STATE OF NEW JERSEY
OFFICE OF ADMINISTRATIVE LAW
BEFORE THE HONORABLE GAIL M. COOKSON

I/M/O THE PETITION OF PUBLIC SERVICE ELECTRIC AND GAS COMPANY FOR APPROVAL OF AN INCREASE IN ELECTRIC AND GAS RATES AND FOR CHANGES IN THE TARIFFS FOR ELECTRIC AND GAS SERVICE, B.P.U.N.J. NO.16 ELECTRIC AND B.P.U.N.J. NO. 16 GAS, AND FOR CHANGES IN DEPRECIATION RATES, PURSUANT TO N.J.S.A. 48:2-18, N.J.S.A. 48:2-21 AND N.J.S.A. 48:2-21.1 AND FOR OTHER APPROPRIATE RELIEF	))))))))))))	**BPU DOCKET NOS. ER18010029 and GR18010030** **OAL DOCKET NO. PUC 01151-18**

DIRECT TESTIMONY OF JAMES S. GARREN ON BEHALF OF THE DIVISION OF RATE COUNSEL

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FILED: August 6, 2018

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME, POSITION AND BUSINESS ADDRESS.

A. My name is James S. Garren. I am an analyst with the economic consulting firm of Snavely King Majoros & Associates, Inc. ("Snavely King").

Q. HAVE YOU PREPARED A SUMMARY OF YOUR QUALIFICATIONS AND EXPERIENCE?

A. Yes. Appendix A is a summary of my qualifications and experience. Appendix B is a list of matters in which I have submitted written testimony before state and federal regulatory agencies.

Q. PLEASE DESCRIBE YOUR BACKGROUND IN UTILITY DEPRECIATION.

A. Since my employment at Snavely King in 2010, I have participated as an analyst in approximately 30 separate depreciation studies of electric, gas and water utilities on behalf of the firm's clients, most of which are state commissions or state-funded consumer advocate agencies. In that role, I have worked closely with the firm's principals in performing life and net salvage analyses, calculation of depreciation rates, and preparation of testimony. Additionally, I am familiar with the firm's proprietary depreciation software, the Snavely Comprehensive Investment Analysis System ("**SCIAS**"). I am also recognized as a Certified Depreciation Professional by the Society of Depreciation Professionals.[1]

[1] "The Society of Depreciation Professionals was organized in 1987 to recognize the professional field of depreciation analysis and individuals contributing to this field; to promote the professional development and professional ethics of practitioners in the field of depreciation analysis; to collect and exchange

Q. FOR WHOM ARE YOU APPEARING IN THIS PROCEEDING?

A. I am appearing on behalf of the New Jersey of Division of Rate Counsel ("Rate Counsel")

Q. WHAT IS THE OBJECTIVE OF YOUR TESTIMONY?

A. Public Service Electric and Gas ("PSE&G" or "the Company") has filed an Application to change its rates to the Board of Public Utilities of New Jersey ("BPU" or "the Board"). In its Application, the Company included two Depreciation Studies with accompanying Direct testimony. The objective of my testimony is to detail my analysis of the Company's Depreciation Studies with regard to average service lives and net salvage.

II. SUMMARY

Q. WHAT INFORMATION HAVE YOU REVIEWED IN PREPARATION FOR THIS TESTIMONY?

A. I have reviewed the written direct testimony and exhibits of Mr. John Spanos of Gannett Fleming, who presents testimony on the Company's Depreciation Studies, one for electric and common plant, and one for gas plant. Upon examination of this testimony and the Studies, I prepared numerous data requests which were propounded to PSE&G by Rate Counsel at my request. I have now had the opportunity to review PSE&G's

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information about depreciation analysis; and to provide a national forum of programs and publications concerning depreciation." http://www.depr.org/?page=AboutUs . For certification, an applicant must have at least 5 years of full time professional depreciation experience, at least 2 years of which must be in the area of depreciation administration. Among other requirements, the applicant must pass a two part (Technical and Ethics) closed book examination which includes questions about, *inter alia*, Plant and Reserve Accounting, Life Analysis Concepts, Life Analysis Using Actuarial Models, Life Analysis Using Simulation Models, Salvage and Cost of Retiring Analysis, Technology Forecasting and Depreciation Calculations." http://www.depr.org/?page=Certification responses to these data requests as well as the documents attached to PSE&G's filing. In response to some of the data requests, Rate Counsel has been provided the depreciation data used by Mr. Spanos to perform his studies. Utilizing this data, and my own analysis, I have proposed adjustments to the depreciation rates and accruals utilized for plant depreciation.

Q. WOULD YOU PLEASE SUMMARIZE THE TOTAL IMPACT OF THE LIFE AND NET SALVAGE ADJUSTMENTS YOU HAVE MADE?

Yes. Please refer to the table below for comparison of the depreciation rates and expenses:

Table JSG-1

Summary of Depreciation Rates and Expenses
Based on December 31, 2016 Plant Balances
$ in thousands

	PSE&G Rate	PSE&G Expense	RC Rate	RC Expense	Adjustment
Electric	2.84%	$260,848	2.18%	$185,540	$75,308[2]
Gas	1.99%	$189,632	1.67%	$125,730	$63,902[3]

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2 Schedule JSG-1-Electric..
3 Schedule JSG-1-Gas.

Q. IN BRIEF, WHAT ARE THE PRIMARY REASONS WHY YOUR PROPOSED DEPRECIATION RATES ARE LOWER THAN THE RATES PROPOSED BY COMPANY WITNESS SPANOS?

A. The two drivers of my depreciation rate adjustment are changes to the service lives of four electric accounts and two gas account, and the continuation of the BPU's currently accepted future net salvage methodology.

Q. ARE YOU SPONSORING ANY SCHEDULES IN CONJUNCTION WITH THIS TESTIMONY?

A. Yes. I have prepared five schedules. Schedules JSG-1-Electric and JSG-1-Gas show the calculation of my proposed depreciation rates for service lives and net salvage. Schedules JSG-2-Electric and JSG-2-Gas show the calculation of total future net salvage. Schedule JSG-3 contains the service life analysis for the accounts which I am proposing to adjust.

Q. CAN YOU SUMMARIZE THE ISSUES ADDRESSED IN YOUR TESTIMONY?

A. Yes. In this testimony, I will be addressing two issues. First, is the selection of average service lives for both electric and gas plant, and second is the estimation of future net salvage. My recommendations are summarized as follows.

- I am proposing to adjust the average service lives of six accounts, four electric distribution accounts and two gas distribution accounts. My proposed adjustments to average service lives result principally from acknowledgement of the Company's historical experience of very low retirement levels on most vintages in the noted accounts. My proposed adjustments to the average service lives result in an increase from Mr. Spanos's proposed depreciation accruals of $79.2 million.

- I am proposing to adopt the net salvage methodology that is reflected in the Company's current rates and accruals. This method utilizes the most recent five-year average of recorded net salvage to estimate future net salvage over the remaining life of plant. This method is superior to the alternative method proposed by Mr. Spanos because it matches future estimates to the Company's actual experience. Mr. Spanos's proposed method relies on calculated ratios that compare the Company's costs of removal, in current dollars to the original book values of the plant being retired. The ratio is applied to the book values of the plant currently in the Company's rate base, resulting in the inclusion of significant inflation that should not be charged to ratepayers. My proposed adjustments to the estimated future net salvage results in an increase from Mr. Spanos's proposed depreciation accruals of $59.9 million.

III. <u>SERVICE LIVES</u>

Q. WOULD YOU PLEASE EXPLAIN YOUR ADJUSTMENT TO SERVICE LIVES?

A. I have identified seven accounts where I believe Mr. Spanos's proposed average service lives vary significantly from the historical indications for six accounts. The four electric distribution accounts are: 364 - Poles Towers and Fixtures, 365 – Overhead Conductors and Devices, 368 – Line Transformers, 369 – Services. The two gas distribution accounts are 376 – Mains, and 378 Measuring and Regulating Station Equipment

I have reviewed Mr. Spanos's testimony, workpapers and responses to data requests in an attempt to understand Mr. Spanos's rationales for this deviation, but Mr. Spanos has not explained his departure from the statistical indications. Below, I discuss my life analysis methodology and considerations in reaching my proposed average service lives. I also discuss two primary issues that result in Mr. Spanos underestimating average service lives for each account. Finally, I discuss specific considerations in reaching proposed average service lives for individual accounts.

A. <u>Methodology</u>

Q. PLEASE DEFINE "AVERAGE SERVICE LIFE" AS IT IS USED IN UTILITY DEPRECIATION CALCULATIONS?

A. The "average service life" for a given account is a projection of the number years that a new unit of plant can be expected to remain used and useful on average. This concept is useful because modern utility depreciation methods use what is called "group depreciation." That is, rather than depreciate the value of an individual unit or units over the lifetime of those units, this method depreciates the value of a collection of units as a group. This group depreciation assumes that many units in a given account will be retired at earlier ages, and thus have a shorter than average life, and many units will retire at later ages, and thus have a longer than average life. Average service life is used to calculate the average remaining life, which, in turn, is the denominator in the calculation of depreciation expense. Group depreciation is also why one does not study the lives of units in an account, but rather, the lives of dollars in these accounts. Therefore, all else being equal, a longer average service life directly results in a lower depreciation expense.

Q. PLEASE DESCRIBE THE PROPER WAY TO DETERMINE THE AVERAGE SERVICE LIFE COMPONENT OF DEPRECIATION RATES.

A. I have analyzed PSE&G's distribution accounts using an actuarial life analysis process called the "Retirement Rate" method. Actuarial methodologies were developed initially in the 17th and 18th centuries, primarily by life insurance companies that needed mathematical means of estimating the mortality risk of individuals over a long period of time. This resulted in the development of "life tables," which show the mortality risk of a group of individuals with similar risk factors at each age.

The Retirement Rate method is an actuarial technique used to study plant lives, much like the actuarial techniques used in the insurance industry to study human lives. It requires a record of the dates of placement (birth) and retirement (death) for each asset unit studied. Retirement data that contains this date of placement and retirement is referred to as "aged data" because it tells the analyst the age of the plant at the time it was retired. The Retirement Rate method is the most sophisticated of the statistical life analysis methods because it relies on the most refined level of data.

In the Retirement Rate method, aged retirement data as described above, and total plant in service at a given age (referred to collectively as "exposures") from a company's records are used to construct an observed or original life table. I discuss the composition of an observed life table in detail below, but the details are important because they result in data points showing the percentage of a given unit of plant that is expected to survive at a given age. The actuarial analysis smooths and extends the observed life table by fitting it to a family of 31 standardized survivor curves known as "Iowa curves." The curve-fitting uses the least squared differences approach to find a best fit life for each curve. The "sum of least squared difference" is a common means of fitting curves (in this case the Iowa curves) to a set of data (in this case the observed life table data). The difference between each point of data and a point on a line is squared, and the square of all of those differences is summed to provide the total difference between the set of data and the line. The line that produces the least difference from the set of data is considered the "best fit." The purpose of squaring the difference is to ensure that negative differences contribute to the overall difference rather than canceling out positive differences.

Numerous iterative calculations are required for a Retirement Rate analysis. In the end, the analysis produces a life and Iowa curve best fit for a single average vintage. My understanding is that this is the same type of life analysis that Mr. Spanos performed for his depreciation studies.

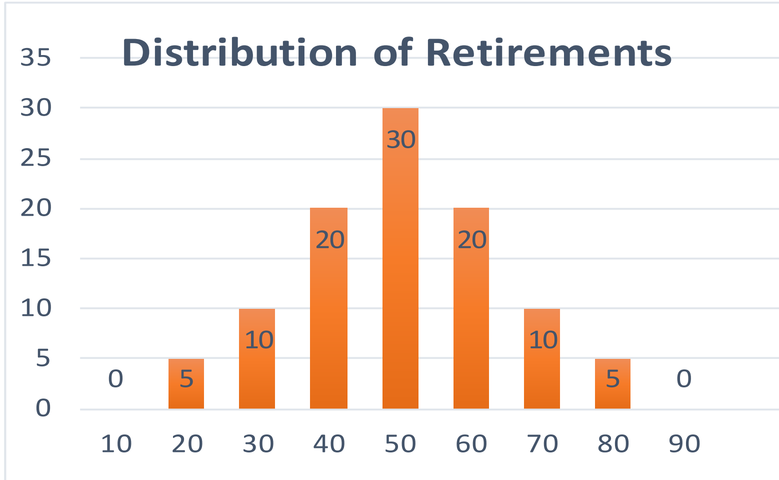
Q. WHAT ARE IOWA CURVES?

A. An Iowa curve is a surrogate or standardized observed life table based on a specific pattern of retirements around an average service life. The Iowa curves were devised over 60 years ago at Iowa State University. The curves provide a set of standard patterns of retirement dispersion. Retirement dispersion merely recognizes that accounts are comprised of individual assets or units having different lives.

For example, imagine an account that begins with a new addition of one hundred units. These units are unlikely to all retire at the same time. Rather, different units within the group will retire at different times. Represented graphically, the result might appear as follows:

Graph JSG-1

Age:	Units Retired
10	0
20	5
30	10
40	20
50	30
60	20
70	10
80	5
90	0

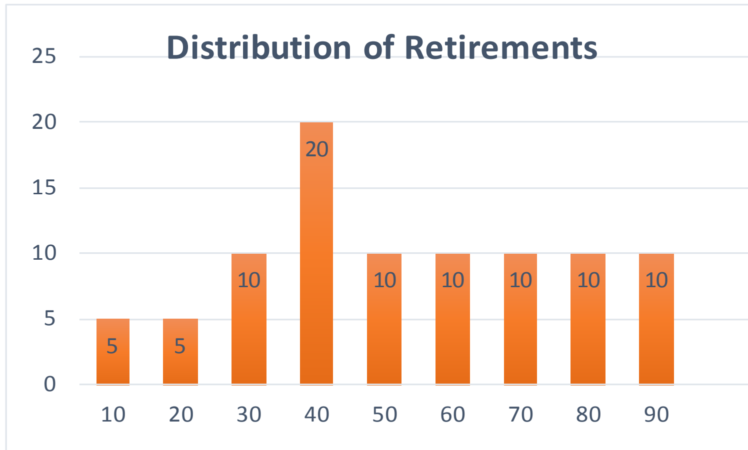


In this example, the average service life would be fifty, and the retirement dispersion curve would tell us how the retirements are arranged around the average service life. In this example, the distribution of retirements around the average service life is symmetrical, with the "mode," or the age with the highest number of retirements, being at the average service life. In this data, the retirements are also relatively tightly grouped around the average service life.

Iowa curves describe many different patterns of dispersions. Returning to our example, imagine a different pattern of retirements as follows:

Graph JSG-2

Age:	Units Retired
10	5
20	5
30	10
40	20
50	10
60	10
70	10
80	10
90	10



In this example, the average service life is still fifty but the dispersion characteristics are very different. The mode is at age 40, which is an earlier age than the average, and overall the distribution of retirements is more spread out than in the previous example. By using different types of Iowa curves, one can capture these different characteristics that can be seen in retirement data.

One way that Iowa curves illustrate these different patterns is by their orientation as left-skewed, symmetrical or right-skewed curves, which are known, respectively, as “L curves,” “S curves,” and “R curves.” The letters describe the location of the “mode,” as discussed above, relative to the average service life. Hence, the first example, which is symmetrical, I would indicate the use of an “S curve,” whereas the second example, in which the mode was at a younger age than the average service life, would indicate the use of an “L curve.” If the mode falls after the average service life, that would indicate the use of an “R curve.” In addition to L, S and R curves, there is a set of Origin Modal, or

"O curves," which are so called because the mode for these curves is at age one, or the "origin." Generally speaking, O-shaped Iowa curves are not appropriate for utility plant.

In addition to the letter that describes the location of the mode, Iowa curves are numbered one through six, which identifies the spread of the retirement dispersion. Lower numbers represent a wider retirement dispersion. Referring back to the first example above, in which the retirements were more tightly grouped around the average service life, a higher number would be used, whereas in the second example, in which the retirements were more diffuse, a lower number would be used.

To combine these two concepts, an appropriate Iowa curve for the first example might be an S5, whereas an appropriate Iowa curve for the second example might be a L2. This combination of one letter and one number defines a dispersion pattern. Adding an average service life to an Iowa curve (*e.g.*, 5-S0) provides a survivor curve intended to depict a reasonable expectation of how a group of assets will survive, or conversely be retired, over the expected average service life.

Table JSG-2 below compares curves with the same shape (S0) but different average service lives (5- and 10-years) to illustrate different iterations with the same curve. The percent surviving represents the amount of plant surviving at each age interval shown in the first column. The 5S0 life and curve sums to the five-year average service life, while the 10S0 life and curve sums to a ten-year average service life.

Table JSG-2

Sample Survivor Curves

Age	5 S0 Curve Percent Surviving	10 S0 Curve Percent Surviving
0.5	0.99	1.00
1.5	0.92	0.98
2.5	0.83	0.94
3.5	0.70	0.90
4.5	0.57	0.85
5.5	0.43	0.80
6.5	0.30	0.74
7.5	0.17	0.67
8.5	0.08	0.60
9.5	0.01	0.53
10.5		0.47
11.5		0.40
12.5		0.33
13.5		0.26
14.5		0.20
15.5		0.15
16.5		0.10
17.5		0.06
18.5		0.02
19.5		0.00
Total	**5.00**	**10.00**

These are called "curves" because, when plotted on charts with the x-axis representing "age" and the y-axis representing "percent surviving," they appear as shown below in Graph JSG-3:

Graph JSG-3

Q. **HOW DO YOU USE THE IOWA CURVES IN YOUR SERVICE LIFE ANALYSIS?**

A. The purpose of Iowa curves is to enable the calculation of an average remaining life. Remaining life calculations take the current age of each vintage within an account and then use the retirement rate projected by the appropriate Iowa curve to project the remaining life of each of these vintages of plant. Ultimately, depreciation accruals for plant investment are calculated from remaining lives, so it is important to select the correct average service life and the correct Iowa curve.

Q. **IS IT NECESSARY TO FIT ALL OF THE AVAILABLE DATA POINTS TAKEN FROM THE OBSERVED LIFE TABLE?**

A. No. In some cases, it is appropriate to disregard some or even many of the oldest aged data. This is because actuarial data that the company keeps often is tied to long-lived assets that represent so small a percentage of the total plant as to not be statistically significant or represent accounting anomalies, such as retirements that were never recorded. This process, which is represented in the graphs below, is called a "T-cut." While there is no hard and fast rule for where a T-cut is appropriate, it is generally appropriate to make a T-cut where the remaining retirement data diverges materially from the established pattern of retirements seen to that point.

The decision to make a T-cut, and at what point in the data set to make the cut, is one of the most important, yet subjective, elements to an actuarial analysis. In most cases, making a "larger" T-cut (that is, one that results in fitting the curve to less of the actuarial data) will result in a shorter estimated average service life, because the data eliminated is for the longest-lived assets in the set of data.

Additionally, an inconclusive analysis may occur if data points are eliminated from an observed life table with a limited data set (that is, an account that has a short history plant exposed to retirement). Typically, the portion of an Iowa curve between 85% surviving and 15% surviving most distinguishes one curve from another. With the exception of O curves, Iowa curves follow a parabolic distribution of retirements. That is, as we discussed above, they tend to have limited retirements at the beginnings and ends of their life. Thus, the portion between 85% and 15% surviving is the most indicative because that is when the bulk of retirements in a given account happen, and where variation in the pattern of retirements tends to occur. If a T-cut eliminates too much of the observed life table data, the matching of that data to an Iowa curve will be more likely to produce ambiguous and misleading results. I believe that the full set of aged data should be used in the service life analysis unless specific circumstances warrant exclusion of the data.

B. Analysis – General Concerns

Q. DO YOU HAVE ANY CONCERNS WITH THE SERVICE LIVES COMPONENT OF MR. SPANOS'S DEPRECIATION STUDIES FOR PS&G?

A. I have two major concerns with Mr. Spanos's service life recommendations. First, Mr. Spanos inappropriately truncates (that is, makes a larger T-cut) the historical data used in his survivor curves to exclude older aged data without adequate justification. Mr. Spanos's depreciation studies for electric and gas purport to present the service life statistical analysis of historical depreciation data. However, the information is incomplete and, as a result, Mr. Spanos's depreciation studies do not adequately justify adoption of his service life recommendations. Through discovery I obtained the Company's full set of historical depreciation data, which I recommend be used in establishing the service life rate for the Company's depreciation accounts. Second, Mr. Spanos employs a curve fitting technique that favors visually matching the truncated retirement data to Iowa curves and largely disregards the mathematical fitting approach that I favor. Below, I show how these two concerns work in tandem to result in Mr. Spanos's adoption of Iowa curves with artificially low average service life; that is, the visual fit approach preferred by Mr. Spanos produces artificially shorter service lives, and therefore higher depreciation rates, because it relies on inappropriately truncated aged data.

Q. PLEASE DESCRIBE YOUR CONCERNS REGARDING MR. SPANOS'S INAPPROPRIATE TRUNCATION OF THE HISTORICAL DATA.

A. Mr. Spanos's Depreciation Studies provide, for each account Mr. Spanos studied, a graph comparing his proposed average service life and curve superimposed on a subset of points corresponding to the percent surviving for each age, as shown in the original life table which follows the graph for each account. Referring to account 369.00 – Services, we can see that Mr. Spanos's graph, at page VII-49 of his Electric depreciation study, stops displaying data points at approximately age 66. However, the original life table continues well past age 66 with the final retirement for this account taking place at age 111,[4] leaving approximately 45 years of data uncharted on Mr. Spanos's graph. The exclusion of these data from the graph makes it much more difficult to evaluate the appropriateness of Mr. Spanos's proposed average service life and Iowa curve visually, which as I demonstrate below, creates further concerns with his service life analysis.

Q. HAS MR. SPANOS TRUNCATED THE DATA FOR EVERY ACCOUNT?

A. No. Curiously, Mr. Spanos has elected to truncate data for some accounts, but not for others. It is not clear what rational schema Mr. Spanos has applied to determine what data is suitable to analyze, and what data is not. As discussed below in my discussion of the individual accounts, I believe there is ample reason to somewhat discount some individual data points in this case. However, I have shown all of the data for each account, and done my best to provide my rationale for the conclusions I have reached. My issue with Mr. Spanos's studies is that he has not consistently shown all of the data, nor has he explained his rationale for disregarding some of the data.

Q. CAN YOU WALK THROUGH THE ANALYSIS OF A PARTICULAR ACCOUNT AS AN EXAMPLE?

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[4] *Public Service Gas & Electric 2016 Depreciation Study – Electric* at VII-52.

A. Yes. Understanding how a life table functions is crucial to understanding life analyses. Therefore, let us take Line Transformers, as an example. Below, I have reproduced ages 0 to 4.5 of the observed life table for Account 369 – Line Transformers.

Table JSG-3

Observed Life Table for Account 369

Age	Exposures	Retirements	Retirement Ratio (%)	Survivor Ratio (%)	Cumulative Survivors
0	482,266,376	18,694	0.0039	99.9961	1.0000
0.5	468,979,108	27,316	0.0058	99.9942	1.0000
1.5	469,714,265	87,824	0.0187	99.9813	0.9999
2.5	461,146,970	37,127	0.0081	99.9919	0.9997
3.5	450,619,792	82,287	0.0183	99.9817	0.9996
4.5	443,343,826	114,080	0.0257	99.9743	0.9995

The first column shows the age in years. Retirement rate analysis shows age according to the “half-year method”, under which retirements that occurred between age 0.0 and 0.5 are shown under age 0, retirements that occurred between age 0.5 and 1.5 years and exposures that are 1.5 years old at the end of the age are shown under age 1. Using the half-year convention, all ages other than the first period from 0.0 to 0.5 are one year long. The observed life table groups data from all vintages together and analyzes the mortality characteristics based on the age of the plant. In the next column are exposures. This is the total plant in service exposed to retirement at a given age. Exposures decrease as age increases because the most recent vintages have not yet had time to attain higher ages. Next, we consider retirements, which are total retirements on all vintages that occur at a given age. Earlier, I discussed aged retirement data, and this is where that data comes into play. To review, the age of the retirement is the year that it was taken out of service minus the age that it was put into service. The next column, retirement ratio, is simply retirements divided by exposures. Broadly, this indicates what the odds of a given unit retiring at this age should be. The survivor ratio is then 100% minus the retirement ratio, which, converse to retirement ratio, tells you what percent of the exposures should survive this age. Finally, cumulative survivors are an iterative calculation that begins at 100% and then is multiplied by the previous year's survivor ratio. This measures the chance that a unit will survive at the beginning of its life, which is 100%, and then subjects that percentage to the risk of retirement at each subsequent age.

The cumulative survivors at each age become the data points, which are then compared to the points on each Iowa curve by an algorithm to arrive at the best fit. For Account 369, the life-curve combination with the lowest sum of squared differences is an R2 curve with a 150 year average service life with a sum of squared differences of 461. The curve fitting results display the average service life that gives the lowest sum of squared differences for each different curve shape. Table JSG-4 presents the top seven curve fits for this account:

Table JSG-4

Curve Fitting Results for Account 369

Curve	Life	Sum of Squared Differences
R2	150.0	461.505
R2.5	137.0	699.573
R1.5	150.0	826.562
S1	150.0	984.805
R3	125.0	1,186.265
S0.5	150.0	1,192.360
S1.5	142.0	1,228.386

Reviewing this table grants a sense of the range of lives that might be appropriate given the curve shape selection. Looking further down the curve fitting results for Account 369, one can see that the best fit results for each curve shape range from as low as 125 years to as high as 150 for the top seven results. One can also see that the number components in the best fitting Iowa curves are in the low to middle range, from 0.5 to 3, indicating that each of the best fit curves is consistent with retirements that are somewhat tightly fit around the mode, but not drastically.

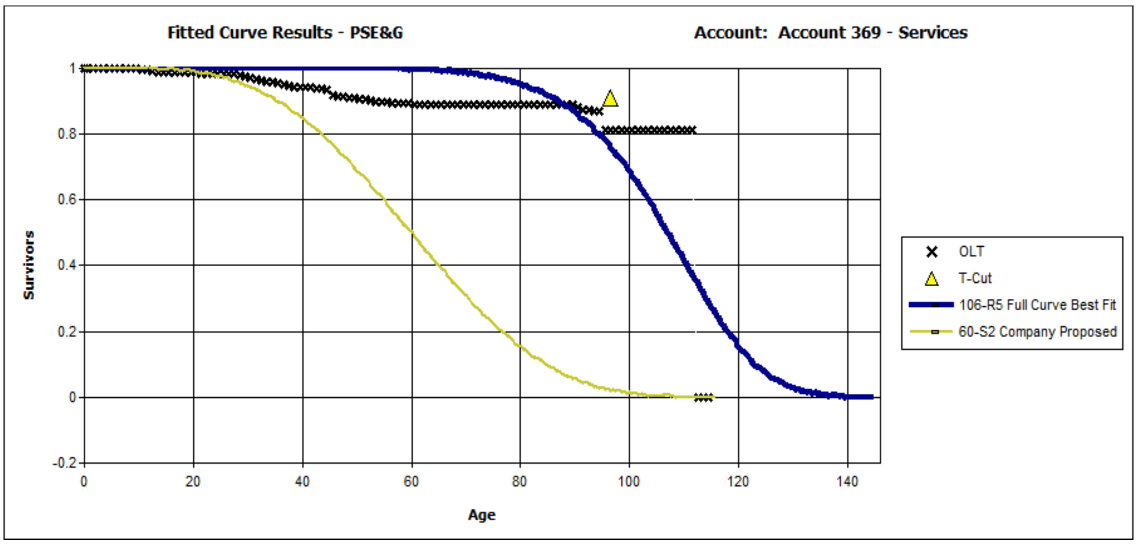
The next section of the life analysis is a graph, depicted below as Graph JSG-5, which plots the cumulative survivors from the observed life table against the best fitting Iowa curve and the Iowa curve proposed by Mr. Spanos.[5] I provide the graph for each of the Company's accounts below in my account-by-account analysis. I also include these graphs, in Excel format, in Schedule JSG-3.

