Amended
October 15, 2019

STATE OF NEW JERSEY
OFFICE OF ADMINISTRATIVE LAW
BEFORE THE HONORABLE IRENE JONES

IN THE MATTER OF THE VERIFIED PETITION OF ROCKLAND ELECTRIC COMPANY FOR APPROVAL OF CHANGES IN ELECTRIC RATES, ITS TARIFF FOR ELECTRIC SERVICE, AND ITS DEPRECIATION RATES, AND FOR OTHER RELIEF	)))))))	BPU DOCKET NO. ER19050552 OAL DOCKET NO. PUC07548-2019

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

STEFANIE A. BRAND, ESQ.
DIRECTOR, DIVISION OF RATE COUNSEL

DIVISION OF RATE COUNSEL
140 East Front Street, 4th Floor
P. O. Box 003
Trenton, New Jersey 08625
Phone: 609-984-1460
Email: njratepayer@rpa.nj.gov

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DIRECT TESTIMONY AND EXHIBITS

OF JAMES S. GARREN

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. Attachment A is a summary of my qualifications and experience.

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]

Q. FOR WHOM ARE YOU APPEARING IN THIS PROCEEDING?

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

Q. WHAT IS THE OBJECTIVE OF YOUR TESTIMONY?

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

SUMMARY

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

A. I have reviewed the written direct testimony and exhibits of the Company's depreciation panel, which is comprised of Mr. Ned Allis, who presents testimony on the Company's

[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 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

Depreciation Study, and Mr. Matthew Kahn, of Con Edison. Upon examination of this testimony and the Study, I prepared numerous data requests, and I have had the opportunity to review RECO's responses to these data requests as well as the documents attached to RECO's filing. In response to some of the data requests DRC has been provided the depreciation data used by Mr. Allis 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 proposed by RECO in this proceeding.

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

Yes. Please refer to the table below for comparison of the depreciation rates and expenses. This table shows the depreciation expense impact based on the currently approved depreciation rates: the depreciation rates proposed by RECO: and, my recommended adjustments.

Table - RC - 1
Comparison of Proposed v. Allis v. Garren.
Overall Depreciation expense
Based on Dec. 31,2018 Plant Balances

Current	**Allis**	**SKM**	**SKM** ***Difference V. Current***	**SKM** ***Difference V. Allis***
$7,774,985	**$**8,361,338	$7,581,601	$***(193,384)***	$***(779,737)***

Q. IN BRIEF, WHAT IS THE PRIMARY FACTOR, OR FACTORS, AS TO WHY YOUR PROPOSED DEPRECIATION RATES ARE LOWER THAN THE RATES PROPOSED BY COMPANY WITNESS ALLIS?

A. The primary factor in my proposed depreciation rates being lower than those proposed by the Company's depreciation panel are adjustments that I have made to the average service lives of four accounts, and related sub-accounts.

Q. ARE THERE OTHER FACTORS THAT IMPACT RATE COUNSEL'S PROPOSED DEPRECIATION EXPENSE?

A. Yes. Rate Counsel witness, Paul Alvarez,'s testimony disallows plant associated with the Company investment in new AMI and legacy meters. The result of his testimony will reduce Rate Counsel's proposed depreciation expense in the revenue requirement calculation. I have reviewed Mr. Alvarez's testimony and broadly concur with his conclusions as they impact on depreciation.

In addition, I have proposed to adjust the average service lives of the Company's various meter accounts, both new and legacy. Should Mr. Alvarez's proposal to disallow AMI meters from the Company's rate base be accepted by the Board, my adjusted service lives would become moot. However, if Mr. Alvarez's proposal is not accepted by the Board, the service lives that I am proposing for the various Meter accounts should be adopted.

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

A. Yes, I am sponsoring two exhibits. I have prepared Exhibit JSG-1, which shows the calculation of my proposed depreciation rates for service lives. Exhibit JSG-2 contains the service life analysis for the accounts which I am proposing to adjust.

DISCUSSION OF SERVICE LIVES

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

A. I have identified five accounts and associated subaccounts where I believe Mr. Allis' proposed average service lives vary significantly from the historical indications. They are Account 365.00 – Overhead Conductors and Devices, 368.10 through 368.40 – Line Transformers, Account 369.20 Services – Underground, Account 370.10 through 370.26 – Meters and Meter Installations, and Account 390.00 Structures and Improvements.

I have reviewed Mr. Allis' testimony, workpapers and responses to data requests in an attempt to understand Mr. Allis' rationales for this deviation from historical experience, but Mr. Allis 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. Allis underestimating average service lives for each account. Finally, I discuss specific considerations in reaching proposed average service lives for individual accounts.

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. 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. 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 RECO's transmission 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 retirements 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 ("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 RECO performed for its depreciation study.

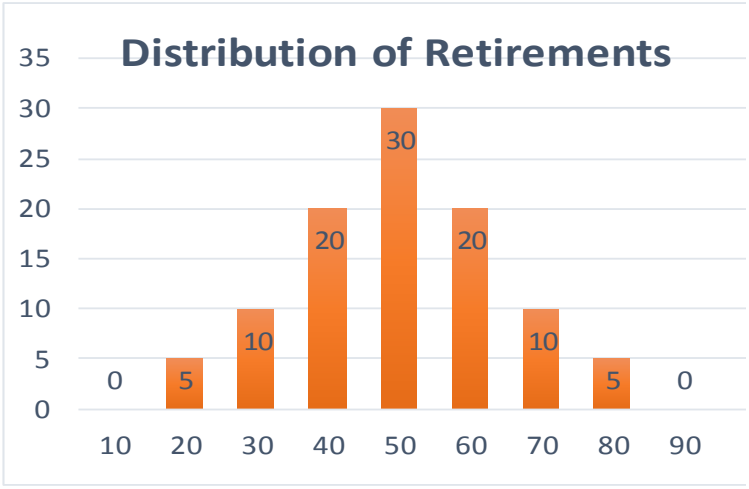
Q. WHAT ARE IOWA CURVES?

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 RC-1

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

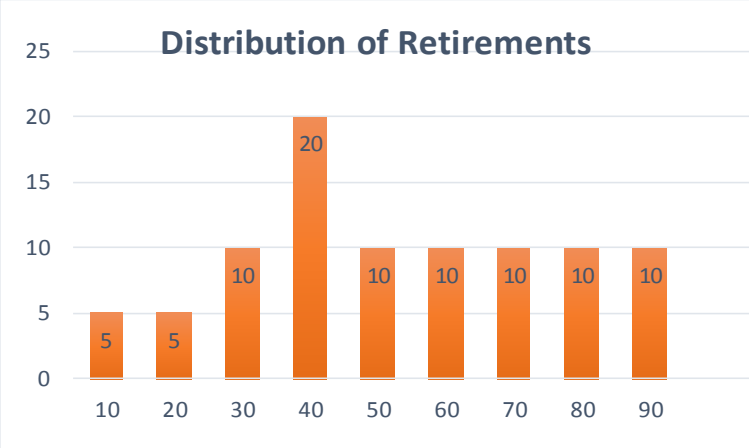


In this example, the average service life would be fifty, and the retirement dispersion curve would tell us how the retirements are arranged around the average service life. In this example, the distribution of retirements around the average service life is symmetrical, with the "mode," or the age with 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 RC-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, I 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, in the first example, which is symmetrical, I would use an "S curve," whereas in the second example, in which the mode was at a younger age than the average service life, I would use an "L curve." If the mode falls after the average service life, then I would use 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 RC-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.

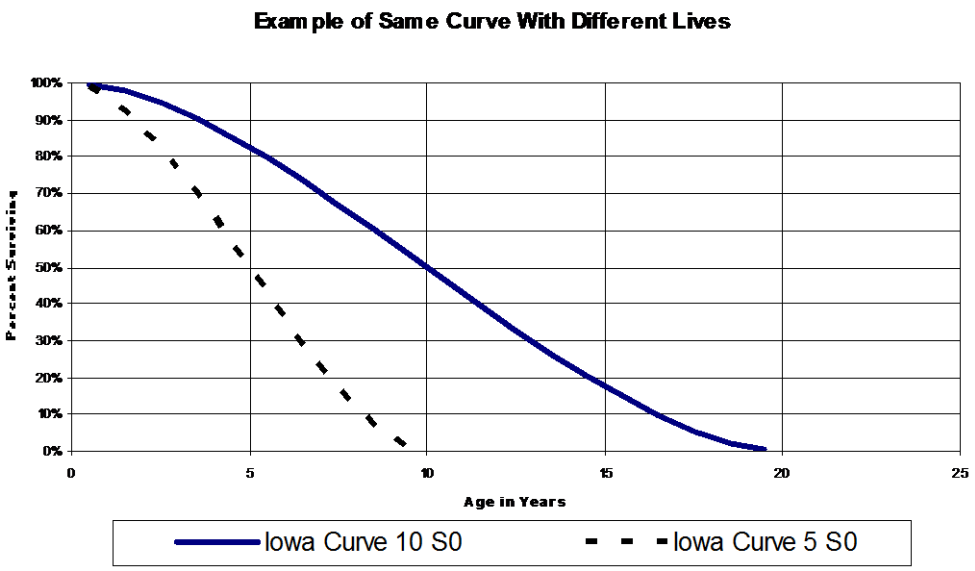
Table RC-2

Sample Survivor Curves

	5 S0 Curve	**10 S0 Curve**
Age	**Percent Surviving**	**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 RC - 3:

Graph RC-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.

As will be discussed in detail below, 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 reliably few recorded retentions). 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.

Q. DO YOU HAVE ANY CONCERNS WITH THE SERVICE LIVES COMPONENT OF MR. ALLIS'S DEPRECIATION STUDY FOR RECO?

A. I have two broad concerns with Mr. Allis's service life recommendations. First, Mr. Allis 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. Allis's depreciation studies purport to present the service life statistical analysis of historical depreciation data. However, the information is incomplete and, as a result, Mr. Allis's depreciation study does 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. Allis 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. Allis's adoption of Iowa curves with artificially low average service life; that is, the visual fit approach preferred by Mr. Allis produces artificially shorter service lives because it relies on inappropriately truncated aged data.

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

A. The Depreciation Study provides, for each account Mr. Allis 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 365.00 – Overhead Conductors and Devices, we can see that Mr. Allis's graph, at page VII-50 of his

depreciation study, stops displaying data points at approximately age 65. However, the original life table continues well past age 65 with the final retirement for this account taking place at age 110,[2] leaving approximately 45 years of data uncharted on Mr. Allis's graph. This goes back to my concern that a T-cut that fails to use the portion of data between 15% and 85% will produce misleading results. There is simply no reason to exclude approximately 45 years of data that form a smooth pattern of retirements with the data that precede them. Moreover, the exclusion of these data from the graph makes it much more difficult to evaluate the appropriateness of Mr. Allis's proposed average service life and Iowa curve visually, which as I demonstrate below, creates further concerns with his service life analysis.

Q. WHAT IS THE NET EFFECT OF THIS TRUNCATION ON MR. ALLIS' ANALYSIS?

A. The truncation of the data at the highest available ages of the depreciation data has the effect of biasing Mr. Allis' analysis towards shorter lives. Below, I provide graphs for each account like the one referenced above, showing the truncated data. These graphs are also available in Exhibit JSG-2. These graphs clearly show a pattern of excluding data for long-lived assets, which has the result of biasing anyone reviewing these graphs in the direction of shorter lives.

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

[2] *Rockland Electric Depreciation Study, page* VII-105.

A. Yes. Understanding how a life table functions is crucial to understanding life analyses. Therefore, let us take 365.00 – Overhead Conductors and Devices, as an example. Below, I have reproduced ages 0 to 4.5 of the observed life table for Account 365 using an experience band of 1952-2016.

Table RC-3

Observed Life Table for Account 365.00

Age	Exposures	Retirements	Retirement Ratio (%)	Survivor Ratio (%)	Cumulative Survivors
BAND		1952 - 2016			
0	252,251,442	45,193	0.0179	99.9821	1.0000
0.5	239,286,696	793,982	0.3318	99.6682	0.9998
1.5	223,275,183	1,018,970	0.4564	99.5436	0.9965
2.5	210,142,181	1,139,763	0.5424	99.4576	0.9920
3.5	197,157,681	951,906	0.4828	99.5172	0.9866
4.5	184,449,424	1,116,755	0.6055	99.3945	0.9818

The first column shows the age. 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 have retirements, which are total retirements on all vintages that occur at a given age. Earlier, we 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 tells you 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 365, the life-curve combination with the lowest sum of squared differences is an L0.5 curve with a 99 year average service life with a sum of squared differences of 217.49. The curve fitting results display the average service life that gives the lowest sum of squared differences for each different curve shape. Table RC-4 presents the top seven curve fits for this account:

Table RC-4

Curve Fitting Results for Account 365

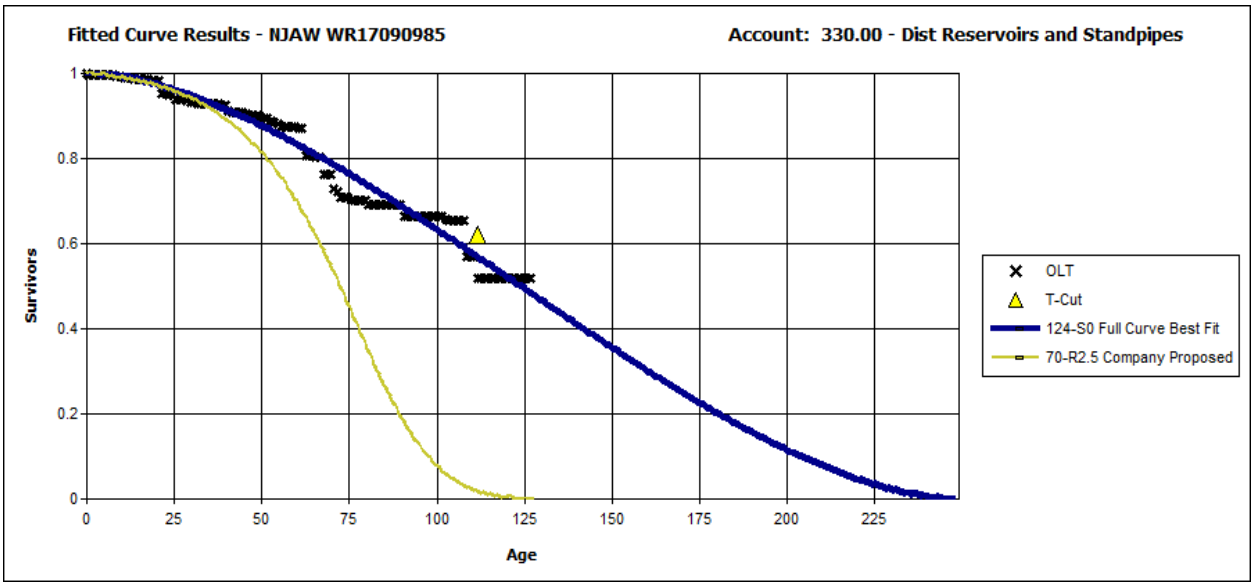
Curve	Life	Sum of Squared Differences
BAND	1952 - 2016	
L0	99.0	217.490
S-0.5	90.0	325.198
R0.5	88.0	368.382
O1	92.0	372.049
O2	100.0	533.910
L0.5	96.0	705.333
R1	86.0	1,586.923

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 365.0, we can see that the best fit results for each curve shape range from as low as 86 years to as high as 100 for the top seven results. We can also see that the number components in the best fitting Iowa curves are quite low, generally between 0 and 1, with the O2 curve being the lone exception, due to the unique characteristics of O curves. Generally, we would expect the retirement pattern of this account to be widely dispersed with a long, flat retirement curve. We can also see that the Company's proposed curve for Account 365, an R1.5 curve, is not one of the top seven curve fits for this account, nor is the Company's proposed average service life of 65 years within the range of any of the best-fitting results.

The next section of the life analysis is a graph, depicted below as Graph RC-5, which plots the cumulative survivors from the observed life table against the best fitting Iowa curve and the Iowa curve proposed by Mr. Allis. 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 Exhibit JSG-2.

Graph RC-5

Best Curve Fit Results for Account 330



Graph RC-5 illustrates the bias that results from truncating the 45 years of data in Mr. Allis's analysis. As you can see, between ages 0 and 45, both the Company's proposed curve (represented by the grey line) and my proposed curve (represented by the black line) closely follow the historical data from the original life table (represented by the black Xs). However, right around age 50, the Company's proposed curve deviates from the historical data and dips sharply downward, whereas my proposed curve still closely follows the historical data. As a result, the Company's proposed service life of 65 years for Account 365 is significantly shorter than the data actually suggests, which is a service life of 99 years. I provide a more detailed discussion of my proposed service life for Account 365 below. The problem is exacerbated by Mr. Allis's use of an improper curve fitting technique, as discussed further below.

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

A. In Mr. Allis's response to data request RCR-DR-40, Mr. Allis 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 365 demonstrates, I have found that Mr. Allis 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.

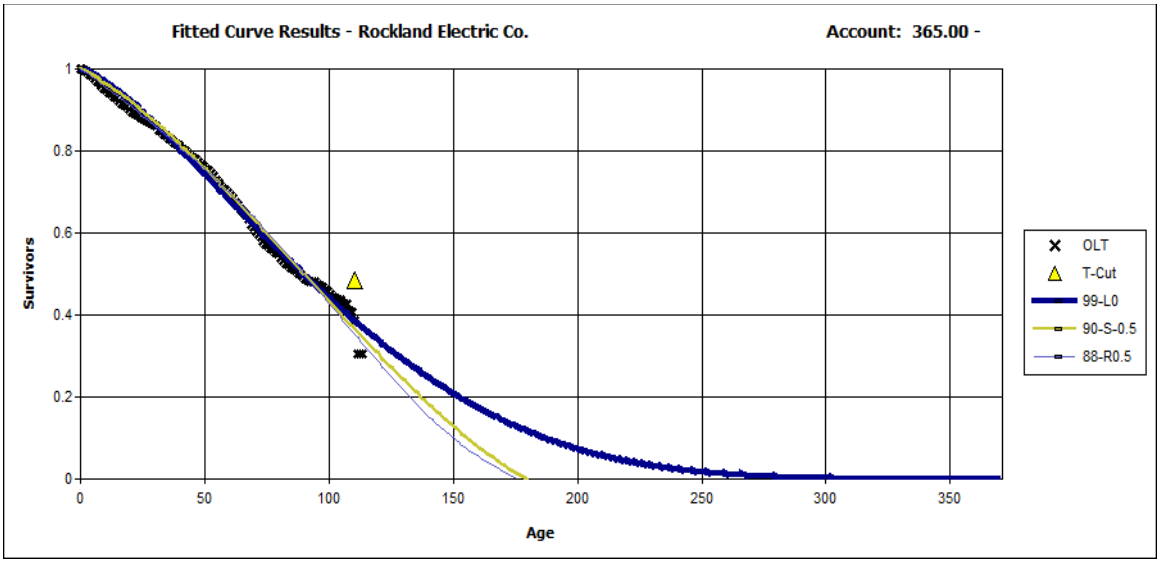
A mathematical curve fitting is superior to a visual curve fitting for two primary reasons. First, is that visual curve fitting is simply less accurate and less precise than mathematical curve fitting. Second, mathematical curve-fitting provides you with metrics by which it is possible to directly compare different service lives and curve-shapes to each other.

To explain the first of these two issues, here is a brief example. Selecting the best curve for a given set of data is not 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. Just as with counting each M&M in a jar, the primary drawback of mathematical curve-fitting is that

it can be an extremely laborious process. Before 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.

The second reason that mathematical curve-fitting is superior to visual curve-fitting is that mathematical curve fitting provides a mathematical output. For my curve-fitting routines, the sum of the squared differences is the output of the analysis of each life and curve combination. These sum of squared differences are compared, with the least sum of squared differences being considered the "best fit", as I have explained above. In Mr. Allis's mathematical curve-fitting, something called a "Residual Measure" (abbreviated to "Resid Meas" in Mr. Allis's workpapers) is used. Residual measure is simply a derivative of the sum of the squared differences created for ease of use. This output is crucial to the analysts ability to understand the results of curve fit. By reviewing the output of the mathematical analysis, it is possible to see not only what life-curve combination is the best match to the data, but how much better it matches than the next best combination. Additionally, by reviewing the outputs, we can see patterns in the results, that can be helpful in understanding the data. Finally, the fact that mathematical results provide these explainable outputs means that the Board, or another individual reviewing the results, can easily assess the analysts proposal.

Visual curve-fitting provides no such output. Obviously, without any output, it is impossible for the analyst to directly compare two different life-curve combinations to each other. For example, here is a graph of the three best-fitting life and curve combinations for Account 365:



These three curves are very close matches. Simply by visual curve-fitting it would be impossible to know with any certainty which result is the closest match. However, thanks to mathematical curve-fitting, we know that the sum of the squared differences for the 99-L0 curve is 217.49, for the 90-S0.5 curve is 325.198, and for the 88-R0.5 curve is 368.382. In this example three extremely different curves are all extremely close matches for the data.

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. In certain cases, such as above, where three extremely different curves are all very close fits to the data, we use informed judgment to select the curve that seems most appropriate for the type of plant in question. 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. ARE THERE ACCOUNTS THAT YOU STUDIED WHERE THE BEST FITTING CURVE IS NOT APPROPRIATE?

Yes. There are three accounts Account 365 – Overhead Conductors and Devices, Account 368 – Line Transformers, and Account 390 – General Structures and Improvements, where I have adopted the second best-fitting curve, rather than the best fit. In each, the best-fitting curve shapes were very close together in terms of their mathematical fit to the data, but in my judgement, the second best-fitting curve was more appropriate to the type of plant in question.

