## Exhibit C <br> SCE Depreciation Testimony in 2015 CPUC General Rate Case

## DOCKET

## DIRECT TESTIMONY

of
DANE A. WATSON
on behalf of
SOUTHERN CALIFORNIAL EDISON COMPANY

## (Revenue Requirement)

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## Glossary of Acronyms and Defined Terms

| Acronym/Defined Term | Meaning |
| :--- | :--- |
| AR-15 | FERC Accounting Release 15 |
| BG | Broad Group |
| Commission | California Public Utility Commission or <br> ("CPUC") |
| Depreciation Study | SCE Book Depreciation Accrual Rate Study at <br> December 31, 2012 |
| EEI | Edison Electric Institute |
| FERC | Federal Energy Regulatory Commission |
| IEEE | Institute of Electrical and Electronics Engineers |
| SDP | Society of Depreciation Professionals |
| SCE | Simulated Plant Record Method |
| SPR | Standard Practice U-4 |
| SP U-4 |  |

## DIRECT TESTIMONY OF DANE A. WATSON

## I. WITNESS IDENTIFICATION AND QUALIFICATIONS

## Q. Please state your name and business address.

A. My name is Dane A. Watson. My business address is 1410 Avenue K, Suite 1105B, Plano, Texas 75074.

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

A. I am a Partner of Alliance Consulting Group. Alliance Consulting Group provides consulting and expert services to the utility industry.
Q. On whose behalf are you testifying in this proceeding?
A. I am filing testimony on behalf of Southern California Edison Company ("SCE"),
Q. Please describe your educational background.
A. I hold a Bachelor of Science degree in Electrical Engineering from the University of Arkansas at Fayetteville and a Master's Degree in Business Administration from Amberton University.

## Q. Please describe your professional experience.

A. Since graduation from college in 1985, I have worked in the area of depreciation and valuation. I founded Alliance Consulting Group in 2004 and am responsible for conducting depreciation, valuation, and certain accounting-related studies for clients in various industries. My duties related to depreciation studies include the assembly and analysis of historical and simulated data, conducting field reviews, determining service life and net salvage estimates, calculating annual depreciation, presenting recommended depreciation rates to utility management for its consideration, and supporting such rates before regulatory bodies.

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

I have twice been Chair of the Edison Electric Institute ("EEI") Property Accounting and Valuation Committee and have been Chairman of EEI's Depreciation and Economic Issues Subcommittee. I am a Registered Professional Engineer in the State of Texas and a Certified Depreciation Professional. I am a Senior Member of the Institute of Electrical and Electronics Engineers ("IEEE") and served for several years as an officer of the Executive Board of the Dallas Section of IEEE. I am also currently Past-President of the Society of Depreciation Professionals.

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

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

## Q. Have you previously testified at any regulatory commission?

A. Yes. I have conducted depreciation studies and filed testimony or testified on depreciation and valuation issues numerous regulatory bodies as listed in my Attachment F of this exhibit.

## II. ASSIGNMENT AND SUMMARY OF CONCLUSIONS

Q. What is your assignment in this proceeding?
A. The purpose of my testimony is to:

- Discuss the recent SCE - Book Depreciation Accrual Rate Study at December 31, 2012, completed for SCE assets ("Depreciation Study"); and support and justify the recommended depreciation rate changes for SCE assets
Q. Are any assets not included in your depreciation proposal in this proceeding?
A. Yes. I have excluded from my testimony depreciation proposals for the San Onofre Nuclear Generating Station, Mohave Generating Station, and Four Corners Generating Station. These have special circumstances around them and SCE is sponsoring testimony regarding the cost recovery periods for those assets. Additionally, SCE is addressing costs associated with the decommissioning of Mountainview units 1 and 2 as well as Solar 2.


## Q. Please summarize your conclusions regarding depreciation rate changes for SCE assets based on the results of the Depreciation Study.

A. The Depreciation Study and analysis performed under my supervision fully support SCE's proposed depreciation rates. The Depreciation Study shows SCE's proposed rates applied to year-end 2012 depreciable plant balances. The change in depreciation expense as compared to the depreciation rates approved in the Company's 2012 GRC applied to December 31, 2012 investment is an increase of approximately 7.66 percent or $\$ 106$ million. The Depreciation Study follows the Commission's long-standing precedent for straight line depreciation in
accordance with the CPUC Standard Practice U-4 ("SP U-4"). In this way, all customers are charged for their appropriate share of the capital expended for their benefit. In order to ensure intergenerational equities, the Commission should adopt the life and net salvage parameters proposed in this study. SCE's depreciation rates should be set at the levels supported in the Depreciation Study in order to recover SCE's total investment in property over the estimated remaining life of the assets.

## Q. How is the Depreciation Study used to determine SCE's depreciation expense for the Test Year?

A. SCE uses depreciation rates determined in the Depreciation Study to calculate the appropriate depreciation expense for the Test Year. The information presented in the Depreciation Study is based on 2012 year-end depreciable plant balances and all of the conclusions are based on those balances.

## III. DEPRECIATION ANALYSIS PHILOSOPHY

Q. Please describe the depreciation analysis philosophy reflected in the current Depreciation Study.
A. The objective of any sound depreciation philosophy should be the matching of expense with revenue over the life of the asset. Revenue, in this context, represents the ability of an asset to generate value, or usefulness-in other words, the useful life. In general, the life of the asset is determined by several factors including the rate of physical deterioration, obsolescence, weather, maintenance, or (in some cases) the economic usefulness of an entire operating unit. The function of depreciation is to recognize the cost of an asset spread over its useful life. Book depreciation techniques should not accelerate or defer the recovery of an asset in comparison to its appropriate useful life in order to maintain intergenerational equity.
Q. What objective should the Commission strive to achieve in setting depreciation rates?
A. The objective of computing depreciation is to ensure that all customers using the assets pay their pro rata share for the investment, including the cost of retirement. This objective is achieved by allocating the cost or depreciable base of a group of assets over the service life of those assets, on a straight line basis, by charging a portion of the consumption of the assets to each accounting period.

## Q. Is this objective consistent with Commission rules and historic practice?

A. Yes. As evidenced by SP U-4 and the Commission's prior rate decisions, the Commission has a long standing practice of establishing depreciation rates using the straight line depreciation method based on the actual historic data of the utility. The straight line method of depreciation operates by collecting a pro rata share of the cost of the investment, including removal cost, from all customers that use the asset over its useful life.
Q. What is the best evidence that the Commission can rely on to ensure that the cost of certain assets are ratably recovered over the service life of the asset?
A. The best evidence is the actual experience of the specific group of assets being analyzed. This evidence is found in the Depreciation Study based on plant investment in service at December 31, 2012.
Q. What happens when depreciation rates are not adjusted to reflect the actual life and retirement characteristics of the assets?
A. When depreciation rates are set at a level that does not reflect the actual life and retirement characteristics of a utility's assets, the cost of the asset will not be recovered on a pro rata basis from all customers that use the asset. For example, in instances where the net salvage rate for certain plant accounts is set at a level that is insufficient under current and projected conditions to recover the cost of the asset, SCE will not accrue a reasonable level of removal cost over the useful life of the plant asset. This, in turn, means that future customers will have to pay a disproportionate share of the removal costs to make up for the payment deferrals.

## Q. Is the situation you just described at issue in this case?

A. Yes. Removal cost has been increasing over time, which calls for a higher negative net salvage component (mitigated by longer lives) and a slight increase in the depreciation rates to reflect this fact. SCE's depreciation reserve position (where the actual depreciation reserve is lower than theoretically indicated) is evidence of the historical under recovery of costs through depreciation rates. Consequently, these amounts, as well as all remaining investment, should be recovered on an equal basis from current and future customers within the estimated remaining life of the assets.
Q. What actions should be taken in order to remedy the changes in life and net salvage?
A. The Commission should approve SCE's proposed depreciation rates which accurately reflect service life and net salvage projections and experience for SCE's existing assets. The depreciation rates proposed in the Depreciation Study accurately reflect SCE's current experience and future expectations and also allow for the recovery of depreciation expense that has been under-accrued in the past. In addition, adoption of the proposed depreciation rates should ensure, on a going forward basis, that current SCE customers pay their pro-rata share of the investment over the remaining life of the investment. This ensures that future customers are not unduly burdened by having to pay a disproportionate share of any remaining investment balance for removal costs at the end of the asset's life.
Q. With historical net salvage rates more negative than what you are recommending, why do you believe the proposed net salvage rates are reflective of future expectations?
A. There are many factors and pressures that will continue to increase the actual removal cost necessary to retire assets over time and resulting net salvage rates will likely continue to increase in the near future. The accuracy of the industrystandard Compatible Unit estimating process ensures that the appropriate costs are captured as removal costs. However, some historical changes in accounting that occurred in the 1990's and 2000's (such as more accurately allocating or charging construction-related activities to capitalized asset costs and removal cost) had a more immediate effect on the removal costs than it did on the asset base that is being retired in the net salvage calculations. The calculation of the net salvage percentage uses the following formula:

$$
\text { Net Salvage Ratio }=(\text { Gross Salvage }- \text { Removal Cost }) / \text { Cost of retired Assets }
$$

The net salvage percentage is calculated by dividing the net salvage spent by the asset cost being retired. The temporarily lower basis for the denominator (asset cost) in the net salvage percentage formula (caused by the assets recently retired generally not receiving the higher level of loading), would cause the percentage to be more negative than expected in the future when the asset cost basis (with the higher loading on later additions) catches up to the removal cost. All else equal, as SCE moves forward in time, it is anticipated that eventually the experienced net salvage rates may stabilize and perhaps moderate to some degree from the rates currently being experienced as it relates to these accounting changes. While
these changes are not quantified, the depreciation study net salvage recommendations are very conservative as compared to the historical indications, in part, in order to reflect this difference. It should be noted that there are other factors (such as inflation, additional governmental and environmental requirements, etc.) that may move in the other direction and continue to move the net salvage factors more negative over time.

## Q. Have you reviewed SCE's removal cost allocation practices?

A. Yes. I have analyzed the process that SCE uses to allocate costs between construction and removal. For most types of projects using internal or contract labor, SCE uses a sophisticated set of allocation percentages based on the type of project and configuration of assets to determine the capital cost and removal cost for a project. The levels of work effort for construction and removal activities are separately defined and the portion of total work effort related to removal activities is the basis for the allocation of labor costs to removal. For other types of projects, the field will directly charge time spent on removal activities to a removal work order. The methodology and detailed nature of SCE's process ensures the appropriate allocation of cost.
Q. Will the theoretically higher current cost of emergency-related replacements or overtime work affect the projection of future removal percentages?
A. No. Over the past few years, the percentage of labor related to normal and "premium" labor has been very constant. It is simply speculation that as the assets get more mature, and therefore have higher levels of planned replacements, that the retirements related to emergency work will decrease as a percentage of
total retirements. In reality, with the significant replacement programs currently in place, the facts that the level of premium labor hours is fairly constant in light of those programs and that the realized net salvage percentages are increasing would tend to anecdotally negate that conclusion. There is as strong a rationale that the exact opposite could occur. Some emergency work will be due to nonage related causes such as cars hitting poles. For these types of events, the level of replacement programs, the condition-related inspection programs and the age of the assets would not logically be coincident with whether emergency work was performed. In addition, as the assets get older, it is also logical to assume that more of the assets will fail and require emergency work due to age, not less. Related to the concept of less overtime being required when there is more "scheduled" replacement work, logic would also dictate the possibility of just the opposite - the more work that is scheduled with a finite number of workers, the fewer normal hours available to do work other than the "scheduled" work. Under that paradigm, more overtime would be necessary, not less.

## IV. SCE BOOK DEPRECIATION STUDY

## A. Summary of the SCE Study

## Q. Have you prepared a Depreciation Study for SCE?

A. Yes. I undertook a comprehensive analysis of annual depreciation for SCE that is based on SCE's depreciable plant in service as of December 31, 2012. The Depreciation Study analyzed the property characteristics of SCE's production plant, other production plant, transmission plant, distribution plant, and general plant and proposes depreciation rates for these assets. The study report is in this exhibit, following the testimony.
Q. What depreciation rates are you recommending in this proceeding?
A. My recommended depreciation rates for SCE are provided in Appendix A of this exhibit. Based on updated service life and net salvage rates for SCE's depreciable plant in-service as of December 31, 2012, I derived the appropriate depreciation rates for production plant, other production plant, transmission plant, distribution plant and general plant. As discussed previously, I am not proposing depreciation rates for the San Onofre Nuclear Generating Station, Mohave Generating Station, or the Four Corners Generating Station. The Company has elected to address those assets given the unique circumstances.

## Q. When did the last change in SCE's depreciation rates occur?

A. The last change in SCE's depreciation rates became effective as a result of the 2012 GRC.
Q. Are you recommending changes from the lives and net salvage approved in the 2012 GRC?
A. Yes. I am recommending extending lives in many of the accounts and moving to a more negative net salvage to reflect the higher level or removal cost being experienced by SCE.
Q. What has changed since the Company's last comprehensive depreciation study?

In general, the depreciation study indicates an increase in lives in a number of accounts. Within the Transmission and Distribution function, seven accounts are experiencing longer lives, one account is experiencing a shorter life and the lives for the remaining accounts remain the same as approved in the 2012 GRC with a few minor dispersion curve changes. Net salvage for the majority of SCE's asset accounts are reflecting an increasingly negative percentage with five accounts remaining the same and one account net salvage moving less negative. The removal costs for transmission and distribution plant continues to rise. Including three more years of experience in the life and net salvage analysis allows a better understanding of the trends exhibited over time in the historical experience. In addition, with all else being equal, inflation alone will move the net salvage factors more negative simply from extending lives (as done in the Company's recommendations). More detailed analysis is provided in later sections and in the Depreciation Study report.

## B. Overview of Depreciation Study Method

Q. What definition of depreciation did you use in preparing your Depreciation Study and testimony?
A. The term "depreciation," as I use it, is a system of accounting that distributes the cost of assets, less net salvage (if any), over the estimated useful life of the assets in a systematic and rational manner. It is a process of allocation, not valuation. Depreciation expense is systematically allocated to accounting periods over the life of the assets. The amount allocated to any one accounting period does not necessarily represent the loss or decrease in value that will occur during that particular period. Thus, depreciation is considered an expense or cost, rather than a loss or decrease in value. SCE accrues depreciation based on the original cost of all property included in each depreciable plant account. On retirement, the full cost of depreciable property, less any net salvage amount, is charged to the depreciation reserve.

## Q. Please describe your Depreciation Study approach.

A. I conducted the Depreciation Study in four phases. The four phases are: Data Collection, Analysis, Evaluation, and Calculation. I began each of the studies by collecting the historical data to be used in the analysis. After the data had been assembled, I performed analyses to determine the life and net salvage percentage for the different property groups being studied. As part of this process, I conferred with field personnel, engineers, and managers responsible for the installation, operation, and removal of the assets to gain their input into the operation, maintenance, and salvage of the assets. The information obtained from field personnel, engineers, and managerial personnel, combined with the study results, is then evaluated to determine how the results of the historical asset activity analysis, in conjunction with SCE's expected future plans, should be
applied. Using all of these resources, I then calculated the depreciation rate for each function.

## Q. What property is included in the Depreciation Study?

A. There are five distinct classes of property in this study: Production, Other Production, Transmission, Distribution, and General Property. The Production plant functional group consists of all structures, boiler plant equipment, turbogenerator equipment, accessory electrical equipment, and other miscellaneous assets used to generate electricity at SCE's power plants. The Other Production function consists of similar assets used at SCE's combustion turbine and solar facilities. The Transmission plant functional group consists of structures, substations, and transmission lines used in the transmission of energy to the distribution system. The Distribution plant functional group consists of structures, substations, transformers, meters, services, distribution lines, guard lights and street lighting used in the distribution and end use of energy on the distribution system. The General plant functional group contains facilities associated with the overall operation of the business such as land and water rights, office equipment and computers rather than with a specific transmission, or distribution classification.

## Q. What depreciation methodology did you use?

A. The Broad Group ("BG"), straight-line, remaining-life depreciation system, was employed to calculate annual and accrued depreciation in the studies for all plant except small dollar item assets found in FERC Accounts 391-398. The BG methodology is the same method used in prior studies and has been approved by
this Commission in prior dockets both for SCE and other companies within California.

## C. Production and Other Production Plant

1. Life of Assets

## Q. Please describe the methodology you used to determine life for production and other production plant.

A. For Production and Other Production plant, most components are expected to have a retirement date concurrent with the planned retirement date of the generating unit. The terminal retirement date refers to the year that each facility will cease operations. The terminal retirement date along with the interim retirement characteristics of the individual assets that will retire prior to the facility ceasing operation, describe the pattern of retirement of the assets that comprise a generating unit. The estimated terminal retirement dates for the various generating units were determined based on consultation with SCE management, financial, and engineering staff and are shown in Appendix D. Interim retirement rates were determined using historical analysis of the past 10 years of retirements along with professional judgment.

## Q. What is an interim retirement rate?

A. An interim retirement rate uses Company history for each account and functional group projects how many of the assets or units within a facility that are currently in-service will retire each year prior to the final retirement of the whole facility, using historical analysis and judgment. The life span procedure assumes all assets are depreciated (straight-line) for the same number of periods and retire at the
same time (the terminal retirement date). Adding interim retirement rates to the procedure reflects the fact that some of the assets at a power plant will not survive to the end of the life of the facility, but will be retired earlier than the terminal life of the facility and should be depreciated (straight-line) over a shorter time frame to match their projected lives.

In this study, we analyzed each account separately to estimate an interim retirement rate for FERC Accounts 331-336. No assets in Accounts 311-316 were included in study. Assets in the Other Production (FERC Accounts 341346) function have very limited retirements, so no interim retirement curve is incorporated for those units.
Q. Is this the typical approach that Alliance Consulting Group uses in a production depreciation rate computation?
A. No. Typically, Alliance uses an Iowa curve modeled to project interim retirements. SCE has used the interim retirement rate methodology in its GRC cases stemming back to the early 1980 's. An interim retirement rate provides similar results although the interim retirement rate method will not as effectively reflect the changing pattern of retirements over the life of the assets as will the interim retirement curve method. Since the interim retirement rate methodology was approved by the CPUC in prior proceedings, it is used in this study.
Q. Why is it critical to include interim retirements in the depreciation rate computation?
A. Interim retirements model how plant assets are actually retired prior to a terminal retirement of an entire facility. Excluding interim retirements means that in the
future all production investment will remain in service for depreciation purposes, until the facility retires, even though some of those assets will be functionally retired.
2. Net Salvage of Production and Other Production Assets

## Q. What is the significance of net salvage rates for SCE Plant assets?

A. In general, net salvage values are the amount received for retired property (salvage) less any costs incurred to sell or remove the property (removal). When salvage exceeds removal (positive net salvage), the net salvage reduces the amount to be depreciated over time. When removal exceeds salvage (negative net salvage), the negative net salvage increases the amount to be depreciated. In this Depreciation Study, the net salvage percentages were calculated for each property account.
Q. What are the currently approved net salvage values for Production and Other Production assets?
A. The currently approved net salvage rates for Production, Nuclear, Hydro and Other Production are shown in Appendix C..

## 3. Depreciation Rate for Production-related Assets

## Q. Please describe the results of the Depreciation Study for Production Plant.

A. The results of the analysis conducted in the Depreciation Study, based on the service life of production assets and the revised net salvage rates, resulted in a decrease to SCE's depreciation rates for production plant. SCE's present depreciation rates were compared to the Depreciation Study recommendations in

Appendix B. The rates proposed for Production assets would be a decrease of approximately 11.1 percent from SCE's present depreciation rates.
Q. Please describe the major changes that resulted in the decrease in Steam Production Plant depreciation rates.
A. The major reasons for the decrease in depreciation rates are from changes in the decommissioning estimates due to base year updates and slightly higher inflation analyses, new investment added to plant since the last GRC, and the life extension for Palo Verde.
Q. Please describe the results of the Depreciation Study for Nuclear Production plant.
A. The results of the analysis conducted in the Depreciation Study, based on the service life and the revised net salvage rates, resulted in a decrease to SCE's depreciation rates for Nuclear Production plant based solely on the results for the Palo Verde assets. SCE's present depreciation rates were compared to the Depreciation Study recommendations in Appendix B. The rates proposed for Nuclear Production assets would be a decrease of approximately 62.1 percent from SCE's present depreciation rates. This is driven primarily by the 20 year life extension for Palo Verde.
Q. Please describe the results of the Depreciation Study for Hydro Production plant.
A. The results of the analysis conducted in the Depreciation Study, based on the service life and the revised net salvage rates, resulted in an increase to SCE's depreciation rates for Hydro Production plant. SCE's present depreciation rates
were compared to the Depreciation Study recommendations in Appendix B. The rates proposed for Hydro Production assets would be an increase of approximately 24.4 percent from SCE's present depreciation rates. This is driven primarily by slight changes in interim retirement rates and new investment added since the last GRC.
Q. Please describe the results of the Depreciation Study for Other Production plant.
A. The results of the analysis conducted in the Depreciation Study, based on the service life and the revised net salvage rates, resulted in a decrease to SCE's depreciation rates for Other Production plant. SCE's present depreciation rates were compared to the Depreciation Study recommendations in Appendix B proposed for Other Production assets would be a decrease of approximately 2.6 percent from SCE's present depreciation rates. This is driven primarily by the change in depreciation rate attributable to the retirement of Mountain View Units 1 and 2 , additional investment added since the last GRC, and updates in the decommissioning amounts.

## D. Transmission, Distribution, and General Property

## 1. Life of Transmission, Distribution, and General Assets

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

A. An asset's useful life is used to determine the remaining life over which the remaining cost (original cost plus or minus net salvage, minus accumulated depreciation) can be allocated to normalize the asset's cost and spread it ratably
over future periods and provide intergenerational equity between generations of customers.

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

A. The establishment of appropriate average service lives for each account within a functional group was determined by using the Simulated Plant Record ("SPR") method. Graphs and tables supporting the SPR analysis and the chosen Iowa Curves (which represent the percentage of property remaining in service at various age intervals) used to determine the average service lives for analyzed accounts are found in the SCE Depreciation Study Report and the workpapers.. As detailed in the study, I relied on SCE subject matter experts and my experience from nearly thirty years of conducting depreciation studies to incorporate any differences in the expected future life characteristics of the assets into the selection of lives. The objective of life selection is to estimate the future life characteristics of assets, not simply measure the historical life characteristics. More information can be found in the life analysis section of the SCE Depreciation Study.
Q. Does your Depreciation Study reflect any changes in the useful lives of the Transmission, Distribution, and General function assets from the lives embedded in the current depreciation rates?
A. Yes. As shown in Appendix C, seven accounts have increases in life. The greatest change is an increase of six years in FERC Account 356 - Overhead Conductors and Devices. One account shows a decrease in life of five years for

FERC Account 355 - Transmission Poles and Fixtures. The lives for the other accounts remained unchanged from the approved lives from the 2012 GRC.

## 2. Net Salvage Rates Transmission, Distribution, and General

## Q. How did you determine the net salvage rates that you used in your study for Transmission, Distribution, and General property?

A. I examined the experience realized by SCE by observing the average net salvage rates for various bands (or combinations) of years. Using averages (such as the 5year average and 10-year average band) allows the smoothing of timing differences between when retirements, removal cost and salvage are booked and smoothes the natural variations between years. By looking at successive average bands, or "rolling bands," an analyst can see trends in the data that would signal the future net salvage in the account. This examination, in combination with the feedback of SCE personnel related to any changes in operations or maintenance that would affect the future net salvage of SCE, allowed for the selection of the best estimate of future net salvage for each account.
Q. Is this a reasonable method for determining net salvage rates?
A. Yes. This methodology is commonly employed throughout the industry and is the method recommended in authoritative texts.
Q. Does your Depreciation Study reflect any change in the net salvage values of the Transmission and Distribution property from the existing net salvage rates embedded in SCE's current depreciation rates?
A. Yes. The net salvage values for both Transmission and Distribution property continue to experience increasing cost of removal. The recommended net salvage
values used in the calculation of the Transmission and Distribution depreciation rates, along with the current net salvage values for comparison, are listed in Appendix C. Additionally, the Depreciation Study Report contains a detailed net salvage analysis for Transmission and Distribution property, by account.
3. Depreciation Rates for Transmission, Distribution, and General Property

## Q. Please describe the results of the Depreciation Study for Transmission plant.

A. The results of the analysis conducted in the Depreciation Study, based on the service life of transmission plant and the revised net salvage rates, resulted in an increase to SCE's depreciation rates for transmission plant. SCE's present depreciation rates as authorized by the Commission were compared to the Depreciation Study recommendations in Appendix B. The rates proposed for Transmission assets would be an increase of approximately a 0.25 percentage point difference in depreciation rates as compared to SCE's present depreciation rates.

## Q. Please describe the results of the Depreciation Study for Distribution plant.

A. The results of the analysis conducted in the Depreciation Study, based on the service life of distribution plant and the revised net salvage rates, resulted in an increase to SCE's depreciation rates for distribution plant. SCE's present depreciation rates as authorized by the Commission were compared to the proposed Depreciation Study recommendations in Appendix B. The rates proposed for Distribution assets would be an increase of approximately a 0.44 percentage point difference in depreciation rates as compared to 7 SCE's present depreciation rates.
Q. Please describe the results of the Depreciation Study for FERC Accounts 389-390 (land rights, and structures and improvements).
A. The results of the analysis conducted in the Depreciation Study, based on the service life of FERC Accounts 389-390 and the revised net salvage rates, resulted in an increase to SCE's depreciation rate for FERC Account 390 and no change for FERC Account 389. SCE's present depreciation rates as authorized by the Commission were compared to the proposed Depreciation Study recommendations in Appendix B. The rate proposed for FERC Accounts 390 would be an increase of approximately a 0.94 percentage point difference in depreciation rate as compared to SCE's present depreciation rate. Account 389 is only for our easement property which has historically received a 60 year average service life with no impact to the study. The proposed changes to account 390 are due to a slight reduction in life and a more negative net salvage rate.
Q. Please describe the major changes that resulted in the changes in depreciation rates for electric Transmission and Distribution property.
A. Changes in service life, gross salvage, gross removal costs, curve selection, and reserve position are all factors that affect the calculation of the depreciation accrual. The proposed changes in the Depreciation Study analysis for Transmission and Distribution assets suggest adjustments that both increase and decrease the total accrual. However, two factors influenced the accrual calculation notably and consistently in opposite direction: the increases in life have the impact of decreasing depreciation rates while the movement toward more negative net salvage has the tendency to increase depreciation expense.

## E. Vintage Year Depreciation of General Plant Assets

## Q. Please describe the Vintage Group methodology.

A. For most general plant assets and amortized accounts, SCE is requesting to continue to use a vintage year accounting method approved by the FERC in Accounting Release Number 15 (AR-15), Vintage Year Accounting For General Plant Accounts, dated January 1, 1997. AR-15 allowed utilities to use a simplified method of accounting for general plant assets, excluding structures and improvements (referred to as "general plant"). The AR-15 release allowed high volume, low cost assets to be amortized over the associated useful life, eliminated the need to track individual assets, and allows a retirement to be booked at the end of the depreciable life. This method is often referred to as "amortization of general plant." No changes in the life or net salvage parameters are proposed. The proposed lives are shown in the table below. Any changes in the accrual amounts are a result differences between theoretical and book of reserve amounts for each account that are amortized between GRC periods.

## General and Intangible Forecast Service Lives

| Account No. | Account Description | 2012-2014 <br> Authorized <br> (Years) | $2015-2017$ <br> Proposed <br> (Years) |
| :--- | :--- | :--- | :--- |

## General Plant

391.1
391.2
391.3
391.4
391.5
391.6
391.7

393
394
395
397
398
Intangibles
302.020
303.640
302.050
303.105
303.707
303.210
303.315

Easements
350
360
389

Office Furniture
Personal Computers
Mainframe Computers
DDSMS-Power Management System
Office Equipment
Duplicating Equipment
PC Software
Stores Equipment
Tools \& Work Equipment
Laboratory Equipment
Telecommunication Equipment Misc Power Plant Equipment

20
5
5
Composite ${ }^{1}$
5
5
5
20
10
$15 \quad 15$
C
Composite ${ }^{2}$
20

Various
Hydro Relicensing
Radio Frequency
40
Miscellaneous Intangibles
Capitalized Software - 5 year
Capitalized Software - 7 year
Capitalized Software - 10 year
Capitalized Software - 15 year

Transmission Easements
General Easements

60
60
60
20
5
7
7
10
15

60

[^0]4 A. Yes. I prepared this exhibit.

## Q. Does this conclude your pre-filed direct testimony?

6 A. Yes.

## AFFIDAVIT

## STATE OF TEXAS

COUNTY OF COLLIN
)
)

DANE A. WATSON, first being sworn on his oath, states:
I am the witness identified in the preceding testimony. I have read the testimony and the accompanying attachments and am familiar with their contents. Based upon my personal knowledge, the facts stated in the testimony are true. In addition, in my judgment and based upon my professional experience, the opinions and conclusions stated in the testimony are true, valid, and accurate.

DANE. A. WATSON

Subscribed and sworn to before me this $\qquad$ day of $\qquad$ , 2012 by DANE A. WATSON.