[5] *Public Service Gas & Electric 2016 Depreciation Study – Electric* at VII-49.

Graph JSG-5 illustrates the bias that results from truncating the data in Mr. Spanos's analysis. This graph shows the individual date points from the observed life table ("OLT") (in Xs), the best-fitting Iowa curve according to the mathematical curve-fitting (darker line), and the Iowa curve proposed by Mr. Spanos (lighter line).

Graph JSG-5

Best Curve Fit Results for Electric Account 369



My own T-cut can be seen at the triangle above, is at age 98.5, which is at the end of the exposure data. In contrast, if you refer to Mr. Spanos's equivalent graph on page VII-49 of his electric depreciation study, you will see that the data he shows ends at age 66. By truncating the data at age 66, Mr. Spanos can make it appear as though we are looking at perhaps an account with a limited data pool, with inadequate retirement history to reach a conclusion based on the data. Viewing the entirety of the data makes clear that there is in fact a very long history in this account, with very few retirements, indicating long-lived assets. In my discussion of Account 369 below, I provide a more detailed discussion of my conclusions for this particular account. The problem of truncation is exacerbated by Mr. Spanos's use of an improper curve fitting technique, as discussed further below.

Q. PLEASE DESCRIBE YOUR CONCERNS WITH MR. SPANOS'S CURVE FITTING TECHNIQUE.

A. In Mr. Spanos's response to data request RCR-DEP-39, a copy of which is attached to this testimony as Appendix C, Mr. Spanos claims he considers both visual and mathematical curve fitting to arrive at his selection of the best-fitting curves for each account. But as the example on Account 369 demonstrates, I have found that Mr. Spanos largely disregards the results from the mathematical curve fitting analysis and instead relies much more heavily on a visual curve fitting. In essence, visual curve fitting is the processes of overlaying a number of different curve shapes against the data in the life table to make a determination of which curve best fits the data. I also use my informed judgment in my analysis. But in contrast to Mr. Spanos, I offer a reasoned basis for that judgment that relies more heavily on mathematical curve-fitting, as detailed above, which uses the sum of least squared difference to arrive at the curve that mathematically best fits the available data.

A mathematical curve fitting is superior to a visual curve fitting. A brief example will help illustrate this point. Selecting the best curve for a given set of data is conceptually not entirely unlike determining the number of M&Ms in a glass jar. Someone with a great deal of experience, and aided by computer imaging may make very accurate estimates as to the number of M&Ms in a jar, and even may make a completely accurate estimate from time to time. However, to determine the number of M&Ms truly accurately, you must count the number of M&Ms in the jar individually.

This is equivalent to the function of a mathematical curve fitting, which takes each individual data point and processes it individually to arrive at the exact best fit. Moreover, a mathematical curve fitting also tells how good of a fit one curve is relative to every other curve. Before the computer software was accessible, this type of fitting was impractical, as it requires thousands, or tens of thousands, of individual calculations. Fortunately, we can now efficiently perform these types of calculations with the aid of a computer algorithm.

Q. HAVE YOU PROVIDED THE RESULTS OF YOUR MATHEMATICAL FITTING ANALYSIS?

A. Yes, Schedule JSG-3 includes a Schedule titled "Best Fit Curve Results" for each account studied that shows my mathematical curve fitting analysis. Except in limited cases, the "best fit" here, defined as the life-curve combination with the least sum of squared differences, has been selected as our proposed average service life and retirement dispersion curve for that account. These differ from the best fits resulting from Mr. Spanos's analysis primarily because I am using different experience bands than those used by Mr. Spanos. For each account, I have utilized "full band" analyses, which utilize the entire range of retirement experience.

Q. ARE THERE INSTANCES WHERE THE MATHEMATICAL BEST FIT LIFE AND CURVE ARE NOT APPROPRIATE?

A. Certainly. The mathematical best fit is appropriate in most cases in which the future retirement patterns can reasonably be expected to follow historical experience. However, this is not always the case. There are numerous factors that might lead a utility depreciation expert, familiar with the particular plant account for a given company for a given account, to conclude that future depreciation expectations are different than historical experience. These factors, including major replacement or maintenance projects, differing life expectations of new technologies, or economic or engineering decisions of utility management, might significantly affect the expectations for future retirement rates. Thus, informed judgment is an important component of the service life analysis, but any decision not to follow historical experience must be supported by a reasonable basis.

Q. IS PSE&G UNDERGOING ANY REPLACEMENT OR MAINTENANCE PROGRAMS?

A. Yes. PSE&G has been undergoing a Gas System Modernization Program ("GSMP") in which it plans to replace some of its cast iron and unprotected steel mains with newer materials. The result of this will be that one can anticipate increases in future retirements of the longest-lived plant in Account 376 – Mains in particular. However, as an express purpose of the program, this would also be to replace older, less-reliable main materials with newer, more reliable ones. These factors will likely off-set each other slightly in the long run. Indeed, the New Jersey BPU, in its order approving the program, stated the following:

> The Board agrees that replacement of aging infrastructure, as well as the implementation of certain investments in the Company's gas system, if properly executed, should mitigate potential damage to the system and reduce methane emissions, as well as enhance public safety and result in increased long-term reliability. These investments include replacement of UPCI mains, unprotected steel mains, unprotected steel services, and associated district regulators. A systematic, committed long-term replacement program allows for infrastructure to be replaced and/or

> uprated at a lower cost per ratepayer, and should result in fewer disruptions in the affected municipalities.[6]

In addition to the off-setting effects described by the Board here, one must also remember that the historical data contains the record of similar previous programs. In the past, PSE&G and virtually every other gas Company in the nation have gone through significant periods of overhauling the composition of their mains, from using cast iron to bare steel to coated steel and plastic. The records of each of these transitions is already in our retirement data, meaning that when we perform our life analysis, periods of heavy replacements are already accounted for. Further adjusting for such programs runs the risk of over-compensating.

Q. DOES MR. SPANOS ADDRESS THE EFFECTS OF THE GSMP IN HIS DEPRECIATION STUDY?

A. No. Although Mr. Spanos specifically addressed Account 376 in the section of his gas depreciation study, he did not make mention of the GSMP or any effects it may have on the service life of Account 376 or other accounts.[7]

Q. ARE THERE ACCOUNTS THAT YOU STUDIED WHERE THE BEST FITTING CURVE IS NOT APPROPRIATE?

Yes. For PSE&G, I have had to utilize informed judgment extensively. I detail my rationale for deviating from the best fitting results in my discussion of the individual accounts. However, in general, I have drawn from my knowledge of the retirement

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[6] I/M/O Petition of Public Service Electric and Gas Company for Approval of a Gas System Modernization Program and Associated Cost Recovery Mechanism, BPU Dkt. No. GR15030272, Decision and Order Approving Stipulation at 5 (Nov. 15, 2015).
[7] *Public Service Gas & Electric 2016 Depreciation Study – Gas* at III-2-3.

patterns of electric and gas plant elsewhere in the industry to interpret PSE&G's retirement data in a way that I think results in reasonably accurate life recommendations.

Q. DO THE RESULTS OF YOUR ANALYSIS CHANGE IF YOU WERE TO ADOPT THE T-CUTS MR. SPANOS USES IN HIS VISUAL ANALYSIS?

A. The results of the mathematical curve fitting would certainly change if Mr. Spanos's proposed T-cuts were to be adopted. However, I would not expect the results to change dramatically. More to the point, I would not expect the mathematical best fit to result in average service lives nearly as short as those proposed by Mr. Spanos. Furthermore, making the T-cuts at an earlier point would make the results less reliable and therefore less consistent. This occurs because reducing the number of data points to which your analysis can match increases the range of average service lives and Iowa curves to which the data can appear to be a reasonable fit, thereby increasing the role of judgment.

I want to underscore that Mr. Spanos's reliance on visual curve fitting and his use of significant T-cuts are two separate issues that compound one another. If Mr. Spanos had relied on visual curve fitting, but utilized all, or most, of the available data, his results would be more reliable.

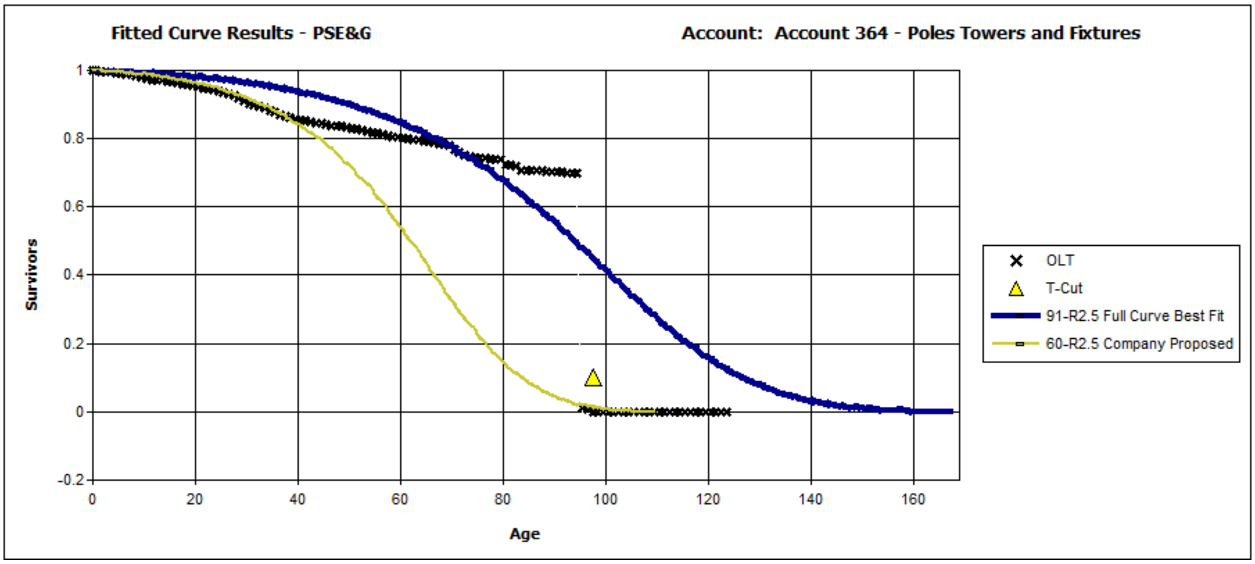
C. <u>Analysis – Specific Accounts</u>

Q. CAN YOU DESCRIBE THE FINDINGS FROM YOUR LIFE ANALYSIS FOR EACH ACCOUNT?

A. Yes, below is a discussion of my life analysis for each account, as well the information provided by Mr. Spanos, and how I arrived at my proposals for each account. Each account description is accompanied by a graph, showing the observed life table ("OLT") data (in black Xs), the best-fitting Iowa curve according to the mathematical curve-fitting (blue line), and the Iowa curve proposed by Mr. Spanos (yellow line).

1. <u>Electric Plant</u>

<u>Account 364 – Poles, Towers and Fixtures.</u>

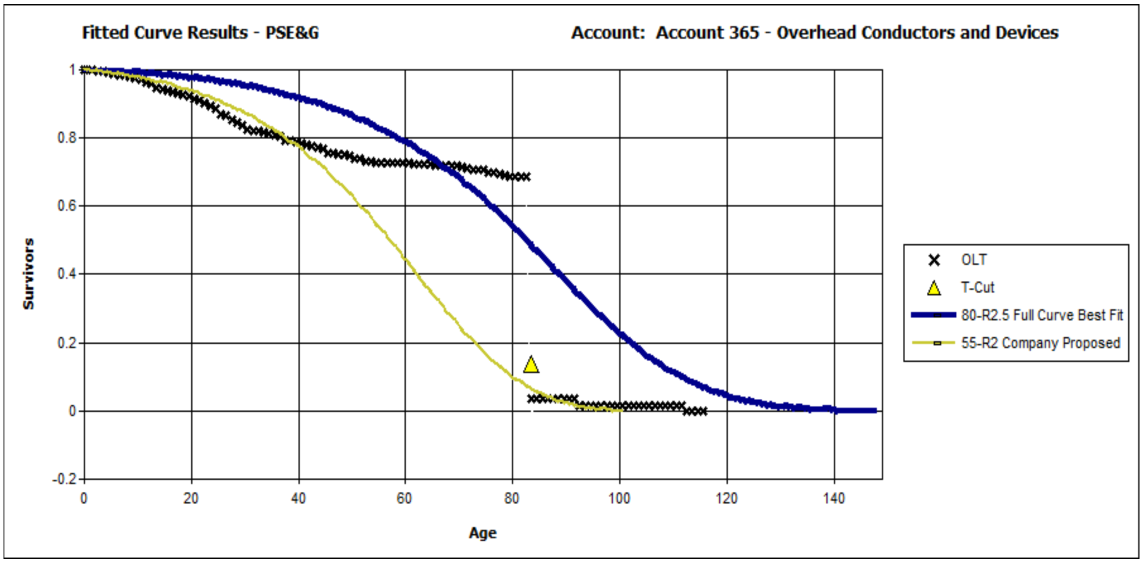


Mr. Spanos has proposed a 60-R2.5 life-curve combination for this account.[8] The historical data shows a long record of relatively limited retirements followed by one large retirement of one of the oldest ages of plant. Mr. Spanos's proposed curve does not conform well at all to the available data after age 40 The curve he is proposing seems to closely follow only the final retirement. It is necessary to decide whether to adhere to the consistent pattern of retirements leading up to the large retirement, or to attempt to select a curve that matches the one final retirement. I have proposed to compromise between the two, selecting a curve shape that anticipates that there will be more retirements of

[8] *Public Service Gas & Electric 2016 Depreciation Study – Electric* at VI-4.

long-lived assets, but is consistent with the general pattern of limited retirements in this account so far. Therefore, I have proposed a 91-R2.5 life-curve combination.

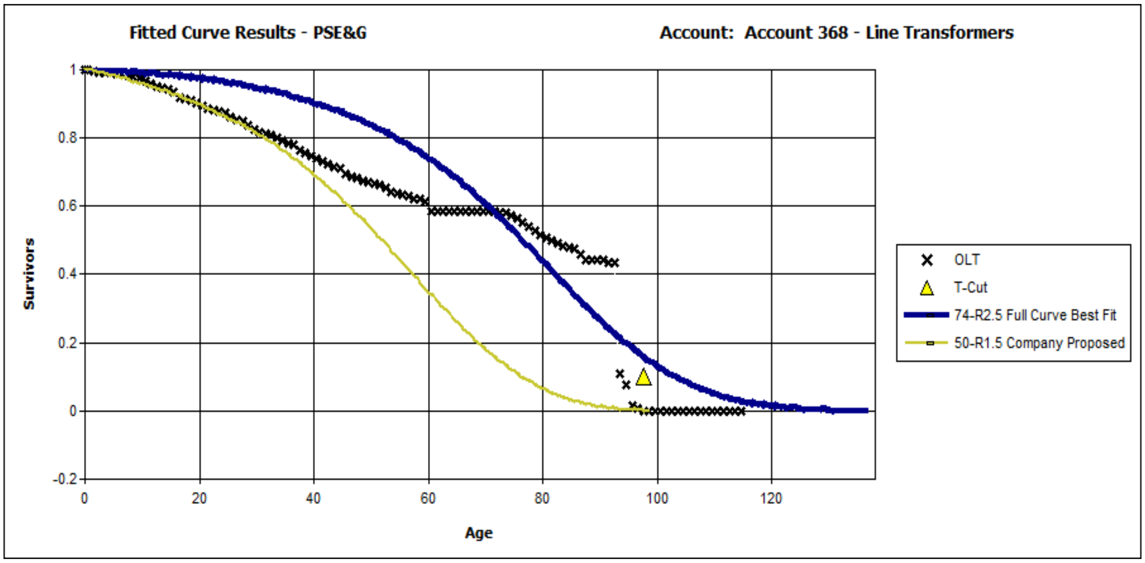
Account 365 – Overhead Conductors and Devices



Mr. Spanos has proposed a 55-R2.5 life curve combination for this account.[9] The circumstances of the historical data are remarkably similar as in Account 364 above, with a long history of limited retirements followed by one large retirement of the longest-lived assets. Once again, it appears Mr. Spanos has proposed a curve that disregards the history of limited retirements and simply follows the one large retirement at age 82.5. Once again, I am proposing a life-curve combination that compromises between agreeing with the long history of limited retirements, and the expectation of increased retirements on the longest-lived assets in the future. I am therefore proposing an 80-R2.5 life curve combination.

[9] *Public Service Gas & Electric 2016 Depreciation Study – Electric* at VI-4.

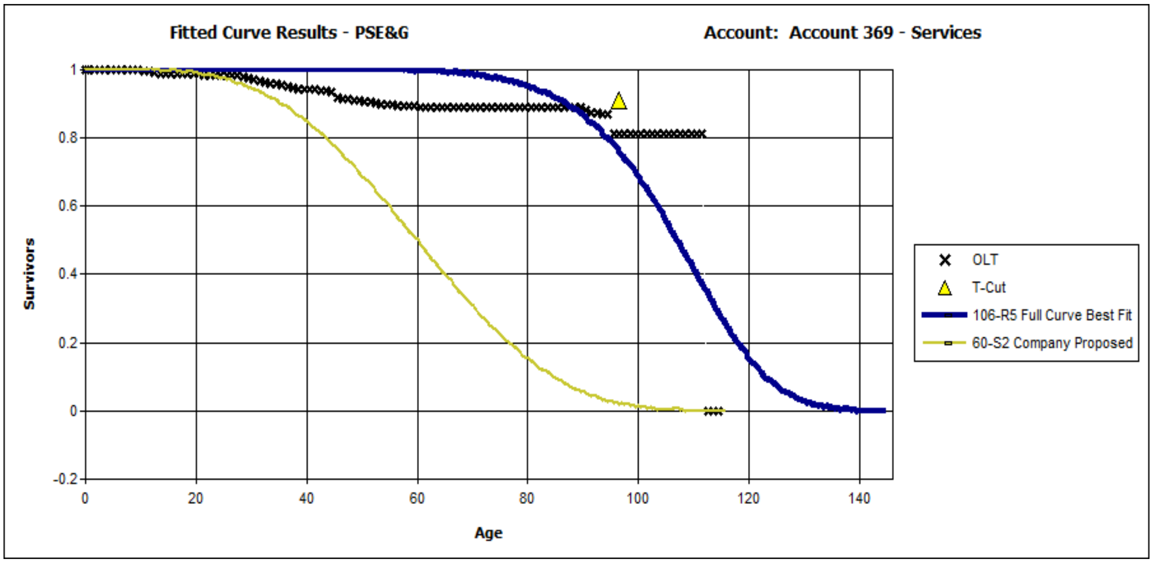
Account 368 – Line Transformers



Mr. Spanos has proposed a 50-R1.5 life-curve combination for this account.[10] The considerations for Account 368 are again similar to accounts 364 and 365 above, except less pronounced on both ends. That is, the brunt of the historical data shows more retirements over time, and the retirements on the longest-lived assets are slightly more gradual. Regardless, once again, Mr. Spanos has favored selecting a life and curve that agrees with the large final retirements and disregards the overall pattern of retirements. Once again, I am proposing a curve that takes into consideration both of the trends in the retirement data. Therefore, I am proposing a 74-R2.5 life-curve combination.

[10] *Public Service Gas & Electric 2016 Depreciation Study – Electric* at VI-4.

Account 369 – Services

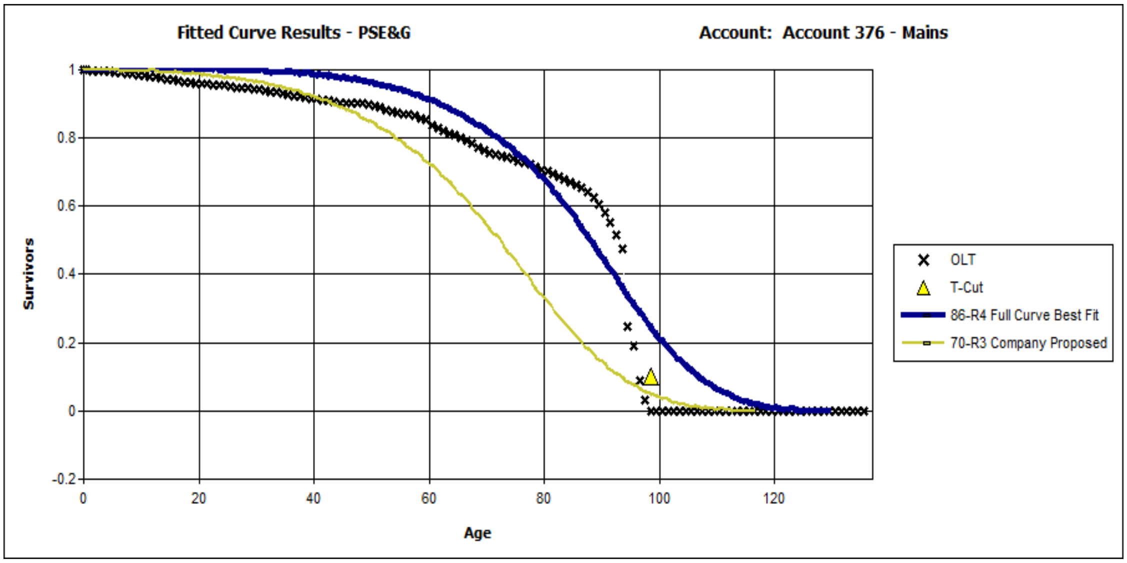


Mr. Spanos has proposed a 60-S2 life-curve combination.[11] For this account, like the other electric accounts for which I am proposing changes, the pattern is the same. There is a long history of very limited retirements followed by one retirement that brings that longest-lived assets to zero. Unlike for Account 368, where these divergent results were somewhat muted, they are even more extreme in this account. The available retirement data does not drop below 80% surviving through age 110.5, and then the final age exposure is completely retired at age 111.5. In this case, I am again proposing a life-curve combination that takes into consideration both the pattern of retirements and the total retirement of the longest-lived assets. However, in this case, I am proposing a retirement curve that anticipates a more rapid retirement of the longest-lived assets after approximately age 95. Therefore, I am proposing a 106-R5 life-curve combination.

[11] *Public Service Gas & Electric 2016 Depreciation Study – Electric* at VI-4.

2. <u>Gas Plant</u>

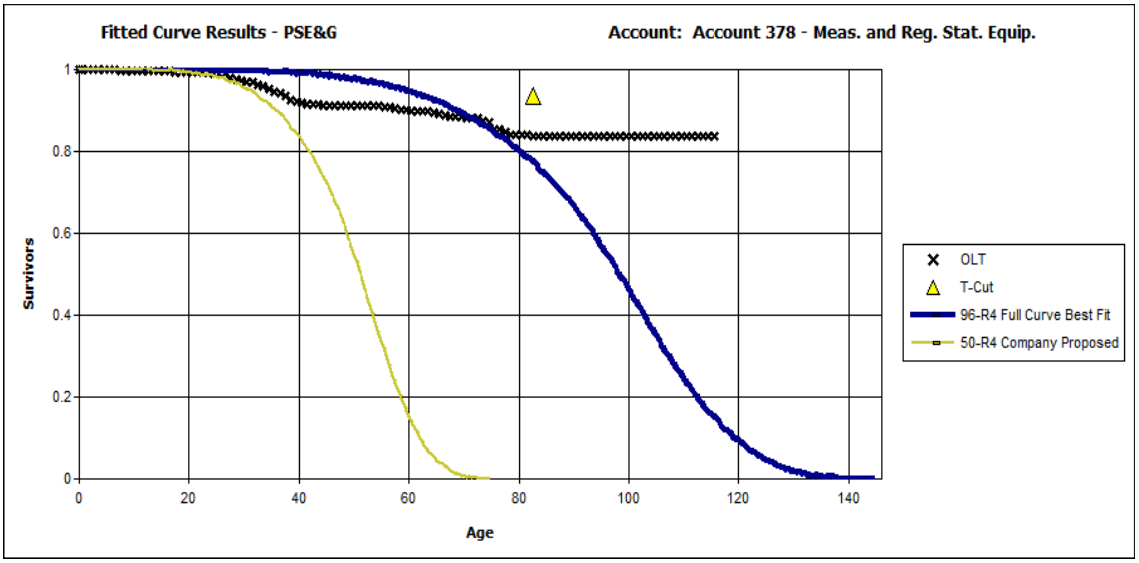
<u>Account 376 – Mains</u>



Mr. Spanos is proposing a 70-R3 life-curve combination.[12] As we move to the gas plants, the same overall pattern of retirements on the accounts that I am adjusting holds true. We see a long history of relatively limited retirements, followed by the sudden retirement of all of the longest-lived assets. Here, the overall pattern is much more internally consistent, with the two best-fitting life-curve combinations being an 86-R3 and 86-R4 with very similar sums of squared differences. Of the two, I have elected to propose the curve shape with the steeper mode, because that more closely matches the pattern that I am seeing for this account and the numerous accounts that we have discussed. Therefore, I am proposing a 86-R4 life-curve combination.

[12] *Public Service Gas & Electric 2016 Depreciation Study – Gas* at VI-5.

Account 378 – Measuring and Regulating Station Equipment



Mr. Spanos is proposing a 50-R4 life-curve combination.[13] For this account, unlike in each of the others above, we have a long history with very few retirements, without the accompanying large retirement of the longest-lived assets. For this account, Mr. Spanos's selected life and curve do not seem to conform to anything in the data. At age 81.5, the age of the last retirement in the observed life table for this account, the table shows 84% of the plant is expected to survive. This makes curve-fitting challenging, as there is no real mode in the retirement data to speak of, but there is a long history of retirement data. I am proposing a life-curve combination that anticipates that this account will start to experience the rapid retirement of its longest-lived assets in a pattern similar to PSE&G's other accounts as discussed above. Therefore, I am proposing a 96-R4 life-curve combination.

[13] *Public Service Gas & Electric 2016 Depreciation Study – Gas* at VI-5.

D. Summary of Recommendations

Q. CAN YOU PROVIDE A SUMMARY OF THE DIFFERENCE BETWEEN YOURS AND MR. SPANOS RECOMMENDATIONS REGARDING SERVICE LIVES?

A. Yes. The following tables shows Mr. Spanos' proposed average service lives and my own proposed average service lives for the six accounts where I have proposed adjustments.

	Spanos Proposed Average Service Life and Iowa Curve	PSE&G 5-Year Avg. Ratio of Net Salv. to Retirements
Electric Plant		
Acct 364	60-R2.5	91-R2.5
Acct 365	55-R2.5	80-R2.5
Acct 368	50-R1.5	74-R2.5
Acct 369	60-S2	106-R5
Gas Plant		
Acct 376	70-R3	86-R4
Acct 378	50-R4	96-R4

IV. NET SALVAGE

Q. WHAT IS NET SALVAGE?

A. "Salvage" is the theoretical value of property after retirement. Net salvage is gross salvage minus cost of removal. Cost of removal is the cost that the Company incurs for the process of retiring plant in service. Gross salvage is the amount that the Company is able to recoup from its retirements through sales of parts and scrap. Thus, net salvage is the net of the proceeds and expenses of retiring plant. Because net salvage is considered part of the cost of the investment in plant in service, it is collected as part of depreciation expense to recoup that cost of investment just as the rest of the Company's investment in plant in service.

