

**BEFORE THE  
FLORIDA PUBLIC SERVICE COMMISSION**

_____	)	
<b>IN RE: PETITION FOR RATE</b>	)	
<b>INCREASE BY GULF POWER</b>	)	<b>DOCKET NO. 160186-EI</b>
<b>COMPANY</b>	)	
	)	
<b>IN RE: PETITION FOR APPROVAL</b>	)	
<b>OF 2016 DEPRECIATION AND</b>	)	
<b>DISMANTLEMENT STUDIES,</b>	)	
<b>APPROVAL OF PROPOSED</b>	)	
<b>DEPRECIATION RATES AND</b>	)	<b>DOCKET NO. 160170-EI</b>
<b>ANNUAL DISMANTLEMENT</b>	)	
<b>ACCRUALS AND PLANT SMITH</b>	)	
<b>UNITS 1 AND 2 REGULATORY</b>	)	
<b>ASSET AMORTIZATION, BY GULF</b>	)	
<b>POWER COMPANY</b>	)	
_____	)	

Direct Testimony and Exhibits of

**Brian C. Andrews**

On behalf of

**Federal Executive Agencies**

January 13, 2017





**BEFORE THE  
FLORIDA PUBLIC SERVICE COMMISSION**

	)	
IN RE: PETITION FOR RATE	)	
INCREASE BY GULF POWER	)	DOCKET NO. 160186-EI
COMPANY	)	
	)	
IN RE: PETITION FOR APPROVAL	)	
OF 2016 DEPRECIATION AND	)	
DISMANTLEMENT STUDIES,	)	
APPROVAL OF PROPOSED	)	
DEPRECIATION RATES AND	)	DOCKET NO. 160170-EI
ANNUAL DISMANTLEMENT	)	
ACCRUALS AND PLANT SMITH	)	
UNITS 1 AND 2 REGULATORY	)	
ASSET AMORTIZATION, BY GULF	)	
POWER COMPANY	)	
	)	

**Direct Testimony of Brian C. Andrews**

**I. INTRODUCTION AND SUMMARY**

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11

**Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

A Brian C. Andrews. My business address is 16690 Swingley Ridge Road, Suite 140, Chesterfield, MO 63017.

**Q WHAT IS YOUR OCCUPATION?**

A I am a Consultant in the field of public utility regulation with Brubaker & Associates, Inc., energy, economic and regulatory consultants.

**Q PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.**

A This information is included in Appendix A to my testimony.

1 **Q ON WHOSE BEHALF ARE YOU APPEARING IN THIS PROCEEDING?**

2 A I am testifying on behalf of the Federal Executive Agencies (“FEA”), consisting of  
3 certain agencies of the United States government, which have offices, facilities,  
4 and/or installations in the service area of Gulf Power Company (“Gulf” or  
5 “Company”), from whom they purchase electricity and energy services.

6

7 **Q WHAT IS THE SUBJECT MATTER OF YOUR DIRECT TESTIMONY?**

8 A My testimony will address and propose changes to Gulf’s proposed depreciation  
9 rates for certain transmission, distribution, general and transportation plant (“TD&G”)  
10 accounts. I also present a TD&G depreciation study as my Exhibit BCA-1.

11 My silence in regard to any issue should not be construed as an endorsement  
12 of Gulf’s position.

13

14 **Q HAVE YOU FILED TESTIMONY BEFORE THE FLORIDA PUBLIC SERVICE  
15 COMMISSION (“COMMISSION”) REGARDING DEPRECIATION ISSUES?**

16 A Yes. I filed direct and rebuttal testimony in the Florida Power & Light Company rate  
17 case (Docket No. 160021-EI) in 2016. In addition, I have filed depreciation related  
18 testimony in Arizona, Indiana, New Mexico, and Oklahoma. Additionally, I have  
19 provided support to my colleagues Mr. Michael P. Gorman and James T. Selecky for  
20 their depreciation related testimonies filed in Arkansas, Louisiana, Michigan and  
21 Alberta.

22

23 **Q PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS.**

24 A My conclusions and recommendations are summarized as follows:

- 1 1. Gulf has overstated its depreciation rates for several of its TD&G accounts.  
2 These rates produce an excessive amount of depreciation expense and  
3 overstate the test year revenue requirement.  
4
- 5 2. The adjustments I am proposing provide the Commission with an opportunity to  
6 provide rate relief to Gulf's customers, while allowing Gulf to depreciate its assets  
7 under reasonable rates.  
8
- 9 3. My adjustments result in the 2016 depreciation expense being reduced by  
10 \$1.5 million relative to Gulf's proposal.  
11

## 12 13 **II. BOOK DEPRECIATION CONCEPTS**

14 **Q PLEASE EXPLAIN THE PURPOSE OF BOOK DEPRECIATION ACCOUNTING.**

15 A Book depreciation is the recognition in a utility's income statement of the  
16 consumption or use of assets to provide utility service. Book depreciation is  
17 recorded as an expense and is included in the ratemaking formula to calculate the  
18 utility's overall revenue requirement.

19 Book depreciation provides for the recovery of the original cost of the utility's  
20 assets that are currently providing service. Book depreciation expense is not  
21 intended to provide for replacement of the current assets, but provides for capital  
22 recovery or return of current investment. Generally, this capital recovery occurs over  
23 the average service life of the investment or assets. As a result, it is critical that  
24 appropriate average service lives be used to develop the depreciation rates so no  
25 generation of ratepayers is disadvantaged.

26 In addition to capital recovery, depreciation rates also contain a provision for  
27 net salvage. Net salvage is simply the scrap or reused value less the removal cost  
28 of the asset being depreciated. Accordingly, a utility will also recover the net salvage  
29 costs over the useful life of the asset.  
30

1    **Q    ARE THERE ANY DEFINITIONS OF DEPRECIATION ACCOUNTING THAT ARE**  
2    **UTILIZED FOR RATEMAKING PURPOSES?**

3    A    Yes. One of the most quoted definitions of depreciation accounting is the one  
4    contained in the Code of Federal Regulations:

5                    “Depreciation, as applied to depreciable electric plant, means the loss  
6                    in service value not restored by current maintenance, incurred in  
7                    connection with the consumption of prospective retirement of electric  
8                    plant in the course of service from causes which are known to be in  
9                    current operation and against which the utility is not protected by  
10                   insurance. Among the causes to be given consideration are wear and  
11                   tear, decay, action of the elements, inadequacy, obsolescence,  
12                   changes in the art, changes in demand and requirements of public  
13                   authorities.”

14                     
15                   (Electronic Code of Federal Regulations, Title 18, Chapter 1,  
16                   Subchapter C, Part 101)  
17

18                   Effectively, depreciation accounting provides for the recovery of the original cost of  
19                   an asset, adjusted for net salvage, over its useful life.

20

21    **Q    WHAT METHOD, PROCEDURE AND TECHNIQUE WERE USED TO CALCULATE**  
22    **THE PROPOSED DEPRECIATION RATES FOR GULF?**

23    A    The proposed depreciation rates were calculated using the straight line method, the  
24    average life group procedure and the remaining life technique. Under this method,  
25    procedure and technique of developing depreciation rates, the unrecovered cost of  
26    plant in service is adjusted for the cost of net salvage, and is recovered over the  
27    remaining life of the asset or group of assets. At the end of the useful life, the asset  
28    is fully depreciated.

29

30

31

1 **Q IS YOUR METHOD OF CALCULATING DEPRECIATION RATES DIFFERENT**  
2 **THAN THE COMPANY’S?**

3 A No, both the Company and I utilized the same method to calculate depreciation  
4 rates. Gulf witness Dane Watson discusses the depreciation calculation process in  
5 his pre-filed direct testimony and the depreciation study filed as Direct Exhibit  
6 DAW-1.

7

8 **Q PLEASE DESCRIBE THE ACTUARIAL LIFE ANALYSIS THAT IS PERFORMED**  
9 **TO EVALUATE HISTORICAL ASSET RETIREMENT EXPERIENCE.**

10 A I will first provide the description of actuarial life analysis (retirement rate method)  
11 that is contained in the National Association of Regulatory Utility Commissioners’  
12 (“NARUC”) Public Utility Depreciation Practices manual.

13 “Actuarial analysis is the process of using statistics and probability to  
14 describe the retirement history of property. The process may be used  
15 as a basis for estimating the probable future life characteristics of a  
16 group of property.

17

18 Actuarial analysis requires information in greater detail than do other  
19 life analysis models (e.g., turnover, simulation) and, as a result, may  
20 be impractical to implement for certain accounts (see Chapter VII).  
21 However, for accounts for which application of actuarial analysis is  
22 practical; it is a powerful analytical tool and, therefore, is generally  
23 considered the preferred approach.

24

25 Actuarial analysis objectively measures how the company has retired  
26 its investment. The analyst must then judge whether this historical  
27 view depicts the future life of the property in service. The analyst  
28 takes into consideration various factors, such as changes in  
29 technology, services provided, or, capital budgets.”

30

31 (NARUC Public Utility Depreciation Practices Manual, 1996, Page  
32 111, Emphasis Added).

33

34 As explained by NARUC, when the required data exists, a database that  
35 contains the year of installation and the year of retirements for each vintage of  
36 property, actuarial life analysis is the preferred method of determining the life, and

1           thus retirement, characteristics of a group of property. In this type of analysis, there  
2           are two major steps. The first step is to use available aged data from the company's  
3           continuing plant records to create an observed life table. The observed life table  
4           provides the percent surviving for each age interval of property. The observed life  
5           tables can be created from multiple combinations of placements and experience of  
6           the aged property data. It is important to select a combination of data that will best  
7           reflect future lives of the property. The second step is to match the actual survivor  
8           data from the observed life table to a standard set of mortality, or survivor curves.  
9           Typically, the observed life table data is matched to Iowa Curves. The fitting process  
10          is both a mathematical fitting process, which would minimize the Sum of Squared  
11          Differences ("SSD") between the actual data and the Iowa Curves, and a visual fitting  
12          process. Though the mathematically fitting process provides a curve that is  
13          theoretically possible, the visual matching process will allow the trained depreciation  
14          professional to use informed judgment in the determination of the best fitting survivor  
15          curve.

16

17   **Q     PLEASE PROVIDE FURTHER EXPLANATION OF THE SUM OF SQUARED**  
18   **DIFFERENCES STATISTICAL MEASUREMENT.**

19   **A     In the Actuarial Life Analysis section of the NARUC Depreciation Manual, it**  
20   **describes SSD as follows:**

21                   "Generally, the goodness of fit criterion is the least sum of squared  
22                   deviations. The difference between the observed and projected data  
23                   is calculated for each data point in the observed data. This difference  
24                   is squared, and the resulting amounts are summed to provide a single  
25                   statistic that represents the quality of the fit between the observed and  
26                   projected curves.

27

28                   The difference between the observed and projected data points is  
29                   squared for two reasons: (1) the importance of large differences is  
30                   increased, and (2) the result is a positive number, hence the squared



1 differences can be summed to generate a measure of the total  
2 absolute difference between the two curves. The curves with the  
3 least sum of squared deviations are considered the best fits.”  
4

5

6 **Q PLEASE DESCRIBE THE SIMULATED PLANT RECORD PROCEDURE.**

7 A NARUC, in its Depreciation Practices Manual describes the Simulated Plant Record  
8 (“SPR”) as follows:

9 “The Simulated Plant Record (SPR) method is used by utilities and  
10 commissions to indicate generalized survivor curves that best  
11 represent the life characteristics of property when the property records  
12 do not contain the age of the property upon retirement. The selection  
13 of curves is based upon the closeness of the match between actual  
14 and simulated annual amounts.

15  
16 The closeness of the match between annual amounts is measured by  
17 the Conformance Index (CI) or its reciprocal, the Index of Variation  
18 (IV). These measures are based upon the sum of squared  
19 differences between simulated and actual annual amounts. The  
20 highest ranked curves are those with the highest CIs (or lowest IVs).

21  
22 The maturity of the account is measured by the Retirement  
23 Experience Index (REI). The higher the REI, the more assurance that  
24 a unique retirement pattern was used in the simulation. In 1947,  
25 Bauhan proposed a scale to rank the REI and the CI from poor to  
26 excellent.

27  
28 The amounts that are compared may be balances or retirements  
29 depending upon which model is used: SPR Balances, SPR Period  
30 Retirements, or SPR Cumulative Retirements.”

31  
32 (NARUC Public Utility Deprecation Practices Manual, 1996, Page 92).

33  
34 The SPR method is a commonly used practice when the proper aged vintage data is  
35 not available to analyze. The method used by Gulf in this proceeding is the SPR  
36 Balances model, which applies the survivor factors from a predetermined Iowa Curve  
37 and average service life to the actual annual additions of a property account, which  
38 produces an estimation of the year end balances. Goodness of fit statistics are  
39 calculated to determine which curves produce the best match. These goodness of fit

1 statistics are the Conformance Index ("CI") and the Retirement Experience Index  
2 ("REI"). A good fit in both of these measurements are those that are above 50, over  
3 75 is considered excellent. A CI under 25 is considered a poor fit. In a discussion of  
4 the interpretation of the results of the SPR balance Model, the NARUC manual  
5 states,

6 "Bauhan states that the CI should be "good" or better (i.e. at least 50)  
7 in order for a life determination to be entirely satisfactory. It is not  
8 uncommon, however, for the model to produce results with low CIs for  
9 all curves over several test periods. A low CI indicates either that the  
10 account has no stable life and dispersion pattern or that the actual  
11 mortality dispersion is so unusual that it is not included in the  
12 generalized patterns that were used to simulate the data. In either  
13 case, Bauhan cautions that one should be forewarned in using the  
14 results."

15 (NARUC Public Utility Depreciation Practices Manual, 1996, page 99)  
16  
17

18

19 **Q PLEASE EXPLAIN SURVIVOR CURVES AND THE NOTATION USED TO**  
20 **REFERENCE THEM.**

21 A A survivor curve is a visual representation of the amount of property existing at each  
22 age interval throughout the life of a group of property. From the survivor curve,  
23 parameters required to calculate depreciation rates can be determined, such as the  
24 average service life of the group of property and the composite remaining life. In this  
25 case, as well as the majority of others throughout the U.S. and Canada, the Iowa  
26 Curves are the general survivor curves utilized to describe the mortality  
27 characteristics of group property. There are four types of Iowa Curves: right-moded,  
28 left-moded, symmetrical-moded, and origin-moded. Each type describes where the  
29 greatest frequency of retirements occur relative to the average service life. Mr.  
30 Watson provides a more detailed explanation of Iowa Curves on pages 13-16 of his  
31 Direct Exhibit DAW-1.

1           A survivor curve consists of an average service life and Iowa Curve type  
2 combination. When describing property with a 50-year average service life that has  
3 mortality characteristics of the R2 Iowa Curve, the survivor curve would simply be  
4 notated as "50-R2."

5

6

### **III. GULF DEPRECIATION STUDY**

7   **Q    IN GULF'S DEPRECIATION STUDY, DID MR. WATSON USE THE SPR**  
8   **PROCEDURE OR CONDUCT AN ACTUARIAL LIFE ANALYSIS ON THE**  
9   **PROPERTY RECORDS IN THE TRANSMISSION, DISTRIBUTION, GENERAL**  
10   **AND TRANSPORTATION ("TD&G") PLANT ACCOUNTS?**

11   A    Mr. Watson conducted actuarial life analysis when the aged data were available.  
12   The required data needed for this analysis was available for all transmission  
13   accounts, 361 and 362 of the distribution accounts, and all of the depreciable  
14   general and transportation plant accounts. Gulf does not maintain aged plant  
15   records for accounts 364, 365, 366, 367, 368, 369, 370, and 373. For these  
16   distribution accounts, the life analysis was conducted using the SPR procedure.

17

18   **Q    WHAT IS THE IMPACT ON DEPRECIATION EXPENSE FOR THE TD&G**  
19   **ACCOUNTS DUE TO THE GULF DEPRECIATION STUDY?**

20   A    I have summarized the impact below in Table 1. The values shown below are  
21   sourced from Appendix B of Exhibit DAW-1.

22

23

24

25

<b>TABLE 1</b>				
<b><u>Comparison of Annual Accrual</u></b>				
<b><u>Plant Type</u></b>	<b><u>Existing</u></b>	<b><u>Gulf Proposed</u></b>	<b><u>Difference</u></b>	<b><u>Percent</u></b>
Transmission	\$19,109,058	\$22,808,435	\$3,699,377	19%
Distribution	\$44,976,653	\$44,835,531	(\$141,122)	0%
General	\$3,526,782	\$3,267,406	(\$259,376)	-7%
<u>Transportation</u>	<u>\$2,703,991</u>	<u>\$3,582,202</u>	<u>\$878,210</u>	<u>32%</u>
<b>Total</b>	<b>\$70,316,485</b>	<b>\$74,493,574</b>	<b>\$4,177,089</b>	<b>6%</b>

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19

As is shown in Table 1, Gulf is proposing to increase the depreciation expense for the TD&G accounts by \$4.2 million, or 6% over what is currently approved under the existing depreciation rates.

**IV. BCA TD&G DEPRECIATION STUDY**

**Q PLEASE DESCRIBE YOUR TD&G DEPRECIATION STUDY.**

A My Exhibit BCA-1 contains the BCA TD&G Depreciation Study. I have studied all TD&G accounts. This study was conducted by performing an actuarial life analysis (retirement rate method) on Gulf’s property data when it was available. This is the NARUC preferred method of utility property life analysis and is the same method used by Mr. Watson on behalf of Gulf. For the distribution accounts that Mr. Watson studied with the SPR analysis, I am proposing only a single adjustment (Account 364), which is based on my informed judgment. I am recommending increasing the lives of nine of the 28 accounts studied. This results in a \$1.5 million reduction to the 2016 depreciation expense, which is shown on page 4 of my Exhibit BCA-1.

1    **Q    PLEASE PROVIDE ADDITIONAL DETAIL ON THE PROCESS USED FOR YOUR**  
2    **DEPRECIATION STUDY, SPECIFICALLY THE ACCOUNTS ANALYZED USING**  
3    **ACTUARIAL ANALYSIS.**

4    A    The first step in my analysis was a thorough review of the Gulf depreciation study and  
5    of Mr. Watson's workpapers which were provided in response to FEA's First POD. I  
6    conducted my own actuarial analysis based on the observed life tables created by  
7    Mr. Watson for his actuarial analysis. I utilized a depreciation model to determine the  
8    Iowa Curve and average service life that best fit the significant points of the observed  
9    life tables created by Mr. Watson. I then used a statistical and visual analysis to  
10   select an Iowa Curve and average service life combination that results in a better  
11   statistical fit (lower SSD) than the survivor curves being recommended by Mr.  
12   Watson.

13           In my Exhibit BCA-1, for each account studied by actuarial analysis, I present  
14   four sections of information. The first section contains a description of the plant  
15   account per the FERC uniform system of accounts. The second section contains the  
16   results of the fitting analysis. This chart shows for each Iowa Curve type, the  
17   average service life that minimizes the SSD. Additionally, the table contains the  
18   SSDs of the Gulf and BCA proposals. For each account to which an adjustment is  
19   proposed, the BCA proposal has a lower SSD, which indicates a better statistical fit.

20           The next section contains a graph that shows the actual Gulf retirement data  
21   (blue triangles), the Gulf proposed curve (green dashed line), the BCA proposed  
22   curve (purple dotted line), and the best fit curve (orange dash-dotted line). The best  
23   fit curve shown on the graph is the curve determined by the statistical fitting analysis  
24   to have the lowest SSD.

1           The last section for each account shows the calculation of the annual accrual,  
2           depreciation rate, and composite remaining life. This procedure is the same  
3           performed by Mr. Watson in his depreciation study.  
4

5   **Q    DID YOU PERFORM A BENCHMARKING EXERCISE TO VALIDATE THE**  
6   **RESULTS OF BOTH THE BCA DEPRECIATION MODEL AND MR. WATSON'S**  
7   **CALCULATIONS?**

8   A    Yes. For all TD&G Accounts, I calculated the annual accrual, theoretical reserve,  
9           and composite remaining life using the survivor curves and net salvage rates that Mr.  
10          Watson has proposed. These results are shown on pages 72-73 of Exhibit BCA-1.  
11          The difference in annual accrual for the TD&G accounts is only \$3,517 or 0.00% of  
12          the approximately \$74.3 million of annual accrual for these accounts.  
13

14   **Q    DID YOU FIND ANY ERRORS WITH MR. WATSON'S CALCULATIONS DURING**  
15   **YOUR BENCHMARKING EXERCISE?**

16   A    Yes. It appears that in the calculation of depreciation parameters for Account 390,  
17          Mr. Watson mistakenly utilized the wrong survivor curve. The Gulf depreciation  
18          study shows the recommendation for this account is the 46-R1.5 Iowa Curve.  
19          Inspection of Mr. Watson's workpaper titled "Gulf Power TDG Adj Smith Reg  
20          Asset.xlsx" shows that he actually used the 45-R1.5 survivor curve for his  
21          calculations. This error results in the annual depreciation expense for this account  
22          being overstated by approximately \$56 thousand.  
23  
24  
25

1 Q WHAT CAN YOU CONCLUDE ABOUT THE RESULTS OF YOUR  
2 BENCHMARKING EXERCISE?

3 A The results show that the BCA Depreciation Model can calculate the depreciation  
4 parameters for Gulf's accounts with the same accuracy as the model utilized by Mr.  
5 Watson. The BCA Depreciation Model can therefore be utilized to calculate  
6 depreciation parameters with differing survivor curves and the results will be  
7 accurate.