[^1]$\qquad$

## APPENDIX A

Depreciation Rate Calculations

## NUCLEAR PRODUCTION－－PALO VERDE

321 Structures \＆Improvements $\begin{array}{ll}321 & \text { Reactor Plant Equipment } \\ 323 & \text { Turbogenerator Units }\end{array}$ 324 Accessory Electric Equipment $325 \quad \begin{aligned} & \text { Misc．Power Plant Equipment } \\ & \text { Decommissioning } \\ & \text { Total PVNGS Production }\end{aligned}$

182 Design Basis Documentation

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DEPRECIABLE
January 1， 2013

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$166,374,080$ 92，089，056

$\square$



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$\begin{array}{r}657,042 \\ 11,041,110 \\ \hline 11,698,151\end{array}$





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| 016＇L88＇レレ |

$338,867,708$
2013


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DEPRECIABLE
January 1， 2013






653，623，396

$11,887,910$
$319,984,876$
6,997

Mountainview Intangibles
$\frac{\text { OTHER PRODUCTION－－PEAKERS }}{340 \text { Land and Land Rights }}$
341 Structures and Improvements
 Prime Movers

Generators
Accessory Electric Equipment
bu！̣！ssimu
Peakers Decommissioning
Total Peakers
STEAM PRODUCTION－－MOUNTAINVIEW

342 Boiler Plant Equipment
343 Turbogenerator Units
344 Accessory Electric Equipment


301 Organization

| OTHER PRODUCTION－－SOLAR PV |  |
| :---: | :--- |
| 341 | Structures and Improvements |
| 343 | Prime Movers |
| 345 | Accessory Electric Equipment |
| $34 x$ | Solar PV Decommissioning |
|  | Solar Production |


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$\stackrel{\circ}{\circ}$
$\stackrel{\circ}{\circ}$



|  | $\begin{aligned} & 0 \\ & 0 \\ & 0 \end{aligned}$ | $\stackrel{\infty}{\sim}$ |  |
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|  |  |  |  |


 DEPRECIATION


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EST. FUTURE NET SALVAGE
$\% \quad$ AMOUNT

| \% |
| :--- |
| (2) |
|  |



Southern California Edison Annual Accrual Rate Determination For Estimated Year 2015

## $\frac{\text { TRANSMISSION PLANT }}{350.2 \quad \text { Easements }}$

| 352 | $\begin{array}{l}\text { Structures and Improvements } \\ 353\end{array}$ |
| :--- | :--- |
|  | Station Equipment |
| Total Transmission Substations |  |$]$| 354 | Towers and Fixtures |
| :--- | :--- |
| 355 | Poles and Fixtures |
| 356 | Overhead Conductors \& Devices |
| 357 | Underground Conduit |
| 358 | Underground Conductors \& Devices |
| 359 | Roads and Trails |
|  | Total Transmissions Lines |
|  | Total Transmission Plant |

## DISTRIBUTION PLANT


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ஃㅇ GROSS PLANT
January 1, 2013

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$\begin{array}{r}8,612,752.8 \\ 764,807.3 \\ \hline 232,072,449.0\end{array}$



$29,771,926$
$8,284,523$
102,167



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## COMPOSITE DEPRECIATION RATES

| 391.1 | Office Furniture |
| :--- | :--- |
| 391.5 | Office Equipment |
| 391.6 | Duplicating Equipment |
|  | Acc．Dep．Adjustment |
|  | Furniture \＆Equipment |
| 391.2 | Personal Computers |
| 391.3 | Mainframe Computers |
| 391.7 | PC Software |
|  | Acc．Dep．Adjustment |
|  | Computers |
| 391.4 | DDSMS－CPU \＆Processing |
| 391.4 | DDSMS－Controllers，Receivers，Comm． |
| 391.4 | DDSMS－Telemetering \＆System |
| 391.4 | DDSMS－Miscellaneous |
| 391.4 | DDSMS－Map Board |
|  | Acc．Dep．Adjustment |
|  | Security Monitoring（DDSMS） |

Stores Equipment
Laboratory Equipment
Misc Power Plant Equipment
Acc．Dep．Adjustment
Stores／Lab／Miscellaneous Data Network Systems
Telecom System Equipment
Netcomm Radio Assembly
Microwave Equip．\＆Antenna Assembly
Telecom Power Systems
Fiber Optic Communication Cables
Telecom Infrastructure
Acc．Dep．Adjustment
$\quad$ Telecommunications
Telecommunications
Transportation Equip．
Transportation Equip．
Garage \＆Shop－－Equip．
Tools \＆Work Equip．－－Shop
Tools \＆Work Equip．－－Shop
Power Oper Equip
Power Oper Equip
DEPRECIATION

|  |  ம 우사 |
| :---: | :---: |










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 DEPRECIABLE

January 1， 2013

$33,819,929.9$
$258,179,017.9$

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## APPENDIX B

## Depreciation Expense Comparison

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Southern California Edison
Comparison of Depreciation Accrual Rates
Straight Line Remaining Life Method
For Estimated Year 2015


 ㅋㅋ | NUCLEAR PRODUCTION -- PALO VERDE |
| :---: |
| Total PVNGS Production |
| Total PVNGS DBD \& Debits |
| Total PVNGS Plant |
| HYDRO ELECTRIC PRODUCTION |
| 330.2 Easements |
| $331 \quad$ Structures and Improvements |
| $332 \quad$ Reservoirs, Dams and Waterways |
| $333 \quad$ Water Wheels, Turbines \& Generators |
| $334 \quad$ Accessory Electric Equipment |
| 335 |
| 336 Misc. Power Plant Equipment |
| Roads, Railroads \& Bridges |
| Total Hydro Electric Production |
| OTHER PRODUCTION -- PEBBLY BEACH |
| Other Production - Pebbly Beach |
| Pebbly Beach Decommissioning |
| Total Pebbly Beach |
| OTHER PRODUCTION -- PEAKERS |
| Other Prodcution - Peakers |
| Peakers Decommissioning |
| Total Peakers |

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|  |  |  | $\left\lvert\, \begin{gathered}o \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ \sim \\ 0\end{gathered}\right.$ |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |
|  | ®®® | ®® | $\stackrel{\stackrel{1}{2}}{\substack{0}}$ |  |
|  |  |  | $\left\lvert\, \begin{gathered}0 \\ n \\ n \\ 0 \\ n \\ n \\ 0 \\ 0\end{gathered}\right.$ |  |
|  | 코 | E® | ¢̊ |  |
|  |  |  |  |  |

STEAM PRODUCTION -- MOUNTAINVIEW
Mountainview Production
Mountainview Decommissioning
Mountainview Intangibles
Total Mountainview
OTHER PRODUCTION -- SOLAR PV
Solar Production
Solar Decomissioning
Total Solar PV


[^2]Southern California Edison
Comparison of Depreciation Accrual Rates Straight Line Remaining Life Method For Estimated Year 2015

$$
\begin{array}{cc} 
& \text { PRESENT } \\
& \text { ANNUAL } \\
\text { GROSS PLANT } & \text { ACCRUAL } \\
\text { Jan. 1, 2013 } & \text { RATE/LIFE (YRS) } \\
\hline
\end{array}
$$



$\frac{\text { DISTRIBUTION PLANT }}{360.2 \text { Easements }}$

## GENERAL PLANT

389.2 Easements

390 Structures and Improvements
Total General Plant

391.x Furniture \& Equipment 391.x Computers 391.4 Security Monitoring (DDSMS) 391.x Stores/Lab/Miscellaneous $\begin{array}{cl}\text { 397.x } & \text { Telecommunications } \\ 39 x & \text { General Other }\end{array}$

 증

Southern California Edison Comparison of Depreciation Accrual Rates Straight Line Remaining Life Method For Estimated Year 2015 |  | PRESENT |
| :---: | :---: |
|  | ANNUAL |
| GROSS PLANT | ACCRUAL |
| Jan. 1, 2013 | RATE/LIFE (YRS) |
| $(1)$ | $(2)$ |

\& x!puədd $\forall$

|  | PRESENT | PRESENT | PROPOSED | PROPOSED | DIFFERENCE |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | ANNUAL | ANNUAL | ANNUAL | ANNUAL | ANNUAL |
| GROSS PLANT | ACCRUAL | ACCRUAL | ACCRUAL | ACCRUAL | ACCRUAL |
| Jan. 1, 2013 | RATE/LIFE (YRS) | AMOUNT | RATE/LIFE (YRS) | AMOUNT | AMOUNT |
| (1) | (2) | (3) | (4) | (5) | (6) |
| 124,930,436 | 2.64\% | 3,295,263 | 2.52\% | 3,143,089 | $(152,173)$ |
| 18,723,340 | 2.50\% | 468,084 | 2.50\% | 468,084 | 0 |
| 510,832 | 5.00\% | 25,542 | 5.00\% | 25,542 | $\underline{0}$ |
| 144,164,608 | 0.00\% | 3,788,888 |  | 3,636,715 | $(152,173)$ |
| 449,748,553 | 21.41\% | 96,285,380 | 20.58\% | 92,578,035 | $(3,707,345)$ |
| 861,860,605 | 14.71\% | 126,746,013 | 14.93\% | 128,685,521 | 1,939,508 |
| 71,434,285 | 10.00\% | 7,143,429 | 12.45\% | 8,893,177 | 1,749,749 |
| 124,570,889 | 6.67\% | 8,303,316 | 6.78\% | 8,448,649 | 145,332 |
| 1,507,614,331 | 10.82\% | 238,478,138 |  | 238,605,382 | 127,244 |
| 641,973 | 1.96\% | 12,583 | 2.57\% | 16,497 | 3,915 |
| 1,652,420,912 |  | 242,279,609 |  | 242,258,594 | $(21,015)$ |
| 31,798,693,947 | 4.38\% | 1,391,974,276 | 4.70\% | 1,494,337,199 | 102,417,521 |

INTANGIBLES

CATALINA Plant

## Total Intangibles and Software

(1) Production present accrual determined from 2012 GRC remaining life and decommissioning amount
(2) Production proposed accrual Determined from Proposed remaining life and decommissioning amount

## APPENDIX C

Depreciation Parameter Comparison


| \% \% \% \% \% \% \% \% | \% \% | \%ㅇํㅇํ |
| :---: | :---: | :---: |
|  | 우웅 |  |
|  | ¢ $\quad \stackrel{0}{\circ}$ | 208 |
|  <br>  |  |  |

SCE Proposed Versus Approved Lives and Net Salvage
Production Facitlities

| 2012 GRC Approved |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Life Span | 30 | 26.0 | 0\% |  |
| Life Span | 30 | 26.0 | 0\% |  |
| Life Span | 30 | 26.0 | 0\% |  |
| Life Span | 30 | 26.0 | 0\% |  |
| Life Span | 30 | 26.0 | 0\% |  |
| Life Span | 30 | 26.0 | 0\% |  |
| Life Span |  |  |  | (8,846,811) |
| Life Span | 30 | 26.0 | 0\% |  |
| Life Span | 30 | 26.0 | 0\% |  |
| Life Span | 20 | 17.2 | 0\% |  |
| Life Span | 20 | 17.2 | 0\% |  |
| Life Span | 20 | 17.2 | 0\% |  |
| Life Span |  |  |  | (27,17 |

## 



| SCE Proposed Versus Approved Lives and Net Salvage Transmission, Distribution, and General 2015 GRC |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Previously Authorized |  | SCE Proposed |  | 2012 CRC Adopted |  |
| 2009 GRC |  | 2012 GRC |  |  |  |
| $\begin{aligned} & \text { Iowa } \\ & \text { Curve } \end{aligned}$ | $\begin{gathered} \text { Net } \\ \text { Salvage } \end{gathered}$ | Lifelowa <br> Curve | $\begin{gathered} \text { Net } \\ \text { Salvage } \end{gathered}$ | Lifelowa <br> Curve | $\begin{gathered} \text { Net } \\ \text { Salvage } \end{gathered}$ |
|  |  |  |  | 60 | 0\% |
| 55 s3 | -40 | 55 s2 | -30\% | 55 s2 | -30\% |
| 40 R1 | 5\% | 40 R1 | -10\% | 40 R1 | -5\% |
| 65 S3 | -70\% | 60 R5 | -85\% | 65 R5 | -70\% |
| 45 R1 | -70\% | 45 R1 | -85\% | 50 R 1 | -70\% |
| 50 R 4 | -80\% | 50 R 4 | -85\% | 50 R 4 | -80\% |
| 55 R3 | 0\% | 55 R3 | 0\% | 55 R3 | 0\% |
| 35 R3 | -30\% | 40 R 2.5 | -20\% | 40 R 2.5 | -20\% |
| 60 sQ | 0\% | 60 SQ | 0\% | 60 SQ | 0\% |
|  |  |  |  | 60 | 0\% |
| $40 \mathrm{S2}$ | -20\% | 40 S2.5 | -25\% | 40 S2.5 | -25\% |
| 45 R 1 | -10\% | $45 \mathrm{R1.5}$ | -20\% | $45 \mathrm{R1.5}$ | -20\% |
| 45 R0.5 | -190\% | 40 R 1 | -200\% | 45 R1 | -190\% |
| 45 R 0.5 | -100\% | 40 R1 | -110\% | $45 \mathrm{R0.5}$ | -110\% |
| 55 R3 | -20\% | 55 R3 | -20\% | 55 R3 | -20\% |
| 30 R2 | -60\% | 30 R2 | -60\% | 40 R1 | -60\% |
| $30 \mathrm{S3}$ | 0\% | 30 R 1.5 | -10\% | $30 \mathrm{R1.5}$ | 0\% |
| 35 R2 | -75\% | 40 R 2 | -100\% | 40 R 2 | -85\% |
| 19 yr RL | -10\% | 16 yr RL | -5\% | 6 yr RL | N/A |
| 20 R3 | -10\% | 20 R3 | -5\% | 20 R3 | -5\% |
| 35 L0.5 | -15\% | 40 L0.5 | -30\% | 40 LO .5 | -20\% |
| 40 R 2.5 | -5\% | 40 R 2.5 | -5\% | 40 R 2.5 | -5\% |



# SCE Proposed Versus Approved Lives and Net Salvage <br> General Amortized, Intangible, and Easements 2015 GRC 

| 2012 GRC <br> Approved <br> Life | 2012 GRC <br> Approved <br> Net Salvage |
| :---: | :---: |


| Plant Acct S | Sub Acct | Description | Life | Net Salvage | Life | Net Salvage |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 391.1 |  | Office Furniture | 20 | 0\% | 20 | 0\% |
| 391.2 |  | Personal Computers | 5 | 0\% | 5 | 0\% |
| 391.3 |  | Mainframe Computers | 5 | 0\% | 5 | 0\% |
| 391.4 |  | DDSMS-Power Management System | 14.5 | 0\% | 12.3 | 0\% |
|  | 391.4 | Central Processing Unit | 7 | 0\% | 7 | 0\% |
|  | 391.401 | CPU Memory Unit | 7 | 0\% | 7 | 0\% |
|  | 391.407 | Line Printer | 7 | 0\% | 7 | 0\% |
|  | 391.408 | Magnetic Tape Drive | 7 | 0\% | 7 | 0\% |
|  | 391.409 | Bulk Storage Unit | 7 | 0\% | 7 | 0\% |
|  | 391.413 | Display Controller | 7 | 0\% | 7 | 0\% |
|  | 391.415 | Full Graphics CRT Workstation | 7 | 0\% | 7 | 0\% |
|  | 391.416 | PC-Based Workstation | 7 | 0\% | 7 | 0\% |
|  | 391.417 | Teletypewriter | 7 | 0\% | 7 | 0\% |
|  | 391.432 | Interface/Application Processor | 7 | 0\% | 7 | 0\% |
|  | 391.438 | Battery System | 7 | 0\% | 7 | 0\% |
|  | 391.442 | Cathode Ray Tube Terminal | 7 | 0\% | 7 | 0\% |
|  | 391.443 | Optical Projection Unit | 7 | 0\% | 7 | 0\% |
|  | 391.42 | Data Acq Concentrator/Controller | 10 | 0\% | 10 | 0\% |
|  | 391.422 | Communication Controller | 10 | 0\% | 10 | 0\% |
|  | 391.423 | Data Communication Unit | 10 | 0\% | 10 | 0\% |
|  | 391.428 | Standard Time/Freq Clock Receiver | 10 | 0\% | 10 | 0\% |
|  | 391.429 | Wall Strip Chart Recorder | 10 | 0\% | 10 | 0\% |
|  | 391.435 | Dial-Up Remote Terminal Unit | 10 | 0\% | 10 | 0\% |
|  | 391.426 | Telemetering Receiver/Transmitter | 15 | 0\% | 15 | 0\% |
|  | 391.436 | Uninterruptible Power System | 15 | 0\% | 15 | 0\% |
|  | 391.405 | Input/Output Unit | 20 | 0\% | 20 | 0\% |
|  | 391.406 | Control Console | 20 | 0\% | 20 | 0\% |
|  | 391.421 | Real Time Remote Terminal Unit | 20 | 0\% | 20 | 0\% |
|  | 391.43 | Broadcast Control System | 20 | 0\% | 20 | 0\% |
|  | 391.419 | Dynamic Map Board | 25 | 0\% | 25 | 0\% |
| 391.5 |  | Office Equipment | 5 | 0\% | 5 | 0\% |
| 391.6 |  | Duplicating Equipment | 5 | 0\% | 5 | 0\% |
| 391.7 |  | PC Software | 5 | 0\% | 5 | 0\% |
| $\underline{393}$ |  | Stores Equipment | 20 | 0\% | 20 | 0\% |
| 394 |  | Tools \& Work Equipment | 10 | 0\% | 10 | 0\% |
| 395 |  | Laboratory Equipment | 15 | 0\% | 15 | 0\% |
| 397 |  | Telecommunication Equipment | 16.8 | 0\% | 16.8 | 0\% |
|  | 397.55 | Data Network System | NA | NA | 5 | 0\% |
|  | 397.05 | AC/Heating/Ventilation System | 7 | 0\% | NA | NA |
|  | 397.11 | Radio Base Station Control System | 7 | 0\% | NA | NA |
|  | 397.13 | Telephone System | 7 | 0\% | NA | NA |
|  | 397.135 | Circuit Treatment | 7 | 0\% | NA | NA |
|  | 397.145 | Transmission Equipment | 7 | 0\% | NA | NA |
|  | 397.152 | Radio Transmission Equipment | 7 | 0\% | NA | NA |
|  | 397.153 | Sync Equipment | 7 | 0\% | NA | NA |
|  | 397.155 | Channel Equipment Assembly | 7 | 0\% | NA | NA |
|  | 397.16 | Communications Alarm/Control System | 7 | 0\% | NA | NA |
|  | 397.163 | Misc Communication Training Equipment | 7 | 0\% | NA | NA |
|  | 397.2 | Communication Equipment - Radio | 7 | 0\% | NA | NA |
|  | 397.5 | Cellular Phones | 7 | 0\% | NA | NA |
|  | 397.51 | Radio Base Station Control System (397.110) | 7 | 0\% | NA | NA |
|  | 397.515 | Radio, Mobil Unit (397.540) | 7 | 0\% | NA | NA |
|  | 397.52 | Radio, Portable Unit (397.540) | 7 | 0\% | NA | NA |

# SCE Proposed Versus Approved Lives and Net Salvage General Amortized, Intangible, and Easements 2015 GRC 

| Plant Acct Sub Acct Description |
| :---: |
| 397.525 Radio, Pager Unit (397.540) |
| 397.54 Mobile/Portable Unit |
| 397.545 Data Network Interconnect System |
| 397.55 Dynamic Network Multiplexer (DNM) |
| 397.56 Television System (TV) |
| 397.562 |


| 2012 GRC <br> Approved <br> Life | 2012 GRC <br> Approved <br> Net Salvage |
| ---: | ---: | ---: | ---: |$\quad$| 2015 GRC <br> Proposed <br> Life | 2015 GRC <br> Proposed <br> Net Salvage |  |
| :---: | :---: | :---: |
| 7 | $0 \%$ | NA |

397.025 Comm Term. Prot. System
397.136 Cable Protection
397.14 Antenna Assembly
397.151 Intercom System (IC)
397.24 D.C. Power System
397.245 Electrical Power Generation System
397.255 Public Address System (PA)
397.3 Communication Equipment - Microwave
397.701 Microwave Antenna Assembly
10

| $0 \%$ | NA | NA |
| :--- | :--- | :--- |
| O\% | NA | NA |
| NA | 10 | $0 \%$ |
| NA | 10 | $0 \%$ |
| NA | 10 | $0 \%$ |
| NA | 10 | $0 \%$ |
| NA | 10 | $0 \%$ |
| NA | 10 | $0 \%$ |
| NA | 10 | $0 \%$ |
| NA | 10 | $0 \%$ |
| NA | 10 | $0 \%$ |
| NA | 10 | $0 \%$ |
| NA | 10 | $0 \%$ |
| NA | 10 | $0 \%$ |
| NA | 10 | $0 \%$ |

397.705 Microwave Terminal Assembly
397.715 Baseband Equipment Assembly
397.72 Channel Equipment Assembly
397.836 Digital Cross Connect System (DSX)
397.837 Dynamic Network Multiplexer (DNM)
397.84 DC Power System
397.24 D.C. Power System

15
397.245 Electrical Power Generation System

| 15 | 0\% | NA | NA |
| :---: | :---: | :---: | :---: |
| 15 | 0\% | 15 | 0\% |
| 15 | 0\% | 15 | 0\% |
| 15 | 0\% | NA | NA |
| 15 | 0\% | NA | NA |
| 15 | 0\% | NA | NA |
| 15 | 0\% | 15 | 0\% |
| 15 | 0\% | NA | NA |
| 15 | 0\% | NA | NA |
| 15 | 0\% | NA | NA |
| 15 | 0\% | NA | NA |
| 15 | 0\% | NA | NA |
| 15 | 0\% | NA | NA |
| 15 | 0\% | NA | NA |
| 15 | 0\% | NA | NA |
| 15 | 0\% | 20 | 0\% |
| 15 | 0\% | 20 | 0\% |
| 25 | 0\% | 25 | 0\% |
| 25 | 0\% | 25 | 0\% |
| 40 | 0\% | NA | NA |
| 40 | 0\% | NA | NA |
| 40 | 0\% | NA | NA |
| 40 | 0\% | NA | NA |
| 40 | 0\% | NA | NA |
| 40 | 0\% | NA | NA |
| 40 | 0\% | 40 | 0\% |
| 40 | 0\% | 40 | 0\% |
| 40 | 0\% | 40 | 0\% |
| 40 | 0\% | 40 | 0\% |
| 40 | 0\% | 40 | 0\% |
| 40 | 0\% | 40 | 0\% |

## SCE Proposed Versus Approved Lives and Net Salvage <br> General Amortized, Intangible, and Easements 2015 GRC

| $\underline{\text { Plant Acct S }}$ | Sub Acct | Description | 2012 GRC <br> Approved Life | 2012 GRC <br> Approved <br> Net Salvage | $\begin{gathered} \hline 2015 \text { GRC } \\ \text { Proposed } \\ \text { Life } \\ \hline \end{gathered}$ | 2015 GRC <br> Proposed <br> Net Salvage |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 397.821 | Communication Riser | 40 | 0\% | 40 | 0\% |
|  | 397.825 | Antenna Support Structure | 40 | 0\% | 40 | 0\% |
|  | 397.865 | Communication Conduit System | 40 | 0\% | 40 | 0\% |
| 398 |  | Misc Power Plant Equipment | 20 | 0\% | 20 | 0\% |
| Intangibles |  |  |  |  |  |  |
| 302.02 |  | Hydro Relicensing | Various | 0\% | Various | 0\% |
| 303.64 |  | Radio Frequency | 40 | 0\% | 40 | 0\% |
| 302.05 |  | Miscellaneous Intangibles | 20 | 0\% | 20 | 0\% |
| 303.105 |  | Capitalized Software - 5 year | 5 | 0\% | 5 | 0\% |
| 303.707 |  | Capitalized Software-7 year | 7 | 0\% | 7 | 0\% |
| 303.21 |  | Capitalized Software - 10 year | 10 | 0\% | 10 | 0\% |
| 303.315 |  | Capitalized Software - 15 year | 15 | 0\% | 15 | 0\% |
|  |  |  |  |  |  | 0\% |
| Easements $0 \%$ |  |  |  |  |  |  |
| 350 |  | Transmission Easements | 60 | 0\% | 60 | 0\% |
| 360 |  | Distribution Easements | 60 | 0\% | 60 | 0\% |
| 389 |  | General Easements | 60 | 0\% | 60 | 0\% |

## APPENDIX D

## Production Retirement Dates

SOUTHERN CALIFORNIA EDISON COMPANY
GENERATION REMAINING LIFE DETERMINATION

| Pebbly Beach Remaining Life Span: |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | MW | H. Whitman | DATE OF FIRM OPERATION | DATE FULLY DEPRECIATED | WEIGHTING | TOTAL LIFE SPAN | $\begin{gathered} \hline \text { AGE } \\ \text { (YRS) } \end{gathered}$ | RMNG LIFE SPAN | WTD REM <br> LIFE SPAN | WTD AGE |
| Unit 7 Diesel | 1.00 | 80 | 1958 | 2003 | 4.4\% | 45 | 54.5 | 0.0 | 0.000 | 2.389 |
| Unit 8 Diesel | 1.50 | 67 | 1963 | 2008 | 5.5\% | 45 | 49.5 | 0.0 | 0.000 | 2.726 |
| Unit10 Diesel | 1.10 | 71 | 1966 | 2011 | 4.3\% | 45 | 46.5 | 0.0 | 0.000 | 1.990 |
| Unit12 Diesel | 1.60 | 140 | 1976 | 2021 | 12.3\% | 45 | 36.5 | 8.5 | 1.043 | 4.480 |
| Unit 14 Diesel | 1.40 | 261 | 1986 | 2031 | 20.0\% | 45 | 26.5 | 18.5 | 3.704 | 5.305 |
| Unit 15 Diesel | 2.80 | 349 | 1995 | 2040 | 53.5\% | 45 | 17.5 | 27.5 | 14.723 | 9.369 |
|  | 9.40 |  |  |  | 100.0\% |  |  |  |  | 26.258 |
| Mountainview Remaining Life Span: |  |  |  |  |  |  |  |  |  |  |
|  | DATE OF FIRM DATE FULLY |  |  |  |  | TOTAL | AGE | RMNG | WTD REM |  |
| UNIT | LOCN | DESCRIPTION | OPERATION | DEPRECIATED | WEIGHTING | LIFE SPAN | (YRS) | LIFE SPAN | LIFE SPAN | WTD AGE |
| 3 |  | Mountainview | 12/31/05 | 12/31/35 | 50\% | 30 | 7.0 | 23.0 | 11.500 | 3.500 |
| 4 |  | Mountainview | 12/31/05 | 12/31/35 | 50\% | 30 | 7.0 | 23.0 | 11.500 | 3.500 |
|  |  |  |  |  | 100\% |  | 7.0 | 23.0 | 22.999 | 7.001 |

Peater ceneratiom Remamians Lis span:

| InIr | 100 | pescrip | - | derent | wel | Itersh | ${ }_{\text {ate }}^{\text {ace }}$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\frac{1}{2}$ | 3 sax | Patass | ${ }^{180107}$ | ${ }_{07312}$ | 208 | ${ }_{25}^{25}$ | ${ }_{54}$ | (19,6 |  | ${ }^{3916}$ | 1.084 |
| ${ }_{4}^{3}$ | (ind |  | (osion |  | 20\% | ${ }_{25}^{25}$ | ${ }_{5}^{54}$ |  |  | cos |  |
|  | ${ }_{3 \times 1}$ | Peates |  | 1137 |  |  |  |  |  |  |  |


Remaining Life As Of $\quad 12 / 31 / 12$
SOUTHERN CALIFORNIA EDISON COMPANY
GENERATION REMAINING LIFE DETERMINATION

| Solar PV Remaining Life Span: |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| UNIT | MW (DC) | Escalation Factor | DATE OF FIRM OPERATION | DATE FULLY DEPRECIATED | WEIGHTING | TOTAL LIFE SPAN | $\begin{aligned} & \text { AGE } \\ & \text { (YRS) } \end{aligned}$ | RMNG LIFE SPAN | WTD REM LIFE SPAN | WTD AGE |
| SPVP002-Chino | 1.22 | 1.560 | 09/24/09 | 09/24/29 | 1.3\% | 20 | 3.3 | 16.7 | 0.220 | 0.043 |
| SPVP003-Rialto | 1.22 | 1.643 | 07/19/10 | 07/19/30 | 1.4\% | 20 | 2.5 | 17.5 | 0.243 | 0.034 |
| SPVP005-Redlands | 3.40 | 1.686 | 12/27/10 | 12/27/30 | 4.0\% | 20 | 2.0 | 18.0 | 0.713 | 0.080 |
| SPVP006- Ontario | 2.55 | 1.643 | 01/10/11 | 01/10/31 | 2.9\% | 20 | 2.0 | 18.0 | 0.522 | 0.057 |
| SPVP007-Redlands | 3.20 | 1.686 | 12/29/10 | 12/29/30 | 3.7\% | 20 | 2.0 | 18.0 | 0.672 | 0.075 |
| SPVP008- Ontario | 2.85 | 1.643 | 12/30/10 | 12/30/30 | 3.2\% | 20 | 2.0 | 18.0 | 0.583 | 0.065 |
| SPVP009- Ontario | 1.41 | 1.643 | 01/10/11 | 01/10/31 | 1.6\% | 20 | 2.0 | 18.0 | 0.289 | 0.032 |
| SPVP010-Fontana | 2.25 | 1.731 | 05/18/11 | 05/18/31 | 2.7\% | 20 | 1.6 | 18.4 | 0.495 | 0.044 |
| SPVP011-Redlands | 5.02 | 1.731 | 11/10/11 | 11/10/31 | 6.0\% | 20 | 1.1 | 18.9 | 1.133 | 0.069 |
| SPVP012-Ontario | 0.77 | 1.643 | 12/29/10 | 12/29/30 | 0.9\% | 20 | 2.0 | 18.0 | 0.157 | 0.018 |
| SPVP013-Redlands | 4.93 | 1.731 | 09/15/11 | 09/15/31 | 5.9\% | 20 | 1.3 | 18.7 | 1.104 | 0.076 |
| SPVP015-Fontana | 4.69 | 1.731 | 12/19/11 | 12/19/31 | 5.6\% | 20 | 1.0 | 19.0 | 1.064 | 0.058 |
| SPVP016-Redlands | 1.75 | 1.731 | 05/18/11 | 05/18/31 | 2.1\% | 20 | 1.6 | 18.4 | 0.385 | 0.034 |
| SPVP017-Fontana | 4.50 | 1.731 | 12/14/11 | 12/14/31 | 5.4\% | 20 | 1.0 | 19.0 | 1.020 | 0.056 |
| SPVP018-Fontana | 1.94 | 1.686 | 05/23/11 | 05/23/31 | 2.3\% | 20 | 1.6 | 18.4 | 0.416 | 0.036 |
| SPVP022-Redlands | 3.09 | 1.643 | 11/15/10 | 11/15/30 | 3.5\% | 20 | 2.1 | 17.9 | 0.628 | 0.075 |
| SPVP023-Fontana | 3.86 | 1.731 | 05/12/11 | 05/12/31 | 4.6\% | 20 | 1.6 | 18.4 | 0.848 | 0.076 |
| SPVP026-Rialto | 8.60 | 1.731 | 08/26/11 | 08/26/31 | 10.3\% | 20 | 1.3 | 18.7 | 1.920 | 0.139 |
| SPVP027-Rialto | 2.62 | 1.731 | 11/27/12 | 11/27/32 | 3.1\% | 20 | 0.1 | 19.9 | 0.624 | 0.003 |
| SPVP028 - San Bernardi | 4.86 | 1.731 | 12/20/11 | 12/20/31 | 5.8\% | 20 | 1.0 | 19.0 | 1.104 | 0.060 |
| SPVP032-Ontario | 1.74 | 1.731 | 12/22/11 | 12/22/31 | 2.1\% | 20 | 1.0 | 19.0 | 0.394 | 0.021 |
| SPVP033-Ontario | 1.27 | 1.731 | 12/12/11 | 12/12/31 | 1.5\% | 20 | 1.1 | 18.9 | 0.289 | 0.016 |
| SPVP042-Porterville | 6.77 | 1.686 | 12/28/10 | 12/28/30 | 7.9\% | 20 | 2.0 | 18.0 | 1.421 | 0.159 |
| SPVP044-Perris | 10.15 | 1.731 | 09/14/12 | 09/14/32 | 12.2\% | 20 | 0.3 | 19.7 | 2.394 | 0.036 |
|  | 84.65 |  |  |  | 100.0\% |  | 1.36 | 18.6 | 18.639 | 1.361 |

## APPENDIX E

Net Salvage Analysis

| $\qquad$ | Retirements | Gross Salvage | Cost of Removal | $\begin{gathered} \text { Net } \\ \text { Salvage } \end{gathered}$ | $\begin{gathered} \text { Net } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} 2-\mathrm{yr} \\ \text { Net } \\ \text { Salv. \% } \\ \hline \end{gathered}$ | $\begin{gathered} \text { 3-yr } \\ \text { Net } \\ \text { Salv. \% } \\ \hline \end{gathered}$ | $\begin{gathered} 4-\mathrm{yr} \\ \mathrm{Net} \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} \text { 5-yr } \\ \text { Net } \\ \text { Salv. \% } \\ \hline \end{gathered}$ | $\begin{gathered} \text { 6-yr } \\ \text { Net } \\ \text { Salv. \% } \\ \hline \end{gathered}$ | $\begin{gathered} \text { 7-yr } \\ \text { Net } \\ \text { Salv. \% } \\ \hline \end{gathered}$ | $\begin{gathered} \text { 8- yr } \\ \text { Net } \\ \text { Salv. \% } \\ \hline \end{gathered}$ | 9- yr Net Salv. \% | 10-yr Net Salv. \% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 198635200 Structures and Improvements | 101,362 | 3,058 | 38,678 | $(35,620)$ | -35.14\% |  |  |  |  |  |  |  |  |  |
| 198735200 Structures and Improvements | 63,769 | - | 74,165 | $(74,165)$ | -116.30\% | -66.48\% |  |  |  |  |  |  |  |  |
| 198835200 Structures and Improvements | 18,789 | 52,940 | 20,209 | 32,730 | 174.20\% | -50.19\% | -41.90\% |  |  |  |  |  |  |  |
| 198935200 Structures and Improvements | 242,412 | 344 | 42,794 | $(42,450)$ | -17.51\% | -3.72\% | -25.81\% | -28.03\% |  |  |  |  |  |  |
| 199035200 Structures and Improvements | 82,283 | 1,593 | 36,242 | $(34,649)$ | -42.11\% | -23.74\% | -12.92\% | -29.11\% | -30.31\% |  |  |  |  |  |
| 199135200 Structures and Improvements | 103,252 | - | 17,628 | $(17,628)$ | -17.07\% | -28.18\% | -22.14\% | -13.88\% | -26.67\% | -28.07\% |  |  |  |  |
| 199235200 Structures and Improvements | 92,911 | - | 42,639 | $(42,639)$ | -45.89\% | -30.72\% | -34.09\% | -26.37\% | -19.39\% | -29.63\% | -30.42\% |  |  |  |
| 199335200 Structures and Improvements | 53,683 | 745 | 15,648 | $(14,903)$ | -27.76\% | -39.25\% | -30.09\% | -33.07\% | -26.50\% | -20.15\% | -29.48\% | -30.24\% |  |  |
| 199435200 Structures and Improvements | 105,801 | 6,634 | 186,441 | $(179,807)$ | -169.95\% | -122.09\% | -94.04\% | -71.69\% | -66.14\% | -48.81\% | -42.82\% | -48.96\% | -47.34\% |  |
| 199535200 Structures and Improvements | 99,566 | - | 31,988 | $(31,988)$ | -32.13\% | -103.13\% | -87.51\% | -76.52\% | -63.04\% | -59.84\% | -46.68\% | -41.48\% | -47.02\% | -45.77\% |
| 199635200 Structures and Improvements | 153,021 | 4,101 | 158,480 | $(154,380)$ | -100.89\% | -73.78\% | -102.17\% | -92.48\% | -83.91\% | -72.56\% | -68.93\% | -55.57\% | -51.04\% | -55.13\% |
| 199735200 Structures and Improvements | 417,567 | 12,245 | 51,512 | $(39,267)$ | -9.40\% | -33.94\% | -33.67\% | -52.25\% | -50.67\% | -50.19\% | -46.85\% | -46.50\% | -41.30\% | -38.34\% |
| 199835200 Structures and Improvements | 344,817 | 17,395 | 165,285 | $(147,890)$ | -42.89\% | -24.55\% | -37.31\% | -36.80\% | -49.37\% | -48.38\% | -48.20\% | -45.86\% | -45.64\% | -41.62\% |
| 199935200 Structures and Improvements | 881,002 | - | 321,089 | $(321,089)$ | -36.45\% | -38.26\% | -30.93\% | -36.89\% | -36.64\% | -43.68\% | -43.27\% | -43.38\% | -42.17\% | -42.17\% |
| 200035200 Structures and Improvements | 740,451 | - | 207,776 | $(207,776)$ | -28.06\% | -32.62\% | -34.42\% | -30.04\% | -34.31\% | -34.23\% | -39.46\% | -39.24\% | -39.45\% | -38.68\% |
| 200135200 Structures and Improvements | 397,842 | - | 298,034 | $(298,034)$ | -74.91\% | -44.44\% | -40.95\% | -41.23\% | -36.45\% | -39.81\% | -39.56\% | -43.96\% | -43.68\% | -43.75\% |
| 200235200 Structures and Improvements | 603,560 | - | 283,632 | $(283,632)$ | -46.99\% | -58.09\% | -45.32\% | -42.34\% | -42.40\% | -38.33\% | -41.04\% | -40.80\% | -44.45\% | -44.21\% |
| 200335200 Structures and Improvements | 473,459 | - | 182,057 | $(182,057)$ | -38.45\% | -43.24\% | -51.78\% | -43.85\% | -41.75\% | -41.86\% | -38.35\% | -40.73\% | -40.53\% | -43.77\% |
| 200435200 Structures and Improvements | 346,364 | - | 204,458 | $(204,458)$ | -59.03\% | -47.15\% | -47.08\% | -53.16\% | -45.91\% | -43.48\% | -43.43\% | -40.05\% | -42.19\% | -41.96\% |
| 200535200 Structures and Improvements | 723,379 | - | 70,702 | $(70,702)$ | -9.77\% | -25.72\% | -29.63\% | -34.51\% | -40.83\% | -37.95\% | -37.63\% | -38.03\% | -35.61\% | -37.57\% |
| 200635200 Structures and Improvements | 173,038 | 525 | 113,238 | $(112,714)$ | -65.14\% | -20.46\% | -31.21\% | -33.21\% | -36.79\% | -42.37\% | -39.31\% | -38.73\% | -39.03\% | -36.61\% |
| 200735200 Structures and Improvements | 204,099 | - | 139,368 | $(139,368)$ | -68.28\% | -66.84\% | -29.33\% | -36.44\% | -36.94\% | -39.34\% | -44.18\% | -40.92\% | -40.06\% | -40.26\% |
| 200835200 Structures and Improvements | 337,973 | - | 60,250 | $(60,250)$ | -17.83\% | -36.82\% | -43.68\% | -26.63\% | -32.92\% | -34.08\% | -36.80\% | -41.45\% | -38.97\% | -38.52\% |
| 200935200 Structures and Improvements | 851,385 | 128,044 | 366,446 | $(238,402)$ | -28.00\% | -25.11\% | -31.43\% | -35.16\% | -27.14\% | -31.33\% | -32.41\% | -34.78\% | -38.67\% | -37.05\% |
| 201035200 Structures and Improvements | 272,200 | 16,399 | 335,785 | $(319,387)$ | -117.34\% | -49.64\% | -42.29\% | -45.47\% | -47.32\% | -36.72\% | -39.38\% | -39.25\% | -40.42\% | -43.55\% |
| 201135200 Structures and Improvements | 1,102,062 | 53,940 | 950,006 | $(896,066)$ | -81.31\% | -88.44\% | -65.32\% | -59.06\% | -59.74\% | -60.06\% | -50.13\% | -50.90\% | -49.59\% | -49.28\% |
| 201235200 Structures and Improvements | 222,572 | 45,986 | 176,911 | $(130,924)$ | -58.82\% | -77.53\% | -84.32\% | -64.73\% | -59.04\% | -59.67\% | -59.97\% | -50.63\% | -51.32\% | -50.02\% |