Q. PLEASE DESCRIBE THE ISSUES ASSOCIATED WITH THE COLLECTION OF NET SALVAGE.

A. The primary issue arises when utilities are allowed to include the future cost of removing plant currently in service as part of current depreciation. This means that a utility collects cost of removal in current rates, via depreciation expense, for an expenditure that will be made at some point in the future. However, this presents an issue because the actual amount of net salvage that the Company will incur in the future is unknown. With net salvage, one is forced to estimate both the timing and the expected amount of future net salvage that the Company will require to retire its current plant in service.

Q. HOW IS MR. SPANOS PROPOSING TO ESTIMATE THE COMPANY'S FUTURE NET SALVAGE?

A. Mr. Spanos proposes a methodology which estimates net salvage based on calculated ratios of annual net salvage over retirements. For a given year, net salvage, in current dollars, is divided by the original cost of the retired plant. This ratio is examined over twenty years of data, utilizing rolling three-year averages, a final five-year average, and an overall average. Mr. Spanos then adjusts this result to arrive at a recommended net salvage ratio for each account. Mr. Spanos states that his adjustments are based on the historical data, the age of the plant, managerial expectations, and the experience of other utilities in the industry, and arrives at a net salvage ratio for each account.

Q. CAN YOU DESCRIBE YOUR CONCERNS WITH THIS METHODOLOGY?

A. Yes. I have several significant concerns with this methodology. First, this methodology produces unrealistically high future net salvage ratios. Second, net salvage and retirements are not mathematically correlated in any way, and therefore reliance on this ratio yields unreliable and unsound results. Third, and perhaps most importantly, it is not clear how Mr. Spanos's proposed net salvage ratios relate to either the historical data or the industry statistics, which suggests that Mr. Spanos's proposals are purely based on judgment that is divorced from PSE&G's actual or industry experience. This type of analysis is insufficient to support the large amounts of future net salvage that Mr. Spanos is proposing to collect.

Q. CAN YOU EXPLAIN WHY YOU BELIEVE MR. SPANOS'S METHODOLOGY RESULTS IN UNREALISTICALLY HIGH NET SALVAGE RATIOS?

A. Yes. In addition to the other problems discussed with this ratio of net salvage to retirements, there is a mismatch in the periods between the two numbers. Cost of removal is always in current dollars. That is, an amount from 2012 is shown at 2012 dollar values. In contrast, retirements are always recorded at original cost. A given retirement may be recorded in 2012, but the dollar values represented in that retirement could be from 1986, 1970, or 1920, consistent with wildly varying current dollar values.

What this means is that the method Mr. Spanos is proposing contains a significant amount of inflation inherent in it. This range of historical inflation is implicitly projected out into the future and charged to current ratepayers. This introduces one relatively minor issue, the question of whether it is accurate to assume that future inflation will be the same as historical inflation. It also introduces a major issue, which is that current ratepayers are effectively being charged for future net salvage at their inflated future dollar values, but are required to pay those amounts with current dollars.

An example of the results of this mismatch can be seen if we look at Account 369 - Services, which is the Company's largest distribution account, the five-year average of net salvage from 2012-2016 was -$2.1 million.[14] If we take the five-year average net salvage ratio of net salvage over retirements in this account for 2012-2016, which is -520%, the annual accrual for net salvage (that is, the amount that the Company collects each year) would be $29.8 million. This

[14] *Public Service Gas & Electric 2016 Depreciation Study – Electric* at VIII-27.

means that the Company would be collecting roughly $27.7 million more annually than they are actually expending on cost of removal. Now, Mr. Spanos is not proposing to use the five-year average; he is only proposing a -100% net salvage ratio, which results in somewhat more reasonable annual net salvage accruals of $5.7 million, but even then the Company would be collecting $3.6 million more than it incurs annually.

Q. DO FUTURE COST OF REMOVAL EXPENSES JUSTIFY HIGHER FUTURE NET SALVAGE RATIOS?

A. No. Setting aside the question of the accuracy of net salvage of retirements as a means for forecasting future net salvage, the logic of collecting for large excesses for future net salvage is flawed. This methodology charges current ratepayers for future net salvage at their inflated future dollar values, but requires them to pay those charges with current dollars. As plant in service increases, the amount being collected for future net salvage will increase in turn. The result is that present distribution customers will be constantly paying an amount for future net salvage costs that are in excess of a reasonable estimate of those costs.

It is instructive to contrast this ongoing net salvage situation with net salvage for a single piece of plant with a final retirement date. In such cases, a terminal net salvage estimate is arrived at using a terminal net salvage study which carefully estimates the actual cost of removing all plant for the relevant unit. That terminal net salvage is then distributed over the remaining life of the plant. This is a reasonable application of the principle that current customers should bear the cost of future net salvage.

The same rationale does not apply in the context of group depreciation. This is because PSE&G, like any utility, is continuously adding and retiring plant with no end date. This means that, in a real sense, the future never truly arrives. With no termination date, current customers are perpetually asked to bear the cost of ill-defined and excessive future net salvage.

Q. CAN YOU EXPLAIN THE LACK OF CORRELATION BETWEEN NET SALVAGE AND RETIREMENTS?

A. Yes. There are two senses in which net salvage could be related to retirements: causally and mathematically correlated. First, let us examine how retirements and net salvage could be related causally, which would be if retirements were a causal driver of net salvage. There is an intuitive logic to this notion. A retirement happens when a given unit of plant is taken out of service. If, as part of taking that unit out of service, it needs to be physically removed, then there will be some cost to the Company associated with that removal. However, this is not actually what drives most cost of removal. In fact, most retirements occur when old plant is being replaced by new plant. What happens in the such cases, when old plant is being replaced by new plant, the Company performs an engineering estimate which estimates what percentage of the cost of the new project should be allocated to the cost of removal. This estimate is not based on the amount of plant to be replaced. In fact, typically, when the estimate is being done, the value of the retired plant is not known. The result of this process is that year-to-year, the cost of removal is driven more by plant additions in a given year than by retirements.

The other sense in which retirements and net salvage could be related is by mathematical correlation. That is, even without a causal relationship, it is possible that there is a close relationship between the two amounts, such that when one increases, it would be possible to reasonably predict that the other would also increase. The lack of any real correlative connection between net salvage and retirements is clear when we look at how much the net salvage to retirement ratio varies from year to year. To illustrate the variance in net salvage, I examined the ratios for the Company's largest transmission plant account, Account 369, Services for the past fifteen years.[15]

[15] *Public Service Gas & Electric 2016 Depreciation Study – Electric* at VIII-25.

Table JSG-5

Net Salvage History Account 369 - Services

YEAR	REGULAR RETS	COST OF REMOVAL AMOUNT	%	GROSS SALVAGE AMOUNT	%	NET SALVAGE AMOUNT	%
2002	482,573	1,811,189	375	18,368	4	-1,792,820	-372
2003	28,039	1,563,254	5,575	22,350	80	-1,540,905	-5,495
2004	44,969	1,944,199	4,323	40,301	90	-1,903,898	-4,233
2005	23,834	2,056,609	8,628	36,263	156	-2,019,346	-8,472
2006	12,217	2,128,558	17,422	67,291	551	-2,061,267	-16,872
2007	6,888	2,006,398	29,128	93,431	1,356	1,912,867	-27,771
2008	2,229	1,752,809	78,605	71,397	3,203	-1,681,412	-75,433
2009	253,643	1,795,108	708	0	0	-1,795,108	-708
2010	1,392,128	2,120,349	152	0	0	-2,120,349	-152
2011	1,450,669	2,069,921	143	0	0	-2,069,921	-143
2012	724,754	3,146,232	434	0	0	-3,146,232	-424
2013	273,597	1,582,516	578	0	0	-1,582,516	-578
2014	331,271	1,722,307	520	0	0	-1,622,307	-520
2015	258,051	2,048,632	794	27,375	11	-2,021,258	-783
2016	435,759	2,056,834	472	0	0	-2,056,834	-472
TOTAL	10,827,227	71,024,673	656	2,737,015	25	-68,287,658	-631

Table JSG-5, above, reproduces the net salvage and retirement history for Account 369 - Services. We can see the annual net salvage ratio for this account varies significantly, from as low as -143% in 2011, when services with original costs totaling about $1.5 million were retired with a cost of removal amount of about $2 million, to as high as – 75,433% in 2008 when service with original costs totaling about $2,000 were retired with a cost of removal of about $1.7 million. This table also illustrates that there is no trend from one year to the next. For example, in just the most recent three years—2008, 2009 and 2010—the net salvage ratio is -75,433%, -708%, and -152% respectively. Despite the fact that the cost-of-removal ratio decreased dramatically in that period, cost of removal actually increased from year to year over the same three years. The reason for this disconnect is that there is no mathematical relationship between retirements and cost of removal. Thus, retirements and net salvage amounts increase and decrease independent of each other. This tells us that retirements and net salvage do not have a mathematically correlative relationship to each other.

Q. WHY DOES IT MATTER THAT RETIREMENTS AND NET SALVAGE DO NOT CORRELATE?

A. It is tremendously important, because the method that Mr. Spanos is proposing relies entirely on this relationship. The presumption is that the ratio of retirement amounts in a given year and the cost of removal in a given year should track with one another, and the ratio of them should remain relatively constant. The correlation, and the reliability of the ratio, are how Mr. Spanos can propose to then use this ratio to predict what the cost of removal will be on the entirety of plant in service.

If retirements and cost of removal are not related, and the ratio of the two numbers is not relatively constant and reliable for any given account, then there is no way we can justify using that ratio to predict such an important and substantial number as the cost of removal for all plant in service.

Q. CAN YOU EXPLAIN WHAT YOU MEAN WHEN YOU SAY THAT MR. SPANOS'S PROPOSALS DO NOT RELATE TO THE HISTORICAL OR INDUSTRY DATA AND ARE PURELY BASED ON MR. SPANOS'S OWN JUDGMENT?

A. Yes. Neither the amount of net salvage and retirements, the age of the plant in service, or the industry data are connected in any consistent way to Mr. Spanos's proposed net salvage ratios in this case. The below table shows Mr. Spanos's proposals for each account next to the five-year average of net salvage of retirements for each distribution account.

Table JSG-6

Net Salvage Proposals Against Historical and Industry Data

	Spanos Proposed Net Salvage Ratio[16] [17]	PSE&G 5-Year Avg. Ratio of Net Salv. to Retirements
Electric Plant		
Acct 361	(10)	N/A[18]
Acct 362	(20)	(35)[19]
Acct 364	(100)	(1,168)[20]
Acct 365	(25)	(26)[21]
Acct 366	(5)	(16,985)[22]
Acct 367	(20)	(17)[23]
Acct 368	(40)	(140)[24]
Acct 369	(100)	(520)[25]
Acct 370	(30)	(76)[26]
Acct 373	(30)	(65)[27]
Gas Plant		
Acct 311	(5)	N/A[28]
Acct 363 – 363.4	(5)	(430)[29]

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[16] *Public Service Gas & Electric 2016 Depreciation Study – Electric* at VI-4.
[17] *Public Service Gas & Electric 2016 Depreciation Study – Gas* at VI-5.
[18] *Public Service Gas & Electric 2016 Depreciation Study – Electric* at VIII-6.
[19] *Public Service Gas & Electric 2016 Depreciation Study – Electric* at VIII-9
[20] *Public Service Gas & Electric 2016 Depreciation Study – Electric* at VIII-12
[21] *Public Service Gas & Electric 2016 Depreciation Study – Electric* at VIII-15
[22] *Public Service Gas & Electric 2016 Depreciation Study – Electric* at VIII-18
[23] *Public Service Gas & Electric 2016 Depreciation Study – Electric* at VIII-21
[24] *Public Service Gas & Electric 2016 Depreciation Study – Electric* at VIII-24
[25] *Public Service Gas & Electric 2016 Depreciation Study – Electric* at VIII-27
[26] *Public Service Gas & Electric 2016 Depreciation Study – Electric* at VIII-30
[27] *Public Service Gas & Electric 2016 Depreciation Study – Electric* at VIII-33
[28] *Public Service Gas & Electric 2016 Depreciation Study – Gas* at VIII-10
[29] *Public Service Gas & Electric 2016 Depreciation Study – Gas* at VIII-18

Acct 367	(10)	N/A[30]
Acct 376	(50)	(76)[31]
Acct 378	(10)	N/A[32]
Acct 379	(10)	N/A[33]
Acct 380	(75)	(371)[34]
Acct 381 & 382	(10)	(19)[35]
Acct 383 & 384	(5)	N/A[36]

As can be seen from Table JSG-6, Mr. Spanos's proposals are not supported by the available data. The deviations between Mr. Spanos's proposals and the data vary so widely from account to account that it is not apparent that Mr. Spanos relies on the historical data at all. None of Mr. Spanos's proposals show a clear pattern or method, so much so that it is difficult to dissect. For example the accounts above where I have put in "N/A" are accounts where there are either no retirements or no net salvage for the past five years. This means that the methodology that Mr. Spanos purports to rely on shows no meaningful results. Yet, in many of these cases Mr. Spanos is proposing to collect ten percent of the current plant in service for future net salvage from customers. Many of PSE&G's largest accounts show the unreliability of the methodology Mr. Spanos is

[30] *Public Service Gas & Electric 2016 Depreciation Study – Gas* at VIII-21
[31] *Public Service Gas & Electric 2016 Depreciation Study – Gas* at VIII-27
[32] *Public Service Gas & Electric 2016 Depreciation Study – Gas* at VIII-30
[33] *Public Service Gas & Electric 2016 Depreciation Study – Gas* at VIII-33
[34] *Public Service Gas & Electric 2016 Depreciation Study – Gas* at VIII-36
[35] *Public Service Gas & Electric 2016 Depreciation Study – Gas* at VIII-39
[36] *Public Service Gas & Electric 2016 Depreciation Study – Gas* at VIII-42

proposing, including Account 364 – Poles, Towers and Fixtures, where the five-year average historical ratio suggests that future net salvage will be over 11 times, the book value of current plant.

The purpose of this table is not necessarily to demonstrate the unreasonableness of Mr. Spanos's proposals, but to demonstrate that Mr. Spanos's proposals do not appear to follow any evident methodology, are therefore arbitrary. This leads me to conclude that Mr. Spanos's proposals, which consistently result in higher net salvage ratios that produce greater depreciation rates for the Company, are not based on fact or the reasoned application of judgment.

Q. WHAT ARE YOU PROPOSING REGARDING THE COMPANY'S NET SALVAGE PROPOSALS?

A. I am proposing that the Board reject the Company's proposal and instead adopt the methodology for estimating and accruing future net salvage that the Board is currently reflected in the Company's rates, which, uses a five-year average of recorded net salvage to estimate future net salvage over the remaining life of plant. I believe that the Company's most recent five years of net salvage data provide the best indication of net salvage needs for 2018 and the immediate future. This average should then be updated with each subsequent rate case that the Company files. Accordingly, I propose that the Company calculate its total future net salvage by multiplying its most recent five-year average of net salvage for each account by the remaining life (*i.e.*, the plant not yet depreciated) for that account. This methodology is superior to the Company's proposal.

Q. IN WHAT WAYS ARE YOUR PROPOSED METHODOLOGY SUPERIOR TO THE METHODOLOGY PROPOSED BY MR. SPANOS?

A. This methodology is superior to the Company's proposed methodology because it effectively matches the Company's depreciation rate to the costs actually incurred by the Company. The overarching problem is that the Company's methodology is an estimate of costs that it will not incur for years, and in some cases decades. By its very nature, projecting costs decades into the future carries significant inherent uncertainty. In contrast, utilizing the five-year average of incurred net salvage ensures that a company that files rate cases regularly is always compensated for their net salvage costs because its net salvage accruals are directly tied to its incurred net salvage. Using the five-year average would also ensure that charges to distribution customers closely equate to the Company's actual expenditures, therefore ensuring that customers are not being overcharged for costs that may not be incurred and that the Company collects a sufficient amount to cover its cost of removal.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes. I reserve the right to file supplemental testimony in response to any new information supplied by the Company.

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
ELECTRIC PLANT

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2016

	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE	NET SALVAGE PERCENT	TOTAL FUTURE NS	ORIGINAL COST AS OF DECEMBER 31, 2016	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)=(5)/(6)	(5)	(6)	(7)	(8)=(6)-(5)-(7)	(9)=(8)/(11)	(10)=(9)/(6)	(11)
	ELECTRIC PLANT										
	DISTRIBUTION PLANT										
360.30	SIDEWALKS AND CURBS ON PUBLIC PROPERTY		60-S2.5	(33)	(498,150)	1,515,657.09	504,166	1,509,642	30,935	2.04	48.8
361.00	STRUCTURES AND IMPROVEMENTS		70-S2.5	(21)	(41,176,509)	192,089,951.00	81,061,239	152,205,221	2,966,963	1.54	51.3
362.00	STATION EQUIPMENT		55-S0.5	(22)	(239,293,728)	1,067,931,631.54	351,762,952	955,462,407	22,534,491	2.11	42.4
364.00	POLES, TOWERS AND FIXTURES		91-R2.5	(131)	(987,545,547)	753,985,877.86	151,662,858	1,589,868,567	21,622,040	2.87	73.5
365.00	OVERHEAD CONDUCTORS AND DEVICES		80-R2.5	(13)	(224,229,729)	1,748,436,554.00	483,709,718	1,488,956,566	22,349,993	1.28	66.6
366.00	UNDERGROUND CONDUIT		70-S3	(3)	(17,053,594)	487,461,130.20	216,238,142	288,276,582	5,630,402	1.16	51.2
367.00	UNDERGROUND CONDUCTORS AND DEVICES		55-R2	(4)	(56,314,243)	1,312,281,895.04	419,819,657	948,776,480	22,324,152	1.70	42.5
368.00	LINE TRANSFORMERS		74-R2.5	(41)	(487,350,465)	1,183,522,232.29	240,879,333	1,429,993,364	26,634,259	2.25	53.7
369.00	SERVICES		106-R5	(37)	(179,753,563)	489,507,139.06	196,498,172	472,762,531	5,538,455	1.13	85.4
370.00	METERS		26-S0	(16)	(41,696,851)	261,118,428.88	23,371,079	279,444,201	26,116,280	10.00 *	10.7
373.00	STREET LIGHTING AND SIGNAL SYSTEMS		35-R1.5	(17)	(63,564,319)	384,376,031.03	89,899,194	358,041,156	14,613,925	3.80	24.5
	TOTAL DISTRIBUTION PLANT					**7,882,226,527.99**	**2,255,406,509**	**7,965,296,718**	**170,361,896**	**2.16**	
	GENERAL PLANT - STRUCTURES AND IMPROVEMENTS										
390.00	STRUCTURES AND IMPROVEMENTS - DISTRIBUTION		55-R2	0		14,786,923.83	7,717,047	7,069,876	141,115	0.96	50.1
	TOTAL STRUCTURES AND IMPROVEMENTS					**14,786,923.83**	**7,717,047**	**7,069,876**	**141,115**	**0.95**	
	TOTAL DEPRECIABLE ELECTRIC PLANT					**7,897,013,451.82**	**2,263,123,557**	**7,972,366,595**	**170,503,012**	**2.16**	
	DISTRIBUTION - GENERAL PLANT - AMORTIZED										
391.10	FURNITURE EQUIPMENT		20-SQ	0		12,272,902.98	10,544,071		613,645	5.00 **	
391.20	OFFICE EQUIPMENT		4-SQ	0		65,865.74	49,459		16,466	25.00 **	
391.31	COMPUTER EQUIPMENT		7-SQ	0		831,924.65	1,031,655		118,882	14.29 **	
392.10	TRANSPORTATION EQUIPMENT 13,000 LBS AND UNDER		9-SQ	0		15,352,111.88	9,684,328		1,705,790	11.11 **	
392.20	TRANSPORTATION EQUIPMENT OVER 13,000 LBS		13-SQ	0		90,204,400.54	59,255,823		6,938,800	7.69 **	
393.00	STORES EQUIPMENT		7-SQ	0		306,306.34	165,208		43,758	14.29 **	
394.00	TOOLS, SHOP AND GARAGE EQUIPMENT		7-SQ	0		10,849,077.18	4,561,277		1,549,868	14.29 **	
395.00	LABORATORY EQUIPMENT		5-SQ	0		2,183,185.72	741,666		436,637	20.00 **	
396.00	POWER OPERATED EQUIPMENT		13-SQ	0		11,367,506.11	5,255,143		874,424	7.69 **	
397.00	COMMUNICATION EQUIPMENT		10-SQ	0		14,457,253.79	4,630,881		1,445,725	10.00 **	
398.00	MISCELLANEOUS EQUIPMENT		7-SQ	0		1,272,357.78	514,872		181,765	14.29 **	
	TOTAL DISTRIBUTION - GENERAL PLANT - AMORTIZED					**159,162,892.71**	**96,434,385**		**13,925,762**	**8.75**	

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
ELECTRIC PLANT

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2016

	ACCOUNT	PROBABLE RETIREMENT DATE	SURVIVOR CURVE	NET SALVAGE PERCENT	TOTAL FUTURE NS	ORIGINAL COST AS OF DECEMBER 31, 2016	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)=(5)/(6)	(5)	(6)	(7)	(8)=(6)-(5)-(7)	(9)=(8)/(11)	(10)=(9)/(6)	(11)
	COMMON PLANT										
	GENERAL PLANT										
390.00	STRUCTURES AND IMPROVEMENTS										
	PARK PLAZA	06-2041	55-R2	0		32,680,978.46	10,177,125	22,503,854	974,160	2.98	23.1
	LEASEHOLD IMPROVEMENTS		55-R2	0		7,683,510.07	4,408,452	3,275,058	61,856	0.81	52.9
	STRUCTURES AND IMPROVEMENTS - OTHER		55-R2	0		3,994,737.96	439,611	3,555,127	75,020	1.88	47.4
	TOTAL DEPRECIABLE COMMON PLANT					**44,359,226.49**	**15,025,187**	**29,334,039**	**1,111,036**	**2.50**	
	TOTAL COMMON AND GENERAL PLANT					**218,309,043.03**	**119,176,619**	**36,403,916**	**15,177,913**	**6.95**	
	NONDEPRECIABLE PLANT AND ACCOUNTS NOT STUDIED										
	ELECTRIC PLANT										
303.00	MISCELLANEOUS INTANGIBLE PLANT					19,220,476.00					
350.00	LAND AND LAND RIGHTS					146,177,766.00					
359.10	ASSET RETIREMENT COSTS FOR TRANSMISSION PLANT					5,786,445.00					
360.00	LAND AND LAND RIGHTS					47,383,936.00					
371.00	INSTALLATIONS ON CUSTOMER PREMISES					33,707,692.00	13,078,061				
374.00	ASSET RETIREMENT COSTS FOR DISTRIBUTION PLANT					37,978,123.00					
389.10	LAND AND LAND RIGHTS					155,022.78	(405)				
399.10	ASSET RETIREMENT COSTS FOR GENERAL PLANT					89,951.00					
	TOTAL NONDEPRECIABLE PLANT AND ACCOUNTS NOT STUDIED					**290,499,411.78**	**13,077,656**				
	TOTAL ELECTRIC AND COMMON PLANT					**8,391,034,982.80**	**2,387,660,785**	**8,001,700,634**	**185,539,809**	**2.21**	

* NEW AMI METERS SHOULD HAVE A 15-S2.5 SURVIVOR CURVE, (30) PERCENT NET SALVAGE AND 8.67% DEPRECIATION RATE.
** ACCRUAL RATE FOR GENERAL PLANT AMORTIZATION ACCOUNTS IS EQUAL TO 1 DIVIDED BY THE AMORTIZATION PERIOD.