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

A. The results of the mathematical curve fitting would certainly change if Mr. Allis'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. Allis. 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. Allis's reliance on visual curve fitting and his use of significant T-cuts are two separate issues that compound one another. If Mr. Allis had relied on visual curve fitting, but utilized all, or most, of the available data, his results would be more reliable.

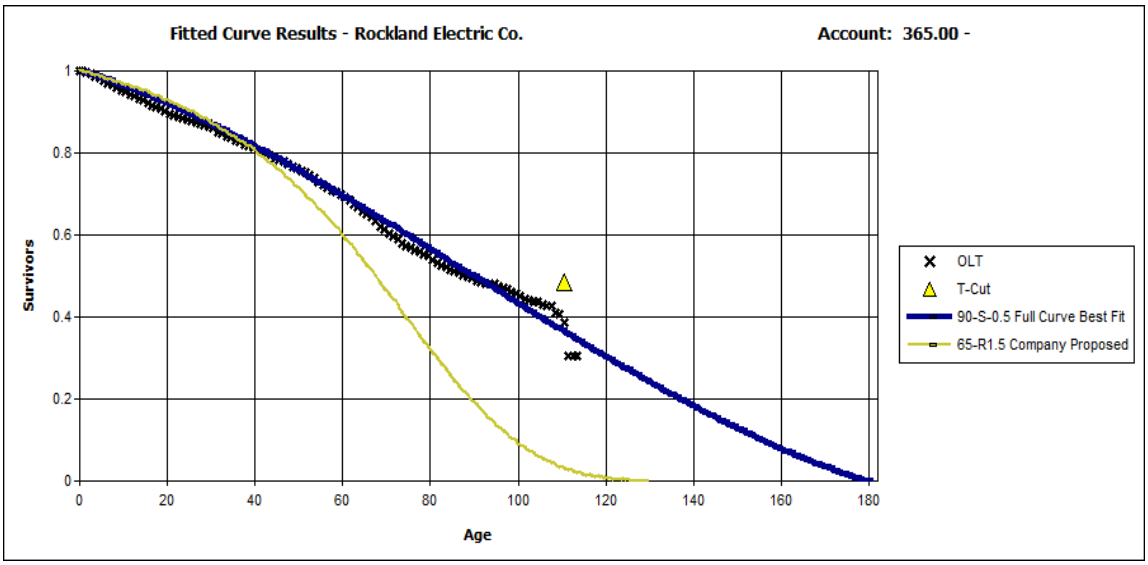
Q. HAVE YOU PROVIDED THE RESULTS OF YOUR MATHEMATICAL FITTING ANALYSIS?

A. Yes, Exhibit JSG-2 includes a Schedule titled "Best Fit Curve Results" for each account studied that shows my mathematical curve fitting analysis. In most cases, I have selected the best fit according to the mathematical curve-fitting results. However, I have diverged from the best fit in some cases, as I will discuss below. Where I have parted from the absolute mathematical best fit, I have relied on a near to best fit directly from the mathematical analysis.

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

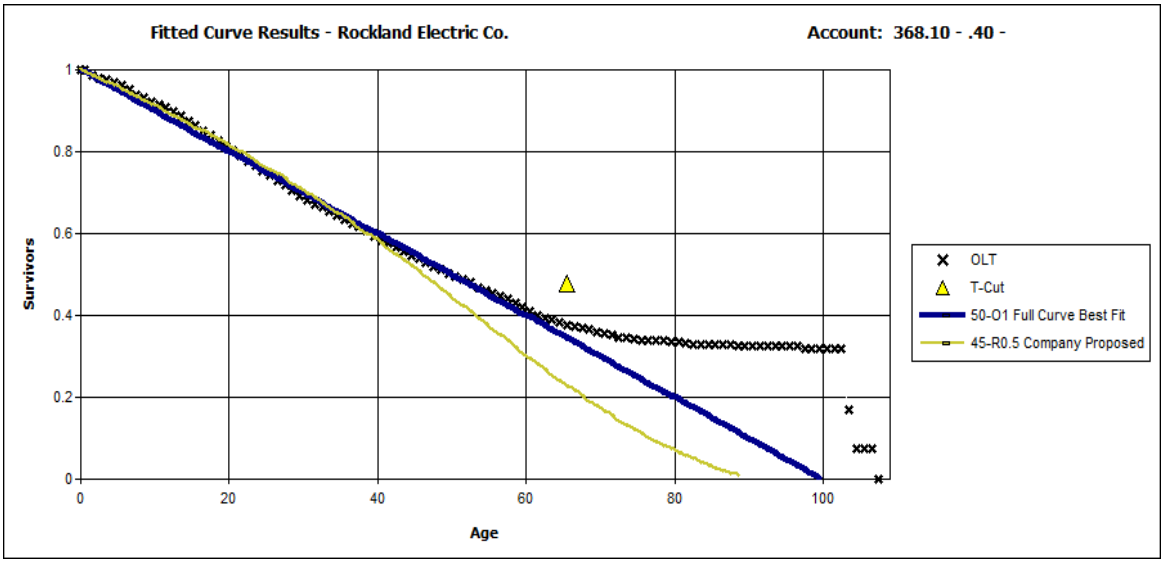
A. Yes, below is a discussion of my life analysis for each account, as well the information provided by Mr. Allis, and how I arrived at my proposals for each account. Each account description is accompanied by a graph, showing the observed life table data (in black Xs), the best-fitting Iowa curve according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

Account 365.00 – Overhead, Conductors and Devices



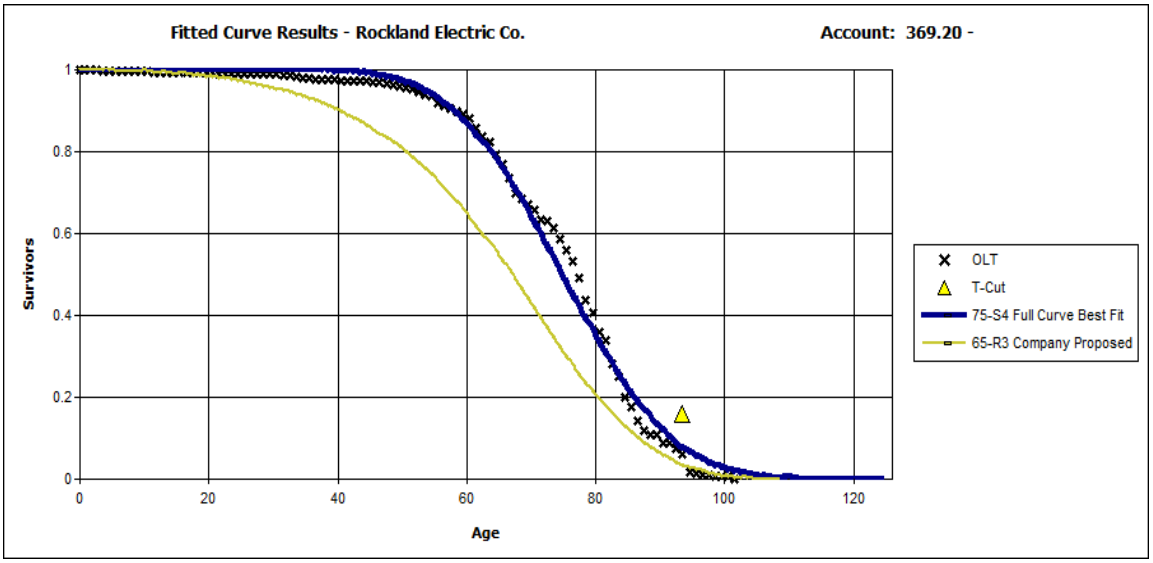
Mr. Allis has proposed a 65-R1.5 life and curve for this account. This is an extremely poor fit to the Company's extensive historical data available in this account. On page VII-50 of the Depreciation Study, Mr. Allis provides a graph of his recommendation against the available data through approximately age 67. Even to this point, we can see that Mr. Allis' proposed curve diverges from the data. However, the available data in fact continues on in a consistent pattern through the end of the data. The best fit to the available data in this account is the 99-L0 curve. However, I do not believe that an L0 curve shape is the most appropriate for plant of this type. Given that the second-best fitting life and curve, 90-S0.5, is also an extremely close fit to the data, I am proposing that life and curve combination for this account.

Account 368.10-.40 – Line Transformers



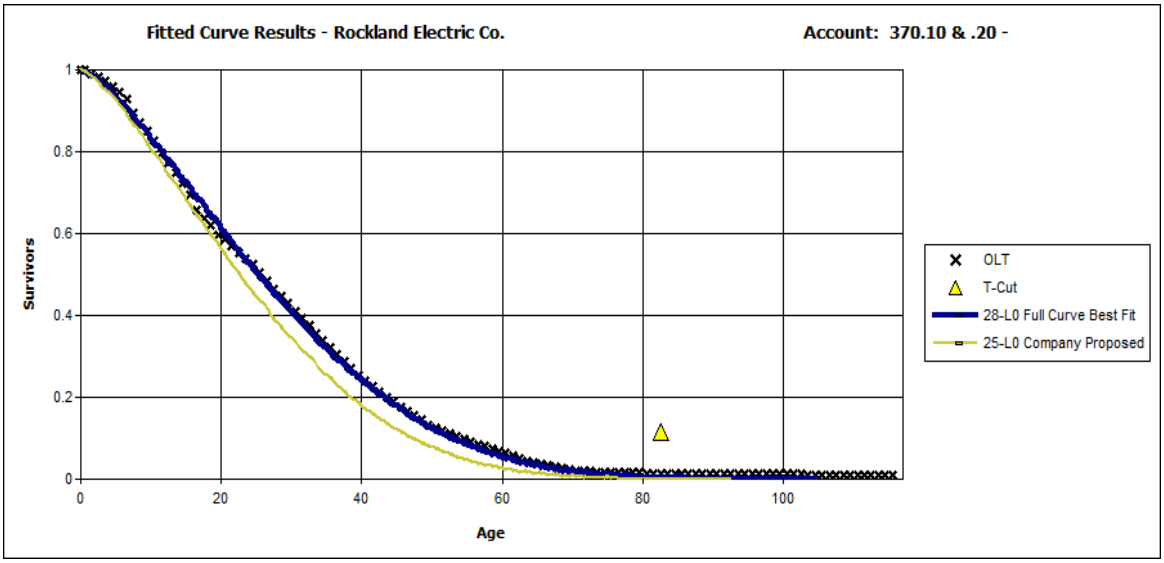
Mr. Allis has proposed a 45-R0.5 life and curve for this account. While this is a reasonable fit to the available data through age 40, the data departs from Mr. Allis' selected curve notably at that point. At page VII-64 of the depreciation study, we see the graph provided by Mr. Allis for this account. In Mr. Allis' graph, he stops displaying the data at approximately age 58. In fact, the available data continues on through age 107. However, at age 65 we can see that the pattern of the data diverges substantially, with retirements dwindling until age 103. In my judgment, the data through age 65 is more consistent with most types of utility plant. The best-fitting curve shape for this account is a 57-O2 curve. As discussed above, the O2 curve shape is not generally appropriate for utility plant. Therefore, I am proposing the next best fit life and curve, which is a 50-O1

Account 369.20 – Services, Underground



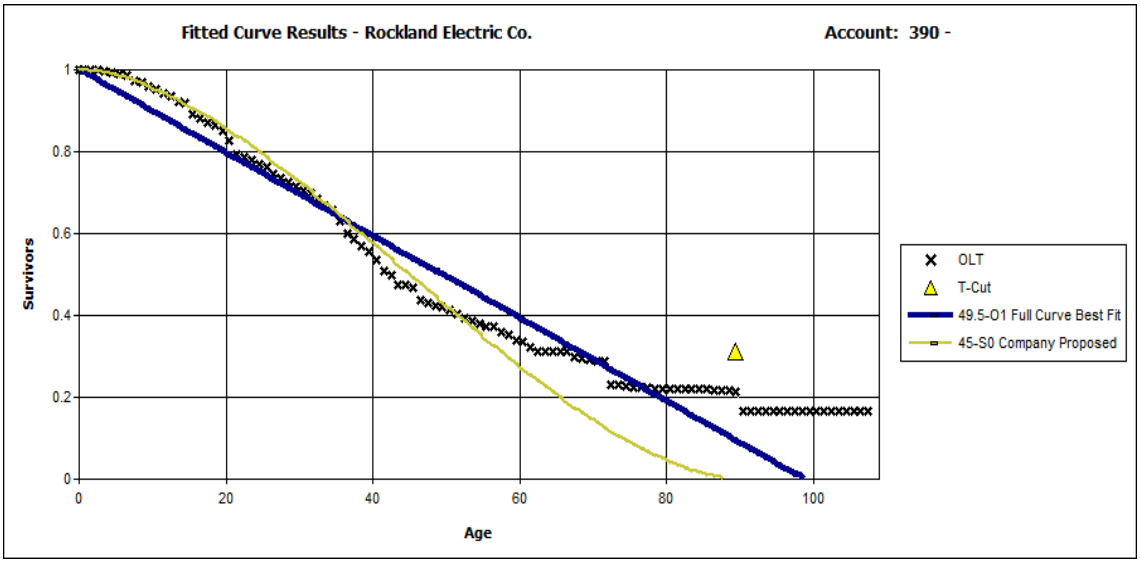
Mr. Allis is proposing a 65 -R3 life and curve. As we can see in the graph above, Mr. Allis' selected curve is simply not a good fit to the smooth and complete set of retirement data in this account. Therefore, I am proposing a 75-S4 curve because that is the best fit to the available data.

Account 370.10 - .21 – Meters and Installations – Electromechanical



Mr. Allis has proposed a 25-LO curve for each of the electromechanical meter accounts. This is nearly a good fit to the available data, but the L0 curve shape better fits the available data with a 28-year service life, rather than the 25 year service life that Mr. Allis has proposed. Visually, there difference between the two service lives, combined with the L0 curve shape is close, but the 28-year curve is clearly a better fit. Therefore, I have proposed a 28-L0 life and curve. In addition, Mr. Allis has proposed a 20 – S2.5 life and curve. This proposal is not based on any historical data, and there is not sufficient industry data for AMI meters to provide a baseline. Until there is data to study on these new types of meters, the service life for the previous generation of meters should continue to be used.

Account 390.00 General Structures and Improvements.



Mr. Allis is proposing a 45 – S0 life and curve combination. This is not a particularly good fit to any segment of the data. At page VII-91 of Mr. Allis' depreciation study, Mr. Allis' provide a graph of the data that stops at approximately age 65. When we view the data through Age 90, the age of the oldest retirement, we can see that the data has varying patterns through different periods. As such, rather than the mathematical best fit, which is a 51 – L0, I am proposing a 49 – O1 curve shape, which is also an excellent fit to the data, but doesn't assume low retirement patterns at older ages.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

APPENDIX

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

PROJECTS AND APPEARANCES

Federal Energy Regulatory Commission

Docket No. ER17-2154-000 Pacific Gas and Electric

MD Public Service Commission

Case No. 9490 Potomac Edison
Case No. 9480 Columbia Gas
Case No. 9447 Columbia Gas
Case No 9424 Delmarva
Case No. 9385 Pepco
Case No. 9355 Baltimore Gas and Electric

New Jersey Board of Public Utilities

Docket No. ER18010029 & GR18010030 Public Service Electric and Gas
Docket No WR17090985 New Jersey American Water
Docket No. ER13111135 Rockland Electric Company
Docket No. GR16090826 Elizabeth Town Gas
Docket No. WR18050593 Suez Water and Wastewater

Pennsylvania Public Utilities Commission

Docket No. R-2017-2640058 UGI Utilities Inc. – Electric Division
Docket Nos. R-2016-2537349, 2537352, 2537355, 2537459, First Energy Companies.
Docket No. 2015-2518439 UGI Utilities Gas Division

West Virginia Public Service Commission

Case No. 15-0048-G-D Mountaineer Gas

Colorado Public Service Commission

Proceeding No. 16A-0231E – Public Service of Colorado

Hawai'i Public Utilities Commission

Docket No. 2016-0431 Hawai'i Electric, Hawai'i Electric Light, and Maui Electric

Georgia Public Utilities Commission

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

Kansas Corporation Commission

Kansas Gas Company 2018 Rate Case Docket No. 18-KGSG-560-RTS
Empire District Electric Co. 2019 Rate Case Docket No. 19-EPDE-223-RTS

EXHIBIT JSG-1

Rate Counsel Proosed Calculation of DepreciationRates **Exhibit JSG-1**
Snavely King Majoros & Assoc.
Based on Plant in Service as of December 31, 2017

	ACCOUNT	SURVIVOR CURVE	ORIGINAL COST AS OF DECEMBER 31, 2017	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	COMPOSITE REMAINING LIFE	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)=(5)/(6)	(8)=(7)/(3)
	ELECTRIC PLANT							
	TRANSMISSION PLANT							
352.00	STRUCTURES AND IMPROVEMENTS	60-R2	1,961,546.03	583,397	1,378,149	43.8	31,430	1.60
353.00	STATION EQUIPMENT	45-S0	14,059,732.11	4,455,848	9,603,884	28.9	332,877	2.37
354.00	TOWERS AND FIXTURES	70-R4	1,184,704.37	541,067	643,637	9.2	70,255	5.93
355.00	POLES AND FIXTURES - WOOD	55-R3	4,474,679.68	1,286,169	3,188,510	40.3	79,070	1.77
355.10	POLES AND FIXTURES - STEEL	55-R3	916,324.19	269,733	646,592	36.4	17,748	1.94
356.00	OVERHEAD CONDUCTORS AND DEVICES	65-R1.5	4,030,023.02	1,370,666	2,659,357	47.9	55,532	1.38
356.10	OVERHEAD CONDUCTORS AND DEVICES - CLEARING	65-R1.5	397,992.41	128,534	269,458	40.7	6,626	1.66
357.00	UNDERGROUND CONDUIT	45-R3	1,116,728.83	397,717	719,012	31.1	23,115	2.07
358.00	UNDERGROUND CONDUCTORS AND DEVICES	35-S3	1,074,720.86	484,072	590,649	20.0	29,526	2.75
359.00	ROADS AND TRAILS	65-R4	96,742.25	48,770	47,972	35.7	1,345	1.39
	TOTAL TRANSMISSION PLANT		**29,313,193.75**	**9,565,974**	**19,747,220**		**647,524**	
	DISTRIBUTION PLANT							
361.00	STRUCTURES AND IMPROVEMENTS	55-R3	4,606,182.94	1,210,078	3,396,105	38.6	88,075	1.91
362.00	STATION EQUIPMENT	45-S0	54,909,124.52	11,304,932	43,604,192	34.6	1,262,049	2.30
364.00	POLES, TOWERS AND FIXTURES	55-R1	50,499,119.96	7,347,015	43,152,105	43.6	990,190	1.96
365.00	OVERHEAD CONDUCTORS AND DEVICES	90-S0.5	57,323,421.73	10,246,036	47,077,386	75.7	621,730	1.08
365.10	OVERHEAD CONDUCTORS AND DEVICES - CAPACITORS	30-R1	1,666,848.38	445,683	1,221,166	21.6	56,651	3.40
366.00	UNDERGROUND CONDUIT	75-R3	18,154,101.40	4,472,579	13,681,522	56.5	242,000	1.33
367.00	UNDERGROUND CONDUCTORS AND DEVICES	60-R4	58,265,607.22	12,131,724	46,133,884	45.2	1,021,116	1.75
367.10	UNDERGROUND CONDUCTORS AND DEVICES - CABLE CURE	60-R4	2,160,120.31	736,789	1,423,331	41.8	34,023	1.58
368.10	LINE TRANSFORMERS - OVERHEAD	50-O1	15,241,140.79	3,432,809	11,808,332	39.1	301,695	1.98
368.20	LINE TRANSFORMERS - OVERHEAD INSTALLATIONS	50-O1	8,500,430.67	1,442,426	7,058,005	42.2	167,410	1.97
368.30	LINE TRANSFORMERS - UNDERGROUND	50-O1	10,843,264.14	2,318,955	8,524,309	40.1	212,470	1.96
368.40	LINE TRANSFORMERS - UNDERGROUND INSTALLATIONS	50-O1	3,109,800.40	391,100	2,718,700	44.5	61,094	1.96
369.10	SERVICES - OVERHEAD	65-R3	5,904,236.72	2,345,108	3,559,129	38.4	92,644	1.57
369.20	SERVICES - UNDERGROUND	75-S4	15,179,490.82	5,008,220	10,171,271	54.2	187,593	1.24
370.10	METERS - ELECTROMECHANICAL	28-L0	2,686,188.31	1,272,587	1,413,601	17.0	83,104	3.09
370.11	METERS - SOLID STATE	28-L0	2,173,490.39	540,524	1,632,967	23.3	70,235	3.23
370.20	METER INSTALLATIONS - ELECTROMECHANICAL	28-L0	1,335,336.20	654,627	680,709	16.7	40,859	3.06
370.21	METER INSTALLATIONS - SOLID STATE	28-L0	2,996,229.30	640,173	2,356,056	24.0	98,374	3.28
371.00	INSTALLATIONS ON CUSTOMERS' PREMISES	35-R0.5	582,740.41	207,593	375,148	25.5	14,710	2.52
373.10	STREET LIGHTING AND SIGNAL SYSTEMS - OVERHEAD	40-R0.5	3,548,678.94	827,773	2,720,906	26.6	102,121	2.88
373.20	STREET LIGHTING AND SIGNAL SYSTEMS - UNDERGROUND	40-R0.5	1,396,869.83	349,427	1,047,442	26.5	39,456	2.82
	TOTAL DISTRIBUTION PLANT		**321,082,423.38**	**67,326,157**	**253,756,266**		**5,787,599**	**1.80**