| Cransaction Year | Retirements | $\begin{gathered} \text { Gross } \\ \text { Salvage } \end{gathered}$ | Cost of Removal | $\begin{gathered} \text { Net } \\ \text { Salvage } \end{gathered}$ | $\begin{gathered} \text { Net } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} \text { 2-yr } \\ \text { Netr } \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} \text { 3-yr } \\ \text { Netr } \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} 4 . \mathrm{yr} \\ \mathrm{Net} \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} \text { 5-yr } \\ \text { N-yt } \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} \text { 6-yr } \\ \text { N-ye } \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} \begin{array}{c} \text { 7- yr } \\ \text { Net } \\ \text { Salv. } \% \end{array} \\ \hline \end{gathered}$ | $\begin{gathered} 8 \mathrm{yr} \\ \text { 8.yr } \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} \text { 9-yr } \\ \text { Selt } \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} \begin{array}{c} 10-\mathrm{yr} \\ \text { Net } \\ \text { Salv. } \end{array} \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 198635300 Station Equipment | 4,292,796 | 1,703,607 | 581,588 | 1,122,019 | ${ }^{26.14 \%}$ |  |  |  |  |  |  |  |  |  |
| 198735300 Station Equipment | 3,430,023 | 602,842 | 252,698 | 350,144 | 10.21\% | 19.06\% |  |  |  |  |  |  |  |  |
| 198835300 Station Equipment | 6,080,460 | 622,523 | 555,342 | 67,181 | 1.10\% | 4.39\% |  |  |  |  |  |  |  |  |
| 198935300 Station Equipment | 5,862,100 | 1,640,348 | 422,455 | 1,217,893 | 20.78\% | 10.76\% | 10.64\% | 14.02\% |  |  |  |  |  |  |
| 199035300 Station Equipment | 12,871,565 | 3,523,728 | 2,165,261 | 1,358,468 | 10.55\% | 13.75\% | 10.65\% | 10.60\% | 12.65\% |  |  |  |  |  |
| 199135300 Station Equipment | 8,289,012 | 3,047,080 | 1,738,310 | 1,308,770 | 15.79\% | 12.60\% | 14.38\% | 11.94\% | 11.78\% | 13.29\% |  |  |  |  |
| 199235300 Station Equipment | 4,380,753 | 1,352,336 | 357,481 | 994,855 | 22.71\% | 18.18\% | 14.34\% | 15.54\% | 13.20\% | 12.95\% | 14.20\% |  |  |  |
| 199335300 Station Equipment | 9,681,589 | 2,489,972 | 1,329,643 | 1,160,329 | 11.98\% | 15.33\% | 15.50\% | 13.69\% | 14.70\% | 12.95\% | 12.76\% | 13.81\% |  |  |
| 199435300 Station Equipment | 5,701,867 | 1,535,904 | 620,773 | 915,130 | 16.05\% | 13.49\% | 15.53\% | 15.61\% | 14.02\% | 14.87\% | 13.28\% | 13.10\% | 14.02\% |  |
| 199535300 Station Equipment | 13,051,569 | 1,051,184 | 2,080,918 | $(1,029,734)$ | -7.89\% | -0.61\% | 3.68\% | 6.22\% | 8.15\% | 8.72\% | 9.90\% | 9.09\% | 9.15\% | 10.14\% |
| 199635300 Station Equipment | 15,146,997 | 901,656 | 2,730,651 | $(1,828,994)$ | -12.07\% | -10.14\% | -5.73\% | -1.80\% | 0.44\% | 2.70\% | 4.16\% | 5.46\% | 5.14\% | 5.34\% |
| 199735300 Station Equipment | 11,482,207 | 732,143 | 1,394,066 | (661,923) | -5.76\% | -9.35\% | -8.87\% | -5.74\% | -2.62\% | -0.76\% | 1.27\% | 2.75\% | 3.97\% | 3.78\% |
| 199835300 Station Equipment | 9,125,216 | 1,423,626 | 1,717,859 | (294,233) | -3.22\% | $-4.64 \%$ | -7.79\% | -7.82\% | -5.32\% | -2.71\% | -1.09\% | 0.73\% | 2.14\% | 3.29\% |
| 199935300 Station Equipment | 12,385,259 | 523,166 | 1,824,644 | $(1,301,477)$ | -10.51\% | -7.42\% | -6.84\% | -8.49\% | $-8.36 \%$ | -6.28\% | -3.97\% | -2.53\% | -0.83\% | 0.61\% |
| 200035300 Station Equipment | 20,943,193 | 1,608,417 | 2,088,440 | (480,223) | -2.29\% | -5.35\% | -4.89\% | -5.08\% | -6.61\% | -6.81\% | -5.33\% | $-3.61 \%$ | $-2.48 \%$ | -1.10\% |
| 200135300 Station Equipment | 13,260,097 | 1,855,738 | 3,225,494 | $(1,369,756)$ | -10.33\% | -5.41\% | -6.76\% | -6.18\% | -6.11\% | -7.21\% | -7.30\% | -5.99\% | -4.42\% | -3.38\% |
| 200235300 Station Equipment | 39,188,732 | 504,949 | 2,758,828 | $(2,253,879)$ | -5.75\% | -6.91\% | -5.59\% | -6.30\% | -6.01\% | -5.98\% | -6.74\% | -6.85\% | -5.92\% | -4.76\% |
| 200335300 Station Equipment | 29,826,797 | 1,931,598 | 3,630,094 | $(1,698,496)$ | -5.69\% | -5.73\% | -6.47\% | -5.62\% | -6.14\% | -5.93\% | -5.92\% | -6.53\% | -6.64\% | -5.88\% |
| 200435300 Station Equipment | 29,636,047 | 257,614 | 3,508,361 | $(3,250,747)$ | -10.97\% | -8.32\% | -7.30\% | -7.66\% | -6.81\% | -7.13\% | -6.90\% | -6.82\% | -7.26\% | -7.30\% |
| 200535300 Station Equipment | 33,047,138 | 223,816 | 4,864,923 | $(4,641,107)$ | -14.04\% | -12.59\% | -10.37\% | -8.99\% | -9.12\% | -8.25\% | -8.41\% | -8.16\% | -8.02\% | -8.31\% |
| 200635300 Station Equipment | 20,064,572 | 342,084 | 5,049,115 | (4,707,031) | -23.46\% | -17.60\% | -15.23\% | -12.70\% | -10.91\% | -10.8\% | -9.89\% | -9.93\% | -9.64\% | -9.44\% |
| 200735300 Station Equipment | 29,105,657 | 366,605 | 7,505,787 | $(7,13,181)$ | -24.53\% | -24.09\% | -20.05\% | -17.65\% | -15.13\% | -13.10\% | -12.91\% | -11.8\% | -11.80\% | -11.47\% |
| 200835300 Station Equipment | 19,697,781 | 332,667 | 5,626,460 | $(5,293,794)$ | -26.88\% | -25.48\% | -24.89\% | -21.37\% | -19.03\% | -16.56\% | -14.45\% | -14.20\% | -13.13\% | -13.00\% |
| 200935300 Station Equipment | 17,866,746 | 3,570,620 | 9,901,181 | (6,33,561) | -35.43\% | -30.95\% | -28.14\% | -27.06\% | -23.47\% | -20.99\% | -18.44\% | -16.17\% | -15.83\% | -14.71\% |
| 201035300 Station Equipment | 34,101,038 | 2,530,657 | 11,419,631 | (8,888,975) | -26.07\% | -29.29\% | -28.62\% | -27.44\% | -26.78\% | -24.04\% | -21.93\% | -19.6\% | -17.50\% | -17.15\% |
| 201135300 Station Equipment | 23,837,092 | 3,296,839 | 8,018,372 | $(4,72,532)$ | -19.81\% | -23.49\% | -26.31\% | -26.42\% | -25.98\% | -25.63\% | -23.48\% | -21.69\% | -19.68\% | -17.70\% |
| 201235300 Station Equipment | 66,749,956 | 3,517,952 | 12,223,765 | (8,705,813) | -13.04\% | -14.82\% | -17.90\% | -20.10\% | -20.92\% | -21.47\% | -21.6\% | -20.63\% | -19.58\% | -18.22\% |


| rransaction |  | Gross | Costof | ${ }^{\text {Not }}$ | ${ }_{\text {Not }}^{\text {Not }}$ | $\begin{gathered} 2 . y r \\ \text { Net } \end{gathered}$ | $\begin{aligned} & \substack{3 . y r \\ \text { Net }} \end{aligned}$ | $\begin{gathered} \text { 4.y. } \\ \mathrm{Net} \end{gathered}$ | $\begin{gathered} \text { 5.yr } \\ \text { Net } \end{gathered}$ | $\underbrace{\substack{\text { che }}}_{\substack{\text { v．yr } \\ \text { velt } \\ \text { salu }}}$ |  |  | Salvor | $\begin{gathered} 10 . y r \\ \substack{\text { Not }} \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Retirements | Savage | Removal | Salvage | Salv．\％ |  |  |  |  |  |  |  |  |  |
| 198635400 Towers \＆Fixtures 198735400 Towers \＆Fixtures |  | ${ }_{\substack{44,182 \\ 2488}}$ | 254，987 |  |  |  |  |  |  |  |  |  |  |  |
| 198735400 Towers \＆Fixtures Towers \＆Fixtures | $\begin{aligned} & 35,722 \\ & 824,509 \end{aligned}$ |  | 152，011 |  |  | ${ }^{386.52 \%}$ |  |  |  |  |  |  |  |  |
| 198955590 Towers 8 F Fixurus |  | 71，968 | 432，078 57,860 |  | －5．5．53\％ |  | －86．15\％ |  |  |  |  |  |  |  |
| 1990354000 Toweses 8 Fixutres | 210，435 | 30，995 | 79，995 | （48，999） | －2328\％ | －35．60\％ | －47．78\％ | －58．05\％ | －73．49\％ |  |  |  |  |  |
| 199135400 Towers 8 Fixutus | 143,417 | 6.165 | 139，692 | （13，527） | －93．10\％ | －51．53\％ | －56．3\％ | －53．10\％ | －62．05\％ | －75．64\％ |  |  |  |  |
| 199235400 Towers 8 F ixurres | ${ }^{81,640}$ | 48，899 | 23，203 | 25.995 | 31．47\％ | －47．9\％ | －36．01\％ | －41．39\％ | －4．78\％ | －56．35\％ | －69．3\％ |  |  |  |
| 199335400 Towers $\&$ F ixures | 155.615 | 21.851 | 143.442 | （12，590） | －78．14\％ | －40．42\％ | －60．27\％ | －47．0\％ | －50．40\％ | －51．04\％ | ．58．62\％ | －70．24\％ |  |  |
| 1994354500 Towers 8 F ixutres | ${ }^{131,008}$ | ${ }^{133.682}$ | 176，885 | （43，203） | ${ }^{32883 \%}$ | －57．37\％ | ${ }^{377.71 \%}$ | －53．22\％ | －44．50\％ | －47．38\％ | －49．53\％ | －56．53\％ | －67．31\％ |  |
| 1999535400 Towers 8 F Fixures | ${ }^{18,605}$ | 14，852 | 15.315 | ${ }^{(463)}$ | －2．49\％ | －29 | －54．0．4\％ | －36．02\％ | －51．4 | －4345\％ | －46．32\％ | 99\％ | －55．92\％ |  |
| 199635400 Towers 8 F ixuras | ${ }^{91,547}$ | 2.414 | 80,880 | （78．466） | －85．7\％ | －71．685 | ．50．52\％ | －61．33\％ |  | 48\％ | －48．09\％ |  | －50．96\％ |  |
| 199735400 Towere 8 Fixuras | 280，468 | ${ }^{12,314}$ | 290，512 | （278，199） | －99．19\％ | －95．88 | －91．43\％ | －76．6\％ | －7700\％ |  |  | 60．97\％ | 25\％ | ．57．79\％ |
| 1998354000 Towere 8 Fixurus | ${ }^{34,966}$ | 16，512 |  |  |  | －91．085 |  |  | －73， | －74．49\％ |  |  | 90\％ |  |
| 199935400 Toweres 8 Fixures | ${ }^{319,293}$ | 51.979 | 219，315 | （167，36） | －524 | －49，780 | －71．62\％ | 9\％ |  | 80\％ |  | 339\％ | 12\％ |  |
| 200035400 Towers 8 Fixurus | 36，468 | 7，157 | 26，059 | （18，02） | －51．83\％ | －52．33 | －49．98\％ | －70．56 | －72．36\％ | －70．70\％ | －65．28 | 12\％ | 12\％ |  |
| 200135400 Towers 8 Fixumes | 101,924 | 9，536 | 184, | （90，945） | －8923 | －79．3\％ | －60．56\％ | －58．10\％ | －73， | －74．35\％ | －72．84 | －67．55\％ | 04\％ | \％ |
| 200235400 Towers 8 Fixumes | 153，700 | 5，542 | 123 | （117，628） | 6．53\％ | 59\％ |  | ．58\％ |  | －73．59\％ | 68\％ | 3．3\％\％ | 82\％ |  |
| 200335400 Towers 8 Fixumes | 231，679 | 15，862 | 617，759 | （601，897） | －259．80\％ | －186．71\％ | －166．32\％ | －158．35\％ | －118．22\％ | 114．55\％ | －110．83\％ | －108．9\％ |  | －100．42\％ |
| 2004354000 Toweres \＆Fxixures | ${ }^{37,123}$ | ${ }_{6}^{6,985}$ | 12，760 | ${ }^{55,775)}$ | －15．56\％ | －226．07\％ | －171．67\％ | －155．65\％ | － $1488.90 \%$ | －${ }^{-113.89 \%}$ | － $11.505 \%$ | $-10787 \%$ | －10629\％ | －104．82\％ |
| 2005 354000 Towers 8 F Fxxtres |  | 46，377 | ${ }^{244,508}$ |  | －267．80\％ | －184．79\％ | － $23.23 .23 \%$ | －1868．27\％ | －169．79\％ |  | －126．08\％ | ${ }^{-122.54 \%}$ |  | \％ |
|  | ， |  | 49，202 | （0，550） | －1．99\％ | － | －113．396 | 隹 |  | \％ |  | 源 |  | \％ |
| ${ }^{20707545000 ~ T o w e r s ~} \alpha$ Fxxures | 195，104 | ${ }^{3,25}$ | ${ }^{24,527}$ | （19，302） | －88839\％ | －69．42\％ | －11．69\％ | －104．01\％ | －163．38\％ | －14．8．8\％ | －139．70\％ | 退 |  |  |
| 2008534000 Towers $\alpha$ Frxures | 9，211 | 21，012 | 20,94 | （4，235） | －45．97\％ | －66．9\％ | －60．03\％ | －11．90\％ | －10202\％ | －10．03\％ | －144．06\％ | －138．19\％ |  |  |
|  | ¢ | ${ }^{29,995}$ |  | （291，920） | 年．89\％\％ |  |  | （10．90\％ | ${ }_{\text {－}}$ | ${ }^{-117.94 \%}$ | － | －160．90\％ | ${ }^{149757 \%}$ | 边 |
| 201135400 Towers $\&$ Fix | 451，459 | 7， 3,24 | 979，999 |  | －200．8 | 5．03\％ |  | 185．80\％ |  |  |  |  |  |  |
| 201235400 Towers \＆Fixures | ${ }^{125,956}$ | 4.662 | 357，470 | （352807） | －280．10\％ | 218.12 | 221．26\％ | －222．6 | －200．8 | －178．68 | －167． |  | －169．95 | 184．55\％ |


| rransaction Year $\quad$ Description | Retirements | $\begin{gathered} \text { Gross } \\ \text { Salvage } \end{gathered}$ | Cost of Removal | $\begin{gathered} \text { Net } \\ \text { Salvage } \end{gathered}$ | $\begin{aligned} & \text { Net } \\ & \text { Salv. \% } \end{aligned}$ | $\begin{gathered} \text { 2-yr } \\ \text { Net } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} 3-\mathrm{yr} \\ \mathrm{Net} \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} 4 . \mathrm{yr} \\ \mathrm{Net} \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} \text { 5.yr } \\ \text { Net } \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} \text { 6.yr } \\ \text { Nett } \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} 7 . \mathrm{yr} \\ \mathrm{Net} \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} \text { 8-yr } \\ \text { Nett } \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} \text { 9. yr } \\ \text { Nat. } \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} 10-\mathrm{yr} \\ \text { Netv } \\ \text { Salv. \% } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 198635500 Poles \& Fixtures | 1,518,036 | 438,116 | 811,666 | (373,550) | -24.61\% |  |  |  |  |  |  |  |  |  |
| 198735500 Poles \& Fixtures | 1,124,400 | 366,125 | 789,370 | (423,245) | -37.64\% | -30.15\% |  |  |  |  |  |  |  |  |
| 198835500 Poles \& Fixtures | 1,724,976 | 606,548 | 1,108,639 | (502,091) | -29.11\% | -32.48\% | -29.74\% |  |  |  |  |  |  |  |
| 198935500 Poles \& Fixtures | 1,034,058 | 557,280 | 755,714 | (198,434) | -19.19\% | -25.39\% | -28.94\% | -27.72\% |  |  |  |  |  |  |
| 199035500 Poles \& Fixtures | 1,991,785 | 753,024 | 1,225,351 | (472,327) | -23.71\% | -22.17\% | -24.69\% | -27.17\% | -26.64\% |  |  |  |  |  |
| 199135500 Poles \& Fixtures | 1,718,015 | 558,202 | 1,084,725 | (526,523) | -30.65\% | -26.92\% | -25.24\% | -26.27\% | -27.95\% | -27.40\% |  |  |  |  |
| 199235500 Poles \& Fixtures | 1,651,069 | 440,754 | 755,563 | (314,808) | -19.07\% | -24.97\% | -24.50\% | -23.65\% | -24.81\% | -26.37\% | -26.12\% |  |  |  |
| 199335500 Poles \& Fixtures | 1,266,212 | 558,183 | 1,143,323 | (585,140) | -46.21\% | -30.85\% | -30.77\% | -28.65\% | -27.37\% | -27.69\% | -28.76\% | -28.23\% |  |  |
| 199435500 Poles \& Fixtures | 1,483,752 | 697,340 | 1,169,684 | (472,344) | -31.83\% | -38.45\% | -31.18\% | -31.03\% | -29.23\% | -28.10\% | -28.26\% | -29.14\% | -28.63\% |  |
| 199535500 Poles \& Fixtures | 1,477,493 | 345,475 | 841,966 | (496,491) | -33.60\% | -32.72\% | -36.76\% | -31.79\% | -31.53\% | -29.91\% | -28.86\% | -28.90\% | -29.63\% | -29.12\% |
| 199635500 Poles \& Fixtures | 1,036,883 | 541,338 | 1,130,194 | (588,857) | -56.79\% | -43.17\% | -38.96\% | -40.70\% | -35.54\% | -34.57\% | -32.53\% | -31.35\% | -31.06\% | -31.57\% |
| 199735500 Poles \& Fixtures | 1,398,739 | 494,759 | 1,254,825 | $(760,066)$ | -54.34\% | -55.38\% | -47.16\% | -42.95\% | -43.57\% | -38.70\% | -37.32\% | -35.07\% | -33.81\% | -33.26\% |
| 199835500 Poles \& Fixtures | 1,421,698 | 1,001,435 | 1,529,915 | (528,480) | -37.17\% | -45.69\% | -48.67\% | -44.50\% | -41.74\% | -42.44\% | -38.48\% | -37.30\% | -35.29\% | -34.14\% |
| 199935500 Poles \& Fixtures | 1,846,035 | 1,052,060 | 2,530,115 | $(1,478,055)$ | -80.07\% | -61.40\% | -59.29\% | -58.83\% | -53.64\% | -49.91\% | -49.44\% | -45.11\% | -43.24\% | -40.70\% |
| 200035500 Poles \& Fixtures | 2,609,213 | 420,142 | 3,209,785 | $(2,789,643)$ | -106.92\% | -95.79\% | -81.61\% | -76.37\% | -73.93\% | -67.84\% | -63.10\% | -61.40\% | -56.47\% | -53.68\% |
| 200135500 Poles \& Fixtures | 2,113,517 | 767,645 | 2,474,819 | $(1,707,174)$ | -80.77\% | -95.22\% | -90.96\% | -81.39\% | -77.36\% | -75.31\% | -70.14\% | -65.89\% | -64.19\% | -59.62\% |
| 200235500 Poles \& Fixtures | 3,710,467 | 772,808 | 3,429,557 | $(2,556,749)$ | -71.60\% | -74.93\% | -84.83\% | -83.97\% | -78.29\% | -75.73\% | -74.34\% | -70.48\% | -67.13\% | -65.69\% |
| 200335500 Poles \& Fixtures | 3,729,142 | 705,007 | 7,324,518 | (6,619,511) | -177.51\% | -124.69\% | -114.97\% | -113.24\% | -108.87\% | -102.27\% | -98.28\% | -95.87\% | -91.12\% | -86.89\% |
| 200435500 Poles \& Fixtures | 2,452,036 | 607,711 | 3,110,453 | (2,502,74) | -102.07\% | -147.58\% | -119.08\% | -112.34\% | -111.37\% | -107.8\% | -102.24\% | -98.76\% | -96.62\% | -92.35\% |
| 200535500 Poles \& Fixtures | 4,558,437 | 786,988 | 5,554,081 | $(4,767,093)$ | -104.58\% | -103.70\% | -129.33\% | -114.51\% | -110.20\% | -109.75\% | -107.15\% | -102.71\% | -99.88\% | -98.08\% |
| 200635500 Poles \& Fixtures | 5,808,638 | 1,342,264 | 6,820,595 | $(5,48,331)$ | -94.31\% | -98.83\% | -99.45\% | -117.04\% | -108.72\% | -106.08\% | -106.16\% | -104.3\% | -100.99\% | -98.79\% |
| 200735500 Poles \& Fixtures | 3,348,922 | 859,445 | 5,852,507 | $(4,993,062)$ | -149.09\% | -114.35\% | -111.10\% | -109.73\% | -122.43\% | -114.44\% | -111.6\% | -111.24\% | -109.33\% | -106.08\% |
| 200835500 Poles \& Fixtures | 4,173,710 | 738,114 | 2,822,436 | $(2,084,322)$ | -4.94\% | -94.08\% | -94.18\% | -96.83\% | -97.46\% | -109.86\% | -104.75\% | -103.06\% | -103.37\% | -102.12\% |
| 200935500 Poles \& Fixtures | 3,037,919 | 502,948 | 4,427,029 | $(3,924,080)$ | -129.17\% | -83.32\% | -104.18\% | -100.68\% | -101.53\% | -101.58\% | -112.03\% | -107.16\% | -105.47\% | -105.57\% |
| 201035500 Poles \& Fixtures | 3,474,106 | 189,780 | 3,441,806 | $(3,252,026)$ | -93.61\% | -110.20\% | -86.66\% | -101.56\% | -99.44\% | -100.40\% | -100.55\% | -109.93\% | -105.79\% | -104.33\% |
| 201135500 Poles \& Fixtures | 5,248,922 | 290,185 | 6,565,472 | $(6,275,287)$ | -119.55\% | -109.22\% | -114.37\% | -97.50\% | -106.46\% | -103.65\% | -103.79\% | -103.6\% | -111.34\% | -107.61\% |
| 201235500 Poles \& Fixtures | 4,857,840 | 194,204 | 6,944,627 | (6,750,423) | -138.96\% | -128.88\% | -119.86\% | -121.56\% | -107.18\% | -113.00\% | -109.37\% | -108.74\% | -108.30\% | -114.64\% |


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| Transaction Year | Retirements | Gross Salvage | Cost of Removal | $\begin{gathered} \text { Net } \\ \text { Salvage } \end{gathered}$ | $\begin{gathered} \text { Net } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} 2 . \mathrm{yr} \\ \mathrm{Net} \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} \begin{array}{c} 3-y r \\ \text { Net } \\ \text { Salv. } \end{array} \\ \hline \end{gathered}$ | $\begin{gathered} 4 . \mathrm{yr} \\ \mathrm{Net} \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} \text { 5.yr } \\ \text { Netr } \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} \text { 6.yr } \\ \text { Net } \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} 7 . \mathrm{yr} \\ \mathrm{Net} \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} \text { 8.yr } \\ \text { Net } \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} \text { 9. yr } \\ \text { Sat. } \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} 10-\mathrm{yr} \\ \text { Net } \\ \text { Salv. } \% \end{gathered}$ |
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| 198635800 UG Conductors | 33,521 | 4,339 | 4,339 | 0 | 0.00\% |  |  |  |  |  |  |  |  |  |
| 198735800 UG Conductors | 29,820 | 1,074 | 12,324 | $(11,251)$ | -37.73\% | -17.76\% |  |  |  |  |  |  |  |  |
| 198835800 UG Conductors | 86,121 | 7,316 | 65,011 | $(57,695)$ | -66.99\% | -59.47\% | -46.13\% |  |  |  |  |  |  |  |
| 198935800 UG Conductors | 65,610 | 20,809 | 40,063 | $(19,255)$ | -29.35\% | -50.71\% | -48.58\% | -41.01\% |  |  |  |  |  |  |
| 199035800 UG Conductors |  |  | - | 0 | NA | -29.35\% | -50.71\% | -48.58\% | -41.01\% |  |  |  |  |  |
| 199135800 UG Conductors | 90,159 | 43,683 | 75,829 | (32, 145) | -35.65\% | -35.65\% | -33.00\% | -45.10\% | -44.29\% | -39.43\% |  |  |  |  |
| 199235800 UG Conductors | 134,419 | 71,448 | 67,052 | 4,396 | 3.27\% | -12.36\% | -12.36\% | -16.20\% | -27.82\% | -28.55\% | -26.37\% |  |  |  |
| 199335800 UG Conductors | 774,378 | 115,743 | 269,330 | (153,588) | -19.83\% | -16.42\% | -18.15\% | -18.15\% | -18.84\% | -22.45\% | -22.83\% | -22.20\% |  |  |
| 199435800 UG Conductors | 121,238 | 38,260 | 46,227 | $(7,966)$ | -6.57\% | -18.04\% | -15.26\% | -16.90\% | -16.90\% | -17.59\% | -20.93\% | -21.32\% | -20.78\% |  |
| 199535800 UG Conductors | 138,949 | . | 30,703 | (30,703) | -22.10\% | -14.86\% | -18.58\% | -16.07\% | -17.47\% | -17.47\% | -18.06\% | -21.05\% | -21.39\% | -20.91\% |
| 199635800 UG Conductors | 119,453 | 2,788 | 95,230 | (92,442) | -77.39\% | -47.66\% | -34.54\% | -24.67\% | -21.76\% | -22.66\% | -22.6\%\% | -22.97\% | -25.45\% | -25.68\% |
| 199735800 UG Conductors | 193,991 | 58,444 | 113,062 | $(54,617)$ | -28.15\% | -46.92\% | -39.29\% | -32.38\% | -25.17\% | -22.59\% | -23.34\% | -23.34\% | -23.5\% | -25.75\% |
| 199835800 UG Conductors | 317,397 | 88,275 | 122,715 | $(34,440)$ | -10.85\% | -17.41\% | -28.7\% | -27.57\% | -24.71\% | -22.44\% | -20.52\% | -21.24\% | -21.24\% | -21.52\% |
| 199935800 UG Conductors | 226,906 | 103,101 | 290,088 | $(186,987)$ | -82.41\% | -40.68\% | -37.39\% | -42.96\% | -40.05\% | -36.42\% | -29.63\% | -27.45\% | -27.80\% | -27.80\% |
| 200035800 UG Conductors | 498,229 | 75,220 | 246,018 | $(170,797)$ | -34.28\% | -49.34\% | -37.62\% | -36.14\% | -39.77\% | -38.13\% | -35.76\% | -30.60\% | -28.80\% | -29.03\% |
| 200135800 UG Conductors | 549,407 | 116,471 | 167,686 | $(51,215)$ | -9.32\% | -21.19\% | -32.09\% | -27.86\% | -27.89\% | -30.99\% | -30.39\% | -29.05\% | $-26.62 \%$ | -25.32\% |
| 200235800 UG Conductors | 440,467 | 90,904 | 297,670 | $(206,766)$ | -46.94\% | -26.06\% | -28.81\% | -35.90\% | -31.99\% | -31.66\% | -33.99\% | -33.32\% | -32.08\% | -29.27\% |
| 200335800 UG Conductors | 267,637 | 7,093 | 192,237 | $(185,144)$ | -69.18\% | -55.35\% | -35.24\% | -34.97\% | -40.40\% | -36.32\% | -35.68\% | -37.59\% | -36.81\% | -35.53\% |
| 200435800 UG Conductors | 309,838 | 15,556 | 86,401 | $(70,844)$ | -22.86\% | -44.33\% | -45.46\% | -32.79\% | -33.15\% | -38.03\% | -34.72\% | -34.27\% | -36.03\% | -35.40\% |
| 200535800 UG Conductors | 807,360 | 106,551 | 229,567 | $(123,016)$ | -15.24\% | -17.35\% | -27.37\% | -32.09\% | -26.82\% | -28.12\% | -32.09\% | -30.12\% | -30.01\% | -31.53\% |
| 200635800 UG Conductors | 739,002 | 75,119 | 342,541 | (267,422) | -36.19\% | -25.25\% | -24.85\% | -30.44\% | -33.27\% | -29.05\% | -29.77\% | -32.8\% | -31.20\% | -31.06\% |
| 200735800 UG Conductors | 1,018,422 | 284,944 | 821,919 | $(536,975)$ | -52.73\% | -45.77\% | -36.16\% | -34.73\% | -37.66\% | -38.80\% | -34.88\% | -34.82\% | -37.04\% | -35.43\% |
| 200835800 UG Conductors | 2,103,923 | 170,566 | 409,209 | $(238,643)$ | -11.34\% | -24.84\% | -27.01\% | -24.98\% | -24.84\% | -27.11\% | -28.64\% | -26.94\% | -27.48\% | -29.27\% |
| 200935800 UG Conductors | 870,788 | 130,962 | 358,270 | (227,308) | -26.10\% | -15.66\% | -25.12\% | -26.85\% | -25.15\% | -25.03\% | -26.96\% | -28.31\% | -26.84\% | -27.33\% |
| 201035800 UG Conductors | 282,167 | 16,095 | 150,992 | $(134,897)$ | -47.81\% | -31.42\% | -18.45\% | -26.61\% | -28.02\% | -26.25\% | -26.08\% | -27.8\% | -29.11\% | -27.64\% |
| 201135800 UG Conductors | 4,042,434 | 196,782 | 524,199 | $(327,417)$ | -8.10\% | -10.69\% | -13.27\% | -12.72\% | -17.62\% | -19.13\% | -18.81\% | -18.94\% | -20.22\% | -21.31\% |
| 201235800 UG Conductors | 1,074,467 | 47,010 | 488,020 | $(441,010)$ | -41.04\% | -15.02\% | -16.73\% | -18.03\% | -16.35\% | -20.30\% | -21.46\% | -21.00\% | -21.05\% | -22.17\% |