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
GAS PLANT

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS PLANT AS OF DECEMBER 31, 2016

	ACCOUNT	SURVIVOR CURVE	NET SALVAGE PERCENT	TOTAL FUTURE NS	ORIGINAL COST AS OF DECEMBER 31, 2016	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)=(5)-(4)-(6)	(8)	(9)=(8)/(5)	(9)
	GAS PLANT									
	PRODUCTION PLANT									
304.30	SIDEWALKS AND CURBS - ON PUBLIC PROPERTY	50-R3	0	0	41,238.98	70,673	(29,434)	0	-	-
305.00	STRUCTURES AND IMPROVEMENTS	33-R1.5	0	0	8,349,334.00	10,100,899	(1,751,565)	0	-	-
307.00	OTHER POWER EQUIPMENT	25-R2	0	0	2,714,134.15	2,942,978	(228,844)	0	-	-
311.00	LIQUEFIED PETROLEUM GAS EQUIPMENT	50-S3	0	0	41,368,762.12	42,677,941	(1,309,179)	(26,555)	0.04	49.3
320.00	OTHER EQUIPMENT	21-R1	0	0	357,313.41	568,326	(211,013)	0	-	-
	TOTAL PRODUCTION PLANT				**52,830,782.66**	**56,360,817**	**(3,530,034)**	**(26,555)**	**-0.05**	
	OTHER STORAGE PLANT									
362.00	GAS HOLDERS	55-R3	0	0	5,066,482.48	4,942,968	123,514	5,212	0.10	23.7
363.20	VAPORIZING EQUIPMENT	55-S2.5	0	0	1,342,879.09	1,274,140	68,739	1,672	0.12	41.1
363.30	COMPRESSOR EQUIPMENT	55-S2.5	0	0	513.13	0	513	10	1.86	53.9
363.40	MEASURING AND REGULATING STATION EQUIPMENT	55-S2.5	0	0	4,203,783.93	3,654,748	549,036	10,224	0.24	53.7
	TOTAL OTHER STORAGE PLANT				**10,613,658.63**	**9,871,856**	**741,802**	**17,118**	**0.16**	**43.3**
	TRANSMISSION PLANT									
367.00	MAINS	65-S2	0	0	79,321,099.24	43,442,949	35,878,150	815,413	1.03	44.0
369.00	MEASURING AND REGULATING STATION EQUIPMENT	30-S2.5	0	0	4,224,120.12	2,198,004	2,026,116	225,124	5.33	9.0
	TOTAL TRANSMISSION PLANT				**83,545,219.36**	**45,640,953**	**37,904,266**	**1,040,536**	**1.25**	**36.4**
	DISTRIBUTION PLANT									
374.30	SIDEWALKS AND CURBS - ON PUBLIC PROPERTY	50-R3	0	-	54,865.26	23,566	31,299	990	1.81	31.6
375.00	STRUCTURES AND IMPROVEMENTS	55-S2.5	0	-	46,629,557.64	37,309,982	9,319,576	285,002	0.61	32.7
376.00	MAINS	86-R4	(20)	(529,686,114)	2,666,043,182.75	1,026,142,342	2,169,586,954	32,684,347	1.23	66.4
378.00	MEASURING AND REGULATING STATION EQUIPMENT - GENERAL	96-R4	(18)	(16,841,158)	91,319,091.00	25,871,168	82,289,080	1,015,037	1.11	81.1
379.00	MEASURING AND REGULATING STATION EQUIPMENT - CITY GATE	55-R3	0	26,887	78,867,038.05	51,208,907	27,631,244	827,283	1.05	33.4
380.00	SERVICES	60-R3	(16)	(456,722,409)	2,854,069,821.44	789,779,829	2,521,012,402	55,043,939	1.93	45.8
381.00	METERS	29-S0	(11)	(28,431,254)	257,235,089.57	19,194,548	266,471,795	13,126,689	5.10	20.3
382.00	METER INSTALLATIONS	29-S0	(10)	(14,466,481)	145,989,543.39	42,287,602	118,168,423	6,492,770	4.45	18.2
383.00	HOUSE REGULATORS	29-S0	(0)	(86,861)	38,524,414.14	19,070,960	19,540,315	1,177,127	3.06	16.6
384.00	HOUSE REGULATOR INSTALLATIONS	29-S0	(0)	(230,487)	98,658,890.82	42,060,437	56,828,940	3,304,008	3.35	17.2
385.00	INDUSTRIAL MEASURING AND REGULATING STATION EQUIPMENT	35-S2	0	3,534	83,488,965.00	23,927,602	59,557,829	2,612,185	3.13	22.8
387.00	OTHER EQUIPMENT	35-S4	0	-	1,521,716.85	979,421	542,296	93,499	6.14	5.8
	TOTAL DISTRIBUTION PLANT				**6,362,402,175.91**	**2,077,856,365**	**5,330,980,154**	**116,662,879**	**1.83**	**45.7**

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
GAS PLANT

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS PLANT AS OF DECEMBER 31, 2016

	ACCOUNT	SURVIVOR CURVE	NET SALVAGE PERCENT	TOTAL FUTURE NS	ORIGINAL COST AS OF DECEMBER 31, 2016	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)=(5)-(4)-(6)	(8)	(9)=(8)/(5)	(9)
	GENERAL PLANT									
390.00	STRUCTURES AND IMPROVEMENTS	55-R2	0		12,628,603.96	1,879,362	10,749,242	237,290	1.88	45.3
	TOTAL GENERAL PLANT				**12,628,603.96**	**1,879,362**	**10,749,242**	**237,290**	**1.88**	**45.3**
	TOTAL DEPRECIABLE PLANT				**6,522,020,440.52**	**2,191,609,353**	**5,376,845,430**	**117,931,268**	**1.81**	**45.6**
	GENERAL PLANT - AMORTIZED									
391.10	OFFICE FURNITURE	20-SQ	0		11,195,106.94	6,761,806		559,755	5.00 *	
391.20	OFFICE EQUIPMENT	4-SQ	0		23,958.90	(43,014)		5,990	25.00 *	
391.30	OFFICE COMPUTER EQUIPMENT	7-SQ	0		1,185,900.06	1,186,600		169,414	14.29 *	
391.33	PERSONAL COMPUTING EQUIPMENT	3-SQ	0		360,836.12	213,691		120,279	33.33 *	
392.10	CARS AND LIGHT TRUCKS	9-SQ	0		18,063,289.84	9,200,053		2,007,032	11.11 *	
392.20	HEAVY TRUCKS AND TRUCK MOUNTED EQUIPMENT	13-SQ	0		17,095,008.71	10,716,636		1,315,001	7.69 *	
393.00	STORES EQUIPMENT	7-SQ	0		1,178,326.59	194,020		168,332	14.29 *	
394.00	TOOLS, SHOP AND GARAGE EQUIPMENT	7-SQ	0		11,791,760.40	5,676,251		1,684,537	14.29 *	
395.00	LABORATORY EQUIPMENT	5-SQ	0		20,572.15	18,344		4,114	20.00 *	
396.00	POWER OPERATED EQUIPMENT	13-SQ	0		12,670,324.00	8,962,309		974,640	7.69 *	
397.00	COMMUNICATION EQUIPMENT	10-SQ	0		6,903,658.79	2,716,396		690,366	10.00 *	
398.00	MISCELLANEOUS EQUIPMENT	7-SQ	0		695,518.55	499,416		99,360	14.29 *	
	TOTAL GENERAL PLANT - AMORTIZED				**81,184,261.05**	**46,102,509**		**7,798,820**	**9.61**	
	TOTAL GENERAL PLANT				**93,812,865.01**	**47,981,871**		**8,036,110**	**8.57**	
	NONDEPRECIABLE PLANT AND ACCOUNTS NOT STUDIED									
303.00	MISCELLANEOUS INTANGIBLE PLANT				6,228,071.00	1,800,411				
304.00	LAND AND LAND RIGHTS				1,220,370.86					
360.00	LAND				23,496.57					
365.00	LAND AND LAND RIGHTS				5,421,127.53					
374.00	LAND AND LAND RIGHTS				7,185,318.39					
388.00	ARC - DISTRIBUTION PLANT				10,834,324.00					
399.00	ARC - GENERAL PLANT				4,785,231.71					
	TOTAL NONDEPRECIABLE PLANT AND ACCOUNTS NOT STUDIED				**35,697,940.06**	**1,800,411**				
	TOTAL GAS PLANT				**6,638,902,641.63**	**2,239,512,273**		**125,730,088**		
								125,730,088		

* ACCRUAL RATE FOR GENERAL PLANT AMORTIZATION ACCOUNTS IS EQUAL TO 1 DIVIDED BY THE AMORTIZATION PERIOD.

PUBLIC SERVICE ELECTRIC AND GAS COMPANY
ELECTRIC PLANT

OF ESTIMATED SURVIVOR CURVES, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE
LATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2016

	ACCOUNT	5-YEAR AVG. NS	REMAINING LIFE	TOTAL FUTURE NS
	(1)	(2)	(3)	(4)
	ELECTRIC PLANT			
	DISTRIBUTION PLANT			
360.30	SIDEWALKS AND CURBS ON PUBLIC PROPERTY	-10,208	48.8	(498,150)
361.00	STRUCTURES AND IMPROVEMENTS	-802,661	51.3	(41,176,509)
362.00	STATION EQUIPMENT	-5,643,720	42.4	(239,293,728)
364.00	POLES, TOWERS AND FIXTURES	-13,430,512	73.53	(987,545,547)
365.00	OVERHEAD CONDUCTORS AND DEVICES	-3,365,802	66.62	(224,229,729)
366.00	UNDERGROUND CONDUIT	-333,078	51.2	(17,053,594)
367.00	UNDERGROUND CONDUCTORS AND DEVICES	-1,325,041	42.5	(56,314,243)
368.00	LINE TRANSFORMERS	-9,077,118	53.69	(487,350,465)
369.00	SERVICES	-2,105,829	85.36	(179,753,563)
370.00	METERS	-3,896,902	10.7	(41,696,851)
373.00	STREET LIGHTING AND SIGNAL SYSTEMS	-2,594,462	24.5	(63,564,319)
	TOTAL DISTRIBUTION PLANT			
	GENERAL PLANT - STRUCTURES AND IMPROVEMENTS			
390.00	STRUCTURES AND IMPROVEMENTS - DISTRIBUTION			
	TOTAL STRUCTURES AND IMPROVEMENTS			
	TOTAL DEPRECIABLE ELECTRIC PLANT			
	DISTRIBUTION - GENERAL PLANT - AMORTIZED			

391.10	FURNITURE EQUIPMENT
391.20	OFFICE EQUIPMENT
391.31	COMPUTER EQUIPMENT
392.10	TRANSPORTATION EQUIPMENT 13,000 LBS AND UNDER
392.20	TRANSPORTATION EQUIPMENT OVER 13,000 LBS
393.00	STORES EQUIPMENT
394.00	TOOLS, SHOP AND GARAGE EQUIPMENT
395.00	LABORATORY EQUIPMENT
396.00	POWER OPERATED EQUIPMENT
397.00	COMMUNICATION EQUIPMENT
398.00	MISCELLANEOUS EQUIPMENT
	TOTAL DISTRIBUTION - GENERAL PLANT - AMORTIZED
	COMMON PLANT
	GENERAL PLANT
390.00	STRUCTURES AND IMPROVEMENTS
	PARK PLAZA
	LEASEHOLD IMPROVEMENTS
	STRUCTURES AND IMPROVEMENTS - OTHER
	TOTAL DEPRECIABLE COMMON PLANT
	TOTAL COMMON AND GENERAL PLANT
	NONDEPRECIABLE PLANT AND ACCOUNTS NOT STUDIED
	ELECTRIC PLANT
303.00	MISCELLANEOUS INTANGIBLE PLANT
350.00	LAND AND LAND RIGHTS
359.10	ASSET RETIREMENT COSTS FOR TRANSMISSION PLANT
360.00	LAND AND LAND RIGHTS
371.00	INSTALLATIONS ON CUSTOMER PREMISES
374.00	ASSET RETIREMENT COSTS FOR DISTRIBUTION PLANT
389.10	LAND AND LAND RIGHTS

399.10 ASSET RETIREMENT COSTS FOR GENERAL PLANT

TOTAL NONDEPRECIABLE PLANT AND ACCOUNTS NOT STUDIED

TOTAL ELECTRIC AND COMMON PLANT

* NEW AMI METERS SHOULD HAVE A 15-S2.5 SURVIVOR CURVE, (30) PERCENT NET SALVAGE AND 8.67% DEPRECIATION RATE.
** ACCRUAL RATE FOR GENERAL PLANT AMORTIZATION ACCOUNTS IS EQUAL TO 1 DIVIDED BY THE AMORTIZATION PERIOD.

	ACCOUNT	5-YEAR AVG. NS		Rem Life	Total Future NS
	(1)	(2)		(3)	(4)
	GAS PLANT				
	PRODUCTION PLANT				
304.30	SIDEWALKS AND CURBS - ON PUBLIC PROPERTY				
305.00	STRUCTURES AND IMPROVEMENTS	-1,709		0	
307.00	OTHER POWER EQUIPMENT	0		0	
311.00	LIQUEFIED PETROLEUM GAS EQUIPMENT	0		0	
320.00	OTHER EQUIPMENT	0		49.3	
	TOTAL PRODUCTION PLANT				
	OTHER STORAGE PLANT				
362.00	GAS HOLDERS	0			
363.20	VAPORIZING EQUIPMENT	(34,054)	*	23.7	(807,082)
363.30	COMPRESSOR EQUIPMENT	(13)	*	41.1	(535)
363.40	MEASURING AND REGULATING STATION EQUIPMENT	(106,604)	*	53.9	(5,745,949)
	TOTAL OTHER STORAGE PLANT				

	TRANSMISSION PLANT				
367.00	MAINS	**0**		**44**	
369.00	MEASURING AND REGULATING STATION EQUIPMENT	**0**		**9**	
	TOTAL TRANSMISSION PLANT				
	DISTRIBUTION PLANT				
374.30	SIDEWALKS AND CURBS - ON PUBLIC PROPERTY	**0**		**31.6**	
375.00	STRUCTURES AND IMPROVEMENTS	**0**		**32.7**	
376.00	MAINS	**-7,979,604**		**66.38**	**(529,686,114)**
378.00	MEASURING AND REGULATING STATION EQUIPMENT - GENERAL	**-207,736**		**81.07**	**(16,841,158)**
379.00	MEASURING AND REGULATING STATION EQUIPMENT - CITY GATE	**805**		**33.4**	**26,887**
380.00	SERVICES	**-9,972,105**		**45.8**	**(456,722,409)**
381.00	METERS	**(1,400,554)**	#	**20.3**	**(28,431,254)**
382.00	METER INSTALLATIONS	**(794,862)**	#	**18.2**	**(14,466,481)**
383.00	HOUSE REGULATORS	**-5,233**	^	**16.6**	**(86,861)**
384.00	HOUSE REGULATOR INSTALLATIONS	**-13,400**	^	**17.2**	**(230,487)**
385.00	INDUSTRIAL MEASURING AND REGULATING STATION EQUIPMENT	**155**		**22.8**	**3,534**
387.00	OTHER EQUIPMENT	**0**		**5.8**	
	TOTAL DISTRIBUTION PLANT				
	GENERAL PLANT				
390.00	STRUCTURES AND IMPROVEMENTS				
	TOTAL GENERAL PLANT				
	TOTAL DEPRECIABLE PLANT				
	GENERAL PLANT - AMORTIZED				

391.10	OFFICE FURNITURE
391.20	OFFICE EQUIPMENT
391.30	OFFICE COMPUTER EQUIPMENT
391.33	PERSONAL COMPUTING EQUIPMENT
392.10	CARS AND LIGHT TRUCKS
392.20	HEAVY TRUCKS AND TRUCK MOUNTED EQUIPMENT
393.00	STORES EQUIPMENT
394.00	TOOLS, SHOP AND GARAGE EQUIPMENT
395.00	LABORATORY EQUIPMENT
396.00	POWER OPERATED EQUIPMENT
397.00	COMMUNICATION EQUIPMENT
398.00	MISCELLANEOUS EQUIPMENT
	TOTAL GENERAL PLANT - AMORTIZED
	TOTAL GENERAL PLANT

NONDEPRECIABLE PLANT AND ACCOUNTS NOT STUDIED

303.00	MISCELLANEOUS INTANGIBLE PLANT
304.00	LAND AND LAND RIGHTS
360.00	LAND
365.00	LAND AND LAND RIGHTS
374.00	LAND AND LAND RIGHTS
388.00	ARC - DISTRIBUTION PLANT
399.00	ARC - GENERAL PLANT
	TOTAL NONDEPRECIABLE PLANT AND ACCOUNTS NOT STUDIED
	TOTAL GAS PLANT

Observed Life Table Results

PSE&G

Account: Account 364 - Poles Towers and Fixtures

Age	Exposures	Retirements	Retirement Ratio (%)	Survivor Ratio (%)	Cumulative Survivors
BAND		**1892 - 2016**			
0	710,027,886	587,657	0.0828	99.9172	1.0000
0.5	705,889,952	1,213,199	0.1719	99.8281	0.9992
1.5	701,106,620	958,251	0.1367	99.8633	0.9975
2.5	695,635,634	1,001,235	0.1439	99.8561	0.9961
3.5	635,697,301	986,244	0.1551	99.8449	0.9947
4.5	595,782,517	1,344,906	0.2257	99.7743	0.9931
5.5	579,304,055	1,085,088	0.1873	99.8127	0.9909
6.5	561,281,330	1,563,490	0.2786	99.7214	0.9890
7.5	534,203,394	2,432,772	0.4554	99.5446	0.9863
8.5	511,560,366	1,559,043	0.3048	99.6952	0.9818
9.5	487,659,410	1,576,235	0.3232	99.6768	0.9788
10.5	474,235,999	1,061,592	0.2239	99.7761	0.9756
11.5	451,655,965	964,394	0.2135	99.7865	0.9734
12.5	433,193,563	719,543	0.1661	99.8339	0.9714
13.5	422,086,405	757,969	0.1796	99.8204	0.9697
14.5	405,431,831	812,342	0.2004	99.7996	0.9680
15.5	393,581,234	1,138,272	0.2892	99.7108	0.9661
16.5	380,205,682	1,300,278	0.3420	99.6580	0.9633
17.5	372,091,399	837,902	0.2252	99.7748	0.9600
18.5	353,813,144	800,076	0.2261	99.7739	0.9578
19.5	339,148,765	989,868	0.2919	99.7081	0.9556
20.5	321,802,146	1,365,670	0.4244	99.5756	0.9529
21.5	304,465,609	1,037,240	0.3407	99.6593	0.9488
22.5	285,826,965	752,806	0.2634	99.7366	0.9456
23.5	269,514,899	1,284,729	0.4767	99.5233	0.9431
24.5	250,176,050	1,162,066	0.4645	99.5355	0.9386
25.5	233,108,835	953,341	0.4090	99.5910	0.9342
26.5	211,144,820	1,204,771	0.5706	99.4294	0.9304
27.5	192,992,527	1,417,600	0.7345	99.2655	0.9251
28.5	175,711,624	1,518,525	0.8642	99.1358	0.9183
29.5	159,629,080	1,201,829	0.7529	99.2471	0.9104
30.5	146,046,961	753,236	0.5157	99.4843	0.9035
31.5	134,242,162	661,435	0.4927	99.5073	0.8989
32.5	124,867,379	747,898	0.5990	99.4010	0.8944
33.5	115,275,939	745,104	0.6464	99.3536	0.8891
34.5	107,803,994	743,353	0.6895	99.3105	0.8833
35.5	99,294,199	610,005	0.6143	99.3857	0.8772
36.5	92,053,317	795,641	0.8643	99.1357	0.8718
37.5	84,999,882	392,683	0.4620	99.5380	0.8643
38.5	78,979,081	216,767	0.2745	99.7255	0.8603

39.5	74,368,738	277,654	0.3733	99.6267	0.8580
40.5	69,672,939	209,640	0.3009	99.6991	0.8548
41.5	65,733,797	228,379	0.3474	99.6526	0.8522
42.5	61,287,935	184,656	0.3013	99.6987	0.8492
43.5	56,846,710	167,842	0.2953	99.7047	0.8467
44.5	52,098,788	226,409	0.4346	99.5654	0.8442
45.5	47,643,251	93,228	0.1957	99.8043	0.8405
46.5	43,277,021	70,531	0.1630	99.8370	0.8388
47.5	39,275,721	68,928	0.1755	99.8245	0.8375
48.5	35,128,355	131,071	0.3731	99.6269	0.8360
49.5	31,961,750	113,088	0.3538	99.6462	0.8329
50.5	29,038,649	64,531	0.2222	99.7778	0.8299
51.5	25,877,311	102,090	0.3945	99.6055	0.8281
52.5	22,835,112	74,518	0.3263	99.6737	0.8248
53.5	20,341,138	87,039	0.4279	99.5721	0.8221
54.5	18,016,335	73,391	0.4074	99.5926	0.8186
55.5	16,831,137	64,726	0.3846	99.6154	0.8153
56.5	14,736,823	57,018	0.3869	99.6131	0.8122
57.5	13,036,241	46,670	0.3580	99.6420	0.8090
58.5	11,300,844	25,945	0.2296	99.7704	0.8061
59.5	9,563,041	24,787	0.2592	99.7408	0.8043
60.5	7,978,700	21,271	0.2666	99.7334	0.8022
61.5	6,560,539	18,073	0.2755	99.7245	0.8000
62.5	6,145,947	16,610	0.2703	99.7297	0.7978
63.5	5,041,844	14,306	0.2838	99.7162	0.7957
64.5	4,164,445	14,493	0.3480	99.6520	0.7934
65.5	3,383,762	9,480	0.2802	99.7198	0.7907
66.5	2,807,535	7,713	0.2747	99.7253	0.7884
67.5	2,255,075	8,154	0.3616	99.6384	0.7863
68.5	1,831,591	7,404	0.4042	99.5958	0.7834
69.5	1,637,928	22,484	1.3727	98.6273	0.7803
70.5	1,424,541	17,931	1.2587	98.7413	0.7696
71.5	1,265,587	14,616	1.1549	98.8451	0.7599
72.5	1,139,789	5,525	0.4848	99.5152	0.7511
73.5	1,006,665	2,342	0.2327	99.7673	0.7475
74.5	852,146	2,490	0.2922	99.7078	0.7457
75.5	666,788	1,198	0.1797	99.8203	0.7435
76.5	516,994	830	0.1606	99.8394	0.7422
77.5	392,970	554	0.1409	99.8591	0.7410
78.5	268,530	59	0.0219	99.9781	0.7400
79.5	250,562	4,894	1.9533	98.0467	0.7398
80.5	231,800	1,269	0.5473	99.4527	0.7254
81.5	225,510	1,202	0.5332	99.4668	0.7214
82.5	218,538	2,801	1.2816	98.7184	0.7175
83.5	214,225	185	0.0861	99.9139	0.7083
84.5	203,417	134	0.0661	99.9339	0.7077
85.5	200,350	144	0.0719	99.9281	0.7073

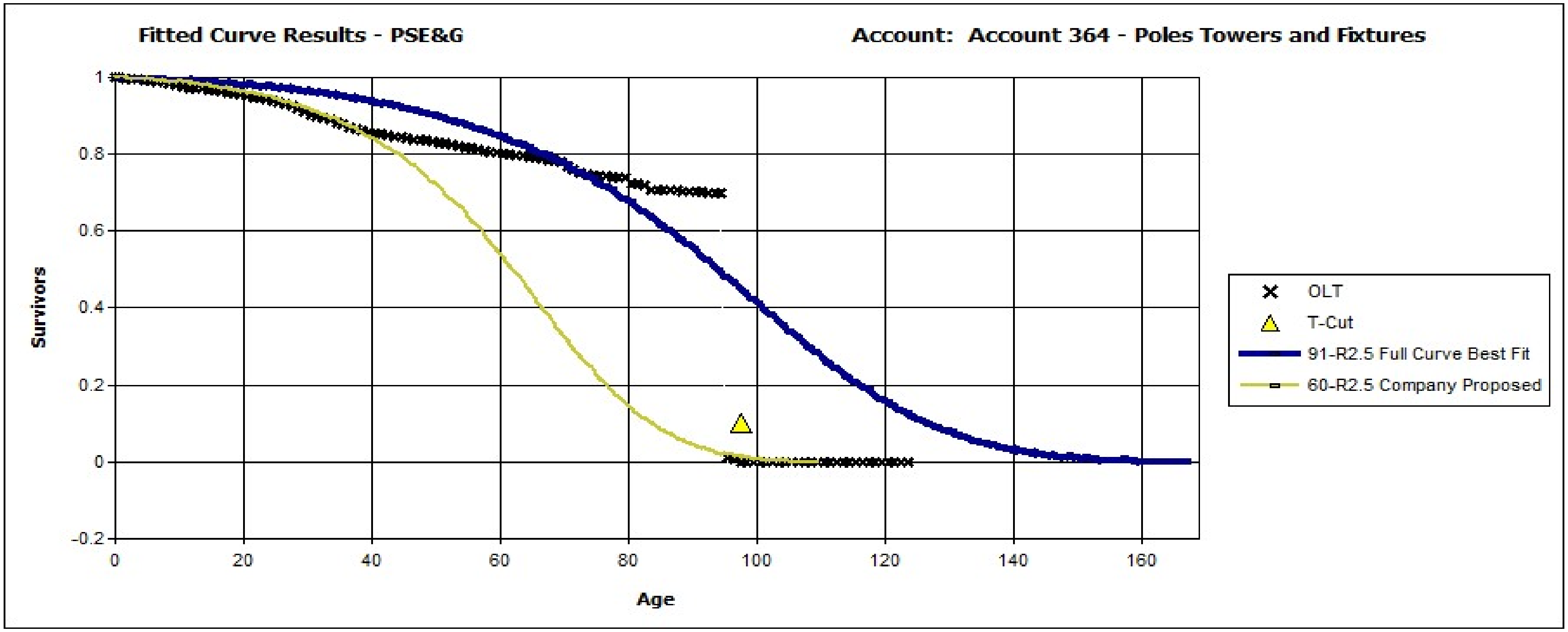
86.5	164,337	195	0.1189	99.8811	0.7068
87.5	116,162	139	0.1193	99.8807	0.7059
88.5	71,027	288	0.4055	99.5945	0.7051
89.5	22,413	0	0.0000	100.0000	0.7022
90.5	8,306	0	0.0000	100.0000	0.7022
91.5	8,306	28	0.3414	99.6586	0.7022
92.5	8,278	0	0.0000	100.0000	0.6998
93.5	8,278	0	0.0000	100.0000	0.6998
94.5	8,278	8,139	98.3174	1.6826	0.6998
95.5	139	60	43.1648	56.8352	0.0118
96.5	79	79	100.0000	0.0000	0.0067
97.5	0	0	0.0000	100.0000	0.0000
98.5	0	0	0.0000	100.0000	0.0000
99.5	0	0	0.0000	100.0000	0.0000
100.5	0	0	0.0000	100.0000	0.0000
101.5	0	0	0.0000	100.0000	0.0000
102.5	0	0	0.0000	100.0000	0.0000
103.5	0	0	0.0000	100.0000	0.0000
104.5	0	0	0.0000	100.0000	0.0000
105.5	0	0	0.0000	100.0000	0.0000
106.5	0	0	0.0000	100.0000	0.0000
107.5	0	0	0.0000	100.0000	0.0000
108.5	0	0	0.0000	100.0000	0.0000
109.5	0	0	0.0000	100.0000	0.0000
110.5	0	0	0.0000	100.0000	0.0000
111.5	0	0	0.0000	100.0000	0.0000
112.5	0	0	0.0000	100.0000	0.0000
113.5	0	0	0.0000	100.0000	0.0000
114.5	0	0	0.0000	100.0000	0.0000
115.5	0	0	0.0000	100.0000	0.0000
116.5	0	0	0.0000	100.0000	0.0000
117.5	0	0	0.0000	100.0000	0.0000
118.5	0	0	0.0000	100.0000	0.0000
119.5	0	0	0.0000	100.0000	0.0000
120.5	0	0	0.0000	100.0000	0.0000
121.5	0	0	0.0000	100.0000	0.0000
122.5	0	0	0.0000	100.0000	0.0000
123.5	0	0	0.0000	100.0000	0.0000

Best Fit Curve Results
PSE&G
Account: Account 364 - Poles Towers and Fixtures

Curve	Life	Sum of Squared Differences
BAND	**1892 - 2016**	
R1	109.0	4,131.516
S-0.5	124.0	4,221.006
R0.5	122.0	4,263.552
L0	142.0	4,275.904
R1.5	102.0	4,316.093
L0.5	129.0	4,411.549
S0	113.0	4,471.856
O1	142.0	4,475.009
O2	150.0	4,617.071
S0.5	107.0	4,940.057
L1	120.0	4,971.832
R2	98.0	5,025.181
L1.5	113.0	5,642.128
S1	103.0	5,882.104
R2.5	95.0	6,019.935
S1.5	100.0	6,848.583
L2	108.0	7,075.396
R3	93.0	7,660.024
S2	97.0	8,344.652
L3	100.0	10,011.507
R4	91.0	11,202.728
S3	94.0	11,371.336
O3	150.0	12,513.553
L4	95.0	13,211.353
S4	93.0	15,611.847
R5	92.0	17,099.909
L5	94.0	17,383.513
S5	92.0	19,889.144
S6	93.0	23,852.873
SQ	94.0	31,034.998
O4	150.0	31,910.822

Analytical Parameters

OLT Placement Band:	1892 - 2016
OLT Experience Band:	1892 - 2016
Minimum Life Paramet	1
Maximum Life Parame	150
Life Increment Parame	1
Max Age (T-Cut):	95.5



Analytical Parameters

OLT Placement Band:	1892 - 2016
OLT Experience Band:	1892 - 2016
Minimum Life Parameter:	1
Maximum Life Parameter:	150
Life Increment Parameter:	1
Max Age (T-Cut):	99.0

PSE&G

Account 364 GA - Poles Towers and Fixtures

Calculation of Remaining Life
Based Upon Broad Group/Vintage Group Procedures
Related to Original Cost as of December 31, 2016