8  
9 Q WHEN YOU PERFORMED YOUR FITTING ANALYSIS, WHICH SET OF DATA  
10 DID YOU UTILIZE AND WHY.

11 A For each account that was studied using actuarial analysis, I performed my fitting  
12 analysis using the original life tables that were created by Mr. Watson that captured  
13 property for all surviving vintages, i.e. the full placement band, and the most recent  
14 experience band. I chose the combination of the full placement band and the most  
15 recent experience band for two reasons, first, it captures the retirement experience  
16 from all of Gulf's surviving property, and second, it is the more recent experience that  
17 will better signal the future retirement behavior of Gulf's property. Wolf and Fitch's  
18 "Depreciation Systems," states:

19 "Recent experience bands yield the most recent retirement ratios  
20 providing the forecaster with valuable information about the current  
21 retirement ratios for all ages."  
22

23 These recent retirement ratios will provide a much better indication of the retirement  
24 behavior of property in the near future, than will reliance on much older retirement  
25 history. While Mr. Watson studied several different combinations of placement  
26 bands and experience bands, the results presented in his study generally have  
27 experience bands that capture retirement experience that is no longer be relevant.

1 For example, Account 353, the largest plant account studied using actuarial analysis,  
2 has a recommended survivor curve based on a retirement history that begins in  
3 1972. This account has a total plant balance of \$250 million, however, \$229 million  
4 or 92% of this property was installed after 1990. Therefore, maintenance and  
5 operational practices, as well as retirement experience, that occurred between 1972  
6 and 1990 has very little relevance to the property that is currently in service and it is  
7 inappropriate to allow that outdated retirement experience to influence service life  
8 estimation of Gulf's property.

9

10 **Q DO THE SURVIVOR CURVES THAT YOU ARE RECOMMENDING**  
11 **ADJUSTMENTS TO PRODUCE A BETTER FIT TO GULF'S DATA THAN THOSE**  
12 **BEING RECOMMENDED BY MR. WATSON?**

13 **A** Yes. Eight of my nine proposed adjustments are based on my actuarial life analysis.  
14 For each of those eight accounts to which I am proposing a survivor curve that differs  
15 from Mr. Watson' recommendation, the SSD is lower. That is, all of my  
16 recommendations result in survivor curves that mathematically and statistically fit  
17 Gulf's data better than those recommended by Mr. Watson. The SSDs of my  
18 recommendations compared to the recommendations of Mr. Watson are shown  
19 below in Table 2. In each case, the SSD of the BCA proposal is lower than the Gulf  
20 proposal. Again, a lower SSD indicates that the generalized survivor curve more  
21 accurately portrays the life characteristics of the property data.

22

23

24

25



**TABLE 2**

**Goodness of Fit Statistics**

<b><u>Account</u></b>	<b><u>Gulf Proposed</u></b>		<b><u>BCA Proposed</u></b>	
	<b><u>Curve</u></b>	<b><u>SSD</u></b>	<b><u>Curve</u></b>	<b><u>SSD</u></b>
353	40-S0	1,324	40-L0.5	259
354	55-R4	696	56-R3	552
355	40-L0.5	1,106	41-S0	247
358	50-R4	17,539	55-R5	4,104
361	50-R2.5	1,113	52-R2.5	357
390	46-R1.5	320	48-R1.5	262
396	16-R4	22,395	18-R4	16,962
397	16-L1.5	245	17-L1.5	168

Source: Exhibit BCA-1

1 **Q WHAT ADJUSTMENT ARE YOU PROPOSING TO MAKE TO ACCOUNT 364 –**  
2 **POLES, TOWERS, AND FIXTURES?**

3 A I proposed that the life of the distribution poles account be increased to 38 years  
4 rather than be decreased to 33 years as is proposed by Gulf.

5

6 **Q WHY ARE YOU PROPOSING THIS ADJUSTMENT TO ACCOUNT 364?**

7 A Account 364 is one of the distribution accounts that Gulf does not maintain the aged  
8 data necessary to perform actuarial analysis; therefore the analysis performed by Mr.  
9 Watson was the simulated plant record procedure. Based on the SPR analysis, Mr.  
10 Watson is recommending decreasing the life of this account by one year to a 33 R0.5  
11 survivor curve. Mr. Watson on page 77 of Exhibit DAW-1 states that “the CIs were  
12 poor to fair, but the REIs were excellent.”

13 Upon further inspection of the results of Mr. Watson’s SPR analysis, the  
14 33-R0.5 curve was the second ranked curve in 8 of the 9 bands studied; however all  
15 but one of these eight bands had CIs in the poor range, and only a single band  
16 scored a CI in the “fair” range, and it was at the very bottom of the range. Although

1 the SPR analysis appears to support the life of 33 years for this account, the fitting  
2 statistics suggest that the 33-R0.5 Iowa Curve is simply a “least worst” choice. The  
3 results of Mr. Watson’s SPR analysis are included in my Exhibit BCA-2. As is  
4 discussed earlier, the CI should be at least in the “good” range (above 50) to be  
5 considered satisfactory. The CI for the 38-R1 curve is also in the poor range;  
6 however, my recommendation is based on informed judgement, not just the SPR  
7 analysis. According to SPR analysis, no Iowa Curve produces a satisfactory fit to the  
8 Account 364 data.

9 Mr. Watson also stated that discussions with Company personnel indicate  
10 that there are now more concrete poles than in the past. Concrete poles have a  
11 longer life than wood poles which means there are now more longer lived assets in  
12 this account. This logically would lead one to believe the average life of this account  
13 should increase, not decrease as is proposed by Gulf.

14 My recommendation is also more consistent with the depreciation study filed  
15 in Florida Power & Light Company’s (“FPL”) the most recent rate case, Docket No.  
16 160021-EI. FPL maintains aged data for all of its distribution accounts, including  
17 account 364, which is separated into sub accounts for wood and concrete poles.  
18 The actuarial analysis performed in that case indicated the wood poles should have  
19 an average service life of 40 years, and the concrete poles will have an average life  
20 of 50 years. Again, the actuarial analysis is the preferred method of life analysis.  
21 While FPL and Gulf do not have the same maintenance and operation practices,  
22 their service territories are located in similar climates and their property is subject to  
23 similar forces of retirement. It is unlikely that Gulf’s distribution poles have average  
24 service lives that are shorter by seven and 17 years for wood and concrete poles  
25 than FPL.

1 Q WHAT IS THE IMPACT ON THE DEPRECIATION RATES FOR THE TD&G  
2 ACCOUNTS TO WHICH YOU ARE RECOMMENDING SURVIVOR CURVE  
3 CHANGES?

4 A For the nine TD&G accounts to which I am recommending an adjustment to the  
5 survivor curve, the resulting rates are shown below in Table 3.

<b><u>Account</u></b>	<b><u>Gulf</u></b>	<b><u>BCA</u></b>	<b><u>Delta</u></b>
353	2.90 %	2.81%	-0.09%
354	2.10%	2.00%	-0.10%
355	4.60%	4.56%	-0.04%
358	1.70%	1.47%	-0.23%
361	2.00%	1.89%	-0.11%
364	4.90%	4.30%	-0.60%
390	2.20%	2.01%	-0.19%
396	1.70%	1.37%	-0.33%
397	5.70%	5.22%	-0.58%

Source: Exhibit BCA-1

6  
7 Q WHAT IS THE IMPACT TO THE ANNUAL ACCRUAL DUE TO YOUR PROPOSED  
8 ADJUSTMENTS?

9 A These proposed adjustments result in a decrease to the annual accrual of  
10 \$1.5 million. The detail of these adjustments is shown on page 4 of my Exhibit  
11 BCA-1.

12  
13  
14  
15

1 **Q WHAT IS THE IMPACT TO THE THEORETICAL RESERVE AND**  
2 **CORRESPONDING RESERVE IMBALANCE DUE TO YOUR PROPOSED**  
3 **ADJUSTMENTS?**

4 A These proposed adjustments decrease both the theoretical reserve and the reserve  
5 imbalance by \$4.3 million, which yields a reserve imbalance of -\$4.6 million. The  
6 account level detail is shown on page 71 of my Exhibit BCA-1. These adjustments  
7 bring the theoretical reserve closer to the book reserve as compared to Gulf's  
8 proposals.

9

10 **Q DO YOU HAVE ANYTHING ELSE TO ADD?**

11 A Yes. Depreciation expense on utility mass property accounts is one of the most  
12 subjective areas at a utility's revenue requirement. There is no single correct  
13 answer, as the rates for mass property are based on an analyst's forecast of future  
14 expectations. My proposed adjustments provide the Commission with an opportunity  
15 to offer rate relief to Gulf's customers. These depreciation parameters are supported  
16 by Gulf's retirement history data and will not harm Gulf financially.

17

18 **Q PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS.**

19 A My conclusions and recommendations are summarized as follows:

- 20 1. Gulf has overstated its depreciation rates for several of its TD&G accounts.  
21 These rates produce an excessive amount of depreciation expense and  
22 overstate the test year revenue requirement.  
23
- 24 2. The adjustments I am proposing provide the Commission with an opportunity to  
25 provide rate relief to Gulf's customers, while allowing Gulf to depreciate its assets  
26 under reasonable rates.  
27
- 28 3. My adjustments result in the 2016 depreciation expense being reduced by  
29 \$1.5 million relative to Gulf's proposal.  
30  
31

1 Q DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

2 A Yes, it does.

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

1

**Qualifications of Brian C. Andrews**

2 **Q PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A Brian C. Andrews. My business address is 16690 Swingley Ridge Road, Suite 140,  
4 Chesterfield, MO 63017.

5

6 **Q PLEASE STATE YOUR OCCUPATION.**

7 A I am a Consultant in the field of public utility regulation with the firm of Brubaker &  
8 Associates, Inc. ("BAI"), energy, economic and regulatory consultants.

9

10 **Q PLEASE STATE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL**  
11 **EMPLOYMENT EXPERIENCE.**

12 A I received a Bachelor of Science Degree in Electrical Engineering from the  
13 Washington University in St. Louis/University of Missouri - St. Louis Joint  
14 Engineering Program. I have also received a Master of Science Degree in Applied  
15 Economics from Georgia Southern University.

16 I have attended training seminars on multiple topics including class cost of  
17 service, depreciation, power risk analysis, production cost modeling, cost-estimation  
18 for transmission projects, transmission line routing, MISO load serving entity  
19 fundamentals and more.

20 Additionally, I am a certified Engineer Intern in the State of Missouri, and I am  
21 a member of the Society of Depreciation Professionals.

22 As a consultant at BAI, and as an Associate Consultant and Assistant  
23 Engineer before that, I have been involved with several regulated and competitive  
24 electric service issues. These have included book depreciation, fuel and purchased

1 power cost, transmission planning, transmission line routing, resource planning  
2 including renewable portfolio standards compliance, electric price forecasting, class  
3 cost of service, power procurement, and rate design. This has involved use of power  
4 flow, production cost, cost of service, and various other analyses and models to  
5 address these issues, utilizing, but not limited to, various programs such as  
6 STRATEGIST, RealTime, PSS/E, MatLab, R Studio, ArcGIS, Excel, and the United  
7 States Department of Energy/Bonneville Power Administration's Corona and Field  
8 Effects ("CAFÉ") Program. Additionally, I have received extensive training on the  
9 PLEXOS Integrated Energy Model.

10 BAI was formed in April 1995. BAI provides consulting services in the  
11 economic, technical, accounting, and financial aspects of public utility rates and in  
12 the acquisition of utility and energy services through RFPs and negotiations, in both  
13 regulated and unregulated markets. Our clients include large industrial and  
14 institutional customers, some utilities and, on occasion, state regulatory agencies.  
15 We also prepare special studies and reports, forecasts, surveys and siting studies,  
16 and present seminars on utility-related issues.

17 In general, we are engaged in energy and regulatory consulting, economic  
18 analysis and contract negotiation. In addition to our main office in St. Louis, the firm  
19 also has branch offices in Phoenix, Arizona and Corpus Christi, Texas.

20  
21  
22  
23  
24

**BCA Depreciation Study  
On Gulf Power Company's  
Transmission, Distribution, General and Transportation  
Plant Accounts**

**Brian Andrews**



**TABLE OF CONTENTS**

Executive Summary .....	3
BCA Proposed Adjustments.....	4
Life Analysis .....	5
Account 350.1 - Land and land rights .....	8
Account 352 - Structures and Improvements.....	10
Account 353 - Station Equipment .....	13
Account 354 - Towers And Fixtures.....	16
Account 355 - Poles and Fixtures .....	19
Account 356 - Overhead Conductors And Devices .....	22
Account 358 - Underground Conductor & Devices.....	25
Account 359 - Roads and trails .....	28
Account 360.1 - Land and land rights .....	29
Account 361 - Structures and Improvements.....	30
Account 362 - Station Equipment .....	33
Account 364 - Poles, Towers And Fixtures.....	36
Account 365 - Overhead Conductors And Devices .....	38
Account 366 - Underground Conduit .....	40
Account 367 - Underground Conductors And Devices .....	41
Account 368 - Line Transformers.....	43
Account 369.1 - Overhead Services .....	45
Account 369.2 - Underground Services .....	47
Account 370.0 - Meters .....	49
Account 370.1 AMI - Meters.....	50
Account 373 - Street Lighting And Signal Systems .....	51
Account 390 – Structures and Improvements.....	52
Account 392.1 - Automobiles .....	55
Account 392.2 - Transportation Equipment - Light Trucks .....	56
Account 392.3 - Transportation Equipment - Heavy Trucks .....	59
Account 392.4 - Transportation Equipment - Trailers .....	62
Account 396 - Power Operated Equipment .....	65
Account 397 - Communication Equipment.....	68
Reserve Imbalance .....	71
Benchmarking .....	72

### **Executive Summary**

The contents herein contain the results of the BCA Depreciation Study conducted on behalf of the Federal Executive Agencies on the Gulf Power Company (“Gulf”) Transmission, Distribution, General, and Transportation accounts. This study was conducted by performing an actuarial analysis (retirement rate method) on Gulf’s actual property data when it was available. This is the NARUC preferred method of utility property life analysis and is the same method used by Mr. Watson on behalf of Gulf. All of my proposed adjustments, with the exception of Account 364, are based on actuarial analysis. The proposed adjustment to Account 364 is based on informed judgment. I am recommending increasing the lives of 9 of the 28 accounts studied. This results in a \$1.5 million reduction to the 2016 depreciation expense.

**Table 1**  
**BCA Proposed Adjustments**  
**for Transmission, Distribution, General and Transportation Accounts**

Account	Survivor Curve			Theoretical Reserve			Total Annual Accrual		
	Gulf	BAI	Delta	Gulf	BAI	Delta	Gulf	BAI	Delta
353	40 - S0	40 - L0.5	0	44,761,649	38,782,427	(5,979,222)	7,252,121	7,033,366	(218,755)
354	55 - R4	56 - R3	1	23,268,888	21,659,251	(1,609,638)	888,093	846,562	(41,531)
355	40 - L0.5	41 - S0	1	47,321,011	52,900,799	5,579,788	10,595,594	10,504,043	(91,551)
358	50 - R4	55 - R5	5	7,442,406	6,988,786	(453,620)	244,840	212,282	(32,558)
<b>Total Transmission</b>				<b>\$ 122,793,954</b>	<b>\$ 120,331,263</b>	<b>\$(2,462,692)</b>	<b>\$ 18,980,648</b>	<b>\$ 18,596,253</b>	<b>\$(384,395)</b>
361	50 - R2.5	52 - R2.5	2	7,179,948	6,937,867	(242,080)	528,251	498,195	(30,056)
364	33 - R0.5	38 - R1	5	67,451,759	67,776,229	324,471	6,882,766	6,045,511	(837,254)
<b>Total Distribution</b>				<b>\$ 74,631,706</b>	<b>\$ 74,714,097</b>	<b>\$ 82,390</b>	<b>\$ 7,411,017</b>	<b>\$ 6,543,706</b>	<b>\$(867,311)</b>
390 <sup>1</sup>	46 - R1.5	48 - R1.5	2	28,098,547	26,561,318	(1,537,229)	1,853,441	1,691,657	(161,784)
396	16 - R4	18 - R4	2	532,879	505,337	(27,542)	15,843	12,786	(3,056)
397	16 - L1.5	17 - L1.5	1	8,266,595	7,959,834	(306,760)	1,398,123	1,280,521	(117,601)
<b>Total General</b>				<b>\$ 36,898,021</b>	<b>\$ 35,026,489</b>	<b>\$(1,871,531)</b>	<b>\$ 3,267,406</b>	<b>\$ 2,984,964</b>	<b>\$(282,442)</b>
<b>Total</b>				<b>\$ 234,323,681</b>	<b>\$ 230,071,849</b>	<b>\$(4,251,833)</b>	<b>\$ 29,659,072</b>	<b>\$ 28,124,924</b>	<b>\$(1,534,148)</b>

<sup>1</sup>Account 390 parameters were calculated using a 45-R1.5 survivor curve, not the 46-R1.5 survivor curve that is recommended by Gulf.

### Life Analysis

I created an Excel-based model (“BCA Model”) that utilizes accepted methodologies to test the fit of the various Iowa curves to the actual retirement data contained in the observed life tables for the Gulf Transmission, Distribution, General and Transportation accounts (“TD&G”). The data for the Iowa Curves have been generated utilizing the formulas containing in Iowa State Bulletin 125, and the observed life tables were contained within the workpapers to Mr. Watson’ depreciation study.

In the fitting process, the model determines for each curve type, the average service life that minimizes the sum of squared differences (“SSD”) between the Iowa curves and the actual data points from the observed life tables that were determined to be significant<sup>1</sup>. The Iowa curve and corresponding average service life that minimizes the SSD produces the “best fit” to Gulf’s actual retirement history data.

The analysis provides for each Iowa Curve, the average service life that best fits the data by minimizing the SSD. The results of this analysis are provided for each account. After the fitting analysis was performed, I created graphs that contain the Gulf’s retirement data, the best fit line from the fitting analysis, the survivor curve being proposed by Gulf, and my proposed survivor curve (“BCA Proposed”). The BCA Proposed survivor curve for each account is curve that lies between the recommendation of Gulf (Watson) and the best fit curve. In some instances the best fit produces an unreasonable average service life; however the historical retirement pattern should not be ignored in determining the appropriate average service life and

---

<sup>1</sup> Significant data points were determined by dividing the exposures for each vintage by the Age 0 vintage exposures. If that ratio was greater than 1%, the data point was determined to be significant.

retirement dispersion because these are key inputs in developing a fair and equitable depreciation rate. In each instance the proposed average service life and retirement dispersion that I am recommending results in a better statistical fit, (lower SSD) compared to the Gulf proposed survivor curve.

For any Iowa Curve and average service life combination, the model calculates the remaining life for each vintage, which is later used to determine the composite remaining life of all property in the account and thus the depreciation rate. The vintage group remaining lives are calculated in the same manner as described in the Gulf Depreciation Study for the straight line method using the average service life procedure and the remaining life basis.

This depreciation study focuses on the TD&G accounts. The majority of these accounts were studied using actuarial life analysis; however some of the distribution accounts were studied with a simulated plant record ("SPR") analysis. The SPR analysis was conducted by Mr. Watson, not I. To those accounts analyzed with SPR, I am only proposing adjusting a single account, 364, which is explained in the Account 364 section.

The first step in my analysis was a thorough review of the Gulf deprecation study and of Mr. Watson' workpapers. I conducted my own actuarial analysis based on the observed life tables created by Mr. Watson for his actuarial analysis. I utilized the BCA Model to determine the Iowa Curve and average service life that best fit the significant points of the observed life table created by Mr. Watson. I then used a statistical and visual analysis to select an Iowa Curve and average service life that results in a better statistical fit (lower SSD) than the survivor curves being recommended by Mr. Watson.

For each account studied with actuarial analysis, I present four sections of information. The first section contains a description of the plant account per the FERC Uniform System of Accounts. The second section contains the results of the fitting analysis if performed. This table shows for each Iowa Curve type, the average service life that minimizes the SSD. Additionally the table contains the SSD of the Gulf and BCA proposals. For each account to which I propose an adjustment, the BCA proposal has a lower SSD which indicates a better statistical fit.

The next section contains a graph that shows the actual Gulf retirement data (blue triangles), the Gulf proposed curve (green dashed line), the BCA proposed curve (purple dotted line), and the best fit curve (orange dash-dotted line). The best fit shown on the graph is the curve determined by the fitting analysis which had the lowest SSD; this curve will match the survivor curve at the top of the table in the fitting analysis section.