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| Cransaction Year Description | Retirements | $\begin{gathered} \text { Gross } \\ \text { Salvage } \end{gathered}$ | Cost of Removal | $\begin{gathered} \text { Net } \\ \text { Salvage } \end{gathered}$ | $\begin{gathered} \text { Net } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} 2-\mathrm{yr} \\ \mathrm{Net} \\ \text { Nalv. } \% \end{gathered}$ | $\begin{gathered} \text { 3-yr } \\ \text { Netv. } \\ \text { Salv. } \end{gathered}$ | $\begin{gathered} \text { 4. yr } \\ \text { Net. } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} 5-\mathrm{yr} \\ \mathrm{Net} \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} \text { 6-yr } \\ \text { Netv. } \\ \text { Salv. } \end{gathered}$ | $\begin{gathered} 7 . \mathrm{yr} \\ \text { Net } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} \text { 8-yr } \\ \text { Netv } \\ \text { Salv. } \% \\ \hline \end{gathered}$ | $\begin{gathered} \text { 9. yr } \\ \text { Not. } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} \text { 10- yr } \\ \text { Net } \\ \text { Salv. \% } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 198636100 Structures \& Improvements | 85,396 | 104 | 8,123 | (8,019) | -9.39\% |  |  |  |  |  |  |  |  |  |
| 198736100 Structures \& Improvements | 46,022 |  | 6,913 | $(6,913)$ | -15.02\% | -11.36\% |  |  |  |  |  |  |  |  |
| 198836100 Structures \& Improvements | 223,726 |  | 39,495 | $(39,495)$ | -17.65\% | -17.20\% | -15.33\% |  |  |  |  |  |  |  |
| 198936100 Structures \& Improvements | 128,887 | 4,544 | 24,492 | $(19,948)$ | -15.48\% | -16.86\% | -16.65\% | -15.37\% |  |  |  |  |  |  |
| 199036100 Structures \& Improvements | 605,079 |  | 118,653 | (118,653) | -19.61\% | -18.88\% | -18.60\% | -18.43\% | -17.72\% |  |  |  |  |  |
| 199136100 Structures \& Improvements | 1,98,851 | 3 | 515,912 | (515,909) | -43.03\% | -35.18\% | -33.86\% | -32.18\% | -31.82\% | -30.99\% |  |  |  |  |
| 199236100 Structure \& Improvements | 714,298 |  | 391,496 | $(391,496)$ | -54.81\% | -47.43\% | -40.75\% | -39.51\% | -37.81\% | -37.45\% | -36.65\% |  |  |  |
| 199336100 Structures \& Improvements | 855,348 | 60,896 | 427,855 | (366,959) | -42.90\% | -48.32\% | -46.03\% | -41.29\% | -40.34\% | -38.98\% | -38.69\% | -38.04\% |  |  |
| 199436100 Structures \& Improvements | 1,927,243 | 12,604 | 167,837 | (155,233) | -8.05\% | -18.77\% | -26.13\% | -30.44\% | -29.21\% | -28.88\% | -28.44\% | -28.33\% | -28.05\% |  |
| 199536100 Structures \& Improvements | 1,205,147 | - | 408,179 | (408,179) | -33.87\% | -17.99\% | -23.33\% | -28.11\% | -31.14\% | -30.07\% | -29.79\% | -29.39\% | -29.30\% | -29.05\% |
| 199636100 Structures \& Improvements | 494,838 | - | 74,113 | (74,113) | -14.98\% | -28.37\% | -17.5\% | -22.41\% | -26.86\% | -29.89\% | -29.0\% | -28.76\% | $-28.42 \%$ | -28.34\% |
| 199736100 Structure \& Improvements | 1,184,870 | 161,247 | 380,162 | (218,915) | -18.48\% | -17.45\% | -24.31\% | -17.80\% | -21.59\% | -25.30\% | -28.11\% | -27.48\% | -27.29\% | -27.04\% |
| 199836100 Structures \& Improvements | 2,655,541 |  | 538,212 | (538,212) | -20.27\% | -19.71\% | -19.17\% | -22.37\% | -18.68\% | -21.17\% | -23.82\% | -26.07\% | -25.71\% | -25.59\% |
| 199936100 Structures \& Improvements | 2,946,745 | . | 307,552 | (307,552) | -10.44\% | -15.10\% | -15.69\% | -15.64\% | -18.23\% | -16.34\% | -18.36\% | -20.53\% | -22.58\% | -22.45\% |
| 200036100 Structures \& Improvements | 2,247,942 |  | 462,164 | (462,164) | -20.56\% | -14.82\% | -16.6\% | -16.90\% | -16.80\% | -18.72\% | -17.09\% | -18.73\% | -20.54\% | -22.28\% |
| 200136100 Structures \& Improvements | 750,929 |  | 473,464 | (473,464) | -63.05\% | -31.20\% | -20.91\% | -20.71\% | -20.44\% | -20.18\% | -21.61\% | -19.67\% | -21.06\% | -22.67\% |
| 200236100 Structures \& Improvements | 1,864,896 | - | 518,867 | (518,867) | -27.82\% | -37.94\% | -29.90\% | -22.56\% | -21.98\% | -21.62\% | -21.35\% | -22.48\% | -20.66\% | -21.84\% |
| 200336100 Structures \& Improvements | 3,472,039 | 25,715 | 962,798 | $(937,083)$ | -26.99\% | -27.28\% | -31.69\% | -28.69\% | -23.92\% | -23.23\% | -22.85\% | -22.60\% | -23.41\% | -21.83\% |
| 200436100 Structures \& Improvements | 8,216,338 | 13,645 | 1,005,907 | (992,263) | -12.08\% | -16.51\% | -18.06\% | -20.42\% | -20.44\% | -18.93\% | -19.09\% | -19.06\% | -18.98\% | -19.69\% |
| 200536100 Structures \& Improvements | 1,680,974 | 20,723 | 574,059 | (553,335) | -32.92\% | -15.62\% | -18.5\% | -19.70\% | -21.74\% | -21.59\% | -20.04\% | -20.07\% | -19.99\% | -19.89\% |
| 200636100 Structures \& Improvements | 1,520,778 | 48,713 | 525,047 | (476,334) | -31.32\% | -32.16\% | -17.71\% | -19.87\% | -20.76\% | -22.57\% | -22.34\% | -20.80\% | -20.74\% | -20.64\% |
| 200736100 Structures \& Improvements | 2,137,042 | 51,518 | 971,730 | $(920,212)$ | -43.06\% | -38.18\% | -36.52\% | -21.70\% | -22.78\% | -23.28\% | -24.80\% | -24.36\% | -22.71\% | -22.48\% |
| 200836100 Structures \& Improvements | 2,598,748 |  | 971,989 | (971,989) | -37.40\% | -39.96\% | -37.8\% | -36.81\% | -24.23\% | -24.72\% | -24.99\% | -26.27\% | -25.75\% | -24.10\% |
| 200936100 Structure \& Improvements | 1,465,400 | 220,388 | 1,153,155 | (932,767) | -63.65\% | -46.87\% | -45.56\% | -42.75\% | -40.99\% | -27.51\% | -27.42\% | -27.46\% | -28.58\% | -27.89\% |
| 201036100 Structures \& Improvements | 6,375,349 | 363,650 | 1,160,646 | $(796,995)$ | -12.50\% | -22.06\% | -25.8\% | -28.80\% | -29.07\% | -29.48\% | -23.52\% | -23.96\% | -24.21\% | -25.17\% |
| 201136100 Structures \& Improvements | 6,349,672 | 309,096 | 2,750,713 | $(2,441,617)$ | -38.45\% | -25.45\% | -29.40\% | -30.64\% | -32.04\% | -31.98\% | -32.06\% | -26.65\% | -26.68\% | -26.74\% |
| 201236100 Structures \& Improvements | 1,946,615 | 163,163 | 385,453 | (222,290) | -11.42\% | -32.11\% | -23.59\% | -27.23\% | -28.64\% | -30.12\% | -30.20\% | -30.39\% | -25.73\% | -25.85\% |


| Transaction Year | Retirements | $\begin{gathered} \text { Gross } \\ \text { Salvage } \end{gathered}$ | Cost of Removal | Net Salvage | $\begin{gathered} \text { Net } \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} 2 \text {-yr } \\ \text { Net } \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} 3-\mathrm{yr} \\ \text { Netr. } \\ \text { Salv. } \end{gathered}$ | $\begin{gathered} 4 . \mathrm{yr} \\ \mathrm{Net} \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} 5 \text { y.yr } \\ \text { Net } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} \text { 6.yr } \\ \text { Net } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} 7 \text {. yr } \\ \text { Net } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} \text { 8.yr } \\ \text { Nett } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} \text { 9. yr } \\ \text { Nat. } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} \text { 10- yr } \\ \text { Net } \\ \text { Salv. } \% \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 198636200 Station Equipment | 2,936,715 | 1,053,941 | 430,130 | 623,810 | 21.24\% |  |  |  |  |  |  |  |  |  |
| 198736200 Station Equipment | 2,252,088 | 982,578 | 375,325 | 607,254 | 26.96\% | 23.73\% |  |  |  |  |  |  |  |  |
| 198836200 Station Equipment | 813,859 | 192,558 | 227,362 | $(34,804)$ | -4.28\% | 18.67\% | 19.93\% |  |  |  |  |  |  |  |
| 198936200 Station Equipment | 2,606,426 | 1,015,368 | 612,748 | 402,620 | 15.45\% | 10.75\% | 17.19\% | 18.57\% |  |  |  |  |  |  |
| 199036200 Station Equipment | 2,638,932 | 598,252 | 1,068,592 | $(470,340)$ | -17.82\% | -1.29\% | -1.69\% | 6.07\% | 10.03\% |  |  |  |  |  |
| 199136200 Station Equipment | 3,676,008 | 826,110 | 727,447 | 98,663 | 2.88\% | -5.89\% | 0.35\% | -0.04\% | 5.03\% | 8.22\% |  |  |  |  |
| 199236200 Station Equipment | 1,976,095 | 354,082 | 453,241 | $(9,159)$ | -5.02\% | -0.01\% | -5.68\% | -0.63\% | -0.88\% | 3.61\% | 6.67\% |  |  |  |
| 199336200 Station Equipment | 2,134,017 | 252,856 | 846,435 | (593,579) | -27.82\% | -16.85\% | -7.63\% | -10.21\% | -5.08\% | -5.03\% | -0.56\% | 2.81\% |  |  |
| 199436200 Station Equipment | 4,078,250 | 644,012 | 1,246,729 | $(602,717)$ | -14.78\% | -19.26\% | -15.82\% | -10.09\% | -11.49\% | -7.39\% | -7.25\% | -3.43\% | -0.30\% |  |
| 199536200 Station Equipment | 6,377,093 | 1,167,702 | 1,431,332 | $(263,630)$ | 4.13\% | -8.29\% | -11.60\% | -10.70\% | -8.01\% | -9.25\% | -6.51\% | -6.43\% | -3.60\% | -1.13\% |
| 199636200 Station Equipment | 6,337,891 | 694,712 | 1,727,381 | $(1,032,669)$ | -16.29\% | -10.20\% | -11.31\% | -13.17\% | -12.40\% | -10.14\% | -10.89\% | -8.59\% | -8.47\% | -6.05\% |
| 199736200 Station Equipment | 4,088,764 | 329,587 | 964,096 | (634,508) | -15.52\% | -15.99\% | -11.49\% | -12.13\% | -13.59\% | -12.91\% | -10.91\% | -11.49\% | -9.42\% | -9.30\% |
| 199836200 Station Equipment | 5,038,573 | 305,201 | 1,196,125 | (890,924) | -17.68\% | -16.71\% | -16.54\% | -12.92\% | -13.21\% | -14.32\% | -13.71\% | -11.92\% | -12.35\% | -10.49\% |
| 199936200 Station Equipment | 8,666,099 | 301,660 | 1,937,130 | (1,635,471) | -18.87\% | -18.43\% | -17.76\% | -17.38\% | -14.61\% | -14.63\% | -15.40\% | -14.87\% | -13.34\% | -13.61\% |
| 200036200 Station Equipment | 8,350,700 | 826,215 | 1,684,686 | (858,471) | -10.28\% | -14.6\% | -15.35\% | -15.37\% | -15.55\% | -13.68\% | -13.78\% | -14.45\% | -14.05\% | -12.84\% |
| 200136200 Station Equipment | 10,878,952 | 88,797 | 1,629,150 | $(1,540,353)$ | -14.16\% | -12.47\% | -14.46\% | -14.95\% | -15.02\% | -15.20\% | -13.78\% | -13.86\% | -14.39\% | -14.07\% |
| 200236200 Station Equipment | 7,913,059 | 200,115 | 1,991,770 | $(1,791,655)$ | -22.64\% | -17.73\% | -15.44\% | -16.27\% | -16.44\% | -16.36\% | -16.35\% | -15.00\% | -14.99\% | -15.41\% |
| 200336200 Station Equipment | 11,851,157 | 716,639 | 3,065,033 | $(2,348,394)$ | -19.82\% | -20.95\% | -18.54\% | -16.77\% | -17.15\% | -17.20\% | -17.08\% | -17.00\% | -15.82\% | -15.76\% |
| 200436200 Station Equipment | 9,659,572 | 190,967 | 2,681,590 | (2,490,623) | -25.78\% | -22.50\% | -22.54\% | -20.27\% | -18.56\% | -18.61\% | -18.53\% | -18.35\% | -18.17\% | -17.04\% |
| 200536200 Station Equipment | 10,096,497 | 728,515 | 3,204,123 | (2,475,609) | -24.52\% | -25.14\% | -23.14\% | -23.04\% | -21.12\% | -19.58\% | -19.49\% | -19.37\% | -19.16\% | -18.94\% |
| 200636200 Station Equipment | 7,340,728 | 292,757 | 3,307,771 | (3,015,014) | -41.07\% | -31.49\% | -29.45\% | -26.52\% | -25.87\% | -23.6\%\% | -21.97\% | -21.61\% | -21.36\% | -21.08\% |
| 200736200 Station Equipment | 8,894,802 | 256,805 | 4,354,474 | $(4,097,669)$ | -46.07\% | -43.81\% | -36.41\% | -33.56\% | -30.16\% | -29.09\% | -26.65\% | -24.83\% | -24.21\% | -23.84\% |
| 200836200 Station Equipment | 7,962,590 | 43,555 | 3,407,823 | $(3,364,268)$ | -42.25\% | -44.27\% | -43.30\% | -37.77\% | -35.13\% | -31.88\% | -30.73\% | -28.32\% | -26.50\% | -25.78\% |
| 200936200 Station Equipment | 5,499,955 | 833,334 | 5,169,068 | $(4,335,735)$ | -78.83\% | -57.20\% | -52.77\% | -49.88\% | -43.44\% | -39.99\% | -36.09\% | -34.56\% | -31.79\% | -29.76\% |
| 201036200 Station Equipment | 8,430,001 | 355,237 | 6,903,970 | $(6,548,733)$ | -77.6\% | -78.14\% | -65.08\% | -59.59\% | -56.03\% | -49.43\% | -45.48\% | -41.12\% | -39.24\% | -36.16\% |
| 201136200 Station Equipment | 9,468,083 | 460,898 | 5,980,498 | $(5,599,599)$ | -58.30\% | -67.43\% | -70.11\% | -63.04\% | -59.29\% | -56.48\% | $-50.88 \%$ | -47.28\% | -43.17\% | -41.31\% |
| 201236200 Station Equipment | 10,518,014 | 377,680 | 4,802,176 | $(4,424,496)$ | -42.07\% | -49.76\% | -58.04\% | -61.41\% | -57.77\% | -55.72\% | -53.87\% | -49.52\% | -46.58\% | -43.04\% |



| $\underbrace{\text { Descriptio }}_{\substack{\text { rransaction } \\ \text { vear }}}$ | Retirements | ${ }_{\substack{\text { cross } \\ \text { Salvage }}}$ | $\underset{\substack{\text { Costof } \\ \text { Removal }}}{\text { cen }}$ | Satuage | ${ }_{\text {chet }}^{\text {Natr. }}$ | $\begin{gathered} \text { 2.yr } \\ \text { Sel } \\ \text { Salv. } \% \% \end{gathered}$ | $\begin{gathered} \text { s.yr } \\ \text { Selv } \\ \text { salv. } \end{gathered}$ | $\begin{gathered} 4 \text { yet } \\ \text { sale } \\ \text { salv. } \end{gathered}$ | $\begin{gathered} \text { S.yr } \\ \text { salv. } \\ \text { sal. } \end{gathered}$ |  | $\begin{gathered} \text { Ther } \\ \text { sale. } \\ \text { sal., } \end{gathered}$ |  | $\begin{gathered} \text { 9.yr } \\ \text { satv, } \\ \text { salu. } \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\underbrace{4.859}_{4,899,457}$ | , |  |  | ${ }^{-1342828 \%}$ |  |  |  |  |  |  |  |  |  |
| 1988385500 voveremead Conducuctor | ${ }_{4}^{4.428,282}$ | $\underbrace{1}_{\substack{2,1,25,160 \\ \text { 2,153 }}}$ | ${ }_{7,421 / 474}^{8,972671}$ | , 321 ) |  | -13724\% | -131.5 |  |  |  |  |  |  |  |
| 198936550 Overeread Conductor | 5.544,702 | 3,533,348 | 9,166,963 | (5,633,645) | -101.60\% | -109.69\% | -119.5\% | -122.88\% |  |  |  |  |  |  |
| 199036550 Overemad Conductor | 4,888,583 | 2,219,819 | 6,726,065 | (4,506, 246) | -92.94\% | -97.5\% | -104.21\% | -112.94\% | -116.33\% |  |  |  |  |  |
| 1991365500 Overread Conductor | $5.835,486$ | ${ }^{2,633,231}$ | 8,051,102 | (55417,877) | -92.84\% | -9289\% | ${ }^{-9.957 \%}$ | -101.0\%\% | -108.3\%\% | -112.15\% |  |  |  |  |
|  | 6.042 .269 4.212814 |  | (8,00,240 |  | -9.9.21\% | -96.08\% | -99.17\% | -96.77\% | - | $-100.5 \% \%$ $.10038 \%$ | $-109.97 \%$ $-10569 \%$ |  |  |  |
|  |  | - | ${ }_{5,617,313}^{50,473}$ | ${ }_{(4,356,429)}$ | -9.2.2\% | -94.87\% | -996.6\% | -95.56\% | -95.07\% | -96.23\% | -99.15\% | -103.98\% | -106.94\% |  |
| 199536550 Overread Conductor | 5,127,051 | 1,634,988 | 7,484,997 | (5,899,729) | -114.10\% | -103.06\% | -101.35\% | -101.06\% | -99.2\% | -98.33\% | -99.74\% | -101.03\% | -105.12\% | -107.68\% |
| ${ }^{19966356500 ~ O v e r r e a d ~ C o n d u c t o r ~}$ | ${ }^{3,397,644}$ | ${ }^{1,086,232}$ | 4,239,771 | (3,1529.939) | ${ }^{-928.80 \%}$ | -105.6\% | -100.44\% | - $100.10 \%$ | -99.87\% | -98.47\% | -97.99\% | -98.24\% | -100.40\% | -104.26\% |
| 1997365500 Overemead Conductor | 4,222,743 | ${ }^{1,002,9211}$ | ${ }_{\text {5,393, } 148}$ | ${ }^{(4,3930,373)}$ | -10393\% | -98.99\% | -105.08\% | - $100.29 \%$ | -100.95\% | -100.49\% | -99.17\%\% | -9933\%\% | -98.79\% | -100.71\% |
| 1998385500 Overread Conductor | 3,255.038 | ${ }^{1,2077,796}$ | 5,481,157 | (4,273,361) | -13137\% | -115.89\% | -108.67\% | -110.41\% | -106.00\% | -100.82\% | - $103.73 \%$ | -10200\% | -100.95\% | ${ }^{-101.03 \%}$ |
| 199935550 Overread Conductor | 4,188,551 | 1,087,76 | 6,317.546 | (5,229,70) | -124.85\% | $-127.70 \%$ | -119.11\% | -113.17\% | -113.41\% | -109.16\% | -107.70\% | -10624\% | -104.34\% | -103.13\% |
| 200003650 Overead Condutior 200136500 verenead Conductor | $7,183.370$ 5.958 .34 | (1,$1,776.125$ <br> 1.255 .136 |  |  | - $10.78 \% \%$ $-8366 \%$ | - ${ }_{\text {- }}^{\text {-113.4.28\% }}$ | - $\begin{aligned} & -17.40 \% \\ & -103.18 \%\end{aligned}$ | ${ }^{-114.39 \%} \begin{aligned} & \text {-10.64\% }\end{aligned}$ | - | - $11.66 \%$ $-10505 \%$ | -100.6\% <br> $-106.55 \%$ <br>  | -$-107.51 \%$ <br> $-1042 \%$ | ${ }_{\text {- }}^{\text {-10.32\% }}$ | - ${ }^{-104.69 \%}$ |
| ${ }_{2}^{2002} 3656500$ Overemearead Conduductor |  | ${ }_{\text {a }}$ |  | ${ }_{(0,510,201)}^{(4,94,403)}$ | ${ }^{-8366 \%}$ | - ${ }_{-828.84 \%}$ | - $-1.10 .18 \%$ | ${ }^{-977.23 \%}$ | -10.28\% | -100.64\% | -100.78\% | -10248\%\% | -10128\% | -105.09\% |
| 200336550 veveriead Conductor | ${ }_{9,270,966}$ | 1,225,719 | 10,886,406 | ${ }_{(9,660,687}$ | -10420\% | -94.44\% | -9,1.2\% | -95.48\% | -99.16\% | -10202\% | -10222\% | -101.50\% | -10280\% | -101.78\% |
| 200436550 Overread Conductor | 10,262,432 | 927,758 | 14,793,005 | (13,86, 847) | -135.11\% | -120.44\% | -110.51\% | -105.56\% | -105.78\% | -107.61\% | -109.25\% | -108.82\% | -107.82\% | -108.36\% |
| 200535650 Overtead Conductor | 10,52,9,955 | 1,799,874 | 18,13,3,40 | (16,36,4,46) | -155.50\% | -145.44\% | -132.72\% | -123.35\% | -117.83\% | -116.24\% | -116.90\% | -117.72\% | -116.78\% | -115.53\% |
| ${ }_{2}^{200685650 ~ O v e r e m e a d ~ C o n d u c t o r ~}$ | 12,41.,527 15,717,07 | $2,418.082$ 2,418,799 | $2.5331,453$ 28,492641 | ${ }^{(22,913,392)}{ }_{(26,073,83)}$ | - $\begin{array}{r}-184.60 \% \\ .165 .89 \%\end{array}$ |  | -- <br> $-160.08 \%$ <br> $1007 \%$ |  |  | ${ }^{-13283 \%}$ |  | ${ }^{-129.51 \%}{ }^{-137.08 \%}$ |  | ${ }^{-128.14 \%}$ |
|  |  | ${ }_{\substack{2,418,789 \\ 16371}}$ | ${ }_{\text {20, }}^{20,492,3641}$ |  | -165.89\%\% | - |  | - ${ }_{\text {- }}^{\text {-167.80\% }}$ | -1527.75\% | ${ }^{-1453.35 \%}$ | - ${ }^{-140.15 \%}$ | ${ }^{-1371.08 \%}$ | ${ }^{-13646 \% \%}$ | ${ }_{\text {- }}^{-136.26 \%}$ |
| 200935550 Overmead Conductor | 4,901,901 | 892,530 | 21,994 | (17,29,374) | -.351.48\% | -241.86\% | -197.98\% | -193.79\% | -185.75\% | -177.15\% | -167.44\% | -159.83\% | -154.32\% | -150.51\% |
| 10335500 veemead Cone | ${ }^{6,211,615}$ | ${ }^{396,640}$ | 73,525 | (3,577,885) | -379.5\% | -367.18\% | -290.17\% | -231.72\% | -218.96\% | -207.1\% | -196.02\% | -184.81\% |  | -170.10\% |
| 1136500 Oventead Con | 55,074 |  |  |  | ${ }_{\text {cke }}$ | - | - ${ }_{\text {- }}^{\text {-234.24\% }}$ |  | ${ }_{\text {-277.48\% }}$ | ${ }_{\text {- }}^{\text {-243.51\% }}$ | ${ }_{-232909 \%}^{-29.54 \%}$ | ${ }_{-222.28 \%}^{-208.12 \%}$ | -210.86\% | ${ }_{-}^{-288.30 \% \%}$ |


| Cransaction Year Description | Retirements | Gross Salvage | Cost of Removal | $\begin{gathered} \text { Net } \\ \text { Salvage } \end{gathered}$ | $\begin{gathered} \text { Net } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} 2-\mathrm{yr} \\ \text { Net } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} 3-\mathrm{yr} \\ \text { Netr } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} \text { 4. yr } \\ \text { Net } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} \begin{array}{c} 5-\mathrm{yr} \\ \text { Net } \\ \text { Salv. } \% \end{array} \\ \hline \end{gathered}$ | $\begin{gathered} \text { 6-yr } \\ \text { Netr } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} 7-\mathrm{yr} \\ \text { Net } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} \text { 8.yr } \\ \text { Netr } \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} \text { 9. yr } \\ \text { Net } \\ \text { Salv. } \% \end{gathered}$ | $\begin{gathered} 10-\mathrm{yr} \\ \text { Net } \\ \text { Salv. \% } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 198636600 Underground Conduit | 477,798 | 74,356 | 155,193 | $(80,837)$ | -16.92\% |  |  |  |  |  |  |  |  |  |
| 198736600 Underground Conduit | 386,243 | 63,399 | 169,239 | $(105,840)$ | -27.40\% | -21.61\% |  |  |  |  |  |  |  |  |
| 198836600 Underground Conduit | 526,244 | 59,299 | 172,618 | (113,319) | -21.53\% | -24.02\% | -21.5\% |  |  |  |  |  |  |  |
| 198936600 Underground Conduit | 786,278 | 97,375 | 224,896 | (127,521) | -16.22\% | -18.35\% | -20.41\% | -19.64\% |  |  |  |  |  |  |
| 199036600 Underground Conduit | 835,966 | 50,176 | 216,356 | $(166,180)$ | -19.88\% | -18.10\% | -18.94\% | -20.23\% | -19.71\% |  |  |  |  |  |
| 199136600 Underground Conduit | 1,224,840 | 107,632 | 373,554 | (265,922) | -21.71\% | -20.97\% | -19.6\% | -19.95\% | -20.71\% | -20.29\% |  |  |  |  |
| 199236600 Underground Conduit | 821,659 | 80,297 | 255,652 | $(175,356)$ | -21.34\% | -21.56\% | -21.07\% | -20.03\% | -20.22\% | -20.83\% | -20.46\% |  |  |  |
| 199336600 Underground Conduit | 706,046 | 67,031 | 312,470 | (245,439) | -34.76\% | -27.54\% | -24.95\% | -23.77\% | -22.41\% | -22.32\% | -22.69\% | -22.21\% |  |  |
| 199436600 Underground Conduit | 601,488 | 51,511 | 236,687 | $(185,177)$ | -30.79\% | -32.93\% | -28.46\% | -26.00\% | -24.78\% | -23.42\% | -23.24\% | -23.52\% | -23.02\% |  |
| 199536600 Underground Conduit | 667,942 | 57,772 | 218,882 | $(161,110)$ | -24.12\% | -27.28\% | -29.95\% | -27.42\% | -25.68\% | -24.69\% | -23.51\% | -23.34\% | -23.58\% | -23.12\% |
| 199636600 Underground Conduit | 652,948 | 39,859 | 163,811 | (123,952) | -18.98\% | -21.58\% | -24.46\% | -27.23\% | -25.83\% | -24.75\% | -24.01\% | -23.04\% | -22.92\% | -23.16\% |
| 199736600 Underground Conduit | 549,038 | 52,395 | 166,386 | (113,990) | -20.76\% | -19.80\% | -21.34\% | -23.64\% | -26.11\% | -25.13\% | -24.33\% | -23.72\% | -22.85\% | -22.76\% |
| 199836600 Underground Conduit | 865,463 | 81,759 | 273,985 | (192,226) | -22.21\% | -21.65\% | -20.81\% | -21.62\% | -23.27\% | -25.28\% | -24.61\% | -24.03\% | -23.53\% | -22.78\% |
| 199936600 Underground Conduit | 846,117 | 70,935 | 325,892 | $(254,957)$ | -30.13\% | -26.13\% | -24.82\% | -23.52\% | -23.63\% | -24.66\% | -26.12\% | -25.43\% | -24.7\% | -24.25\% |
| 200036600 Underground Conduit | 1,078,716 | 67,480 | 652,421 | (584,942) | -54.23\% | -43.63\% | -36.99\% | -34.32\% | -31.81\% | -30.71\% | -30.72\% | -31.20\% | -30.0\% | -28.74\% |
| 200136600 Underground Conduit | 1,216,166 | 82,798 | 535,105 | (452,306) | -37.19\% | -45.20\% | -41.14\% | -37.05\% | -35.09\% | -33.07\% | -32.05\% | -31.93\% | -32.21\% | -31.10\% |
| 200236600 Underground Conduit | 1,061,800 | 66,494 | 491,375 | $(424,880)$ | -40.02\% | -38.51\% | -43.56\% | -40.86\% | -37.67\% | -36.02\% | -34.25\% | -33.27\% | -33.07\% | -33.22\% |
| 200336600 Underground Conduit | 1,328,930 | 65,102 | 941,392 | (876,290) | -65.94\% | -54.43\% | -48.61\% | -49.91\% | $-46.88 \%$ | -43.54\% | -41.74\% | -39.79\% | $-38.52 \%$ | -38.00\% |
| 200436600 Underground Conduit | 1,595,234 | 95,005 | 1,053,816 | (958,811) | -60.10\% | -62.76\% | -56.70\% | -52.14\% | -52.50\% | -49.84\% | -46.85\% | -45.17\% | -43.31\% | -42.01\% |
| 200536600 Underground Conduit | 1,810,550 | 141,870 | 1,542,409 | $(1,400,539)$ | -77.35\% | -69.27\% | -68.34\% | -63.15\% | -58.65\% | -58.06\% | -55.42\% | -52.48\% | -50.80\% | -48.91\% |
| 200636600 Underground Conduit | 1,801,730 | 203,885 | 1,606,462 | $(1,402,576)$ | -77.85\% | -77.60\% | -72.24\% | -70.96\% | -66.64\% | -62.57\% | -61.6\% | -59.18\% | -56.42\% | -54.81\% |
| 200736600 Underground Conduit | 2,452,729 | 262,160 | 2,749,824 | $(2,487,664)$ | -101.42\% | -91.44\% | -87.23\% | -81.58\% | -79.27\% | -75.12\% | -71.03\% | -69.5\% | -67.03\% | -64.27\% |
| 200836600 Underground Conduit | 724,984 | 111,401 | 506,006 | $(394,605)$ | -54.43\% | -90.70\% | -86.05\% | -83.73\% | -79.24\% | -77.42\% | -73.73\% | -70.03\% | -68.72\% | -66.38\% |
| 200936600 Underground Conduit | 1,313,670 | 205,605 | 2,948,062 | (2,742,457) | -208.76\% | -153.88\% | -125.23\% | -111.67\% | -104.00\% | -96.78\% | -93.06\% | -88.40\% | -83.72\% | -81.51\% |
| 201036600 Underground Conduit | 3,440,480 | 199,519 | 3,459,771 | $(3,260,251)$ | -94.76\% | -126.26\% | -116.76\% | -112.02\% | -105.69\% | -101.25\% | -96.25\% | -93.4\% | -89.81\% | -85.99\% |
| 201136600 Underground Conduit | 6,131,041 | 319,914 | 5,635,971 | $(5,316,057)$ | -86.71\% | -89.60\% | -103.98\% | -100.89\% | -100.98\% | -98.35\% | -96.20\% | -93.22\% | -91.46\% | -88.93\% |
| 201236600 Underground Conduit | 2,639,501 | 122,408 | 6,190,035 | $(6,067,26)$ | -229.88\% | -129.79\% | -119.92\% | -128.55\% | -124.78\% | -121.35\% | -117.12\% | -113.57\% | -109.68\% | -107.18\% |