Rate Counsel Proosed Calculation of DepreciationRates **Exhibit JSG-1**
Snavely King Majoros & Assoc.
Based on Plant in Service as of December 31, 2017

	ACCOUNT	SURVIVOR CURVE	ORIGINAL COST AS OF DECEMBER 31, 2017	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	COMPOSITE REMAINING LIFE	CALCULATED ANNUAL ACCRUAL AMOUNT	CALCULATED ANNUAL ACCRUAL RATE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)=(5)/(6)	(8)=(7)/(3)
	GENERAL PLANT							
390.00	STRUCTURES AND IMPROVEMENTS	49-O1	689,261.10	221,932	467,329	38.1	12,276	1.78
	TOTAL GENERAL PLANT		**689,261.10**	**221,932**	**467,329**		**12,276**	**1.78**
	TOTAL DEPRECIABLE ELECTRIC PLANT		**351,084,878.23**	**77,114,062**	**273,970,815**		**6,447,398**	**1.84**
	NONDEPRECIABLE AND ACCOUNTS NOT STUDIED							
301.00	ORGANIZATION		5,636.12					
302.00	FRANCHISES AND CONSENTS		441.59					
350.00	LAND AND LAND RIGHTS - EASEMENTS		1,440,974.69					
350.10	LAND AND LAND RIGHTS - FEE		387,670.89					
360.00	LAND AND LAND RIGHTS - EASEMENTS		180,609.34					
360.09	LAND AND LAND RIGHTS - EASEMENT (FUTURE USE)		41,660.00					
360.10	LAND AND LAND RIGHTS - FEE		2,713,001.98					
360.19	LAND AND LAND RIGHTS - FEE (FUTURE USE)		167,049.29					
389.10	LAND AND LAND RIGHTS - FEE		154,414.77					
390.14	STRUCTURES AND IMPROVEMENTS - LETHBRIDGE PLAZA		235,554.08	142,523				
391.10	OFFICE FURNITURE AND EQUIPMENT - FURNITURE		3,614.57	(13,969)				
391.20	OFFICE FURNITURE AND EQUIPMENT - BUSINESS MACHINES			(6,593)				
391.70	OFFICE FURNITURE AND EQUIPMENT - EDP EQUIPMENT		121,950.51	103,316				
392.40	TRAILERS AND TRUCK MOUNTED EQUIPMENT		(30.55)					
393.00	STORES EQUIPMENT		2,025.54	1,202				
394.00	TOOLS, SHOP AND GARAGE EQUIPMENT		450,563.51	59,219				
394.20	GARAGE EQUIPMENT		81,387.25	58,222				
395.00	LABORATORY EQUIPMENT		224,222.33	47,773				
396.00	POWER OPERATED EQUIPMENT			(41,335)				
397.00	COMMUNICATION EQUIPMENT		7,090,392.45	2,499,301				
397.10	COMMUNICATION EQUIPMENT - TELEPHONE SYSTEM COMPUTER		40,248.05	17,827				
397.20	COMMUNICATION EQUIPMENT - TELEPHONE SYSTEM EQUIPMENT		27,170.98	(1,665)				
398.00	MISCELLANEOUS EQUIPMENT		281,187.59	24,872				
399.00	UNALLOCATED RESERVE			5,877,129				
	TOTAL NONDEPRECIABLE AND ACCOUNTS NOT STUDIED		**13,649,744.98**	**8,767,822**				
	TOTAL ELECTRIC PLANT		**364,734,623.21**	**85,881,884**				

NOTES:

ADDITIONS TO NEW METERS ACCOUNTS SHOULD USE THE FOLLOWING SURVIVOR CURVES AND ANNUAL ACCRUAL RATES:

ACCOUNT	SURVIVOR CURVE	ACCRUAL RATE
ACCOUNT 370.12 METERS - AMI METERS	28-L0	3.57%
ACCOUNT 370.15 METERS - UNRECOVERED ELECTROMECHANICAL PURCHASES	28-L0	3.57%
ACCOUNT 370.16 METERS - UNRECOVERED SOLID STATE PURCHASES	28-L0	3.57%
ACCOUNT 370.12 METER INSTALLATIONS - AMI METERS	28-L0	3.57%
ACCOUNT 370.15 METER INSTALLATIONS - UNRECOVERED ELECTROMECHANICAL PURCHASES	28-L0	3.57%
ACCOUNT 370.16 METER INSTALLATIONS - UNRECOVERED SOLID STATE PURCHASES	28-L0	3.57%

EXHIBIT JSG-2

Observed Life Table Results
Rockland Electric Co.
Account: 365.00 -

Age	Exposures	Retirements	Retirement Ratio (%)	Survivor Ratio (%)	Cumulative Survivors
BAND		**1952 - 2016**			
0	252,251,442	45,193	0.0179	99.9821	1.0000
0.5	239,286,696	793,982	0.3318	99.6682	0.9998
1.5	223,275,183	1,018,970	0.4564	99.5436	0.9965
2.5	210,142,181	1,139,763	0.5424	99.4576	0.9920
3.5	197,157,681	951,906	0.4828	99.5172	0.9866
4.5	184,449,424	1,116,755	0.6055	99.3945	0.9818
5.5	174,292,373	952,887	0.5467	99.4533	0.9759
6.5	161,463,897	879,194	0.5445	99.4555	0.9705
7.5	151,218,529	872,901	0.5772	99.4228	0.9652
8.5	139,460,554	791,830	0.5678	99.4322	0.9597
9.5	131,684,574	803,151	0.6099	99.3901	0.9542
10.5	124,632,805	619,772	0.4973	99.5027	0.9484
11.5	117,787,507	760,365	0.6455	99.3545	0.9437
12.5	112,116,167	622,898	0.5556	99.4444	0.9376
13.5	107,478,392	570,583	0.5309	99.4691	0.9324
14.5	103,085,325	724,246	0.7026	99.2974	0.9274
15.5	98,617,833	484,718	0.4915	99.5085	0.9209
16.5	94,359,629	429,844	0.4555	99.5445	0.9164
17.5	88,035,753	524,048	0.5953	99.4047	0.9122
18.5	84,337,433	565,280	0.6703	99.3297	0.9068
19.5	81,268,405	449,042	0.5525	99.4475	0.9007
20.5	77,871,999	336,633	0.4323	99.5677	0.8957
21.5	73,217,343	341,920	0.4670	99.5330	0.8919
22.5	69,139,923	272,130	0.3936	99.6064	0.8877
23.5	65,283,949	302,195	0.4629	99.5371	0.8842
24.5	61,285,466	199,897	0.3262	99.6738	0.8801
25.5	57,954,082	221,174	0.3816	99.6184	0.8772
26.5	52,950,635	252,016	0.4759	99.5241	0.8739
27.5	47,395,362	183,088	0.3863	99.6137	0.8697
28.5	45,550,492	188,025	0.4128	99.5872	0.8664
29.5	43,518,728	175,082	0.4023	99.5977	0.8628
30.5	41,663,250	352,543	0.8462	99.1538	0.8593
31.5	40,027,987	276,447	0.6906	99.3094	0.8521
32.5	38,554,368	238,025	0.6174	99.3826	0.8462
33.5	37,038,490	225,940	0.6100	99.3900	0.8409
34.5	35,460,867	237,671	0.6702	99.3298	0.8358
35.5	33,296,685	148,626	0.4464	99.5536	0.8302
36.5	31,917,477	198,545	0.6221	99.3779	0.8265
37.5	30,438,569	161,799	0.5316	99.4684	0.8214
38.5	29,071,669	181,653	0.6248	99.3752	0.8170

39.5	27,347,989	166,486	0.6088	99.3912	0.8119
40.5	25,892,910	141,489	0.5464	99.4536	0.8070
41.5	23,835,404	115,175	0.4832	99.5168	0.8025
42.5	20,701,079	162,692	0.7859	99.2141	0.7987
43.5	17,333,743	121,441	0.7006	99.2994	0.7924
44.5	14,473,095	71,209	0.4920	99.5080	0.7868
45.5	12,719,730	79,622	0.6260	99.3740	0.7830
46.5	10,820,825	74,568	0.6891	99.3109	0.7781
47.5	9,858,648	71,563	0.7259	99.2741	0.7727
48.5	8,723,475	56,449	0.6471	99.3529	0.7671
49.5	8,055,575	55,211	0.6854	99.3146	0.7621
50.5	7,029,278	45,578	0.6484	99.3516	0.7569
51.5	6,373,871	50,304	0.7892	99.2108	0.7520
52.5	5,665,867	52,754	0.9311	99.0689	0.7461
53.5	5,098,035	64,834	1.2717	98.7283	0.7391
54.5	4,522,735	40,094	0.8865	99.1135	0.7297
55.5	4,035,168	38,577	0.9560	99.0440	0.7233
56.5	3,539,989	36,895	1.0422	98.9578	0.7163
57.5	3,128,021	22,660	0.7244	99.2756	0.7089
58.5	2,744,939	21,257	0.7744	99.2256	0.7037
59.5	2,360,190	26,731	1.1326	98.8674	0.6983
60.5	1,972,155	15,720	0.7971	99.2029	0.6904
61.5	1,725,735	22,117	1.2816	98.7184	0.6849
62.5	1,510,329	17,044	1.1285	98.8715	0.6761
63.5	1,141,739	15,972	1.3990	98.6010	0.6685
64.5	1,058,536	13,102	1.2377	98.7623	0.6591
65.5	929,077	10,452	1.1250	98.8750	0.6510
66.5	791,252	13,778	1.7413	98.2587	0.6436
67.5	706,257	13,921	1.9711	98.0289	0.6324
68.5	626,296	6,991	1.1162	98.8838	0.6200
69.5	573,823	8,354	1.4558	98.5442	0.6130
70.5	537,309	6,982	1.2994	98.7006	0.6041
71.5	520,737	6,887	1.3225	98.6775	0.5963
72.5	510,232	8,542	1.6741	98.3259	0.5884
73.5	499,975	5,144	1.0289	98.9711	0.5785
74.5	477,179	2,939	0.6158	99.3842	0.5726
75.5	451,942	4,419	0.9778	99.0222	0.5691
76.5	425,187	3,267	0.7683	99.2317	0.5635
77.5	393,802	4,307	1.0937	98.9063	0.5592
78.5	364,007	3,038	0.8345	99.1655	0.5530
79.5	328,097	5,198	1.5843	98.4157	0.5484
80.5	297,951	4,271	1.4336	98.5664	0.5397
81.5	281,337	2,940	1.0450	98.9550	0.5320
82.5	265,102	1,992	0.7512	99.2488	0.5264
83.5	246,775	3,446	1.3962	98.6038	0.5225
84.5	223,983	1,898	0.8476	99.1524	0.5152
85.5	204,681	1,555	0.7595	99.2405	0.5108

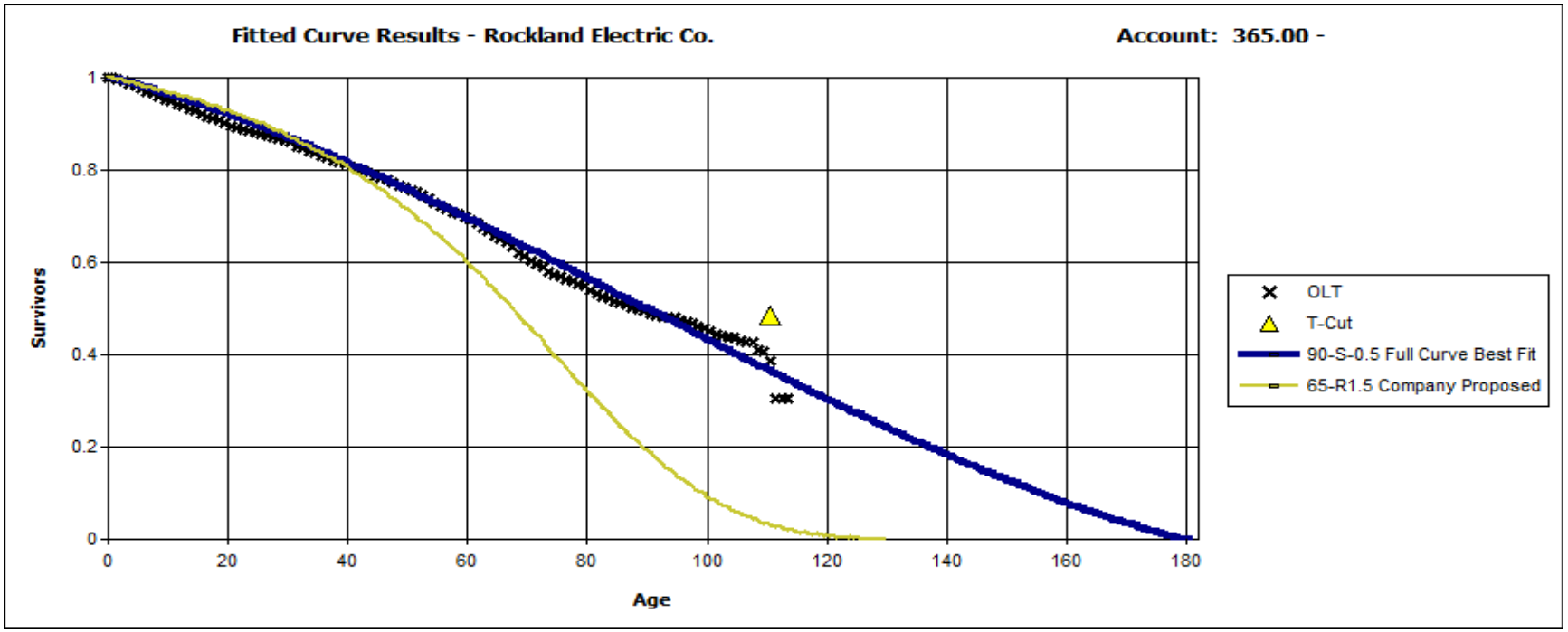
86.5	171,387	1,462	0.8529	99.1471	0.5069
87.5	127,720	734	0.5747	99.4253	0.5026
88.5	103,237	920	0.8913	99.1087	0.4997
89.5	73,629	945	1.2840	98.7160	0.4953
90.5	54,138	506	0.9343	99.0657	0.4889
91.5	38,238	163	0.4275	99.5725	0.4844
92.5	32,734	54	0.1655	99.8345	0.4823
93.5	14,949	40	0.2681	99.7319	0.4815
94.5	11,099	125	1.1246	98.8754	0.4802
95.5	10,063	76	0.7505	99.2495	0.4748
96.5	9,677	90	0.9267	99.0733	0.4712
97.5	9,355	141	1.5072	98.4928	0.4669
98.5	7,690	27	0.3564	99.6436	0.4598
99.5	6,515	126	1.9295	98.0705	0.4582
100.5	5,851	83	1.4109	98.5891	0.4493
101.5	5,452	34	0.6255	99.3745	0.4430
102.5	5,062	35	0.6870	99.3130	0.4402
103.5	4,384	5	0.1218	99.8782	0.4372
104.5	3,704	67	1.8000	98.2000	0.4367
105.5	3,508	3	0.0855	99.9145	0.4288
106.5	2,525	0	0.0000	100.0000	0.4285
107.5	2,117	95	4.4959	95.5041	0.4285
108.5	1,897	7	0.3916	99.6084	0.4092
109.5	1,890	105	5.5740	94.4260	0.4076
110.5	1,785	368	20.6431	79.3569	0.3849
111.5	1,416	0	0.0000	100.0000	0.3054
112.5	1,416	0	0.0000	100.0000	0.3054
113.5	1,416	0	0.0000	100.0000	0.3054

Best Fit Curve Results
Rockland Electric Co.
Account: 365.00 -

Curve	Life	Sum of Squared Differences
BAND	**1952 - 2016**	
L0	99.0	217.490
S-0.5	90.0	325.198
R0.5	88.0	368.382
O1	92.0	372.049
O2	100.0	533.910
L0.5	96.0	705.333
R1	86.0	1,586.923
S0	88.0	1,618.477
L1	93.0	1,959.077
S0.5	88.0	3,593.554
R1.5	86.0	4,020.090
L1.5	92.0	4,251.454
S1	87.0	6,494.047
R2	86.0	7,690.124
L2	90.0	7,741.315
S1.5	87.0	10,077.694
O3	100.0	11,761.642
R2.5	87.0	12,672.795
S2	87.0	14,573.706
L3	89.0	17,276.807
R3	88.0	18,853.639
S3	88.0	24,955.740
L4	89.0	31,381.097
R4	90.0	32,639.516
O4	100.0	34,891.882
S4	90.0	40,880.886
L5	90.0	47,542.846
R5	92.0	52,835.761
S5	92.0	58,738.614
S6	93.0	76,614.484
SQ	88.0	110,897.799

Analytical Parameters

OLT Placement Band:	1902 - 2016
OLT Experience Band:	1952 - 2016
Minimum Life Paramet	4
Maximum Life Parame	100
Life Increment Parame	1
Max Age (T-Cut):	110.5



Analytical Parameters

OLT Placement Band:	1902 - 2016
OLT Experience Band:	1952 - 2016
Minimum Life Parameter:	4
Maximum Life Parameter:	100
Life Increment Parameter:	1
Max Age (T-Cut):	110.5

Rockland Electric Co.

365 Gen Arm -

Calculation of Remaining Life
Based Upon Broad Group/Vintage Group Procedures
Related to Original Cost as of December 31, 2017

Survivor Curve .. IOWA: 90 S0.5

			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)
2017	0.5	4,905,069	90.00	89.50	54,501	4,877,883
2016	1.5	2,637,672	90.00	88.52	29,307	2,594,316
2015	2.5	1,634,112	90.00	87.55	18,157	1,589,710
2014	3.5	2,065,386	90.00	86.60	22,949	1,987,379
2013	4.5	3,318,256	90.00	85.66	36,870	3,158,200
2012	5.5	2,506,400	90.00	84.73	27,849	2,359,609
2011	6.5	2,809,049	90.00	83.81	31,212	2,615,846
2010	7.5	1,870,898	90.00	82.90	20,788	1,723,329
2009	8.5	2,132,707	90.00	82.00	23,697	1,943,194
2008	9.5	4,696,177	90.00	81.11	52,180	4,232,504
2007	10.5	1,492,455	90.00	80.24	16,583	1,330,525
2006	11.5	1,516,532	90.00	79.37	16,850	1,337,341
2005	12.5	765,838	90.00	78.51	8,509	668,033
2004	13.5	1,587,453	90.00	77.66	17,638	1,369,717
2003	14.5	948,875	90.00	76.82	10,543	809,868
2002	15.5	593,353	90.00	75.98	6,593	500,949
2001	16.5	635,284	90.00	75.16	7,059	530,547
2000	17.5	695,584	90.00	74.35	7,729	574,618
1999	18.5	601,930	90.00	73.54	6,688	491,869
1998	19.5	378,734	90.00	72.75	4,208	306,134
1997	20.5	509,977	90.00	71.96	5,666	407,755
1996	21.5	1,345,269	90.00	71.18	14,947	1,063,970
1995	22.5	1,084,254	90.00	70.41	12,047	848,246
1994	23.5	448,035	90.00	69.65	4,978	346,719
1993	24.5	937,149	90.00	68.89	10,413	717,376
1992	25.5	633,107	90.00	68.15	7,035	479,388
1991	26.5	694,509	90.00	67.41	7,717	520,185
1990	27.5	786,622	90.00	66.68	8,740	582,792
1989	28.5	747,471	90.00	65.96	8,305	547,782
1988	29.5	680,385	90.00	65.24	7,560	493,210

1987	30.5	371,165	90.00	64.53	4,124	266,136
1986	31.5	308,029	90.00	63.83	3,423	218,467
1985	32.5	468,500	90.00	63.14	5,206	328,673
1984	33.5	216,104	90.00	62.45	2,401	149,960
1983	34.5	424,556	90.00	61.77	4,717	291,407
1982	35.5	311,708	90.00	61.10	3,463	211,623
1981	36.5	630,874	90.00	60.44	7,010	423,644
1980	37.5	421,988	90.00	59.78	4,689	280,284
1979	38.5	185,418	90.00	59.13	2,060	121,811
1978	39.5	393,894	90.00	58.48	4,377	255,944
1977	40.5	313,397	90.00	57.84	3,482	201,412
1976	41.5	339,753	90.00	57.21	3,775	215,962
1975	42.5	491,319	90.00	56.58	5,459	308,885
1974	43.5	848,646	90.00	55.96	9,429	527,680
1973	44.5	1,085,850	90.00	55.35	12,065	667,758
1972	45.5	892,571	90.00	54.74	9,917	542,862
1971	46.5	433,756	90.00	54.14	4,820	260,905
1970	47.5	686,941	90.00	53.54	7,633	408,638
1969	48.5	246,470	90.00	52.95	2,739	144,996
1968	49.5	306,830	90.00	52.36	3,409	178,507
1967	50.5	163,695	90.00	51.78	1,819	94,179
1966	51.5	259,303	90.00	51.20	2,881	147,528
1965	52.5	184,589	90.00	50.63	2,051	103,851
1964	53.5	155,872	90.00	50.07	1,732	86,717
1963	54.5	138,585	90.00	49.51	1,540	76,238
1962	55.5	170,659	90.00	48.96	1,896	92,831
1961	56.5	110,024	90.00	48.41	1,222	59,176
1960	57.5	119,929	90.00	47.86	1,333	63,777
1959	58.5	94,274	90.00	47.32	1,047	49,568
1958	59.5	148,454	90.00	46.79	1,649	77,172
1957	60.5	136,017	90.00	46.25	1,511	69,905
1956	61.5	129,657	90.00	45.73	1,441	65,878
1955	62.5	68,108	90.00	45.21	757	34,211
1954	63.5	64,867	90.00	44.69	721	32,210
1953	64.5	134,387	90.00	44.18	1,493	65,963
1952	65.5	17,312	90.00	43.67	192	8,400
1951	66.5	35,511	90.00	43.16	395	17,030
1950	67.5	24,261	90.00	42.66	270	11,500
1949	68.5	17,665	90.00	42.16	196	8,276
1948	69.5	10,376	90.00	41.67	115	4,804
1947	70.5	11,049	90.00	41.18	123	5,056
1946	71.5	5,744	90.00	40.70	64	2,597
1945	72.5	1,276	90.00	40.22	14	570
1944	73.5	307	90.00	39.74	3	136
1943	74.5	44	90.00	39.26	0	19
1942	75.5	5,798	90.00	38.79	64	2,499
1941	76.5	5,148	90.00	38.33	57	2,192

