remaining life while the average service life remains at 13 years.

The 15 year historical pattern in this account continues to reflect minimal salvage activity. SDG&E is not proposing a change from the currently authorized net salvage rate of 0%.

Account C398.1 – Miscellaneous Equipment

This account includes medical emergency equipment, kitchen equipment, recreation equipment, radios, food processing equipment, furnishings, other miscellaneous equipment, and apparatus used in the utility operations, which is not included in any other account as identified in the FERC system of accounts. The authorized life and Iowa curve resulting from the 2012 GRC is currently 14 SQ and based on additional historic 2010 through 2013 recorded plant account activity, the 2016 study supports the proposed 13 R0.5 life/curve. A change in the Iowa curve type is proposed, and the average service life is reduced by one (1) year to 13 years.

The 15 year historical pattern in this account is reflecting positive net salvage. SDG&E is not requesting a change from the currently authorized positive net salvage rate of +10%.

VIII. GENERAL AND COMMON PLANT

The Tables SDG&E-28-BW-1 and SDG&E-28-BW-2, below, include the expense and reserve amounts for General Plant and Common Plant, which are allocated to related Electric Production/Distribution Plant or Gas Plant. These expense and reserve amounts were allocated

in a manner entirely consistent with treatment of gross plant using allocation methods described in the Rate Base testimony of Mr. Aragon (Ex. SDG&E-27-R).

For TY 2016, the Electric Distribution-related General Plant Depreciation Expense is estimated to be $10.6 million with an Electric Distribution-related Common Plant Depreciation Expense of $22.8 million; Gas Plant Depreciation Expense includes $9.2 million for Gas-related Common Plant. Again for TY 2016, the Electric Distribution-related General Plant Depreciation Reserve is estimated to be $107.3 million with an Electric Distribution-related Common Plant Depreciation Reserve of $153.8 million; and the Gas Plant Depreciation Reserve includes $62 million for Gas-related Common Plant.

IX. AMORTIZATIONS

Tables SDG&E-28-BW-1 and SDG&E-28-BW-2 also show Recorded Year 2013 and TY 2016 amortization expenses and reserves for land rights and software. These amortization expenses are calculated on a straight-line basis. For 2016, the amortization expense is estimated to be $56.4 million for Electric Plant and $11.2 million for Gas Plant. The 2013 recorded amortization reserve is $34.5 million for Electric Plant and $9.7 million for Gas Plant.

Computer Software

There are two main categories of computer software; systems software and applications software. SDG&E capitalizes all software to FERC Plant Account 303, an Intangible Asset account. As of January 1, 2004, all software acquired or internally developed by SDG&E for use within the company has been capitalized when the software costs exceed the $500,000 threshold, consistent with the current capitalization guidelines set forth in the Financial Accounting Standards Board ("FASB") ASC 350-40.

While SDG&E does not specifically identify nor differentiate software lives for their products within the capitalization policy, the majority of current capitalized SDG&E software products reflect a five (5) year amortization life. Because of ever changing technological issues, and as additional software products are introduced and capitalized, internal and external factors will play an even larger role in determining and identifying the proper forecasted amortization period, be it five (5) years, seven (7) years, ten (10) years, or longer. There may even be situations where software products could have shorter lives based upon a product's specific technological and forecasted obsolescent end-life. Because of the growing influence of technology on SDG&E infrastructure and the costs associated with that technology, it becomes

more appropriate to assign an amortization life that will reflect and support the useful life, thereby ensuring intergenerational equity. The identified options above regarding software lives were presented, proposed, and eventually authorized with the final decision in the 2012 GRC filing. This 2016 GRC filing again proposes those same authorized software life parameters.

X. SUMMARY OF ESTIMATED EXPENSES AND RESERVES

The total of the estimated TY 2016 Electric Plant depreciation and amortization expense is $363.3 million. The total of the estimated TY 2016 Gas Plant depreciation and amortization expense is $57.6 million. These amounts include the related expense for General and Common Plant and are shown on Table SDG&E-28-BW-1in Appendix A. The total Electric and Gas Plant depreciation and amortization expense has increased from Recorded Year 2013 to TY 2016 by $102.5 million. As discussed earlier, this increase results from the combined impact of the net additions to plant and the proposed lower depreciation rates.

The total estimated December 31, 2016, Electric Plant depreciation and amortization reserve is $3.589 billion. The total estimated December 31, 2016, Gas Plant depreciation and amortization reserve is $1.080 billion. These amounts include the related reserves for General and Common Plant shown on Table SDG&E-28-BW-2, below.