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| $\qquad$ | Retirements | $\begin{gathered} \text { Gross } \\ \text { Salvage } \\ \hline \end{gathered}$ | Cost of Removal | $\begin{gathered} \text { Net } \\ \text { Salvage } \\ \hline \end{gathered}$ | $\begin{gathered} \text { Net } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} \text { 2- yr } \\ \text { Net } \\ \text { Salv. \% } \\ \hline \end{gathered}$ | $\begin{gathered} \begin{array}{c} 3-\mathrm{yr} \\ \text { Net } \\ \text { Salv. \% } \end{array} \\ \hline \end{gathered}$ | $\begin{gathered} \text { 4- yr } \\ \text { Net } \\ \text { Salv. \% } \\ \hline \end{gathered}$ | $\begin{gathered} \begin{array}{c} 5-\mathrm{yr} \\ \text { Net } \\ \text { Salv. \% } \end{array} \\ \hline \end{gathered}$ | $\begin{gathered} \begin{array}{c} 6-\mathrm{yr} \\ \text { Net } \\ \text { Salv. \% } \end{array} \\ \hline \end{gathered}$ | $\begin{gathered} \text { 7- yr } \\ \text { Net } \\ \text { Salv. \% } \\ \hline \end{gathered}$ | $\begin{gathered} \begin{array}{c} 8-\mathrm{yr} \\ \text { Net } \\ \text { Salv. \% } \end{array} \\ \hline \end{gathered}$ | $\begin{gathered} \begin{array}{l} 9-\mathrm{yr} \\ \text { Net } \\ \text { Salv. \% } \end{array} \\ \hline \end{gathered}$ | 10- yr Net Salv. \% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 198636800 Line Transformers | 12,499,465 | 2,305,557 | 1,764,311 | 541,246 | 4.33\% |  |  |  |  |  |  |  |  |  |
| 198736800 Line Transformers | 14,879,106 | 2,192,213 | 1,939,736 | 252,476 | 1.70\% | 2.90\% |  |  |  |  |  |  |  |  |
| 198836800 Line Transformers | 13,216,812 | 2,229,808 | 2,108,611 | 121,197 | 0.92\% | 1.33\% | 2.25\% |  |  |  |  |  |  |  |
| 198936800 Line Transformers | 14,025,974 | 4,841,238 | 2,243,322 | 2,597,916 | 18.52\% | 9.98\% | 7.05\% | 6.43\% |  |  |  |  |  |  |
| 199036800 Line Transformers | 14,472,571 | 3,063,840 | 2,104,798 | 959,041 | 6.63\% | 12.48\% | 8.82\% | 6.95\% | 6.47\% |  |  |  |  |  |
| 199136800 Line Transformers | 17,861,861 | 4,211,200 | 2,463,809 | 1,747,391 | 9.78\% | 8.37\% | 11.44\% | 9.11\% | 7.63\% | 7.15\% |  |  |  |  |
| 199236800 Line Transformers | 17,628,562 | 3,636,468 | 2,692,677 | 943,791 | 5.35\% | 7.58\% | 7.31\% | 9.76\% | 8.25\% | 7.19\% | 6.85\% |  |  |  |
| 199336800 Line Transformers | 15,208,707 | 2,796,692 | 2,472,786 | 323,906 | 2.13\% | 3.86\% | 5.95\% | 6.10\% | 8.30\% | 7.24\% | 6.47\% | 6.25\% |  |  |
| 199436800 Line Transformers | 16,705,282 | 2,453,067 | 1,777,363 | 675,704 | 4.04\% | 3.13\% | 3.92\% | 5.48\% | 5.68\% | 7.56\% | 6.75\% | 6.15\% | 5.98\% |  |
| 199536800 Line Transformers | 11,459,804 | 3,014,305 | 2,472,556 | 541,748 | 4.73\% | 4.32\% | 3.55\% | 4.07\% | 5.37\% | 5.56\% | 7.26\% | 6.56\% | 6.03\% | 5.88\% |
| 199636800 Line Transformers | 11,898,859 | 1,841,898 | 1,836,336 | 5,562 | 0.05\% | 2.34\% | 3.05\% | 2.80\% | 3.42\% | 4.67\% | 4.94\% | 6.54\% | 5.98\% | 5.54\% |
| 199736800 Line Transformers | 13,893,242 | 949,396 | 2,496,024 | $(1,546,628)$ | -11.13\% | -5.97\% | -2.68\% | -0.60\% | 0.00\% | 1.09\% | 2.57\% | 3.06\% | 4.69\% | 4.35\% |
| 199836800 Line Transformers | 17,779,042 | 1,969,363 | 3,047,810 | $(1,078,446)$ | -6.07\% | -8.29\% | -6.01\% | -3.78\% | -1.95\% | -1.24\% | -0.13\% | 1.32\% | 1.88\% | 3.43\% |
| 199936800 Line Transformers | 16,622,447 | 1,338,244 | 3,079,403 | $(1,741,158)$ | -10.47\% | -8.20\% | -9.04\% | -7.24\% | -5.33\% | -3.56\% | -2.72\% | -1.55\% | -0.09\% | 0.54\% |
| 200036800 Line Transformers | 19,135,687 | 2,039,218 | 4,202,538 | $(2,163,321)$ | -11.31\% | -10.92\% | -9.31\% | -9.68\% | -8.22\% | -6.59\% | -4.94\% | -4.06\% | -2.88\% | -1.45\% |
| 200136800 Line Transformers | 19,136,571 | 2,066,116 | 3,661,584 | $(1,595,468)$ | -8.34\% | -9.82\% | -10.02\% | -9.05\% | -9.39\% | -8.25\% | -6.89\% | -5.45\% | -4.64\% | -3.53\% |
| 200236800 Line Transformers | 21,558,681 | 1,994,259 | 4,182,063 | $(2,187,804)$ | -10.15\% | -9.30\% | -9.94\% | -10.06\% | -9.30\% | -9.54\% | -8.59\% | -7.43\% | -6.13\% | -5.36\% |
| 200336800 Line Transformers | 27,447,202 | 2,109,990 | 6,817,584 | $(4,707,594)$ | -17.15\% | -14.07\% | -12.46\% | -12.21\% | -11.93\% | -11.07\% | -11.08\% | -10.18\% | -9.11\% | -7.86\% |
| 200436800 Line Transformers | 29,563,287 | 2,369,283 | 6,845,696 | $(4,476,412)$ | -15.14\% | -16.11\% | -14.47\% | -13.27\% | -12.95\% | -12.64\% | -11.87\% | -11.81\% | -11.01\% | -10.05\% |
| 200536800 Line Transformers | 33,595,329 | 4,200,341 | 7,950,227 | $(3,749,886)$ | -11.16\% | -13.02\% | -14.27\% | -13.48\% | -12.73\% | -12.55\% | -12.34\% | -11.74\% | -11.70\% | -11.03\% |
| 200636800 Line Transformers | 32,795,319 | 5,761,654 | 7,379,127 | $(1,617,473)$ | -4.93\% | -8.08\% | -10.26\% | -11.79\% | -11.55\% | -11.17\% | -11.19\% | -11.13\% | -10.71\% | -10.74\% |
| 200736800 Line Transformers | 82,633,959 | 18,289,630 | 28,192,597 | $(9,902,967)$ | -11.98\% | -9.98\% | -10.25\% | -11.06\% | -11.87\% | -11.71\% | -11.44\% | -11.43\% | -11.38\% | -11.06\% |
| 200836800 Line Transformers | 8,440,110 | 10,097,105 | 2,472,010 | 7,625,095 | 90.34\% | -2.50\% | -3.14\% | -4.86\% | -6.48\% | -7.85\% | -8.06\% | -8.08\% | -8.30\% | -8.43\% |
| 200936800 Line Transformers | 5,400,614 | 6,058,266 | 14,551,185 | $(8,492,919)$ | -157.26\% | -6.27\% | -11.16\% | -9.58\% | -9.91\% | -10.71\% | -11.52\% | -11.39\% | -11.17\% | -11.18\% |
| 201036800 Line Transformers | 30,396,645 | 7,132,423 | 24,930,319 | $(17,797,896)$ | -58.55\% | -73.44\% | -42.19\% | -22.52\% | -18.91\% | -17.56\% | -17.24\% | -17.23\% | -16.67\% | -16.12\% |
| 201136800 Line Transformers | 72,956,890 | 7,748,567 | 30,290,693 | $(22,542,125)$ | -30.90\% | -39.03\% | -44.90\% | -35.16\% | -25.58\% | -22.67\% | -21.21\% | -20.61\% | -20.31\% | -19.68\% |
| 201236800 Line Transformers | 40,788,745 | 6,271,110 | 40,040,700 | $(33,769,590)$ | -82.79\% | -49.51\% | -51.41\% | -55.24\% | -47.46\% | -35.28\% | -31.64\% | -29.40\% | -28.14\% | -27.32\% |



| Tranasation Descrition | Retirements |  | $\underbrace{\text { cose }}_{\substack{\text { Costof } \\ \text { Removal }}}$ | $\underset{\substack{\text { Net } \\ \text { saluage }}}{\text { N }}$ | $\stackrel{\text { Net }}{\text { Sal. } \%}$ |  | $\begin{gathered} \text { 3.yr } \\ \text { S.et } \\ \text { Salv, } \end{gathered}$ |  | $\begin{gathered} 5 \text { yr } \\ \text { selt } \\ \text { Salv. \% } \end{gathered}$ | $\begin{gathered} \substack{\text {-.yr } \\ \text { Selt } \\ \text { Salv. }} \end{gathered}$ |  | $\begin{gathered} \text { s.y. } \\ \text { seve } \\ \text { sal., } \% \end{gathered}$ | $\begin{gathered} \text { s.yr } \\ \text { sate } \\ \text { sala.\% } \end{gathered}$ | $\begin{gathered} \text { 10.0r } \\ \text { Noer } \\ \text { Salv, } \% \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 198687300 StreetLighting | 1,790,494 | 1,292,592 | 957,587 | 335,264 | 18.72\% |  |  |  |  |  |  |  |  |  |
| 198773300 Street Lighting | 1,756,273 | 750,610 | 906,675 | (156,065) | 8.89\% | 5.05\% |  |  |  |  |  |  |  |  |
| 1988 73730 Stret Lighting | ${ }^{1,007,126}$ |  | ${ }^{951,395}$ | (71,232) | ${ }^{3.744 \%}$ | ${ }^{-6.20 \%}$ | ${ }^{1.98 \%}$ |  |  |  |  |  |  |  |
| 1989937300 Street Lighting | 2,097,179 | 1.565,889 | 1,057,201 | ${ }^{508,689}$ | ${ }^{24.26 \%}$ | 10.92\% | ${ }^{4.88 \%}$ | ${ }^{8.17 \%}$ |  |  |  |  |  |  |
|  |  | 951.022 1,16055 | (1,24,2,23 | (277,231) | -14.04\% | ${ }^{5.82 \%}$ | 277\%\% | 0.11\% | 3.62\% |  |  |  |  |  |
| 199173730 Street Lighting 1992 37300 Stret Lighing |  |  | $1,1,55.105$ <br> $1,723,648$ |  | -18, |  | - | -2.8.10\% | - ${ }_{\text {- }}^{\text {- }}$-88\%\% | - |  |  |  |  |
| 1993373300 Street Lighting | 2,261,205 | 1,249,688 | 1,469,833 | (220,165) | -9.74\% | -10.52\% | -12.85\% | -13.11\% | -6.05\% | .5.7\% | ${ }^{-6.09 \%}$ | -3.0\% |  |  |
| 199437300 Street Lighting | 1,884,132 | 1,190,711 | 1,538,642 | (347,930) | -18.47\% | -13.70\% | -1273\% | -14.03\% | -14.03\% | -7.85\% | -7.3\% | -7.49\% | 4.94\% |  |
| 199573300 Street Lighting | 2,352,652 | 1,550,784 | 1,63,509 | (88,725) | 3.52\% | -10.16\% | -10.02\% | -10.36\% | -11.84\% | -12.16\% | -7.78\% | -6.80\% | -7.0\% | -4.78\% |
| 199667330 Street Lighting | 2.418,490 | 1,190,009 | 1.,677,382 | (456,733) | -18.89\% | -11.3\% | -13.33\% | -12.42\% | $-12.14 \%$ | $-13.08 \%$ | -13.20\% | ${ }^{-8.78 \%}$ | 8.29\% | -8.34\% |
| 199777300 Street Lighting | ,32,862 | ${ }^{960.577}$ | ${ }^{1,684,538}$ | (723,961) | -33.94\% | -25.94\% | 30\% | -18.34\% | -16.58\% | -15.54\% | -15.89\% | -15.69\% | -11.48\% | 10.80\% |
| ${ }^{1998} \mathbf{7} 73700$ Street Lighting |  | 2,795,333 <br> 2, 593028 | 2,225,296 2,30732 | ${ }^{570.036}$ | ${ }^{16.15 \% \%}$ |  | -7.56\% |  | - | -8.65\% ${ }_{\text {- }}^{4.93 \%}$ | -9.95\% | - | -$-10.42 \%$ <br> $.7420 \%$ | -7.31\% |
| ${ }_{20900}^{1909373300 \text { Street Lithting }}$ |  |  | (e, | ${ }_{(1 ., 086,050}^{2929}$ |  | - | (1.2.15\% | ${ }_{-7.95 \%}$ | ${ }_{-9.82 \%}^{-3.80 \%}$ | ${ }_{\text {- }}^{\text {- }}$ | ${ }_{-9.95 \%}^{-5.50 \%}$ | ${ }_{\text {- }}^{\text {-.8.88\% }}$ | ${ }_{\text {- }}^{\substack{\text {-1.4.3\% } \\ \hline}}$ | - $\begin{array}{r}\text {-7.97\% } \\ -1.72 \% \\ \hline\end{array}$ |
| 200137300 streetLighting | 2,401,133 | ${ }_{848,825}$ | $2.006,991$ | (1,156,166) | -4823\% | -40.44\% | -22.92\% | -1.4.40\% | -14.81\% | -15.40\% | 13.92\% | 14.34\% | -13.88\% | -13.61\% |
| 200237300 Stret Lighting | 2,861,348 | ${ }^{938,664}$ | 2,287,008 | $(1,1,48,344)$ | -47.12\% | -47.63\% | -42.52\% | -29.05\% | -18.29\% | -20.26\% | 20.09\% | -18.29\% | -18.31\% | -17.5\% |
| ${ }_{2004}^{2004} 3737300$ Stret LLGSting | (e,3,678,673 <br> 3.621 .198 |  | ${ }_{\text {2,15, }}^{2.9898}$ |  | ${ }_{\text {- }}^{\text {- } 48.5089 \%}$ | -46.7.33\% | -66.999\% | - 5 - $58.806 \%$ | - ${ }_{\text {- }}^{\text {-33.35\% }}$ | - ${ }_{\text {- }}^{\text {-23.89\% }}$ | - 3 - $3.4 .460 \%$ | - ${ }_{\text {- }}^{\text {-34.33\% }}$ | ${ }_{\text {- }}^{\text {-2232\% }}$ | - |
| 200573700 Stret Lighting | 4,677,903 | 1,294,999 | 5,415,203 | (4,12, 5, 504) | -88.20\% | -88.33\% | -75.35\% | -69.90\% | -66.89\% | -61.8\% | -52.87\% | -4378\% | -43.05\% | 41.19\% |
| 2006373300 Street Lighing | 9,260,885 | ${ }^{2,154,818}$ | ${ }^{8,225.512}$ | (6,070,994) | -65.56\% | -73.55\% | -76.32\% | -71.08\% | -68.33\% | -66.42\% | -62.93\% | -56.48\% | -4937\% | 48.51\% |
| 2007 37300 STreet Lighing | 8,93,657 | 2,275,049 | 7,605,647 | (5,330.598) | -59.67\% | -62.66\% | -67.88\% | -70.70\% | -677.70\% | -65.22\% | -64.72\% | -6221\% | -57.70\% | .51.42\% |
| ${ }_{2008}^{2009} 3737300$ Stret LLGhting |  | 102,957 910,162 |  |  | - ${ }_{\text {- }}^{\substack{136.69 \% \\-6.182 \%}}$ | - 7 -74.97\% | - $\begin{aligned} & -7.7 .70 \% \\ & -70.40 \%\end{aligned}$ | - $78.73 .96 \%$ | -75.99\% |  | --70.36\% <br> $.70 .78 \%$ | 13\% | ${ }_{\text {- }}^{\text {- } 66.25 \%}$ | -61.20\%\% |
| 201037300 Street Lighting | 5.214,352 | 297,561 | 6,023,233 | (5,725,672) | -109.81\% | ${ }_{-8.30 \%}$ | -92.99\% | -79.63\% | -75.50\% | -77.44\% | -78.17\% | -75.4.4\% | .73.71\% | -72.45\% |
| 201137330 Stree | 7,136,187 | ${ }^{350,026}$ | ${ }_{6}^{6,356,097}$ | (6,006,0727) | -84.16\% | -94.99\% | -84.24\% | -89.92\% | 80.73\% | -7.10\% | 78.29\% | -79.8\%\% | -76.68\% |  |
| 2012 37300 Street Lighting | 7,465,772 | 280,461 | 6,128,041 | (5,877,580) | -78.33\% | 81.18\% | 88.71\% | -82.53\% | ${ }^{86.82 \%}$ | -80.24\% | ${ }^{7729 \%}$ | -78.30\% | -78.98\% | -76.89\% |


|  | Retirements | $\underset{\substack{\text { Gross } \\ \text { Salvase }}}{\text { den }}$ | $\underset{\substack{\text { Costof } \\ \text { Removal }}}{\text { a }}$ | Satage | ${ }_{\text {Nate }}^{\text {Nat. }}$ | $\begin{gathered} 2 . \mathrm{yr} \\ \text { Net } \\ \text { Salv. } \\ \text { save } \end{gathered}$ | $\begin{gathered} \text { s.y. } \begin{array}{c} \text { vet } \\ \text { salv. } \end{array} \end{gathered}$ | $\begin{gathered} \substack{4 . \mathrm{yr} \\ \text { Net. } \\ \text { salv. \% }} \end{gathered}$ | $\begin{gathered} \text { S.yr } \\ \text { Helt } \\ \text { salv. \%o } \end{gathered}$ |  | $\begin{gathered} 7 \text { T.le } \\ \text { salv. } \\ \text { sal. } \end{gathered}$ | $\begin{gathered} \text { s.yer } \\ \text { satar. } \% \end{gathered}$ | $\begin{gathered} \text { 9.yr } \\ \text { set. } \\ \text { sav. } \% \end{gathered}$ | $\begin{gathered} \text { 10...rr } \\ \text { Nate. } \\ \text { Sav. } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ${ }_{4}^{4,234}$ |  |  | $\bigcirc$ | ${ }^{0.000 \%}$ |  |  |  |  |  |  |  |  |  |
| 1987 190 Stractues and Improvements | 2, ${ }_{\text {2,373 }}$ |  | ${ }^{24,523}$ | ${ }^{(24,523)}$ | ${ }^{0.00 \% \%}$ | ${ }_{\text {a }}^{0.00 \% \%}$ |  |  |  |  |  |  |  |  |
| 1988 9390 structueses and miprovemenents | 1, $1.807,455$ |  |  | ${ }^{(24,5799)}$ | - | -1.70\% | ${ }^{-1.69 \%}$ | -1.69\% |  |  |  |  |  |  |
| 19903039 Structures and Improvements | 326,934 |  | 19,303 | (19,303) | 5.90\% | -1.27\% | -2.31\% | -2.31\% | -2.31\% |  |  |  |  |  |
| 1991390 Structures and Inprovements | 274,700 | 463 | ${ }^{33,860}$ | (33,97) | -1216\% | -878\% | -2.51\% | ${ }^{-3.39 \%}$ | ${ }^{-3.39 \%}$ | ${ }^{\text {3.33\% }}$ |  |  |  |  |
| 19293939 Structures and Improvements | ${ }^{264,0,088}$ |  | ${ }^{6,936}$ | ${ }^{(6,936)}$ | -2.63\% | ${ }^{-7.499 \%}$ | ${ }^{-6.89 \%}$ | -2.52\% | ${ }^{-3.32 \%}$ | ${ }^{3.332 \%}$ | ${ }^{-3.31 \%}$ |  |  |  |
| 1993390 Structures and Improvements | ${ }^{203,813}$ |  | ${ }^{342,336}$ | ${ }^{(342,336)}$ | -167.9\%\% | ${ }^{-74.45 \%}$ | ${ }^{-51.53 \%}$ | -37.58\% | -14.24\% | ${ }^{-14.4519}$ | -14.60\% | -14.57\% |  |  |
| 1994399 Structures and Improvements | 27,417 |  | ${ }_{7}^{71,307}$ | ${ }^{(71,3077)}$ | ${ }^{-26.08 \%}$ | ${ }^{-86.68 \%}$ | -56.74\% | -44.68\% | -35.24\% | -15.27\% | -19.59\% | -19.56\% | -15.5\%\% |  |
|  | $2,713,123$ 182711 |  | ${ }_{\substack{71,122 \\ 29,884}}$ | (71,122) | - $\begin{array}{r}\text { 2.62\% } \\ -1636 \%\end{array}$ | ${ }^{-4.77 \%}$ | -15.9\%\% | -14.23\% | -14.03\% $-14.34 \%$ | -13.42\% | -9.4.52\% | ${ }_{-9.968 \%}^{-9.68 \%}$ | ${ }^{\text {9.6.67\% }}$ | ${ }_{-9.89 \%}^{-9.87 \%}$ |
| 19967 390 Structurues and and mproveromements | 182,711 $1,31,305$ |  | 29,884 112,087 | ${ }_{(112,2887)}^{(29,84)}$ | - | ${ }_{-9.51 \%}^{-3.49 \%}$ | ${ }_{-5.07 \%}^{-5.47 \%}$ | - | -13.38\% | ${ }^{-14.989 \%}$ | - | ${ }^{-12337 \%}$ | ${ }^{9.94 \%}$ | -9.64\% |
| 19983095 Structures and Improvements | 1,23,3,36 |  | 88,002 | (88,602) | -7.00\% | -7.80\% | ${ }^{-8.37 \%}$ | -5.51\% | -6.49\% | -1205\% | -11.65\% | -11.67\% | -11.39\% | -9.09\% |
| 1999309 Strucurese and Improvements | 4,582,497 |  | 704,315 | (7004,315) | -15.3\% | -13.59\% | -12.67\% | -12.76\% | -10.02\% | -10.44\% | -13.50\% | -13.23\% | -13.21\% | -13.0\% |
| 20003905 Structures and Improvements | 1,966,593 | 3,266 | 374.864 | (351,588) | -17.88\% | -16.12\% | -14.6\% | -13.79\% | $-13.84 \%$ | -11.30\% | -11.63\% |  | -13.95\% | -13.9\% |
| ${ }_{2} 2001390$ Structure sand Inprovements |  | 365 |  | ${ }_{\text {(5017.799) }}$ | -15.85\% | $-16.63 \%$ | -16.33\% | -15.02\% | -14.32\% | -14.35\% | -12.25\% | -12.50\% | -14.53\% | -14.33\% |
|  | (e.5.8.718 |  | 54, 287 591,369 | $\underset{(5921.369)}{(54287)}$ | - | - ${ }_{\text {- }}^{\text {- }}$-930\% | - ${ }^{-10.18 \%}$-10.65\% | - ${ }_{\text {-14,48\% }}$ | -11.20\% | - | - | - $\begin{aligned} & -10.11 \% \\ & -1.185 \%\end{aligned}$ | ${ }^{-10.29 \%}$ | - ${ }^{-11.1 .2 \% \%}$ |
| ${ }_{2}^{2003} \mathbf{2 0 0 9} 390$ Structures and Inporvements |  | 1,191.391 |  |  |  | ${ }^{-9.30 \% \%}$ | ${ }_{-1.47 \%}^{-10.65 \%}$ | - | -12.38\% | ${ }_{\text {- }}^{-12000 \%}$ | - | ${ }_{-1.8 .85 \%}^{-1.85 \%}$ | ${ }_{\text {- }}^{\text {-10.74\% }}$ | - |
| 2005390 Stuctures and Improvements | 1,527,788 |  | 882,067 | (882,067) | -57.73\% | -8.30\% | -11.36\% | ${ }^{-8.97 \%}$ | -10.00\% | -10.66\% | -11.44\% | -1125\% | -11.13\% | -11.16 |
| 200639 Structures and Inprovements | 1,535,921 |  | 388,259 | (38,259) | -24.76\% | -41.20\% | -11.7\% | -13.22\% | -10.21\% | -10.99\% | -11.54\% | -12.44\% | -11.93\% | -11.79\% |
| 2007390 Structures and Improvements | ${ }^{6278,829}$ |  | ${ }^{372,196}$ | $(372,196)$ | -59.19\% | -34.76\% | -44.27\% | -15.40\% | -15.69\% | -11.73\% | -1228\% | $-12.72 \%$ | -13.12\% | -1288\% |
| ${ }_{2}^{2008} 390$ Structures and limporvements | 1.645 .786 <br> 46.445 |  |  |  | - |  | - $5.50 .23 \% \%$ | - $5.5238 \%$ | - $2.4 .7 .55 \%$ | - | - $\begin{array}{r}\text {-16, } 6.15 \% \\ -2238 \%\end{array}$ |  | $\xrightarrow{-1624 \%}$ |  |
| 2010390 Structuses and Improveenents | 5,256,925 |  | 2,620,243 | (2,620,243) | -4.92\% | ${ }_{-77.46 \%}$ | -5.264\% | -53.15\% | -48.5\% | ${ }_{-29.84 \%}$ | -33.15\% | -29.96\% | -22.62\% | -21.92\% |
| ${ }_{2011}^{20095050}$ Tructures and Improvements | ${ }_{\text {8, }}^{\text {8,93, }} \mathbf{}$ |  | ${ }_{\substack{\text { 2,0484,472 }}}^{2}$ | (2,048,472) | -2278\% | ${ }^{-3278 \%}$ | -32.36\% | -36.21\% | -37.06\% | -36.04\% | -37.69\% | ${ }^{229.33 \%}$ | -27.6\% | -22.66\% |
| 2012390 Structure and Improvements |  |  |  | (2,732,872) |  |  |  |  |  | -22.5\% |  |  |  |  |

## APPENDIX F

## List of Appearances before Regulatory Bodies by Dane A. Watson

| Asset Location | Commission | Docket (If <br> Applicable | Company | Year | Description |
| :---: | :---: | :---: | :---: | :---: | :---: |
| North Carolina/South Carolin | FERC | ER13-1313 | Progress Energy <br> Carolina | 2013 | Electric Depreciation Study |
| Wisconsin | Public Service <br> Commission of <br> Wisconsin | $4220-$ DU-108 | Northern States <br> Power- Wisconsin | 2013 | Transmission, Distribution and <br> General |
| Texas | Public Utility <br> Compars | 41474 | Sharyland | 2013 | Electric Depreciation Study |


| Asset Location | Commission | Docket (If Applicable | Company | Year | Description |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Michigan | Michigan Public Service Commission | U-17104 | Michigan Gas Utilities Corporation | 2012 | Gas Depreciation Study |
| North Carolina | North Carolina Utilities Commission | E-2 Sub 1025 | Progress Energy Carolina | 2012 | Electric Depreciation Study |
| Texas | Texas Public Utility Commission | 40606 | Wind Energy Transmission Texas | 2012 | Electric Depreciation Study |
| Texas | Texas Public Utility Commission | 40604 | Crosss Texas <br> Transmission | 2012 | Electric Depreciation Study |
| Minnesota | Minnesota Public Utilities Commission | 12-858 | Northern States Power | 2012 | Electric, Gas and Common Transmission, Distribution and General |
| Texas | Railroad Commission of Texas | 10170 | Atmos Mid-Tex | 2012 | Gas Depreciation Study |
| Texas | Railroad Commission of Texas | 10174 | Atmos West Texas | 2012 | Gas Depreciation Study |
| Texas | Railroad Commission of Texas | 10182 | CenterPoint Beaumont/ East Texas | 2012 | Gas Depreciation Study |
| Kansas | Kansas Corporation Commission | $\begin{gathered} \text { 12-KCPE- } \\ \text { 764-RTS } \end{gathered}$ | Kansas City Power and Light | 2012 | Electric Depreciation Study |
| Nevada | Public Utility Commission of Nevada | 12-04005 | Southwest Gas | 2012 | Gas Depreciation Study |
| Texas | Railroad Commission of Texas | 10147, 10170 | Atmos Mid-Tex | 2012 | Gas Depreciation Study |
| Kansas | Kansas Corporation Commission | $\begin{aligned} & \text { 12-ATMG- } \\ & \text { 564-RTS } \end{aligned}$ | Atmos Kansas | 2012 | Gas Depreciation Study |
| Texas | Texas Public Utility Commission | 40020 | Lone Star Transmission | 2012 | Electric Depreciation Study |
| Michigan | Michigan Public Service Commission | U-16938 | Consumers Energy Company | 2011 | Gas Depreciation Study |
| Colorado | Public Utilities Commission of Colorado | 11AL-947E | Public Service of Colorado | 2011 | Electric Depreciation Study |
| Texas | Texas Public Utility Commission | 39896 | Entergy Texas | 2011 | Electric Depreciation Study |
| MultiState | FERC | ER12-212 | American Transmission Company | 2011 | Electric Depreciation Study |


| Asset Location | Commission | Docket (If Applicable | Company | Year | Description |
| :---: | :---: | :---: | :---: | :---: | :---: |
| California | California Public Utilities Commission | A1011015 | Southern California Edison | 2011 | Electric Depreciation Study |
| Mississippi | Mississippi Public Service Commission | 2011-UN-184 | Atmos Energy | 2011 | Gas Depreciation Study |
| Texas | Texas Commission on Environmental Quality | $\begin{gathered} \text { Matter } 37050 \\ \text { R } \end{gathered}$ | Southwest Water Company | 2011 | WasteWater Depreciation Study |
| Texas | Texas Commission on Environmental Quality | $\begin{gathered} \text { Matter 37049 } \\ \text { R } \end{gathered}$ | Southwest Water Company | 2011 | Water Depreciation Study |
| Michigan | Michigan Public Service Commission | U-16536 | Consumers Energy Company | 2011 | Wind Depreciation Rate Study |
| Texas | Public Utility <br> Commission of Texas | 38929 | Oncor | 2011 | Electric Depreciation Study |
| Texas | Railroad Commission of Texas | 10038 | CenterPoint South TX | 2010 | Gas Depreciation Study |
| Alaska | Regulatory Commission of Alaska | U-10-070 | Inside Passage Electric Cooperative | 2010 | Electric Depreciation Study |
| Texas | Public Utility <br> Commission of Texas | 36633 | City Public Service of San Antonio | 2010 | Electric Depreciation Study |
| Texas | Texas Railroad Commission | 10000 | Atmos Pipeline Texas | 2010 | Gas Depreciation Study |
| Multi State - SE US | FERC | RP10-21-000 | Florida Gas Transmission | 2010 | Gas Depreciation Study |
| Maine/ New Hampshire | FERC | 10-896 | Granite State Gas Transmission | 2010 | Gas Depreciation Study |
| Texas | Public Utility <br> Commission of Texas | 38480 | Texas New Mexico Power | 2010 | Electric Depreciation Study |
| Texas | Public Utility <br> Commission of Texas | 38339 | CenterPoint Electric | 2010 | Electric Depreciation Study |
| California | California Public Utility Commission | A10071007 | California American Water | $\begin{gathered} 2009- \\ 2010 \end{gathered}$ | Water and Waste Water Depreciation Study |
| Texas | Texas Railroad Commission | 10041 | Atmos Amarillo | 2010 | Gas Depreciation Study |
| Georgia | Georgia Public Service Commission | 31647 | Atlanta Gas Light | 2010 | Gas Depreciation Study |


| Asset Location | Commission | Docket (If Applicable | Company | Year | Description |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Texas | Public Utility Commission of Texas | 38147 | Southwestern Public Service | 2010 | Electric Technical Update |
| Alaska | Regulatory Commission of Alaska | U-09-015 | Alaska Electric Light and Power | $\begin{gathered} 2009- \\ 2010 \end{gathered}$ | Electric Depreciation Study |
| Alaska | Regulatory Commission of Alaska | U-10-043 | Utility Services of Alaska | $\begin{gathered} 2009- \\ 2010 \end{gathered}$ | Water Depreciation Study |
| Tennessee | Tennessee Regulatory Authority | 09-000183 | AGL - <br> Chattanooga Gas | 2009 | Gas Depreciation Study |
| Michigan | Michigan Public Service Commission | U-16055 | Consumers Energy/DTE Energy | $\begin{gathered} 2009- \\ 2010 \end{gathered}$ | Ludington Pumped Storage Depreciation Study |
| Michigan | Michigan Public Service Commission | U-16054 | Consumers Energy | $\begin{gathered} 2009- \\ 2010 \end{gathered}$ | Electric Depreciation Study |
| Michigan | Michigan Public Service Commission | U-15963 | Michigan Gas Utilities Corporation | 2009 | Gas Depreciation Study |
| Michigan | Michigan Public Service Commission | U-15989 | Upper Peninsula <br> Power Company | 2009 | Electric Depreciation Study |
| Texas | Railroad Commission of Texas | 9869 | Atmos Energy | 2009 | Shared Services Depreciation Study |
| Mississippi | Mississippi Public Service Commission | 09-UN-334 | CenterPoint Energy Mississippi | 2009 | Gas Depreciation Study |
| Texas | Railroad Commission of Texas | 9902 | CenterPoint Energy Houston | 2009 | Gas Depreciation Study |
| Wyoming | Wyoming Public Service Commission | $\begin{gathered} 30022-148- \\ \text { GR10 } \end{gathered}$ | Source Gas | $\begin{gathered} 2009- \\ 2010 \end{gathered}$ | Gas Depreciation Study |
| Colorado | Colorado Public Utilities Commission | 09AL-299E | Public Service of Colorado | 2009 | Electric Depreciation Study |
| Tennessee | Tennessee Regulatory Authority | 11-00144 | Piedmont Natural Gas | 2009 | Gas Depreciation Study |
| South Carolina | Public Service Commission of South Carolina |  | Piedmont Natural Gas | 2009 | Gas Depreciation Study |
| North Carolina | North Carolina Utilities Commission |  | Piedmont Natural Gas | 2009 | Gas Depreciation Study |
| Louisiana | Louisiana Public Service Commission | U-30689 | Cleco | 2008 | Electric Depreciation Study |


| Asset Location | Commission | Docket (If Applicable | Company | Year | Description |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Texas | Public Utility Commission of Texas | 35763 | SPS | 2008 | Electric Production, Transmission, Distribution and General Plant Depreciation Study |
| Wisconsin | Wisconsin | 05-DU-101 | WE Energies | 2008 | Electric, Gas, Steam and Common Depreciation Studies |
| North Dakota | North Dakota Public Service Commission | PU-07-776 | Northern States Power | 2008 | Net Salvage |
| New Mexico | New Mexico Public Regulation Commission | 07-00319-UT | SPS | 2008 | Testimony - Depreciation |
| Multiple States | Railroad Commission of Texas | 9762 | Atmos Energy | $\begin{gathered} 2007- \\ 2008 \end{gathered}$ | Shared Services Depreciation Study |
| Colorado | Colorado Public Utilities Commission | 10AL-963G | Public Service of Colorado | $\begin{gathered} 2007- \\ 2008 \end{gathered}$ | Gas Depreciation Study |
| Minnesota | Minnesota Public Utilities Commission | $\begin{gathered} \text { E015/D-08- } \\ 422 \end{gathered}$ | Minnesota Power | $\begin{gathered} 2007- \\ 2008 \end{gathered}$ | Electric Depreciation Study |
| Texas | Public Utility Commission of Texas | 35717 | Oncor | 2008 | Electric Depreciation Study |
| Texas | Public Utility Commission of Texas | 34040 | Oncor | 2007 | Electric Depreciation Study |
| Michigan | Michigan Public Service Commission | U-15629 | Consumers Energy | $\begin{gathered} 2006- \\ 2009 \end{gathered}$ | Gas Depreciation Study |
| Colorado | Colorado Public Utilities Commission | 06-234-EG | Public Service of Colorado | 2006 | Electric Depreciation Study |
| Multiple States | Multiple | NA | CenterPoint Energy | 2006 | Shared Services Depreciation Study |
| Arkansas | Arkansas Public Service Commission | 06-161-U | CenterPoint Energy <br> - Arkla Gas | 2006 | Gas Distribution Depreciation Study and Removal Cost Study |
| Texas, New Mexico | Public Utility Commission of Texas | 32766 | Xcel Energy | $\begin{gathered} 2005- \\ 2006 \end{gathered}$ | Electric Production, Transmission, Distribution and General Plant Depreciation Study |
| Texas | Railroad Commission of Texas | 9670/9676 | Atmos Energy Corp | $\begin{gathered} 2005- \\ 2006 \end{gathered}$ | Gas Distribution Depreciation Study |


| Asset Location | Commission | Docket (If Applicable | Company | Year | Description |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Texas | Railroad Commission of Texas | 9400 | TXU Gas | $\begin{gathered} 2003- \\ 2004 \end{gathered}$ | Gas Distribution Depreciation Study |
| Texas | Railroad Commission of Texas | 9313 | TXU Gas | 2002 | Gas Distribution Depreciation Study |
| Texas | Railroad Commission of Texas | 9225 | TXU Gas | 2002 | Gas Distribution Depreciation Study |
| Texas | Public Utility Commission of Texas | 24060 | TXU | 2001 | Line Losses |
| Texas | Public Utility <br> Commission of Texas | 23640 | TXU | 2001 | Line Losses |
| Texas | Railroad Commission of Texas | 9145-9148 | TXU Gas | $\begin{gathered} 2000- \\ 2001 \end{gathered}$ | Gas Distribution Depreciation Study |
| Texas | Public Utility Commission of Texas | 22350 | TXU | $\begin{gathered} 2000- \\ 2001 \end{gathered}$ | Electric Depreciation Study, Unbundling |
| Texas | Railroad Commission of Texas | 8976 | TXU Pipeline | 1999 | Pipeline Depreciation Study |
| Texas | Public Utility Commission of Texas | 20285 | TXU | 1999 | Fuel Company Depreciation Study |
| Texas | Public Utility <br> Commission of Texas | 18490 | TXU | 1998 | Transition to Competition |
| Texas | Public Utility Commission of Texas | 16650 | TXU | 1997 | Customer Complaint |
| Texas | Public Utility Commission of Texas | 15195 | TXU | 1996 | Mining Company Depreciaiton Study |
| Texas | Public Utility Commission of Texas | 12160 | TXU | 1993 | Fuel Company Depreciation Study |
| Texas | Public Utility Commission of Texas | 11735 | TXU | 1993 | Electric Depreciation Study |

# SOUTHERN CALIFORNIA EDISON 

 ELECTRIC UTILITY PLANT DEPRECIATION RATE STUDY AT DECEMBER 31, 2012http://www.utilityalliance.com

# SOUTHERN CALIFORNIA EDISON ELECTRIC UTILITY PLANT DEPRECIATION RATE STUDY EXECUTIVE SUMMARY 

Southern California Edison ("SCE" or "Company") engaged Alliance Consulting Group to conduct a depreciation study of the Company's Electric and Common utility plant depreciable assets as of December 31, 2012.