1940	77.5	5,435	90.00	37.86	60	2,286
1939	78.5	5,828	90.00	37.40	65	2,422
1938	79.5	4,549	90.00	36.95	51	1,868
1937	80.5	4,672	90.00	36.49	52	1,894
1936	81.5	4,942	90.00	36.04	55	1,979
1935	82.5	1,920	90.00	35.60	21	759
1934	83.5	3,738	90.00	35.15	42	1,460
1933	84.5	3,494	90.00	34.71	39	1,348
1932	85.5	5,157	90.00	34.27	57	1,964
1931	86.5	3,597	90.00	33.84	40	1,352
1930	87.5	5,285	90.00	33.41	59	1,962
1929	88.5	5,680	90.00	32.98	63	2,081
1928	89.5	3,298	90.00	32.55	37	1,193
1927	90.5	4,457	90.00	32.13	50	1,591
1926	91.5	2,789	90.00	31.70	31	982
1925	92.5	5,868	90.00	31.29	65	2,040
1924	93.5	600	90.00	30.87	7	206
1923	94.5	119	90.00	30.46	1	40
1922	95.5	416	90.00	30.05	5	139
1921	96.5	367	90.00	29.64	4	121
1920	97.5	91	90.00	29.23	1	30
1919	98.5	43	90.00	28.83	0	14
1918	99.5	582	90.00	28.43	6	184
1917	100.5	23	90.00	28.03	0	7
1916	101.5	164	90.00	27.63	2	50
1915	102.5	92	90.00	27.24	1	28
1914	103.5	100	90.00	26.84	1	30
1913	104.5	117	90.00	26.45	1	34
1912	105.5	538	90.00	26.06	6	156
1911	106.5	45	90.00	25.68	0	13
1910	107.5	31	90.00	25.29	0	9
1909	108.5	44	90.00	24.91	0	12
1908	109.5	124	90.00	24.53	1	34
		57,323,422			636,927	48,225,115

AVERAGE SERVICE LIFE	90.00
AVERAGE REMAINING LIFE	75.72

Observed Life Table Results
Rockland Electric Co.
Account: 368.10 - .40 -

Age	Exposures	Retirements	Retirement Ratio (%)	Survivor Ratio (%)	Cumulative Survivors
BAND		1904 - 2016			
0	202,076,765	174,999	0.0866	99.9134	1.0000
0.5	191,170,001	2,207,817	1.1549	98.8451	0.9991
1.5	183,564,998	1,165,290	0.6348	99.3652	0.9876
2.5	172,984,439	1,009,549	0.5836	99.4164	0.9813
3.5	162,812,050	990,732	0.6085	99.3915	0.9756
4.5	157,756,778	1,066,961	0.6763	99.3237	0.9697
5.5	150,890,119	1,430,816	0.9483	99.0517	0.9631
6.5	143,779,573	2,097,872	1.4591	98.5409	0.9540
7.5	133,318,587	1,235,273	0.9266	99.0734	0.9401
8.5	121,658,316	1,036,268	0.8518	99.1482	0.9313
9.5	114,281,850	972,568	0.8510	99.1490	0.9234
10.5	106,681,277	880,405	0.8253	99.1747	0.9156
11.5	101,479,100	1,173,419	1.1563	98.8437	0.9080
12.5	96,602,240	1,112,731	1.1519	98.8481	0.8975
13.5	92,898,121	1,119,976	1.2056	98.7944	0.8872
14.5	87,573,744	1,071,634	1.2237	98.7763	0.8765
15.5	84,162,809	1,227,980	1.4591	98.5409	0.8657
16.5	79,533,508	1,098,741	1.3815	98.6185	0.8531
17.5	76,581,990	1,316,091	1.7185	98.2815	0.8413
18.5	73,331,420	1,066,717	1.4547	98.5453	0.8269
19.5	70,397,919	1,026,164	1.4577	98.5423	0.8148
20.5	67,732,920	1,057,988	1.5620	98.4380	0.8030
21.5	64,504,941	1,030,912	1.5982	98.4018	0.7904
22.5	60,820,163	922,858	1.5174	98.4826	0.7778
23.5	57,961,021	813,494	1.4035	98.5965	0.7660
24.5	54,689,164	858,327	1.5695	98.4305	0.7552
25.5	51,511,019	819,595	1.5911	98.4089	0.7434
26.5	48,193,496	793,429	1.6463	98.3537	0.7315
27.5	45,084,340	787,704	1.7472	98.2528	0.7195
28.5	41,676,348	753,020	1.8068	98.1932	0.7069
29.5	38,021,864	563,464	1.4819	98.5181	0.6942
30.5	35,083,077	514,582	1.4668	98.5332	0.6839
31.5	32,485,421	432,272	1.3307	98.6693	0.6738
32.5	30,656,858	448,465	1.4629	98.5371	0.6649
33.5	29,148,015	421,332	1.4455	98.5545	0.6551
34.5	27,777,745	427,921	1.5405	98.4595	0.6457
35.5	26,091,494	426,256	1.6337	98.3663	0.6357
36.5	24,474,606	337,254	1.3780	98.6220	0.6253
37.5	23,321,147	389,616	1.6707	98.3293	0.6167
38.5	22,265,947	403,632	1.8128	98.1872	0.6064

39.5	21,230,464	348,556	1.6418	98.3582	0.5954
40.5	20,438,761	278,535	1.3628	98.6372	0.5857
41.5	19,633,660	347,703	1.7710	98.2290	0.5777
42.5	16,160,554	271,444	1.6797	98.3203	0.5674
43.5	12,170,303	204,427	1.6797	98.3203	0.5579
44.5	9,940,471	160,604	1.6157	98.3843	0.5485
45.5	8,369,730	157,056	1.8765	98.1235	0.5397
46.5	6,746,442	107,051	1.5868	98.4132	0.5296
47.5	5,388,472	96,765	1.7958	98.2042	0.5212
48.5	4,618,535	71,450	1.5470	98.4530	0.5118
49.5	3,411,525	44,380	1.3009	98.6991	0.5039
50.5	2,510,361	42,239	1.6826	98.3174	0.4973
51.5	2,055,818	35,041	1.7045	98.2955	0.4890
52.5	1,784,164	44,564	2.4977	97.5023	0.4806
53.5	1,549,535	22,576	1.4569	98.5431	0.4686
54.5	1,364,490	22,751	1.6673	98.3327	0.4618
55.5	1,201,471	18,839	1.5680	98.4320	0.4541
56.5	1,045,135	16,030	1.5338	98.4662	0.4470
57.5	892,811	16,157	1.8097	98.1903	0.4401
58.5	789,580	22,346	2.8302	97.1698	0.4321
59.5	654,518	13,054	1.9944	98.0056	0.4199
60.5	544,167	13,395	2.4615	97.5385	0.4115
61.5	431,796	7,715	1.7867	98.2133	0.4014
62.5	362,290	4,505	1.2435	98.7565	0.3942
63.5	295,342	3,362	1.1382	98.8618	0.3893
64.5	265,427	4,736	1.7844	98.2156	0.3849
65.5	225,285	2,673	1.1863	98.8137	0.3780
66.5	181,844	1,926	1.0592	98.9408	0.3736
67.5	154,055	1,551	1.0067	98.9933	0.3696
68.5	111,193	2,065	1.8570	98.1430	0.3659
69.5	93,552	932	0.9959	99.0041	0.3591
70.5	78,449	137	0.1747	99.8253	0.3555
71.5	72,664	1,898	2.6123	97.3877	0.3549
72.5	68,670	47	0.0684	99.9316	0.3456
73.5	66,638	238	0.3572	99.6428	0.3454
74.5	64,009	702	1.0966	98.9034	0.3441
75.5	59,029	281	0.4760	99.5240	0.3404
76.5	54,885	72	0.1320	99.8680	0.3387
77.5	50,257	49	0.0969	99.9031	0.3383
78.5	47,321	73	0.1541	99.8459	0.3380
79.5	42,645	245	0.5748	99.4252	0.3375
80.5	37,692	179	0.4738	99.5262	0.3355
81.5	36,408	328	0.8997	99.1003	0.3339
82.5	35,445	155	0.4385	99.5615	0.3309
83.5	34,707	38	0.1103	99.8897	0.3295
84.5	34,342	0	0.0000	100.0000	0.3291
85.5	32,015	90	0.2798	99.7202	0.3291

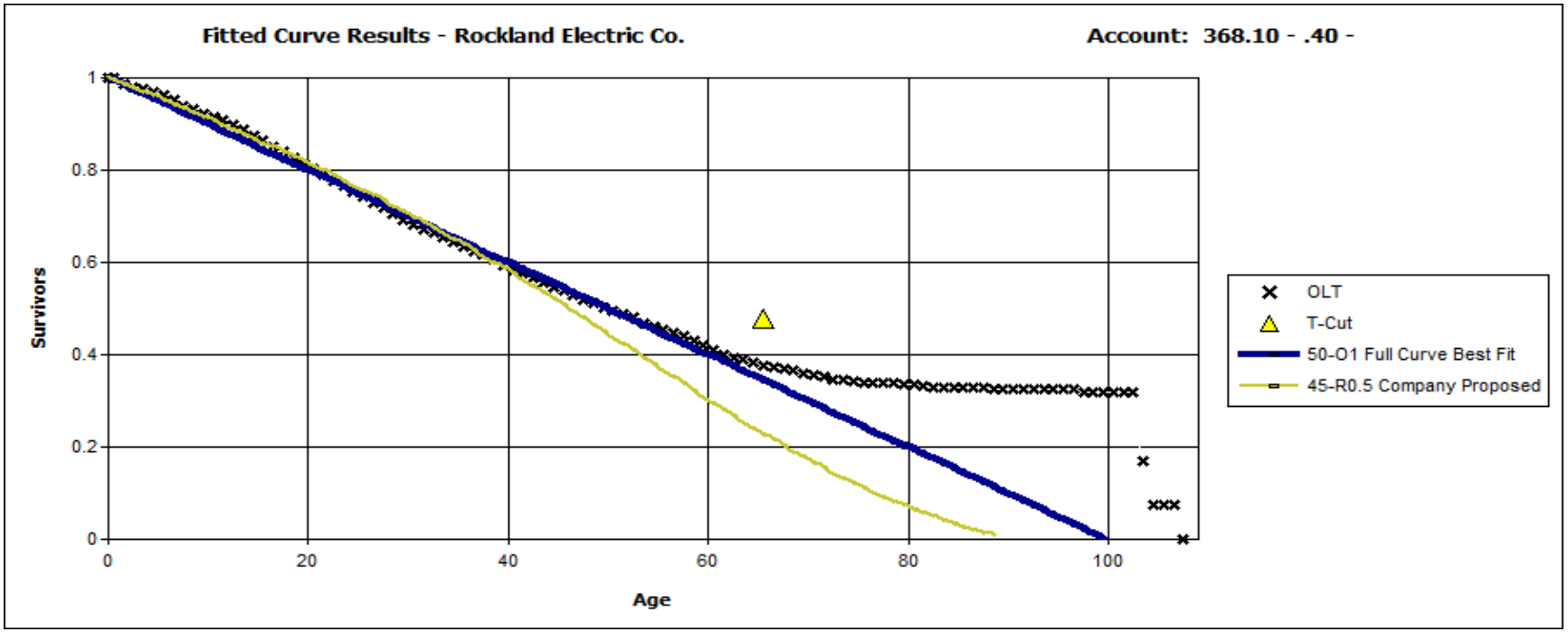
86.5	27,276	0	0.0000	100.0000	0.3282
87.5	24,003	98	0.4103	99.5897	0.3282
88.5	20,959	1	0.0048	99.9952	0.3268
89.5	18,378	0	0.0000	100.0000	0.3268
90.5	14,062	0	0.0000	100.0000	0.3268
91.5	10,133	0	0.0000	100.0000	0.3268
92.5	8,591	20	0.2340	99.7660	0.3268
93.5	6,802	0	0.0000	100.0000	0.3261
94.5	5,501	0	0.0000	100.0000	0.3261
95.5	4,526	0	0.0000	100.0000	0.3261
96.5	3,206	74	2.3048	97.6952	0.3261
97.5	2,968	0	0.0000	100.0000	0.3185
98.5	2,145	0	0.0000	100.0000	0.3185
99.5	1,151	2	0.1737	99.8263	0.3185
100.5	812	0	0.0000	100.0000	0.3180
101.5	569	0	0.0000	100.0000	0.3180
102.5	569	268	47.0869	52.9131	0.3180
103.5	90	50	55.3372	44.6628	0.1683
104.5	40	0	0.0000	100.0000	0.0751
105.5	40	0	0.0000	100.0000	0.0751
106.5	40	40	100.0000	0.0000	0.0751
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

Best Fit Curve Results
Rockland Electric Co.
Account: 368.10 - .40 -

Curve	Life	Sum of Squared Differences
BAND	**1952 - 2016**	
O2	57.0	102.572
O1	50.0	115.496
L0	54.0	217.017
O3	74.0	245.597
S-0.5	50.0	555.613
R0.5	49.0	645.218
L0.5	53.0	854.752
S0	49.0	1,880.087
L1	52.0	1,985.319
R1	49.0	2,064.011
S0.5	49.0	3,626.568
L1.5	51.0	3,947.360
R1.5	49.0	4,230.323
O4	75.0	4,267.411
S1	49.0	5,958.999
L2	51.0	6,658.553
R2	49.0	7,183.533
S1.5	50.0	8,755.341
R2.5	50.0	10,942.978
S2	50.0	12,109.525
L3	50.0	13,731.994
R3	50.0	15,465.293
S3	51.0	19,613.085
L4	51.0	23,584.868
R4	52.0	25,058.838
S4	52.0	30,400.919
L5	51.0	34,261.013
R5	53.0	38,277.789
S5	53.0	41,762.980
S6	52.0	52,322.216
SQ	51.0	72,761.545

Analytical Parameters

OLT Placement Band:	1904 - 2016
OLT Experience Band:	1952 - 2016
Minimum Life Parameter	3
Maximum Life Paramete	75
Life Increment Paramete	1
Max Age (T-Cut):	65.5



Analytical Parameters

OLT Placement Band:	1904 - 2016
OLT Experience Band:	1952 - 2016
Minimum Life Parameter:	3
Maximum Life Parameter:	75
Life Increment Parameter:	1
Max Age (T-Cut):	65.5

Rockland Electric Co.

368.10 Gen Arm -

Calculation of Remaining Life
Based Upon Broad Group/Vintage Group Procedures
Related to Original Cost as of December 31, 2017

Survivor Curve .. IOWA: 50 O1

			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)
2017	0.5	367,375	50.00	49.75	7,348	365,555
2016	1.5	500,035	50.00	49.25	10,001	492,557
2015	2.5	429,511	50.00	48.75	8,590	418,793
2014	3.5	884,762	50.00	48.25	17,695	853,835
2013	4.5	492,733	50.00	47.75	9,855	470,582
2012	5.5	703,253	50.00	47.25	14,065	664,607
2011	6.5	496,906	50.00	46.75	9,938	464,630
2010	7.5	681,426	50.00	46.25	13,629	630,351
2009	8.5	491,918	50.00	45.75	9,838	450,129
2008	9.5	637,791	50.00	45.25	12,756	577,231
2007	10.5	510,783	50.00	44.75	10,216	457,176
2006	11.5	632,177	50.00	44.25	12,644	559,508
2005	12.5	287,682	50.00	43.75	5,754	251,736
2004	13.5	312,942	50.00	43.25	6,259	270,711
2003	14.5	199,720	50.00	42.75	3,994	170,771
2002	15.5	355,549	50.00	42.25	7,111	300,457
2001	16.5	91,524	50.00	41.75	1,830	76,427
2000	17.5	220,403	50.00	41.25	4,408	181,844
1999	18.5	147,425	50.00	40.75	2,949	120,160
1998	19.5	116,112	50.00	40.25	2,322	93,477
1997	20.5	137,870	50.00	39.75	2,757	109,614
1996	21.5	135,782	50.00	39.25	2,716	106,596
1995	22.5	261,933	50.00	38.75	5,239	203,013
1994	23.5	269,152	50.00	38.25	5,383	205,917
1993	24.5	118,848	50.00	37.75	2,377	89,737
1992	25.5	244,725	50.00	37.25	4,895	182,335
1991	26.5	245,682	50.00	36.75	4,914	180,591
1990	27.5	260,212	50.00	36.25	5,204	188,670
1989	28.5	151,996	50.00	35.75	3,040	108,686
1988	29.5	184,389	50.00	35.25	3,688	130,006

1987	30.5	166,935	50.00	34.75	3,339	116,030
1986	31.5	153,207	50.00	34.25	3,064	104,956
1985	32.5	123,586	50.00	33.75	2,472	83,428
1984	33.5	78,219	50.00	33.25	1,564	52,020
1983	34.5	88,361	50.00	32.75	1,767	57,882
1982	35.5	49,496	50.00	32.25	990	31,928
1981	36.5	62,417	50.00	31.75	1,248	39,639
1980	37.5	107,832	50.00	31.25	2,157	67,402
1979	38.5	46,761	50.00	30.75	935	28,761
1978	39.5	100,466	50.00	30.25	2,009	60,789
1977	40.5	22,486	50.00	29.75	450	13,381
1976	41.5	2,269	50.00	29.25	45	1,327
1975	42.5	28,254	50.00	28.75	565	16,248
1974	43.5	472,894	50.00	28.25	9,458	267,222
1973	44.5	493,139	50.00	27.75	9,863	273,731
1972	45.5	349,301	50.00	27.25	6,986	190,397
1971	46.5	272,440	50.00	26.75	5,449	145,777
1970	47.5	385,936	50.00	26.25	7,719	202,649
1969	48.5	402,141	50.00	25.75	8,043	207,137
1968	49.5	171,208	50.00	25.25	3,424	86,475
1967	50.5	368,438	50.00	24.75	7,369	182,409
1966	51.5	256,077	50.00	24.25	5,122	124,220
1965	52.5	99,091	50.00	23.75	1,982	47,077
1964	53.5	73,889	50.00	23.25	1,478	34,365
1963	54.5	52,410	50.00	22.75	1,048	23,851
1962	55.5	41,253	50.00	22.25	825	18,361
1961	56.5	36,391	50.00	21.75	728	15,834
1960	57.5	30,180	50.00	21.25	604	12,829
1959	58.5	14,240	50.00	20.75	285	5,911
1958	59.5	16,286	50.00	20.25	326	6,597
1957	60.5	29,486	50.00	19.76	590	11,650
1956	61.5	13,214	50.00	19.26	264	5,089
1955	62.5	10,018	50.00	18.76	200	3,758
1954	63.5	3,970	50.00	18.26	79	1,449
1953	64.5	5,848	50.00	17.76	117	2,077
1952	65.5	999	50.00	17.26	20	345
1951	66.5	3,987	50.00	16.76	80	1,336
1950	67.5	4,722	50.00	16.26	94	1,535
1949	68.5	5,039	50.00	15.76	101	1,588
1948	69.5	6,451	50.00	15.26	129	1,968
1947	70.5	2,880	50.00	14.76	58	850
1946	71.5	3,137	50.00	14.26	63	894
1945	72.5	614	50.00	13.76	12	169
1944	73.5	287	50.00	13.26	6	76
1943	74.5	548	50.00	12.76	11	140
1942	75.5	326	50.00	12.26	7	80
1941	76.5	1,124	50.00	11.76	22	264

1940	77.5	470	50.00	11.26	9	106
1939	78.5	2,002	50.00	10.76	40	431
1938	79.5	114	50.00	10.26	2	23
1937	80.5	1,317	50.00	9.76	26	257
1936	81.5	1,204	50.00	9.26	24	223
1935	82.5	333	50.00	8.76	7	58
1934	83.5	61	50.00	8.26	1	10
1933	84.5	0	50.00	7.76	0	0
1932	85.5	134	50.00	7.26	3	19
1931	86.5	452	50.00	6.76	9	61
1930	87.5	683	50.00	6.26	14	86
1929	88.5	174	50.00	5.76	3	20
1928	89.5	672	50.00	5.26	13	71
1927	90.5	435	50.00	4.76	9	41
1926	91.5	1,244	50.00	4.27	25	106
1925	92.5	664	50.00	3.77	13	50
1924	93.5	451	50.00	3.27	9	30
1923	94.5	356	50.00	2.77	7	20
1922	95.5	111	50.00	2.28	2	5
1921	96.5	146	50.00	1.79	3	5
1920	97.5	358	50.00	1.30	7	9
1919	98.5	51	50.00	0.83	1	1
1918	99.5	204	50.00	0.50	4	2
1917	100.5	90	50.00	0.50	2	1
1916	101.5	207	50.00	0.50	4	2
1915	102.5	27	50.00	0.50	1	0
1914	103.5	0	50.00	0.50	0	0
1913	104.5	45	50.00	0.50	1	0
1912	105.5	0	50.00	0.50	0	0
1911	106.5	0	50.00	0.50	0	0
1910	107.5	0	50.00	0.50	0	0
1909	108.5	0	50.00	0.50	0	0
1908	109.5	0	50.00	0.50	0	0
1907	110.5	268	50.00	0.50	5	3
		15,241,141			304,823	11,929,244

AVERAGE SERVICE LIFE	50.00
AVERAGE REMAINING LIFE	39.14

Rockland Electric Co.