Survivor Curve .. IOWA: 91 R2.5

Year	Age	Surviving Investment	BG/VG Average Service Life	BG/VG Average Remaining Life	ASL Weights	RL Weights
(1)	(2)	(3)	(4)	(5)	(6)=(3)/(4)	(7)=(6)*(5)
2016	0.5	17,226,776	91.00	90.52	189,305	17,136,854
2015	1.5	29,812,253	91.00	89.58	327,607	29,347,376
2014	2.5	15,733,550	91.00	88.64	172,896	15,325,337
2013	3.5	38,629,159	91.00	87.70	424,496	37,227,859
2012	4.5	33,934,017	91.00	86.76	372,901	32,353,294
2011	5.5	19,746,233	91.00	85.83	216,992	18,623,391
2010	6.5	21,031,328	91.00	84.89	231,113	19,619,727
2009	7.5	29,747,417	91.00	83.96	326,895	27,446,503
2008	8.5	23,213,986	91.00	83.03	255,099	21,181,535
2007	9.5	25,252,640	91.00	82.11	277,502	22,784,693
2006	10.5	19,614,979	91.00	81.18	215,549	17,498,921
2005	11.5	24,902,249	91.00	80.26	273,651	21,963,751
2004	12.5	19,989,804	91.00	79.34	219,668	17,429,239
2003	13.5	13,285,093	91.00	78.43	145,990	11,449,674
2002	14.5	17,319,635	91.00	77.51	190,326	14,753,059
2001	15.5	12,964,147	91.00	76.60	142,463	10,913,370
2000	16.5	13,938,621	91.00	75.70	153,172	11,594,796
1999	17.5	8,570,534	91.00	74.79	94,182	7,044,245
1998	18.5	25,658,381	91.00	73.89	281,960	20,835,022
1997	19.5	15,509,952	91.00	73.00	170,439	12,441,353
1996	20.5	17,819,130	91.00	72.10	195,815	14,118,535
1995	21.5	16,627,279	91.00	71.21	182,717	13,011,385
1994	22.5	19,999,782	91.00	70.32	219,778	15,455,377
1993	23.5	16,451,034	91.00	69.44	180,781	12,553,125
1992	24.5	18,865,715	91.00	68.56	207,316	14,213,065
1991	25.5	16,655,432	91.00	67.68	183,027	12,387,342
1990	26.5	21,573,844	91.00	66.81	237,075	15,838,365
1989	27.5	17,374,593	91.00	65.94	190,930	12,589,496
1988	28.5	16,061,488	91.00	65.07	176,500	11,485,253
1987	29.5	14,762,321	91.00	64.21	162,223	10,416,450

1986	30.5	12,532,391	91.00	63.35	137,719	8,724,850
1985	31.5	11,170,098	91.00	62.50	122,748	7,671,636
1984	32.5	8,846,486	91.00	61.65	97,214	5,993,169
1983	33.5	9,014,230	91.00	60.80	99,057	6,023,048
1982	34.5	6,920,248	91.00	59.96	76,047	4,559,923
1981	35.5	7,949,299	91.00	59.13	87,355	5,164,864
1980	36.5	6,790,282	91.00	58.29	74,618	4,349,714
1979	37.5	6,388,774	91.00	57.46	70,206	4,034,393
1978	38.5	5,651,192	91.00	56.64	62,101	3,517,489
1977	39.5	4,413,192	91.00	55.82	48,497	2,707,202
1976	40.5	4,427,363	91.00	55.01	48,652	2,676,276
1975	41.5	3,739,768	91.00	54.20	41,096	2,227,359
1974	42.5	4,223,130	91.00	53.39	46,408	2,477,887
1973	43.5	4,270,925	91.00	52.59	46,933	2,468,374
1972	44.5	4,585,667	91.00	51.80	50,392	2,610,199
1971	45.5	4,268,692	91.00	51.01	46,909	2,392,692
1970	46.5	4,323,220	91.00	50.22	47,508	2,385,964
1969	47.5	3,976,800	91.00	49.44	43,701	2,160,691
1968	48.5	4,127,940	91.00	48.67	45,362	2,207,660
1967	49.5	3,050,391	91.00	47.90	33,521	1,605,574
1966	50.5	2,810,260	91.00	47.13	30,882	1,455,572
1965	51.5	3,096,903	91.00	46.37	34,032	1,578,199
1964	52.5	2,940,273	91.00	45.62	32,311	1,474,018
1963	53.5	2,420,448	91.00	44.87	26,598	1,193,509
1962	54.5	2,238,058	91.00	44.13	24,594	1,085,298
1961	55.5	1,111,909	91.00	43.39	12,219	530,185
1960	56.5	2,029,800	91.00	42.66	22,305	951,545
1959	57.5	1,643,582	91.00	41.93	18,061	757,386
1958	58.5	1,688,854	91.00	41.21	18,559	764,891
1957	59.5	1,712,414	91.00	40.50	18,818	762,129
1956	60.5	1,559,591	91.00	39.79	17,138	681,982
1955	61.5	1,396,938	91.00	39.09	15,351	600,083
1954	62.5	396,689	91.00	38.40	4,359	167,373
1953	63.5	1,087,526	91.00	37.71	11,951	450,616
1952	64.5	863,244	91.00	37.02	9,486	351,206
1951	65.5	766,236	91.00	36.35	8,420	306,043
1950	66.5	566,778	91.00	35.68	6,228	222,209
1949	67.5	544,827	91.00	35.01	5,987	209,637
1948	68.5	415,380	91.00	34.36	4,565	156,837
1947	69.5	191,088	91.00	33.71	2,100	70,788
1946	70.5	192,174	91.00	33.07	2,112	69,836
1945	71.5	142,253	91.00	32.44	1,563	50,704
1944	72.5	113,730	91.00	31.81	1,250	39,754
1943	73.5	127,655	91.00	31.19	1,403	43,753
1942	74.5	160,353	91.00	30.58	1,762	53,883
1941	75.5	182,868	91.00	29.98	2,010	60,237
1940	76.5	148,595	91.00	29.38	1,633	47,976

1939	77.5	123,194	91.00	28.79	1,354	38,981
1938	78.5	123,886	91.00	28.22	1,361	38,413
1937	79.5	17,909	91.00	27.65	197	5,441
1936	80.5	13,867	91.00	27.09	152	4,127
1935	81.5	5,021	91.00	26.53	55	1,464
1934	82.5	5,770	91.00	25.99	63	1,648
1933	83.5	1,512	91.00	25.45	17	423
1932	84.5	10,623	91.00	24.93	117	2,910
1931	85.5	2,933	91.00	24.41	32	787
1930	86.5	35,869	91.00	23.91	394	9,423
1929	87.5	47,979	91.00	23.41	527	12,343
1928	88.5	44,996	91.00	22.92	494	11,334
1927	89.5	48,326	91.00	22.44	531	11,919
1926	90.5	14,107	91.00	21.98	155	3,407
		753,985,878			8,285,559	609,275,626

AVERAGE SERVICE LIFE	91.00
AVERAGE REMAINING LIFE	73.53

Observed Life Table Results

PSE&G

Account: Account 365 - Overhead Conductors and Devices

Age	Exposures	Retiremen	Retirement Ratio (%)	Survivor Ratio (%)	Cumulative Survivors
BAND		**1900 - 2016**			
0	1,590,220,197	493,595	0.0310	99.9690	1.0000
0.5	1,456,024,903	1,113,345	0.0765	99.9235	0.9997
1.5	1,360,308,072	1,524,884	0.1121	99.8879	0.9989
2.5	1,288,718,201	1,614,024	0.1252	99.8748	0.9978
3.5	1,140,746,823	3,114,419	0.2730	99.7270	0.9966
4.5	1,037,144,208	5,155,626	0.4971	99.5029	0.9938
5.5	972,468,124	3,503,009	0.3602	99.6398	0.9889
6.5	924,239,682	2,541,456	0.2750	99.7250	0.9853
7.5	872,340,657	2,300,397	0.2637	99.7363	0.9826
8.5	840,380,547	2,765,643	0.3291	99.6709	0.9800
9.5	812,462,197	2,741,302	0.3374	99.6626	0.9768
10.5	811,294,707	7,477,739	0.9217	99.0783	0.9735
11.5	786,036,826	5,818,229	0.7402	99.2598	0.9645
12.5	759,828,756	7,786,866	1.0248	98.9752	0.9574
13.5	738,711,814	2,672,898	0.3618	99.6382	0.9476
14.5	715,179,311	2,649,850	0.3705	99.6295	0.9442
15.5	696,640,804	5,747,795	0.8251	99.1749	0.9407
16.5	665,150,954	2,078,077	0.3124	99.6876	0.9329
17.5	654,505,956	2,115,164	0.3232	99.6768	0.9300
18.5	630,205,301	2,812,866	0.4463	99.5537	0.9270
19.5	599,951,649	4,858,834	0.8099	99.1901	0.9228
20.5	576,081,692	3,937,340	0.6835	99.3165	0.9154
21.5	548,341,509	5,017,893	0.9151	99.0849	0.9091
22.5	517,680,721	3,379,213	0.6528	99.3472	0.9008
23.5	488,921,660	4,028,139	0.8239	99.1761	0.8949
24.5	457,733,685	8,462,696	1.8488	98.1512	0.8875
25.5	424,142,967	3,396,684	0.8008	99.1992	0.8711
26.5	392,587,228	4,106,823	1.0461	98.9539	0.8642
27.5	364,513,546	3,752,939	1.0296	98.9704	0.8551
28.5	338,473,797	4,044,833	1.1950	98.8050	0.8463
29.5	313,213,337	3,629,832	1.1589	98.8411	0.8362
30.5	292,111,006	1,524,301	0.5218	99.4782	0.8265
31.5	275,206,786	921,534	0.3349	99.6651	0.8222
32.5	260,174,976	1,097,897	0.4220	99.5780	0.8194
33.5	245,673,574	832,547	0.3389	99.6611	0.8160
34.5	238,884,638	1,711,435	0.7164	99.2836	0.8132
35.5	224,926,065	772,045	0.3432	99.6568	0.8074
36.5	213,761,705	2,747,208	1.2852	98.7148	0.8046
37.5	201,163,488	935,861	0.4652	99.5348	0.7943
38.5	192,435,653	729,477	0.3791	99.6209	0.7906

39.5	183,630,691	1,042,116	0.5675	99.4325	0.7876
40.5	174,750,421	1,019,430	0.5834	99.4166	0.7831
41.5	167,182,929	613,637	0.3670	99.6330	0.7785
42.5	155,204,358	622,059	0.4008	99.5992	0.7757
43.5	142,938,900	501,718	0.3510	99.6490	0.7726
44.5	130,140,636	2,026,443	1.5571	98.4429	0.7699
45.5	119,994,477	344,427	0.2870	99.7130	0.7579
46.5	108,163,188	302,547	0.2797	99.7203	0.7557
47.5	96,378,882	248,820	0.2582	99.7418	0.7536
48.5	83,482,881	619,753	0.7424	99.2576	0.7516
49.5	72,237,446	577,832	0.7999	99.2001	0.7461
50.5	62,476,056	153,662	0.2460	99.7540	0.7401
51.5	51,835,710	387,615	0.7478	99.2522	0.7383
52.5	42,616,775	98,913	0.2321	99.7679	0.7328
53.5	34,356,295	84,602	0.2462	99.7538	0.7311
54.5	27,423,287	21,678	0.0791	99.9209	0.7293
55.5	25,851,252	18,060	0.0699	99.9301	0.7287
56.5	19,706,189	15,362	0.0780	99.9220	0.7282
57.5	16,124,823	8,505	0.0527	99.9473	0.7276
58.5	13,555,631	10,027	0.0740	99.9260	0.7272
59.5	11,091,017	10,285	0.0927	99.9073	0.7267
60.5	8,968,551	10,532	0.1174	99.8826	0.7260
61.5	7,217,555	13,061	0.1810	99.8190	0.7252
62.5	6,533,331	10,101	0.1546	99.8454	0.7238
63.5	5,687,826	8,604	0.1513	99.8487	0.7227
64.5	4,777,694	7,257	0.1519	99.8481	0.7216
65.5	3,920,357	5,033	0.1284	99.8716	0.7205
66.5	3,412,936	3,943	0.1155	99.8845	0.7196
67.5	2,801,427	2,722	0.0971	99.9029	0.7188
68.5	2,398,013	1,875	0.0782	99.9218	0.7181
69.5	2,110,579	7,041	0.3336	99.6664	0.7175
70.5	1,930,057	7,850	0.4067	99.5933	0.7151
71.5	1,857,337	8,148	0.4387	99.5613	0.7122
72.5	1,770,724	4,983	0.2814	99.7186	0.7091
73.5	1,710,625	2,070	0.1210	99.8790	0.7071
74.5	1,581,968	11,746	0.7425	99.2575	0.7062
75.5	1,411,355	7,565	0.5360	99.4640	0.7010
76.5	1,271,834	5,401	0.4246	99.5754	0.6972
77.5	1,159,439	5,258	0.4535	99.5465	0.6943
78.5	1,044,497	5,910	0.5659	99.4341	0.6911
79.5	30,956	0	0.0000	100.0000	0.6872
80.5	30,956	0	0.0000	100.0000	0.6872
81.5	30,956	85	0.2743	99.7257	0.6872
82.5	30,871	29,181	94.5275	5.4725	0.6853
83.5	1,689	0	0.0000	100.0000	0.0375
84.5	1,689	0	0.0000	100.0000	0.0375
85.5	1,689	0	0.0000	100.0000	0.0375

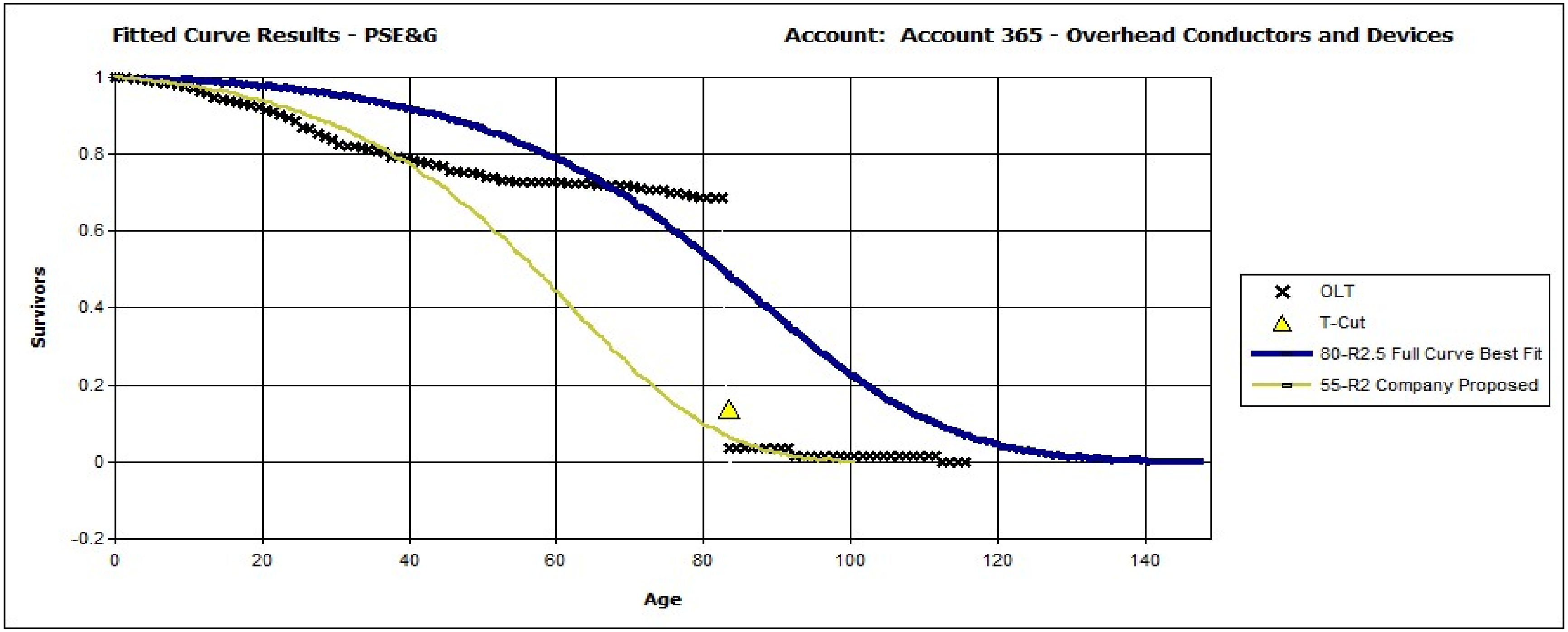
86.5	1,689	0	0.0000	100.0000	0.0375
87.5	1,689	0	0.0000	100.0000	0.0375
88.5	1,689	0	0.0000	100.0000	0.0375
89.5	1,689	0	0.0000	100.0000	0.0375
90.5	1,689	0	0.0000	100.0000	0.0375
91.5	1,689	914	54.1272	45.8728	0.0375
92.5	775	0	0.0000	100.0000	0.0172
93.5	775	0	0.0000	100.0000	0.0172
94.5	775	0	0.0000	100.0000	0.0172
95.5	775	0	0.0000	100.0000	0.0172
96.5	775	0	0.0000	100.0000	0.0172
97.5	775	0	0.0000	100.0000	0.0172
98.5	775	0	0.0000	100.0000	0.0172
99.5	775	0	0.0000	100.0000	0.0172
100.5	775	0	0.0000	100.0000	0.0172
101.5	775	0	0.0000	100.0000	0.0172
102.5	775	0	0.0000	100.0000	0.0172
103.5	775	0	0.0000	100.0000	0.0172
104.5	775	0	0.0000	100.0000	0.0172
105.5	775	0	0.0000	100.0000	0.0172
106.5	775	0	0.0000	100.0000	0.0172
107.5	775	0	0.0000	100.0000	0.0172
108.5	775	0	0.0000	100.0000	0.0172
109.5	775	0	0.0000	100.0000	0.0172
110.5	775	0	0.0000	100.0000	0.0172
111.5	775	775	100.0000	0.0000	0.0172
112.5	0	0	0.0000	100.0000	0.0000
113.5	0	0	0.0000	100.0000	0.0000
114.5	0	0	0.0000	100.0000	0.0000
115.5	0	0	0.0000	100.0000	0.0000

Best Fit Curve Results
PSE&G
Account: Account 365 - Overhead Conductors and Devices

Curve	Life	Sum of Squared Differences
BAND	**1900 - 2016**	
R0.5	95.0	4,140.718
O1	100.0	4,196.420
S-0.5	97.0	4,377.527
R1	87.0	4,674.504
L0	100.0	4,965.552
L0.5	100.0	5,152.205
S0	91.0	5,435.594
R1.5	84.0	5,646.421
O2	100.0	5,744.157
L1	96.0	6,335.653
S0.5	87.0	6,584.515
R2	81.0	7,262.127
L1.5	92.0	7,816.770
S1	85.0	8,283.989
R2.5	80.0	9,121.637
S1.5	83.0	9,965.725
L2	89.0	10,170.409
R3	79.0	11,660.001
S2	82.0	12,227.434
L3	85.0	14,660.679
S3	80.0	16,525.021
R4	79.0	16,602.290
O3	100.0	18,422.585
L4	82.0	19,014.577
S4	80.0	21,900.994
R5	79.0	23,647.063
L5	81.0	23,934.015
S5	80.0	26,617.542
S6	81.0	30,522.860
SQ	82.0	37,896.684
O4	100.0	40,369.662

Analytical Parameters

OLT Placement Band:	1900 - 2016
OLT Experience Band:	1900 - 2016
Minimum Life Paramet	1
Maximum Life Parame	100
Life Increment Parame	1
Max Age (T-Cut):	83.5



Analytical Parameters

OLT Placement Band:	1900 - 2016
OLT Experience Band:	1900 - 2016
Minimum Life Parameter:	1
Maximum Life Parameter:	100
Life Increment Parameter:	1
Max Age (T-Cut):	85.0

PSE&G

Account 365 GA - Overhead Conductors and Devices

Calculation of Remaining Life
Based Upon Broad Group/Vintage Group Procedures
Related to Original Cost as of December 31, 2016

Survivor Curve .. IOWA: 80 R2.5

			BG/VG Average			
		Surviving	Service	Remaining	ASL	RL
Year	Age	Investment	Life	Life	Weights	Weights
(1)	(2)	(3)	(4)	(5)	(6)=(3)/(4)	(7)=(6)*(5)
2016	0.5	180,308,182	80.00	79.53	2,253,852	179,238,289
2015	1.5	171,354,242	80.00	78.58	2,141,928	168,315,879
2014	2.5	91,045,464	80.00	77.64	1,138,068	88,359,681
2013	3.5	131,008,781	80.00	76.70	1,637,610	125,606,410
2012	4.5	111,578,185	80.00	75.76	1,394,727	105,670,788
2011	5.5	71,207,428	80.00	74.83	890,093	66,605,913
2010	6.5	56,460,320	80.00	73.90	705,754	52,154,471
2009	7.5	62,255,237	80.00	72.97	778,190	56,784,813
2008	8.5	40,502,683	80.00	72.04	506,284	36,474,903
2007	9.5	34,538,831	80.00	71.12	431,735	30,705,564
2006	10.5	30,770,105	80.00	70.20	384,626	27,001,232
2005	11.5	26,919,413	80.00	69.28	336,493	23,313,702
2004	12.5	28,753,166	80.00	68.37	359,415	24,573,394
2003	13.5	21,510,932	80.00	67.46	268,887	18,139,067
2002	14.5	23,750,319	80.00	66.55	296,879	19,758,109
2001	15.5	22,016,181	80.00	65.65	275,202	18,066,803
2000	16.5	29,325,307	80.00	64.75	366,566	23,734,807
1999	17.5	11,135,288	80.00	63.85	139,191	8,887,671
1998	18.5	32,313,490	80.00	62.96	403,919	25,430,496
1997	19.5	29,563,516	80.00	62.07	369,544	22,937,849
1996	20.5	20,779,206	80.00	61.19	259,740	15,892,365
1995	21.5	24,665,695	80.00	60.30	308,321	18,593,114
1994	22.5	27,909,839	80.00	59.43	348,873	20,732,631
1993	23.5	26,294,029	80.00	58.55	328,675	19,245,566
1992	24.5	28,025,941	80.00	57.69	350,324	20,208,990
1991	25.5	25,964,325	80.00	56.82	324,554	18,441,901
1990	26.5	28,775,639	80.00	55.96	359,695	20,129,548
1989	27.5	24,373,564	80.00	55.11	304,670	16,789,739
1988	28.5	22,576,721	80.00	54.26	282,209	15,312,021
1987	29.5	21,391,789	80.00	53.41	267,397	14,282,217

1986	30.5	17,539,183	80.00	52.57	219,240	11,525,712
1985	31.5	15,460,596	80.00	51.74	193,257	9,998,322
1984	32.5	14,166,986	80.00	50.91	177,087	9,014,632
1983	33.5	13,532,978	80.00	50.08	169,162	8,471,488
1982	34.5	6,117,886	80.00	49.26	76,474	3,766,981
1981	35.5	12,386,564	80.00	48.44	154,832	7,500,631
1980	36.5	10,507,796	80.00	47.63	131,347	6,256,575
1979	37.5	9,967,840	80.00	46.83	124,598	5,834,801
1978	38.5	8,819,718	80.00	46.03	110,246	5,074,649
1977	39.5	8,075,486	80.00	45.24	100,944	4,566,385
1976	40.5	7,841,891	80.00	44.45	98,024	4,357,080
1975	41.5	6,551,577	80.00	43.67	81,895	3,576,090
1974	42.5	11,365,450	80.00	42.89	142,068	6,093,406
1973	43.5	11,646,333	80.00	42.12	145,579	6,131,909
1972	44.5	12,299,530	80.00	41.36	153,744	6,358,319
1971	45.5	8,148,897	80.00	40.60	101,861	4,135,351
1970	46.5	11,486,862	80.00	39.85	143,586	5,721,291
1969	47.5	11,481,759	80.00	39.10	143,522	5,611,759
1968	48.5	12,647,181	80.00	38.36	158,090	6,064,463
1967	49.5	10,625,682	80.00	37.63	132,821	4,997,719
1966	50.5	9,183,559	80.00	36.90	114,794	4,236,023
1965	51.5	10,486,684	80.00	36.18	131,084	4,742,801
1964	52.5	8,831,321	80.00	35.47	110,392	3,915,418
1963	53.5	8,161,567	80.00	34.76	102,020	3,546,393
1962	54.5	6,849,320	80.00	34.06	85,617	2,916,332
1961	55.5	1,550,357	80.00	33.37	19,379	646,716
1960	56.5	6,127,002	80.00	32.69	76,588	2,503,379
1959	57.5	3,566,003	80.00	32.01	44,575	1,426,796
1958	58.5	2,560,687	80.00	31.34	32,009	1,003,124
1957	59.5	2,454,588	80.00	30.68	30,682	941,269
1956	60.5	2,112,181	80.00	30.02	26,402	792,700
1955	61.5	1,740,464	80.00	29.38	21,756	639,135
1954	62.5	671,163	80.00	28.74	8,390	241,117
1953	63.5	835,404	80.00	28.11	10,443	293,557
1952	64.5	901,529	80.00	27.49	11,269	309,803
1951	65.5	850,079	80.00	26.88	10,626	285,620
1950	66.5	502,387	80.00	26.28	6,280	165,015
1949	67.5	607,567	80.00	25.68	7,595	195,060
1948	68.5	400,692	80.00	25.10	5,009	125,719
1947	69.5	285,560	80.00	24.53	3,569	87,544
1946	70.5	173,481	80.00	23.96	2,169	51,960
1945	71.5	64,869	80.00	23.41	811	18,980
1944	72.5	78,465	80.00	22.86	981	22,424
1943	73.5	55,117	80.00	22.33	689	15,383
1942	74.5	127,362	80.00	21.81	1,592	34,714
1941	75.5	158,867	80.00	21.29	1,986	42,283
1940	76.5	131,956	80.00	20.79	1,649	34,292

1939	77.5	106,995	80.00	20.30	1,337	27,148
1938	78.5	109,684	80.00	19.82	1,371	27,171
1937	79.5	1,007,631	80.00	19.35	12,595	243,696
		1,748,436,554			21,855,457	1,455,977,070

AVERAGE SERVICE LIFE 80.00
AVERAGE REMAINING LIFE 66.62

Observed Life Table Results

PSE&G

Account: Account 368 - Line Transformers

Age	Exposures	Retirements	Retirement Ratio (%)	Survivor Ratio (%)	Cumulative Survivors
BAND		1901 - 2016			
0	1,118,767,958	1,136,492	0.1016	99.8984	1.0000
0.5	1,072,972,536	1,638,235	0.1527	99.8473	0.9990
1.5	1,049,571,034	3,863,458	0.3681	99.6319	0.9975
2.5	1,034,965,974	1,948,919	0.1883	99.8117	0.9938
3.5	981,500,900	1,511,901	0.1540	99.8460	0.9919
4.5	952,145,708	1,321,120	0.1388	99.8612	0.9904
5.5	928,101,476	1,997,633	0.2152	99.7848	0.9890
6.5	918,096,149	2,583,576	0.2814	99.7186	0.9869
7.5	882,088,695	4,647,371	0.5269	99.4731	0.9841
8.5	871,286,052	3,804,766	0.4367	99.5633	0.9789
9.5	857,722,170	5,695,329	0.6640	99.3360	0.9746
10.5	866,551,373	9,190,340	1.0606	98.9394	0.9682
11.5	852,825,976	5,900,322	0.6919	99.3081	0.9579
12.5	843,072,979	3,149,037	0.3735	99.6265	0.9513
13.5	835,285,335	2,772,170	0.3319	99.6681	0.9477
14.5	808,187,548	8,371,543	1.0358	98.9642	0.9446
15.5	787,089,534	11,979,023	1.5219	98.4781	0.9348
16.5	764,570,462	4,372,217	0.5719	99.4281	0.9206
17.5	753,753,265	3,385,408	0.4491	99.5509	0.9153
18.5	744,603,994	7,381,668	0.9914	99.0086	0.9112
19.5	721,414,768	7,419,206	1.0284	98.9716	0.9022
20.5	689,326,857	5,973,479	0.8666	99.1334	0.8929
21.5	669,257,546	2,664,055	0.3981	99.6019	0.8851
22.5	662,620,530	2,584,854	0.3901	99.6099	0.8816
23.5	640,958,716	2,960,477	0.4619	99.5381	0.8782
24.5	621,880,446	8,677,677	1.3954	98.6046	0.8741
25.5	605,258,578	4,581,659	0.7570	99.2430	0.8619
26.5	589,155,247	4,577,556	0.7770	99.2230	0.8554
27.5	548,843,317	7,165,334	1.3055	98.6945	0.8488
28.5	505,404,422	6,531,728	1.2924	98.7076	0.8377
29.5	456,908,058	5,056,775	1.1067	98.8933	0.8269
30.5	408,678,871	3,360,873	0.8224	99.1776	0.8177
31.5	373,335,284	1,807,891	0.4843	99.5157	0.8110
32.5	335,115,008	2,219,976	0.6625	99.3375	0.8071
33.5	315,104,841	2,848,772	0.9041	99.0959	0.8017
34.5	302,619,372	3,225,373	1.0658	98.9342	0.7945
35.5	282,865,169	2,475,783	0.8753	99.1247	0.7860
36.5	263,701,180	4,976,567	1.8872	98.1128	0.7791
37.5	246,745,347	2,835,401	1.1491	98.8509	0.7644
38.5	230,115,965	2,203,574	0.9576	99.0424	0.7556