The last section for each account shows the calculation of the annual accrual and depreciation rate, composite remaining life, and theoretical reserve. This procedure is the same performed by Mr. Watson and is described on pages 24, 29, and 30 of the Gulf Depreciation Study.

The accounts not studied with actuarial analysis contain three sections; (i) a description of the account, (ii) a discussion on my proposed adjustment, and (iii) the calculation of the depreciation parameters.

**Account 350.1 - Land and land rights**

This account is for Land and land rights. Per the FERC Uniform System of Accounts, "This account shall include the cost of land and land rights used in connection with distribution operations." The account does not include the cost of permits to erect poles, towers, etc., or to trim trees.

**Adjustment**

No adjustment is proposed.

**Calculation of Depreciation Parameters**

Account	350.1	Total Annual Accrual	\$193,214
Survivor Curve	65-R5	Composite Remaining Life	27.66
Net Salvage	0%	Theoretical Reserve	\$7,270,194
Book Reserve	\$7,310,897	Accrual Rate	1.53%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2015	\$ 29,708	65.00	2.31	\$ 686	63.50	\$ 1,886,453
2011	55,951	65.00	8.46	4,735	59.50	3,329,031
2010	157,383	65.00	10.00	15,739	58.50	9,206,803
2009	58,036	65.00	11.54	6,697	57.50	3,337,054
2008	64,044	65.00	13.08	8,375	56.50	3,618,447
2007	2,657	65.00	14.62	388	55.50	147,455
2006	369,563	65.00	16.15	59,701	54.50	20,140,998
2003	43,000	65.00	20.77	8,931	51.50	2,214,456
2002	376,605	65.00	22.31	84,015	50.50	19,018,356
2001	55,803	65.00	23.85	13,307	49.50	2,762,233
2000	66,795	65.00	25.39	16,956	48.50	3,239,542
1998	88,793	65.00	28.46	25,272	46.50	4,128,812
1997	10,625	65.00	30.00	3,188	45.50	483,448
1996	1,621,387	65.00	31.54	511,373	44.50	72,150,956
1994	225	65.00	34.62	78	42.50	9,567
1993	52,899	65.00	36.15	19,125	41.50	2,195,277
1992	54,919	65.00	37.69	20,700	40.50	2,224,184
1991	24,512	65.00	39.23	9,616	39.50	968,225
1990	31,299	65.00	40.77	12,760	38.50	1,205,013
1989	39,610	65.00	42.31	16,758	37.50	1,485,411
1988	983,815	65.00	43.84	431,340	36.50	35,910,896
1987	11,284	65.00	45.38	5,121	35.50	400,618
1986	505	65.00	46.91	237	34.51	17,426
1985	75,207	65.00	48.45	36,434	33.51	2,520,208
1983	782	65.00	51.50	403	31.53	24,665
1982	132,135	65.00	53.02	70,059	30.54	4,034,931
1981	147,237	65.00	54.54	80,296	29.55	4,351,158
1980	138,792	65.00	56.04	77,783	28.57	3,965,560
1979	162,435	65.00	57.54	93,469	27.60	4,482,798
1978	220,892	65.00	59.03	130,398	26.63	5,882,143
1977	90,257	65.00	60.51	54,616	25.67	2,316,691
1976	47,233	65.00	61.98	29,274	24.71	1,167,336
1975	1,004,546	65.00	63.43	637,196	23.77	23,877,771
1974	844,908	65.00	64.87	548,085	22.84	19,293,488
1973	694,829	65.00	66.29	460,619	21.91	15,223,597
1972	199,308	65.00	67.70	134,926	21.00	4,184,827
1971	250,726	65.00	69.09	173,216	20.09	5,038,132
1970	33,468	65.00	70.45	23,579	19.21	642,777
1969	15,462	65.00	71.80	11,102	18.33	283,407
1968	1,846,774	65.00	73.12	1,350,433	17.47	32,262,143
1967	400,440	65.00	74.42	298,027	16.62	6,656,860
1966	285,370	65.00	75.70	216,020	15.80	4,507,775
1965	146,890	65.00	76.94	113,022	14.99	2,201,363
1964	330,786	65.00	78.16	258,538	14.20	4,696,126
1963	105,602	65.00	79.34	83,785	13.43	1,418,128
1962	182,470	65.00	80.49	146,866	12.68	2,314,267
1961	277,987	65.00	81.60	226,826	11.96	3,325,459
1959	2,839	65.00	83.70	2,376	10.60	30,084
1958	72,203	65.00	84.69	61,147	9.95	718,661
1957	19,846	65.00	85.63	16,994	9.34	185,376
1956	90,765	65.00	86.53	78,543	8.75	794,464
1955	26,740	65.00	87.39	23,368	8.20	219,159
1954	60,382	65.00	88.21	53,261	7.67	462,838
1953	141,243	65.00	88.98	125,677	7.16	1,011,815
1952	102,745	65.00	89.71	92,172	6.69	687,243
1951	26,257	65.00	90.40	23,736	6.24	163,879
1950	33,566	65.00	91.05	30,560	5.82	195,367
1949	698	65.00	91.65	640	5.43	3,787
1948	142	65.00	92.22	131	5.06	720
1947	67,151	65.00	92.75	62,283	4.71	316,398
1946	2,009	65.00	93.25	1,873	4.39	8,821
1945	5,878	65.00	93.70	5,507	4.10	24,077
1944	33,224	65.00	94.12	31,271	3.82	126,922
1943	33,534	65.00	94.50	31,691	3.57	119,795
1942	27,448	65.00	94.86	26,038	3.34	91,643
1939	16,647	65.00	95.79	15,946	2.74	45,569
1934	103	65.00	97.52	101	1.61	167
1930	17,060	65.00	98.85	16,865	0.75	12,725
1929	20,519	65.00	99.14	20,343	0.56	11,407
1928	1,079	65.00	99.23	1,071	0.50	539
1926	18,529	65.00	100.00	18,529	0.00	-
<b>Total</b>	<b>\$ 12,654,559</b>			<b>\$ 7,270,194</b>		<b>\$ 349,983,725</b>



**Account 352 - Structures and Improvements**

This account is for Transmission Structures and Improvements. Per the FERC Uniform System of Accounts of Account 352, "This account shall include the cost in place of structures and improvements used in connection with transmission operations." This includes the cost of all buildings and facilities to house, support, or safeguard property or persons, including all fixtures permanently attached to and made a part of buildings, and improvements of a permanent character on or to land, in connection with transmission operations.

**Account 352 Fitting Analysis Results**

<b>Iowa Curve</b>	<b>Average Service Life</b>	<b>SSD</b>
R3	49.0	258.78
L2.5	55.5	263.35
L3	52.8	301.92
S2	52.2	305.41
S2.5	50.4	309.52
L2	59.3	317.06
S1.5	54.6	357.89
R2.5	51.2	386.40
S3	49.1	429.62
R4	46.8	434.82
S1	58.0	496.00
L1.5	64.0	509.06
R2	54.6	629.56
L4	48.5	700.16
S0.5	62.5	721.47
L1	71.2	724.18
S0	69.0	981.31
R1.5	59.9	1029.96
L0.5	79.8	1052.13
S4	46.9	1082.87
L0	92.9	1356.43
R1	68.4	1410.16
R5	45.8	1559.46
L5	46.8	1615.24
R0.5	83.4	1728.57
O2	114.4	1880.21
O1	102.2	1891.66
O3	167.3	1937.27
O4	225.9	1954.90
S5	46.0	2377.74
S6	45.8	4259.18
SQ	225.9	10178.28

Gulf Proposal Curve 55-R3 1177.99

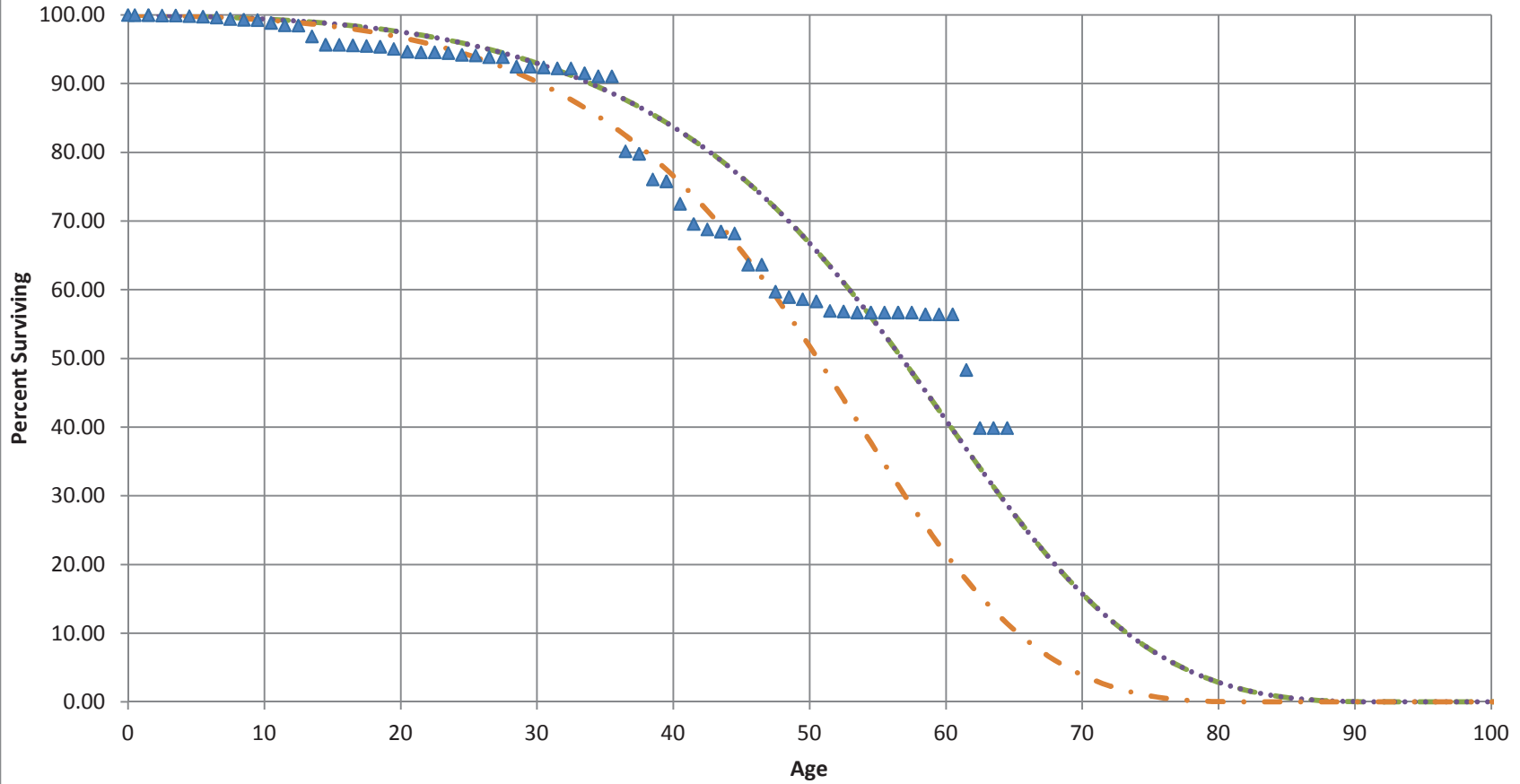
BCA Proposal Curve 55-R3 1177.99

# Account 352 - Structures and Improvements

Original & Smooth Survivor Curves

Placements 1900-2014

Experience 1989-2014



▲ Original Curve

— Gulf Proposal 55-R3

..... BCA Proposal 55-R3

- . - Best Fit 49-R3

**Calculation of Depreciation Parameters**

Account	352	Total Annual Accrual	\$419,779
Survivor Curve	55-R3	Composite Remaining Life	46.65
Net Salvage	-5%	Theoretical Reserve	\$3,890,209
Book Reserve	\$6,029,828	Accrual Rate	1.72%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2015	\$ 7,914,030	55.00	2.82	\$ 222,885	53.52	\$ 423,596,714
2014	1,868,468	55.00	4.69	87,601	52.54	98,177,127
2013	3,091,192	55.00	6.56	202,642	51.57	159,400,972
2012	643,230	55.00	8.42	54,142	50.59	32,541,636
2011	706,522	55.00	10.27	72,581	49.62	35,056,838
2010	1,493,991	55.00	12.12	181,103	48.65	72,683,115
2009	181,618	55.00	13.96	25,362	47.69	8,660,527
2008	1,351,461	55.00	15.80	213,517	46.72	63,146,100
2007	66,367	55.00	17.63	11,698	45.77	3,037,457
2006	848,734	55.00	19.44	165,028	44.82	38,036,018
2005	106,887	55.00	21.25	22,717	43.87	4,688,885
2004	9,608	55.00	23.05	2,215	42.93	412,422
2003	12,754	55.00	24.84	3,168	41.99	535,517
2002	2,452,208	55.00	26.62	652,751	41.06	100,679,738
2001	19,176	55.00	28.39	5,443	40.13	769,561
2000	48,276	55.00	30.14	14,551	39.21	1,892,986
1999	11,155	55.00	31.88	3,557	38.30	427,249
1998	17,258	55.00	33.61	5,801	37.39	645,337
1997	8,393	55.00	35.33	2,965	36.50	306,319
1996	9,313	55.00	37.03	3,449	35.60	331,587
1995	12,499	55.00	38.72	4,839	34.72	433,972
1994	41,214	55.00	40.39	16,646	33.84	1,394,815
1993	39	55.00	42.05	16	32.98	1,276
1992	3,640	55.00	43.69	1,590	32.12	116,905
1991	367,715	55.00	45.31	166,629	31.26	11,496,128
1990	156,427	55.00	46.92	73,402	30.42	4,758,606
1989	1,025,437	55.00	48.52	497,516	29.59	30,338,684
1988	585,003	55.00	50.09	293,042	28.76	16,825,333
1987	129,022	55.00	51.65	66,640	27.95	3,605,535
1986	35,316	55.00	53.19	18,785	27.14	958,412
1985	30,591	55.00	54.71	16,737	26.34	805,800
1984	88	55.00	56.22	49	25.55	2,238
1983	93,690	55.00	57.70	54,061	24.78	2,321,225
1982	17,420	55.00	59.17	10,307	24.01	418,233
1981	90,075	55.00	60.61	54,595	23.25	2,094,353
1980	91,953	55.00	62.04	57,044	22.50	2,069,386
1979	102,691	55.00	63.44	65,148	21.77	2,235,480
1978	(0)	55.00	64.82	(0)	21.04	(0)
1977	149,927	55.00	66.18	99,227	20.33	3,048,365
1976	26,839	55.00	67.52	18,122	19.63	526,909
1975	109,443	55.00	68.83	75,334	18.94	2,073,310
1974	74,303	55.00	70.12	52,103	18.27	1,357,428
1973	154,310	55.00	71.39	110,157	17.61	2,716,912
1972	8,052	55.00	72.62	5,848	16.96	136,559
1971	56,267	55.00	73.83	41,543	16.33	918,597
1969	2,135	55.00	76.17	1,626	15.10	32,252
1968	62,362	55.00	77.29	48,199	14.52	905,201
1967	48,006	55.00	78.38	37,628	13.94	669,352
1966	645	55.00	79.44	512	13.39	8,637
1965	1,409	55.00	80.47	1,134	12.85	18,109
1963	9,217	55.00	82.43	7,598	11.82	108,989
1962	969	55.00	83.36	808	11.34	10,991
1961	986	55.00	84.25	831	10.87	10,713
1960	435	55.00	85.12	370	10.42	4,528
1959	931	55.00	85.95	800	9.98	9,294
1957	1,243	55.00	87.51	1,088	9.16	11,390
1956	843	55.00	88.25	744	8.78	7,396
1954	44	55.00	89.63	39	8.05	353
1953	9,131	55.00	90.28	8,244	7.71	70,396
1952	839	55.00	90.91	762	7.38	6,192
1951	8	55.00	91.51	7	7.07	56
1950	982	55.00	92.09	904	6.76	6,641
1949	24,652	55.00	92.65	22,840	6.47	159,471
1947	7	55.00	93.73	7	5.91	41
1946	401	55.00	94.24	378	5.64	2,258
1945	484	55.00	94.75	459	5.37	2,600
1943	2,793	55.00	95.75	2,675	4.85	13,539
<b>Total</b>	<b>\$ 24,391,124</b>			<b>\$ 3,890,209</b>		<b>\$ 1,137,738,968</b>

**Account 353 - Station Equipment**

This account is for Station Equipment. Per the FERC Uniform System of Accounts, "This account shall include the cost installed of transforming, conversion, and switching equipment used for the purpose of changing the characteristics of electricity in connection with its transmission or for controlling transmission circuits." This includes much of the equipment located within the fence at a transmission substation, including busses, conduit, control equipment, transformers, switching equipment, insulators, general station equipment, etc.

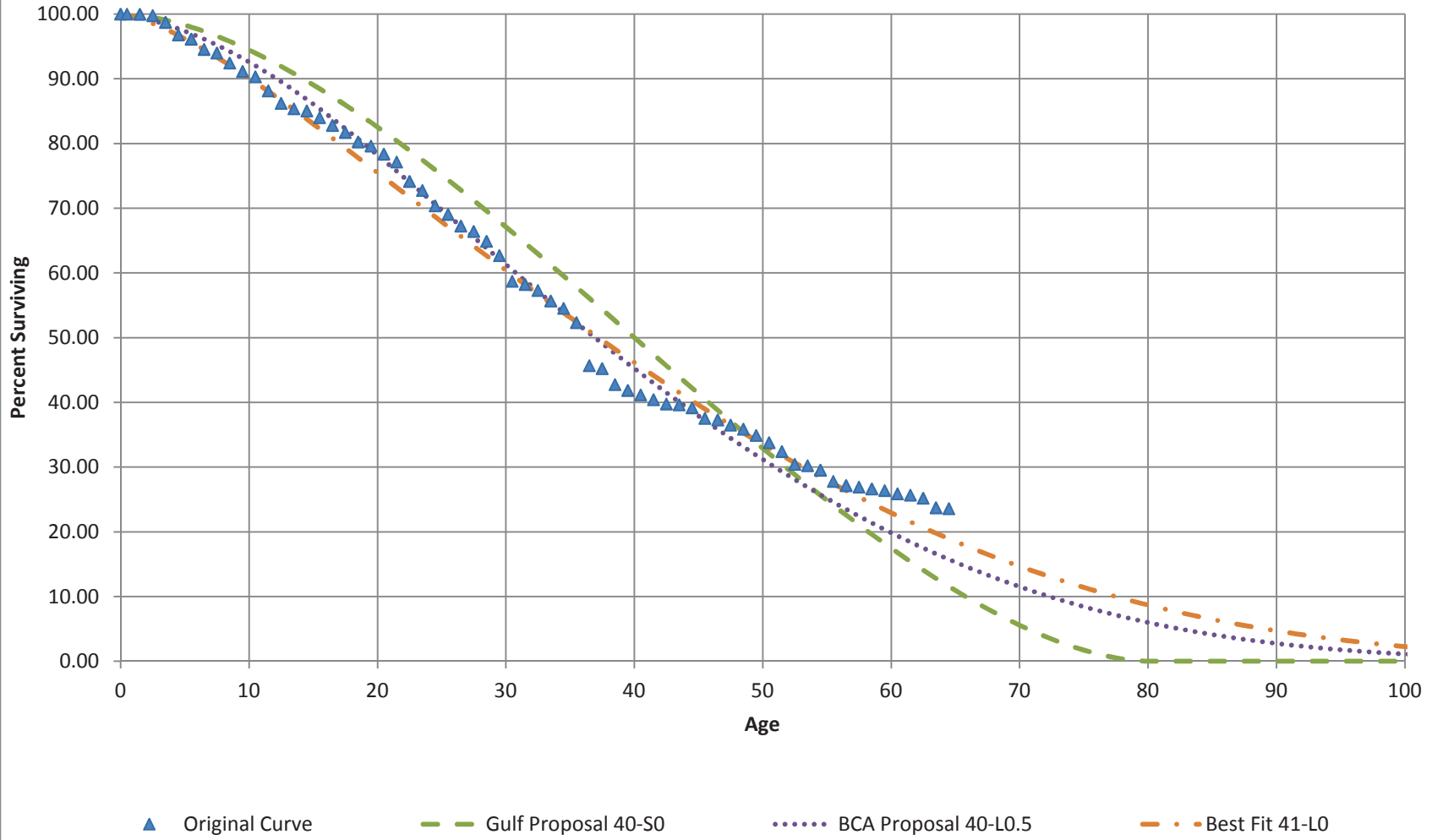
**Account 353 Fitting Analysis Results**