368.20 Gen Arm -

Calculation of Remaining Life
Based Upon Broad Group/Vintage Group Procedures
Related to Original Cost as of December 31, 2017

Survivor Curve .. IOWA: 50 O1

			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)
2017	0.5	451,715	50.00	49.75	9,034	449,476
2016	1.5	489,250	50.00	49.25	9,785	481,933
2015	2.5	77,955	50.00	48.75	1,559	76,009
2014	3.5	412,324	50.00	48.25	8,246	397,911
2013	4.5	717,839	50.00	47.75	14,357	685,569
2012	5.5	175,944	50.00	47.25	3,519	166,275
2011	6.5	259,984	50.00	46.75	5,200	243,097
2010	7.5	320,379	50.00	46.25	6,408	296,365
2009	8.5	548,984	50.00	45.75	10,980	502,347
2008	9.5	772,149	50.00	45.25	15,443	698,832
2007	10.5	294,182	50.00	44.75	5,884	263,308
2006	11.5	402,469	50.00	44.25	8,049	356,205
2005	12.5	336,273	50.00	43.75	6,725	294,256
2004	13.5	310,327	50.00	43.25	6,207	268,449
2003	14.5	231,828	50.00	42.75	4,637	198,224
2002	15.5	212,178	50.00	42.25	4,244	179,301
2001	16.5	68,090	50.00	41.75	1,362	56,859
2000	17.5	50,104	50.00	41.25	1,002	41,338
1999	18.5	23,729	50.00	40.75	475	19,340
1998	19.5	48,319	50.00	40.25	966	38,899
1997	20.5	16,197	50.00	39.75	324	12,877
1996	21.5	34,317	50.00	39.25	686	26,940
1995	22.5	123,868	50.00	38.75	2,477	96,005
1994	23.5	77,043	50.00	38.25	1,541	58,943
1993	24.5	96,750	50.00	37.75	1,935	73,052
1992	25.5	105,218	50.00	37.25	2,104	78,394
1991	26.5	99,719	50.00	36.75	1,994	73,300
1990	27.5	78,494	50.00	36.25	1,570	56,913
1989	28.5	51,315	50.00	35.75	1,026	36,693
1988	29.5	74,474	50.00	35.25	1,489	52,509

1987	30.5	70,547	50.00	34.75	1,411	49,035
1986	31.5	56,823	50.00	34.25	1,136	38,927
1985	32.5	55,946	50.00	33.75	1,119	37,767
1984	33.5	42,885	50.00	33.25	858	28,521
1983	34.5	32,687	50.00	32.75	654	21,412
1982	35.5	48,660	50.00	32.25	973	31,389
1981	36.5	56,149	50.00	31.75	1,123	35,658
1980	37.5	66,540	50.00	31.25	1,331	41,592
1979	38.5	51,969	50.00	30.75	1,039	31,965
1978	39.5	51,280	50.00	30.25	1,026	31,028
1977	40.5	73,230	50.00	29.75	1,465	43,577
1976	41.5	61,926	50.00	29.25	1,239	36,231
1975	42.5	53,730	50.00	28.75	1,075	30,899
1974	43.5	73,705	50.00	28.25	1,474	41,649
1973	44.5	152,591	50.00	27.75	3,052	84,700
1972	45.5	160,784	50.00	27.25	3,216	87,640
1971	46.5	82,934	50.00	26.75	1,659	44,376
1970	47.5	124,869	50.00	26.25	2,497	65,567
1969	48.5	41,325	50.00	25.75	827	21,286
1968	49.5	48,925	50.00	25.25	979	24,711
1967	50.5	19,480	50.00	24.75	390	9,644
1966	51.5	42,425	50.00	24.25	849	20,580
1965	52.5	17,985	50.00	23.75	360	8,544
1964	53.5	14,630	50.00	23.25	293	6,804
1963	54.5	6,825	50.00	22.75	137	3,106
1962	55.5	5,475	50.00	22.25	110	2,437
1961	56.5	4,453	50.00	21.75	89	1,937
1960	57.5	2,730	50.00	21.25	55	1,161
1959	58.5	2,046	50.00	20.75	41	849
1958	59.5	2,177	50.00	20.25	44	882
1957	60.5	2,911	50.00	19.76	58	1,150
1956	61.5	2,474	50.00	19.26	49	953
1955	62.5	2,487	50.00	18.76	50	933
1954	63.5	1,228	50.00	18.26	25	449
1953	64.5	350	50.00	17.76	7	124
1952	65.5	125	50.00	17.26	2	43
1951	66.5	515	50.00	16.76	10	173
1950	67.5	232	50.00	16.26	5	76
1949	68.5	321	50.00	15.76	6	101
1948	69.5	322	50.00	15.26	6	98
1947	70.5	176	50.00	14.76	4	52
1946	71.5	134	50.00	14.26	3	38
1945	72.5	48	50.00	13.76	1	13
1944	73.5	52	50.00	13.26	1	14
1943	74.5	144	50.00	12.76	3	37
1942	75.5	242	50.00	12.26	5	59
1941	76.5	78	50.00	11.76	2	18

1940	77.5	142	50.00	11.26	3	32
1939	78.5	265	50.00	10.76	5	57
1938	79.5	108	50.00	10.26	2	22
1937	80.5	135	50.00	9.76	3	26
1936	81.5	82	50.00	9.26	2	15
1935	82.5	49	50.00	8.76	1	9
1934	83.5	7	50.00	8.26	0	1
1933	84.5	40	50.00	7.76	1	6
1932	85.5	50	50.00	7.26	1	7
1931	86.5	50	50.00	6.76	1	7
1930	87.5	393	50.00	6.26	8	49
1929	88.5	0	50.00	5.76	0	0
1928	89.5	0	50.00	5.26	0	0
1927	90.5	17	50.00	4.76	0	2
1926	91.5	51	50.00	4.27	1	4
1925	92.5	51	50.00	3.77	1	4
		8,500,431			170,009	7,168,070

AVERAGE SERVICE LIFE	50.00
AVERAGE REMAINING LIFE	42.16

Rockland Electric Co.

368.30 Gen Arm -

Calculation of Remaining Life
Based Upon Broad Group/Vintage Group Procedures
Related to Original Cost as of December 31, 2017

Survivor Curve .. IOWA: 50 O1

			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)
2017	0.5	51,978	50.00	49.75	1,040	51,720
2016	1.5	218,002	50.00	49.25	4,360	214,741
2015	2.5	249,826	50.00	48.75	4,997	243,592
2014	3.5	263,245	50.00	48.25	5,265	254,043
2013	4.5	111,019	50.00	47.75	2,220	106,028
2012	5.5	245,923	50.00	47.25	4,918	232,409
2011	6.5	287,525	50.00	46.75	5,751	268,849
2010	7.5	360,843	50.00	46.25	7,217	333,796
2009	8.5	753,038	50.00	45.75	15,061	689,066
2008	9.5	735,112	50.00	45.25	14,702	665,312
2007	10.5	350,084	50.00	44.75	7,002	313,342
2006	11.5	406,099	50.00	44.25	8,122	359,417
2005	12.5	202,923	50.00	43.75	4,058	177,568
2004	13.5	147,165	50.00	43.25	2,943	127,305
2003	14.5	120,881	50.00	42.75	2,418	103,360
2002	15.5	363,152	50.00	42.25	7,263	306,882
2001	16.5	261,742	50.00	41.75	5,235	218,568
2000	17.5	311,396	50.00	41.25	6,228	256,918
1999	18.5	239,433	50.00	40.75	4,789	195,151
1998	19.5	264,453	50.00	40.25	5,289	212,899
1997	20.5	270,345	50.00	39.75	5,407	214,939
1996	21.5	215,610	50.00	39.25	4,312	169,265
1995	22.5	277,374	50.00	38.75	5,547	214,980
1994	23.5	244,770	50.00	38.25	4,895	187,263
1993	24.5	149,981	50.00	37.75	3,000	113,245
1992	25.5	173,702	50.00	37.25	3,474	129,418
1991	26.5	168,543	50.00	36.75	3,371	123,889
1990	27.5	78,524	50.00	36.25	1,570	56,935
1989	28.5	198,004	50.00	35.75	3,960	141,585
1988	29.5	389,304	50.00	35.25	7,786	274,483

1987	30.5	412,986	50.00	34.75	8,260	287,051
1986	31.5	314,840	50.00	34.25	6,297	215,685
1985	32.5	328,646	50.00	33.75	6,573	221,857
1984	33.5	204,829	50.00	33.25	4,097	136,225
1983	34.5	167,790	50.00	32.75	3,356	109,914
1982	35.5	136,304	50.00	32.25	2,726	87,926
1981	36.5	208,288	50.00	31.75	4,166	132,277
1980	37.5	187,938	50.00	31.25	3,759	117,475
1979	38.5	99,763	50.00	30.75	1,995	61,361
1978	39.5	14,635	50.00	30.25	293	8,855
1977	40.5	18,381	50.00	29.75	368	10,938
1976	41.5	17,929	50.00	29.25	359	10,490
1975	42.5	24,477	50.00	28.75	490	14,076
1974	43.5	153,255	50.00	28.25	3,065	86,601
1973	44.5	295,987	50.00	27.75	5,920	164,296
1972	45.5	64,246	50.00	27.25	1,285	35,019
1971	46.5	48,823	50.00	26.75	976	26,124
1970	47.5	15,111	50.00	26.25	302	7,935
1969	48.5	14,721	50.00	25.75	294	7,583
1968	49.5	2,163	50.00	25.25	43	1,092
1967	50.5	2,157	50.00	24.75	43	1,068
		10,843,264			216,865	8,700,817

AVERAGE SERVICE LIFE	50.00
AVERAGE REMAINING LIFE	40.12

Rockland Electric Co.

368.40 Gen Arm -

Calculation of Remaining Life
Based Upon Broad Group/Vintage Group Procedures
Related to Original Cost as of December 31, 2017

Survivor Curve .. IOWA: 50 O1

			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)
2017	0.5	340,165	50.00	49.75	6,803	338,479
2016	1.5	570,921	50.00	49.25	11,418	562,382
2015	2.5	100,554	50.00	48.75	2,011	98,044
2014	3.5	155,837	50.00	48.25	3,117	150,390
2013	4.5	424,142	50.00	47.75	8,483	405,075
2012	5.5	78,250	50.00	47.25	1,565	73,950
2011	6.5	136,455	50.00	46.75	2,729	127,592
2010	7.5	21,173	50.00	46.25	423	19,586
2009	8.5	85,546	50.00	45.75	1,711	78,278
2008	9.5	103,651	50.00	45.25	2,073	93,809
2007	10.5	74,585	50.00	44.75	1,492	66,757
2006	11.5	38,297	50.00	44.25	766	33,894
2005	12.5	31,009	50.00	43.75	620	27,135
2004	13.5	37,084	50.00	43.25	742	32,080
2003	14.5	43,183	50.00	42.75	864	36,923
2002	15.5	35,295	50.00	42.25	706	29,826
2001	16.5	47,827	50.00	41.75	957	39,938
2000	17.5	41,815	50.00	41.25	836	34,500
1999	18.5	9,886	50.00	40.75	198	8,057
1998	19.5	23,113	50.00	40.25	462	18,607
1997	20.5	39,697	50.00	39.75	794	31,562
1996	21.5	26,659	50.00	39.25	533	20,929
1995	22.5	22,753	50.00	38.75	455	17,635
1994	23.5	32,730	50.00	38.25	655	25,041
1993	24.5	47,923	50.00	37.75	958	36,184
1992	25.5	53,248	50.00	37.25	1,065	39,673
1991	26.5	19,108	50.00	36.75	382	14,046
1990	27.5	11,519	50.00	36.25	230	8,352
1989	28.5	9,132	50.00	35.75	183	6,530
1988	29.5	70,161	50.00	35.25	1,403	49,468

1987	30.5	53,331	50.00	34.75	1,067	37,068
1986	31.5	39,839	50.00	34.25	797	27,293
1985	32.5	36,405	50.00	33.75	728	24,576
1984	33.5	30,056	50.00	33.25	601	19,989
1983	34.5	28,770	50.00	32.75	575	18,846
1982	35.5	23,739	50.00	32.25	475	15,313
1981	36.5	40,445	50.00	31.75	809	25,685
1980	37.5	23,999	50.00	31.25	480	15,001
1979	38.5	19,104	50.00	30.75	382	11,750
1978	39.5	17,190	50.00	30.25	344	10,401
1977	40.5	11,090	50.00	29.75	222	6,599
1976	41.5	10,451	50.00	29.25	209	6,115
1975	42.5	5,048	50.00	28.75	101	2,903
1974	43.5	9,379	50.00	28.25	188	5,300
1973	44.5	13,555	50.00	27.75	271	7,524
1972	45.5	6,870	50.00	27.25	137	3,745
1971	46.5	7,230	50.00	26.75	145	3,869
1970	47.5	0	50.00	26.25	0	0
1969	48.5	1,580	50.00	25.75	32	814
		3,109,800			62,196	2,767,514

AVERAGE SERVICE LIFE	50.00
AVERAGE REMAINING LIFE	44.50

Observed Life Table Results
Rockland Electric Co.
Account: 369.20 -

Age	Exposures	Retirements	Retirement Ratio (%)	Survivor Ratio (%)	Cumulative Survivors
BAND		1909 - 2016			
0	37,398,897	4,060	0.0109	99.9891	1.0000
0.5	35,519,094	25,400	0.0715	99.9285	0.9999
1.5	34,056,779	11,464	0.0337	99.9663	0.9992
2.5	32,383,636	21,362	0.0660	99.9340	0.9988
3.5	31,207,623	13,639	0.0437	99.9563	0.9982
4.5	30,096,953	17,188	0.0571	99.9429	0.9977
5.5	29,001,224	9,260	0.0319	99.9681	0.9972
6.5	28,019,095	12,356	0.0441	99.9559	0.9969
7.5	27,069,537	9,134	0.0337	99.9663	0.9964
8.5	25,936,381	9,962	0.0384	99.9616	0.9961
9.5	24,739,442	10,417	0.0421	99.9579	0.9957
10.5	23,436,522	8,651	0.0369	99.9631	0.9953
11.5	22,317,377	8,393	0.0376	99.9624	0.9949
12.5	21,140,211	7,572	0.0358	99.9642	0.9945
13.5	20,161,793	7,741	0.0384	99.9616	0.9942
14.5	19,152,634	7,585	0.0396	99.9604	0.9938
15.5	18,116,291	6,015	0.0332	99.9668	0.9934
16.5	17,098,279	7,436	0.0435	99.9565	0.9931
17.5	16,080,821	3,905	0.0243	99.9757	0.9926
18.5	15,337,604	6,242	0.0407	99.9593	0.9924
19.5	14,522,804	6,846	0.0471	99.9529	0.9920
20.5	13,639,731	4,937	0.0362	99.9638	0.9915
21.5	12,790,306	5,242	0.0410	99.9590	0.9912
22.5	11,892,360	4,742	0.0399	99.9601	0.9908
23.5	11,130,824	3,121	0.0280	99.9720	0.9904
24.5	10,382,610	2,173	0.0209	99.9791	0.9901
25.5	9,786,892	1,261	0.0129	99.9871	0.9899
26.5	9,140,832	3,567	0.0390	99.9610	0.9898
27.5	8,589,298	2,479	0.0289	99.9711	0.9894
28.5	8,038,540	1,154	0.0144	99.9856	0.9891
29.5	7,361,304	3,050	0.0414	99.9586	0.9889
30.5	6,638,776	5,098	0.0768	99.9232	0.9885
31.5	5,730,937	10,045	0.1753	99.8247	0.9878
32.5	4,901,699	13,266	0.2706	99.7294	0.9860
33.5	4,316,615	19,483	0.4513	99.5487	0.9834
34.5	3,902,206	3,386	0.0868	99.9132	0.9789
35.5	3,540,585	3,125	0.0883	99.9117	0.9781
36.5	3,211,043	2,954	0.0920	99.9080	0.9772
37.5	2,838,605	1,652	0.0582	99.9418	0.9763
38.5	2,468,466	1,476	0.0598	99.9402	0.9758

39.5	2,147,762	1,690	0.0787	99.9213	0.9752
40.5	1,858,036	851	0.0458	99.9542	0.9744
41.5	1,680,473	353	0.0210	99.9790	0.9740
42.5	1,372,601	603	0.0440	99.9560	0.9738
43.5	1,098,501	1,412	0.1285	99.8715	0.9733
44.5	702,844	1,374	0.1955	99.8045	0.9721
45.5	562,916	1,234	0.2192	99.7808	0.9702
46.5	349,329	846	0.2421	99.7579	0.9681
47.5	277,298	546	0.1969	99.8031	0.9657
48.5	192,323	935	0.4860	99.5140	0.9638
49.5	154,618	698	0.4514	99.5486	0.9591
50.5	126,666	510	0.4025	99.5975	0.9548
51.5	106,340	477	0.4486	99.5514	0.9509
52.5	79,759	554	0.6942	99.3058	0.9467
53.5	66,042	271	0.4103	99.5897	0.9401
54.5	55,799	981	1.7583	98.2417	0.9363
55.5	45,618	371	0.8127	99.1873	0.9198
56.5	36,723	320	0.8702	99.1298	0.9123
57.5	30,030	182	0.6052	99.3948	0.9044
58.5	24,008	216	0.8985	99.1015	0.8989
59.5	18,062	159	0.8783	99.1217	0.8908
60.5	14,960	423	2.8273	97.1727	0.8830
61.5	11,370	256	2.2555	97.7445	0.8580
62.5	9,613	186	1.9390	98.0610	0.8387
63.5	7,793	290	3.7244	96.2756	0.8224
64.5	6,802	182	2.6817	97.3183	0.7918
65.5	5,844	272	4.6470	95.3530	0.7706
66.5	4,828	249	5.1507	94.8493	0.7348
67.5	4,343	71	1.6419	98.3581	0.6969
68.5	4,011	81	2.0160	97.9840	0.6855
69.5	3,790	70	1.8493	98.1507	0.6716
70.5	3,603	147	4.0735	95.9265	0.6592
71.5	3,399	11	0.3089	99.6911	0.6324
72.5	3,369	87	2.5815	97.4185	0.6304
73.5	3,275	151	4.6054	95.3946	0.6141
74.5	3,083	144	4.6740	95.3260	0.5859
75.5	2,828	132	4.6671	95.3329	0.5585
76.5	2,503	198	7.9049	92.0951	0.5324
77.5	2,214	235	10.6068	89.3932	0.4903
78.5	1,903	143	7.5233	92.4767	0.4383
79.5	1,539	177	11.4867	88.5133	0.4053
80.5	1,283	76	5.9437	94.0563	0.3588
81.5	1,098	180	16.3743	83.6257	0.3375
82.5	900	103	11.4213	88.5787	0.2822
83.5	662	136	20.5308	79.4692	0.2500
84.5	450	53	11.6898	88.3102	0.1986
85.5	286	53	18.5965	81.4035	0.1754

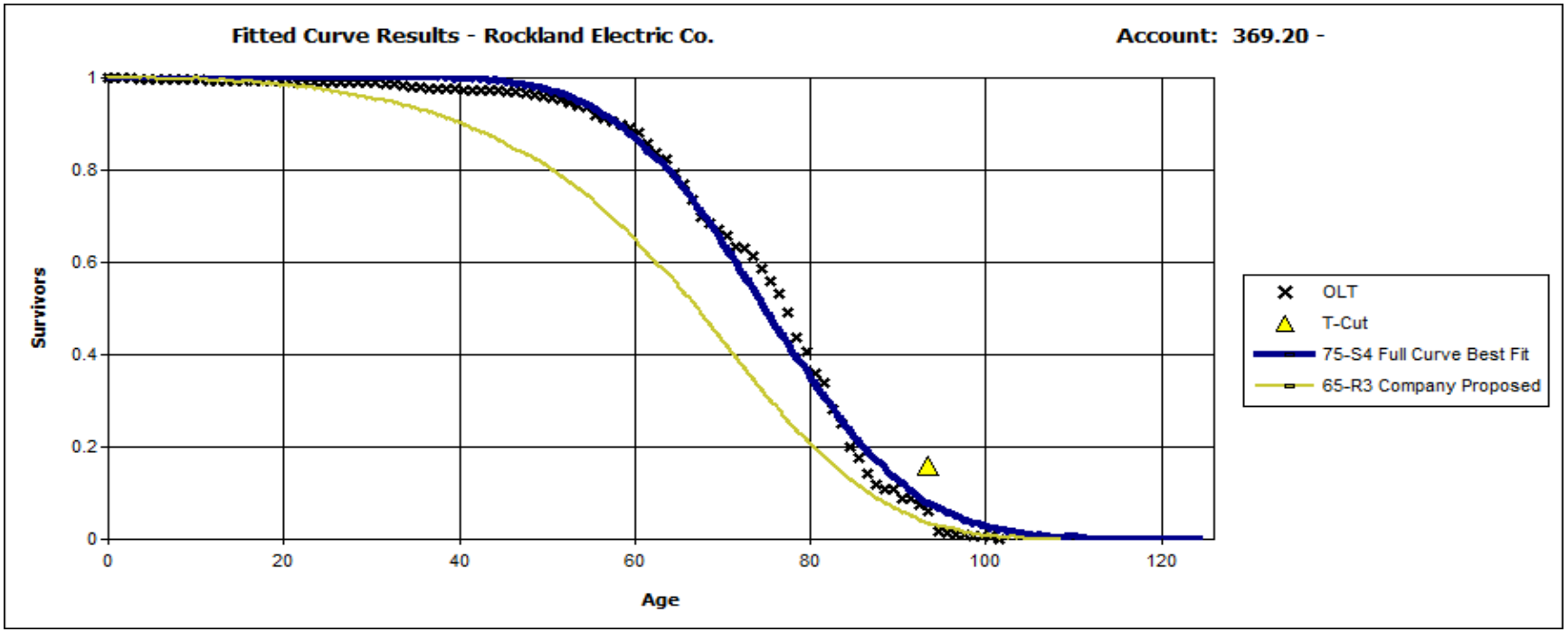
86.5	196	32	16.2938	83.7062	0.1428
87.5	129	12	9.3052	90.6948	0.1195
88.5	110	0	0.0000	100.0000	0.1084
89.5	101	18	17.8554	82.1446	0.1084
90.5	83	0	0.0000	100.0000	0.0891
91.5	83	12	14.4910	85.5090	0.0891
92.5	71	16	22.0732	77.9268	0.0762
93.5	55	38	68.8655	31.1345	0.0593
94.5	17	3	17.4622	82.5378	0.0185
95.5	14	5	32.1580	67.8420	0.0152
96.5	10	0	0.0000	100.0000	0.0103
97.5	10	5	48.8565	51.1435	0.0103
98.5	5	0	0.0000	100.0000	0.0053
99.5	5	0	0.0000	100.0000	0.0053
100.5	5	5	100.0000	0.0000	0.0053
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