This study was conducted using the standard industry depreciation study approach. The net salvage analysis in this study paralleled the approach previously used by SCE in its 2012 GRC. This study follows the California Public Utility Commission ("CPUC")'s long-standing precedent of Standard Practice U-4, Determination of Straight-Line Remaining Life Depreciation Accruals ("U-4," or "Standard Practice U-4"), dated January 3, 1961. Standard Practice U-4 "sets forth various factors influencing the determination of depreciation accruals and describes methods of calculating these accruals" with the purpose of assisting "the Commission staff in determining proper depreciation expenses., ${ }^{11}$ Although over 40 years old, the Standard Practice U-4 represents conventional utility depreciation practices and the CPUC continues to adhere to this standard.

For Production accounts, some generating units were excluded from the study due to special circumstances regarding the recovery of those costs. The units excluded from the study were: Mohave, Four Corners, San Onofre, the decommission costs of Mountainview 1 and 2, and the decommissioning costs for Solar 2. For the units in scope, most generating units retained the same lives. The only generating unit to change its terminal life was Palo Verde, which reflects a 20year life extension granted by the Nuclear Regulatory Commission. For all units, the terminal demolition costs were impacted by updated dismantling studies for all production facilities. These updated dismantling studies resulted in changes in depreciation rates for all production functions.

For Transmission, Distribution and General Accounts, the lives of most
accounts with changes exhibited longer lives than currently in effect. There are seven accounts that have increasing lives, two that have a decreasing life and ten accounts that have the same life. There are shifts in net salvage: Fourteen accounts increasing their negative net salvage, four accounts with no change, and one account decreasing its negative net salvage. The accounts with the largest increases in negative net salvage are Account 369, Distribution Services where the net salvage moved from negative 85 percent to negative 125 percent and Account 364 Distribution Poles which moved from negative 190 percent to negative 225 percent. The only account with a change in net salvage which produced a decrease was Account 358 Transmission Underground Conductor and Devices which moved from negative 20 percent to negative 15 percent.

This study recommends an overall increase of $\$ 102$ million in annual depreciation expense for all accounts. This consists of a decrease of $\$ 14$ million in annual depreciation expense for production facilities compared to the depreciation rates currently in effect and an increase of $\$ 116$ million in Transmission, Distribution, General, Amortized, and Intangible assets annual depreciation expense compared to the depreciation rates currently in effect. Appendix $B$ demonstrates the change in depreciation expense for the various accounts.

# SOUTHERN CALIFORNIA EDISON <br> <br> ELECTRIC UTILITY PLANT <br> <br> ELECTRIC UTILITY PLANT DEPRECIATION RATE STUDY <br> AT DECEMBER 31, 2012 

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## PURPOSE

The purpose of this study is to develop depreciation rates for the depreciable property as recorded on Southern California Edison's books at December 31, 2012. The account based depreciation rates were designed to recover the total remaining undepreciated investment, adjusted for net salvage, over the remaining life of Southern California Edison's property on a straight-line basis. Non-depreciable property and transportation property were excluded from this study.

Southern California Edison ("SCE") is one of the largest utilities in the United States. In 2011, the Company delivered 87.34 billion kWh of electricity in 2011 and powered a total of: 14 million+ people, 180 cities, 11 counties, 50,000 square miles of service area, 5,000 large businesses, and 280,000 small businesses. To deliver power safely, reliably and affordably, the Company monitors and maintains a vast electricity system with the following transmission and distribution assets: 1.5 million+ electric poles. 700,000+ transformers, 55,000+ distribution switches, and 88,000+ miles of distribution lines.

## STUDY RESULTS

Overall depreciation rates for all Southern California Edison depreciable property are shown in Appendix A. These rates translate into an annual depreciation accrual of $\$ 1,494.3$ million based on Southern California Edison's depreciable investment at December 31, 2012. The annual equivalent depreciation expense calculated by the same method using the approved rates is $\$ 1,392.0$ million. Certain generating units, namely San Onofre Nuclear Generating Station, Mohave Generating Station, and Four Corners Generating Station, are excluded from this depreciation study. Additionally, decommissioning related to Solar 2 and Mountainview Units $1 \& 2$, will not be covered in this testimony. Special circumstances surrounding those assets are being addressed by SCE. A table showing the present vs. proposed depreciation accrual rates is shown below.

| Type of Plant | Accrual at <br> Existing Rates <br> $\$ \times$ million | Accrual at <br> Proposed <br> Rates $\$ \mathrm{x}$ <br> million | Difference <br> $\$ \times$ million |
| :--- | :---: | :---: | :---: |
| Electric Nuclear - Palo Verde | $\$ 25.6$ | $\$ 9.7$ | $(\$ 15.9)$ |
| Electric Hydro | $\$ 22.3$ | $\$ 27.7$ | $\$ 5.4$ |
| Electric Other Production | $\$ 61.2$ | $\$ 58.5$ | $(\$ 3.3)$ |
| Electric Transmission | $\$ 199.4$ | $\$ 216.9$ | $\$ 17.5$ |
| Electric Distribution | $\$ 654.6$ | $\$ 727.8$ | $\$ 73.2$ |
| Electric General Depreciable and <br> Amortized | $\$ 186.0$ | $\$ 211.5$ | $\$ 25.5$ |
| Electric Intangible and Common <br> Amortized | $\$ 242.3$ | $\$ 242.3$ | $\$ 0$ |
| Total | $\$ 1392.0$ | $\$ 1494.3$ | $\$ 102.4$ |

Appendix A demonstrates the development of the annual depreciation rates and accruals. Appendix A-1 shows proposed Production Accrual rates and A-2 shows Transmission, Distribution, General Depreciable, and Amortized accounts proposed accrual rates. Appendix $B$ presents a comparison of approved rates versus proposed rates by account. Appendix C presents a summary of mortality and net salvage estimates by account for Transmission, Distribution and General Depreciable assets. Appendix D presents the terminal retirement dates for production facilities. Appendix $E$ presents the net salvage analysis for Transmission, Distribution, and General Accounts.

## GENERAL DISCUSSION

## Definition

The term "depreciation" as used in this study is considered in the accounting sense, that is, a system of accounting that distributes the cost of assets, less net salvage (if any), over the estimated useful life of the assets in a systematic and rational manner. It is a process of allocation, not valuation. This expense is systematically allocated to accounting periods over the life of the properties. The amount allocated to any one accounting period does not necessarily represent the loss or decrease in value that will occur during that particular period. The Company accrues depreciation on the basis of the original cost of all depreciable property included in each functional property group. On retirement the full cost of depreciable property, less the net salvage value, is charged to the depreciation reserve.

## Basis of Depreciation Estimates

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

SPR analysis was used with each account within a function where sufficient data was available, and judgment was used to some degree on all accounts.

## Survivor Curves

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


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


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

Most property groups can be closely fitted to one lowa Curve with a unique average service life. The blending of judgment concerning current conditions and future trends along with the matching of historical data permits the depreciation analyst to make an informed selection of an account's average life and retirement dispersion pattern.

## Life Span Procedure

The life span procedure was used for production facilities for which most components are expected to have a retirement date concurrent with the planned retirement date of the generating unit. The terminal retirement date refers to the year that each unit will cease operations. The terminal retirement date, along with the interim retirement characteristics of the assets that will retire prior to the facility ceasing operation; describe the pattern of retirement of the assets that comprise a generating unit. The estimated terminal retirement dates for the various generating units were determined based on consultation with Company management, financial, and engineering staff. Those estimated terminal retirement dates are shown in Appendix D.

## Interim Retirement Rates

Interim retirement rates were used to model the retirement of individual assets within primary plant accounts for each generating unit prior to the terminal retirement of the facility. The life span procedure assumes all assets are depreciated (straight-line) for the same number of periods and retire at the same time (the terminal retirement date). Adding interim retirement rates to the procedure reflects the fact that some of the assets at a power plant will not survive to the end of the life of the facility and should be depreciated (straight-line) more quickly and retired earlier than the terminal life of the facility. The goal of interim retirement rates is to project how many of the assets that are currently in service will retire each year in the future using historical analysis and judgment. In most of Alliance's
depreciation studies, lowa curves are used based on an analysis of the historical retirement pattern of the Generation assets and consultation with Company personnel. SCE has used interim retirement rates to model this activity in past GRC proceedings. This methodology has been approved by the CPUC in prior proceedings and is used in this depreciation study. Interim retirement rates for each plant account were modeled using a 10 year history of SCE specific experience. By applying interim retirement rates, recognition is given to the obvious fact that generating units will have retirements of depreciable property before the end of their lives.

Although interim retirements have been recognized in the study, interim additions (i.e. future additions) have been excluded from the study. The estimated amount of future additions might or might not occur. However, there is no uncertainty as to whether the full level of interim retirements will happen. The assets that are being modeled for retirement are already in rate base. Depreciation rates using interim retirements are known and measurable in the same way that setting depreciation rates for transmission or distribution property using lowa Curves is known and measurable. There is no depreciable asset that is expected to live forever. All assets at a power plant will retire at some point. Interim retirements simply model when those retirements will occur in the same way that is done for transmission or distribution assets.

## Simulated Plant Record Procedure

The Simulated Plant Record Procedure - Balances approach ("SPR") is one of the commonly accepted approaches to analyze mortality characteristics of utility property. SPR was applied to the Transmission, Distribution, and General accounts due to the unavailability of vintaged transactional data. In this method, an lowa Curve and average service life are selected as a starting point of the analysis and its survivor factors are applied to the actual annual additions to give a sequence of annual balance totals. These simulated balances are compared with the actual balances by using both graphical and statistical analysis. Through multiple comparisons using various bands (i.e. comparing the results of various groupings of
specific numbers of years of account balances in the calculation such as the closeness of fit of 30 years of balances to the calculated balances, 40 years of balances, etc.), the mortality characteristics (as defined by an average life and lowa Curve) that are the best match to the property in the account can be found.

The Conformance Index ("Cl") is one measure used to evaluate various SPR analyses. Cls are also used to evaluate the "goodness of fit" between the actual data and the lowa Curve being referenced. The sum of squares difference ("SSD") is a summation of the difference between the calculated balances and the actual balances for the band or test year being analyzed. This difference is squared and then summed to arrive at the SSD, where n is the number of years in the test band as follows:

This calculation can then be used to develop other calculations, which the analyst feels might give a better indication for the "goodness of fit" for the representative curve under consideration. The residual measure ("RM") is the square root of the average squared differences as developed above. The residual measure is calculated as follows:

$$
\left.R M=\sqrt{( } \frac{S S D}{n}\right)
$$

The Cl is developed from the residual measure and the average observed plant balances for the band or test year being analyzed. The calculation of conformance index is shown below:

$$
C I=\frac{\sum_{l}^{n} \text { Balances }_{i} / n}{R M}
$$

The Retirement Experience Index ("REl") gives an indication of the maturity of the account and is the percent of the property retired from the oldest vintage in the band at the end of the test year. Retirement indices range from 0 percent to 100
percent and a REI of 100 percent indicates that a complete curve was used. A REI less than 100 percent indicates that the survivor curve was truncated at that point. The originator of the SPR method, Alex Bauhan, suggests ranges of value for the CI and REI. The relationship for Cl proposed by Bauhan is shown below ${ }^{2}$ :

| Cl | Value |
| :--- | :--- |
| Over 75 | Excellent |
| 50 to 75 | Good |
| 25 to 50 | Fair |
| Under 25 | Poor |

The relationship for REI proposed by Bauhan ${ }^{3}$ is shown below:

| REI | Value |
| :--- | :--- |
| Over 75 | Excellent |
| 50 to 75 | Good |
| 33 to 50 | Fair |
| 17 to 33 | Poor |
| 17 and below | Valueless |

Depreciation analysts have used these measures in analyzing SPR results for nearly 60 years, since the SPR method was developed. Both the CI and REI statistics provide the analyst with important information with which to make a comparison between a band of simulated or calculated balances and the observed or actual balances in the account being studied.

Statistics are useful in analyzing mortality characteristics of accounts, as well as determining a range of service lives to be analyzed using the detailed graphical method. However, these statistics boil all the information down to one, or at most, a few numbers for comparison. Visual matching through comparison between actual and calculated balances expands the analysis by permitting the analyst to view many points of data at a time. The goodness of fit should be visually compared to plots of other lowa Curve dispersions and average lives for the selection of the appropriate curve and life. Detailed information for each account is shown later in

[^3]this study and in workpapers.

## Judgment

Any depreciation study requires informed judgment by the analyst conducting the study. A knowledge of the property being studied, company policies and procedures, general trends in technology and industry practice, and a sound basis of understanding depreciation theory are needed to apply this informed judgment. Judgment was used in areas such as survivor curve modeling and selection, depreciation method selection, and simulated plant record method analysis. Judgment is not defined as being used in cases where there are specific, significant pieces of information that influence the choice of a life or curve. Those cases would simply be a reflection of specific facts into the analysis. Where there are multiple factors, activities, actions, property characteristics, statistical inconsistencies, implications of applying certain curves, property mix in accounts or a multitude of other considerations that impact the analysis (potentially in various directions), judgment is used to take all of these factors and synthesize them into a general direction or understanding of the characteristics of the property. Individually, no one factor in these cases may have a substantial impact on the analysis, but overall, may shed light on the utilization and characteristics of assets. Judgment may also be defined as deduction, inference, wisdom, common sense, or the ability to make sensible decisions. There is no single correct result from statistical analysis; hence, there is no answer absent judgment. At the very least for example, any analysis requires choosing which bands to place more emphasis.

The establishment of appropriate Production interim retirement rates requires judgment to incorporate the understanding of the operation of the system with the available accounting information. Selection of life parameters for Transmission, Distribution, and General Assets using the SPR method also requires judgment. The appropriateness of lives and curves depends not only on statistical analyses, but also on how well future retirement patterns will match past retirements.

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

## Broad Group Depreciation

At the request of SCE, consistent with its prior and current practices, this study continues to use the broad depreciation procedure to group the assets within each account. After an average service life and dispersion were selected for each account, those parameters were used to estimate what portion of the surviving investment of each vintage was expected to retire. A straight-line rate for each broad group $(B G)$ is calculated by computing a composite remaining life for each group across all vintages within the group, dividing the remaining investment to be recovered by the remaining life to find the annual depreciation expense and dividing the annual depreciation expense by the surviving investment. The resultant rate for each group is designed to recover all retirements less net salvage when the last unit retires. The BG procedure recovers net book cost over the life of each account by averaging many components.

## Theoretical Depreciation Reserve

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

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

## DETAILED DISCUSSION

## Depreciation Study Process

This depreciation study encompassed four distinct phases. The first phase involved data collection and field interviews. The second phase was where the initial data analysis occurred. The third phase was where the information and analysis was evaluated. Finally, the Fourth phase involved the calculation of deprecation rates and documenting the corresponding recommendations.

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

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

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

Finally, Phase 4 involved the calculation of accrual rates, making recommendations and documenting the conclusions in a final report. The calculation of accrual rates is found in Appendix A. Recommendations for the various accounts are contained within the Detailed Discussion of this report. The depreciation study flow diagram shown as Figure $1^{4}$ documents the steps used in conducting this study. Depreciation Systems ${ }^{5}$, documents the same basic processes in performing a depreciation study which are: Statistical analysis, evaluation of statistical analysis, discussions with management, forecast assumptions, and document recommendations.

[^4]
## SOUTHERN CALIFORNIA EDISON DEPRECIATION STUDY PROCESS

## Book Depreciation Study Flow Diagram



Accourting: A Reader Madfocs

Figure 1

## Depreciation Rate Calculation

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

## Remaining Life Calculation

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

## Production Depreciation Calculation Process

Annual depreciation expense amounts for the Steam, Hydraulic and Other Production accounts were calculated by the straight line, remaining life procedure. In a whole life representation, the annual accrual rate is computed by the following equation:

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

In the case of steam production facilities with a terminal life and interim retirement curve, each vintage within the group has a unique average service life and remaining life determined by computing the area under the truncated lowa Curve coupled with the group's terminal life.

Use of the remaining life depreciation system adds a self-correcting mechanism, which accounts for any differences between theoretical and book depreciation reserve over the remaining life of the group. For each vintage modeled with an interim retirement curve and terminal life,

$$
\begin{gathered}
\text { Remaining Life(i) }=\frac{\text { Area Under Survivor Curve to the Right of Age (i) }}{\text { Survivors (i) }} \text {, and } \\
\text { Average Service Life }=\frac{\text { Area Under Survivor Curve }}{\text { Survivors at age zero }}
\end{gathered}
$$

With the straight line, remaining life, broad group system using lowa Curves, composite remaining lives were calculated by computing a direct weighted average of each remaining life by vintage within the group. Within each group (plant account/ unit), for each plant account, the difference between the surviving investment, adjusted for estimated net salvage, and the allocated book depreciation reserve, was divided by the composite remaining life to yield the annual depreciation expense as noted in this equation.

Annual Depreciation Expense $=\frac{\text { Original Cost }- \text { Book Reserve }- \text { Original Cost } *(1-\text { Net Salvage } \%)}{\text { Remaining Life }}$
In this equation, the net salvage percent represents future net salvage.

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

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

These calculations are shown in Appendix A. The calculations of the theoretical depreciation reserve values and the corresponding remaining life calculations are shown in the workpapers. Book depreciation reserves were reallocated from specific functional groups to a plant account/unit level basis within that specific functional group and theoretical reserve computations were used to compute remaining life for each group.

## Other Accounts Calculation Process

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

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

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

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

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

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

Annual Depreciation Expense $=\frac{\text { Original Cost }- \text { Book Reserve }-(\text { Original Cost }) *(1-\text { Net Salvage } \%)}{\text { Composite Remaining Life }}$
In this equation, the Net Salvage\% represents future net salvage.
Within a group, the sum of the group annual depreciation expense amounts, as a percentage of the depreciable original cost investment summed, gives the annual depreciation rate as shown below:

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

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

## Terminal Retirement Date

The terminal retirement date refers to the year in which a generating unit will be retired from service. The retirement can be for a number of reasons such as the physical end of the generating unit but will generally be driven by economic retirement of the unit. SCE' personnel provided their estimated retirement dates for each generating unit. These dates are based on the current plans and investment in the generating units. Retirement dates for generating units can be found in Appendix D. As new investment is committed to these units or decisions made that units are not economically viable, these lives may change. At this time, these retirement dates are the best estimate of the current lives remaining in the generating assets.

## Interim Retirement Rates

Interim retirement rates were computed by analyzing data from 2003-2012, Data was segregated into functional groups: coal, nuclear, hydro and other. For each functional group and plant account, Company history showing plant balance, retirements, gross salvage and cost of removal was compiled by plant account. By examining those trends, interim retirement rates and interim net salvage rates were
developed by function and account. Those results were applied to each generating unit. Those results are provided in workpapers.

SCE's historical practice considers the interim retirement rate adjustment first by estimating the future level of interim retirements as a percent of the plant balance (i.e., an interim retirement rate). The estimate of the IR rate is made by analyzing the historical levels of interim retirements. Judgment is used in selecting IR rates, just as is done with interim retirement curves. To add the IR rate to the computation of the depreciation accrual rate, the IR rate is applied to the current plant balance over the remaining life of the plant to determine the necessary adjustment to the overall remaining life of the generating station. For example, if a generating unit has an 11 year remaining life and an IR rate of 1.4 percent per year, then about 15 percent of the current plant balance would retire as an interim retirement (11 years times 1.4 percent per year and the remaining 85 percent would retire as a final retirement.

A graph in the interim retirement curve with these parameters is shown below.

## INTERIM RETIREMENT CURVE WITH

## 11 YEAR REMAINING LIFE SPAN AND 1.4\% IR.



* Remaining Life Span $=11$ years; IR Rate $=1.4 \%$.

The average life of the group is equal to the life span adjusted for the shorter life of the interim retirements. The remaining life adjustment is calculated as follows:

Life Span: Remaining Life Adjustment

| Remaining Life <br> Adjustment | Remaining Life Span x <br>  <br> 0 | Remaining <br> Life Span |
| :---: | :---: | :---: |
| 0.8 Years | 11 Years $\times 1.4 \%$ | 11 Years |

The remaining life used to compute the depreciation accrual is decremented to be 10.2 years.

When analyzing a large pool of assets like power plant accounts, these shorter lived items can be accurately modeled together statistically. Thus, given that interim retirements will occur, this statistical analysis enables one to measure the interim retirement rates applicable to property groups. Some examples of "long lived" property that are projected to last until the retirement of a unit are: Roads, Bridges, Railroad track, Intake/Discharge Structures, Structural Steel (and misc. steel), Cooling towers, Buildings, Cranes, Dams, Ponds, Basins, Canals, Foundations, Stacking and Reclaiming equipment, Surge Silos, Crushers, Transfer Towers, Fly Ash and Bottom Ash Systems, Precipitators, Bag Houses, Stack, Turbine (except blades) and Piping, Generator Cooling System, Vacuum Systems, Generator and Main Leads, Station Transformers, Conduits and Ducts, Station Grounding System, Start-up Diesel Generators, and Stores Equipment.

Some examples of "shorter lived" property that are projected to retire prior to the retirement of the unit are: fences, signs, sprinkler systems, security systems, Intake screens, roofs, cooling fan units, air compressors, fuel oil heaters, heating, ventilation and air conditioners, piping, motors, pumps, conveyors, pulverizers, air preheaters, economizers, control equipment, feed water heaters, boiler feed water pumps, forced draft (FD) and induced draft (ID) fans, scrubbers, continuous emissions monitoring systems (CEM), turbine blades and buckets, turbine plant instruments, condensers, control equipment, station service switchgear, and universal power supply (UPS) batteries.

## Life Estimates

## PRODUCTION PLANT

The only Generation life span changed from the 2012 GRC is the Palo Verde Nuclear plant. The Company was granted a 20 year life extension for each of the Palo Verde units. All other generation life spans are unchanged from the 2012 GRC. For Hydro plants, individual life spans for each generating station are used to develop a composite life. For Nuclear, Hydraulic and Other Production Plant study recommendations will be based on a life span analysis using IR rates which were explained above. The following plants/units will not be addressed in this study: Mohave, Four Corners, San Onofre, and Mountainview 1 and 2 Decommissioning. PRODUCTION

The table below shows the total life for each plant.
GENERATING UNIT LIFE SPANS

| Plant | $\mathbf{2 0 1 2 - 2 0 1 4}$ <br> Authorized | $\mathbf{2 0 1 5 - 2 0 1 7}$ <br> Proposed |
| :--- | :--- | :--- |
| Nuclear- Palo Verde | 16.1 Years | 33.5 Years |
| Hydro | Various | Various |
| Other- Pebbly Beach | 45 Years | 45 Years |
| Other- Mountainview | 30 Years | 30 Years |
| Other- Peakers | 25 Years | 25 Years |
| Other- Solar | 20 Years | 20 Years |
| Photovoltaic |  |  |

A discussion of the each generating station occurs below.

## Nuclear

SCE has two nuclear locations, San Onofre Nuclear Generating Station (SONGS) and Palo Verde. SCE announced the permanent shutdown of SONGS units 2 and 3 in June of 2013. As a result of this determination, SCE is addressing proposed recovery of the remaining asset separate from this depreciation study. Palo Verde Nuclear Generating Station's NRC licenses for units 1, 2, and 3 expire on

December 31, 2044, December 9, 2045 and March 25, 2047 respectively. These units each received 20 year life extension from the original NRC license. On a composite basis, the plant has a 33.5 year remaining life.

PALO VERDE REMAINING LIFE

| ACCT | Life Span <br> Remaining Life | IR Rate | Avg. Remaining <br> Life |
| :---: | :---: | :---: | :---: |
| 321 | 33.5 | $0.00 \%$ | 33.5 |
| 322 | 33.5 | $0.00 \%$ | 33.5 |
| 323 | 33.5 | $0.00 \%$ | 33.5 |
| 324 | 33.5 | $0.00 \%$ | 33.5 |
| 325 | 33.5 | $0.00 \%$ | 33.5 |

## Hydro

For Hydro facilities, SCE has 76 different generating units at 33 different locations. All but five of SCE's hydro investment has a FERC license in place to determine the life span. The licenses have a variety of termination dates - from expired (in the process of being relicensed) to 2046. The total life span of SCE's current license periods range between 29 and 50 years. Recently, FERC has issued renewals with license periods averaging 39.33 years. There are no guarantees that the FERC will continue to grant the company licenses going forward or that the generating units will continue to be economic. The individual components making up a generating station will continue to wear out, retire, and need to be replaced. Consequently, this study proposes that the hydro generation plant be depreciated over the remaining life spans associated with the individual FERC licenses. $\frac{6}{}$ For generating stations within five years of license termination, however, this study proposes that the life spans be extended by the estimated license life in its current FERC license applications.?
$6 \quad$ In the case of the 1 percent of hydro plant not covered by a FERC license, SCE applies the average life determined for the plant that is covered by FERC license.
$7 \quad$ The average application license period is 45 years. The exception to this life span extension is the amortization period for the hydro relicensing costs. These relicensing costs are only amortized over the associated license period for which they were spent.

HYDRO REMAINING LIFE

| ACCT | Life Span <br> Remaining Life | IR Rate | Avg. <br> Remaining Life |
| :---: | :---: | :---: | :---: |
| 331 | 41.4 | $0.20 \%$ | 39.6 |
| 332 | 35.1 | $0.05 \%$ | 34.8 |
| 333 | 38.4 | $0.25 \%$ | 36.4 |
| 334 | 33.3 | $0.40 \%$ | 30.6 |
| 335 | 39.8 | $0.25 \%$ | 37.6 |
| 336 | 34.8 | $0.50 \%$ | 31.3 |

## Pebbly Beach

The Pebbly Beach generating station consists of six diesel generating units, ranging in capacity from 1.0 MW to 2.8 MW . SCE engineers estimate that the average life span of these generating units is 45 years. This estimate is premised on the fact that the diesel generators require a major overhaul after 140,000 operating hours (about 22 years assuming a 75 percent capacity factor). After two such operating periods, obsolescence increased operating and maintenance costs, and reduced reliability can affect the retirement of these generators. Another retirement factor that can affect this generation is the need for capacity upgrades requiring more space-efficient generation given the limited space at Pebbly Beach. The weighted average age of the diesel generators is 20 years. There have been insufficient interim retirements to estimate an IR rate for this plant; consequently both the remaining life span and the average remaining life are 18.7 years, as shown below.

## PEBBLY BEACH REMAINING LIFE

| ACCT | Life Span <br> Remaining Life | IR Rate | Avg. Remaining Life |
| :---: | :---: | :---: | :---: |
| 341 | 18.7 | $0.00 \%$ | 18.7 |
| 342 | 18.7 | $0.00 \%$ | 18.7 |
| 343 | 18.7 | $0.00 \%$ | 18.7 |
| 344 | 18.7 | $0.00 \%$ | 18.7 |


| 345 | 18.7 | $0.00 \%$ | 18.7 |
| :--- | :--- | :--- | :--- |
| 346 | 18.7 | $0.00 \%$ | 18.7 |

## Mountainview

Mountainview Units 3 and 4 currently has a 30 -year life span. Since the plant is 7 years old, this leaves a remaining life of 23 years as part of the Purchase Power Agreement (PPA). At this time, however, SCE is not estimating interim retirements to estimate an IR rate for this plant. Consequently both the remaining life span and the average remaining life are 23.0 years. The remaining life is 23 years, as shown below:

MOUNTAINVIEW REMAINING LIFE

| ACCT | Life Span <br> Remaining Life | IR Rate | Avg. Remaining <br> Life |
| :---: | :---: | :---: | :---: |
| 341 | 23.0 | $0.00 \%$ | 23.0 |
| 342 | 23.0 | $0.00 \%$ | 23.0 |
| 343 | 23.0 | $0.00 \%$ | 23.0 |
| 344 | 23.0 | $0.00 \%$ | 23.0 |
| 345 | 23.0 | $0.00 \%$ | 23.0 |
| 346 | 23.0 | $0.00 \%$ | 23.0 |

## Peakers

It is estimated that the Peakers will have a life span of approximately 25 years. SCE currently has no retirement data for Peakers' generation. At this time this study is not adjusting remaining life for estimated interim retirements until more information is available. Given that the Peakers were in-service mid-2007, the remaining life is 20.6 years as of year-end 2012, as shown below.

## PEAKERS REMAINING LIFE

| ACCT | Life Span <br> Remaining <br> Life | IR Rate | Avg. <br> Remaining <br> Life |
| :---: | :---: | :---: | :---: |
| 341 | 20.6 | $0.00 \%$ | 20.6 |


| 342 | 20.6 | $0.00 \%$ | 20.6 |
| :---: | :---: | :---: | :---: |
| 343 | 20.6 | $0.00 \%$ | 20.6 |
| 344 | 20.6 | $0.00 \%$ | 20.6 |
| 345 | 20.6 | $0.00 \%$ | 20.6 |
| 346 | 20.6 | $0.00 \%$ | 20.6 |

## Solar Photovoltaic

It is estimated that Solar Photovoltaic has a life span of approximately 20 years. SCE currently has no retirement data for Solar Photovoltaic generation. At this time this study is not adjusting remaining life for estimated interim retirements until more information is available. The remaining life for Solar Photovoltaic assets is 18.6 years as of year-end 2012, as shown below.

SOLAR PHOTOVOLTAIC REMAINING LIFE

| ACCT | Life Span Remaining Life | IR Rate | Avg. Remaining Life |
| :---: | :---: | :---: | :---: |
| 341 | 18.6 | $0.00 \%$ | 18.6 |
| 343 | 18.6 | $0.00 \%$ | 18.6 |
| 345 | 18.6 | $0.00 \%$ | 18.6 |

## TRANSMISSION and DISTRIBUTION PLANT

Transmission Accounts, FERC Accounts 352-359
FERC Account 352 Transmission Structures \& Improvements (proposed 55 year life with a S3 dispersion curve)

This account includes structures, fencing, containment, security and similar assets found in a transmission substation. The current investment balance is \$377 million. The approved life and curve is 55 years with a S2 dispersion curve. A 55 S3 curve is ranked at or near the top for the full band (i.e. using all available account balances in the calculation), 60,50, 40 and 30 years with Cls and REls in the excellent range. Indications in shorter life runs show changing characteristics that produce flat curves that are anomalous with the type of property in the account. Since the existing life is 55 years, indications from the widest bands were used to predict future life characteristics for this account. Although life characteristics are specific to individual companies where many factors affect the life, the dispersion characteristics can be of use in understanding the retirement pattern generally applicable to assets in a specific account. For that reason, a graph based on 2012 FERC Form 1 information showing the distribution of industry dispersion patterns is shown below.


Although an R3 dispersion curve is predominant in the industry data, an S3 curve has many similar characteristics of the R3 curve and was chosen due to the better match of SCE specific results for the account and the 55 year life exhibited by the S3 curve is consistent with expectations for the life of the account. Based on SPR runs, industry data, and Company experience, retaining the 55 year life is proposed for this
account with a move from a S2 dispersion curve to a S3 dispersion curve. A graph of the actual versus simulated balances for this account is shown below.