<b>Iowa Curve</b>	<b>Average Service Life</b>	<b>SSD</b>
L0	40.9	257.11
L0.5	40.1	257.92
R0.5	37.7	590.48
O2	42.2	630.29
O1	37.9	642.33
L1	39.6	701.56
S0	38.1	941.54
R1	37.8	1491.37
O3	54.0	1633.45
L1.5	39.3	1703.72
S0.5	38.3	2039.58
O4	68.8	2430.55
R1.5	38.1	3096.49
L2	39.2	3347.41
S1	38.5	3692.10
R2	38.4	5481.70
L2.5	39.0	5534.81
S1.5	38.7	5827.44
L3	38.8	8419.35
S2	38.9	8511.34
R2.5	38.7	8580.92
S2.5	38.9	11371.02
R3	39.1	12490.85
S3	39.0	14728.28
L4	38.6	16852.81
R4	38.9	20616.73
S4	38.6	23695.28
L5	38.1	25741.73
R5	37.6	30068.57
S5	37.4	32088.10
S6	36.6	38973.30
SQ	68.8	108331.63

Gulf Proposal Curve 40-S0 1324.43

BCA Proposal Curve 40-L0.5 259.28

**Account 353 - Station Equipment**  
**Original & Smooth Survivor Curves**  
**Placements 1900-2014      Experience 1990-2014**



**Calculation of Depreciation Parameters**

Account	353	Total Annual Accrual	\$7,033,366
Survivor Curve	40-L0.5	Composite Remaining Life	34.36
Net Salvage	-10%	Theoretical Reserve	\$38,782,427
Book Reserve	\$33,409,988	Accrual Rate	2.81%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2016	\$ 8,115,770	40.00	1.24	\$ 100,528	39.55	\$ 320,975,271
2015	63,995,084	40.00	3.58	2,292,075	38.70	2,476,455,156
2014	9,889,266	40.00	5.80	573,977	37.89	374,698,748
2013	27,452,472	40.00	7.93	2,177,848	37.12	1,018,904,381
2012	27,258,271	40.00	9.98	2,720,814	36.37	991,392,155
2011	6,848,053	40.00	11.96	818,769	35.65	244,148,689
2010	18,702,917	40.00	13.86	2,592,452	34.96	653,845,727
2009	5,368,184	40.00	15.70	842,762	34.29	184,081,466
2008	13,876,652	40.00	17.47	2,424,531	33.65	466,901,323
2007	2,023,928	40.00	19.18	388,210	33.03	66,840,376
2006	3,836,613	40.00	20.83	799,067	32.43	124,407,541
2005	3,473,788	40.00	22.41	778,556	31.85	110,640,368
2004	2,437,843	40.00	23.94	583,548	31.30	76,293,797
2003	2,401,489	40.00	25.40	610,054	30.76	73,875,774
2002	9,516,963	40.00	26.81	2,551,727	30.25	287,888,460
2001	10,453,987	40.00	28.17	2,944,570	29.76	311,084,207
2000	423,211	40.00	29.47	124,718	29.28	12,393,248
1999	798,846	40.00	30.72	245,428	28.83	23,029,187
1998	1,387,561	40.00	31.93	443,058	28.39	39,391,261
1997	2,805,271	40.00	33.10	928,464	27.96	78,448,525
1996	483,889	40.00	34.23	165,619	27.55	13,333,049
1995	460,822	40.00	35.32	162,780	27.15	12,513,630
1994	166,152	40.00	36.39	60,468	26.77	4,447,270
1993	1,003,916	40.00	37.44	375,858	26.39	26,489,091
1992	1,880,657	40.00	38.47	723,448	26.01	48,919,057
1991	3,592,967	40.00	39.48	1,418,577	25.64	92,134,082
1990	277,368	40.00	40.48	112,284	25.28	7,011,654
1989	2,561,360	40.00	41.47	1,062,148	24.92	63,830,842
1988	1,920,184	40.00	42.44	814,935	24.57	47,173,340
1987	2,632,452	40.00	43.40	1,142,466	24.22	63,753,848
1986	993,857	40.00	44.34	440,725	23.87	23,727,945
1985	63,055	40.00	45.28	28,550	23.54	1,484,035
1984	110,565	40.00	46.20	51,077	23.20	2,565,231
1983	220,398	40.00	47.10	103,816	22.87	5,040,801
1982	315,059	40.00	48.00	151,222	22.55	7,103,362
1981	1,399,743	40.00	48.88	684,196	22.23	31,109,858
1980	412,474	40.00	49.75	205,206	21.91	9,036,922
1979	527,490	40.00	50.61	266,952	21.60	11,392,250
1978	1,592	40.00	51.45	819	21.29	33,893
1977	824,116	40.00	52.29	430,920	20.99	17,294,807
1976	46,803	40.00	53.11	24,858	20.69	968,202
1975	372,720	40.00	53.92	200,985	20.39	7,600,259
1974	380,387	40.00	54.72	208,165	20.10	7,645,824
1973	2,522,043	40.00	55.51	1,400,099	19.81	49,969,013
1972	34,343	40.00	56.29	19,333	19.53	670,704
1971	800,441	40.00	57.06	456,747	19.25	15,408,671
1970	718,438	40.00	57.82	415,398	18.97	13,632,106
1969	90,953	40.00	58.57	53,268	18.70	1,701,078
1968	944,724	40.00	59.30	560,262	18.43	17,415,812
1967	1,099,977	40.00	60.03	660,330	18.17	19,987,066
1966	3,725	40.00	60.75	2,263	17.91	66,709
1965	126,716	40.00	61.46	77,874	17.65	2,236,861
1964	12,695	40.00	62.15	7,890	17.40	220,872
1963	42,170	40.00	62.84	26,500	17.15	723,175
1962	115,704	40.00	63.52	73,493	16.90	1,955,689
1961	346,037	40.00	64.19	222,109	16.66	5,764,783
1960	46,140	40.00	64.85	29,920	16.42	757,608
1959	248,497	40.00	65.50	162,754	16.18	4,021,567
1958	105,987	40.00	66.14	70,095	15.95	1,690,568
1957	134,905	40.00	66.77	90,072	15.72	2,120,875
1954	64,394	40.00	68.61	44,178	15.05	969,288
1953	332,838	40.00	69.20	230,326	14.84	4,938,054
1952	427,197	40.00	69.79	298,125	14.62	6,246,946
1951	4,758	40.00	70.36	3,348	14.41	68,572
1950	8,043	40.00	70.93	5,705	14.21	114,267
1949	30,880	40.00	71.49	22,076	14.00	432,423
1947	13	40.00	72.58	9	13.61	177
1945	11,605	40.00	73.64	8,546	13.22	153,440
1944	4,868	40.00	74.16	3,610	13.03	63,453
1943	799	40.00	74.66	596	12.85	10,264
1942	79,719	40.00	75.16	59,916	12.67	1,009,989
1900	323	40.00	110.00	355	0.00	-
<b>Total</b>	<b>\$ 250,073,126</b>			<b>\$ 38,782,427</b>		<b>\$ 8,592,654,945</b>

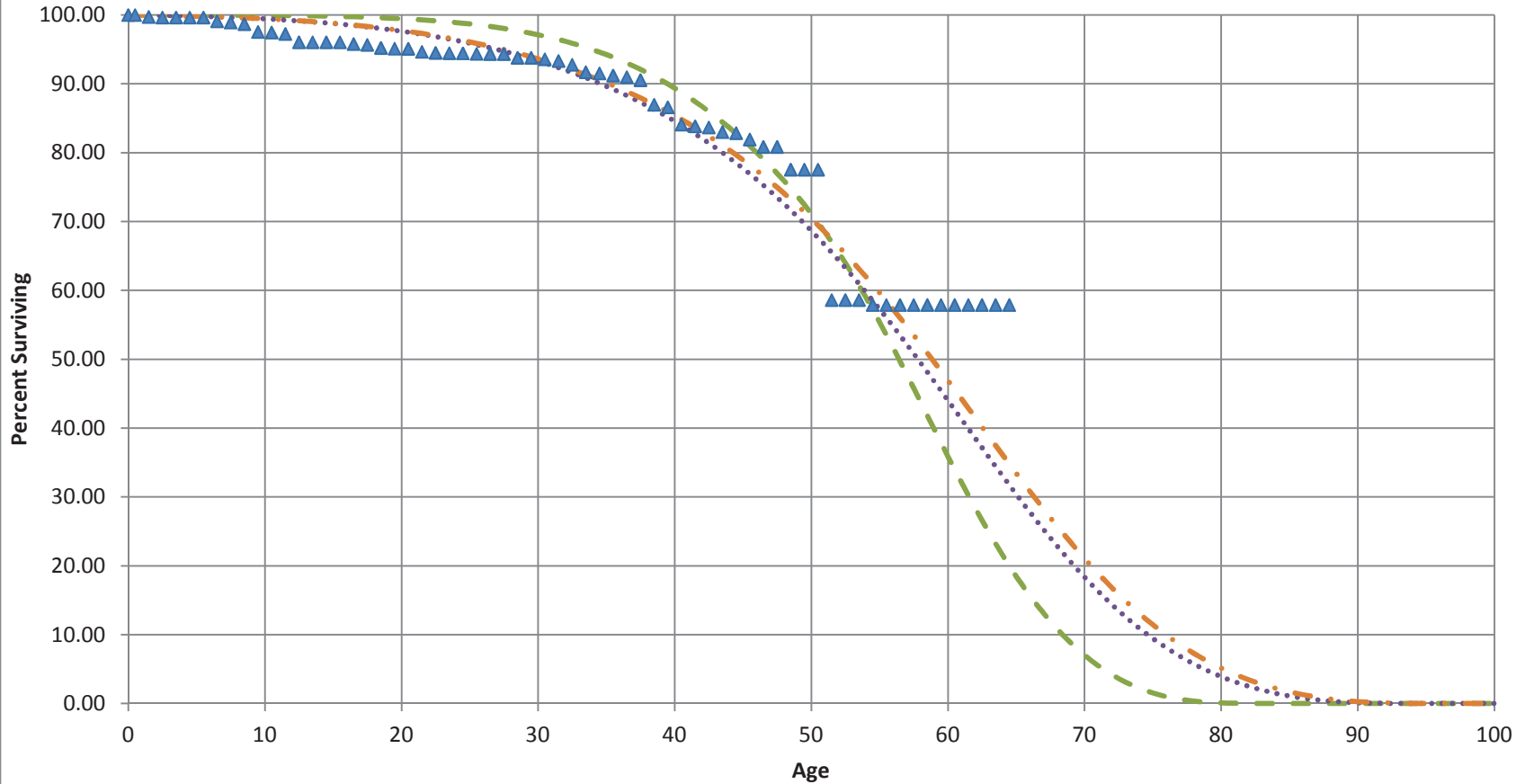
**Account 354 - Towers and Fixtures**

This account is for transmission towers and fixtures. Per the FERC Uniform System of Accounts, "This account shall include the cost installed of towers and appurtenant fixtures used for supporting overhead transmission conductors." This includes anchors, guys, braces, brackets, cross arms, foundations, insulator pins and suspension bolts, railings, towers, etc.

**Account 354 Fitting Analysis Results**

<b>Iowa Curve</b>	<b>Average Service Life</b>	<b>SSD</b>
R3	57.2	480.31
L2.5	64.9	586.07
R2.5	59.5	609.29
L3	61.9	645.26
S2.5	59.0	648.83
S2	60.9	653.05
L2	69.1	674.50
S1.5	63.5	693.24
R4	54.9	695.01
S3	57.6	802.96
S1	67.1	860.64
L1.5	74.1	871.46
R2	63.0	901.52
L4	57.1	980.19
S0.5	71.8	1103.84
L1	82.0	1142.36
R1.5	68.4	1368.17
S0	78.7	1416.85
L0.5	91.0	1498.98
S4	55.4	1508.10
R1	77.1	1848.27
L0	104.8	1874.74
R5	54.0	1899.18
L5	55.2	1941.60
R0.5	92.8	2270.95
O2	126.4	2483.52
O1	112.9	2495.91
O3	184.6	2563.18
O4	249.0	2591.61
S5	54.3	2756.01
S6	54.0	4537.43
SQ	249.0	13977.49
Gulf Proposal Curve 55-R4		696.45
BCA Proposal Curve 56-R3		551.59

**Account 354 - Towers & Fixtures**  
**Original & Smooth Survivor Curves**  
**Placements 1928-2014      Experience 1990-2014**



▲ Original Curve
- - Gulf Proposal 55-R4
..... BCA Proposal 56-R3
- . Best Fit 57-R3



**Calculation of Depreciation Parameters**

Account 354  
 Survivor Curve 56-R3  
 Net Salvage -25%  
 Book Reserve \$24,879,312

Total Annual Accrual \$846,562  
 Composite Remaining Life 33.06  
 Theoretical Reserve \$21,659,251  
 Accrual Rate 2.00%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2015	\$ 660,914	56.00	3.29	\$ 21,764	54.52	\$ 36,036,181
2014	695,999	56.00	5.48	38,155	53.54	37,266,605
2013	219,036	56.00	7.67	16,790	52.57	11,513,803
2012	3,327,130	56.00	9.84	327,482	51.59	171,648,114
2011	102,382	56.00	12.01	12,299	50.62	5,182,376
2010	1,982,966	56.00	14.18	281,102	49.65	98,452,708
2009	1,500,627	56.00	16.33	245,066	48.68	73,056,152
2008	615,850	56.00	18.48	113,794	47.72	29,389,641
2007	432,833	56.00	20.62	89,229	46.76	20,241,163
2006	303,629	56.00	22.74	69,053	45.81	13,909,683
2004	2,326,187	56.00	26.97	627,273	43.92	102,164,650
2003	2,557,791	56.00	29.06	743,307	42.98	109,936,150
2002	1,670,883	56.00	31.14	520,358	42.05	70,257,383
2001	3,253,821	56.00	33.21	1,080,648	41.12	133,800,952
2000	2,937,813	56.00	35.27	1,036,087	40.20	118,100,799
1998	61,384	56.00	39.34	24,146	38.38	2,355,735
1996	900	56.00	43.34	390	36.58	32,932
1994	68,738	56.00	47.29	32,503	34.82	2,393,196
1993	388,512	56.00	49.23	191,269	33.94	13,187,800
1992	1,576	56.00	51.16	806	33.08	52,138
1990	4,202	56.00	54.96	2,309	31.38	131,858
1989	16,023	56.00	56.83	9,106	30.54	489,330
1988	8,361	56.00	58.68	4,906	29.71	248,404
1987	62,808	56.00	60.51	38,008	28.89	1,814,523
1986	34,549	56.00	62.33	21,533	28.08	970,073
1982	65,410	56.00	69.36	45,371	24.93	1,630,348
1981	266,732	56.00	71.07	189,562	24.16	6,444,617
1980	45,027	56.00	72.75	32,757	23.41	1,053,973
1978	464,651	56.00	76.04	353,329	21.93	10,191,299
1977	2,092,452	56.00	77.65	1,624,792	21.21	44,386,635
1976	102,872	56.00	79.23	81,509	20.50	2,109,239
1975	2,484,679	56.00	80.79	2,007,376	19.81	49,211,606
1974	5,510,168	56.00	82.32	4,535,904	19.12	105,360,876
1973	1,447,719	56.00	83.82	1,213,451	18.45	26,709,689
1972	241,649	56.00	85.29	206,099	17.79	4,299,130
1971	1,343,064	56.00	86.73	1,164,824	17.15	23,027,478
1970	69,588	56.00	88.14	61,334	16.51	1,149,175
1968	1,235,963	56.00	90.86	1,122,935	15.30	18,906,418
1967	1,773,057	56.00	92.16	1,634,099	14.71	26,083,552
1966	1,002,690	56.00	93.44	936,871	14.14	14,178,806
1965	47	56.00	94.67	44	13.59	636
1964	437,405	56.00	95.87	419,345	13.05	5,708,039
1962	47,015	56.00	98.16	46,148	12.03	565,390
1959	593	56.00	101.30	600	10.62	6,291
1958	399,187	56.00	102.27	408,262	10.18	4,064,321
1952	23,827	56.00	107.36	25,582	7.90	188,274
1949	255	56.00	109.49	279	6.95	1,773
1943	657	56.00	113.21	744	5.28	3,472
1929	281	56.00	121.13	341	1.73	488
1928	253	56.00	121.64	307	1.51	381
<b>Total</b>	<b>\$ 42,290,155</b>			<b>\$ 21,659,251</b>		<b>\$ 1,397,914,257</b>

**Account 355 - Poles and Fixtures**

This account is for Poles and Fixtures. Per the FERC Uniform System of Accounts, “This account shall include the cost installed of transmission line poles, wood, steel, concrete, or other material, together with appurtenant fixtures used for supporting overhead transmission conductors.” This includes the poles, brackets, cross arms, foundations, pole steps, anchors, etc. required to create a pole structure capable of supporting overhead transmission lines.

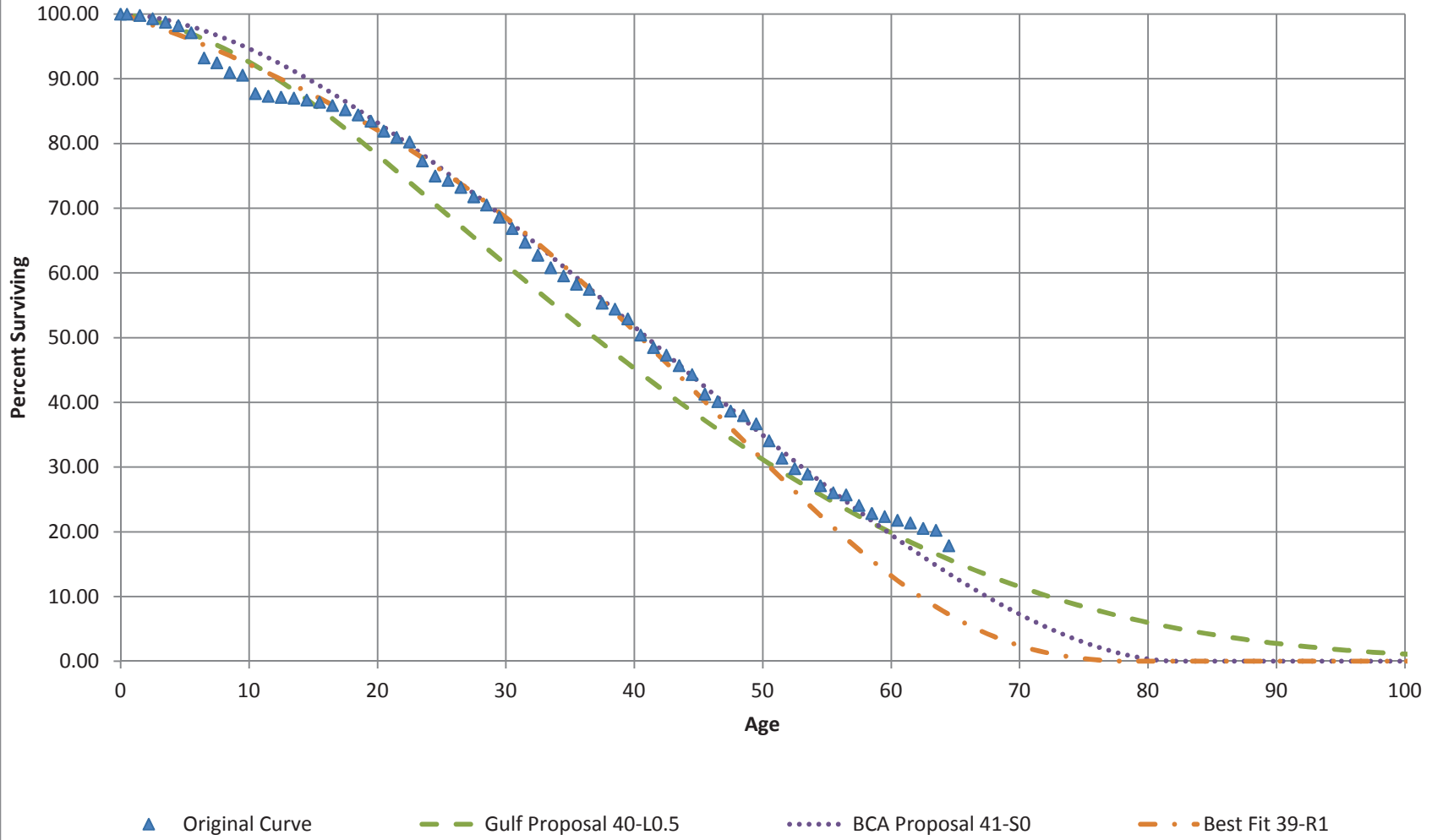
**Account 355 Fitting Analysis Results**

<b>Iowa Curve</b>	<b>Average Service Life</b>	<b>SSD</b>
R1	39.4	146.31
R0.5	40.4	170.64
L0.5	44.1	199.67
S0	40.5	232.20
L0	45.8	341.28
L1	42.9	405.02
S0.5	40.2	675.39
R1.5	39.3	698.42
O1	42.4	708.48
O2	47.6	708.93
L1.5	42.2	947.78
O3	64.6	1352.30
S1	40.0	1540.45
O4	84.3	1718.22
R2	39.3	1821.28
L2	41.7	2042.86
S1.5	40.0	2702.39
L2.5	41.3	3403.80
R2.5	39.6	3525.90
S2	40.0	4282.75
L3	40.9	5360.84
R3	39.9	5792.05
S2.5	40.2	6026.29
S3	40.3	8145.00
L4	40.6	10638.90
R4	40.7	11127.81
S4	41.0	14416.11
L5	41.0	17068.90
R5	41.6	19336.79
S5	41.6	21715.25
S6	41.8	29147.43
SQ	84.3	62120.99