Best Fit Curve Results
Rockland Electric Co.
Account: 369.20 -

Curve	Life	Sum of Squared Differences
BAND	**1952 - 2016**	
S4	75.0	594.101
R4	74.0	740.630
R5	75.0	1,042.997
L5	75.0	1,227.763
L4	75.0	2,107.653
S5	75.0	2,257.382
S3	75.0	3,127.491
R3	73.0	4,322.773
R2.5	73.0	7,586.870
S6	75.0	7,731.572
S2	75.0	7,811.366
L3	75.0	8,390.800
S1.5	75.0	10,981.075
R2	73.0	11,948.614
S1	75.0	14,907.589
R1.5	74.0	16,909.288
L2	75.0	17,212.264
S0.5	75.0	19,162.807
L1.5	75.0	21,899.454
R1	75.0	22,784.654
S0	75.0	24,213.090
L1	75.0	27,682.903
SQ	75.0	28,093.390
R0.5	75.0	30,033.209
S-0.5	75.0	30,803.179
L0.5	75.0	33,222.959
O1	75.0	38,660.664
L0	75.0	39,671.933
O2	75.0	45,539.832
O3	75.0	80,193.705
O4	75.0	119,977.440

Analytical Parameters

OLT Placement Band:	1909 - 2016
OLT Experience Band:	1952 - 2016
Minimum Life Parameter	3
Maximum Life Paramete	75
Life Increment Paramete	1
Max Age (T-Cut):	93.5



Analytical Parameters

OLT Placement Band:	1909 - 2016
OLT Experience Band:	1952 - 2016
Minimum Life Parameter:	3
Maximum Life Parameter:	75
Life Increment Parameter:	1
Max Age (T-Cut):	93.5

Rockland Electric Co.

369.20 Gen Arm -

Calculation of Remaining Life
Based Upon Broad Group/Vintage Group Procedures
Related to Original Cost as of December 31, 2017

Survivor Curve .. IOWA: 75 S4

			BG/VG Average			
Year	Age	Surviving Investment	Service Life	Remaining Life	ASL Weights	RL Weights
(1)	(2)	(3)	(4)	(5)	(6)=(3)/(4)	(7)=(6)*(5)
2017	0.5	355,677	75.00	74.50	4,742	353,297
2016	1.5	374,534	75.00	73.50	4,994	367,035
2015	2.5	383,537	75.00	72.50	5,114	370,743
2014	3.5	489,974	75.00	71.50	6,533	467,097
2013	4.5	138,367	75.00	70.50	1,845	130,062
2012	5.5	303,709	75.00	69.50	4,049	281,430
2011	6.5	468,215	75.00	68.50	6,243	427,626
2010	7.5	322,058	75.00	67.50	4,294	289,845
2009	8.5	276,362	75.00	66.50	3,685	245,035
2008	9.5	305,840	75.00	65.50	4,078	267,093
2007	10.5	357,157	75.00	64.50	4,762	307,147
2006	11.5	343,616	75.00	63.50	4,582	290,921
2005	12.5	379,484	75.00	62.50	5,060	316,228
2004	13.5	340,093	75.00	61.50	4,535	278,868
2003	14.5	407,468	75.00	60.50	5,433	328,682
2002	15.5	318,500	75.00	59.50	4,247	252,670
2001	16.5	425,473	75.00	58.50	5,673	331,859
2000	17.5	457,095	75.00	57.50	6,095	350,429
1999	18.5	546,842	75.00	56.50	7,291	411,942
1998	19.5	356,519	75.00	55.50	4,754	263,816
1997	20.5	402,039	75.00	54.50	5,361	292,139
1996	21.5	483,872	75.00	53.50	6,452	345,151
1995	22.5	473,634	75.00	52.50	6,315	331,533
1994	23.5	535,857	75.00	51.50	7,145	367,944
1993	24.5	410,755	75.00	50.50	5,477	276,566
1992	25.5	360,929	75.00	49.50	4,812	238,206
1991	26.5	314,131	75.00	48.50	4,188	203,133
1990	27.5	285,957	75.00	47.50	3,813	181,103
1989	28.5	182,350	75.00	46.50	2,431	113,056
1988	29.5	227,344	75.00	45.50	3,031	137,923

1987	30.5	285,340	75.00	44.50	3,805	169,308
1986	31.5	405,473	75.00	43.50	5,406	235,192
1985	32.5	541,941	75.00	42.51	7,226	307,143
1984	33.5	569,138	75.00	41.51	7,589	314,997
1983	34.5	350,564	75.00	40.51	4,674	189,373
1982	35.5	227,185	75.00	39.52	3,029	119,717
1981	36.5	236,477	75.00	38.53	3,153	121,489
1980	37.5	205,018	75.00	37.54	2,734	102,626
1979	38.5	255,243	75.00	36.56	3,403	124,417
1978	39.5	247,781	75.00	35.58	3,304	117,542
1977	40.5	214,397	75.00	34.60	2,859	98,917
1976	41.5	188,746	75.00	33.63	2,517	84,645
1975	42.5	86,627	75.00	32.67	1,155	37,738
1974	43.5	104,774	75.00	31.72	1,397	44,310
1973	44.5	85,277	75.00	30.77	1,137	34,992
1972	45.5	29,895	75.00	29.84	399	11,895
1971	46.5	13,353	75.00	28.92	178	5,149
1970	47.5	54,215	75.00	28.01	723	20,247
1969	48.5	8,171	75.00	27.11	109	2,954
1968	49.5	6,756	75.00	26.23	90	2,363
1967	50.5	5,027	75.00	25.37	67	1,700
1966	51.5	5,938	75.00	24.52	79	1,942
1965	52.5	3,005	75.00	23.69	40	949
1964	53.5	3,696	75.00	22.88	49	1,128
1963	54.5	3,297	75.00	22.09	44	971
1962	55.5	2,707	75.00	21.32	36	770
1961	56.5	1,951	75.00	20.58	26	535
1960	57.5	2,204	75.00	19.85	29	583
1959	58.5	1,714	75.00	19.14	23	437
1958	59.5	1,386	75.00	18.46	18	341
1957	60.5	2,006	75.00	17.80	27	476
1956	61.5	910	75.00	17.16	12	208
1955	62.5	1,042	75.00	16.54	14	230
1954	63.5	531	75.00	15.95	7	113
1953	64.5	75	75.00	15.37	1	15
1952	65.5	91	75.00	14.82	1	18
1951	66.5	54	75.00	14.28	1	10
1950	67.5	26	75.00	13.77	0	5
1949	68.5	21	75.00	13.27	0	4
1948	69.5	0	75.00	12.80	0	0
1947	70.5	0	75.00	12.34	0	0
1946	71.5	0	75.00	11.90	0	0
1945	72.5	0	75.00	11.48	0	0
1944	73.5	0	75.00	11.07	0	0
1943	74.5	0	75.00	10.68	0	0
1942	75.5	0	75.00	10.31	0	0
1941	76.5	23	75.00	9.95	0	3

1940	77.5	0	75.00	9.60	0	0
1939	78.5	17	75.00	9.26	0	2
1938	79.5	0	75.00	8.94	0	0
1937	80.5	12	75.00	8.63	0	1
		15,179,491			202,393	10,974,035

AVERAGE SERVICE LIFE	75.00
AVERAGE REMAINING LIFE	54.22

Observed Life Table Results
Rockland Electric Co.
Account: 370.10 & .20 -

Age	Exposures	Retirements	Retirement Ratio (%)	Survivor Ratio (%)	Cumulative Survivors
BAND		1900 - 2016			
0	32,329,588	2,986	0.0092	99.9908	1.0000
0.5	32,362,929	300,622	0.9289	99.0711	0.9999
1.5	32,114,096	201,374	0.6271	99.3729	0.9906
2.5	32,011,841	350,648	1.0954	98.9046	0.9844
3.5	31,707,970	406,501	1.2820	98.7180	0.9736
4.5	31,267,462	493,060	1.5769	98.4231	0.9611
5.5	30,672,580	513,958	1.6756	98.3244	0.9460
6.5	30,032,096	1,089,031	3.6262	96.3738	0.9301
7.5	28,943,065	717,444	2.4788	97.5212	0.8964
8.5	28,225,621	689,783	2.4438	97.5562	0.8742
9.5	27,535,837	680,797	2.4724	97.5276	0.8528
10.5	26,854,931	947,449	3.5280	96.4720	0.8317
11.5	25,907,482	798,768	3.0832	96.9168	0.8024
12.5	25,108,714	786,084	3.1307	96.8693	0.7777
13.5	23,092,787	793,501	3.4361	96.5639	0.7533
14.5	21,450,600	758,466	3.5359	96.4641	0.7274
15.5	19,784,692	1,053,053	5.3226	94.6774	0.7017
16.5	18,339,211	608,319	3.3170	96.6830	0.6644
17.5	17,090,415	454,691	2.6605	97.3395	0.6423
18.5	15,887,022	516,346	3.2501	96.7499	0.6252
19.5	14,951,248	278,807	1.8648	98.1352	0.6049
20.5	14,159,750	394,108	2.7833	97.2167	0.5936
21.5	13,159,936	359,463	2.7315	97.2685	0.5771
22.5	12,482,582	329,728	2.6415	97.3585	0.5613
23.5	11,647,715	321,321	2.7587	97.2413	0.5465
24.5	10,810,784	377,875	3.4953	96.5047	0.5314
25.5	10,082,620	368,616	3.6560	96.3440	0.5129
26.5	9,248,037	430,738	4.6576	95.3424	0.4941
27.5	8,691,041	270,228	3.1093	96.8907	0.4711
28.5	7,072,153	281,695	3.9832	96.0168	0.4565
29.5	6,386,483	323,425	5.0642	94.9358	0.4383
30.5	5,760,225	227,951	3.9573	96.0427	0.4161
31.5	5,300,423	219,143	4.1344	95.8656	0.3996
32.5	4,201,094	204,126	4.8589	95.1411	0.3831
33.5	3,831,375	199,597	5.2095	94.7905	0.3645
34.5	3,515,682	177,330	5.0440	94.9560	0.3455
35.5	3,197,223	158,462	4.9562	95.0438	0.3281
36.5	2,939,903	149,988	5.1018	94.8982	0.3118
37.5	2,643,263	166,036	6.2815	93.7185	0.2959
38.5	2,402,311	140,274	5.8391	94.1609	0.2773

39.5	2,198,175	135,177	6.1495	93.8505	0.2611
40.5	2,004,870	111,751	5.5740	94.4260	0.2451
41.5	1,837,076	114,568	6.2364	93.7636	0.2314
42.5	1,676,061	98,299	5.8649	94.1351	0.2170
43.5	1,487,780	84,538	5.6822	94.3178	0.2042
44.5	1,325,572	76,540	5.7741	94.2259	0.1926
45.5	1,193,014	72,575	6.0833	93.9167	0.1815
46.5	1,056,987	75,173	7.1120	92.8880	0.1705
47.5	938,912	61,065	6.5038	93.4962	0.1583
48.5	817,048	73,700	9.0203	90.9797	0.1480
49.5	689,478	30,420	4.4120	95.5880	0.1347
50.5	602,103	30,521	5.0691	94.9309	0.1288
51.5	534,028	34,822	6.5206	93.4794	0.1222
52.5	443,797	29,074	6.5512	93.4488	0.1143
53.5	358,340	22,160	6.1841	93.8159	0.1068
54.5	284,292	18,176	6.3934	93.6066	0.1002
55.5	223,703	12,636	5.6488	94.3512	0.0938
56.5	184,650	12,635	6.8429	93.1571	0.0885
57.5	139,889	10,623	7.5941	92.4059	0.0824
58.5	104,162	7,121	6.8363	93.1637	0.0762
59.5	79,623	5,433	6.8240	93.1760	0.0709
60.5	61,153	6,071	9.9278	90.0722	0.0661
61.5	47,638	5,637	11.8322	88.1678	0.0595
62.5	37,084	5,356	14.4430	85.5570	0.0525
63.5	26,476	1,929	7.2865	92.7135	0.0449
64.5	22,021	1,355	6.1535	93.8465	0.0416
65.5	14,874	1,225	8.2382	91.7618	0.0391
66.5	9,143	951	10.3964	89.6036	0.0359
67.5	6,619	993	15.0097	84.9903	0.0321
68.5	5,360	605	11.2824	88.7176	0.0273
69.5	4,596	575	12.5027	87.4973	0.0242
70.5	3,980	99	2.4965	97.5035	0.0212
71.5	3,880	191	4.9162	95.0838	0.0207
72.5	3,690	233	6.3046	93.6954	0.0197
73.5	3,457	149	4.3238	95.6762	0.0184
74.5	3,276	60	1.8175	98.1825	0.0176
75.5	3,133	54	1.7102	98.2898	0.0173
76.5	3,023	21	0.7000	99.3000	0.0170
77.5	2,966	83	2.7988	97.2012	0.0169
78.5	2,863	113	3.9470	96.0530	0.0164
79.5	2,750	122	4.4365	95.5635	0.0158
80.5	2,628	66	2.5115	97.4885	0.0151
81.5	2,562	52	2.0297	97.9703	0.0147
82.5	2,510	162	6.4544	93.5456	0.0144
83.5	2,348	46	1.9592	98.0408	0.0135
84.5	2,302	45	1.9549	98.0451	0.0132
85.5	2,257	0	0.0000	100.0000	0.0129

86.5	2,257	0	0.0000	100.0000	0.0129
87.5	2,257	23	1.0191	98.9809	0.0129
88.5	2,234	0	0.0000	100.0000	0.0128
89.5	2,223	0	0.0000	100.0000	0.0128
90.5	2,223	0	0.0000	100.0000	0.0128
91.5	2,223	0	0.0000	100.0000	0.0128
92.5	2,223	0	0.0000	100.0000	0.0128
93.5	2,223	0	0.0000	100.0000	0.0128
94.5	2,210	0	0.0000	100.0000	0.0128
95.5	2,210	0	0.0000	100.0000	0.0128
96.5	2,210	0	0.0000	100.0000	0.0128
97.5	2,210	23	1.0408	98.9592	0.0128
98.5	2,187	0	0.0000	100.0000	0.0127
99.5	2,187	39	1.7834	98.2166	0.0127
100.5	2,148	23	1.0709	98.9291	0.0124
101.5	2,125	23	1.0825	98.9175	0.0123
102.5	2,102	48	2.2838	97.7162	0.0122
103.5	2,054	47	2.2884	97.7116	0.0119
104.5	2,007	47	2.3420	97.6580	0.0116
105.5	1,960	0	0.0000	100.0000	0.0114
106.5	1,960	0	0.0000	100.0000	0.0114
107.5	1,960	48	2.4390	97.5610	0.0114
108.5	1,912	0	0.0000	100.0000	0.0111
109.5	1,912	120	6.2500	93.7500	0.0111
110.5	1,793	24	1.3333	98.6667	0.0104
111.5	1,769	215	12.1622	87.8378	0.0102
112.5	1,554	-120	-7.6923	107.6923	0.0090
113.5	1,673	48	2.8571	97.1429	0.0097
114.5	1,625	0	0.0000	100.0000	0.0094
115.5	0	0	0.0000	100.0000	0.0094
BAND		**1952 - 2016**			
0	31,279,603	2,986	0.0095	99.9905	1.0000
0.5	31,427,095	300,622	0.9566	99.0434	0.9999
1.5	31,260,507	201,374	0.6442	99.3558	0.9903
2.5	31,218,212	350,648	1.1232	98.8768	0.9840
3.5	30,981,358	406,501	1.3121	98.6879	0.9729
4.5	30,583,062	493,060	1.6122	98.3878	0.9601
5.5	30,017,262	513,958	1.7122	98.2878	0.9447
6.5	29,382,929	1,089,031	3.7063	96.2937	0.9285
7.5	28,294,709	717,444	2.5356	97.4644	0.8941
8.5	27,578,504	689,783	2.5012	97.4988	0.8714
9.5	26,901,547	680,797	2.5307	97.4693	0.8496
10.5	26,280,689	947,449	3.6051	96.3949	0.8281
11.5	25,388,189	798,768	3.1462	96.8538	0.7983
12.5	24,613,946	786,084	3.1937	96.8063	0.7731
13.5	22,622,358	793,501	3.5076	96.4924	0.7484
14.5	21,017,545	758,466	3.6087	96.3913	0.7222

15.5	19,371,188	1,053,053	5.4362	94.5638	0.6961
16.5	17,948,616	608,319	3.3892	96.6108	0.6583
17.5	16,708,348	454,691	2.7213	97.2787	0.6360
18.5	15,520,482	516,346	3.3269	96.6731	0.6187
19.5	14,599,991	278,807	1.9096	98.0904	0.5981
20.5	13,838,027	394,108	2.8480	97.1520	0.5867
21.5	12,868,904	359,463	2.7933	97.2067	0.5700
22.5	12,219,859	329,728	2.6983	97.3017	0.5540
23.5	11,411,036	321,321	2.8159	97.1841	0.5391
24.5	10,603,219	377,875	3.5638	96.4362	0.5239
25.5	9,898,989	368,616	3.7238	96.2762	0.5052
26.5	9,089,734	430,738	4.7387	95.2613	0.4864
27.5	8,556,205	270,228	3.1583	96.8417	0.4634
28.5	6,965,801	281,695	4.0440	95.9560	0.4487
29.5	6,301,087	323,425	5.1329	94.8671	0.4306
30.5	5,696,090	227,951	4.0019	95.9981	0.4085
31.5	5,252,834	219,143	4.1719	95.8281	0.3921
32.5	4,165,513	204,126	4.9004	95.0996	0.3758
33.5	3,799,038	199,597	5.2539	94.7461	0.3574
34.5	3,488,342	177,330	5.0835	94.9165	0.3386
35.5	3,175,484	158,462	4.9902	95.0098	0.3214
36.5	2,922,934	149,988	5.1314	94.8686	0.3053
37.5	2,629,245	166,036	6.3150	93.6850	0.2897
38.5	2,390,401	140,274	5.8682	94.1318	0.2714
39.5	2,187,837	135,177	6.1786	93.8214	0.2555
40.5	1,996,587	111,751	5.5971	94.4029	0.2397
41.5	1,830,257	114,568	6.2597	93.7403	0.2263
42.5	1,670,617	98,299	5.8840	94.1160	0.2121
43.5	1,483,006	84,538	5.7005	94.2995	0.1996
44.5	1,321,256	76,540	5.7930	94.2070	0.1882
45.5	1,189,748	72,575	6.1000	93.9000	0.1773
46.5	1,054,437	75,173	7.1292	92.8708	0.1665
47.5	936,596	61,065	6.5199	93.4801	0.1546
48.5	814,800	73,700	9.0452	90.9548	0.1446
49.5	687,231	30,420	4.4265	95.5735	0.1315
50.5	602,087	30,521	5.0692	94.9308	0.1257
51.5	534,028	34,822	6.5206	93.4794	0.1193
52.5	443,797	29,074	6.5512	93.4488	0.1115
53.5	358,340	22,160	6.1841	93.8159	0.1042
54.5	284,292	18,176	6.3934	93.6066	0.0978
55.5	223,703	12,636	5.6488	94.3512	0.0915
56.5	184,650	12,635	6.8429	93.1571	0.0863
57.5	139,889	10,623	7.5941	92.4059	0.0804
58.5	104,162	7,121	6.8363	93.1637	0.0743
59.5	79,623	5,433	6.8240	93.1760	0.0692
60.5	61,153	6,071	9.9278	90.0722	0.0645
61.5	47,638	5,637	11.8322	88.1678	0.0581