39.5	221,679,017	2,710,346	1.2226	98.7774	0.7484
40.5	211,092,253	2,773,696	1.3140	98.6860	0.7392
41.5	197,064,171	2,017,030	1.0235	98.9765	0.7295
42.5	182,234,380	1,377,402	0.7558	99.2442	0.7221
43.5	166,226,388	1,687,887	1.0154	98.9846	0.7166
44.5	150,023,889	3,347,398	2.2312	97.7688	0.7093
45.5	133,071,623	939,242	0.7058	99.2942	0.6935
46.5	126,122,235	1,421,868	1.1274	98.8726	0.6886
47.5	118,469,249	786,155	0.6636	99.3364	0.6808
48.5	111,211,702	866,672	0.7793	99.2207	0.6763
49.5	100,922,406	872,810	0.8648	99.1352	0.6710
50.5	94,370,192	612,586	0.6491	99.3509	0.6652
51.5	87,595,802	713,516	0.8146	99.1854	0.6609
52.5	74,490,813	1,348,810	1.8107	98.1893	0.6555
53.5	58,992,865	509,200	0.8632	99.1368	0.6437
54.5	50,075,688	390,170	0.7792	99.2208	0.6381
55.5	43,168,391	337,764	0.7824	99.2176	0.6331
56.5	36,164,421	296,231	0.8191	99.1809	0.6282
57.5	32,509,895	156,531	0.4815	99.5185	0.6230
58.5	27,277,591	303,664	1.1132	98.8868	0.6200
59.5	22,622,535	968,732	4.2822	95.7178	0.6131
60.5	14,715,061	35,533	0.2415	99.7585	0.5869
61.5	13,951,189	27,178	0.1948	99.8052	0.5855
62.5	12,873,533	8,269	0.0642	99.9358	0.5843
63.5	11,891,846	2,161	0.0182	99.9818	0.5840
64.5	11,651,562	531	0.0046	99.9954	0.5838
65.5	11,465,620	647	0.0056	99.9944	0.5838
66.5	11,147,943	2,859	0.0256	99.9744	0.5838
67.5	10,814,010	1,559	0.0144	99.9856	0.5836
68.5	10,737,637	2,798	0.0261	99.9739	0.5836
69.5	10,650,984	599	0.0056	99.9944	0.5834
70.5	10,520,097	691	0.0066	99.9934	0.5834
71.5	10,381,621	8,495	0.0818	99.9182	0.5833
72.5	10,168,559	32,163	0.3163	99.6837	0.5829
73.5	10,065,725	117,713	1.1694	98.8306	0.5810
74.5	9,217,723	131,122	1.4225	98.5775	0.5742
75.5	9,008,323	197,208	2.1892	97.8108	0.5660
76.5	8,776,894	212,568	2.4219	97.5781	0.5537
77.5	7,386,762	160,006	2.1661	97.8339	0.5402
78.5	5,395,038	112,138	2.0785	97.9215	0.5285
79.5	3,579,434	69,558	1.9433	98.0567	0.5176
80.5	2,135,964	29,900	1.3998	98.6002	0.5075
81.5	1,846,371	26,172	1.4175	98.5825	0.5004
82.5	1,475,882	24,743	1.6765	98.3235	0.4933
83.5	1,044,117	12,880	1.2335	98.7665	0.4850
84.5	749,217	7,725	1.0310	98.9690	0.4791
85.5	422,681	12,334	2.9180	97.0820	0.4741

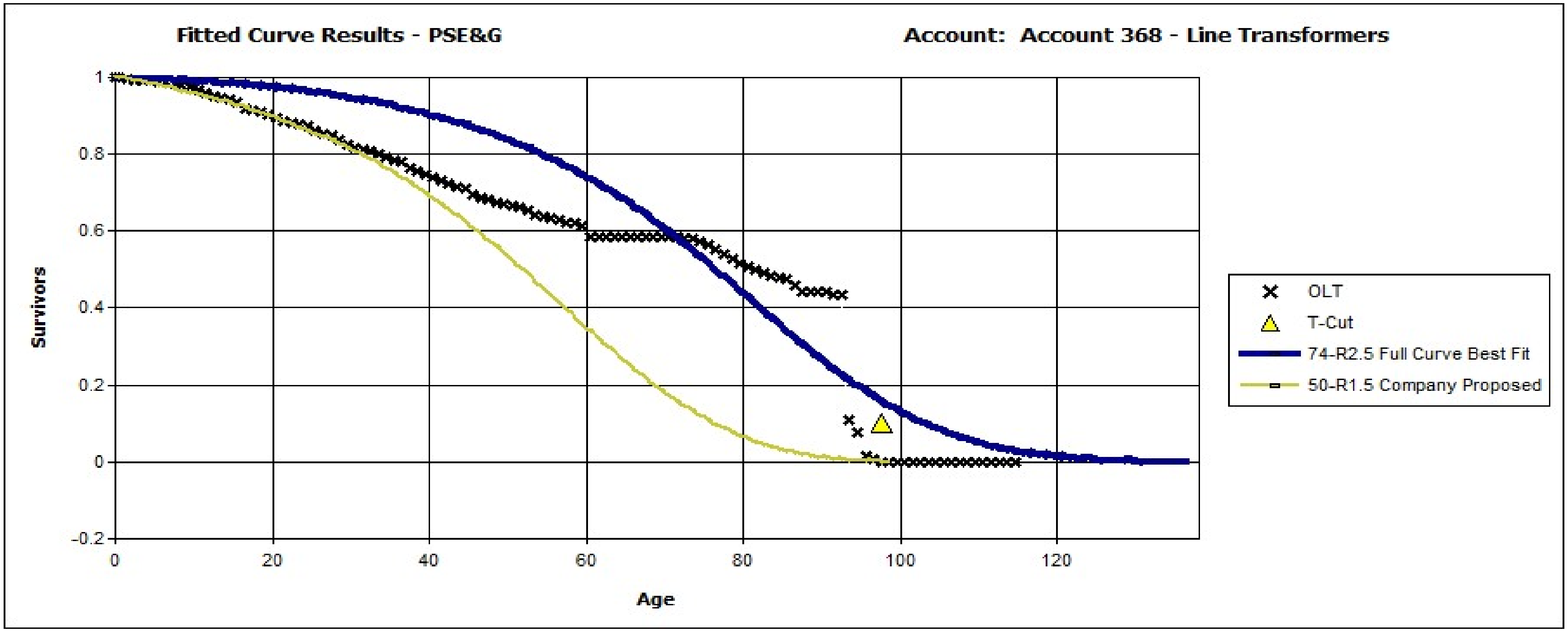
86.5	21,520	812	3.7716	96.2284	0.4603
87.5	20,708	0	0.0000	100.0000	0.4429
88.5	20,708	0	0.0000	100.0000	0.4429
89.5	20,708	0	0.0000	100.0000	0.4429
90.5	20,708	328	1.5830	98.4170	0.4429
91.5	20,380	0	0.0000	100.0000	0.4359
92.5	20,380	15,365	75.3931	24.6069	0.4359
93.5	5,015	1,430	28.5172	71.4828	0.1073
94.5	3,585	2,865	79.9201	20.0799	0.0767
95.5	720	360	50.0000	50.0000	0.0154
96.5	360	360	100.0000	0.0000	0.0077
97.5	0	0	0.0000	100.0000	0.0000
98.5	0	0	0.0000	100.0000	0.0000
99.5	0	0	0.0000	100.0000	0.0000
100.5	0	0	0.0000	100.0000	0.0000
101.5	0	0	0.0000	100.0000	0.0000
102.5	0	0	0.0000	100.0000	0.0000
103.5	0	0	0.0000	100.0000	0.0000
104.5	0	0	0.0000	100.0000	0.0000
105.5	0	0	0.0000	100.0000	0.0000
106.5	0	0	0.0000	100.0000	0.0000
107.5	0	0	0.0000	100.0000	0.0000
108.5	0	0	0.0000	100.0000	0.0000
109.5	0	0	0.0000	100.0000	0.0000
110.5	0	0	0.0000	100.0000	0.0000
111.5	0	0	0.0000	100.0000	0.0000
112.5	0	0	0.0000	100.0000	0.0000
113.5	0	0	0.0000	100.0000	0.0000
114.5	0	0	0.0000	100.0000	0.0000

Best Fit Curve Results
PSE&G
Account: Account 368 - Line Transformers

Curve	Life	Sum of Squared Differences
BAND	**1901 - 2016**	
R0.5	72.0	5,156.517
R1	72.0	5,401.597
S-0.5	73.0	5,409.882
S0	73.0	5,885.011
L0.5	78.0	5,960.113
L0	81.0	5,968.982
O1	74.0	6,227.981
O2	84.0	6,368.201
L1	77.0	6,666.070
R1.5	72.0	6,914.656
S0.5	73.0	7,204.928
L1.5	76.0	8,486.258
O3	100.0	9,209.016
S1	73.0	9,392.229
R2	73.0	9,601.282
L2	76.0	11,424.153
S1.5	74.0	12,251.443
R2.5	74.0	13,405.667
S2	74.0	15,909.623
R3	75.0	18,235.894
L3	76.0	19,435.394
O4	100.0	21,561.240
S3	75.0	24,403.198
R4	77.0	28,995.281
L4	77.0	30,265.671
S4	78.0	36,863.117
L5	79.0	42,488.429
R5	80.0	44,752.098
S5	80.0	49,897.401
S6	82.0	62,596.674
SQ	81.0	91,427.948

Analytical Parameters

OLT Placement Band:	1901 - 2016
OLT Experience Band:	1901 - 2016
Minimum Life Parameter	1
Maximum Life Paramete	100
Life Increment Paramete	1
Max Age (T-Cut):	97.5



Analytical Parameters

OLT Placement Band:	1901 - 2016
OLT Experience Band:	1901 - 2016
Minimum Life Parameter:	1
Maximum Life Parameter:	100
Life Increment Parameter:	1
Max Age (T-Cut):	99.0

PSE&G

Account 368 GA - Line Transformers

Calculation of Remaining Life
Based Upon Broad Group/Vintage Group Procedures
Related to Original Cost as of December 31, 2016

Survivor Curve .. IOWA: 74 R2.5

			BG/VG Average			
		Surviving	Service	Remaining	ASL	RL
Year	Age	Investment	Life	Life	Weights	Weights
(1)	(2)	(3)	(4)	(5)	(6)=(3)/(4)	(7)=(6)*(5)
2016	0.5	54,176,492	74.00	73.53	732,115	53,829,083
2015	1.5	53,936,335	74.00	72.58	728,869	52,902,640
2014	2.5	39,907,586	74.00	71.64	539,292	38,635,343
2013	3.5	48,461,507	74.00	70.70	654,885	46,301,937
2012	4.5	45,999,507	74.00	69.77	621,615	43,367,887
2011	5.5	21,057,029	74.00	68.83	284,554	19,586,931
2010	6.5	14,783,141	74.00	67.90	199,772	13,565,232
2009	7.5	40,543,723	74.00	66.98	547,888	36,695,507
2008	8.5	16,682,026	74.00	66.05	225,433	14,890,380
2007	9.5	15,972,986	74.00	65.13	215,851	14,058,692
2006	10.5	20,831,694	74.00	64.21	281,509	18,076,819
2005	11.5	19,941,002	74.00	63.30	269,473	17,057,605
2004	12.5	19,204,342	74.00	62.39	259,518	16,191,089
2003	13.5	13,485,230	74.00	61.48	182,233	11,204,073
2002	14.5	31,979,317	74.00	60.58	432,153	26,179,391
2001	15.5	20,378,925	74.00	59.68	275,391	16,435,145
2000	16.5	14,185,453	74.00	58.78	191,695	11,268,644
1999	17.5	11,806,829	74.00	57.89	159,552	9,236,895
1998	18.5	22,078,587	74.00	57.01	298,359	17,008,042
1997	19.5	22,943,754	74.00	56.12	310,051	17,400,890
1996	20.5	25,541,832	74.00	55.24	345,160	19,068,077
1995	21.5	15,741,305	74.00	54.37	212,720	11,565,589
1994	22.5	10,860,261	74.00	53.50	146,760	7,851,806
1993	23.5	19,327,437	74.00	52.64	261,182	13,747,604
1992	24.5	16,365,540	74.00	51.78	221,156	11,450,628
1991	25.5	9,878,005	74.00	50.92	133,487	6,797,363
1990	26.5	11,854,976	74.00	50.07	160,202	8,021,611
1989	27.5	35,800,553	74.00	49.23	483,791	23,815,644
1988	28.5	36,362,543	74.00	48.39	491,386	23,777,156
1987	29.5	42,098,162	74.00	47.55	568,894	27,052,994

1986	30.5	43,317,142	74.00	46.73	585,367	27,351,394
1985	31.5	32,212,017	74.00	45.90	435,298	19,981,203
1984	32.5	36,484,989	74.00	45.08	493,040	22,228,550
1983	33.5	18,539,751	74.00	44.27	250,537	11,092,105
1982	34.5	9,718,086	74.00	43.47	131,325	5,708,405
1981	35.5	16,568,515	74.00	42.67	223,899	9,553,145
1980	36.5	18,179,973	74.00	41.87	245,675	10,287,383
1979	37.5	14,144,188	74.00	41.09	191,138	7,853,114
1978	38.5	15,741,559	74.00	40.30	212,724	8,573,647
1977	39.5	7,778,001	74.00	39.53	105,108	4,154,865
1976	40.5	8,151,554	74.00	38.76	110,156	4,269,707
1975	41.5	11,626,199	74.00	38.00	157,111	5,969,870
1974	42.5	13,256,245	74.00	37.24	179,138	6,671,573
1973	43.5	14,934,907	74.00	36.49	201,823	7,365,186
1972	44.5	15,359,522	74.00	35.75	207,561	7,420,499
1971	45.5	14,010,150	74.00	35.02	189,326	6,629,450
1970	46.5	6,010,410	74.00	34.29	81,222	2,784,880
1969	47.5	6,232,397	74.00	33.57	84,222	2,827,009
1968	48.5	6,471,710	74.00	32.85	87,456	2,873,163
1967	49.5	9,423,447	74.00	32.15	127,344	4,093,598
1966	50.5	5,679,404	74.00	31.45	76,749	2,413,558
1965	51.5	6,162,121	74.00	30.76	83,272	2,561,171
1964	52.5	12,391,474	74.00	30.07	167,452	5,035,800
1963	53.5	14,149,361	74.00	29.40	191,208	5,621,233
1962	54.5	8,407,976	74.00	28.73	113,621	3,264,564
1961	55.5	6,517,126	74.00	28.07	88,069	2,472,368
1960	56.5	6,666,206	74.00	27.42	90,084	2,470,481
1959	57.5	3,358,295	74.00	26.78	45,382	1,215,500
1958	58.5	5,075,773	74.00	26.15	68,592	1,793,765
1957	59.5	4,351,471	74.00	25.53	58,804	1,501,250
1956	60.5	6,938,742	74.00	24.92	93,767	2,336,384
1955	61.5	728,340	74.00	24.31	9,842	239,306
1954	62.5	1,050,478	74.00	23.72	14,196	336,739
1953	63.5	973,418	74.00	23.14	13,154	304,367
1952	64.5	238,124	74.00	22.57	3,218	72,614
1951	65.5	185,339	74.00	22.00	2,505	55,112
1950	66.5	317,843	74.00	21.45	4,295	92,145
1949	67.5	331,074	74.00	20.91	4,474	93,567
1948	68.5	74,813	74.00	20.39	1,011	20,609
1947	69.5	83,855	74.00	19.87	1,133	22,513
1946	70.5	130,616	74.00	19.36	1,765	34,175
1945	71.5	137,785	74.00	18.87	1,862	35,131
1944	72.5	221,718	74.00	18.38	2,996	55,084
1943	73.5	72,460	74.00	17.91	979	17,542
1942	74.5	731,729	74.00	17.46	9,888	172,607
1941	75.5	78,278	74.00	17.01	1,058	17,992
1940	76.5	34,220	74.00	16.57	462	7,664

1939	77.5	1,177,564	74.00	16.15	15,913	256,996
1938	78.5	1,831,718	74.00	15.74	24,753	389,565
1937	79.5	1,703,466	74.00	15.34	23,020	353,080
1936	80.5	1,373,911	74.00	14.95	18,566	277,553
1935	81.5	259,693	74.00	14.57	3,509	51,137
1934	82.5	344,317	74.00	14.20	4,653	66,094
1933	83.5	407,023	74.00	13.85	5,500	76,174
1932	84.5	282,021	74.00	13.50	3,811	51,463
1931	85.5	318,811	74.00	13.17	4,308	56,730
1930	86.5	388,827	74.00	12.84	5,254	67,478
		1,183,522,232			15,993,544	858,638,952

AVERAGE SERVICE LIFE 74.00

AVERAGE REMAINING LIFE 53.69

Observed Life Table Results

PSE&G

Account: Account 369 - Services

Age	Exposures	Retirements	Retirement Ratio (%)	Survivor Ratio (%)	Cumulative Survivors
BAND		1901 - 2016			
0	482,266,376	18,694	0.0039	99.9961	1.0000
0.5	468,979,108	27,316	0.0058	99.9942	1.0000
1.5	469,714,265	87,824	0.0187	99.9813	0.9999
2.5	461,146,970	37,127	0.0081	99.9919	0.9997
3.5	450,619,792	82,287	0.0183	99.9817	0.9996
4.5	443,343,826	114,080	0.0257	99.9743	0.9995
5.5	430,914,457	64,149	0.0149	99.9851	0.9992
6.5	415,058,542	116,855	0.0282	99.9718	0.9990
7.5	400,803,597	102,446	0.0256	99.9744	0.9988
8.5	384,548,969	144,186	0.0375	99.9625	0.9985
9.5	366,658,139	106,171	0.0290	99.9710	0.9981
10.5	348,741,115	1,286,870	0.3690	99.6310	0.9978
11.5	330,726,408	1,326,713	0.4012	99.5988	0.9942
12.5	307,447,203	454,063	0.1477	99.8523	0.9902
13.5	288,086,115	64,571	0.0224	99.9776	0.9887
14.5	276,488,146	56,965	0.0206	99.9794	0.9885
15.5	263,443,423	177,558	0.0674	99.9326	0.9883
16.5	249,358,402	56,669	0.0227	99.9773	0.9876
17.5	237,878,093	49,709	0.0209	99.9791	0.9874
18.5	227,127,268	43,503	0.0192	99.9808	0.9872
19.5	215,369,755	104,775	0.0486	99.9514	0.9870
20.5	199,951,745	206,325	0.1032	99.8968	0.9865
21.5	185,757,093	104,989	0.0565	99.9435	0.9855
22.5	173,041,210	35,115	0.0203	99.9797	0.9849
23.5	161,562,982	41,808	0.0259	99.9741	0.9847
24.5	152,799,644	86,520	0.0566	99.9434	0.9845
25.5	144,778,199	48,771	0.0337	99.9663	0.9839
26.5	136,138,902	46,659	0.0343	99.9657	0.9836
27.5	127,156,213	666,968	0.5245	99.4755	0.9833
28.5	117,100,666	443,589	0.3788	99.6212	0.9781
29.5	108,269,750	470,195	0.4343	99.5657	0.9744
30.5	98,466,278	310,974	0.3158	99.6842	0.9702
31.5	89,363,293	293,196	0.3281	99.6719	0.9671
32.5	81,767,749	273,318	0.3343	99.6657	0.9639
33.5	75,614,441	238,993	0.3161	99.6839	0.9607
34.5	70,606,517	253,604	0.3592	99.6408	0.9577
35.5	65,712,456	239,048	0.3638	99.6362	0.9542
36.5	61,413,582	238,057	0.3876	99.6124	0.9508
37.5	56,254,340	183,423	0.3261	99.6739	0.9471
38.5	51,951,333	30,397	0.0585	99.9415	0.9440

39.5	48,500,031	36,727	0.0757	99.9243	0.9434
40.5	44,996,289	45,746	0.1017	99.8983	0.9427
41.5	41,484,970	68,363	0.1648	99.8352	0.9418
42.5	38,115,922	108,299	0.2841	99.7159	0.9402
43.5	35,009,108	91,171	0.2604	99.7396	0.9375
44.5	32,076,947	626,996	1.9547	98.0453	0.9351
45.5	28,737,966	54,903	0.1910	99.8090	0.9168
46.5	26,029,183	65,933	0.2533	99.7467	0.9151
47.5	23,298,234	47,085	0.2021	99.7979	0.9128
48.5	21,111,116	38,184	0.1809	99.8191	0.9109
49.5	19,174,093	35,688	0.1861	99.8139	0.9093
50.5	17,256,909	30,038	0.1741	99.8259	0.9076
51.5	15,488,647	41,044	0.2650	99.7350	0.9060
52.5	13,809,869	63,033	0.4564	99.5436	0.9036
53.5	12,057,747	16,414	0.1361	99.8639	0.8995
54.5	10,469,757	14,196	0.1356	99.8644	0.8982
55.5	9,117,325	12,579	0.1380	99.8620	0.8970
56.5	7,964,804	10,673	0.1340	99.8660	0.8958
57.5	6,884,397	8,018	0.1165	99.8835	0.8946
58.5	5,993,389	5,752	0.0960	99.9040	0.8935
59.5	5,184,621	4,009	0.0773	99.9227	0.8927
60.5	4,304,497	756	0.0176	99.9824	0.8920
61.5	4,138,827	425	0.0103	99.9897	0.8918
62.5	4,109,922	201	0.0049	99.9951	0.8917
63.5	3,522,382	173	0.0049	99.9951	0.8917
64.5	2,968,384	131	0.0044	99.9956	0.8917
65.5	2,369,617	82	0.0035	99.9965	0.8916
66.5	1,890,405	23	0.0012	99.9988	0.8916
67.5	1,516,498	16	0.0011	99.9989	0.8916
68.5	1,202,614	19	0.0016	99.9984	0.8916
69.5	961,513	28	0.0029	99.9971	0.8916
70.5	821,736	61	0.0074	99.9926	0.8915
71.5	776,702	49	0.0063	99.9937	0.8915
72.5	752,671	47	0.0062	99.9938	0.8914
73.5	722,789	63	0.0087	99.9913	0.8914
74.5	671,303	5	0.0007	99.9993	0.8913
75.5	575,310	33	0.0057	99.9943	0.8913
76.5	488,990	28	0.0057	99.9943	0.8912
77.5	415,602	16	0.0039	99.9961	0.8912
78.5	312,462	5	0.0015	99.9985	0.8911
79.5	309,842	14	0.0045	99.9955	0.8911
80.5	263,493	12	0.0044	99.9956	0.8911
81.5	214,785	32	0.0147	99.9853	0.8910
82.5	194,083	21	0.0110	99.9890	0.8909
83.5	182,829	24	0.0130	99.9870	0.8908
84.5	167,253	21	0.0126	99.9874	0.8907
85.5	146,199	23	0.0160	99.9840	0.8906

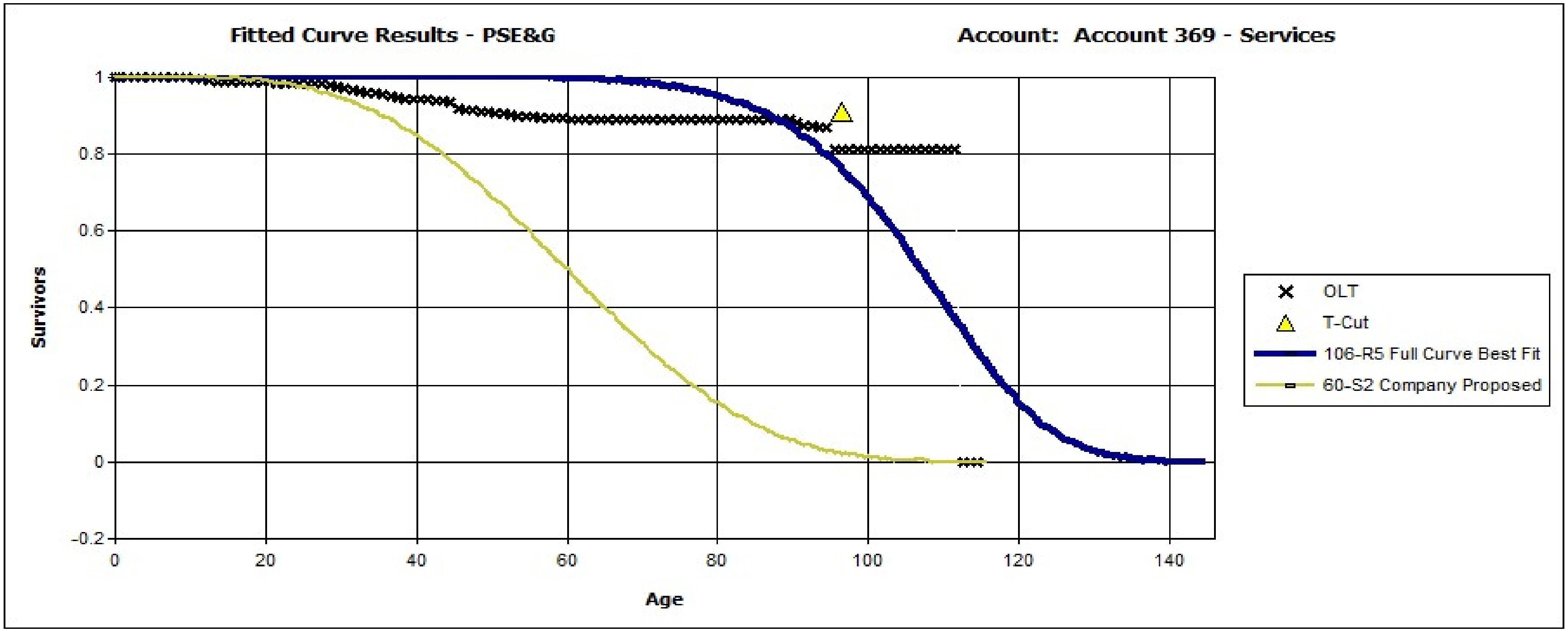
86.5	116,568	0	0.0000	100.0000	0.8904
87.5	86,223	0	0.0000	100.0000	0.8904
88.5	62,223	0	0.0000	100.0000	0.8904
89.5	39,155	434	1.1078	98.8922	0.8904
90.5	4,892	42	0.8497	99.1503	0.8806
91.5	4,851	0	0.0000	100.0000	0.8731
92.5	4,851	10	0.2020	99.7980	0.8731
93.5	4,841	0	0.0000	100.0000	0.8713
94.5	4,841	333	6.8880	93.1120	0.8713
95.5	4,507	0	0.0000	100.0000	0.8113
96.5	4,507	0	0.0000	100.0000	0.8113
97.5	4,507	0	0.0000	100.0000	0.8113
98.5	4,507	0	0.0000	100.0000	0.8113
99.5	4,507	0	0.0000	100.0000	0.8113
100.5	4,507	0	0.0000	100.0000	0.8113
101.5	4,507	0	0.0000	100.0000	0.8113
102.5	4,507	0	0.0000	100.0000	0.8113
103.5	4,507	0	0.0000	100.0000	0.8113
104.5	4,507	0	0.0000	100.0000	0.8113
105.5	4,507	0	0.0000	100.0000	0.8113
106.5	4,507	0	0.0000	100.0000	0.8113
107.5	4,507	0	0.0000	100.0000	0.8113
108.5	4,507	0	0.0000	100.0000	0.8113
109.5	4,507	0	0.0000	100.0000	0.8113
110.5	4,507	0	0.0000	100.0000	0.8113
111.5	4,507	4,507	100.0000	0.0000	0.8113
112.5	0	0	0.0000	100.0000	0.0000
113.5	0	0	0.0000	100.0000	0.0000
114.5	0	0	0.0000	100.0000	0.0000