Gulf Proposal Curve 40-L0.5 1106.25

BCA Proposal Curve 41-S0 247.28

**Account 355 - Poles and Fixtures**  
**Original & Smooth Survivor Curves**  
**Placements 1926-2014      Experience 2000-2014**



**Calculation of Depreciation Parameters**

Account 355  
Survivor Curve 41-S0  
Net Salvage -75%  
Book Reserve \$28,946,820

Total Annual Accrual  
Composite Remaining Life  
Theoretical Reserve  
Accrual Rate  
**\$10,504,043**  
**35.62**  
**\$52,900,799**  
**4.56%**

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2016	\$ 6,735,849	41.00	2.08	\$ 139,852	40.51	\$ 272,893,253
2015	83,823,204	41.00	6.05	5,068,668	39.58	3,317,999,723
2014	19,427,885	41.00	9.83	1,909,721	38.70	751,801,242
2013	14,022,023	41.00	13.45	1,886,418	37.85	530,706,875
2012	26,831,400	41.00	16.95	4,547,369	37.03	993,549,048
2011	8,534,490	41.00	20.32	1,734,209	36.24	309,284,030
2010	4,517,926	41.00	23.59	1,065,785	35.47	160,265,167
2009	4,618,653	41.00	26.76	1,236,088	34.73	160,404,975
2008	5,182,508	41.00	29.85	1,546,954	34.01	176,239,898
2007	4,141,289	41.00	32.86	1,360,683	33.30	137,914,014
2006	1,728,876	41.00	35.79	618,740	32.62	56,387,739
2005	2,466,761	41.00	38.65	953,509	31.94	78,797,878
2004	3,521,615	41.00	41.45	1,459,843	31.29	110,184,171
2003	1,036,888	41.00	44.20	458,267	30.65	31,775,870
2002	11,549,043	41.00	46.88	5,414,365	30.02	346,659,926
2001	4,762,575	41.00	49.52	2,358,232	29.40	140,015,579
2000	397,598	41.00	52.10	207,152	28.79	11,448,246
1999	4,094,923	41.00	54.64	2,237,455	28.20	115,471,456
1998	1,093,307	41.00	57.14	624,670	27.61	30,190,476
1997	581,129	41.00	59.59	346,293	27.04	15,713,148
1996	1,166,083	41.00	62.01	723,045	26.47	30,889,500
1995	280,094	41.00	64.38	180,336	25.92	7,258,845
1994	931,683	41.00	66.73	621,697	25.37	23,633,521
1993	2,557,496	41.00	69.04	1,765,658	24.83	63,490,496
1992	1,813,886	41.00	71.32	1,293,619	24.29	44,061,703
1991	441,750	41.00	73.57	324,979	23.76	10,497,956
1990	1,969,063	41.00	75.79	1,492,276	23.24	45,769,692
1989	2,781,051	41.00	77.98	2,168,636	22.73	63,215,060
1988	1,980,871	41.00	80.14	1,587,567	22.22	44,021,293
1987	677,302	41.00	82.29	557,328	21.72	14,711,973
1986	629,142	41.00	84.40	531,016	21.23	13,353,851
1985	387,541	41.00	86.50	335,214	20.73	8,035,588
1984	229,490	41.00	88.57	203,259	20.25	4,647,032
1983	161,485	41.00	90.62	146,339	19.77	3,192,380
1982	326,994	41.00	92.65	302,964	19.29	6,308,723
1981	1,130,783	41.00	94.66	1,070,426	18.82	21,283,563
1980	212,986	41.00	96.65	205,861	18.36	3,909,394
1979	422,560	41.00	98.63	416,767	17.89	7,560,727
1978	263,825	41.00	100.59	265,370	17.43	4,599,566
1977	232,321	41.00	102.53	238,189	16.98	3,944,729
1976	84,665	41.00	104.45	88,432	16.53	1,399,415
1975	264,649	41.00	106.36	281,476	16.08	4,256,037
1974	156,692	41.00	108.25	169,622	15.64	2,450,389
1973	194,445	41.00	110.13	214,142	15.20	2,955,184
1972	144,048	41.00	112.00	161,327	14.76	2,126,322
1971	173,351	41.00	113.85	197,353	14.33	2,483,681
1970	125,515	41.00	115.68	145,201	13.90	1,744,257
1969	174,971	41.00	117.51	205,607	13.47	2,356,712
1968	113,516	41.00	119.32	135,451	13.04	1,480,748
1967	56,321	41.00	121.12	68,218	12.62	710,899
1966	78,055	41.00	122.91	95,940	12.20	952,508
1965	71,117	41.00	124.69	88,677	11.79	838,206
1964	119,318	41.00	126.46	150,889	11.37	1,356,915
1963	54,871	41.00	128.22	70,354	10.96	601,416
1962	148,490	41.00	129.96	192,983	10.55	1,566,760
1961	32,355	41.00	131.70	42,612	10.14	328,216
1960	64,012	41.00	133.43	85,411	9.74	623,450
1959	3,977	41.00	135.15	5,375	9.34	37,133
1958	75,063	41.00	136.86	102,728	8.94	670,803
1957	65,422	41.00	138.56	90,646	8.54	558,595
1956	18,095	41.00	140.25	25,378	8.14	147,331
1955	6,287	41.00	141.93	8,924	7.75	48,715
1954	102,924	41.00	143.61	147,805	7.36	757,028
1953	128,437	41.00	145.27	186,582	6.96	894,543
1952	89,948	41.00	146.93	132,163	6.58	591,502
1951	11,499	41.00	148.58	17,085	6.19	71,168
1950	3,136	41.00	150.23	4,711	5.80	18,202
1949	42,791	41.00	151.86	64,984	5.42	231,953
1947	20,736	41.00	155.11	32,164	4.66	96,605
1945	7,620	41.00	158.34	12,065	3.90	29,749
1944	6,553	41.00	159.93	10,481	3.53	23,130
1943	10,558	41.00	161.53	17,054	3.16	33,326
1930	4,603	41.00	175.00	8,056	0.00	-
1929	8,338	41.00	175.00	14,592	0.00	-
1927	608	41.00	175.00	1,065	0.00	-
1926	11,674	41.00	175.00	20,429	0.00	-
<b>Total</b>	<b>\$ 230,339,009</b>			<b>\$ 52,900,799</b>		<b>\$ 8,204,509,200</b>

**Account 356 - Overhead Conductors and Devices**

This account is for Overhead Conductors and Devices. Per the FERC Uniform System of Accounts, "This account shall include the cost installed of overhead conductors and devices used for transmission purposes." The items contained within this account include, circuit breakers, conductors, ground wires, insulators, lightning arresters, switches, and other line devices.

**Account 356 Fitting Analysis Results**

<b>Iowa Curve</b>	<b>Average Service Life</b>	<b>SSD</b>
R1	47.0	357.94
R0.5	48.3	387.74
S0	48.3	631.37
L0.5	52.7	640.26
L0	54.7	690.80
R1.5	46.8	968.93
L1	51.2	1000.12
O1	50.8	1003.13
O2	57.0	1006.23
S0.5	48.0	1199.34
O3	77.5	1730.48
L1.5	50.5	1753.15
O4	101.1	2125.76
R2	46.8	2240.11
S1	47.7	2259.71
L2	49.9	3173.06
S1.5	47.7	3595.05
R2.5	47.1	4082.84
L2.5	49.5	4679.48
S2	47.7	5415.10
R3	47.5	6569.59
L3	49.1	6902.18
S2.5	47.9	7298.44
S3	48.1	9610.42
L4	48.7	12265.96
R4	48.4	12291.85
S4	48.9	16080.22
L5	49.1	18880.72
R5	49.6	20963.87
S5	49.7	23518.08
S6	49.8	31454.89
SQ	101.1	70868.63

Gulf Proposal Curve 50-R1 928.08

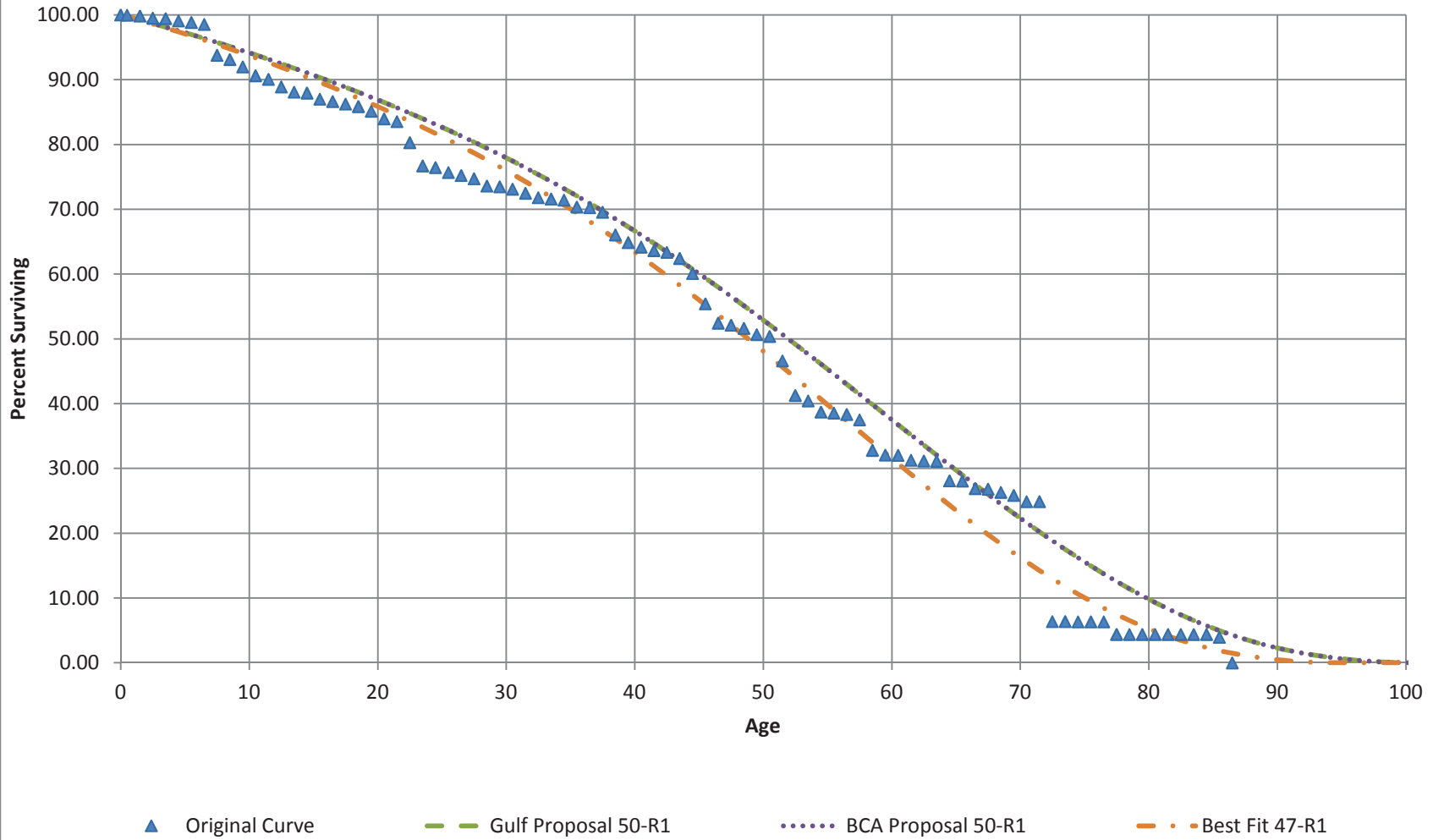
BCA Proposal Curve 50-R1 928.08

# Account 356 - Overhead Conductors & Devices

Original & Smooth Survivor Curves

Placements 1926-2014

Experience 2000-2014



**Calculation of Depreciation Parameters**

Account	356		Total Annual Accrual	\$3,158,075
Survivor Curve	50-R1		Composite Remaining Life	42.14
Net Salvage	-30%		Theoretical Reserve	\$25,290,442
Book Reserve	\$27,851,093		Accrual Rate	2.55%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2016	\$ 977,767	50.00	0.96	\$ 9,410	49.63	\$ 48,526,445
2015	28,259,099	50.00	2.88	814,935	48.89	1,381,611,316
2014	15,821,690	50.00	4.79	758,359	48.16	761,916,848
2013	5,794,112	50.00	6.69	387,671	47.43	274,795,165
2012	7,861,008	50.00	8.58	674,234	46.70	367,118,311
2011	5,893,209	50.00	10.45	615,955	45.98	270,969,846
2010	2,757,702	50.00	12.32	339,642	45.26	124,821,943
2009	3,162,892	50.00	14.17	448,174	44.55	140,907,130
2008	4,146,874	50.00	16.01	664,046	43.84	181,803,460
2007	2,861,264	50.00	17.85	510,643	43.14	123,423,107
2006	1,616,566	50.00	19.67	317,992	42.43	68,597,832
2005	1,616,471	50.00	21.49	347,311	41.74	67,465,442
2004	2,029,809	50.00	23.29	472,781	41.04	83,306,558
2003	2,352,179	50.00	25.09	590,154	40.35	94,910,748
2002	11,580,007	50.00	26.88	3,112,636	39.66	459,283,571
2001	2,581,525	50.00	28.66	739,901	38.98	100,618,489
2000	1,054,610	50.00	30.44	320,978	38.29	40,385,180
1999	2,905,106	50.00	32.20	935,504	37.61	109,274,358
1998	767,167	50.00	33.96	260,531	36.94	28,337,908
1997	399,215	50.00	35.71	142,558	36.27	14,477,764
1996	772,585	50.00	37.45	289,331	35.60	27,501,127
1995	125,040	50.00	39.18	48,991	34.93	4,367,751
1994	387,186	50.00	40.90	158,359	34.27	13,268,563
1993	767,321	50.00	42.61	328,946	33.61	25,791,202
1992	978,759	50.00	44.31	433,648	32.96	32,259,152
1991	236,615	50.00	45.99	108,821	32.31	7,645,336
1990	467,643	50.00	47.66	222,891	31.67	14,809,395
1989	1,514,441	50.00	49.32	746,940	31.03	46,993,588
1988	849,974	50.00	50.97	433,194	30.40	25,837,423
1987	232,600	50.00	52.60	122,336	29.77	6,924,741
1986	98,328	50.00	54.21	53,303	29.15	2,866,275
1985	228,647	50.00	55.81	127,605	28.54	6,524,456
1984	27,103	50.00	57.39	15,555	27.93	756,896
1983	184,140	50.00	58.96	108,565	27.32	5,031,382
1982	473,101	50.00	60.51	286,264	26.73	12,644,897
1981	609,520	50.00	62.04	378,151	26.14	15,931,752
1980	149,711	50.00	63.56	95,150	25.56	3,825,906
1979	448,631	50.00	65.05	291,852	24.98	11,206,484
1978	418,009	50.00	66.53	278,117	24.41	10,203,603
1977	486,536	50.00	68.00	330,825	23.85	11,602,749
1976	39,749	50.00	69.44	27,601	23.29	925,836
1975	627,401	50.00	70.87	444,614	22.74	14,289,515
1974	1,905,096	50.00	72.27	1,376,884	22.20	42,297,715
1973	873,888	50.00	73.66	643,735	21.67	18,935,382
1972	265,258	50.00	75.03	199,036	21.14	5,607,701
1971	1,053,253	50.00	76.39	804,557	20.62	21,718,147
1970	136,949	50.00	77.72	106,441	20.11	2,753,574
1969	247,715	50.00	79.04	195,794	19.60	4,855,223
1968	648,207	50.00	80.34	520,764	19.10	12,380,978
1967	1,332,860	50.00	81.62	1,087,887	18.61	24,801,213
1966	718,846	50.00	82.88	595,809	18.12	13,026,553
1965	111,099	50.00	84.13	93,468	17.64	1,960,023
1964	117,661	50.00	85.36	100,434	17.17	2,020,182
1963	60,767	50.00	86.57	52,606	16.70	1,015,019
1962	72,877	50.00	87.77	63,960	16.24	1,183,809
1961	37,815	50.00	88.94	33,634	15.79	597,132
1960	107,218	50.00	90.10	96,608	15.34	1,645,179
1959	748	50.00	91.25	683	14.90	11,148
1958	300,653	50.00	92.38	277,739	14.47	4,350,359
1957	97,167	50.00	93.49	90,843	14.04	1,364,380
1956	64,794	50.00	94.59	61,288	13.62	882,467
1955	3,485	50.00	95.67	3,335	13.20	46,020
1954	153,874	50.00	96.74	148,854	12.79	1,968,556
1953	283,190	50.00	97.79	276,929	12.39	3,508,390
1952	177,671	50.00	98.83	175,585	11.99	2,130,282
1951	66,783	50.00	99.85	66,681	11.60	774,470
1950	13,677	50.00	100.86	13,794	11.21	153,309
1949	28,294	50.00	101.85	28,817	10.83	306,337
1947	201,607	50.00	103.80	209,260	10.08	2,031,902
1945	3,179	50.00	105.69	3,359	9.35	29,722
1944	125,019	50.00	106.61	133,288	8.99	1,124,497
1943	2,909	50.00	107.53	3,128	8.64	25,144
1930	2,345	50.00	118.33	2,775	4.49	10,524
1929	25,180	50.00	119.10	29,990	4.19	105,560
<b>Total</b>	<b>\$ 123,801,393</b>			<b>\$ 25,290,442</b>		<b>\$ 5,217,360,345</b>

**Account 358 - Underground Conductor & Devices**

This account is for Underground Conductor and Devices. Per the FERC Uniform System of Accounts, "This account shall include the cost installed of underground conductors and devices used for transmission purposes." This includes armored conductors, cables in standpipe, circuit breakers, hollow-core oil-filled cable, and lightning arresters.