62.5	37,084	5,356	14.4430	85.5570	0.0512
63.5	26,476	1,929	7.2865	92.7135	0.0438
64.5	22,021	1,355	6.1535	93.8465	0.0406
65.5	14,874	1,225	8.2382	91.7618	0.0381
66.5	9,143	951	10.3964	89.6036	0.0350
67.5	6,619	993	15.0097	84.9903	0.0314
68.5	5,360	605	11.2824	88.7176	0.0267
69.5	4,596	575	12.5027	87.4973	0.0236
70.5	3,980	99	2.4965	97.5035	0.0207
71.5	3,880	191	4.9162	95.0838	0.0202
72.5	3,690	233	6.3046	93.6954	0.0192
73.5	3,457	149	4.3238	95.6762	0.0180
74.5	3,276	60	1.8175	98.1825	0.0172
75.5	3,133	54	1.7102	98.2898	0.0169
76.5	3,023	21	0.7000	99.3000	0.0166
77.5	2,966	83	2.7988	97.2012	0.0165
78.5	2,863	113	3.9470	96.0530	0.0160
79.5	2,750	122	4.4365	95.5635	0.0154
80.5	2,628	66	2.5115	97.4885	0.0147
81.5	2,562	52	2.0297	97.9703	0.0143
82.5	2,510	162	6.4544	93.5456	0.0140
83.5	2,348	46	1.9592	98.0408	0.0131
84.5	2,302	45	1.9549	98.0451	0.0129
85.5	2,257	0	0.0000	100.0000	0.0126
86.5	2,257	0	0.0000	100.0000	0.0126
87.5	2,257	23	1.0191	98.9809	0.0126
88.5	2,234	0	0.0000	100.0000	0.0125
89.5	2,223	0	0.0000	100.0000	0.0125
90.5	2,223	0	0.0000	100.0000	0.0125
91.5	2,223	0	0.0000	100.0000	0.0125
92.5	2,223	0	0.0000	100.0000	0.0125
93.5	2,223	0	0.0000	100.0000	0.0125
94.5	2,210	0	0.0000	100.0000	0.0125
95.5	2,210	0	0.0000	100.0000	0.0125
96.5	2,210	0	0.0000	100.0000	0.0125
97.5	2,210	23	1.0408	98.9592	0.0125
98.5	2,187	0	0.0000	100.0000	0.0124
99.5	2,187	39	1.7834	98.2166	0.0124
100.5	2,148	23	1.0709	98.9291	0.0121
101.5	2,125	23	1.0825	98.9175	0.0120
102.5	2,102	48	2.2838	97.7162	0.0119
103.5	2,054	47	2.2884	97.7116	0.0116
104.5	2,007	47	2.3420	97.6580	0.0114
105.5	1,960	0	0.0000	100.0000	0.0111
106.5	1,960	0	0.0000	100.0000	0.0111
107.5	1,960	48	2.4390	97.5610	0.0111
108.5	1,912	0	0.0000	100.0000	0.0108

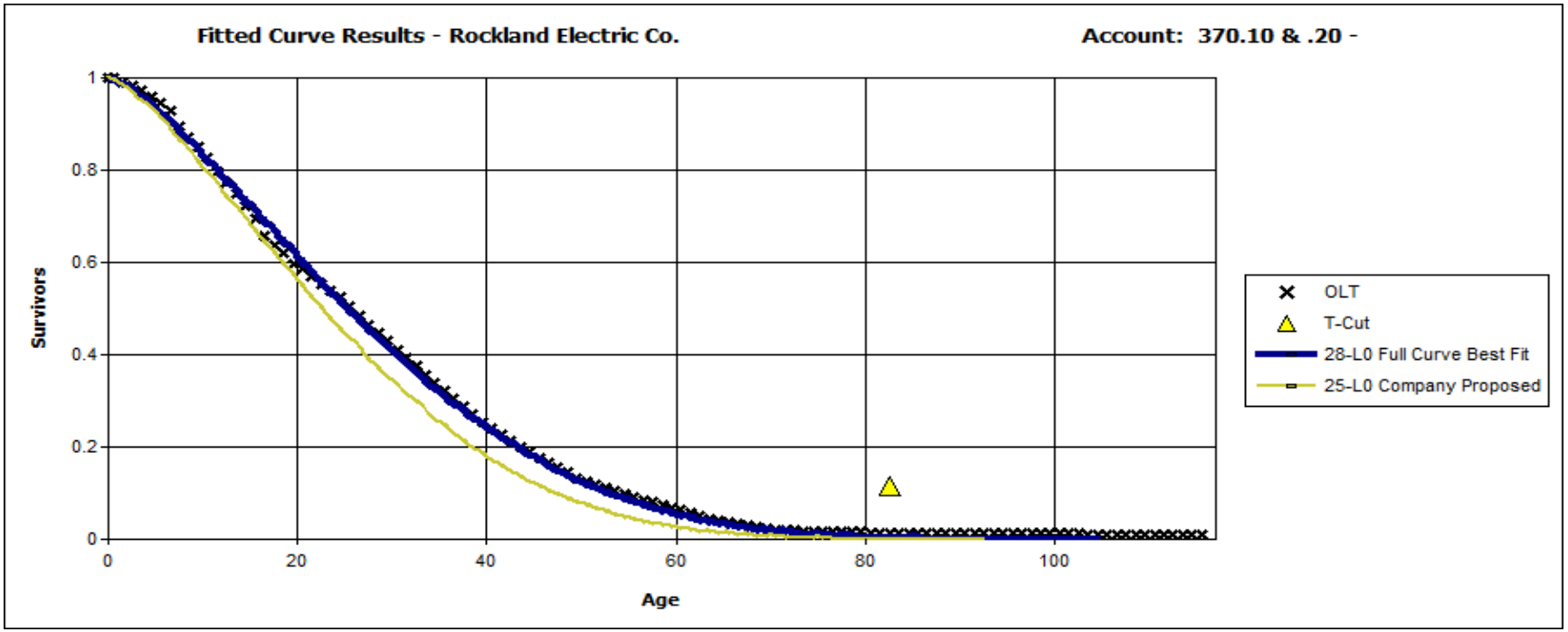
109.5	1,912	120	6.2500	93.7500	0.0108
110.5	1,793	24	1.3333	98.6667	0.0101
111.5	1,769	215	12.1622	87.8378	0.0100
112.5	1,554	-120	-7.6923	107.6923	0.0088
113.5	1,673	48	2.8571	97.1429	0.0095
114.5	1,625	0	0.0000	100.0000	0.0092
115.5	0	0	0.0000	100.0000	0.0092

Best Fit Curve Results
Rockland Electric Co.
Account: 370.10 & .20 -

Curve	Life	Sum of Squared Differences
BAND	**1952 - 2016**	
L0	28.0	105.980
O2	28.0	354.638
L0.5	28.0	526.938
O1	27.0	1,266.206
L1	28.0	1,463.154
S-0.5	28.0	1,645.611
R0.5	28.0	2,009.392
S0	28.0	2,883.680
L1.5	28.0	2,959.796
R1	28.0	3,865.526
O3	30.0	4,329.666
S0.5	28.0	4,400.523
L2	28.0	5,024.960
R1.5	28.0	5,856.067
S1	28.0	6,451.255
R2	28.0	8,593.717
S1.5	28.0	8,717.031
O4	36.0	8,960.763
L3	28.0	10,711.965
R2.5	28.0	11,446.665
S2	28.0	11,453.069
R3	28.0	14,958.450
S3	28.0	16,997.997
L4	28.0	18,672.112
R4	28.0	21,375.657
S4	27.0	24,142.369
L5	27.0	25,835.023
R5	27.0	28,812.830
S5	27.0	30,552.223
S6	27.0	35,986.969
SQ	26.0	46,402.579

Analytical Parameters

OLT Placement Band:	1900 - 2016
OLT Experience Band:	1952 - 2016
Minimum Life Parameter	4
Maximum Life Paramete	60
Life Increment Paramete	1
Max Age (T-Cut):	82.5



Analytical Parameters

OLT Placement Band:	1900 - 2016
OLT Experience Band:	1952 - 2016
Minimum Life Parameter:	4
Maximum Life Parameter:	60
Life Increment Parameter:	1
Max Age (T-Cut):	82.5

Rockland Electric Co.

370.10 Gen Arm -

Calculation of Remaining Life
Based Upon Broad Group/Vintage Group Procedures
Related to Original Cost as of December 31, 2017

Survivor Curve .. IOWA: 28 L0

			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)
2017	0.5	0	28.00	27.57	0	0
2016	1.5	0	28.00	26.82	0	0
2015	2.5	0	28.00	26.16	0	0
2014	3.5	0	28.00	25.56	0	0
2013	4.5	0	28.00	24.99	0	0
2012	5.5	0	28.00	24.46	0	0
2011	6.5	0	28.00	23.96	0	0
2010	7.5	0	28.00	23.48	0	0
2009	8.5	0	28.00	23.02	0	0
2008	9.5	0	28.00	22.58	0	0
2007	10.5	0	28.00	22.16	0	0
2006	11.5	0	28.00	21.75	0	0
2005	12.5	0	28.00	21.35	0	0
2004	13.5	0	28.00	20.96	0	0
2003	14.5	220,831	28.00	20.58	7,887	162,330
2002	15.5	173,899	28.00	20.21	6,211	125,513
2001	16.5	200,471	28.00	19.84	7,160	142,068
2000	17.5	64,986	28.00	19.48	2,321	45,219
1999	18.5	156,566	28.00	19.13	5,592	106,966
1998	19.5	154,596	28.00	18.78	5,521	103,704
1997	20.5	119,826	28.00	18.44	4,279	78,921
1996	21.5	126,522	28.00	18.11	4,519	81,820
1995	22.5	124,541	28.00	17.78	4,448	79,076
1994	23.5	20,527	28.00	17.46	733	12,796
1993	24.5	86,785	28.00	17.14	3,099	53,118
1992	25.5	48,020	28.00	16.83	1,715	28,857
1991	26.5	146,441	28.00	16.52	5,230	86,398
1990	27.5	120,087	28.00	16.22	4,289	69,557
1989	28.5	23	28.00	15.92	1	13

1988	29.5	269,243	28.00	15.63	9,616	150,307
1987	30.5	130,212	28.00	15.35	4,650	71,361
1986	31.5	95,867	28.00	15.06	3,424	51,575
1985	32.5	26,340	28.00	14.79	941	13,910
1984	33.5	13,653	28.00	14.51	488	7,078
1983	34.5	23,855	28.00	14.25	852	12,138
1982	35.5	25,063	28.00	13.98	895	12,517
1981	36.5	22,971	28.00	13.72	820	11,260
1980	37.5	8,948	28.00	13.47	320	4,305
1979	38.5	25,575	28.00	13.22	913	12,073
1978	39.5	13,468	28.00	12.97	481	6,239
1977	40.5	17,456	28.00	12.73	623	7,935
1976	41.5	14,636	28.00	12.49	523	6,527
1975	42.5	12,980	28.00	12.25	464	5,680
1974	43.5	9,077	28.00	12.02	324	3,896
1973	44.5	21,616	28.00	11.79	772	9,102
1972	45.5	19,236	28.00	11.56	687	7,944
1971	46.5	13,636	28.00	11.34	487	5,523
1970	47.5	15,111	28.00	11.12	540	6,002
1969	48.5	12,980	28.00	10.91	464	5,056
1968	49.5	20,146	28.00	10.69	720	7,694
1967	50.5	16,305	28.00	10.48	582	6,104
1966	51.5	12,059	28.00	10.28	431	4,425
1965	52.5	5,862	28.00	10.07	209	2,108
1964	53.5	11,337	28.00	9.87	405	3,996
1963	54.5	13,785	28.00	9.67	492	4,760
1962	55.5	12,106	28.00	9.47	432	4,095
1961	56.5	10,754	28.00	9.28	384	3,563
1960	57.5	5,138	28.00	9.09	184	1,667
1959	58.5	6,310	28.00	8.90	225	2,005
1958	59.5	5,849	28.00	8.71	209	1,819
1957	60.5	1,588	28.00	8.52	57	483
1956	61.5	2,124	28.00	8.34	76	633
1955	62.5	1,658	28.00	8.16	59	483
1954	63.5	1,099	28.00	7.98	39	313
1953	64.5	770	28.00	7.80	28	215
1952	65.5	314	28.00	7.63	11	86
1951	66.5	533	28.00	7.45	19	142
1950	67.5	765	28.00	7.28	27	199
1949	68.5	92	28.00	7.11	3	23
1948	69.5	19	28.00	6.94	1	5
1947	70.5	0	28.00	6.78	0	0
1946	71.5	0	28.00	6.61	0	0
1945	72.5	0	28.00	6.45	0	0
1944	73.5	0	28.00	6.28	0	0
1943	74.5	0	28.00	6.12	0	0
1942	75.5	0	28.00	5.96	0	0

1941	76.5	0	28.00	5.79	0	0
1940	77.5	0	28.00	5.63	0	0
1939	78.5	0	28.00	5.47	0	0
1938	79.5	0	28.00	5.31	0	0
1937	80.5	0	28.00	5.15	0	0
1936	81.5	0	28.00	5.00	0	0
1935	82.5	0	28.00	4.84	0	0
1934	83.5	0	28.00	4.68	0	0
1933	84.5	0	28.00	4.52	0	0
1932	85.5	0	28.00	4.36	0	0
1931	86.5	0	28.00	4.19	0	0
1930	87.5	0	28.00	4.03	0	0
1929	88.5	0	28.00	3.86	0	0
1928	89.5	0	28.00	3.69	0	0
1927	90.5	11	28.00	3.52	0	1
1926	91.5	0	28.00	3.33	0	0
1925	92.5	0	28.00	3.16	0	0
1924	93.5	0	28.00	2.98	0	0
1923	94.5	0	28.00	2.78	0	0
1922	95.5	13	28.00	2.59	0	1
1921	96.5	0	28.00	2.39	0	0
1920	97.5	0	28.00	2.17	0	0
1919	98.5	0	28.00	1.99	0	0
1918	99.5	0	28.00	1.72	0	0
1917	100.5	0	28.00	1.65	0	0
1916	101.5	0	28.00	1.44	0	0
1915	102.5	0	28.00	1.13	0	0
1914	103.5	0	28.00	0.80	0	0
1913	104.5	0	28.00	0.50	0	0
1912	105.5	0	28.00	0.50	0	0
1911	106.5	0	28.00	0.50	0	0
1910	107.5	0	28.00	0.50	0	0
1909	108.5	0	28.00	0.50	0	0
1908	109.5	0	28.00	0.50	0	0
1907	110.5	0	28.00	0.50	0	0
1906	111.5	0	28.00	0.50	0	0
1905	112.5	0	28.00	0.50	0	0
1904	113.5	0	28.00	0.50	0	0
1903	114.5	0	28.00	0.50	0	0
1902	115.5	0	28.00	0.50	0	0
1901	116.5	1,506	28.00	0.50	54	27
		2,686,188			95,935	1,631,631

AVERAGE SERVICE LIFE 28.00
AVERAGE REMAINING LIFE 17.01

Rockland Electric Co.

370.11 Gen Arm -

Calculation of Remaining Life
Based Upon Broad Group/Vintage Group Procedures
Related to Original Cost as of December 31, 2017

Survivor Curve .. IOWA: 28 L0

			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)
2017	0.5	34,592	28.00	27.57	1,235	34,056
2016	1.5	81,683	28.00	26.82	2,917	78,254
2015	2.5	161,275	28.00	26.16	5,760	150,695
2014	3.5	66,962	28.00	25.56	2,391	61,119
2013	4.5	70,267	28.00	24.99	2,510	62,718
2012	5.5	290,746	28.00	24.46	10,384	253,997
2011	6.5	238,103	28.00	23.96	8,504	203,731
2010	7.5	110,231	28.00	23.48	3,937	92,434
2009	8.5	116,177	28.00	23.02	4,149	95,520
2008	9.5	116,137	28.00	22.58	4,148	93,664
2007	10.5	75,042	28.00	22.16	2,680	59,386
2006	11.5	281,273	28.00	21.75	10,045	218,474
2005	12.5	222,515	28.00	21.35	7,947	169,673
2004	13.5	308,489	28.00	20.96	11,017	230,955
		2,173,490			77,625	1,804,676

AVERAGE SERVICE LIFE 28.00
AVERAGE REMAINING LIFE 23.25

Rockland Electric Co.

370.20 Gen Arm -

Calculation of Remaining Life
Based Upon Broad Group/Vintage Group Procedures
Related to Original Cost as of December 31, 2017

Survivor Curve .. IOWA: 28 L0

			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)
2017	0.5	0	28.00	27.57	0	0
2016	1.5	0	28.00	26.82	0	0
2015	2.5	0	28.00	26.16	0	0
2014	3.5	0	28.00	25.56	0	0
2013	4.5	0	28.00	24.99	0	0
2012	5.5	0	28.00	24.46	0	0
2011	6.5	0	28.00	23.96	0	0
2010	7.5	0	28.00	23.48	0	0
2009	8.5	0	28.00	23.02	0	0
2008	9.5	0	28.00	22.58	0	0
2007	10.5	0	28.00	22.16	0	0
2006	11.5	0	28.00	21.75	0	0
2005	12.5	0	28.00	21.35	0	0
2004	13.5	0	28.00	20.96	0	0
2003	14.5	94,137	28.00	20.58	3,362	69,199
2002	15.5	78,319	28.00	20.21	2,797	56,528
2001	16.5	51,903	28.00	19.84	1,854	36,782
2000	17.5	48,981	28.00	19.48	1,749	34,082
1999	18.5	62,521	28.00	19.13	2,233	42,715
1998	19.5	64,611	28.00	18.78	2,308	43,341
1997	20.5	34,792	28.00	18.44	1,243	22,915
1996	21.5	36,457	28.00	18.11	1,302	23,576
1995	22.5	42,915	28.00	17.78	1,533	27,248
1994	23.5	19,184	28.00	17.46	685	11,959
1993	24.5	23,512	28.00	17.14	840	14,391
1992	25.5	28,252	28.00	16.83	1,009	16,977
1991	26.5	36,861	28.00	16.52	1,316	21,748
1990	27.5	31,924	28.00	16.22	1,140	18,491
1989	28.5	28,217	28.00	15.92	1,008	16,046
1988	29.5	34,656	28.00	15.63	1,238	19,347

1987	30.5	38,692	28.00	15.35	1,382	21,205
1986	31.5	23,832	28.00	15.06	851	12,821
1985	32.5	24,833	28.00	14.79	887	13,114
1984	33.5	418,808	28.00	14.51	14,957	217,104
1983	34.5	21,933	28.00	14.25	783	11,160
1982	35.5	19,722	28.00	13.98	704	9,850
1981	36.5	24,328	28.00	13.72	869	11,925
1980	37.5	17,574	28.00	13.47	628	8,454
1979	38.5	24,272	28.00	13.22	867	11,458
1978	39.5	4,100	28.00	12.97	146	1,899
		1,335,336			47,691	794,334

AVERAGE SERVICE LIFE	28.00
AVERAGE REMAINING LIFE	16.66

Rockland Electric Co.