Best Fit Curve Results
PSE&G
Account: Account 369 - Services

Curve	Life	Sum of Squared Differences
BAND	**1901 - 2016**	
R2	150.0	461.505
R2.5	137.0	699.573
R1.5	150.0	826.562
S1	150.0	984.805
R3	125.0	1,186.265
S0.5	150.0	1,192.360
S1.5	142.0	1,228.386
L2	150.0	1,310.802
L1.5	150.0	1,592.436
S2	133.0	1,767.219
L3	131.0	2,056.190
R4	114.0	2,259.666
R1	150.0	2,336.786
S0	150.0	2,449.525
S3	120.0	2,637.879
L4	116.0	2,807.254
L1	150.0	3,403.220
S4	111.0	3,667.129
R5	106.0	3,738.608
L5	108.0	3,834.060
S5	105.0	4,472.078
S6	102.0	5,110.241
S-0.5	150.0	5,542.006
R0.5	150.0	5,666.973
L0.5	150.0	6,097.258
SQ	97.0	6,890.970
L0	150.0	10,302.271
O1	150.0	10,658.794
O2	150.0	15,845.610
O3	150.0	40,856.547
O4	150.0	76,775.935

Analytical Parameters

OLT Placement Band:	1901 - 2016
OLT Experience Band:	1901 - 2016
Minimum Life Parameter	1
Maximum Life Paramete	150
Life Increment Paramete	1
Max Age (T-Cut):	96.5



Analytical Parameters

OLT Placement Band:	1901 - 2016
OLT Experience Band:	1901 - 2016
Minimum Life Parameter:	1
Maximum Life Parameter:	150
Life Increment Parameter:	1
Max Age (T-Cut):	98.0

PSE&G

Account 369 GA - Services

Calculation of Remaining Life
Based Upon Broad Group/Vintage Group Procedures
Related to Original Cost as of December 31, 2016

Survivor Curve .. IOWA: 106 R5

			BG/VG Average			
		Surviving	Service	Remaining	ASL	RL
Year	Age	Investment	Life	Life	Weights	Weights
(1)	(2)	(3)	(4)	(5)	(6)=(3)/(4)	(7)=(6)*(5)
2016	0.5	6,410,670	106.00	105.50	60,478	6,380,349
2015	1.5	3,364,689	106.00	104.50	31,742	3,317,032
2014	2.5	3,087,048	106.00	103.50	29,123	3,014,201
2013	3.5	881,557	106.00	102.50	8,317	852,438
2012	4.5	9,239,714	106.00	101.50	87,167	8,847,344
2011	5.5	15,032,521	106.00	100.50	141,816	14,252,340
2010	6.5	18,531,450	106.00	99.50	174,825	17,394,852
2009	7.5	16,333,422	106.00	98.50	154,089	15,177,548
2008	8.5	18,123,663	106.00	97.50	170,978	16,670,120
2007	9.5	19,652,750	106.00	96.50	185,403	17,891,169
2006	10.5	20,008,083	106.00	95.50	188,755	18,025,896
2005	11.5	18,390,249	106.00	94.50	173,493	16,394,847
2004	12.5	23,663,973	106.00	93.50	223,245	20,873,110
2003	13.5	20,499,817	106.00	92.50	193,394	17,888,730
2002	14.5	12,905,678	106.00	91.50	121,752	11,140,115
2001	15.5	14,111,761	106.00	90.50	133,130	12,048,069
2000	16.5	14,995,921	106.00	89.50	141,471	12,661,460
1999	17.5	12,318,662	106.00	88.50	116,214	10,284,764
1998	18.5	14,971,590	106.00	87.50	141,241	12,358,433
1997	19.5	12,602,606	106.00	86.50	118,893	10,284,042
1996	20.5	15,493,901	106.00	85.50	146,169	12,497,242
1995	21.5	14,126,631	106.00	84.50	133,270	11,261,144
1994	22.5	13,675,613	106.00	83.50	129,015	10,772,596
1993	23.5	11,997,217	106.00	82.50	113,181	9,337,304
1992	24.5	9,302,296	106.00	81.50	87,758	7,152,119
1991	25.5	8,429,322	106.00	80.50	79,522	6,401,407
1990	26.5	8,964,803	106.00	79.50	84,574	6,723,488
1989	27.5	9,250,092	106.00	78.50	87,265	6,850,186
1988	28.5	9,629,794	106.00	77.50	90,847	7,040,529
1987	29.5	8,527,332	106.00	76.50	80,447	6,154,051

1986	30.5	9,370,075	106.00	75.50	88,397	6,673,849
1985	31.5	8,816,019	106.00	74.50	83,170	6,196,052
1984	32.5	7,332,202	106.00	73.50	69,172	5,084,028
1983	33.5	5,936,284	106.00	72.50	56,003	4,060,119
1982	34.5	4,864,978	106.00	71.50	45,896	3,281,504
1981	35.5	4,726,864	106.00	70.50	44,593	3,143,750
1980	36.5	4,123,719	106.00	69.50	38,903	2,703,707
1979	37.5	5,024,432	106.00	68.50	47,400	3,246,857
1978	38.5	4,122,202	106.00	67.50	38,889	2,624,935
1977	39.5	3,467,453	106.00	66.50	32,712	2,175,295
1976	40.5	3,515,742	106.00	65.50	33,167	2,172,424
1975	41.5	3,486,257	106.00	64.50	32,889	2,121,322
1974	42.5	3,311,922	106.00	63.50	31,245	1,984,004
1973	43.5	3,014,081	106.00	62.50	28,435	1,777,160
1972	44.5	2,731,018	106.00	61.50	25,764	1,584,510
1971	45.5	2,741,613	106.00	60.50	25,864	1,564,815
1970	46.5	2,684,243	106.00	59.50	25,323	1,506,777
1969	47.5	2,689,039	106.00	58.50	25,368	1,484,141
1968	48.5	2,163,126	106.00	57.51	20,407	1,173,515
1967	49.5	1,932,702	106.00	56.51	18,233	1,030,327
1966	50.5	1,881,495	106.00	55.51	17,750	985,344
1965	51.5	1,738,224	106.00	54.52	16,398	893,991
1964	52.5	1,637,734	106.00	53.52	15,450	826,947
1963	53.5	1,689,090	106.00	52.53	15,935	837,059
1962	54.5	1,571,576	106.00	51.54	14,826	764,128
1961	55.5	1,338,671	106.00	50.55	12,629	638,391
1960	56.5	1,139,942	106.00	49.56	10,754	533,004
1959	57.5	1,069,734	106.00	48.58	10,092	490,238
1958	58.5	882,990	106.00	47.60	8,330	396,475
1957	59.5	803,016	106.00	46.62	7,576	353,148
1956	60.5	876,114	106.00	45.64	8,265	377,228
1955	61.5	164,914	106.00	44.67	1,556	69,494
1954	62.5	28,481	106.00	43.70	269	11,742
1953	63.5	587,338	106.00	42.74	5,541	236,796
1952	64.5	553,826	106.00	41.78	5,225	218,273
1951	65.5	598,635	106.00	40.82	5,648	230,543
1950	66.5	479,130	106.00	39.87	4,520	180,230
1949	67.5	373,884	106.00	38.93	3,527	137,312
1948	68.5	313,868	106.00	37.99	2,961	112,493
1947	69.5	241,082	106.00	37.06	2,274	84,287
1946	70.5	139,789	106.00	36.13	1,319	47,652
1945	71.5	44,973	106.00	35.22	424	14,941
1944	72.5	23,992	106.00	34.30	226	7,764
1943	73.5	29,835	106.00	33.40	281	9,401
1942	74.5	56,263	106.00	32.50	531	17,251
1941	75.5	95,989	106.00	31.61	906	28,626
1940	76.5	86,287	106.00	30.73	814	25,016

1939	77.5	73,360	106.00	29.86	692	20,664
1938	78.5	103,124	106.00	28.99	973	28,207
1937	79.5	2,615	106.00	28.14	25	694
1936	80.5	46,336	106.00	27.30	437	11,932
1935	81.5	48,696	106.00	26.46	459	12,156
1934	82.5	20,671	106.00	25.64	195	5,000
1933	83.5	11,232	106.00	24.83	106	2,631
1932	84.5	15,552	106.00	24.03	147	3,525
1931	85.5	21,034	106.00	23.24	198	4,612
1930	86.5	29,607	106.00	22.47	279	6,276
1929	87.5	30,345	106.00	21.71	286	6,214
1928	88.5	24,000	106.00	20.96	226	4,746
1927	89.5	23,068	106.00	20.23	218	4,402
1926	90.5	33,829	106.00	19.51	319	6,227
		489,507,139			4,617,992	394,181,078

AVERAGE SERVICE LIFE 106.00
AVERAGE REMAINING LIFE 85.36

Observed Life Table Results

PSE&G

Account: Account 376 - Mains

Age	Exposures	Retirements	Retirement Ratio (%)	Survivor Ratio (%)	Cumulative Survivors
BAND		**1880 - 2016**			
0	2,426,980,980	1,469,331	0.0605	99.9395	1.0000
0.5	2,335,645,499	3,375,008	0.1445	99.8555	0.9994
1.5	2,261,355,679	2,677,433	0.1184	99.8816	0.9980
2.5	2,213,209,743	3,783,228	0.1709	99.8291	0.9968
3.5	2,151,728,696	2,328,320	0.1082	99.8918	0.9951
4.5	2,103,407,544	2,796,832	0.1330	99.8670	0.9940
5.5	2,028,769,120	2,648,427	0.1305	99.8695	0.9927
6.5	1,879,601,828	3,712,379	0.1975	99.8025	0.9914
7.5	1,774,646,993	3,488,885	0.1966	99.8034	0.9894
8.5	1,684,602,151	2,922,794	0.1735	99.8265	0.9875
9.5	1,622,075,832	3,090,932	0.1906	99.8094	0.9858
10.5	1,545,713,491	3,774,908	0.2442	99.7558	0.9839
11.5	1,465,112,814	2,841,843	0.1940	99.8060	0.9815
12.5	1,401,774,373	5,164,211	0.3684	99.6316	0.9796
13.5	1,342,685,197	4,555,813	0.3393	99.6607	0.9760
14.5	1,281,185,828	3,925,008	0.3064	99.6936	0.9726
15.5	1,218,336,966	5,018,871	0.4119	99.5881	0.9697
16.5	1,153,367,441	2,016,890	0.1749	99.8251	0.9657
17.5	1,099,341,141	1,880,904	0.1711	99.8289	0.9640
18.5	1,055,464,941	1,220,177	0.1156	99.8844	0.9623
19.5	1,018,432,549	1,720,587	0.1689	99.8311	0.9612
20.5	998,547,515	1,083,241	0.1085	99.8915	0.9596
21.5	966,691,644	1,353,183	0.1400	99.8600	0.9586
22.5	923,935,822	891,165	0.0965	99.9035	0.9572
23.5	875,919,782	917,465	0.1047	99.8953	0.9563
24.5	841,531,599	3,352,175	0.3983	99.6017	0.9553
25.5	793,705,955	2,095,125	0.2640	99.7360	0.9515
26.5	745,096,335	1,098,351	0.1474	99.8526	0.9490
27.5	698,772,021	847,997	0.1214	99.8786	0.9476
28.5	644,180,627	1,359,568	0.2111	99.7889	0.9464
29.5	591,375,725	1,493,902	0.2526	99.7474	0.9444
30.5	541,945,639	1,825,090	0.3368	99.6632	0.9420
31.5	499,759,652	1,299,405	0.2600	99.7400	0.9389
32.5	467,649,328	1,612,957	0.3449	99.6551	0.9364
33.5	437,751,239	1,247,028	0.2849	99.7151	0.9332
34.5	411,283,253	1,510,092	0.3672	99.6328	0.9305
35.5	385,610,738	1,217,614	0.3158	99.6842	0.9271
36.5	361,208,769	1,293,996	0.3582	99.6418	0.9242
37.5	340,321,364	1,117,895	0.3285	99.6715	0.9209
38.5	326,883,697	702,240	0.2148	99.7852	0.9179

39.5	317,100,666	642,427	0.2026	99.7974	0.9159
40.5	309,219,486	744,697	0.2408	99.7592	0.9140
41.5	302,057,144	789,113	0.2612	99.7388	0.9118
42.5	292,942,872	744,139	0.2540	99.7460	0.9095
43.5	281,643,914	950,437	0.3375	99.6625	0.9071
44.5	270,314,082	321,710	0.1190	99.8810	0.9041
45.5	261,674,449	262,961	0.1005	99.8995	0.9030
46.5	251,803,964	223,716	0.0888	99.9112	0.9021
47.5	241,309,413	194,087	0.0804	99.9196	0.9013
48.5	229,661,848	765,637	0.3334	99.6666	0.9006
49.5	220,874,269	620,481	0.2809	99.7191	0.8976
50.5	212,169,668	1,586,841	0.7479	99.2521	0.8950
51.5	201,555,901	1,445,194	0.7170	99.2830	0.8884
52.5	190,036,903	778,010	0.4094	99.5906	0.8820
53.5	178,422,841	831,163	0.4658	99.5342	0.8784
54.5	167,409,148	611,408	0.3652	99.6348	0.8743
55.5	157,737,436	522,593	0.3313	99.6687	0.8711
56.5	146,994,481	553,715	0.3767	99.6233	0.8682
57.5	137,353,995	851,852	0.6202	99.3798	0.8649
58.5	127,655,984	718,014	0.5625	99.4375	0.8596
59.5	117,837,658	2,454,845	2.0832	97.9168	0.8547
60.5	105,067,122	988,204	0.9405	99.0595	0.8369
61.5	94,744,513	799,622	0.8440	99.1560	0.8291
62.5	73,342,539	703,914	0.9598	99.0402	0.8221
63.5	55,131,362	499,138	0.9054	99.0946	0.8142
64.5	45,559,991	398,808	0.8753	99.1247	0.8068
65.5	38,240,032	285,022	0.7453	99.2547	0.7997
66.5	36,179,913	469,011	1.2963	98.7037	0.7938
67.5	31,779,743	504,226	1.5866	98.4134	0.7835
68.5	25,944,539	260,036	1.0023	98.9977	0.7711
69.5	23,079,100	205,217	0.8892	99.1108	0.7633
70.5	22,151,225	115,018	0.5192	99.4808	0.7565
71.5	21,916,872	95,850	0.4373	99.5627	0.7526
72.5	21,690,743	167,890	0.7740	99.2260	0.7493
73.5	21,324,904	134,007	0.6284	99.3716	0.7435
74.5	21,265,730	170,596	0.8022	99.1978	0.7388
75.5	20,222,359	147,467	0.7292	99.2708	0.7329
76.5	19,069,577	142,553	0.7475	99.2525	0.7276
77.5	18,151,692	161,727	0.8910	99.1090	0.7221
78.5	17,407,575	180,984	1.0397	98.9603	0.7157
79.5	16,786,186	159,604	0.9508	99.0492	0.7083
80.5	16,292,850	151,653	0.9308	99.0692	0.7015
81.5	15,966,836	144,799	0.9069	99.0931	0.6950
82.5	15,568,208	184,839	1.1873	98.8127	0.6887
83.5	15,225,623	194,464	1.2772	98.7228	0.6805
84.5	14,650,263	178,405	1.2178	98.7822	0.6718
85.5	13,767,268	215,338	1.5641	98.4359	0.6636

86.5	12,620,880	238,354	1.8886	98.1114	0.6533
87.5	10,933,393	253,016	2.3142	97.6858	0.6409
88.5	9,111,032	299,381	3.2859	96.7141	0.6261
89.5	7,034,913	306,489	4.3567	95.6433	0.6055
90.5	4,905,188	219,659	4.4781	95.5219	0.5791
91.5	3,002,678	206,630	6.8815	93.1185	0.5532
92.5	1,129,355	90,877	8.0468	91.9532	0.5151
93.5	298,047	143,174	48.0373	51.9627	0.4737
94.5	154,873	34,023	21.9681	78.0319	0.2461
95.5	120,850	65,537	54.2296	45.7704	0.1921
96.5	55,314	34,210	61.8479	38.1521	0.0879
97.5	21,103	21,103	100.0000	0.0000	0.0335
98.5	0	0	0.0000	100.0000	0.0000
99.5	0	0	0.0000	100.0000	0.0000
100.5	0	0	0.0000	100.0000	0.0000
101.5	0	0	0.0000	100.0000	0.0000
102.5	0	0	0.0000	100.0000	0.0000
103.5	0	0	0.0000	100.0000	0.0000
104.5	0	0	0.0000	100.0000	0.0000
105.5	0	0	0.0000	100.0000	0.0000
106.5	0	0	0.0000	100.0000	0.0000
107.5	0	0	0.0000	100.0000	0.0000
108.5	0	0	0.0000	100.0000	0.0000
109.5	0	0	0.0000	100.0000	0.0000
110.5	0	0	0.0000	100.0000	0.0000
111.5	0	0	0.0000	100.0000	0.0000
112.5	0	0	0.0000	100.0000	0.0000
113.5	0	0	0.0000	100.0000	0.0000
114.5	0	0	0.0000	100.0000	0.0000
115.5	0	0	0.0000	100.0000	0.0000
116.5	0	0	0.0000	100.0000	0.0000
117.5	0	0	0.0000	100.0000	0.0000
118.5	0	0	0.0000	100.0000	0.0000
119.5	0	0	0.0000	100.0000	0.0000
120.5	0	0	0.0000	100.0000	0.0000
121.5	0	0	0.0000	100.0000	0.0000
122.5	0	0	0.0000	100.0000	0.0000
123.5	0	0	0.0000	100.0000	0.0000
124.5	0	0	0.0000	100.0000	0.0000
125.5	0	0	0.0000	100.0000	0.0000
126.5	0	0	0.0000	100.0000	0.0000
127.5	0	0	0.0000	100.0000	0.0000
128.5	0	0	0.0000	100.0000	0.0000
129.5	0	0	0.0000	100.0000	0.0000
130.5	0	0	0.0000	100.0000	0.0000
131.5	0	0	0.0000	100.0000	0.0000
132.5	0	0	0.0000	100.0000	0.0000

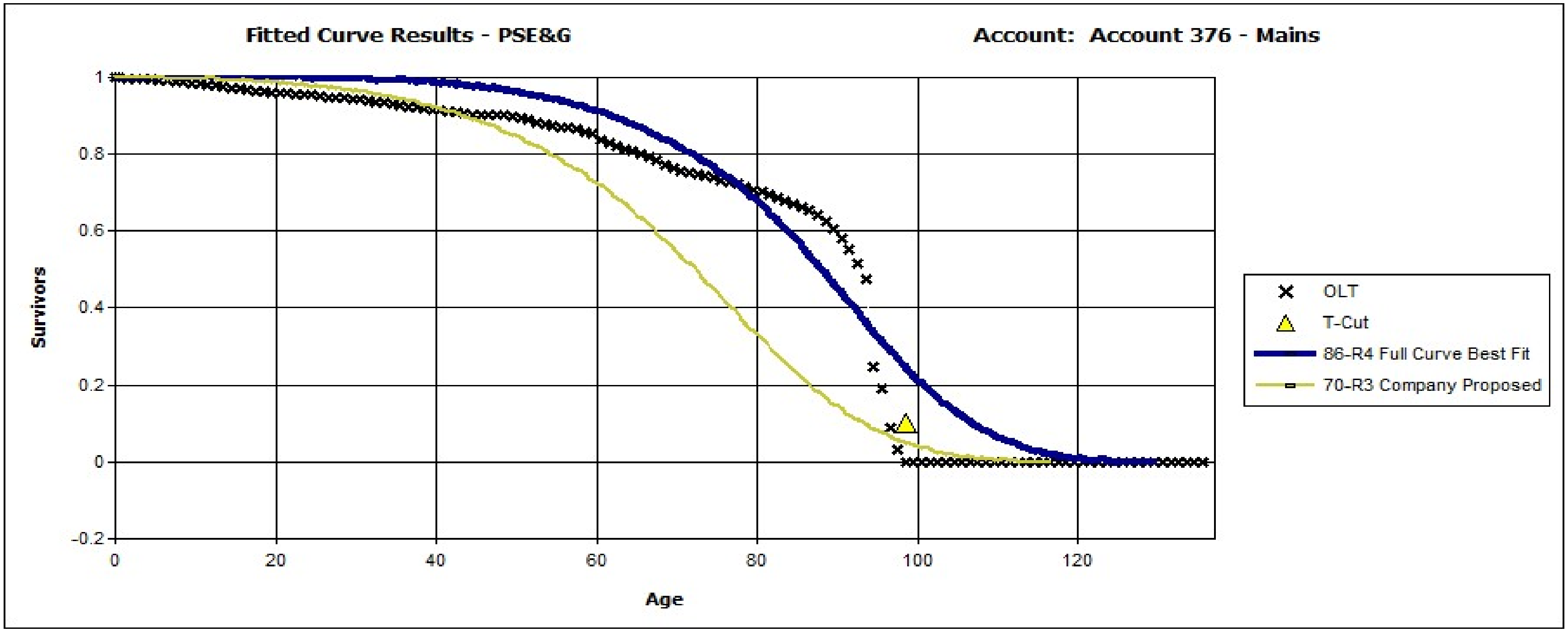
133.5	0	0	0.0000	100.0000	0.0000
134.5	0	0	0.0000	100.0000	0.0000
135.5	0	0	0.0000	100.0000	0.0000

Best Fit Curve Results
PSE&G
Account: Account 376 - Mains

Curve	Life	Sum of Squared Differences
BAND	**1880 - 2016**	
R3	86.0	5,296.747
R4	86.0	5,626.043
R2.5	86.0	5,836.560
S3	88.0	6,835.803
S2	89.0	6,884.165
R2	88.0	7,173.725
L3	93.0	7,214.293
S1.5	91.0	7,305.676
L4	90.0	7,524.938
L2	99.0	8,155.887
S1	93.0	8,285.821
S4	88.0	8,539.028
R1.5	90.0	8,949.988
L1.5	100.0	9,156.565
R5	87.0	9,249.964
S0.5	95.0	9,461.630
L5	89.0	9,870.782
S0	99.0	11,099.746
R1	94.0	11,320.398
L1	100.0	11,430.599
S5	88.0	11,774.184
S-0.5	100.0	13,823.684
L0.5	100.0	14,092.122
R0.5	100.0	14,122.184
S6	89.0	16,113.580
L0	100.0	17,954.131
O1	100.0	18,136.022
O2	100.0	22,434.175
SQ	92.0	32,957.209
O3	100.0	48,347.027
O4	100.0	84,179.803

Analytical Parameters

OLT Placement Band:	1880 - 2016
OLT Experience Band:	1880 - 2016
Minimum Life Parameter	1
Maximum Life Paramete	100
Life Increment Paramete	1
Max Age (T-Cut):	98.5



Analytical Parameters

OLT Placement Band:	1880 - 2016
OLT Experience Band:	1880 - 2016
Minimum Life Parameter:	1
Maximum Life Parameter:	100
Life Increment Parameter:	1
Max Age (T-Cut):	100.0

PSE&G

Account 376 GA - Mains

Calculation of Remaining Life
Based Upon Broad Group/Vintage Group Procedures
Related to Original Cost as of December 31, 2016

Survivor Curve .. IOWA: 86 R4

			BG/VG Average			
		Surviving	Service	Remaining	ASL	RL
Year	Age	Investment	Life	Life	Weights	Weights
(1)	(2)	(3)	(4)	(5)	(6)=(3)/(4)	(7)=(6)*(5)
2016	0.5	116,425,698	86.00	85.50	1,353,787	115,748,463
2015	1.5	85,840,607	86.00	84.50	998,147	84,344,051
2014	2.5	57,495,197	86.00	83.50	668,549	55,824,973
2013	3.5	68,494,832	86.00	82.50	796,452	65,709,617
2012	4.5	57,752,032	86.00	81.50	671,535	54,733,103
2011	5.5	84,584,770	86.00	80.51	983,544	79,181,313
2010	6.5	161,408,518	86.00	79.51	1,876,843	149,224,211
2009	7.5	112,200,491	86.00	78.51	1,304,657	102,429,047
2008	8.5	97,413,726	86.00	77.51	1,132,718	87,800,238
2007	9.5	70,970,430	86.00	76.52	825,238	63,143,806
2006	10.5	83,869,853	86.00	75.52	975,231	73,648,804
2005	11.5	87,894,433	86.00	74.52	1,022,028	76,164,922
2004	12.5	70,434,854	86.00	73.53	819,010	60,220,003
2003	13.5	61,842,602	86.00	72.53	719,100	52,158,399
2002	14.5	67,781,985	86.00	71.54	788,163	56,384,098
2001	15.5	68,761,693	86.00	70.55	799,555	56,404,681
2000	16.5	69,557,670	86.00	69.55	808,810	56,254,843
1999	17.5	62,147,688	86.00	68.56	722,648	49,545,397
1998	18.5	53,973,480	86.00	67.57	627,599	42,407,057
1997	19.5	47,044,051	86.00	66.58	547,024	36,421,297
1996	20.5	41,456,761	86.00	65.59	482,055	31,619,233
1995	21.5	52,528,530	86.00	64.61	610,797	39,460,863
1994	22.5	51,604,781	86.00	63.62	600,056	38,175,686
1993	23.5	55,016,834	86.00	62.64	639,731	40,070,510
1992	24.5	45,624,492	86.00	61.65	530,517	32,708,814
1991	25.5	48,886,038	86.00	60.67	568,442	34,489,930
1990	26.5	52,373,872	86.00	59.70	608,999	36,355,022
1989	27.5	48,255,459	86.00	58.72	561,110	32,948,659
1988	28.5	54,661,807	86.00	57.75	635,602	36,704,301
1987	29.5	51,741,191	86.00	56.78	601,642	34,159,190

1986	30.5	48,198,287	86.00	55.81	560,445	31,277,751
1985	31.5	40,939,751	86.00	54.84	476,044	26,108,046
1984	32.5	31,418,761	86.00	53.88	365,334	19,684,945
1983	33.5	29,354,190	86.00	52.92	341,328	18,064,253
1982	34.5	26,436,722	86.00	51.97	307,404	15,975,415
1981	35.5	25,035,084	86.00	51.02	291,106	14,851,686
1980	36.5	23,866,453	86.00	50.07	277,517	13,895,696
1979	37.5	20,281,684	86.00	49.13	235,834	11,586,287
1978	38.5	12,732,132	86.00	48.19	148,048	7,134,601
1977	39.5	9,315,444	86.00	47.26	108,319	5,118,921
1976	40.5	7,538,674	86.00	46.33	87,659	4,061,220
1975	41.5	6,614,521	86.00	45.41	76,913	3,492,412
1974	42.5	8,772,021	86.00	44.49	102,000	4,538,014
1973	43.5	11,396,361	86.00	43.58	132,516	5,774,881
1972	44.5	11,723,602	86.00	42.67	136,321	5,817,256
1971	45.5	10,362,389	86.00	41.77	120,493	5,033,444
1970	46.5	11,476,782	86.00	40.88	133,451	5,455,616
1969	47.5	12,379,081	86.00	40.00	143,943	5,757,067
1968	48.5	13,650,868	86.00	39.12	158,731	6,209,044
1967	49.5	10,126,554	86.00	38.25	117,751	4,503,375
1966	50.5	10,052,352	86.00	37.38	116,888	4,369,320
1965	51.5	9,952,399	86.00	36.52	115,726	4,226,679
1964	52.5	10,155,435	86.00	35.67	118,086	4,212,615
1963	53.5	10,892,048	86.00	34.83	126,652	4,411,712
1962	54.5	10,257,315	86.00	34.00	119,271	4,055,309
1961	55.5	9,126,647	86.00	33.18	106,124	3,520,783
1960	56.5	10,236,921	86.00	32.36	119,034	3,851,910
1959	57.5	9,177,733	86.00	31.55	106,718	3,367,118
1958	58.5	8,935,876	86.00	30.75	103,906	3,195,306
1957	59.5	9,233,147	86.00	29.96	107,362	3,216,807
1956	60.5	10,388,875	86.00	29.18	120,801	3,525,082
1955	61.5	9,421,052	86.00	28.41	109,547	3,112,040
1954	62.5	20,812,322	86.00	27.64	242,004	6,689,971
1953	63.5	17,690,519	86.00	26.89	205,704	5,531,059
1952	64.5	9,283,413	86.00	26.14	107,947	2,821,871
1951	65.5	7,092,952	86.00	25.40	82,476	2,095,250
1950	66.5	1,839,672	86.00	24.68	21,392	527,850
1949	67.5	4,052,481	86.00	23.96	47,122	1,128,816
1948	68.5	5,452,258	86.00	23.24	63,398	1,473,564
1947	69.5	2,700,797	86.00	22.54	31,405	707,814
1946	70.5	789,661	86.00	21.84	9,182	200,554
1945	71.5	248,390	86.00	21.15	2,888	61,098
1944	72.5	242,345	86.00	20.47	2,818	57,695
1943	73.5	508,750	86.00	19.80	5,916	117,143
1942	74.5	512,622	86.00	19.14	5,961	114,084
1941	75.5	873,812	86.00	18.49	10,161	187,837
1940	76.5	1,006,164	86.00	17.85	11,700	208,789

1939	77.5	775,660	86.00	17.22	9,019	155,309
1938	78.5	582,528	86.00	16.61	6,774	112,501
1937	79.5	440,599	86.00	16.01	5,123	82,043
1936	80.5	333,732	86.00	15.44	3,881	59,900
1935	81.5	174,360	86.00	14.88	2,027	30,159
1934	82.5	253,901	86.00	14.33	2,952	42,317
1933	83.5	157,745	86.00	13.81	1,834	25,334
1932	84.5	380,897	86.00	13.31	4,429	58,949
1931	85.5	704,590	86.00	12.83	8,193	105,083
1930	86.5	931,050	86.00	12.36	10,826	133,822
1929	87.5	1,449,132	86.00	11.91	16,850	200,750
1928	88.5	1,569,346	86.00	11.48	18,248	209,558
1927	89.5	1,776,738	86.00	11.07	20,660	228,724
1926	90.5	1,823,236	86.00	10.67	21,200	226,300
1925	91.5	1,682,850	86.00	10.29	19,568	201,401
1924	92.5	1,666,694	86.00	9.92	19,380	192,335
1923	93.5	740,431	86.00	9.57	8,610	82,390
		2,666,043,183			31,000,502	2,057,915,407

AVERAGE SERVICE LIFE 86.00

AVERAGE REMAINING LIFE 66.38

Observed Life Table Results

PSE&G

Account: Account 378 - Meas. and Reg. Stat. Equip.