**Account 358 Fitting Analysis Results**

<b>Iowa Curve</b>	<b>Average Service Life</b>	<b>SSD</b>
O1	14,184.3	0.08
O3	23,239.3	0.08
R0.5	10,748.4	0.08
R1	7,312.5	0.08
O4	30,415.4	0.08
R1.5	5,006.3	0.08
O2	14,184.3	0.08
R2	2,723.4	0.08
R2.5	1,623.0	0.08
L1	1,790.6	0.09
L0	3,983.8	0.09
L0.5	2,966.3	0.09
L1.5	1,029.0	0.10
R3	585.6	0.10
S0	1,376.0	0.15
S0.5	969.2	0.15
R4	184.8	0.24
S1	459.1	0.25
S1.5	364.9	0.25
L2	404.5	0.26
L2.5	324.0	0.26
S2	226.0	0.36
S2.5	194.9	0.36
L3	210.4	0.41
S3	144.3	0.46
L4	127.2	0.54
S4	98.5	0.55
S5	78.0	0.61
R5	184.8	0.69
S6	78.0	0.69
SQ	30,415.4	0.69
L5	127.2	0.69
Gulf Proposal Curve 50-R4		17539.28
BCA Proposal Curve 55-R5		4104.00

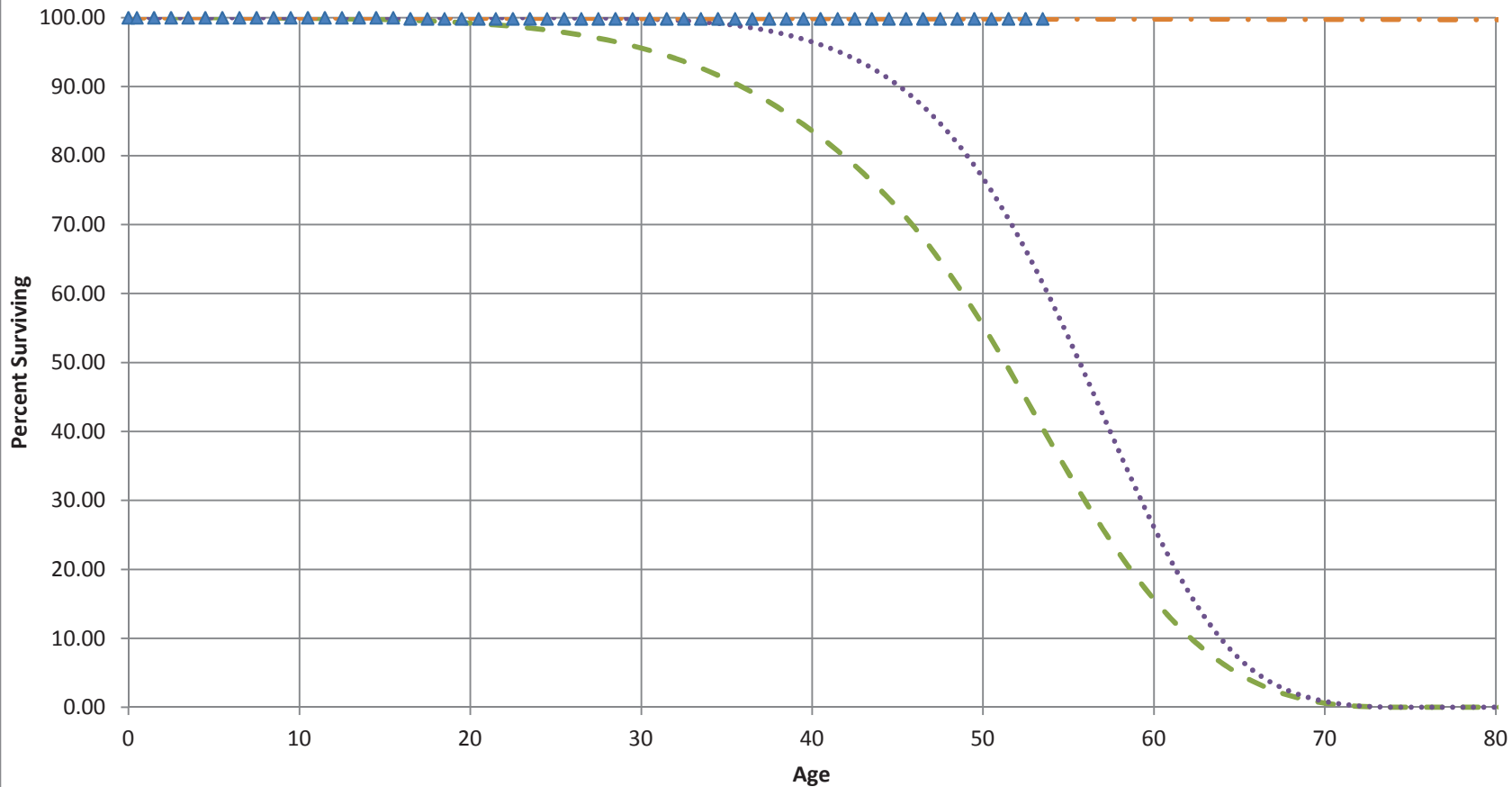


# Account 358 - Underground Conductor & Devices

## Original & Smooth Survivor Curves

Placements 1961-2014

Experience 1989-2014



▲ Original Curve      - - - Gulf Proposal 50-R4      ..... BCA Proposal 55-R5      - . - Best Fit 14184-O1

**Calculation of Depreciation Parameters**

Account 358  
 Survivor Curve 55-R5  
 Net Salvage 0%  
 Book Reserve \$8,392,435

Total Annual Accrual \$212,282  
 Composite Remaining Life 28.31  
 Theoretical Reserve \$6,988,786  
 Accrual Rate 1.47%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2014	\$ 327,029	55.00	4.55	\$ 14,867	52.50	\$ 17,168,881
2005	500,528	55.00	20.91	104,660	43.50	21,772,758
1991	420,000	55.00	46.36	194,695	29.50	12,391,798
1989	11,178,491	55.00	49.97	5,586,433	27.51	307,563,181
1988	1,808,488	55.00	51.78	936,379	26.52	47,965,971
1969	676	55.00	82.28	556	9.75	6,587
1961	167,152	55.00	90.45	151,196	5.25	877,579
<b>Total</b>	<b>\$ 14,402,363</b>			<b>\$ 6,988,786</b>		<b>\$ 407,746,755</b>

**Account 359 - Roads and trails**

This account is for roads and trails. Per the FERC Uniform System of Accounts, "This account shall include the cost of roads, trails, and bridges used primarily as transmission facilities." This includes foundation piers, girders, trusses, flooring for bridges, clearing land, grading, surfacing, culverts for the roads and trails, or others.

**Adjustment**

No adjustment is proposed.

**Calculation of Depreciation Parameters**

Account	359	Total Annual Accrual	\$4,371			
Survivor Curve	55-SQ	Composite Remaining Life	42.09			
Net Salvage	0%	Theoretical Reserve	\$55,396			
Book Reserve	\$51,951	Accrual Rate	1.85%			
Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2011	\$ 174,472	55.00	9.83	\$ 17,159	49.59	\$ 8,652,215
2003	9,230	55.00	24.38	2,250	41.59	383,894
2001	1,126	55.00	28.02	315	39.59	44,583
2000	3,610	55.00	29.83	1,077	38.59	139,324
1980	150	55.00	66.20	99	18.59	2,782
1979	24,453	55.00	68.02	16,632	17.59	430,152
1975	20,293	55.00	75.29	15,278	13.59	275,794
1952	216	55.00	100.00	216	0.00	-
1944	2,369	55.00	100.00	2,369	0.00	-
<b>Total</b>	<b>\$ 235,918</b>			<b>\$ 55,396</b>		<b>\$ 9,928,744</b>

**Account 360.1 - Land and land rights**

This account is for Land and land rights. Per the FERC Uniform System of Accounts, “This account shall include the cost of land and land rights used in connection with distribution operations.” The account does not include the cost of permits to erect poles, towers, etc., or to trim trees.

**Adjustment**

No adjustment is proposed.

**Calculation of Depreciation Parameters**

Account	360.1				Total Annual Accrual	\$3,718
Survivor Curve	55-SQ				Composite Remaining Life	44.59
Net Salvage	0%				Theoretical Reserve	\$38,642
Book Reserve	\$38,383				Accrual Rate	1.82%
Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2006	\$ 204,176	55.00	18.93	\$ 38,642	44.59	\$ 9,104,377
Total	\$ 204,176			\$ 38,642		\$ 9,104,377

**Account 361 - Structures and Improvements**

This account is for structures and improvements. Per the FERC Uniform System of Accounts, "This account shall include the cost in place of structures and improvements used in connection with distribution operations." This includes building station control, fencing, yard improvements and other structures for distribution plant.

**Account 361 Fitting Analysis Results**

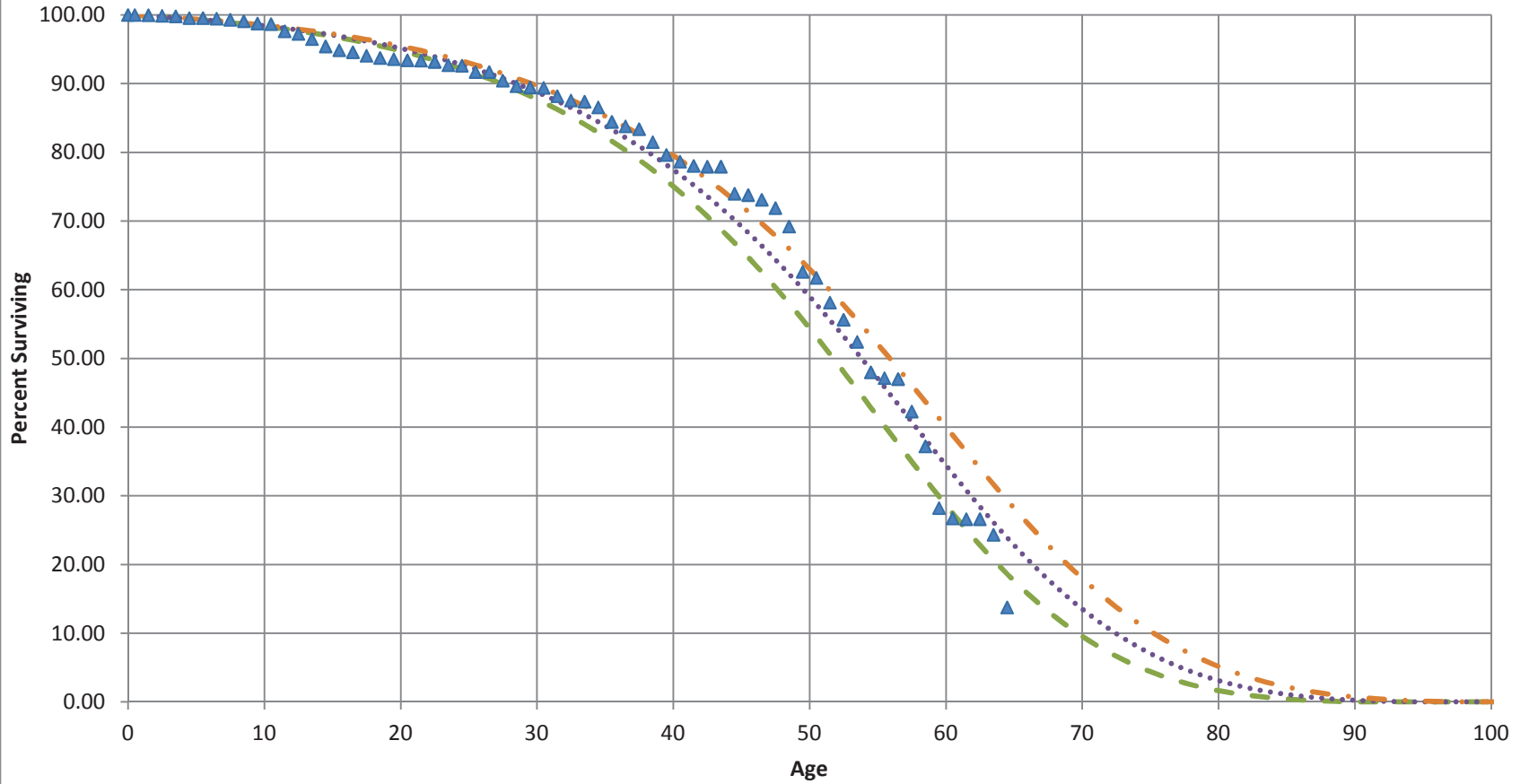
<b>Iowa Curve</b>	<b>Average Service Life</b>	<b>SSD</b>
R2.5	54.2	124.81
R2	56.4	209.33
S1	59.9	281.19
S1.5	57.4	285.13
L1.5	65.9	285.62
R3	52.8	304.12
L2	62.4	323.47
S0.5	63.1	382.17
L2.5	59.2	426.18
L1	71.5	460.05
S2	55.6	490.28
R1.5	59.9	519.52
S0	67.9	626.35
L0.5	78.0	727.24
S2.5	54.4	727.84
L3	57.1	817.98
R1	65.4	960.99
L0	87.6	1091.63
R4	51.4	1185.46
S3	53.4	1186.85
R0.5	75.9	1444.31
O2	101.4	1735.18
O1	90.5	1748.49
L4	53.5	1792.72
O3	147.1	1852.35
O4	198.0	1899.50
S4	52.0	2688.98
R5	51.2	3469.70
L5	52.2	3523.95
S5	51.6	4742.25
S6	51.6	7218.15
SQ	198.0	17771.95
Gulf Proposal Curve 50-R2.5		1112.97
BCA Proposal Curve 52-R2.5		356.96

# Account 361 - Structures and Improvements

Original & Smooth Survivor Curves

Placements 1926-2014

Experience 2000-2014



▲ Original Curve      - - - Gulf Proposal 50-R2.5      ···· BCA Proposal 52-R2.5      - · - Best Fit 54-R2.5

**Calculation of Depreciation Parameters**

Account	361	Total Annual Accrual	\$498,195
Survivor Curve	52-R2.5	Composite Remaining Life	38.99
Net Salvage	-5%	Theoretical Reserve	\$6,937,867
Book Reserve	\$8,307,855	Accrual Rate	1.89%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2015	\$ 1,373,486	52.00	2.86	\$ 39,241	50.59	\$ 69,477,872
2014	1,523,328	52.00	4.75	72,400	49.65	75,627,501
2013	2,427,593	52.00	6.64	161,211	48.71	118,251,034
2012	3,425,956	52.00	8.52	291,914	47.78	163,693,029
2011	939,870	52.00	10.39	97,671	46.85	44,036,184
2010	212,071	52.00	12.25	25,988	45.93	9,740,677
2009	2,551,783	52.00	14.11	359,989	45.01	114,864,692
2008	29,145	52.00	15.95	4,649	44.10	1,285,330
2007	1,402,191	52.00	17.78	249,357	43.19	60,564,782
2006	878,478	52.00	19.61	172,231	42.29	37,151,342
2005	509,902	52.00	21.42	109,204	41.39	21,106,725
2004	910,167	52.00	23.22	211,305	40.50	36,864,091
2003	825,888	52.00	25.00	206,498	39.62	32,719,583
2002	428,346	52.00	26.78	114,701	38.74	16,593,592
2001	66,681	52.00	28.54	19,030	37.87	2,524,985
2000	170,102	52.00	30.29	51,519	37.00	6,293,894
1999	204,503	52.00	32.02	65,484	36.14	7,391,150
1998	9,697	52.00	33.74	3,272	35.29	342,194
1997	5,229	52.00	35.45	1,853	34.45	180,118
1996	38,105	52.00	37.14	14,151	33.61	1,280,678
1995	125,133	52.00	38.81	48,564	32.78	4,101,836
1994	47,308	52.00	40.47	19,145	31.96	1,511,899
1993	228,749	52.00	42.11	96,328	31.15	7,124,440
1992	395,226	52.00	43.74	172,856	30.34	11,991,246
1991	261,915	52.00	45.34	118,764	29.54	7,737,962
1990	400,292	52.00	46.93	187,877	28.76	11,510,806
1989	1,587,170	52.00	48.51	769,896	27.98	44,404,638
1988	1,245,363	52.00	50.06	623,450	27.21	33,883,246
1987	685,443	52.00	51.60	353,670	26.45	18,127,946
1986	10,534	52.00	53.11	5,595	25.70	270,690
1985	340,093	52.00	54.61	185,728	24.95	8,486,902
1984	190,873	52.00	56.09	107,057	24.22	4,623,555
1982	271,923	52.00	58.98	160,380	22.79	6,197,347
1981	179,349	52.00	60.39	108,316	22.09	3,961,919
1980	460,442	52.00	61.79	284,488	21.40	9,854,087
1979	210,991	52.00	63.15	133,250	20.72	4,372,459
1978	425,676	52.00	64.50	274,560	20.06	8,537,906
1977	178,739	52.00	65.82	117,646	19.40	3,468,144
1976	26,329	52.00	67.11	17,671	18.76	493,992
1975	380,968	52.00	68.38	260,518	18.13	6,908,509
1974	110,657	52.00	69.62	77,044	17.52	1,938,627
1973	207,549	52.00	70.84	147,024	16.92	3,511,409
1972	97,393	52.00	72.02	70,145	16.33	1,590,613
1971	40,000	52.00	73.18	29,271	15.76	630,399
1970	39,734	52.00	74.30	29,522	15.20	604,083
1969	44,970	52.00	75.39	33,905	14.66	659,369
1968	19,565	52.00	76.45	14,958	14.14	276,594
1967	37,485	52.00	77.48	29,044	13.63	510,858
1966	20,044	52.00	78.48	15,730	13.14	263,299
1965	56,577	52.00	79.44	44,943	12.66	716,273
1964	48,325	52.00	80.36	38,835	12.20	589,631
1963	1,694	52.00	81.25	1,376	11.76	19,915
1961	6,901	52.00	82.94	5,723	10.93	75,400
1960	29,070	52.00	83.73	24,340	10.53	306,218
1959	7,379	52.00	84.49	6,235	10.16	74,954
1958	28,532	52.00	85.22	24,314	9.80	279,525
1957	1,249	52.00	85.92	1,073	9.45	11,805
1956	9,965	52.00	86.59	8,628	9.12	90,875
1955	1,919	52.00	87.23	1,674	8.80	16,892
1954	1,487	52.00	87.85	1,307	8.50	12,637
1953	8,702	52.00	88.44	7,696	8.20	71,367
1950	1,442	52.00	90.10	1,299	7.38	10,639
1949	5,847	52.00	90.63	5,299	7.12	41,623
1948	54	52.00	91.13	50	6.87	374
1926	989	52.00	101.74	1,006	1.61	1,596
<b>Total</b>	<b>\$ 26,412,569</b>			<b>\$ 6,937,867</b>		<b>\$ 1,029,863,955</b>

**Account 362 - Station Equipment**

This account is for Station Equipment. Per the FERC Uniform System of Accounts, "This account shall include the cost installed of station equipment, including transformer banks, etc., which are used for the purpose of changing the characteristics of electricity in connection with its distribution." This includes much of the equipment located within the fence at a distribution substation, including busses, conduit, control equipment, transformers, switching equipment, insulators, general station equipment, platforms, foundations, etc.

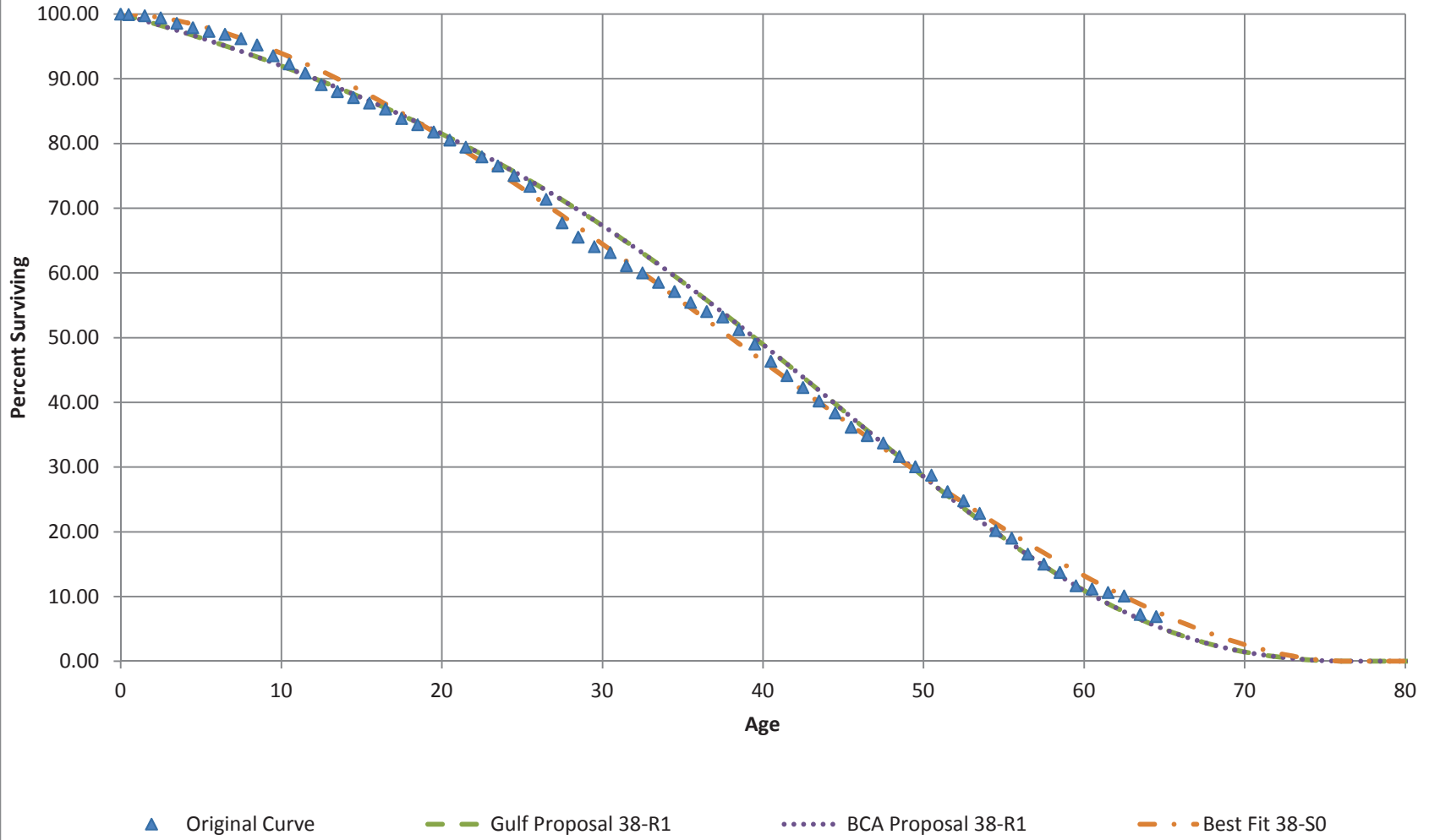
**Account 362 Fitting Analysis Results**

<b>Iowa Curve</b>	<b>Average Service Life</b>	<b>SSD</b>
S0	38.2	48.84
R1	37.6	123.90
L1	40.0	200.37
L0.5	40.6	335.77
R0.5	37.6	346.39
S0.5	38.4	372.42
L1.5	39.8	526.62
R1.5	38.0	718.90
L0	41.5	898.77
S1	38.5	1228.99
O1	38.0	1471.16
L2	39.7	1489.06
O2	42.7	1580.67
R2	38.3	2055.62
S1.5	38.8	2555.38
L2.5	39.5	2905.40
O3	55.9	3459.57
R2.5	38.8	4121.45
S2	39.0	4402.83
O4	72.0	4534.51
L3	39.4	5012.00
S2.5	39.2	6503.02
R3	39.2	6930.21
S3	39.5	9071.99
L4	39.5	11318.94
R4	39.7	13364.95
S4	39.8	16504.80
L5	39.8	18779.84
R5	39.8	22199.56
S5	39.8	24415.62
S6	39.6	31593.67
SQ	72.0	102715.62