Account-level details for the proposed underlying depreciation rates are included in my work papers (Ex. SDG&E-28-R-CWP). These proposed rates have been developed in accordance with Standard Practice U-4.

XI. CONCLUSION

The resulting depreciation expense and reserves as displayed in Appendix A, Table SDG&E-28-BW-1 and Appendix B, Table SDG&E-28-BW-2 should be approved by the CPUC for use in TY 2016 for determination of revenue requirements. Appendix C contains a helpful glossary of terms used in my testimony.

This concludes my revised prepared direct testimony.

XII. WITNESS QUALIFICATIONS

My name is Bob Wieczorek. My business address is 8335 Century Park Court, San Diego, California 92123. I am employed by San Diego Gas & Electric Company ("SDG&E") as a Principal Accountant in the Accounting Operations Department. I have held this position since 2007. My principal duties include the preparation of depreciation estimates and special depreciation-related studies, and the monitoring of depreciation and valuation practices used by San Diego Gas & Electric.

I received an AA degree in Mathematics from Glendale College in 1970, a Bachelor of Science degree in Accounting from Northridge ("CSUN") in 1979, and an MBA from National University in 2002. I have been a member of the Society of Depreciation Professionals.

Prior to assuming my current position, my work experience at SoCalGas ("SCG"), Sempra, & SDG&E has involved physical gas field work, field accounting, depreciation accounting, various staff positions at Gas Transmission and Distribution, Organization and Compensation, Regulatory, and Human Resources.

I previously testified for both SCG and SDG&E on depreciation matters during the 2012 GRC proceedings held before the California Public Utilities Commission.

APPENDIX A

TABLE SDG&E-28-BW-1
SAN DIEGO GAS & ELECTRIC COMPANY
TEST YEAR 2016
ELECTRIC DEPRECIATION & AMORTIZATION EXPENSE
(Thousands of Dollars)

Line No.	Description	2013 Recorded (2013$)	2016 Test Year (2016$)
	Depreciation Expense		
1	Generation (Steam and Other)	34,553	38,668
2	Nuclear	0	853
3	Distribution	163,797	233,996
4	General Plant related to Electric Distribution	11,636	10,585
5	Common Plant related to Distribution	22,587	22,808
6	TOTAL DEPRECIATION	232,572	306,910
	Amortization Expense		
7	Land Rights	1,628	1,998
8	Software	32,917	54,423
9	TOTAL AMORTIZATION	34,545	56,421
10	TOTAL ELECTRIC DEPRECIATION & AMORTIZATION	267,116	363,331

APPENDIX A

TABLE SDG&E-28-BW-1 (con't)
SAN DIEGO GAS & ELECTRIC COMPANY
TEST YEAR 2016
GAS DEPRECIATION & AMORTIZATION EXPENSE
(Thousands of Dollars)

Line No.	Description	2013 Recorded (2013$)	2016 Test Year (2016$)
	Depreciation Expense		
1	Underground Storage	89	92
2	Transmission	7,739	8,225
3	Distribution & General Plant	23,823	28,805
4	Common Plant related to Gas	9,886	9,191
5	TOTAL DEPRECIATION	41,537	46,313
	Amortization Expense		
6	Land Rights	248	330
7	Software	9,519	10,929
8	TOTAL AMORTIZATION	9,767	11,259
9	TOTAL GAS DEPRECIATION & AMORTIZATION	51,304	57,571

APPENDIX B

TABLE SDG&E-28-BW-2
SAN DIEGO GAS & ELECTRIC COMPANY
TEST YEAR 2016
END-OF-YEAR ELECTRIC DEPRECIATION & AMORTIZATION RESERVES
(Thousands of Dollars)

Line No.	Description	2013 Recorded (2013$)	2016 Test Year (2016$)
	Depreciation Reserve		
1	Generation (Steam and Other)	274,817	386,162
2	Nuclear	0	884
3	Distribution	2,232,388	2,645,785
4	General Plant related to Electric Distribution	88,164	107,360
5	Common Plant related to Electric Distribution	143,820	153,846
6	TOTAL DEPRECIATION RESERVE	2,739,190	3,294,038
	Amortization Reserve		
7	Limited Term Investments	203	203
8	Land Rights	35,375	39,613
9	Software	106,236	254,750
10	TOTAL AMORTIZATION RESERVE	141,814	294,566
11	TOTAL ELECTRIC DEPREC. & AMORT. RESERVE	2,881,003	3,588,603