370.21 Gen Arm -

Calculation of Remaining Life
Based Upon Broad Group/Vintage Group Procedures
Related to Original Cost as of December 31, 2017

Survivor Curve .. IOWA: 28 L0

			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)
2017	0.5	113,016	28.00	27.57	4,036	111,263
2016	1.5	207,159	28.00	26.82	7,399	198,462
2015	2.5	278,474	28.00	26.16	9,946	260,207
2014	3.5	277,620	28.00	25.56	9,915	253,398
2013	4.5	321,286	28.00	24.99	11,475	286,770
2012	5.5	113,376	28.00	24.46	4,049	99,046
2011	6.5	249,130	28.00	23.96	8,897	213,166
2010	7.5	200,870	28.00	23.48	7,174	168,438
2009	8.5	251,214	28.00	23.02	8,972	206,547
2008	9.5	212,754	28.00	22.58	7,598	171,585
2007	10.5	144,297	28.00	22.16	5,153	114,192
2006	11.5	223,584	28.00	21.75	7,985	173,666
2005	12.5	282,433	28.00	21.35	10,087	215,362
2004	13.5	121,018	28.00	20.96	4,322	90,602
		2,996,229			107,008	2,562,702

AVERAGE SERVICE LIFE 28.00
AVERAGE REMAINING LIFE 23.95

Observed Life Table Results
Rockland Electric Co.
Account: 390 -

Age	Exposures	Retirements	Retirement Ratio (%)	Survivor Ratio (%)	Cumulative Survivors
BAND		**1890 - 2016**			
0	98,538,454	949	0.0010	99.9990	1.0000
0.5	97,323,293	34,205	0.0351	99.9649	1.0000
1.5	86,641,861	90,797	0.1048	99.8952	0.9996
2.5	74,683,767	177,116	0.2372	99.7628	0.9986
3.5	73,012,418	178,290	0.2442	99.7558	0.9962
4.5	74,164,835	336,559	0.4538	99.5462	0.9938
5.5	72,463,792	296,939	0.4098	99.5902	0.9893
6.5	69,675,140	803,460	1.1532	98.8468	0.9852
7.5	64,873,488	279,239	0.4304	99.5696	0.9739
8.5	59,841,673	515,183	0.8609	99.1391	0.9697
9.5	52,741,473	400,756	0.7598	99.2402	0.9613
10.5	50,853,889	521,272	1.0250	98.9750	0.9540
11.5	49,026,330	348,251	0.7103	99.2897	0.9442
12.5	45,644,899	638,730	1.3993	98.6007	0.9375
13.5	43,433,028	259,361	0.5972	99.4028	0.9244
14.5	38,057,721	1,090,386	2.8651	97.1349	0.9189
15.5	35,416,225	292,541	0.8260	99.1740	0.8926
16.5	34,860,496	511,732	1.4679	98.5321	0.8852
17.5	34,047,060	168,553	0.4951	99.5049	0.8722
18.5	33,631,177	502,427	1.4939	98.5061	0.8679
19.5	32,605,757	908,898	2.7875	97.2125	0.8549
20.5	30,610,169	1,198,362	3.9149	96.0851	0.8311
21.5	29,241,499	312,919	1.0701	98.9299	0.7986
22.5	28,252,846	175,643	0.6217	99.3783	0.7900
23.5	27,705,758	405,175	1.4624	98.5376	0.7851
24.5	26,818,180	232,036	0.8652	99.1348	0.7736
25.5	26,273,018	535,463	2.0381	97.9619	0.7669
26.5	25,608,283	411,893	1.6084	98.3916	0.7513
27.5	24,842,322	333,574	1.3428	98.6572	0.7392
28.5	23,375,882	339,240	1.4512	98.5488	0.7293
29.5	22,909,071	294,023	1.2834	98.7166	0.7187
30.5	22,513,803	231,674	1.0290	98.9710	0.7095
31.5	21,919,820	440,173	2.0081	97.9919	0.7022
32.5	13,614,621	300,898	2.2101	97.7899	0.6881
33.5	11,759,563	164,870	1.4020	98.5980	0.6729
34.5	10,700,140	470,144	4.3938	95.6062	0.6634
35.5	9,752,916	440,886	4.5206	95.4794	0.6343
36.5	9,174,989	233,786	2.5481	97.4519	0.6056
37.5	6,612,510	176,877	2.6749	97.3251	0.5902
38.5	5,749,040	140,483	2.4436	97.5564	0.5744

39.5	5,588,678	180,412	3.2282	96.7718	0.5604
40.5	5,390,004	301,297	5.5899	94.4101	0.5423
41.5	5,011,051	70,114	1.3992	98.6008	0.5120
42.5	4,662,330	219,495	4.7078	95.2922	0.5048
43.5	4,419,774	29,858	0.6755	99.3245	0.4810
44.5	4,342,683	55,728	1.2833	98.7167	0.4778
45.5	4,267,123	257,575	6.0363	93.9637	0.4716
46.5	3,992,011	74,987	1.8784	98.1216	0.4432
47.5	2,807,680	45,320	1.6142	98.3858	0.4348
48.5	2,703,567	25,530	0.9443	99.0557	0.4278
49.5	1,664,198	28,710	1.7251	98.2749	0.4238
50.5	1,224,187	26,999	2.2055	97.7945	0.4165
51.5	1,102,301	25,785	2.3392	97.6608	0.4073
52.5	1,068,085	19,465	1.8224	98.1776	0.3978
53.5	1,041,279	18,892	1.8143	98.1857	0.3905
54.5	1,018,861	15,483	1.5196	98.4804	0.3834
55.5	997,660	1,093	0.1096	99.8904	0.3776
56.5	911,171	33,311	3.6559	96.3441	0.3772
57.5	877,317	17,156	1.9555	98.0445	0.3634
58.5	859,304	27,877	3.2441	96.7559	0.3563
59.5	785,277	13,165	1.6765	98.3235	0.3447
60.5	768,666	31,044	4.0386	95.9614	0.3390
61.5	734,722	17,301	2.3548	97.6452	0.3253
62.5	714,489	1,870	0.2617	99.7383	0.3176
63.5	691,394	1,416	0.2049	99.7951	0.3168
64.5	688,984	930	0.1350	99.8650	0.3161
65.5	675,345	934	0.1383	99.8617	0.3157
66.5	368,669	14,029	3.8053	96.1947	0.3153
67.5	354,640	3,013	0.8496	99.1504	0.3033
68.5	351,627	7,038	2.0016	97.9984	0.3007
69.5	344,588	2,832	0.8218	99.1782	0.2947
70.5	341,536	536	0.1569	99.8431	0.2923
71.5	340,968	67,649	19.8403	80.1597	0.2918
72.5	272,871	1,398	0.5123	99.4877	0.2339
73.5	271,473	2,709	0.9978	99.0022	0.2327
74.5	268,751	2,565	0.9543	99.0457	0.2304
75.5	265,489	465	0.1751	99.8249	0.2282
76.5	264,973	1,630	0.6152	99.3848	0.2278
77.5	263,258	1,876	0.7126	99.2874	0.2264
78.5	261,120	288	0.1103	99.8897	0.2248
79.5	260,807	1,305	0.5004	99.4996	0.2245
80.5	259,414	511	0.1970	99.8030	0.2234
81.5	258,863	0	0.0000	100.0000	0.2230
82.5	258,709	1,271	0.4914	99.5086	0.2230
83.5	257,273	0	0.0000	100.0000	0.2219
84.5	257,273	0	0.0000	100.0000	0.2219
85.5	257,273	1,953	0.7592	99.2408	0.2219

86.5	166,253	123	0.0740	99.9260	0.2202
87.5	166,099	25	0.0151	99.9849	0.2200
88.5	107,818	1,640	1.5206	98.4794	0.2200
89.5	96,535	20,892	21.6421	78.3579	0.2166
90.5	51,217	0	0.0000	100.0000	0.1698
91.5	22,789	0	0.0000	100.0000	0.1698
92.5	16,468	34	0.2065	99.7935	0.1698
93.5	7,021	0	0.0000	100.0000	0.1694
94.5	7,021	0	0.0000	100.0000	0.1694
95.5	6,282	0	0.0000	100.0000	0.1694
96.5	6,282	0	0.0000	100.0000	0.1694
97.5	6,226	25	0.4001	99.5999	0.1694
98.5	5,957	0	0.0000	100.0000	0.1687
99.5	5,957	0	0.0000	100.0000	0.1687
100.5	5,957	0	0.0000	100.0000	0.1687
101.5	5,957	0	0.0000	100.0000	0.1687
102.5	2,555	0	0.0000	100.0000	0.1687
103.5	2,555	0	0.0000	100.0000	0.1687
104.5	2,555	0	0.0000	100.0000	0.1687
105.5	2,555	0	0.0000	100.0000	0.1687
106.5	2,555	0	0.0000	100.0000	0.1687
107.5	0	0	0.0000	100.0000	0.1687
108.5	0	0	0.0000	100.0000	0.1687
109.5	0	0	0.0000	100.0000	0.1687
110.5	0	0	0.0000	100.0000	0.1687
111.5	0	0	0.0000	100.0000	0.1687
112.5	0	0	0.0000	100.0000	0.1687
113.5	0	0	0.0000	100.0000	0.1687
114.5	0	0	0.0000	100.0000	0.1687
115.5	0	0	0.0000	100.0000	0.1687
116.5	0	0	0.0000	100.0000	0.1687
117.5	0	0	0.0000	100.0000	0.1687
118.5	0	0	0.0000	100.0000	0.1687
119.5	0	0	0.0000	100.0000	0.1687
120.5	0	0	0.0000	100.0000	0.1687
121.5	0	0	0.0000	100.0000	0.1687
122.5	0	0	0.0000	100.0000	0.1687
123.5	0	0	0.0000	100.0000	0.1687
124.5	0	0	0.0000	100.0000	0.1687
125.5	0	0	0.0000	100.0000	0.1687
BAND		**1952 - 2016**			
0	96,148,410	949	0.0010	99.9990	1.0000
0.5	94,986,644	34,205	0.0360	99.9640	1.0000
1.5	84,751,269	90,797	0.1071	99.8929	0.9996
2.5	72,808,067	177,116	0.2433	99.7567	0.9986
3.5	71,930,808	178,290	0.2479	99.7521	0.9961
4.5	73,096,115	336,559	0.4604	99.5396	0.9937

5.5	71,397,849	296,939	0.4159	99.5841	0.9891
6.5	68,612,526	803,460	1.1710	98.8290	0.9850
7.5	63,812,609	279,239	0.4376	99.5624	0.9734
8.5	58,786,322	515,183	0.8764	99.1236	0.9692
9.5	51,710,314	400,756	0.7750	99.2250	0.9607
10.5	49,860,009	521,272	1.0455	98.9545	0.9532
11.5	48,039,059	348,251	0.7249	99.2751	0.9433
12.5	44,660,036	638,730	1.4302	98.5698	0.9364
13.5	42,470,946	259,361	0.6107	99.3893	0.9230
14.5	37,103,190	1,090,386	2.9388	97.0612	0.9174
15.5	34,528,116	292,541	0.8473	99.1527	0.8904
16.5	33,973,479	511,732	1.5063	98.4937	0.8829
17.5	33,169,990	168,553	0.5081	99.4919	0.8696
18.5	32,770,199	502,427	1.5332	98.4668	0.8652
19.5	31,774,245	908,898	2.8605	97.1395	0.8519
20.5	29,790,579	1,198,362	4.0226	95.9774	0.8275
21.5	28,619,412	312,919	1.0934	98.9066	0.7943
22.5	27,648,548	175,643	0.6353	99.3647	0.7856
23.5	27,168,649	405,175	1.4913	98.5087	0.7806
24.5	26,294,789	232,036	0.8824	99.1176	0.7689
25.5	25,889,346	535,463	2.0683	97.9317	0.7622
26.5	25,350,659	411,893	1.6248	98.3752	0.7464
27.5	24,628,926	333,574	1.3544	98.6456	0.7343
28.5	23,237,225	339,240	1.4599	98.5401	0.7243
29.5	22,774,581	294,023	1.2910	98.7090	0.7137
30.5	22,381,643	231,674	1.0351	98.9649	0.7045
31.5	21,787,925	440,173	2.0203	97.9797	0.6972
32.5	13,483,941	300,898	2.2315	97.7685	0.6832
33.5	11,629,341	164,870	1.4177	98.5823	0.6679
34.5	10,610,815	470,144	4.4308	95.5692	0.6584
35.5	9,669,976	440,886	4.5593	95.4407	0.6293
36.5	9,092,857	233,786	2.5711	97.4289	0.6006
37.5	6,538,477	176,877	2.7052	97.2948	0.5851
38.5	5,701,410	140,483	2.4640	97.5360	0.5693
39.5	5,541,048	180,412	3.2559	96.7441	0.5553
40.5	5,351,599	301,297	5.6300	94.3700	0.5372
41.5	4,983,126	70,114	1.4070	98.5930	0.5070
42.5	4,639,403	219,495	4.7311	95.2689	0.4998
43.5	4,398,079	29,858	0.6789	99.3211	0.4762
44.5	4,325,996	55,728	1.2882	98.7118	0.4729
45.5	4,251,362	257,575	6.0586	93.9414	0.4668
46.5	3,976,250	74,987	1.8859	98.1141	0.4386
47.5	2,791,919	45,320	1.6233	98.3767	0.4303
48.5	2,687,806	25,530	0.9498	99.0502	0.4233
49.5	1,648,437	28,710	1.7416	98.2584	0.4193
50.5	1,208,426	26,999	2.2342	97.7658	0.4120
51.5	1,086,540	25,785	2.3732	97.6268	0.4028

52.5	1,052,324	19,465	1.8497	98.1503	0.3932
53.5	1,025,518	18,892	1.8422	98.1578	0.3859
54.5	1,003,100	15,483	1.5435	98.4565	0.3788
55.5	981,899	1,093	0.1113	99.8887	0.3730
56.5	895,410	33,311	3.7202	96.2798	0.3726
57.5	861,556	17,156	1.9913	98.0087	0.3587
58.5	847,526	27,877	3.2892	96.7108	0.3516
59.5	773,499	13,165	1.7021	98.2979	0.3400
60.5	764,360	31,044	4.0614	95.9386	0.3342
61.5	734,722	17,301	2.3548	97.6452	0.3206
62.5	714,489	1,870	0.2617	99.7383	0.3131
63.5	691,394	1,416	0.2049	99.7951	0.3123
64.5	688,984	930	0.1350	99.8650	0.3116
65.5	675,345	934	0.1383	99.8617	0.3112
66.5	368,669	14,029	3.8053	96.1947	0.3108
67.5	354,640	3,013	0.8496	99.1504	0.2990
68.5	351,627	7,038	2.0016	97.9984	0.2964
69.5	344,588	2,832	0.8218	99.1782	0.2905
70.5	341,536	536	0.1569	99.8431	0.2881
71.5	340,968	67,649	19.8403	80.1597	0.2876
72.5	272,871	1,398	0.5123	99.4877	0.2306
73.5	271,473	2,709	0.9978	99.0022	0.2294
74.5	268,751	2,565	0.9543	99.0457	0.2271
75.5	265,489	465	0.1751	99.8249	0.2249
76.5	264,973	1,630	0.6152	99.3848	0.2245
77.5	263,258	1,876	0.7126	99.2874	0.2232
78.5	261,120	288	0.1103	99.8897	0.2216
79.5	260,807	1,305	0.5004	99.4996	0.2213
80.5	259,414	511	0.1970	99.8030	0.2202
81.5	258,863	0	0.0000	100.0000	0.2198
82.5	258,709	1,271	0.4914	99.5086	0.2198
83.5	257,273	0	0.0000	100.0000	0.2187
84.5	257,273	0	0.0000	100.0000	0.2187
85.5	257,273	1,953	0.7592	99.2408	0.2187
86.5	166,253	123	0.0740	99.9260	0.2170
87.5	166,099	25	0.0151	99.9849	0.2169
88.5	107,818	1,640	1.5206	98.4794	0.2169
89.5	96,535	20,892	21.6421	78.3579	0.2136
90.5	51,217	0	0.0000	100.0000	0.1673
91.5	22,789	0	0.0000	100.0000	0.1673
92.5	16,468	34	0.2065	99.7935	0.1673
93.5	7,021	0	0.0000	100.0000	0.1670
94.5	7,021	0	0.0000	100.0000	0.1670
95.5	6,282	0	0.0000	100.0000	0.1670
96.5	6,282	0	0.0000	100.0000	0.1670
97.5	6,226	25	0.4001	99.5999	0.1670
98.5	5,957	0	0.0000	100.0000	0.1663

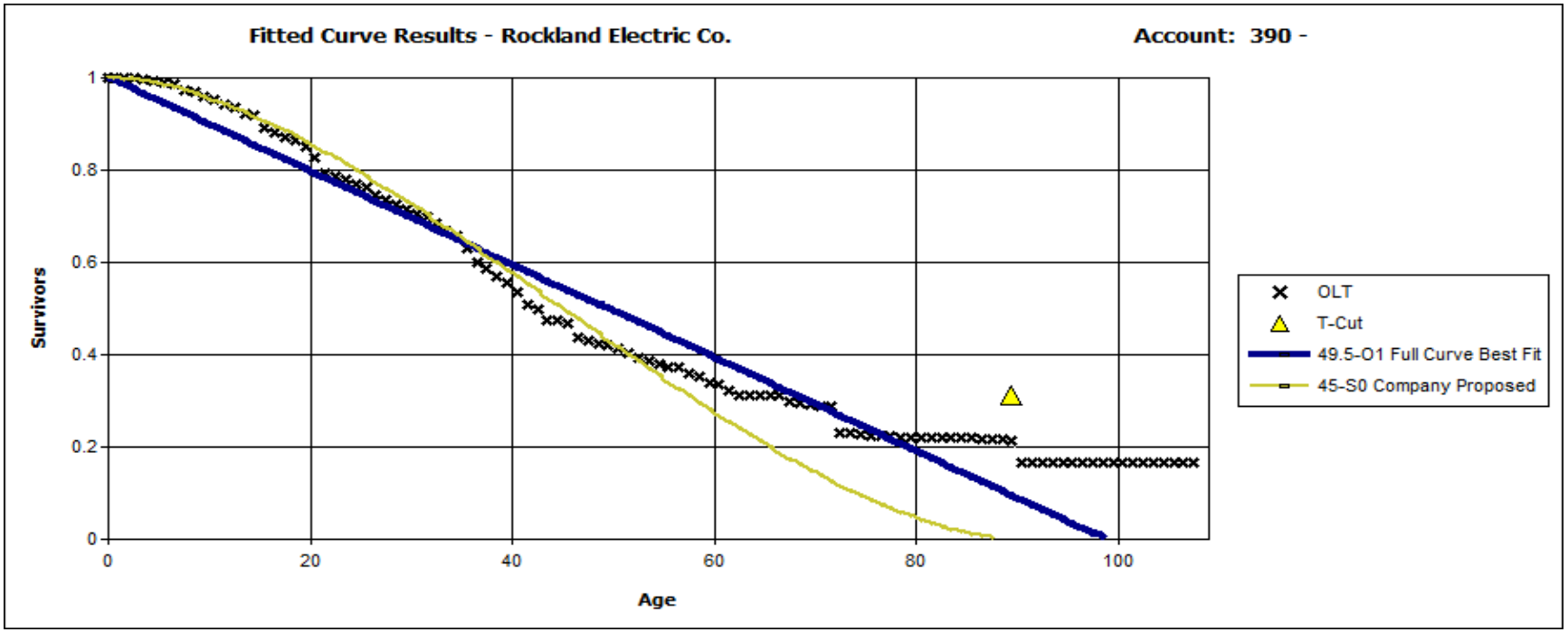
99.5	5,957	0	0.0000	100.0000	0.1663
100.5	5,957	0	0.0000	100.0000	0.1663
101.5	5,957	0	0.0000	100.0000	0.1663
102.5	2,555	0	0.0000	100.0000	0.1663
103.5	2,555	0	0.0000	100.0000	0.1663
104.5	2,555	0	0.0000	100.0000	0.1663
105.5	2,555	0	0.0000	100.0000	0.1663
106.5	2,555	0	0.0000	100.0000	0.1663
107.5	0	0	0.0000	100.0000	0.1663

Best Fit Curve Results
Rockland Electric Co.
Account: 390 -

Curve	Life	Sum of Squared Differences
BAND	**1952 - 2016**	
L0	51.5	953.203
L0.5	50.5	1,372.472
O2	52.5	1,439.694
O1	49.5	2,501.710
L1	50.5	2,528.175
S-0.5	49.5	2,935.451
O3	59.5	3,310.148
R0.5	49.5	3,875.422
L1.5	50.5	4,580.174
S0	50.5	4,857.691
R1	49.5	7,189.762
S0.5	50.5	7,351.028
L2	50.5	7,596.054
R1.5	49.5	10,621.032
S1	50.5	10,793.343
O4	59.5	11,755.702
S1.5	49.5	14,641.803
R2	49.5	15,369.785
L3	49.5	16,778.319
S2	49.5	19,277.080
R2.5	48.5	20,164.669
R3	48.5	26,008.140
S3	48.5	28,507.130
L4	47.5	30,734.284
R4	46.5	36,333.688
S4	46.5	40,027.851
L5	46.5	42,546.766
R5	45.5	47,825.665
S5	45.5	50,336.656
S6	43.5	58,958.246
SQ	41.5	75,787.958

Analytical Parameters

OLT Placement Band:	1890 - 2016
OLT Experience Band:	1952 - 2016
Minimum Life Paramet	1.5
Maximum Life Parame	60
Life Increment Parame	1
Max Age (T-Cut):	89.5



Analytical Parameters

OLT Placement Band:	1890 - 2016
OLT Experience Band:	1952 - 2016
Minimum Life Parameter:	1.5
Maximum Life Parameter:	60
Life Increment Parameter:	1
Max Age (T-Cut):	89.5

Rockland Electric Co.

390.00 Gen Arm -

Calculation of Remaining Life
Based Upon Broad Group/Vintage Group Procedures
Related to Original Cost as of December 31, 2017

Survivor Curve .. IOWA: 49.5 O1

			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)
2017	0.5	0	49.50	49.25	0	0
2016	1.5	29,966	49.50	48.75	605	29,513
2015	2.5	0	49.50	48.25	0	0
2014	3.5	132,926	49.50	47.75	2,685	128,233
2013	4.5	92,834	49.50	47.25	1,875	88,619
2012	5.5	0	49.50	46.75	0	0
2011	6.5	20,699	49.50	46.25	418	19,341
2010	7.5	17,838	49.50	45.75	360	16,487
2009	8.5	33,513	49.50	45.25	677	30,637
2008	9.5	5,458	49.50	44.75	110	4,934
2007	10.5	0	49.50	44.25	0	0
2006	11.5	0	49.50	43.75	0	0
2005	12.5	0	49.50	43.25	0	0
2004	13.5	2,577	49.50	42.75	52	2,225
2003	14.5	0	49.50	42.25	0	0
2002	15.5	0	49.50	41.75	0	0
2001	16.5	0	49.50	41.25	0	0
2000	17.5	0	49.50	40.75	0	0
1999	18.5	0	49.50	40.25	0	0
1998	19.5	0	49.50	39.75	0	0
1997	20.5	4,884	49.50	39.25	99	3,873
1996	21.5	0	49.50	38.75	0	0
1995	22.5	26,147	49.50	38.25	528	20,206
1994	23.5	0	49.50	37.75	0	0
1993	24.5	0	49.50	37.25	0	0
1992	25.5	180	49.50	36.75	4	134
1991	26.5	4,631	49.50	36.25	94	3,391
1990	27.5	11,480	49.50	35.75	232	8,292
1989	28.5	5,373	49.50	35.25	109	3,826
1988	29.5	0	49.50	34.75	0	0

1987	30.5	0	49.50	34.25	0	0
1986	31.5	0	49.50	33.75	0	0
1985	32.5	0	49.50	33.25	0	0
1984	33.5	0	49.50	32.75	0	0
1983	34.5	257	49.50	32.25	5	167
1982	35.5	3,087	49.50	31.75	62	1,980
1981	36.5	173	49.50	31.25	3	109
1980	37.5	1,161	49.50	30.75	23	722
1979	38.5	0	49.50	30.25	0	0
1978	39.5	31,013	49.50	29.75	627	18,641
1977	40.5	0	49.50	29.25	0	0
1976	41.5	0	49.50	28.75	0	0
1975	42.5	10,270	49.50	28.25	207	5,862
1974	43.5	254,794	49.50	27.75	5,147	142,859
		689,261			13,924	530,054

AVERAGE SERVICE LIFE	49.50
AVERAGE REMAINING LIFE	38.07