Gulf Proposal Curve 38-R1	148.19
BCA Proposal Curve 38-R1	148.19



**Account 362 - Station Equipment**  
**Original & Smooth Survivor Curves**  
**Placements 1926-2014      Experience 1989-2014**



**Calculation of Depreciation Parameters**

Account	362	Total Annual Accrual	\$6,641,077
Survivor Curve	38-R1	Composite Remaining Life	28.04
Net Salvage	-10%	Theoretical Reserve	\$61,457,066
Book Reserve	\$48,190,373	Accrual Rate	3.12%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2016	\$ 6,543,010	38.00	1.07	\$ 70,033	37.63	\$ 246,215,058
2015	7,823,602	38.00	3.21	250,793	36.89	288,633,113
2014	12,648,323	38.00	5.32	673,233	36.16	457,379,119
2013	23,368,327	38.00	7.42	1,734,740	35.44	828,089,045
2012	14,698,947	38.00	9.51	1,397,553	34.72	510,280,858
2011	9,999,037	38.00	11.58	1,157,514	34.00	339,976,569
2010	7,141,588	38.00	13.63	973,405	33.29	237,753,594
2009	9,060,474	38.00	15.67	1,419,692	32.59	295,254,097
2008	1,670,531	38.00	17.69	295,591	31.89	53,268,853
2007	10,577,407	38.00	19.71	2,084,509	31.19	329,931,144
2006	6,040,965	38.00	21.71	1,311,305	30.50	184,257,049
2005	4,342,930	38.00	23.70	1,029,076	29.81	129,481,453
2004	4,108,567	38.00	25.67	1,054,783	29.13	119,687,560
2003	2,822,662	38.00	27.64	780,130	28.45	80,311,213
2002	12,461,223	38.00	29.59	3,687,474	27.78	346,141,004
2001	1,084,698	38.00	31.53	342,023	27.11	29,403,182
2000	4,446,353	38.00	33.46	1,487,626	26.44	117,570,690
1999	3,468,176	38.00	35.37	1,226,622	25.78	89,416,477
1998	3,509,971	38.00	37.26	1,307,857	25.13	88,198,353
1997	1,959,475	38.00	39.14	766,878	24.48	47,967,883
1996	2,077,392	38.00	40.99	851,606	23.84	49,521,792
1995	1,510,770	38.00	42.83	647,062	23.20	35,056,184
1994	1,715,189	38.00	44.65	765,752	22.58	38,723,926
1993	4,080,409	38.00	46.44	1,894,876	21.96	89,596,191
1992	3,777,675	38.00	48.21	1,821,138	21.35	80,639,585
1991	2,436,820	38.00	49.95	1,217,295	20.74	50,547,153
1990	3,810,848	38.00	51.68	1,969,268	20.15	76,782,959
1989	9,643,380	38.00	53.37	5,146,806	19.56	188,649,699
1988	6,587,589	38.00	55.04	3,625,975	18.99	125,067,443
1987	6,100,961	38.00	56.69	3,458,416	18.42	112,363,948
1986	537,521	38.00	58.30	313,400	17.86	9,599,248
1985	1,616,834	38.00	59.90	968,429	17.31	27,984,902
1984	2,572,714	38.00	61.46	1,581,222	16.77	43,139,099
1983	64,098	38.00	63.00	40,382	16.24	1,040,727
1982	2,371,247	38.00	64.51	1,529,727	15.71	37,262,280
1981	765,705	38.00	66.00	505,339	15.20	11,639,641
1980	1,320,760	38.00	67.46	890,928	14.70	19,411,386
1979	2,151,834	38.00	68.89	1,482,356	14.20	30,561,061
1978	988,716	38.00	70.29	695,015	13.72	13,561,606
1977	521,921	38.00	71.68	374,092	13.24	6,909,816
1976	566,269	38.00	73.03	413,555	12.77	7,231,779
1975	1,752,504	38.00	74.36	1,303,206	12.31	21,575,307
1974	1,500,480	38.00	75.67	1,135,396	11.86	17,795,481
1973	1,051,287	38.00	76.95	808,975	11.42	12,002,496
1972	1,020,337	38.00	78.21	797,999	10.98	11,205,550
1971	358,006	38.00	79.44	284,416	10.56	3,778,945
1970	547,357	38.00	80.66	441,481	10.14	5,548,421
1969	371,978	38.00	81.85	304,451	9.73	3,617,776
1968	391,090	38.00	83.01	324,661	9.32	3,645,854
1967	184,355	38.00	84.16	155,154	8.93	1,645,614
1966	179,569	38.00	85.29	153,147	8.54	1,533,118
1965	257,697	38.00	86.39	222,625	8.16	2,101,812
1964	476,644	38.00	87.47	416,938	7.78	3,709,135
1963	44,436	38.00	88.54	39,343	7.41	329,457
1962	386,978	38.00	89.58	346,665	7.05	2,729,463
1961	61,465	38.00	90.61	55,691	6.70	411,777
1960	244,717	38.00	91.61	224,195	6.35	1,554,327
1959	68,668	38.00	92.60	63,588	6.01	412,717
1958	458,954	38.00	93.57	429,444	5.68	2,604,907
1957	72,404	38.00	94.52	68,439	5.35	387,109
1956	70,703	38.00	95.46	67,491	5.02	355,203
1955	126,058	38.00	96.37	121,488	4.71	593,367
1954	34,254	38.00	97.28	33,322	4.40	150,556
1953	281,935	38.00	98.16	276,751	4.09	1,153,035
1952	32,649	38.00	99.04	32,334	3.79	123,669
1951	3,381	38.00	99.90	3,377	3.49	11,799
1950	18,880	38.00	100.75	19,021	3.20	60,352
1949	29,649	38.00	101.60	30,124	2.90	86,005
1948	17,924	38.00	102.46	18,365	2.60	46,678
1946	41	38.00	104.26	43	1.98	82
1944	254	38.00	106.16	270	1.32	336
1943	935	38.00	107.10	1,002	1.00	938
1942	19,861	38.00	107.95	21,439	0.71	14,071
1941	2,982	38.00	108.55	3,238	0.50	1,491
1939	247	38.00	110.00	271	0.00	-
1938	1,158	38.00	110.00	1,273	0.00	-
1926	1,522	38.00	110.00	1,675	0.00	-
1900	5,719	38.00	110.00	6,291	0.00	-
<b>Total</b>	<b>\$ 213,071,996</b>			<b>\$ 61,457,066</b>		<b>\$ 5,973,673,583</b>

### **Account 364 - Poles, Towers and Fixtures**

This account is for Poles, Towers, and Fixtures. Per the FERC Uniform System of Accounts, “This account shall include the cost installed of poles, towers, and appurtenant fixtures used for supporting overhead distribution conductors and service wires.” This includes the poles, towers, brackets, cross arms, foundations, pole steps, ladders, anchors, etc. required to create a pole or tower structure capable of supporting overhead distribution lines.

#### **Adjustment**

I propose that the life of the distribution poles account be increased to 38 years rather than be decreased to 33 years as is proposed by Gulf. Account 364 is one of the distribution accounts that Gulf does not maintain the aged data necessary to perform actuarial analysis; therefore the analysis performed by Mr. Watson was the simulated plant record procedure. Based on the SPR analysis, Mr. Watson is recommending decreasing the life of this account by one year to a 33 R0.5 survivor curve. Mr. Watson on page 77 of Exhibit DAW-1 states that “the CIs were poor to fair, but the REIs were excellent.”

Upon further inspection of the results of Mr. Watson’s SPR analysis, the 33-R0.5 curve was the second ranked curve in 8 of the 9 bands studied; however all but 1 of these 8 bands had CIs in the poor range, and only a single band scored a CI in the “fair” range, and it was at the very bottom of the range. Although the SPR analysis appears to support a life of 33 years for this account, the fitting statistics suggest that the 33-R0.5 Iowa Curve is simply a “least worst” choice. The results of Mr. Watson’s SPR analysis are included in my Exhibit BCA-2. As is discussed earlier, the CI should be at least in the “good” range (above 50) to be considered satisfactory.

Mr. Watson also stated that discussions with Company personnel indicate that there are now more concrete poles than in the past. Concrete poles have a longer life than wood poles which means there are now more longer lived assets in this account. This logically would lead one to believe the average life of this account should increase, not decrease as is proposed by Gulf.

Additionally, Florida Power & Light Company (“FPL”) filed a depreciation study in Docket No. 160021-EI. FPL maintains aged data for all of its distribution accounts, including account 364, which is separated into sub accounts for wood and concrete poles. The actuarial analysis performed in that case indicated the wood poles should have an average service life of 40 years, and the concrete poles will have an average life of 50 years. Again, the actuarial analysis is the preferred method of life analysis. While FPL and Gulf do not have the same maintenance and operation practices, their service territories are located in similar climates and their property is subject to similar forces of retirement. It is unlikely that Gulf’s distribution poles have average service lines that are shorter by seven and 17 years for wood and concrete poles than FPL.

**Calculation of Depreciation Parameters**

Account	364	Total Annual Accrual	\$6,948,311
Survivor Curve	33-R0.5	Composite Remaining Life	23.95
Net Salvage	-75%	Theoretical Reserve	\$67,438,346
Book Reserve	\$79,425,237	Accrual Rate	4.95%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2016	\$ 5,149,743	33.00	1.64	\$ 84,381	32.69	\$ 168,350,319
2015	4,773,527	33.00	4.92	234,947	32.07	153,095,941
2014	5,144,794	33.00	8.19	421,420	31.46	161,831,410
2013	6,800,283	33.00	11.45	778,417	30.84	209,730,608
2012	5,201,787	33.00	14.69	764,100	30.23	157,250,214
2011	6,532,985	33.00	17.92	1,170,626	29.62	193,513,828
2010	6,150,967	33.00	21.14	1,300,061	29.01	178,466,458
2009	6,381,611	33.00	24.34	1,553,366	28.41	181,301,116
2008	4,824,235	33.00	27.54	1,328,377	27.81	134,150,355
2007	4,408,011	33.00	30.72	1,354,107	27.21	119,929,792
2006	4,793,264	33.00	33.89	1,624,578	26.61	127,542,808
2005	4,344,861	33.00	37.06	1,610,046	26.01	113,019,547
2004	6,798,351	33.00	40.21	2,733,506	25.42	172,799,449
2003	3,254,309	33.00	43.35	1,410,664	24.83	80,791,108
2002	4,993,546	33.00	46.47	2,320,609	24.24	121,026,955
2001	3,763,372	33.00	49.58	1,865,887	23.65	89,005,996
2000	2,744,121	33.00	52.67	1,445,316	23.07	63,301,460
1999	3,159,568	33.00	55.74	1,761,081	22.49	71,056,789
1998	3,235,061	33.00	58.78	1,901,688	21.92	70,896,609
1997	2,861,686	33.00	61.80	1,768,650	21.35	61,083,956
1996	2,908,956	33.00	64.80	1,884,960	20.78	60,450,580
1995	3,990,975	33.00	67.76	2,704,444	20.22	80,704,094
1994	3,505,084	33.00	70.70	2,478,069	19.67	68,938,465
1993	3,201,743	33.00	73.60	2,356,574	19.12	61,219,259
1992	3,868,392	33.00	76.47	2,958,292	18.58	71,872,019
1991	2,383,996	33.00	79.31	1,890,742	18.04	43,017,857
1990	2,598,744	33.00	82.11	2,133,856	17.52	45,520,120
1989	2,362,847	33.00	84.88	2,005,498	16.99	40,155,969
1988	1,115,823	33.00	87.61	977,518	16.48	18,388,960
1987	2,172,162	33.00	90.30	1,961,394	15.97	34,695,054
1986	2,152,883	33.00	92.95	2,001,133	15.47	33,309,487
1985	2,147,304	33.00	95.57	2,052,143	14.98	32,163,466
1984	1,253,691	33.00	98.15	1,230,474	14.49	18,168,589
1983	1,379,221	33.00	100.69	1,388,746	14.01	19,326,503
1982	1,450,998	33.00	103.20	1,497,378	13.54	19,646,674
1981	1,011,213	33.00	105.67	1,068,507	13.07	13,221,039
1980	927,993	33.00	108.10	1,003,158	12.62	11,707,073
1979	785,552	33.00	110.50	868,025	12.16	9,554,736
1978	715,284	33.00	112.86	807,298	11.72	8,381,052
1977	555,108	33.00	115.20	639,464	11.28	6,260,105
1976	59,295	33.00	117.50	69,670	10.84	642,959
1975	491,407	33.00	119.77	588,547	10.42	5,118,110
1974	674,899	33.00	122.01	823,444	9.99	6,743,869
1973	551,828	33.00	124.23	685,510	9.57	5,283,557
1972	484,543	33.00	126.42	612,539	9.16	4,439,165
1971	442,011	33.00	128.58	568,356	8.75	3,868,807
1970	324,666	33.00	130.73	424,442	8.35	2,710,215
1969	272,936	33.00	132.86	362,629	7.95	2,168,734
1968	224,342	33.00	134.98	302,814	7.55	1,693,088
1967	186,767	33.00	137.08	256,028	7.15	1,335,371
1966	142,307	33.00	139.18	198,067	6.75	961,172
1965	128,903	33.00	141.28	182,112	6.36	819,694
1964	104,893	33.00	143.38	150,391	5.96	625,517
1963	95,921	33.00	145.48	139,547	5.57	533,934
1962	77,973	33.00	147.60	115,089	5.17	402,878
1961	80,069	33.00	149.74	119,895	4.76	381,417
1960	69,555	33.00	151.90	105,656	4.36	302,924
1959	67,348	33.00	154.10	103,786	3.94	265,371
1958	49,166	33.00	156.35	76,869	3.52	172,942
1957	45,789	33.00	158.64	72,639	3.09	141,283
1956	33,304	33.00	160.98	53,614	2.64	88,035
1955	22,518	33.00	163.38	36,790	2.19	49,341
1954	15,216	33.00	165.81	25,231	1.73	26,357
1953	10,138	33.00	168.25	17,058	1.27	12,903
1952	4,762	33.00	170.63	8,126	0.82	3,927
<b>Total</b>	<b>\$ 140,464,604</b>			<b>\$ 67,438,346</b>		<b>\$ 3,363,637,386</b>

**Account 365 - Overhead Conductors and Devices**

This account is for Overhead Conductors and Devices. Per the FERC Uniform System of Accounts, "This account shall include the cost installed of overhead conductors and devices used for distribution purposes." The items contained within this account include, circuit breakers, conductors, ground wires, insulators, lightning arresters, railroad and highway crossing guards, switches, the initial cost of tree trimming including permits, and other line devices.

**Adjustment**

No adjustment is proposed.

**Calculation of Depreciation Parameters**

Account	365	Total Annual Accrual	\$5,457,814
Survivor Curve	45-R1	Composite Remaining Life	32.53
Net Salvage	-50%	Theoretical Reserve	\$63,640,015
Book Reserve	\$52,068,507	Accrual Rate	3.57%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2016	\$ 9,099,716	45.00	1.23	\$ 112,209	44.63	\$ 406,120,942
2015	4,122,715	45.00	3.69	152,308	43.89	180,952,925
2014	5,291,655	45.00	6.14	324,844	43.16	228,379,133
2013	6,900,047	45.00	8.57	591,119	42.43	292,768,525
2012	5,658,021	45.00	10.98	621,198	41.71	235,974,980
2011	5,969,190	45.00	13.37	798,361	40.99	244,662,704
2010	4,420,630	45.00	15.76	696,488	40.27	178,033,698
2009	3,053,055	45.00	18.12	553,265	39.56	120,789,533
2008	2,382,971	45.00	20.47	487,892	38.86	92,596,954
2007	3,440,643	45.00	22.81	784,902	38.16	131,281,866
2006	4,546,279	45.00	25.14	1,142,839	37.46	170,297,384
2005	3,657,787	45.00	27.45	1,004,098	36.76	134,477,497
2004	8,868,887	45.00	29.75	2,638,710	36.07	319,938,605
2003	2,210,734	45.00	32.04	708,384	35.39	78,231,531
2002	3,401,081	45.00	34.32	1,167,307	34.70	118,029,414
2001	2,593,805	45.00	36.59	949,059	34.02	88,249,445
2000	2,222,676	45.00	38.85	863,417	33.35	74,117,914
1999	1,972,533	45.00	41.09	810,516	32.67	64,448,484
1998	2,094,128	45.00	43.32	907,198	32.00	67,019,815
1997	1,915,503	45.00	45.54	872,273	31.34	60,029,419
1996	2,729,038	45.00	47.74	1,302,825	30.68	83,721,980
1995	4,605,031	45.00	49.93	2,299,080	30.02	138,253,996
1994	4,283,419	45.00	52.09	2,231,438	29.37	125,810,698
1993	4,502,036	45.00	54.25	2,442,138	28.73	129,327,513
1992	4,935,770	45.00	56.38	2,782,634	28.09	138,630,627
1991	4,360,725	45.00	58.49	2,550,548	27.45	119,716,185
1990	4,141,564	45.00	60.58	2,508,997	26.83	111,100,486
1989	3,295,124	45.00	62.65	2,064,422	26.20	86,347,927
1988	3,001,421	45.00	64.70	1,941,860	25.59	76,808,142
1987	2,963,165	45.00	66.72	1,977,102	24.98	74,029,359
1986	2,702,478	45.00	68.72	1,857,254	24.38	65,893,920
1985	3,636,648	45.00	70.70	2,571,177	23.79	86,513,864
1984	2,788,808	45.00	72.65	2,026,176	23.20	64,711,073
1983	1,803,977	45.00	74.58	1,345,429	22.63	40,816,097
1982	2,410,779	45.00	76.48	1,843,855	22.05	53,169,389
1981	1,865,937	45.00	78.36	1,462,170	21.49	40,102,062
1980	1,558,738	45.00	80.21	1,250,302	20.94	32,634,153
1979	1,690,553	45.00	82.04	1,386,887	20.39	34,468,262
1978	1,289,493	45.00	83.84	1,081,071	19.85	25,595,038
1977	1,146,453	45.00	85.61	981,487	19.32	22,145,780
1976	92,468	45.00	87.36	80,779	18.79	1,737,693
1975	894,999	45.00	89.08	797,268	18.28	16,356,911
1974	1,201,634	45.00	90.78	1,090,798	17.77	21,349,574
1973	986,790	45.00	92.45	912,256	17.27	17,037,851
1972	850,429	45.00	94.09	800,188	16.77	14,263,645
1971	714,491	45.00	95.71	683,856	16.29	11,636,419
1970	536,458	45.00	97.31	522,012	15.81	8,480,258
1969	383,906	45.00	98.88	379,597	15.34	5,887,875
1968	334,190	45.00	100.42	335,605	14.87	4,970,376
1967	402,389	45.00	101.95	410,218	14.42	5,800,944
1966	243,960	45.00	103.44	252,361	13.97	3,407,351
1965	269,591	45.00	104.92	282,850	13.52	3,646,063
1964	287,589	45.00	106.37	305,909	13.09	3,764,226

**Docket Nos. 160186-EI / 160170-EI**  
**Depreciation**  
**Exhibit BCA-1, Page 39 of 73**

1963	241,815	45.00	107.80	260,675	12.66	3,061,434
1962	173,578	45.00	109.21	189,558	12.24	2,124,294
1961	226,564	45.00	110.59	250,559	11.82	2,678,634
1960	216,138	45.00	111.95	241,975	11.41	2,466,987
1959	202,611	45.00	113.30	229,549	11.01	2,231,045
1958	174,433	45.00	114.62	199,927	10.62	1,851,667
1957	189,189	45.00	115.92	219,300	10.23	1,934,497
1956	191,138	45.00	117.20	224,006	9.84	1,881,019
1955	138,387	45.00	118.46	163,928	9.46	1,309,582
1954	111,423	45.00	119.70	133,368	9.09	1,012,971
1953	97,524	45.00	120.92	117,923	8.72	850,893
1952	61,888	45.00	122.12	75,578	8.36	517,643
1951	50,287	45.00	123.30	62,005	8.01	402,750
1950	54,814	45.00	124.47	68,226	7.66	419,859
1949	56,405	45.00	125.61	70,852	7.32	412,659
1948	43,988	45.00	126.74	55,753	6.98	306,904
1947	31,745	45.00	127.86	40,587	6.64	210,887
1946	24,234	45.00	128.95	31,250	6.31	153,037
1945	14,020	45.00	130.03	18,230	5.99	84,010
1944	4,225	45.00	131.09	5,539	5.67	23,973
1943	2,245	45.00	132.13	2,966	5.36	12,033
1942	5,249	45.00	133.17	6,990	5.05	26,509
1941	3,155	45.00	134.18	4,233	4.75	14,973
1940	2,859	45.00	135.18	3,864	4.45	12,710
1939	2,389	45.00	136.18	3,253	4.15	9,906
1938	4,130	45.00	137.16	5,665	3.85	15,904
1937	2,293	45.00	138.15	3,168	3.56	8,154
1936	1,379	45.00	139.13	1,918	3.26	4,496
1935	537	45.00	140.13	752	2.96	1,590
1934	199	45.00	141.15	281	2.65	529
1933	107	45.00	142.22	153	2.34	251
1932	159	45.00	143.32	227	2.00	318
1931	166	45.00	144.42	239	1.67	277
1930	229	45.00	145.52	334	1.34	308
1929	83	45.00	146.60	121	1.02	84
1928	86	45.00	147.61	126	0.72	61
<b>Total</b>	<b>\$ 153,061,774</b>			<b>\$ 63,640,015</b>		<b>\$ 4,978,579,357</b>

### Account 366 - Underground Conduit

This account is for Underground Conduit. Per the FERC Uniform System of Accounts, "This account shall include the cost installed of underground conduit and tunnels used for housing distribution cables or wires." The items contained within this account include, conduit, duct banks, excavation, foundations, lighting systems, manholes, inspections, permits, sewer connections, sumps, ventilation equipment, etc.