APPENDIX B

TABLE SDG&E-28-BW-2 (con't)
SAN DIEGO GAS & ELECTRIC COMPANY
TEST YEAR 2016
END-OF-YEAR GAS DEPRECIATION & AMORTIZATION RESERVES
(Thousands of Dollars)

Line No.	Description	2013 Recorded (2013$)	2016 Test Year (2016$)
	Depreciation Reserve		
1	Underground Storage	856	1,133
2	Transmission	149,061	174,907
3	Distribution & General Plant	705,355	768,242
4	Common Plant related to Gas	62,947	61,992
5	TOTAL DEPRECIATION RESERVE	918,220	1,006,274
	Amortization Reserve		
6	Limited Term Investments	86	86
7	Land Rights	7,561	8,411
8	Software	35,152	65,629
9	TOTAL AMORTIZATION RESERVE	42,799	74,126
10	TOTAL GAS DEPREC. & AMORTIZATION RESERVE	961,019	1,080,400

APPENDIX C

Glossary of Terms - SDG&E - Depreciation

AMI: advanced metering infrastructure
ASL: Average Service Life
Bcf: billion cubic feet
CIAC: contribution in aid of construction
CNG: compressed natural gas
COR: Cost of Removal
CP: Cathodic Protection
CPEP: Cuyamaca Peak Energy Plant
CT: Combustion Turbine
CTGs: Combustion Turbine Generators
DRA: Division of Ratepayer Advocates
DSEC: Desert Star Energy Center - Generation site
FERC: Federal Energy Regulatory Commission
FNS: Future Net Salvage
GRC: General Rate Case
IR: Interim Retirements
IT: information technology
L: Iowa Curve
LNG: liquefied natural gas
M&R: Meter & Regulator
MMI: Miramar Peaker (1) - Generation
MMII: Miramar Peaker (2) - Generation
MW: megawatt
NARUC: National Association of Regulatory Utility Commissioners
NOx: Nitrogen Oxide
OH: Overhead
O&M: operations and maintenance
PA: Palomar Generation site
PDLM: Price Driven Load Management
PG&E: Pacific Gas and Electric Company
PSEP: Pipeline Safety Enhancement Plan
PUDP: Public Utility Depreciation Practices
PV: Photo Voltaic
RL: Remaining Life
S&L: Sargent & Lundy
SCADA: supervisory, control and data acquisition
SCE: Southern California Edison Company
SCG: Southern California Gas Company
SDG&E: San Diego Gas & Electric Company
SDP: Society of Depreciation Professionals
Sempra: Sempra Energy
SM: Smart Meter

APPENDIX C

Glossary of Terms - SDG&E – Depreciation (con't)

SoCalGas: Southern California Gas Company
SPR: Simulated Plant Records
SRPL: Sunrise Power Link – Electric Transmission
ST: Steam Turbine - Generator
SWPL: Southwest Power Link – Electric Transmission
TIMP: Transmission Integrity Management Program
TURN: The Utility Reform Network
TY: Test Year
U-4: Standard Practice
UCAN: Utility Consumers Action Network
UG: Underground
USofA: Uniform System of Accounts
WP: Work Papers