Age	Exposures	Retiremen	Retirement Ratio (%)	Survivor Ratio (%)	Cumulative Survivors
BAND		1900 - 2016			
0	101,110,071	24,103	0.0238	99.9762	1.0000
0.5	89,160,580	10,991	0.0123	99.9877	0.9998
1.5	81,128,270	2,879	0.0035	99.9965	0.9996
2.5	81,303,924	15,415	0.0190	99.9810	0.9996
3.5	79,109,922	6,022	0.0076	99.9924	0.9994
4.5	76,659,354	25,401	0.0331	99.9669	0.9993
5.5	71,426,221	35,447	0.0496	99.9504	0.9990
6.5	60,227,691	34,218	0.0568	99.9432	0.9985
7.5	54,319,256	1,176	0.0022	99.9978	0.9979
8.5	50,075,767	86,175	0.1721	99.8279	0.9979
9.5	43,540,718	6,548	0.0150	99.9850	0.9962
10.5	40,690,569	782	0.0019	99.9981	0.9961
11.5	37,549,100	13,814	0.0368	99.9632	0.9960
12.5	35,011,053	8,686	0.0248	99.9752	0.9957
13.5	34,073,806	3,309	0.0097	99.9903	0.9954
14.5	32,106,883	9,495	0.0296	99.9704	0.9953
15.5	31,791,279	2,624	0.0083	99.9917	0.9950
16.5	31,739,262	7,961	0.0251	99.9749	0.9949
17.5	31,907,361	9,391	0.0294	99.9706	0.9947
18.5	31,761,687	6,189	0.0195	99.9805	0.9944
19.5	30,188,890	38,807	0.1285	99.8715	0.9942
20.5	29,410,404	19,747	0.0671	99.9329	0.9929
21.5	28,473,029	6,291	0.0221	99.9779	0.9923
22.5	25,310,066	9,752	0.0385	99.9615	0.9920
23.5	22,694,784	24,476	0.1078	99.8922	0.9917
24.5	19,972,695	13,104	0.0656	99.9344	0.9906
25.5	17,287,855	25,064	0.1450	99.8550	0.9899
26.5	14,149,847	142,596	1.0078	98.9922	0.9885
27.5	11,340,533	22,034	0.1943	99.8057	0.9785
28.5	9,677,402	20,771	0.2146	99.7854	0.9766
29.5	8,690,656	38,451	0.4424	99.5576	0.9746
30.5	7,516,209	18,587	0.2473	99.7527	0.9702
31.5	6,498,012	40,469	0.6228	99.3772	0.9678
32.5	5,904,078	19,699	0.3337	99.6663	0.9618
33.5	4,975,063	27,544	0.5536	99.4464	0.9586
34.5	4,068,608	33,594	0.8257	99.1743	0.9533
35.5	3,463,382	17,173	0.4958	99.5042	0.9454
36.5	3,317,500	21,599	0.6511	99.3489	0.9407
37.5	3,223,966	26,869	0.8334	99.1666	0.9346
38.5	3,148,325	19,438	0.6174	99.3826	0.9268

39.5	2,976,395	7,766	0.2609	99.7391	0.9211
40.5	2,888,264	6,840	0.2368	99.7632	0.9187
41.5	2,823,827	4,380	0.1551	99.8449	0.9165
42.5	2,708,705	4,241	0.1566	99.8434	0.9151
43.5	2,639,950	961	0.0364	99.9636	0.9137
44.5	2,470,075	2,245	0.0909	99.9091	0.9133
45.5	2,370,615	1,420	0.0599	99.9401	0.9125
46.5	2,265,526	0	0.0000	100.0000	0.9120
47.5	2,205,819	0	0.0000	100.0000	0.9120
48.5	2,156,080	0	0.0000	100.0000	0.9120
49.5	2,112,942	1,144	0.0542	99.9458	0.9120
50.5	2,076,622	0	0.0000	100.0000	0.9115
51.5	2,039,625	568	0.0279	99.9721	0.9115
52.5	1,978,199	1,010	0.0511	99.9489	0.9112
53.5	1,887,567	966	0.0512	99.9488	0.9107
54.5	1,726,847	1,704	0.0986	99.9014	0.9103
55.5	1,696,269	2,234	0.1317	99.8683	0.9094
56.5	1,452,488	3,091	0.2128	99.7872	0.9082
57.5	1,252,461	4,113	0.3284	99.6716	0.9063
58.5	1,206,517	1,635	0.1355	99.8645	0.9033
59.5	1,068,629	2,613	0.2445	99.7555	0.9021
60.5	906,240	1,436	0.1584	99.8416	0.8998
61.5	750,470	200	0.0267	99.9733	0.8984
62.5	593,487	446	0.0752	99.9248	0.8982
63.5	552,633	2,173	0.3932	99.6068	0.8975
64.5	441,738	919	0.2081	99.7919	0.8940
65.5	353,908	2,083	0.5886	99.4114	0.8921
66.5	304,152	378	0.1241	99.8759	0.8869
67.5	246,704	448	0.1814	99.8186	0.8858
68.5	191,803	95	0.0497	99.9503	0.8842
69.5	162,014	460	0.2840	99.7160	0.8837
70.5	148,833	179	0.1200	99.8800	0.8812
71.5	141,496	0	0.0000	100.0000	0.8802
72.5	137,125	1,131	0.8246	99.1754	0.8802
73.5	129,162	122	0.0946	99.9054	0.8729
74.5	125,436	2,478	1.9751	98.0249	0.8721
75.5	115,869	40	0.0345	99.9655	0.8548
76.5	107,543	1,097	1.0201	98.9799	0.8545
77.5	98,230	707	0.7202	99.2798	0.8458
78.5	94,242	0	0.0000	100.0000	0.8397
79.5	91,187	0	0.0000	100.0000	0.8397
80.5	87,769	0	0.0000	100.0000	0.8397
81.5	86,069	266	0.3094	99.6906	0.8397
82.5	85,542	0	0.0000	100.0000	0.8371
83.5	84,939	0	0.0000	100.0000	0.8371
84.5	83,804	0	0.0000	100.0000	0.8371
85.5	75,793	0	0.0000	100.0000	0.8371

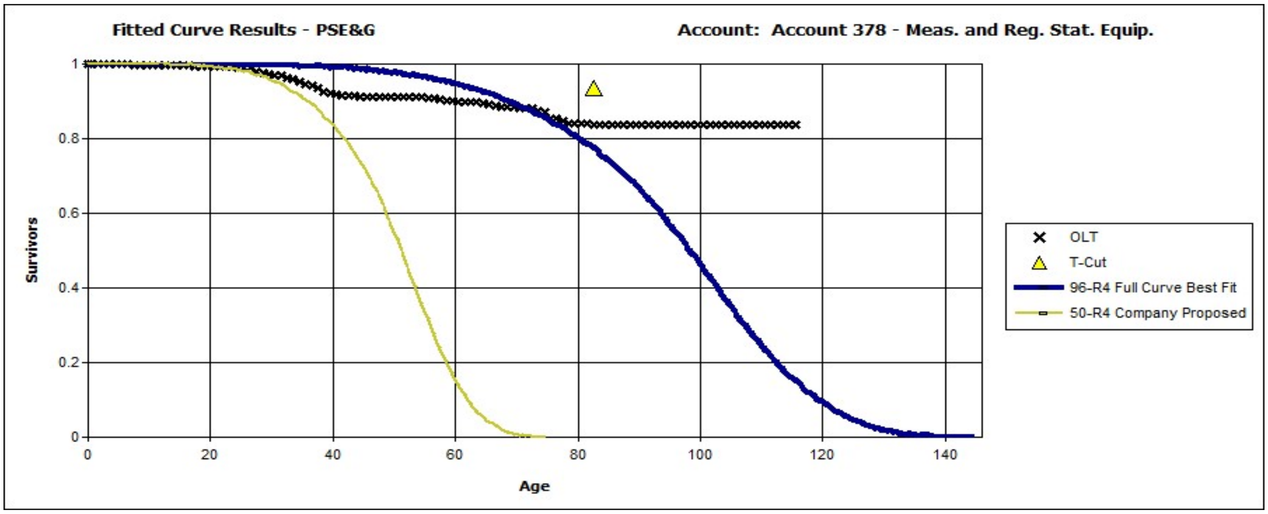
86.5	73,127	0	0.0000	100.0000	0.8371
87.5	70,264	0	0.0000	100.0000	0.8371
88.5	61,492	0	0.0000	100.0000	0.8371
89.5	53,249	0	0.0000	100.0000	0.8371
90.5	45,586	0	0.0000	100.0000	0.8371
91.5	40,729	0	0.0000	100.0000	0.8371
92.5	37,702	0	0.0000	100.0000	0.8371
93.5	33,075	0	0.0000	100.0000	0.8371
94.5	28,886	0	0.0000	100.0000	0.8371
95.5	26,479	0	0.0000	100.0000	0.8371
96.5	25,262	0	0.0000	100.0000	0.8371
97.5	24,623	0	0.0000	100.0000	0.8371
98.5	24,029	0	0.0000	100.0000	0.8371
99.5	22,293	0	0.0000	100.0000	0.8371
100.5	21,699	0	0.0000	100.0000	0.8371
101.5	21,307	0	0.0000	100.0000	0.8371
102.5	20,463	0	0.0000	100.0000	0.8371
103.5	18,781	0	0.0000	100.0000	0.8371
104.5	18,001	0	0.0000	100.0000	0.8371
105.5	16,421	0	0.0000	100.0000	0.8371
106.5	14,583	0	0.0000	100.0000	0.8371
107.5	4,010	0	0.0000	100.0000	0.8371
108.5	0	0	0.0000	100.0000	0.8371
109.5	0	0	0.0000	100.0000	0.8371
110.5	0	0	0.0000	100.0000	0.8371
111.5	0	0	0.0000	100.0000	0.8371
112.5	0	0	0.0000	100.0000	0.8371
113.5	0	0	0.0000	100.0000	0.8371
114.5	0	0	0.0000	100.0000	0.8371
115.5	0	0	0.0000	100.0000	0.8371

Best Fit Curve Results
PSE&G
Account: Account 378 - Meas. and Reg. Stat. Equip.

Curve	Life	Sum of Squared Differences
BAND	**1900 - 2016**	
R1.5	150.0	125.727
R2	129.0	149.476
S0.5	147.0	182.530
R2.5	115.0	252.984
L1.5	145.0	289.940
S0	150.0	355.565
S1	131.0	373.586
L1	150.0	476.277
R3	106.0	528.824
S1.5	120.0	539.641
L2	130.0	573.132
R1	150.0	603.369
S2	112.0	892.549
L3	110.0	1,120.179
R4	96.0	1,270.697
S3	101.0	1,538.906
L0.5	150.0	1,652.201
L4	98.0	1,703.293
S-0.5	150.0	1,937.338
R0.5	150.0	2,305.971
S4	94.0	2,415.273
R5	90.0	2,525.152
L5	92.0	2,600.517
S5	89.0	3,240.423
S6	86.0	4,019.177
L0	150.0	4,095.509
O1	150.0	5,231.748
SQ	83.0	5,779.668
O2	150.0	8,118.296
O3	150.0	23,862.014
O4	150.0	48,940.564

Analytical Parameters

OLT Placement Band:	1900 - 2016
OLT Experience Band:	1900 - 2016
Minimum Life Paramet	1
Maximum Life Parame	150
Life Increment Parame	1
Max Age (T-Cut):	82.5



Analytical Parameters	
OLT Placement Band:	1900 - 2016
OLT Experience Band:	1900 - 2016
Minimum Life Parameter:	1
Maximum Life Parameter:	150
Life Increment Parameter:	1
Max Age (T-Cut):	84.0

PSE&G

Account 378 GA - Meas. and Reg. Stat. Equip.

Calculation of Remaining Life
Based Upon Broad Group/Vintage Group Procedures
Related to Original Cost as of December 31, 2016

Survivor Curve .. IOWA: 96 R4

			BG/VG Average			
		Surviving	Service	Remaining	ASL	RL
Year	Age	Investment	Life	Life	Weights	Weights
(1)	(2)	(3)	(4)	(5)	(6)=(3)/(4)	(7)=(6)*(5)
2016	0.5	4,176,595	96.00	95.50	43,506	4,154,823
2015	1.5	3,671,366	96.00	94.50	38,243	3,614,018
2014	2.5	0	96.00	93.50	0	0
2013	3.5	2,195,192	96.00	92.50	22,867	2,115,220
2012	4.5	2,560,578	96.00	91.50	26,673	2,440,659
2011	5.5	5,279,092	96.00	90.51	54,991	4,976,953
2010	6.5	11,228,285	96.00	89.51	116,961	10,468,905
2009	7.5	5,925,597	96.00	88.51	61,725	5,463,241
2008	8.5	4,281,570	96.00	87.51	44,600	3,902,996
2007	9.5	6,540,241	96.00	86.51	68,128	5,894,006
2006	10.5	2,930,451	96.00	85.52	30,526	2,610,462
2005	11.5	3,247,083	96.00	84.52	33,824	2,858,809
2004	12.5	2,700,063	96.00	83.52	28,126	2,349,180
2003	13.5	960,093	96.00	82.53	10,001	825,368
2002	14.5	2,208,256	96.00	81.53	23,003	1,875,489
2001	15.5	517,409	96.00	80.54	5,390	434,079
2000	16.5	95,623	96.00	79.55	996	79,233
1999	17.5	223,647	96.00	78.55	2,330	182,998
1998	18.5	310,082	96.00	77.56	3,230	250,518
1997	19.5	1,742,839	96.00	76.57	18,155	1,390,052
1996	20.5	915,770	96.00	75.58	9,539	720,949
1995	21.5	1,102,076	96.00	74.59	11,480	856,258
1994	22.5	3,275,306	96.00	73.60	34,118	2,511,019
1993	23.5	2,706,399	96.00	72.61	28,192	2,047,028
1992	24.5	2,753,114	96.00	71.62	28,678	2,054,081
1991	25.5	2,729,712	96.00	70.64	28,435	2,008,620
1990	26.5	3,169,466	96.00	69.66	33,015	2,299,743
1989	27.5	2,698,353	96.00	68.68	28,108	1,930,315
1988	28.5	1,656,053	96.00	67.70	17,251	1,167,782
1987	29.5	974,749	96.00	66.72	10,154	677,423

1986	30.5	1,140,525	96.00	65.74	11,880	781,037
1985	31.5	1,007,816	96.00	64.77	10,498	679,933
1984	32.5	559,716	96.00	63.80	5,830	371,952
1983	33.5	917,542	96.00	62.83	9,558	600,478
1982	34.5	888,299	96.00	61.86	9,253	572,395
1981	35.5	581,057	96.00	60.90	6,053	368,583
1980	36.5	131,989	96.00	59.93	1,375	82,404
1979	37.5	74,990	96.00	58.98	781	46,070
1978	38.5	52,190	96.00	58.02	544	31,544
1977	39.5	155,848	96.00	57.07	1,623	92,651
1976	40.5	80,485	96.00	56.12	838	47,054
1975	41.5	60,062	96.00	55.18	626	34,524
1974	42.5	112,412	96.00	54.24	1,171	63,514
1973	43.5	74,499	96.00	53.31	776	41,367
1972	44.5	171,580	96.00	52.37	1,787	93,609
1971	45.5	101,341	96.00	51.45	1,056	54,311
1970	46.5	114,549	96.00	50.53	1,193	60,290
1969	47.5	71,360	96.00	49.61	743	36,877
1968	48.5	61,455	96.00	48.70	640	31,175
1967	49.5	48,766	96.00	47.79	508	24,278
1966	50.5	38,985	96.00	46.89	406	19,043
1965	51.5	42,435	96.00	46.00	442	20,332
1964	52.5	67,663	96.00	45.11	705	31,794
1963	53.5	93,471	96.00	44.23	974	43,061
1962	54.5	161,864	96.00	43.35	1,686	73,091
1961	55.5	29,838	96.00	42.48	311	13,203
1960	56.5	242,394	96.00	41.62	2,525	105,079
1959	57.5	199,593	96.00	40.76	2,079	84,744
1958	58.5	42,782	96.00	39.91	446	17,786
1957	59.5	136,759	96.00	39.07	1,425	55,655
1956	60.5	160,866	96.00	38.23	1,676	64,067
1955	61.5	156,438	96.00	37.41	1,630	60,955
1954	62.5	159,332	96.00	36.59	1,660	60,721
1953	63.5	43,460	96.00	35.77	453	16,195
1952	64.5	113,312	96.00	34.97	1,180	41,274
1951	65.5	97,579	96.00	34.17	1,016	34,733
1950	66.5	53,737	96.00	33.38	560	18,686
1949	67.5	57,092	96.00	32.60	595	19,388
1948	68.5	54,453	96.00	31.83	567	18,053
1947	69.5	29,695	96.00	31.06	309	9,608
1946	70.5	12,721	96.00	30.30	133	4,015
1945	71.5	7,159	96.00	29.55	75	2,204
1944	72.5	4,371	96.00	28.81	46	1,312
1943	73.5	6,833	96.00	28.08	71	1,998
1942	74.5	3,871	96.00	27.35	40	1,103
1941	75.5	7,089	96.00	26.63	74	1,967
1940	76.5	8,286	96.00	25.92	86	2,237

1939	77.5	8,216	96.00	25.22	86	2,158
1938	78.5	3,281	96.00	24.52	34	838
1937	79.5	3,055	96.00	23.83	32	758
1936	80.5	3,419	96.00	23.15	36	824
1935	81.5	1,700	96.00	22.47	18	398
1934	82.5	260	96.00	21.80	3	59
1933	83.5	603	96.00	21.14	6	133
1932	84.5	1,136	96.00	20.49	12	242
1931	85.5	8,010	96.00	19.85	83	1,657
1930	86.5	2,667	96.00	19.23	28	534
1929	87.5	2,862	96.00	18.62	30	555
1928	88.5	8,772	96.00	18.02	91	1,646
1927	89.5	8,243	96.00	17.44	86	1,497
1926	90.5	7,663	96.00	16.87	80	1,347
1925	91.5	4,856	96.00	16.32	51	825
1924	92.5	3,027	96.00	15.79	32	498
1923	93.5	4,627	96.00	15.27	48	736
1922	94.5	4,189	96.00	14.77	44	645
1921	95.5	2,407	96.00	14.29	25	358
1920	96.5	1,217	96.00	13.82	13	175
1919	97.5	639	96.00	13.37	7	89
1918	98.5	593	96.00	12.94	6	80
1917	99.5	1,737	96.00	12.52	18	227
1916	100.5	593	96.00	12.12	6	75
1915	101.5	392	96.00	11.73	4	48
1914	102.5	845	96.00	11.35	9	100
1913	103.5	1,682	96.00	10.99	18	192
1912	104.5	780	96.00	10.64	8	86
1911	105.5	1,580	96.00	10.29	16	169
1910	106.5	1,838	96.00	9.96	19	191
1909	107.5	10,573	96.00	9.64	110	1,062
1908	108.5	4,010	96.00	9.32	42	390
		91,319,091			951,241	77,115,167

AVERAGE SERVICE LIFE 96.00
AVERAGE REMAINING LIFE 81.07

James S. Garren

Experience

Snavely, King, Majoros, and Associates, Inc.

Consultant (2010-Present)

Mr. Garren provides expert witness testimony to clients, specializing in the area of depreciation. Mr. Garren also provides analytical support to SK clients and principals including quantitative and qualitative analysis, preparation of client presentations, and case management. Mr. Garren works primarily in the areas of depreciation but has also prepared exhibits for use in the revenue requirement, cost-allocation, rate design, and rate of return aspects of regulatory proceedings. Mr. Garren has also assisted with the preparation of two valuation studies on municipal water companies.

Mr. Garren is a member of, and has been made a Certified Depreciation Professional, by the Society of Depreciation Professionals. In addition, Mr. Garren has attended the National Association of Regulated Utility Commissioners' Rate School.

Issue Advocacy Organization

State Policies Assistant 2009

Assisted with a wide variety of tasks including, but not limited to research, updating organization website with current news, extensive member/supporter communication, and database maintenance.

Binder and Binder, LLC

Client Advocate/Non-Attorney Representative 2007-2008

Mr. Garren's primary duties at Binder were legal writing; producing client and ALJ correspondence, case memoranda, expert witness interrogatories, and arguments in favor of appeal. From July 2007 acted as the company president's primary legal writer. In June of 2007, Mr. Garren became certified as a non-attorney representative. From that time, responsibilities included performing three to five Social Security Disability hearings per week.

Mr. Garren was also responsible for thoroughly developing medical and vocational evidence from the initial filing phase, through Administrative hearing.

Education

Marlboro College, Marlboro, Vermont, B.A. - Literature and Philosophy

Mr. Garren fulfilled Marlboro College's graduation requirement with a thesis on ethical issues in the works of Dostoevsky and Nietzsche. Exploring early post-modern ethical thinking in literature and philosophy.

James Shay Garren

List of cases with submitted testimony

Georgia Power Company's 2013 Rate Case - Docket No. 36989

Rockland Electric Company for approval of changes in electric rates, its tariff for electric service, and its depreciation rate. - BPU Docket No. ER13111135

Mountaineer Gas Filing to Increase Rates and Charges and Proposed Charges in Depreciation Rates. West Virginia Case No. 15-0048-G-D.

Case No. 9355: Application of Baltimore Gas and Electric Company for Adjustments to its Electric and Gas Base Rates

Application of Maryland-American Water Company for Authority to Adjust its Existing Schedule Tariffs and Rates (Cost Allocation and Rate Design and Depreciation)

Pepco 2015 Depreciation Rate Case No. 9385

Original Tariff UGI Utilities, INC. – Gas Division – PA P.U.C. NO. 6 DOCKET NO. R-2015-2518438

Pacific Gas and Electric Co 2017 GRC Application 15-09

First Energy PA Companies, PA PUC Docket Nos. R-2016-2537349, 2537352, 2537355, 2537359

Application of Public Service Co. of Colorado, Proceeding No. 16A-0231E

Application of Delmarva Power and Light Co. Maryland PSC Case No. 9424

Application of Columbia Gas to the Maryland PSC Case No. 9447

Application of Pacific Gas and Electric for changes to its rates, FERC Docket No. ER16-2320-002

Application of Hawai'i Electric Company, Hawai'i Electric Light Company, and Maui Electric Company Docket 2016-0431

Application of Pacific Gas and Electric for changes to its Transmission rates to the FERC. ER15-2294

UGI Electric Utilities, Inc. – Electric Division Docket No. R-2017-2640058

Application of New Jersey American Water BPU CaseWR17090985

Public Service Electric and Gas Company
Case Name: 2018 PSE&G Rate Case
Docket No(s): ER18010029 and GR18010030

Response to Discovery Request: RCR-DEP-0039
Date of Response: 4/4/2018
Witness: Spanos, John
Explain Selection of Service Life/Curve Combinations

Question:
For any accounts where Mr. Spanos did not base his service life/curve selection on the results of his retirement rate analysis, explain why he did not. Also, explain in detail how those service live/curve combinations were selected.

Attachments Provided Herewith: 0

Response:
The analyses of historical data based on the retirement rate method were incorporated into the estimates for each account. The curve selection process incorporated both visual and mathematical curve matching. However, consistent with authoritative depreciation texts and accepted depreciation practices, the service life estimates were not based solely on the statistical analyses for any account. The Company also incorporated information gathered from interviews with Company personnel, site visits, industry experience, and general knowledge of the equipment in each account in developing the estimated survivor curve. Please refer to Part III of Mr. Spanos' depreciation studies and the response to RCR-DEP-0003 for a further discussion of the estimation of service life parameters.