## FERC Account 353 Transmission Station Equipment (proposed 41 year life with a R1 dispersion curve)

This account contains a wide variety of transmission substation equipment, from transformers and circuit breakers to switchgear, as well as shorter-lived electronic equipment. The current investment balance is $\$ 3.982$ billion. The current approved life is 40 years with a R1 dispersion curve. In reviewing SPR results, the R1 curve is ranked near the top from the widest band (i.e. using all available account balances in the calculation) down to through 30 years. In 20 year bands, the life moves to approximately 42 years, but the shorter band contains too little information related to this long-lived account to support a further move to a 42 year life. In addition, the most recent 10 year band shows a shorter life, clustering around 32 years for the highest rank curves. These counter indications of changing life are reflective of bands with less information embedded in the calculation. A graph showing the distribution of industry dispersion patterns is shown below.


A low to medium mode R curve is predominant within in the electric utility industry. The SPR bands from 30 years and longer support a 41 year life with R1 dispersion. These signs are consistent with depreciation study results in the 2012 GRC. The various asset types in the account would be expected to have lives ranging from 15
years to 40 years or more. From the information available, the recent retirement mix of long-lived versus shorter-lived assets is comparable to the mix of assets in the account. A graph of the actual versus simulated balances for this account is shown below. Based on SPR bands, input from Company personnel, and judgment regarding the asset groups in this account, this study recommends moving out to a 41-year life with a R1 dispersion curve for this account.


## FERC Account 354 Transmission Towers \& Fixtures (proposed 65 year life with

 a R5 dispersion curve)This account consists of Transmission towers and fixtures, which are used to transmit electricity at a voltage of 69 kV and above. The current investment balance is $\$ 772$ million. The current approved life is the 65 years with a $R 5$ dispersion curve. The R5 is ranked well across all bands with the S 6 ranked slightly higher over the last few years. As the analysis moves from the longer to shorter bands, the life is increasing slightly. For example, longer bands of the S6 dispersion exhibited a 60 year life and moved to a 65 in more recent bands. A graph showing the distribution of industry dispersion patterns is shown below.

A high moded R3 or R4 curve is predominant within in the electric utility industry. The S 6 dispersion which ranked well in many bands is not used by any utility reporting depreciation parameters.


The current analysis is consistent with depreciation study results in the 2012 GRC. A graph of the actual versus simulated balances for this account is shown below. Based on SPR bands, input from Company personnel, and judgment regarding the asset groups in this account, this study recommends retaining a 65 -year life with a R5 dispersion curve for this account.


## FERC Account 355 Transmission Poles \& Fixtures (proposed 45 year life with a R1 dispersion curve)

This account consists of Transmission poles and fixtures, which are used to transmit electricity at a voltage of 69 kV and above. The current investment balance is $\$ 604$ million. The current approved life is 50 years with a R1 dispersion curve. The highest rank curve in all bands was R0.5 which is much flatter than the asset characteristics would indicate. Another curve which ranked well across all bands was the 45 R1. A graph showing the distribution of dispersion patterns is shown below.

A low to medium mode $R$ curve is predominant within in the electric utility industry. The top ranked R0.5 curve is used by only one company out of the 81 entities reporting depreciation parameters.


The pole loading inspection program initiated by the Company will decrease the life of many of the existing poles in the account - the program will especially affect the transmission category.

The Company introduced through-boring in early 2000's. The introduction of through-boring program for poles may eventually increase the life of this account but currently is still applied to a very small subset of the total 1.5 million poles on the system. The process may begin to affect the life of the account as a larger population of through-bored poles comes onto the system and creates an upwards pressure on the average life of the account as a whole. Based on the SPR analysis, input from Company personnel, and judgment regarding the asset groups in this
account, this study recommends moving to a 45-year life with a R1 dispersion curve for this account.


FERC Account 356 Transmission Overhead Conductor \& Devices (proposed 56 year life with a R4 dispersion curve)

This account consists of Transmission overhead conductors, which are used to transmit electricity at voltages of 69 kV and above. The current investment balance is $\$ 706$ million. The current approved life is 50 years with a R4 dispersion curve. In most bands, low modal curves were the top ranked curves by Cl , but the REI for those curves was below Bauhan's recommended range. The R2 and R3 curves produced an acceptable REI, but the life indications are well beyond expectations for these types of assets. A graph showing the distribution of industry dispersion patterns is shown below.

Among the curves that produced acceptable REIs within reasonable life expectations were the R4, R5 and S5. Industry data for this account shows that most companies use a medium to high mode $R$ curve for this account.


SCE specific data shows a life consistent with expectations and a somewhat longer life than approved in the 2012 GRC. Based on the SPR analysis, input from Company personnel, and judgment regarding the asset groups in this account, this study recommends moving to a 56-year life with a R4 dispersion curve for this account. A graph of actual versus simulated balances is shown below.


## FERC Account 357 Transmission Underground Conduit (proposed 55 year life with a R3 dispersion curve)

This account consists of underground conduit and vaults. The current investment balance is $\$ 49$ million. The current approved life is 55 years with a R3 dispersion curve. Various SPR bands show that the L4 is a good curve fit but not used often. The current R3 curve produces lives that are much longer than rational. R4 is a possibility but has a low REI. After considering the 57 L4, that curve was compared to industry norms. The L4 is not a good pattern for this type of property and has only a good REI, not excellent. Lives with a high REI are reflecting reductions from the approved life which, based on experience with other utilities and no indications from the field of changes in process which would tend to decrease the life, is not reasonable. Since there are few retirements, SPR is not giving reliable life indications. A graph showing the distribution industry dispersion patterns is shown below.

Industry data for this account shows that most companies use a high moded curve such as an R4 curve for this account.


Given the limited data available for analysis, this study recommends retaining the currently approved 55 year life with a R3 dispersion curve for this account. A graph of actual versus simulated balances is shown below.

## Southern California Edison Account 357

 Actual vs Simulated Balance 55 R3

FERC Account 358 Transmission Underground Conductor \& Devices (proposed 40 year with a R2.5 dispersion curve)

This account consists of underground conductor. The lines are low pressure oil filled; paper wrapped 500 MCM copper cable. The currently approved curve for this account is a 40 R2.5. The current investment balance is $\$ 208$ million. A 40 L2 curve ranks highly in many bands, but other curves produce a much better REI. The next highest ranked curve is a 34 R4. The 34-year life is shorter than expectations for these types of assets. The next best curve than produced a life closer to expectations was a 38 R2.5. A graph showing the distribution of dispersion patterns is shown below.

An R3 or medium mode R curve is the predominant dispersion used by most electric utilities.


Since retirement data is limited for this account and no reason can be identified for a shorter life, this study recommends retention of the existing 40 R2.5 curve for this account. A graph of actual versus simulated balances is shown below.

## Southern California Edison Account 358 Actual vs Simulated Balance 40 R2.5



## FERC Account 359 Transmission Roads and Trails (proposed 60 year with a SQ dispersion curve)

This account consists of roads and trails. The current investment balance is $\$ 43$ million. The current approved life is 60 years with a SQ dispersion curve. Few assets have been retired, rendering SPR results of little validity. Nearly All REIs fall in the valueless range and the lives produced by SPR were well beyond expectations. In most bands, low modal curves were the top ranked curves by Cl , but the REI for those curves was below Bauhan's recommended range. A graph showing the distribution of dispersion patterns is shown below.

The predominant dispersions are high modal curves as shown below.


Based on analysis of Company data, this study concludes there is insufficient information to change the current life and retirement dispersion for this account. This study recommends retention of a 60-year life with a SQ dispersion curve for this account. A graph of actual versus simulated balances is shown below.


## Distribution Accounts, FERC Accounts 361.0-373.0

FERC Account 361.0 Structures \& Improvements (proposed 42 year life with a R2.5 dispersion)

This grouping contains facilities ranging from fencing and other structures found in distribution substations. The current investment balance is $\$ 437$ million for this account. The approved curve and life is a 40 S2.5. For the 50-year, 60-year and full bands, the top ranked curve is a 40 R3 with the next highest curve being a 42 R2.5. In those bands, the Cls are in the good range, not in the excellent. All REIs are excellent. For bands of 30 and 40 years, the 42 R2.5 curve becomes the highest ranked with the 40 R3 curve ranking second. The shorter bands of 10 and 20 years show S-curves as the highest rank. The 10 - and 20 -year bands are too short compared to the currently approved life to use as the basis of a life change for this account. Within in the utility industry, a mid-moded R curve is the predominant dispersion type as shown below.


Based on SPR life analysis and industry input, this study recommends a 42-year life with a R2.5 dispersion pattern. A graph of the actual versus simulated balances for this account is shown below.

## Southern California Edison Account 361 <br> Actual vs Simulated Balance 42 R2.5



## FERC Account 362.0 Station Equipment (proposed 45 year life with a R1.5 dispersion)

This grouping contains a wide variety of distribution substation equipment, from transformers and circuit breakers to switchgear, as well as shorter-lived electronic equipment. The current balance is $\$ 1.761$ billion for this account. The existing approved life is 45 years with a R1.5 dispersion curve. In bands for 30 years and longer, the Cl for this account is either poor or fair. For those bands, the top ranked curves are low moded L's, S's and R's. The predominant dispersion pattern within the utility industry is a mid-mode R curve.


The R1.5 dispersion curve produces a 44-45 year life in bands from 30 to full in width. Narrow bands of 10 to 20 years produce many curves the have an excellent CI and REI, but the width of those bands is less than one fourth or one half a life cycle for this account. The various asset types in the account would be expected to have lives ranging from 15 years to 40 years or more. From the information available, the recent retirement mix of long-lived versus shorter-lived assets is reasonably comparable to the mix of assets in the account. That data is insufficient to support a change in life for this account. Based on SPR analysis and review of industry trends in dispersion, this study retains the currently approved 45-year life with a R1.5 dispersion curve. A graph of the actual versus simulated balances for
this account is shown below.


## FERC Account 364.0 Poles, Towers, \& Fixtures (proposed 45 year life with a R0.5 dispersion)

This account contains poles and towers of various material types: wood, concrete, and steel. Most of the poles across the system are made of wood. The height of these assets can range generally from 35 feet to 70 feet with the prevalent sizes being 45 feet and up. The current balance is $\$ 1.655$ billion for this account. The approved average service life and dispersion are 45 years with a R1 dispersion pattern. In bands for 30 years and longer, the Cl for this account is either poor or fair. For those bands, the top ranked curves are low moded L's, S's and R's. The predominant dispersion pattern within the utility industry is a low to mid-mode $R$ curve.


While the 10 and 20 year bands produce curves with excellent REls and Cls, the bands are too narrow to rely upon to support a change in an account with a current life of 45 years. In bands of 50 years and more, the R0.5 curve is one of the top three ranked curves with a life of 45 years. In these wider bands, the R0.5 ranks higher than the Company's currently approved R1 dispersion. The R1 dispersion shows a life of 41 years during that period. The pole loading inspection program initiated by the Company will decrease the life of some of the existing poles in this account - the program will affect distribution less than the transmission category. The Rule 20 undergrounding program will also have the effect of decreasing the life of the account. In addition, the Company no longer repairs wood poles. The
introduction of through-boring program for poles in the early 2000's may eventually increase the average life of poles in this account but currently is still applied to a very small subset of the total 1.5 million poles on the system. The process will begin to affect the life of the account as a larger population of through-bored poles comes onto the system. With the significant downward life pressures reflected in the programs mentioned above, any reflection of an increase in life for the account based on the initiation of the through-boring process is premature. Based on the SPR result, judgment and the above discussion, this study recommends retaining the 45 -year life and moving a slight shift to a R0.5 dispersion. A graph of the actual versus simulated balances for this account is shown below.


## FERC Account 365.0 Overhead Conductor \& Devices (proposed 45 year life

 with a R0.5 dispersion)This account consists of overhead conductor of various thickness, as well as various switches and reclosers. The current investment balance is $\$ 1.196$ billion for this account. The approved rate assumes an average service life of 45 years with a R0.5 dispersion curve. For bands of 50 years and longer, the top ranked curve is a 45 year life with a R 0.5 dispersion. In narrower bands, the R 0.5 curve ranks second below the LO. With the Rule 20 undergrounding program creating premature retirements in this account, the longer life exhibited by the LO curve, and the characteristics of the curve itself as compared to the assets in the account, an LO curve does not appear reasonable for this account. Within the utility industry, a low to mid mode R curve is the predominant selection. Since the life of this account is currently 45 years, indications from the widest bands were used to select depreciation parameters for this account.


Based on the SPR results, this study recommends retaining the 45-year life and with a R0.5 dispersion. A graph of the actual versus simulated balances for this account is shown below.

## Southern California Edison Account 365 Actual vs Simulated Balance 45 R 0.5



## FERC Account 366.0 Underground Conduit (proposed 59 year life with a R3 dispersion)

This account consists of conduit, duct banks, vaults, manholes, and ventilating system equipment. The investment balance is $\$ 1.390$ billion for this account. The existing rate is based on a life estimate of 55 years with a R3 dispersion pattern. In the widest bands that would be consistent with indication of life of this account, the top ranked curves produce REl's that are very low. The Cl's are in the excellent range for most of the curves shown in the full and 60 years band. In all bands, the highest ranked curve that produces an REI at or near 100 is the R3 dispersion. Only in the most recent bands does the life move to 60 years. For the widest bands, the 59 R3 is the top ranked curve with an REI close to 100 . As can be seen in the chart below, a mid-range R dispersion is the predominant choice for other utilities across the United States.


Based on the SPR results, this study recommends moving to a 59-year life and with an R3 dispersion. A graph of the actual versus simulated balances for this account is shown below.

## Southern California Edison Account 366

 Actual vs Simulated Balance 59 R3

## FERC Account 367.0 Underground Conductor \& Devices (proposed 42 year life

 with a R1 dispersion)This account consists of underground distribution conductor, switches, and switchgear. The balance is $\$ 4.402$ billion for this account. The currently approved life is 40 years with an R1 dispersion curve. For all bands, the top ranked curves are R0.5, L0 and R1. The REI for the curves is approximately 97, 87, and 100 for the R0.5, L0, and R1 respectively. Both the R0.5 and L0 are used by only one utility each across the industry and shown in the chart below.


The R1 curve shows a life of 42 years across all bands except the narrowest 10 year band where the life lengthens slightly to 43. Based on the SPR results, this study recommends moving to a 42-year life and retaining the R1 dispersion. A graph of the actual versus simulated balances for this account is shown below.

## Southern California Edison Account 367 Actual vs Simulated Balance 42 R1



## FERC Account 368.0 Line Transformers (proposed 33 year life with a R1 dispersion)

This account consists of line transformers, regulators, and capacitors. The investment balance is $\$ 3.022$ billion for this account. The currently approved life for this account is 30 years with a R1.5 dispersion pattern. For all bands, the top ranked curves are R0.5, L0 and R1. The REls are close to 100 for each curve with low Cls. Since the LO curve is not widely used in the industry and would not reflect the as well expected retirement pattern of these types of assets, the choices focused on the R0.5 and R1 curves. The R0.5 curve shows a 36-year life, while the R1 curve demonstrates a 33-year life. The industry reflects a low to mid mode R curve as being the predominant choices in the utility industry.


Given the low Cls for both curves and the lives for nearly all other curves being in the high 20's or low 30's, the longer life and flatter characteristics of the R0.5 curve are not as appropriate for this account. The R1 dispersion is recommended along with moving out to a 33-year life for this account. A graph of the actual versus simulated balances for this account is shown below.


## FERC Account 369 Services (proposed 42 year life with a R2 dispersion curve)

 This account includes overhead and underground services with a balance of \$1.172 billion. The currently approved life for this account is 40 years with an R2 dispersion curve. For all bands except the 10 year band, the top ranked curves are very flat curves. The REIs are close to 100 for each curve. However, the Cls for this account are in the all in the Poor category until the shorter bands where they only move to the Fair range. In addition, most of the curves exhibit a much shorter life than the top few ranked curves and the predominance of very flat dispersions ranked at the top for this type of account would indicate changing life characteristics more so than valid characteristics of the assets. The currently approved curve is the R2 curve which exhibits a 42-year life. The R2 curve is the predominant curve for this account based on the industry data. Using SCE data, the R2 curve reflects a modest 2 year increase which can be considered acceptable even with the low Cls exhibited in the SPR analysis.

The current depreciation study recommendation is to move to a R2 dispersion curve and increase life to 42 years. A graph of the actual versus simulated balances for
this account is shown below.

Southern California Edison Account 369 Actual vs Simulated Balance 42 R2


## FERC Account 370.0 Meters - Smart Connect (proposed 20 year life with a R3 dispersion)

This account includes smart connect meters with a balance of $\$ 889$ million. The currently approved life for this account is 20 years with an R3 dispersion curve. These assets have been installed since 2007. There is insufficient history to analyze the data using SPR analysis. The current life was established through information on battery life indicated by the manufacturer. Other utilities use a low to mid-range $R$ dispersion curve for this account as can be seen from the chart below.


Based on judgment, this study recommends retaining the currently approved 20year life with an R3 dispersion for this account.

FERC Account 370.0 Meters - Legacy (proposed amortization period through 2017)

This account includes all distribution legacy meters that are being phased out. The current balance is $\$ 87$ million in plant with a net book value of $\$ 312$ million. These assets are being allocated over a 6 year life as approved in the 2012 GRC (2012-2017). The current recovery period through 2017 is retained.

## FERC Account 373.0 Street Lighting (proposed 40 year life with a L0.5 dispersion)

This account includes all distribution streetlights, conductor, conduit, luminaire, and standards. The current investment balance is $\$ 754$ million for this account. The currently approved life for this account is 40 years with an L0.5 dispersion curve. The top ranked curves are low modal curves in the R, L, or S dispersion families which given the variety of assets in the account is reasonable. The Cls for all but the 10 year band are in the fair or poor range. The industry showed a low mode R0.5, R1, or L0 curve as being the predominant choices in the utility industry.


Given the low conformance indices and input from company personnel, this study recommends retaining the 40-year life and with a L0.5 dispersion. A graph of the actual versus simulated balances for this account is shown below.

## Southern California Edison Account 373 Actual vs Simulated Balance 40 LO .5



## GENERAL PLANT

## General Accounts, FERC Accounts 390.0

FERC Account 390.0 Structures \& Improvements (proposed 38 year life with a R3 dispersion)

This account includes the cost of general structures and improvements used for utility service. There is a balance of $\$ 843$ million in this account. The approved life for this account is 40 years and a R2.5 dispersion. The top ranked curves in the most recent 40 year and longer bands are S6, S5, L5, and R3. The high modal curves show lives of 30 years which are shorter than would be expected for this type of property. An R3 curve ranks high across all bands and reflects a 38 year life with a reasonably good Cl in the shorter bands and a 100 percent REI.


Based on the SPR results and the types of assets in the account (i.e. a mix of long-lived buildings and shorter-lived components of the buildings), this study recommends moving to a 38 -year life and with a R3 dispersion. A graph of the actual versus simulated balances for this account is shown below.

## Southern California Edison Account 390

 Actual vs Simulated Balance 38 R3

## Forecast Service Lives - Summary

Some categories of plant neither lend themselves to statistical analysis nor belong in the life span category. These plant assets include most general plant (i.e., FERC Accounts 391-398), intangible plant (e.g., software, radio frequencies, etc.), and easements. A determination of a service lives was made through discussions with SCE engineers familiar with the assets, consideration of prior company procedure, and familiarity with industry practice.

After review, this study uses the same lives approved in the 2012 GRC for FERC Accounts 302-303 and 391-398 with the exception of certain subaccounts in Account 397. The Table below shows the forecast depreciation service lives for general and intangible plant accounts. The Table compares this study's proposed depreciation rates to authorized service lives.

## General and Intangible Forecast Service Lives

| Account | Account Description | 2012-2014 <br> Authorized <br> No. | 2015-2017 <br> Proposed |
| :--- | :--- | :--- | :--- |
| (Years) |  |  |  |

## General Plant

391.1
391.2
391.3
391.4
391.5
391.6
391.7

393
394
395
397
398
Intangibles
302.020
303.640
302.050
303.105
303.707
303.210
303.315

Office Furniture
Personal Computers
Mainframe Computers
DDSMS-Power Mgmt System
Office Equipment
Duplicating Equipment
PC Software
Stores Equipment
Tools \& Work Equipment
Laboratory Equipment
Telecommunication Equipment
Misc Power Plant Equipment

## 20

20
5
5
Composite ${ }^{8}$
5
5
5
20
10
15
Composite ${ }^{9}$
20

Various
Hydro Relicensing
Radio Frequency
Miscellaneous Intangibles
Capitalized Software - 5 year
Capitalized Software - 7 year
Capitalized Software - 10 year
Capitalized Software - 15 year

Transmission Easements 60

60
Distribution Easements
60
General Easements 60
60
60

[^5]
## Forecast Service Lives - Account-By-Account

## General Plant

Most general and intangible plant accounts consist of a large volume of items having a low value. Following FERC guidelines, the items in these accounts are not accounted for individually, but are amortized by vintage group over the specified service life and retired at the end of the life span. 10 For example, personal computers are amortized over a 5-year period (i.e., a 20 percent annual depreciation rate) and when a vintage group reaches five years of age, the vintage group of computers will be fully depreciated and retired off of the books. Following this approach eliminates costly plant record keeping and continuous physical tracking of the equipment. Over time, imbalances in the accumulated depreciation can occur if there are depreciation life or rate changes and if net salvage is recorded to the books but not reflected in the depreciation rate. These accumulated depreciation surpluses (deficits) are amortized over this GRC cycle (2012-2014).

## Account 391.1 - Office Furniture

Account 391.1 consists of all costs incurred in the acquisition of office furniture. It includes such items as modular furniture, desks, cabinets, and files used for general utility service and not permanently attached to buildings. A 20-year average service life is reasonable for both modular and free standing furniture.

## Account 391.2 And 391.3 - Computer Equipment

The assets in Account 391.2 can include Central Processing Units and associated components (e.g., monitors, printers, etc.) when purchased as a bundled unit, or when any of these items are purchased individually and meet the capitalization threshold. Account 391.3 is where SCE records all investment related to mainframe computer and file server equipment. SCE information technology personnel state that the average life for this equipment should be five years or less. Retention of the five-year life is reasonable.

## Account 391.4 - Power Management System

Account 391.4 contains Supervisory Control and Data Acquisition (SCADA) equipment for control and monitoring the SCE electrical system. Contained within this account are the components making up the Power Management System specifically, computer and data gathering equipment, man-machine interface, analog and digital telemetry devices, and data center facility infrastructure. The account consists of components that have very different lives, depending upon the technical sophistication and other retirement factors affecting the equipment. SCE's power management personnel have assessed this equipment as having service lives in categories of $7,10,15,20$, or 25 years. A dollar weighting of these equipment lives yields a theoretical combined average service life of about 12.3 years. This study recommends no change in the individual asset group lives. Each of these equipment life categories are addressed in the following discussions.

## Seven-Year Power Management System Equipment

SCE's power management personnel indicate that the equipment falling into the 7-year category is typically modern, digital electronic computer and microprocessor-based equipment which is subject to discontinued support by manufacturer or replaced with newer equipment within a short period of time. Furthermore, these devices contain rotating disk, printers and CRTs that become obsolete and/or worn out after seven years of continuous use. The equipment included in this group is shown in the table below.

| Life (years) | CPR Acct | Description |
| :---: | :---: | :---: |
| 7 | 391.400 | Central Processing Unit |
| 7 | 391.401 | CPU Memory Unit |
| 7 | 391.407 | Line Printer |
| 7 | 391.408 | Magnetic Tape Drive |
| 7 | 391.409 | Bulk Storage Unit |
| 7 | 391.413 | Display Controller |
| 7 | 391.415 | Full Graphics CRT Workstation |
| 7 | 391.416 | PC-Based Workstation |
| 7 | 391.417 | Teletypewriter |
| 7 | 391.432 | Interface/Application Processor |
| 7 | 391.438 | Battery System |
| 7 | 391.442 | Cathode Ray Tube Terminal |
| 7 | 391.443 | Optical Projection Unit |

## Ten-Year Power Management System Equipment

SCE's power management personnel indicate that the ten-year lived equipment is less sophisticated than the typical 7 -year items. They contain digital electronics as well as some electromechanical devices. Most of this equipment is specialized, proprietary and generally supported by the vendor for 10 years. Past experience indicates this equipment will be replaced after about 10 years. The equipment included in this group is shown in the table below.

| Life (years) | CPR Acct | Description |
| :---: | :---: | :---: |
| 10 | 391.420 | Data Acq Concentrator/Controller |
| 10 | 391.422 | Communication Controller |
| 10 | 391.423 | Data Communication Unit |
|  |  | Standard Time/Freq Clock |
| 10 | 391.428 | Receiver |
| 10 | 391.429 | Wall Strip Chart Recorder |
| 10 | 391.435 | Dial-Up Remote Terminal Unit |

## Fifteen-Year Power Management System Equipment

SCE's power management personnel indicate that the telemetry equipment consists of analog devices with mostly user repairable parts. They do not contain a high degree of sophistication and with proper maintenance, these devices should last approximately 15 years. The Uninterruptible Power System is an electromechanical device with a rated life of about 15 years. Both of these devices become high maintenance due to failure of passive components and/or electromechanical failures beyond 15 years. The subaccounts included in this group are shown in the table below.

| Life (years) | CPR Acct |  |
| :---: | :--- | :--- |
|  | 391.426 | Description <br> Telemetering <br> Receiver/Transmitter |
| 15 | 391.436 | Uninterruptible Power <br> System |

## Twenty-Year Power Management System Equipment

SCE's power management personnel indicate that this category contains hardened substation field equipment used for data gathering. The equipment is highly fault tolerant and is typically supported by the vendor for approximately 20
years. Also included here are Wall Strip Chart Recorders and Backup Control Systems. These are robust analog devices containing some passive electronics typically rated for 20 years of service. The equipment included in this group is shown in the table below.

| Life (years) | CPR Acct | Description |
| :---: | :---: | :---: |
| 20 | 391.405 | Input/Output Unit |
| 20 | 391.406 | Control Console |
| 20 | 391.421 | Real Time Remote Terminal Unit |
| 20 | 391.430 | Broadcast Control System |

## Twenty-Five Year Power Management System Equipment

SCE's power management personnel indicate that the Dynamic Map Board consists of structural components used to house equipment and graphically represent the power system. The equipment is subject to physical or mechanical deterioration due day-to-day changes/use. It should have a service life in the range of 20 to 25 years. The subaccount for this equipment is shown in the table below. Life

| $\frac{\text { (years }}{25}$ | $\frac{\text { CPR Acct }}{391.419}$ | $\frac{\text { Description }}{\text { Dynamic Map Board }}$ |
| :---: | :--- | :--- |

## Account 391.5 and 391.6 - Office Equipment; Duplicating Equipment

These accounts represent investment in miscellaneous office equipment such as video projection equipment, public address equipment, plotters, duplicating equipment, and like assets. The current service life of five years is reasonable.

## Account 393 - Stores Equipment

Account 393 represents investment in equipment used for the receiving, shipping, handling, and storage of materials and supplies for warehouses. It includes electric pallet jacks, lifting tables, stretch wrapping machine, racking, rotobins/storage bins, battery charger, transformer trays, hand-held scanners, lockers, picking carts, awning, barrel grabber, warehouse heaters, screen netting, cable cutting machine, and like assets. Based on historical Stores Equipment usage and knowledge of warehouse equipment, the operational personnel state that this
equipment has a useful service life of 20 years or less. Retaining the current 20-year service life is reasonable for this account.

## Account 394 - Tools \& Work Equipment

Account 394 represents investment in tools and equipment for construction, repair, maintenance, general shop, and garage, but not specifically includable in other accounts. This study recommends retaining the current service life of 10 years.

## Account 395 - Laboratory Equipment

Account 395 represents investment in laboratory and field test equipment. The account has a wide variety of equipment. It includes for example, calibrators, baths, furnaces, current shunts, dew point meters, gauge calibrators, insulation testers, gas leak detectors, mass comparator, micrometers, multimeters, oscilloscopes, phase meters, watt-hour meter testing power source, power system analyzers, self-contained portable calibration carts, sound meters, metrology standards, thermometer, vibration analysis data pack, and volt meters.

The expected average service life of lab and test equipment is impacted by two major retirement factors: technological obsolescence and normal "wear and tear" from usage in both the field and lab environments. SCE engineers report that field test equipment has service lives between 5 and 15 years, with an average service life of about 7 or 8 years. The service lives of the lab equipment, on the other hand, are mostly impacted by technological obsolescence and range between 2 and 8 years and average about 5 years. Accordingly, this study's proposal to retain the authorized average service life at 15 years is conservative.

## Account 397 - Telecommunication Equipment

Account 397 represents SCE's investment in communication equipment for the company's system. Contained within this account are the electronic and computer-based equipment (such as transmission equipment, dynamic network multiplexers, data network interconnection system, and radio equipment), as well as communication infrastructure (such as the copper and fiber optic cable, conduit,
microwave equipment, and the electrical power generator system). SCE telecommunication engineers have assessed this equipment as having service lives of $5,7,10,15,20,25$, or 40 years depending on the type of equipment. These are the same service lives the Commission authorized in the prior rate case. The equipment lives are addressed in the following discussions.

## Five-Year Communication Equipment

SCE telecommunication engineers indicate that the equipment falling into the 5-year category experiences shorter lives from lack of vendor support, facility relocations, and insufficient capacity to meet current demand. The equipment in this group resides entirely in the following account:

| Life (years) | $\frac{\text { CPR Acct }}{397.550}$ | $\frac{\text { Description }}{\text { Data Network System }}$ |
| :--- | :--- | :--- |

## Seven-Year Communication Equipment

SCE telecommunication engineers indicate that the equipment falling into the 7-year category is typically modern, state of the art, electronic and/or computer-based equipment which is subject to being discontinued by manufacturer or replaced with newer equipment within a short period of years. The equipment included in this group is shown below.

| $\frac{\text { Life }}{(y \text { ears })}$ |  |  |
| :--- | :--- | :--- |
| 7 | $\frac{\text { CPR Acct }}{397.559}$ | $\frac{\text { Description }}{\text { Videoconferencing System }}$ |

## Ten-Year Communication Equipment

SCE telecommunication engineers state that the NetComm radio equipment is not as sophisticated as the other electronic equipment and warrants a 10 -year service life. They further report that they are experiencing replacements of the NetComm radios after about 10 years. This equipment is shown below.
$\begin{aligned} & \text { Life } \\ & \text { (years) }\end{aligned}$
10
10
10
10
10
10
10
10
10
10
10
10
10
10

CPR Acct
397.098
397.110
397.130
397.135
397.145
397.151
397.153
397.154
397.155
397.160
397.540
397.561
397.562
397.990

Description
iDirect Remote SatComm Station (VSAT)
Radio Base Station Control System
Telephone System
Circuit Treatment
Transmission Equipment
Lightwave Transmission Equipment Sync Equipment
Microwave Transmission Equipment
Channel Equipment Assembly
Communications Alarm/Control System
Mobile/Portable Unit
NetComm Radio Assembly
NetComm Control \& Monitoring System Spare Parts

## Fifteen-Year Communication Equipment

SCE telecommunication engineers designate the equipment shown below as having an average life of about 15 years. This group of assets is typically subject to environmental wear. The equipment fails or is replaced as a result of unreliability and/or high maintenance due to failure of passive components or electromechanical failure. In the case of electronic components included in this category, the telecommunication engineers state that these are relatively basic and not the state-of-the-art electronics reflected in the 7-Year life category. This equipment is shown below.

Life
(years)

15
15
15

CPR Acct
397.136
397.140
397.255

Description
Cable Protection
Antenna Assembly
Public Address System (PA)

## Twenty Year Communication Equipment

SCE Engineers have indicated that certain 15-year equipment will generally last longer than expected in previous rate cases. 20 year equipment is subject to equipment failure, facility relocation retirements, and retirement for capacity issues. Equipment expected to last 20 years is shown in the table below.
$\frac{\text { Life (years) }}{20}$
20

CPR Acct
397.240
397.245

Description
D.C. Power System

Electrical Power Generation System

## Twenty-Five Year Communication Equipment

Although SCE has not yet had fiber optic cable as long as 25 years, SCE telecommunication engineers believe that it may be subject to greater level of degradation than the copper cable. They estimate that 25 years is a reasonable life for the fiber optic cable. This equipment is shown below.

Life
(years)
25
25

CPR Acct
397.802
397.806

Description
Communication Cable, Overhead, Fiber Optic
Communication Cable, Underground, Fiber Optic

## Forty-Year Communication Equipment

The balance of the communication infrastructure includes such equipment as overhead and underground communication cable, the communication conduit system, and antenna support structures. SCE telecommunication engineers estimate that this equipment has an average 40-year service life. The items are
subject to physical or mechanical deterioration since they are subject to outdoor environments. This equipment is shown below.

| $\frac{\text { Life }}{(\text { years) }}$ | $\underline{\text { CPR }}$ <br> 40 |
| :---: | :---: |
| 40 | 397.330 |
| 40 | 397.430 |
| 40 | 397.600 |
|  | 397.790 |
| 40 | 397.801 |
|  |  |
| 40 | 397.805 |
| 40 | 397.821 |
| 40 | 397.825 |
| 40 | 397.865 |

Description<br>Pole, Wood - Edison Solely Owned<br>Switch, Disconnect<br>Pole, Wood - Joint Foreign Set<br>Conductor, Open Wire Communication<br>Communication Cable, Overhead, Copper Jacketed<br>Communication Cable, Underground, Copper Jacketed<br>Communication Riser<br>Antenna Support Structure<br>Communication Conduit System

## Account 398 - Miscellaneous

Account 398 represents investment in miscellaneous utility equipment that does not fit other plant accounts. Examples can include such diverse items such as kitchen and infirmary equipment. The current service life of 20 years is a reasonable depreciation period for this account.