SDG&E 2016 GRC Testimony Errata Log – March 2015

Exhibit	Witness	Page	Line	Errata Item
SDG&E-28-R	*Bob Wieczorek*	*BJW-iii*	*15*	*Summary, change from 362.4 to 363.3*
SDG&E-28-R	*Bob Wieczorek*	*BJW-iii*	*15*	*Summary, change from 57.2 to 57.6*
SDG&E-28-R	*Bob Wieczorek*	*BJW-iii*	*16*	*Summary, change from 3.588 to 3.589*
SDG&E-28-R	*Bob Wieczorek*	*BJW-1*	*11*	*Introduction, change from 362.4 to 363.3*
SDG&E-28-R	*Bob Wieczorek*	*BJW-1*	*11*	*Introduction, change from 57.2 to 57.6*
SDG&E-28-R	*Bob Wieczorek*	*BJW-1*	*14*	*Introduction, change from 3.588 to 3.589*
SDG&E-28-R	*Bob Wieczorek*	*BJW-6*	*7*	*Methodology, change from 101.2 to 102.5*
SDG&E-28-R	*Bob Wieczorek*	*BJW-67*	*5*	*General & Common, change from 21.9 to 22.8*
SDG&E-28-R	*Bob Wieczorek*	*BJW-67*	*5*	*General & Common, change from 8.8 to 9.2*
SDG&E-28-R	*Bob Wieczorek*	*BJW-67*	*8*	*General & Common, change from 152.9 to 153.8*
SDG&E-28-R	*Bob Wieczorek*	*BJW-67*	*9*	*General & Common, change from 61.6 to 62*
SDG&E-28-R	*Bob Wieczorek*	*BJW-68*	*7*	*Summary, change from 362.4 to 363.3*
SDG&E-28-R	*Bob Wieczorek*	*BJW-68*	*8*	*Summary, change from 57.2 to 57.6*
SDG&E-28-R	*Bob Wieczorek*	*BJW-68*	*11*	*Summary, change from 101.2 to 102.5*
SDG&E-28-R	*Bob Wieczorek*	*BJW-68*	*14*	*Summary, change from 3.588 to 3.589*
SDG&E-28-R	*Bob Wieczorek*	*BJW-A-1*	*1*	*Table SDG&E-28-BW-1, change from 38,667 to 38,668*
SDG&E-28-R	*Bob Wieczorek*	*BJW-A-1*	*3*	*Table SDG&E-28-BW-1, change from 233,998 to 233,996*
SDG&E-28-R	*Bob Wieczorek*	*BJW-A-1*	*5*	*Table SDG&E-28-BW-1, change from 21,901 to 22,808*
SDG&E-28-R	*Bob Wieczorek*	*BJW-A-1*	*6*	*Table SDG&E-28-BW-1, change from 306,004 to 306,910*
SDG&E-28-R	*Bob Wieczorek*	*BJW-A-1*	*10*	*Table SDG&E-28-BW-1, change from 362,425 to 363,331*
SDG&E-28-R	*Bob Wieczorek*	*BJW-A-2*	*3*	*Table SDG&E-28-BW-1, change from 28,807 to 28,805*
SDG&E-28-R	*Bob Wieczorek*	*BJW-A-2*	*4*	*Table SDG&E-28-BW-1, change from 8,825 to 9,191*
SDG&E-28-R	*Bob Wieczorek*	*BJW-A-2*	*5*	*Table SDG&E-28-BW-1, change from 45,948 to 46,313*
SDG&E-28-R	*Bob Wieczorek*	*BJW-A-2*	*9*	*Table SDG&E-28-BW-1, change from 57,207 to 57,571*
SDG&E-28-R	*Bob Wieczorek*	*BJW-B-1*	*1*	*Table SDG&E-28-BW-2, change from 386,161 to 386,162*
SDG&E-28-R	*Bob Wieczorek*	*BJW-B-1*	*3*	*Table SDG&E-28-BW-2, change from 2,645,783 to 2,645,785*
SDG&E-28-R	*Bob Wieczorek*	*BJW-B-1*	*4*	*Table SDG&E-28-BW-2, change from 107,364 to 107,360*

Exhibit	Witness	Page	Line	Errata Item
SDG&E-28-R	*Bob Wieczorek*	*BJW-B-1*	*5*	*Table SDG&E-28-BW-2, change from 152,938 to 153,846*
SDG&E-28-R	*Bob Wieczorek*	*BJW-B-1*	*6*	*Table SDG&E-28-BW-2, change from 3,293,131 to 3,294,038*
SDG&E-28-R	*Bob Wieczorek*	*BJW-B-1*	*11*	*Table SDG&E-28-BW-2, change from 2,881,004 to 2,881,003*
SDG&E-28-R	*Bob Wieczorek*	*BJW-B-1*	*11*	*Table SDG&E-28-BW-2, change from 3,587,697 to 3,588,603*
SDG&E-28-R	*Bob Wieczorek*	*BJW-B-2*	*2*	*Table SDG&E-28-BW-2, change from 174,908 to 174,907*
SDG&E-28-R	*Bob Wieczorek*	*BJW-B-2*	*3*	*Table SDG&E-28-BW-2, change from 768,241 to 768,242*
SDG&E-28-R	*Bob Wieczorek*	*BJW-B-2*	*4*	*Table SDG&E-28-BW-2, change from 61,626 to 61,992*
SDG&E-28-R	*Bob Wieczorek*	*BJW-B-2*	*5*	*Table SDG&E-28-BW-2, change from 1,005,909 to 1,006,274*
SDG&E-28-R	*Bob Wieczorek*	*BJW-B-2*	*10*	*Table SDG&E-28-BW-2, change from 1,080,035 to 1,080,400*