## Intangibles

SCE has investments in a number of intangible assets, including hydro relicensing, radio frequencies, long-term franchise fees, capitalized software, and land easements and right-of-ways. As previously discussed, the hydro relicensing costs are amortized over the remaining life of the FERC project license period. This study recommends the continued amortization of radio frequency investments over the 40-year service life and land easements and rights-of-way over the 60-year service life determined in prior rate case proceedings. The other categories are discussed below.

## Miscellaneous Intangibles

The year-end 2012 plant balance for miscellaneous intangibles is approximately $\$ 510$ thousand at year-end 2012, which is largely made up of long-term franchise costs. This study recommends allocating these costs over 20 years.

## Capitalized Software

The depreciable life of capitalized software reflects the estimated life prior to investments required to replace or optimize the software as a result of technology, vendor, or business obsolescence. This study proposes to continue the seven-year service life category for capitalized software in addition to the three existing service life categories of five, ten, and fifteen years determined in prior proceedings as was adopted in the 2009 GRC. The seven-year service life category was established to appropriately account for the depreciation of the capital costs related to SCE's ERP and MRTU Projects.

SCE surveyed 24 utilities to evaluate industry application of depreciable lives for ERP systems in the last few years. The results of the survey yielded a range of lives from five to fifteen years. Of the utilities surveyed, 13 apply a five-year life, 4 apply a seven-year life, 4 apply a ten-year life, and 3 apply a fifteen-year life. The average depreciable life amongst the surveyed companies is 7 years, which is also consistent with SCE's expectations for its ERP project.

## Easements

This study does not recommend any changes to the authorized amortization period of 60 years for its easements and rights-of-way.

## Salvage Analysis

When a capital asset is retired, physically removed from service and finally disposed of, terminal retirement is said to have occurred. The residual value of a terminal retirement is called gross salvage. Net salvage is the difference between the gross salvage (what the asset was sold for) and the removal cost (cost to remove and dispose of the asset). Salvage and removal cost percentages are calculated by
dividing the current cost of salvage or removal by the original installed cost of the asset. Some plant assets can experience significant negative removal cost percentages due to the timing of the original addition versus the retirement. The net salvage analysis uses the history of the individual accounts to estimate the future net salvage that the Company can expect in its operations. As a result, the analysis not only looks at the historical experience of SCE, but also takes into account recent and expected changes in operations that could reasonably lead to different future expectations for net salvage than were experienced in the past.

## Steam Production, Hydraulic and Other Production, FERC Accounts 310-346

The concept behind the net salvage cost component of depreciation rates for power plants is different from that of Transmission or Distribution assets. Power plants are discrete units that will need to be dismantled after the end of their useful lives. Because of this, there are two types of analysis required, one for the interim activity and the other based on engineering studies conducted to determine the cost to dismantle the individual units or plants at end of life. The list of the individual account interim net salvage percentages are shown in Appendix C. The terminal or dismantlement net salvage percentages are shown in Appendix D. The unit specific dismantling costs were calculated in current (2012) dollars and were trended to the year each plant was projected to retire to reflect the retirement costs in the year the plant will cease operations. These net salvage percentages were used in the calculation of the depreciation expense for each plant.

## Site-Specific Decommissioning Analyses

## Life Span Final Retirements

Life span properties consist of property units that will retire concurrently at a specific time. While mass property accounts include a large number of units, the life span groups generally contain a small group of large units. Although there are interim additions and retirement that occur over the service life, the plant as a whole is subject to final retirement. SCE's generating plant - Palo Verde, Hydro, Pebbly Beach, Mountainview, Peakers, and Solar Photovoltaic - fit these characteristics. For this reason, the net salvage for SCE's generation is considered in two basic
elements - interim retirement net salvage and final retirement net salvage (i.e., "decommissioning") - which are estimated separately. The final retirement net salvage entails an engineering estimate of the cost to remove and dispose of the plant and equipment extant at the time of the station's final shut-down. For example, at one of SCE's generating stations, final retirement net salvage may include the removal and disposal of the boiler and ancillary equipment, turbine generators and ancillary equipment, condensate and feed water equipment, fuel handling systems, the ash handling systems (which can include the bottom ash dewatering tanks, flyash storage silos, and associated on site ash disposal area), circulating/cooling/makeup water systems, water treatment systems, and other miscellaneous process equipment and associated infrastructure that continue operating up to the time the station is finally retired.

In contrast to final retirements, interim retirement net salvage is the removal cost associated with the numerous small retirements occurring over the life of the generating station. The interim retirements include the plant components that retire over the operating life of the generating station - pumps, motors, etc. This net salvage is estimated based upon an analysis of recorded interim net salvage ratios similar to the approach followed for mass property. Finally, the interim and final net salvage amounts are weighted together based upon the associated plant dollars to determine a total weighted average net salvage for the generating station.

## Summary of Results

The estimated decommissioning costs at retirement are shown in the table below. Interim retirement net salvage is relatively small with only a minor impact to amortization levels.

Generation Decommissioning Cost
\(\left.$$
\begin{array}{|l|l|l|}\hline & \begin{array}{l}\text { 2012-2014 } \\
\text { Authorized } \\
\text { (Retirement Year } \\
\text { Dollars) }\end{array} & \begin{array}{l}\text { 2015-2017 } \\
\text { Proposed }\end{array}
$$ <br>
Retirement <br>

Year (Dollars)\end{array}\right]\)|  | $\$ 7,900,000$ | $\$ 6,876,000$ |
| :--- | :--- | ---: |
| Hydro Production | $\$ 12,103,028$ |  |
| Other Production - Pebbly Beach | $\$ 654,548$ | $\$ 81,903,634$ |
| Other Production - Peakers | $\$ 7,422,862$ | $\$ 16,316,775$ |

11 Mountainview excludes the decommissioning of Units $1 \& 2$ and only includes decommissioning of Units $3 \& 4$ at the end of the remaining life of the station.
(As a percent of Gross Plant)

| Nuclear |  |  |  |
| :---: | :---: | :---: | :---: |
| Production (Palo |  |  |  |
| Verde Only) |  |  |  |
| 321 | Structures and Improvements | 0.00\% | 0.00\% |
| 322 | Reactor Plant Equipment | 0.00\% | 0.00\% |
| 323 | Turbogenerator Units | 0.00\% | 0.00\% |
| 324 | Accessory Electric Equipment | 0.00\% | 0.00\% |
| 325 | Misc. Power Plant Equipment | 0.00\% | 0.00\% |
| Hydro Production |  | Net Salvage | IR Rate |
|  |  | Ratio |  |
| 331 | Structures and Improvements | -80\% | 0.20\% |
| 332 | Reservoirs, Dams \& Waterways | -200\% | 0.05\% |
| 333 | Water Wheels, Turbines \& Generators* | 50\% | 0.25\% |
| 334 | Accessory Electric Equipment* | -150\% | 0.40\% |
| 335 | Misc. Power Plant Equipment* | 25\% | 0.25\% |
| 336 | Roads, Railroads \& Bridges* | -80\% | .0.50\% |

# Interim Retirement Net Salvage Percentages 

(As a percent of Gross Plant)

## Other Production

341
342

343
344
345
346

Structures and Improvements
0.00\%
0.00\%

Fuel Holders, Producers \& 0.00\%
0.00\%

Accessories
Prime Movers
0.00\%
0.00\%

Generators
0.00\%
0.00\%

Accessory Electric Equipment
0.00\%
0.00\%

Misc. Power Plant Equipment
0.00\%
0.00\%

* Authorized net salvage percentages applied to current estimate of interim retirement percentages.

Life Span Net Salvage Results - Plant-By-Plant
The net salvage estimates for generating stations will differ significantly depending upon a variety of factors. Although the net salvage consists of both interim retirement net salvage and final decommissioning costs, the scale of the decommissioning costs will generally drive the overall net salvage levels requested. In the case of the nuclear plants, only interim retirement net salvage is included in the filing and is estimated to be zero percent at this time. The Commission addresses the final decommissioning costs of nuclear plants in the Nuclear Decommissioning Cost Triennial Proceedings. The following sections discuss the decommissioning estimates for the respective generation facilities.

## Nuclear Net Salvage

As previously mentioned, nuclear decommissioning is not addressed in this filing. The recorded retirement activity has been insufficient to make a provision for interim retirement net salvage at this time. This is not to suggest that there will be no interim retirement net salvage costs to be allocated. However, the level to date does not justify making an estimated provision in the depreciation rate at this time.

## Hydro Net Salvage

## Decommissioning

Hydro generating stations generally are not expected to be decommissioned. The company expects to continuously maintain and operate the hydro plants indefinitely. There can be exceptions to this in the case of catastrophic events, or if the economics do not support continued operation, or the FERC does not relicense the hydro plant. Because decommissioning is largely unexpected, the company is not requesting decommissioning in its depreciation expense until such time as the decommissioning is considered a reasonable certainty. In this filing, there is the continued decommissioning of the San Gorgonio station. The estimated decommissioning costs are $\$ 6.9$ million to be spent through 2017.

## Interim Retirement Net Salvage

## Hydro Net Salvage

The net salvage ratios for interim retirements are determined by analyzing the retirement history in a manner similar to the determination of net salvage ratios for mass property. The interim retirement net salvage ratios are estimated as a percent of the interim retirements and weighted as a percent of the plant balance. The net salvage ratios taken as a percent of retirements are relatively more negative than those experienced in the coal plants. This is probably the result of the relatively older age of the hydro-generating units. The older plant investment means that the denominator of the net salvage ratios will be small relative to the removal costs in the numerator. However, as shown in the table below, because interim retirements make up a small percent of the plant balance, the weighted average net salvage ratios for the account only range from about negative 2 to negative 18 percent.

| Acct | Description | Weighted IR Rate |
| :---: | :--- | :---: |
| 331 | Structures and Improvements | $-8.3 \%$ |
| 332 | Reservoirs, Dams and Waterways | $-1.8 \%$ |
| 333 | Water Wheels, Turbines \& Generators | $-9.6 \%$ |
| 334 | Accessory Electric Equipment | $-13.2 \%$ |
| 335 | Misc. Power Plant Equipment | $-9.9 \%$ |
| 336 | Roads, Railroads \& Bridges | $-17.6 \%$ |

## Pebbly Beach Net Salvage

## Decommissioning - Study

Pebbly Beach is a diesel-powered generation facility located on Santa Catalina Island. The facility has six generators varying in capacity from 1.0 MW to 2.8 MW. At the end of the 45-year life, there is very little gross salvage value anticipated. The expectation is that the salvage value for most generating units will be only for scrap value. At the end of that period, deterioration and obsolescence make the units operationally unreliable, economically ineffective, and environmentally problematic. Some retired generators might still have an operational value. For example, it is possible that a diesel generator might be retired earlier than the 45-year life. Since there is limited space at the Pebbly Beach site, if there is a need for increased capacity, it may be necessary to upgrade to a more efficient generator that takes up less space per kW capacity. Under the circumstance that a generating unit is still fully operational at the time of its retirement, it may have a salvage value of about $\$ 50,000$. Under this scenario, you might receive a little more salvage value, but you would also have a shorter depreciation life. In either case, operational or not, the cost to ship the generator off the island will cost between $\$ 50,000$ and $\$ 100,000$. In other words, the final removal cost will exceed the salvage value from the sale of the retired diesel generators as either scrap or as an "operating generating unit." SCE currently proposes that the depreciation rate
include decommissioning costs of $\$ 670,000$ per generating unit, or $\$ 4.0$ million in 2012 dollars. The decommissioning cost is escalated to the end of the station's average remaining life of 18.7 years resulting in a future decommissioning cost of $\$ 6.6$ million.

## Interim Retirement Net Salvage

There has been little or no interim retirement net salvage for Pebbly Beach. At this time, SCE proposes to retain the 0 percent net salvage ratio.

## Peakers Net Salvage

## Decommissioning - Study

SCE commissioned Arcadis to perform decommissioning cost studies for each of its five Peaker units being built in 2007. Those estimates from 2007 were updated to 2012 for each unit and are shown below.

|  | Decommissioning <br> Estimate 2012 ${ }^{12}$ |
| :--- | :--- |
| Peaker Unit | $\underline{(\$ 000 \mathrm{~s})}$ |
| Center | $\$ 1,287.5$ |
| Grapeland | $\$ 1,276.0$ |
| McGrath | $\$ 1,437.2$ |
| Mira Loma | $\$ 1,517.8$ |
| Barre | $\$ 1,447.1$ |

SCE escalated these estimates to the end of the estimated life of the units for a total future decommissioning cost of $\$ 12.1$ million over the remaining life of 20.6 years.

## Interim Retirement Net Salvage

Although there is no retirement experience for SCE's Peakers generating units, it would not be unreasonable to apply SCE's experience with other generating stations. At this time, however, this study recommends no interim retirement net salvage for the Peakers at this time.

## Solar 2 Net Salvage

## Decommissioning

The retired Solar Two Project located adjacent to Reliant Resources' Cool Water Generating Station (CWGS) in Daggett, California has been decommissioned. The treatment of over or under accrual is addressed in SCE's depreciation study testimony.

## Mountainview Decommissioning

## Decommissioning - Study

In 1993, Halliburton NUS completed a decommissioning study for all SCE's gas-fired units including existing Mountainview units, formerly known as SCE's San Bernardino Generating Station Units 1 and 2. The existing plant consists of 2 conventional, 60 megawatt, gas-fired generating units built in 1957 and 1958. These units have been renamed "Mountainview Units 1 and 2" and will share limited common infrastructure with the new Mountainview units, known as "Mountainview Units 3 and 4." Decommissioning of Units 1 and 2 is complete and any under or over is addressed in SCE's depreciation study testimony. Mountainview Units 3 and 4 are 7 years old as of December 31, 2012.

The estimated decommissioning cost for units $3 \& 4$ is $\$ 8.9$ million (2012 dollars). 13 These costs are escalated to the end of the remaining life of the station, resulting in $\$ 16.3$ million. This study recommends allocation of future decommissioning costs associated with Mountainview Units 3 \& 4 over the remaining life of the station.

## Interim Retirement Net Salvage

Although there is limited retirement experience for SCE's Mountainview generating station, it would not be unreasonable to use SCE's experience with other generating stations. At this time, however, this study recommends no interim retirement net salvage for Mountainview at this time.

## Solar Photovoltaic Net Salvage

## Decommissioning Study

Decommissioning costs are estimated at $\$ 49.8$ million in 2012 dollars. The different facility types (i.e., floating, ground mount, and anchored) result in a range of estimates from \$320,090 and \$547,000 per MW. Escalated to year of retirement this estimate increases to $\$ 81.9$ million. 14

## Interim Retirement Net Salvage

There is no interim retirement net salvage forecast for the Photovoltaic units.

14See work paper in this exhibit entitled Decommissioning Solar Photovoltaic.

## Salvage Characteristics - Non-Production Assets

For each account, data for retirements, gross salvage, and cost of removal for each account derived from 1986-2012. Moving averages, which remove timing differences between retirement and salvage and removal cost, were analyzed over periods varying from one to 10 years.

## Transmission, Distribution and General Plant

The accounts contained in Transmission, Distribution, and General Plant were statistically analyzed using the historical cost for salvaging and removing assets with rolling and shrinking bands from 1986-2012. A discussion of the existing net salvage and current study recommendations for each account in those functions follow below.

A number of factors over the years have affected the removal cost reflected in the analysis. SCE makes use of an industry-standard compatible unit process to generate unit estimates that allocate removal cost. In addition, the loading rates have increased over the years adding to the loading on removal cost as well as the cost of the assets. The calculation of the net salvage percentage is made by dividing the net salvage (gross salvage minus removal cost) by the original cost of the retirements. These changes over time will affect the removal cost (numerator) after they are initiated but will only affect the retirement values (denominator) as those assets begin to retire. All else equal, the expectation is that the new salvage percentage will decrease over time when the higher value retirements begin to occur. For this reason, moderation was used in selecting net salvage percentages from the analysis. Other factors, however, are more permanent in nature such as a greater portion of the infrastructure replacement projects related to urban areas with their higher costs and higher permitting costs.

## TRANSMISSION

Transmission Accounts, FERC Accounts 352-359

## FERC Account 350.2 Rights of Way (proposed 0 percent Net Salvage)

This group contains transmission land rights and generally has no salvage and minimal or no cost of removal associated at retirement. A zero net salvage is approved and is the recommendation in this study.

## FERC Account 352 Transmission Structures \& Improvements (proposed -35 percent net salvage)

This account consists of any gross salvage and cost of removal associated transmission structures and improvements which include buildings, fencing and other structures found in a transmission substation. The approved net salvage for this account is negative 30 percent as recommended by SCE and approved in the 2012 GRC which was a decrease from the previous net salvage rate of negative 40 percent in the 2009 GRC. In the most recent band, net salvage percentages range from negative 50.05 to negative 77.35 percent. There is some variability in the results and the retirement level is not robust enough to support significant movement. As a refinement to the 2012 GRC authorized net salvage rate it is necessary to reflect some movement in the direction of the recent indications, a negative 35 percent net salvage is the proposal for this account.

## FERC Account 353 Transmission Station Equipment (proposed -15 percent net salvage)

This account consists of any gross salvage and cost of removal associated with transmission substation equipment, from transformers and circuit breakers to switchgear, as well as shorter-lived electronic equipment. The approved net salvage for this account is negative 5 percent. In the 2012 GRC, SCE proposed to move in the direction of the increasingly negative net salvage being experienced for this account by requesting a negative 10 percent net salvage. The experienced net salvage is continuing to move more negative. The most recent 5 and 10 year
moving averages show negative 20.92 percent and negative 18.22 percent net salvage respectively. From the information available, the recent retirement mix of long-lived versus shorter-lived assets is comparable to the mix of assets in the account and emergency work is not generally expected for this type of asset. As addressed earlier, the recommended change is conservative based on historical accounting changes. Conservative movement in the direction of the indicated experience, a negative 15 percent net salvage for this account is recommended.

## FERC Account 354 Transmission Towers \& Fixtures (proposed -100 percent net salvage)

This account consists of any gross salvage and cost of removal associated with transmission towers and fixtures, which are used to transmit electricity at a voltage of 69 kV and above. The approved net salvage for this account is negative 70 percent. In the 2012 GRC, SCE proposed to move in the direction of the increasingly negative net salvage being experienced for this account by requesting a negative 85 percent net salvage. The experienced net salvage is continuing to move more negative and a more negative recommendation is necessary. The most recent 5 and 10 year moving averages show negative 200.85 percent and negative 184.55 percent net salvage respectively. As mentioned earlier, historical retirement pricing levels are lower than are expected at some point in the future as a percentage of removal cost and the net salvage recommendation is moderated as compared to recent experience. The processes used to charge the level of removal cost expenditures is expected to be consistent in the future (e.g. the industry standard compatible unit process) and it would not be expected that emergency work would generally be required for this type of asset. All indications are that SCE will continue to experience a more negative percentage than the level currently authorized. Conservatively moving in the direction of the experience over most of the last ten years, a negative 100 percent net salvage for this account is recommended.

## FERC Account 355 Transmission Poles \& Fixtures (proposed -85 percent net salvage)

This account consists of any gross salvage and cost of removal associated with transmission poles and fixtures, which are used to transmit electricity at a voltage of 69 kV and above. The approved net salvage for this account is negative 70 percent. In the 2012 GRC, SCE proposed to move in the direction of the increasingly negative net salvage being experienced for this account by requesting a negative 85 percent net salvage. The experienced net salvage is continuing to move more negative and a more negative recommendation is necessary. The most recent 5 and 10 year moving averages show negative 107.18 percent and negative 114.64 percent net salvage respectively. The processes used to charge the level of removal cost expenditures is expected to be consistent in the future (e.g. the industry standard compatible unit process) and it would not be expected that emergency work would generally be required for this type of asset. All indications are that SCE will continue to experience a more negative percentage than the level currently authorized. In the same way as Account 354 above, the recommendation is conservatively moving in the direction of the experience over most of the last ten years and a negative 85 percent net salvage for this account is recommended.

## FERC Account 356 Transmission Overhead Conductor \& Devices (proposed -100 percent net salvage)

This account consists of any gross salvage and cost of removal associated with Transmission overhead conductors, which are used to transmit electricity at voltages of 69 kV and above. The approved net salvage for this account is negative 80 percent. In the 2012 GRC, SCE proposed to move in the direction of the increasingly negative net salvage being experienced for this account by requesting a negative 85 percent net salvage. The experienced net salvage is continuing to move more negative and a more negative recommendation is necessary. The most recent 5 and 10 year moving averages show negative 203.55 percent and negative 171.19 percent net salvage respectively. The processes used to charge the level of
removal cost expenditures is expected to be consistent in the future (e.g. the industry standard compatible unit process) and it would not be expected that emergency work would generally be required for this type of asset. All indications are that SCE will continue to experience a more negative percentage than the level currently authorized. In the same way that Account 354 and 355 are experiencing lower relative retirement prices and stable removal cost processes, the recommendation is conservatively moving in the direction of the experience over most of the last ten years and a negative 100 percent net salvage for this account is recommended.

## FERC Account 357 Transmission Underground Conduit (proposed 0 percent net salvage)

This account consists of any gross salvage and cost of removal associated with underground conduit. The approved net salvage for this account is 0 percent. The most recent 5 and 10 year moving averages show negative 39.98 and negative 35.79 percent respectively. Since retirement data is limited and there is little expectation for removal cost for the conduit (although there may be some for vaults) assets, this study recommends that no change in net salvage occur in this account. Consistent with life recommendations in this account, retention of 0 percent net salvage for this account is recommended.

## FERC Account 358 Transmission Underground Conductor \& Devices (proposed -15 percent net salvage)

This account consists of any gross salvage and cost of removal associated with underground conductor. The lines are low pressure oil filled; paper wrapped 500 MCM copper cable. The approved net salvage for this account is negative 20 percent. Data is somewhat limited for this account. The most recent 5 and 10 year moving averages show negative 16.35 and 22.17 percent respectively. Since retirement net salvage experience is showing lower negative net salvage this study recommends moving to negative 15 percent net salvage for this account.

## FERC Account 359 Transmission Roads and Trails (proposed 0 percent net

## salvage)

This account consists of any gross salvage and cost of removal associated with roads and trails. There is 0 percent approved net salvage for this account. The most recent 5 and 10 year moving averages show negative 23.51 and negative 23.51 percent for both periods. Since retirement data is extremely limited and there is an expectation for little removal cost for these assets, this study recommends retention of 0 percent net salvage for this account.

## Distribution Accounts, FERC Accounts 360.2-373.0

FERC Account 360.2 Rights of Way (proposed 0 percent Net Salvage)
This group contains land rights and generally has no salvage and minimal or no cost of removal associated at retirement. A zero net salvage is approved and is the recommendation in this study.

## FERC Account 361.0 Structures \& Improvements (proposed -25 percent Net Salvage)

This grouping contains facilities ranging from fencing and other structures found in distribution substations. The currently approved net salvage percent for this account is negative 25 percent. The most recent 5 and 10 year moving averages show negative 28.64 and negative 25.85 percent respectively. This study recommends retaining the negative 25 percent net salvage for this account.

FERC Account 362.0 Station Equipment (proposed -30 percent Net Salvage)
This grouping contains a wide variety of distribution substation equipment, from transformers and circuit breakers to switchgear, as well as shorter-lived electronic equipment. The currently approved net salvage percentage is negative 20 percent. In the 2012 GRC, SCE requested and was granted an incremental
movement toward the experienced level of negative net salvage being realized. This study recommends an additional incremental movement toward the experienced net salvage. The most recent 5 and 10 year moving averages show negative 57.77 and negative 43.04 percent respectively. From the information available, the recent retirement mix of long-lived versus shorter-lived assets is comparable to the mix of assets in the account. The processes used to charge the level of removal cost expenditures is expected to be consistent in the future (e.g. the industry standard compatible unit process) and it would not generally be expected that emergency work would reduce as the assets in this account age. All indications are that SCE will continue to experience a more negative percentage than the level currently authorized. Moving in the direction of the experience over the last several years, this study recommends moving to negative 30 percent net salvage for this account.

## FERC Account 364.0 Poles, Towers, \& Fixtures (proposed -225 percent Net Salvage)

This account contains poles and towers of various material types: wood, concrete, and steel. The currently approved net salvage percentage is negative 190 percent. In the 2012 GRC, SCE proposed to move in the direction of the increasingly negative net salvage being experienced for this account by requesting a negative 200 percent net salvage. The experienced net salvage is continuing to move more negative and a more negative recommendation is necessary. The most recent 5 and 10 year moving averages show negative 538.52 and negative 413.05 percent respectively. As mentioned earlier, historical retirement pricing levels are lower than are expected at some point in the future as a percentage of removal cost and the net salvage recommendation is moderated as compared to recent experience. The processes used to charge the level of removal cost expenditures is expected to be consistent in the future (e.g. the industry standard compatible unit process) and it is not expected that the level of emergency work would decrease as these assets age. All indications are that SCE will continue to experience a more
negative percentage than the level currently authorized. The recommendation for this account is conservatively moving in the direction of the experience over most of the last ten years and a negative 225 percent net salvage for this account is recommended.

## FERC Account 365.0 Overhead Conductor \& Devices (proposed -125 percent

 Net Salvage)This account consists of overhead conductor of various thickness, as well as various switches and reclosers. The currently approved net salvage percentage is negative 110 percent. In the 2012 GRC, SCE requested and was granted an incremental movement toward the experienced level of negative net salvage being realized. This study recommends an additional incremental movement toward the experienced net salvage. The most recent 5 and 10 year moving averages show negative 277.48 and negative 200.35 percent respectively. The processes used to charge the level of removal cost expenditures is expected to be consistent in the future (e.g. the industry standard compatible unit process) and it would not generally be expected that emergency work would reduce as the assets in this account age. All indications are that SCE will continue to experience a more negative percentage than the level currently authorized. Moving in the direction of the experience over the last several years, this study recommends moving to negative 125 percent net salvage for this account.

## FERC Account 366.0 Underground Conduit (proposed -40 percent Net Salvage)

This account consists of Distribution conduit, duct banks, vaults, manholes, and ventilating system equipment. The currently approved net salvage percentage is negative 20 percent. This study recommends an incremental movement toward the experienced net salvage. The most recent 5 and 10 year moving averages show negative 124.78 and negative 107.18 percent respectively. In a few of the
recent years, vaults and manholes (which may have a higher removal cost) have has a higher portion of retirement than the mix of assets in the account and the recommendation takes that into account in the small movement toward the recent experience. The processes used to charge the level of removal cost expenditures is expected to be consistent in the future (e.g. the industry standard compatible unit process) and it would not generally be expected that emergency work would reduce as the assets in this account age. All indications are that SCE will continue to experience a more negative percentage than the level currently authorized. Conservatively moving in the direction of the recent experience over the long-term averages in the last ten years, this study recommends moving to negative 40 percent net salvage for this account.

## FERC Account 367.0 Underground Conductor (proposed -80 percent Net Salvage)

This account consists of Distribution conductor, switches, and switchgear. The currently approved net salvage percentage is negative 60 percent. This study recommends an incremental movement toward the experienced net salvage. The most recent 5 and 10 year moving averages show negative 162.30 and negative 141.55 percent respectively. The processes used to charge the level of removal cost expenditures is expected to be consistent in the future (e.g. the industry standard compatible unit process) and it would not generally be expected that emergency work would reduce as the assets in this account age. All indications are that SCE will continue to experience a more negative percentage than the level currently authorized. Conservatively moving in the direction of the recent experience over the long-term averages in the last ten years, this study recommends moving to negative 80 percent net salvage for this account

## FERC Account 368.0 Line Transformer (proposed -20 percent Net Salvage)

This account consists of line transformers, regulators, and capacitors. The currently approved net salvage percentage is 0 percent. In the 2012 GRC, SCE
proposed to move in the direction of the increasingly negative net salvage being experienced for this account by requesting a negative 10 percent net salvage. The experienced net salvage is continuing to move more negative and a more negative recommendation is necessary. The most recent 5 and 10 year moving averages show negative 47.76 and negative 27.32 percent respectively. The processes used to charge the level of removal cost expenditures is expected to be consistent in the future (e.g. the industry standard compatible unit process) and it would not generally be expected that emergency work would reduce as the assets in this account age. All indications are that SCE will continue to experience a more negative percentage than the level currently authorized. Conservatively moving in the direction of that trend, this study recommends moving to negative 20 percent net salvage for this account.

## FERC Account 369.0 Services (proposed -125 percent Net Salvage)

This account includes overhead and underground services. The currently approved net salvage percentage is negative 85 percent. In the 2012 GRC, SCE proposed to move in the direction of the increasingly negative net salvage being experienced for this account by requesting a negative 100 percent net salvage. The experienced net salvage is continuing to move more negative and a more negative recommendation is necessary. The most recent 5 and 10 year moving averages show negative 431.29 and negative 244.44 percent respectively. The processes used to charge the level of removal cost expenditures is expected to be consistent in the future (e.g. the industry standard compatible unit process) and it would not generally be expected that emergency work would reduce as the assets in this account age. All indications are that SCE will continue to experience a more negative percentage than the level currently authorized. Moving toward the longer term experience for this account, this study recommends moving to negative 125 percent net salvage.

This account includes all Distribution SmartConnect meters installed since 2007. The currently approved net salvage percentage is negative 5 percent. Retirement data is extremely limited. The overall moving average for this account is negative 11.66 percent. Given the small amount of historical data available, this study recommends retaining the currently approved negative 5 percent net salvage for this account.

## FERC Account 370.0 Meters Legacy

This account includes all Distribution legacy meters. The deployment of the SmartConnect meters has been completed and the unamortized balance of legacy meters already includes retirement net salvage incurred. This balance is being amortized through 2017 per the Company's 2012 GRC decision.

## FERC Account 373.0 Street Lighting (-40 percent Net Salvage)

This account includes all Distribution streetlights, conductor, conduit, luminaire, and standards. The currently approved net salvage percentage is negative 20 percent. In the 2012 GRC, SCE proposed to move in the direction of the increasingly negative net salvage being experienced for this account by requesting a negative 30 percent net salvage. The experienced net salvage is continuing to move more negative and a more negative recommendation is necessary. The most recent 5 and 10 year moving averages show negative 86.82 and negative 76.89 percent respectively. The processes used to charge the level of removal cost expenditures is expected to be consistent in the future (e.g. the industry standard compatible unit process) and it would not generally be expected that emergency work would reduce as the assets in this account age. All indications are that SCE will continue to experience a more negative percentage than the level currently authorized. In a few of the recent years, fixtures (which may be expected to have a lower negative net salvage) have has a higher portion of retirement than the mix of assets in the account. However, the recommendation does not reflect the likely higher negative net salvage that will occur when larger numbers of electroliers
are removed. Conservatively moving in the direction of the recent experience, this study recommends moving to negative 40 percent net salvage for this account.

## GENERAL PLANT

## FERC Account 390.0 Structures \& Improvements (-10 percent Net Salvage)

This account includes any salvage and removal cost related to structures and improvements used for general utility operations (not the land on which the buildings reside, which could have resale value). The currently authorized net salvage rate for this account is negative 5 percent. The most recent 5 and 10 year moving averages show negative 21.97 and negative 20.53 percent respectively. Moving in the direction of the experience over the last several years, this study recommends moving to negative 10 percent net salvage for this account.

## Other General Plant

Besides the Structures and Improvements discussed above, General Plant also includes various miscellaneous assets such as office furniture, computers, stores and laboratory equipment, telecommunication equipment, and tools and work equipment. Generally, these assets have experienced little or no net salvage or sporadic retirement history and do not warrant the inclusion of net salvage in the current amortization rate. Instead, any recorded net salvage amounts (positive or negative) will be allocated through the amortization rate updates in future rate proceedings, as necessary. $\underline{15}$

15 One exception is Power-Operated Equipment. The Power Operated Equipment amortization is not recovered through depreciation expense, but is cleared through a clearing account and charged to O\&M or capital work orders. The Power-Operated Equipment subaccount has experienced a positive net salvage of about 25 percent, which will continue to be incorporated in the amortization rate.


[^0]:    ${ }^{1}$ Account 391.4 is depreciated at the subaccount level. The proposed life for each subaccount is shown in Appendix C-3 and remains unchanged from the 2012 GRC. On a composite basis, based on investment weighting in the account the life of 391.4 was 14.5 years in the 2012 GRC and is 12.3 years in this proceeding.
    ${ }^{2}$ Account 397 is depreciated at the subaccount level. The proposed life for each subaccount is shown in Appendix C-3 and remains unchanged from the 2012 GRC. On a composite basis, based on investment weighting in the account the life of 397 was 16.8 years in the 2012 GRC and is 7.7 years in this proceeding.

[^1]:    Notary Public, State of
    My Commission Expires:

[^2]:    TRANSMISSION PLANT
    
    $\begin{array}{cl}350.2 & \text { Easements } \\ 352 & \text { Structures and }\end{array}$
    $\begin{array}{ll}352 & \text { Structures and Improvements } \\ 353 & \text { Station Equipment }\end{array}$ 353 Station Equipment 354 Towers and Fixtures

    356 Overhead Conductors \& Devices 357 Underground Conduit

    358 Underground Conductors \& Devices
    

    Total Transmission Plant

[^3]:    2 Public Utility Depreciation Practices, p. 96.
    3 Public Utility Depreciation Practices, p. 97.

[^4]:    ${ }^{4}$ Public Utility Finance \& Accounting, A Reader (Modified)
    ${ }^{5}$ Depreciation Systems, Wolf \& Fitch, 1994, pg. 289.

[^5]:    ${ }^{8}$ Account 391.4 is depreciated at the subaccount level. The proposed life for each subaccount is shown in Appendix C-3 and remains unchanged from the 2012 GRC. On a composite basis, based on investment weighting in the account the life of 391.4 was 14.5 years in the 2012 GRC and is 12.3 years in this proceeding.
    ${ }^{9}$ Account 397 is depreciated at the subaccount level. The proposed life for each subaccount is shown in Appendix C-3 and remains unchanged from the 2012 GRC. On a composite basis, based on investment weighting in the account the life of 397 was 16.8 years in the 2012 GRC and is 7.7 years in this proceeding.