#### Adjustment

No adjustment is proposed.

#### Calculation of Depreciation Parameters

Account	366	Total Annual Accrual		\$13,060		
Survivor Curve	67-R5	Composite Remaining Life		27.34		
Net Salvage	0%	Theoretical Reserve		\$686,400		
Book Reserve	\$802,585	Accrual Rate		1.13%		
Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2015	\$ 8,611	67.00	2.24	\$ 193	65.50	\$ 563,984
2014	16,708	67.00	3.73	624	64.50	1,077,626
2006	6,590	67.00	15.67	1,033	56.50	372,304
2005	34,387	67.00	17.16	5,902	55.50	1,908,434
1999	20,831	67.00	26.12	5,441	49.50	1,031,100
1995	30,658	67.00	32.09	9,838	45.50	1,394,901
1994	71,582	67.00	33.58	24,039	44.50	3,185,342
1991	55,294	67.00	38.06	21,045	41.50	2,294,659
1990	28,066	67.00	39.55	11,101	40.50	1,136,647
1988	311	67.00	42.54	132	38.50	11,954
1986	1,823	67.00	45.52	830	36.50	66,528
1985	310	67.00	47.01	145	35.51	10,989
1982	3,403	67.00	51.45	1,751	32.53	110,668
1981	44,300	67.00	52.93	23,448	31.54	1,397,063
1980	764	67.00	54.40	415	30.55	23,327
1979	269,735	67.00	55.86	150,684	29.57	7,976,395
1978	5,692	67.00	57.32	3,262	28.60	162,755
1977	31,721	67.00	58.77	18,641	27.63	876,322
1976	12,632	67.00	60.20	7,605	26.66	336,807
1975	13,977	67.00	61.63	8,614	25.71	359,314
1974	35,469	67.00	63.04	22,360	24.76	878,285
1973	1,717	67.00	64.44	1,107	23.82	40,911
1972	50,500	67.00	65.83	33,242	22.90	1,156,262
1971	28,759	67.00	67.20	19,325	21.98	632,064
1970	16,491	67.00	68.55	11,304	21.07	347,499
1969	38,009	67.00	69.88	26,562	20.18	766,926
1968	11,945	67.00	71.20	8,505	19.30	230,499
1967	14,770	67.00	72.50	10,707	18.43	272,176
1966	20,899	67.00	73.77	15,416	17.58	367,308
1965	5,250	67.00	75.02	3,938	16.74	87,867
1964	200	67.00	76.24	152	15.92	3,183
1963	9,614	67.00	77.44	7,445	15.12	145,335
1962	9,463	67.00	78.60	7,438	14.34	135,661
1961	4,283	67.00	79.74	3,415	13.58	58,135
1960	17,609	67.00	80.84	14,235	12.84	226,067
1959	40,530	67.00	81.90	33,196	12.12	491,373
1958	15,151	67.00	82.93	12,565	11.44	173,261
1957	7,411	67.00	83.92	6,219	10.77	79,829
1956	11,428	67.00	84.87	9,699	10.14	115,829
1955	13,643	67.00	85.78	11,704	9.53	129,968
1954	2,867	67.00	86.65	2,484	8.94	25,642
1953	2,380	67.00	87.48	2,082	8.39	19,963
1952	821	67.00	88.27	725	7.86	6,458
1951	103,985	67.00	89.01	92,560	7.36	765,461
1950	32,979	67.00	89.72	29,589	6.89	227,144
1949	2,400	67.00	90.39	2,169	6.44	15,455
1948	487	67.00	91.02	443	6.02	2,930
1945	14	67.00	92.68	13	4.90	68
1942	13	67.00	94.03	12	4.00	52
1941	3,215	67.00	94.41	3,036	3.74	12,033
1940	11	67.00	94.76	11	3.51	39
<b>Total</b>	<b>\$ 1,159,696</b>			<b>\$ 686,400</b>		<b>\$ 31,710,799</b>

**Account 367 - Underground Conductors and Devices**

This account is for Underground Conductors and Devices. Per the FERC Uniform System of Accounts, "This account shall include the cost installed of underground conductors and devices used for distribution purposes." The items contained within this account include, circuit breakers, armored conductors, insulators, insulating materials, splicing, fireproofing, inspections, permits, cable racking, lightning arresters, switches, and other line devices.

**Adjustment**

No adjustment is proposed.



**Calculation of Depreciation Parameters**

Account	367	Total Annual Accrual	\$3,864,776
Survivor Curve	41-R2	Composite Remaining Life	30.52
Net Salvage	-15%	Theoretical Reserve	\$46,475,682
Book Reserve	\$63,904,565	Accrual Rate	2.44%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2016	\$ 6,473,865	41.00	1.27	\$ 82,136	40.55	\$ 262,500,111
2015	9,561,607	41.00	3.80	362,865	39.65	379,088,955
2014	7,858,989	41.00	6.30	495,441	38.75	304,554,967
2013	4,489,808	41.00	8.79	394,856	37.86	170,004,644
2012	9,424,419	41.00	11.27	1,061,840	36.98	348,544,245
2011	5,670,479	41.00	13.72	777,931	36.11	204,754,739
2010	7,163,345	41.00	16.15	1,157,009	35.24	252,447,275
2009	5,071,644	41.00	18.56	941,479	34.38	174,371,663
2008	6,459,561	41.00	20.95	1,353,563	33.53	216,584,529
2007	9,958,434	41.00	23.32	2,322,666	32.68	325,487,703
2006	9,184,940	41.00	25.67	2,357,778	31.85	292,522,601
2005	6,011,596	41.00	27.99	1,682,908	31.02	186,476,116
2004	5,117,704	41.00	30.29	1,550,358	30.20	154,552,202
2003	5,054,922	41.00	32.57	1,466,424	29.39	148,553,211
2002	6,481,357	41.00	34.82	2,256,915	28.59	185,271,713
2001	5,488,831	41.00	37.05	2,033,503	27.79	152,543,266
2000	5,333,456	41.00	39.25	2,093,283	27.01	144,041,586
1999	5,150,997	41.00	41.42	2,133,633	26.23	135,122,199
1998	4,639,008	41.00	43.57	2,021,155	25.47	118,140,774
1997	3,631,840	41.00	45.69	1,659,277	24.71	89,748,608
1996	3,503,264	41.00	47.78	1,673,795	23.97	83,959,401
1995	4,606,739	41.00	49.84	2,295,925	23.23	107,021,566
1994	2,817,714	41.00	51.87	1,461,556	22.51	63,418,625
1993	1,346,509	41.00	53.87	725,373	21.79	29,345,758
1992	1,729,349	41.00	55.84	965,673	21.09	36,474,954
1991	1,031,447	41.00	57.78	595,948	20.40	21,042,469
1990	1,250,828	41.00	59.68	746,523	19.72	24,668,770
1989	1,396,197	41.00	61.55	859,418	19.05	26,603,948
1988	609,621	41.00	63.39	386,441	18.40	11,216,998
1987	1,142,616	41.00	65.19	744,906	17.76	20,289,713
1986	1,593,666	41.00	66.96	1,067,091	17.13	27,296,186
1985	2,781,960	41.00	68.69	1,910,875	16.51	45,933,480
1984	1,477,434	41.00	70.38	1,039,818	15.91	23,503,023
1983	882,778	41.00	72.03	635,902	15.32	13,522,641
1982	795,370	41.00	73.65	585,790	14.74	11,725,479
1981	440,941	41.00	75.23	331,701	14.18	6,252,697
1980	404,065	41.00	76.76	310,173	13.63	5,508,291
1979	396,724	41.00	78.26	310,471	13.10	5,196,686
1978	350,855	41.00	79.72	279,685	12.58	4,413,658
1977	328,599	41.00	81.13	266,593	12.08	3,967,957
1976	20,426	41.00	82.50	16,853	11.59	236,646
1975	264,707	41.00	83.84	221,925	11.11	2,940,872
1974	238,015	41.00	85.13	202,624	10.65	2,534,643
1973	199,520	41.00	86.38	172,352	10.20	2,035,598
1972	84,886	41.00	87.60	74,357	9.77	829,365
1971	64,130	41.00	88.77	56,928	9.35	599,742
1970	26,098	41.00	89.90	23,463	8.95	233,507
1969	38,375	41.00	91.00	34,922	8.56	328,328
1968	8,985	41.00	92.06	8,272	8.18	73,470
1967	13,544	41.00	93.09	12,609	7.81	105,790
1966	9,873	41.00	94.09	9,289	7.46	73,608
1965	15,987	41.00	95.05	15,196	7.11	113,688
1964	3,639	41.00	95.99	3,493	6.78	24,662
1963	775	41.00	96.90	751	6.45	5,000
1962	2,644	41.00	97.79	2,585	6.14	16,220
1961	2,330	41.00	98.66	2,298	5.82	13,568
1960	6,012	41.00	99.52	5,983	5.52	33,186
1959	12,211	41.00	100.36	12,255	5.22	63,744
1958	5,184	41.00	101.19	5,245	4.92	25,523
1957	1,543	41.00	102.01	1,574	4.63	7,146
1956	2,389	41.00	102.83	2,456	4.34	10,362
1955	1,590	41.00	103.64	1,648	4.05	6,439
1954	210	41.00	104.46	219	3.76	789
1953	1,455	41.00	105.26	1,532	3.47	5,051
1952	769	41.00	106.07	815	3.18	2,446
1951	4,542	41.00	106.88	4,854	2.90	13,154
1950	327	41.00	107.67	352	2.61	853
1949	1,816	41.00	108.47	1,969	2.33	4,230
1948	13	41.00	109.24	14	2.05	27
1947	44	41.00	110.01	49	1.78	79
1946	15	41.00	110.75	16	1.52	22
1945	89	41.00	111.48	99	1.25	112
1944	4	41.00	112.18	5	1.01	4
1942	1	41.00	113.41	1	0.57	0
<b>Total</b>	<b>\$ 158,145,619</b>			<b>\$ 46,475,682</b>		<b>\$ 4,827,011,280</b>

### **Account 368 - Line Transformers**

This Account is for Line Transformers. Per the FERC Uniform System of Accounts, "This account shall include the cost installed of overhead and underground distribution line transformers and pole-type and underground voltage regulators owned by the utility, for use in transforming electricity to the voltage at which it is to be used by the customer, whether actually in service or held in reserve." This includes labor of first installation, transformer cut-out boxes, transformer lightning arresters, transformers, lines and network, capacitors, network protectors, etc.

#### **Adjustment**

No adjustment is proposed.

**Calculation of Depreciation Parameters**

Account	368	Total Annual Accrual	\$9,600,141
Survivor Curve	33-R0.5	Composite Remaining Life	24.97
Net Salvage	-22%	Theoretical Reserve	\$83,881,394
Book Reserve	\$104,889,760	Accrual Rate	3.40%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2016	\$ 18,791,738	33.00	1.14	\$ 214,658	32.69	\$ 614,321,008
2015	13,634,745	33.00	3.43	467,843	32.07	437,291,809
2014	15,932,407	33.00	5.71	909,809	31.46	501,159,848
2013	16,553,801	33.00	7.98	1,321,006	30.84	510,543,311
2012	12,231,892	33.00	10.24	1,252,602	30.23	369,770,594
2011	12,084,484	33.00	12.49	1,509,581	29.62	357,955,050
2010	13,344,450	33.00	14.73	1,966,269	29.01	387,180,895
2009	10,142,627	33.00	16.97	1,721,138	28.41	288,151,313
2008	9,394,841	33.00	19.20	1,803,451	27.81	261,247,892
2007	8,601,036	33.00	21.42	1,841,971	27.21	234,010,384
2006	13,292,672	33.00	23.63	3,140,821	26.61	353,701,530
2005	10,385,975	33.00	25.83	2,683,067	26.01	270,162,428
2004	12,160,047	33.00	28.03	3,408,581	25.42	309,082,250
2003	5,901,279	33.00	30.22	1,783,335	24.83	146,504,472
2002	6,977,905	33.00	32.40	2,260,684	24.24	169,121,232
2001	6,012,596	33.00	34.56	2,078,222	23.65	142,201,466
2000	6,231,786	33.00	36.72	2,288,199	23.07	143,755,028
1999	6,518,618	33.00	38.86	2,532,963	22.49	146,599,804
1998	5,479,981	33.00	40.98	2,245,730	21.92	120,094,217
1997	5,106,267	33.00	43.09	2,200,114	21.35	108,995,511
1996	4,316,298	33.00	45.17	1,949,837	20.78	89,696,352
1995	5,304,170	33.00	47.24	2,505,753	20.22	107,259,052
1994	5,539,618	33.00	49.29	2,730,339	19.67	108,953,964
1993	4,397,165	33.00	51.31	2,256,260	19.12	84,076,462
1992	5,423,335	33.00	53.31	2,891,337	18.58	100,761,767
1991	3,262,518	33.00	55.29	1,803,855	18.04	58,870,296
1990	3,971,472	33.00	57.24	2,273,395	17.52	69,565,092
1989	3,224,888	33.00	59.17	1,908,197	16.99	54,806,135
1988	1,532,734	33.00	61.07	936,091	16.48	25,259,727
1987	4,176,394	33.00	62.95	2,629,032	15.97	66,707,845
1986	3,603,578	33.00	64.80	2,335,131	15.47	55,754,701
1985	1,037,004	33.00	66.62	690,902	14.98	15,532,803
1984	6,757,277	33.00	68.42	4,623,547	14.49	97,926,988
1983	4,458,126	33.00	70.20	3,129,415	14.01	62,470,043
1982	2,247,367	33.00	71.94	1,616,815	13.54	30,429,586
1981	2,095,679	33.00	73.66	1,543,766	13.07	27,399,818
1980	1,611,965	33.00	75.36	1,214,792	12.62	20,335,703
1979	1,457,666	33.00	77.03	1,122,890	12.16	17,729,720
1978	1,098,760	33.00	78.68	864,530	11.72	12,874,277
1977	1,001,718	33.00	80.31	804,462	11.28	11,296,648
1976	680,942	33.00	81.91	557,775	10.84	7,383,734
1975	718,717	33.00	83.50	600,095	10.42	7,485,594
1974	1,011,631	33.00	85.06	860,477	9.99	10,108,633
1973	888,709	33.00	86.60	769,647	9.57	8,509,080
1972	693,572	33.00	88.13	611,245	9.16	6,354,201
1971	599,440	33.00	89.64	537,347	8.75	5,246,740
1970	465,684	33.00	91.14	424,419	8.35	3,887,388
1969	369,881	33.00	92.62	342,598	7.95	2,939,051
1968	309,168	33.00	94.10	290,925	7.55	2,333,261
1967	216,200	33.00	95.57	206,616	7.15	1,545,810
1966	208,815	33.00	97.03	202,613	6.75	1,410,377
1965	173,277	33.00	98.49	170,662	6.36	1,101,869
1964	128,445	33.00	99.95	128,385	5.96	765,968
1963	108,570	33.00	101.42	110,113	5.57	604,345
1962	98,761	33.00	102.90	101,623	5.17	510,286
1961	102,827	33.00	104.39	107,340	4.76	489,822
1960	92,395	33.00	105.90	97,846	4.36	402,400
1959	66,967	33.00	107.43	71,945	3.94	263,871
1958	71,679	33.00	109.00	78,127	3.52	252,133
1957	56,705	33.00	110.59	62,712	3.09	174,964
1956	31,945	33.00	112.23	35,851	2.64	84,442
1955	16,812	33.00	113.90	19,148	2.19	36,837
1954	13,620	33.00	115.60	15,744	1.73	23,592
1953	10,022	33.00	117.29	11,755	1.27	12,754
1952	5,044	33.00	118.95	5,999	0.82	4,159
<b>Total</b>	<b>\$ 282,436,706</b>			<b>\$ 83,881,394</b>		<b>\$ 7,051,488,333</b>

### Account 369.1 - Overhead Services

This account is for Overhead Services. Per the FERC Uniform System of Accounts for Account 369, "This account shall include the cost installed of overhead and underground conductors leading from a point where wires leave the last pole of the overhead system or the distribution box or manhole, or the top of the pole of the distribution line, to the point of connection with the customer's outlet or wiring." This subaccount is for overhead property only, which can include brackets, cables and wires, conduit, insulators, inspection, permits, pavement, suspension wire, and service switch.

#### Adjustment

No adjustment is proposed.

#### Calculation of Depreciation Parameters

Account	369.1		Total Annual Accrual	\$2,386,644
Survivor Curve	42-R1		Composite Remaining Life	29.46
Net Salvage	-75%		Theoretical Reserve	\$32,386,834
Book Reserve	\$38,141,620		Accrual Rate	3.85%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	*Remaining Life
2016	\$ 1,747,201	42.00	1.54	\$ 26,926	41.63	\$ 72,736,206
2015	3,033,064	42.00	4.62	140,013	40.89	124,028,359
2014	3,148,052	42.00	7.67	241,439	40.16	126,423,630
2013	1,906,931	42.00	10.70	204,030	39.43	75,194,354
2012	1,479,152	42.00	13.71	202,769	38.71	57,257,909
2011	1,318,785	42.00	16.70	220,198	37.99	50,104,198
2010	1,524,163	42.00	19.66	299,723	37.28	56,821,484
2009	1,284,128	42.00	22.61	290,392	36.57	46,963,941
2008	1,573,953	42.00	25.54	402,053	35.87	56,456,734
2007	1,860,512	42.00	28.46	529,439	35.17	65,434,942
2006	2,295,267	42.00	31.35	719,636	34.48	79,129,933
2005	3,098,082	42.00	34.23	1,060,540	33.78	104,666,466
2004	1,868,013	42.00	37.10	692,974	33.10	61,825,181
2003	2,274,914	42.00	39.95	908,757	32.41	73,736,202
2002	1,475,169	42.00	42.78	631,099	31.73	46,810,716
2001	1,656,118	42.00	45.60	755,210	31.06	51,431,914
2000	721,746	42.00	48.40	349,351	30.38	21,928,889
1999	649,440	42.00	51.19	332,438	29.71	19,297,956
1998	1,525,291	42.00	53.95	822,968	29.05	44,310,968
1997	681,186	42.00	56.70	386,229	28.39	19,340,304
1996	822,589	42.00	59.42	488,808	27.74	22,817,343
1995	964,377	42.00	62.12	599,101	27.09	26,125,398
1994	1,232,839	42.00	64.80	798,855	26.45	32,606,709
1993	1,197,409	42.00	67.45	807,626	25.81	30,908,134
1992	910,537	42.00	70.07	638,003	25.18	22,930,471
1991	1,927,487	42.00	72.66	1,400,553	24.56	47,341,190
1990	1,668,749	42.00	75.23	1,255,335	23.95	39,959,399
1989	1,900,181	42.00	77.76	1,477,550	23.34	44,346,377
1988	1,114,941	42.00	80.26	894,856	22.74	25,350,974
1987	1,660,185	42.00	82.73	1,373,460	22.14	36,764,721
1986	2,349,912	42.00	85.17	2,001,312	21.56	50,664,816
1985	1,541,342	42.00	87.57	1,349,742	20.98	32,342,586
1984	1,364,513	42.00	89.94	1,227,205	20.42	27,856,630
1983	237,751	42.00	92.27	219,378	19.85	4,720,469
1982	925,080	42.00	94.57	874,872	19.30	17,856,435
1981	1,068,586	42.00	96.84	1,034,794	18.76	20,045,569
1980	761,566	42.00	99.07	754,476	18.22	13,878,333
1979	612,373	42.00	101.26	620,118	17.70	10,836,830
1978	766,865	42.00	103.43	793,139	17.18	13,172,988
1977	448,142	42.00	105.55	473,031	16.67	7,469,229
1976	12,126	42.00	107.65	13,053	16.17	196,020
1975	324,975	42.00	109.70	356,513	15.67	5,092,634
1974	406,855	42.00	111.73	454,578	15.18	6,178,050
1973	368,225	42.00	113.72	418,749	14.71	5,415,473
1972	420,356	42.00	115.68	486,268	14.24	5,984,539
1971	276,669	42.00	117.61	325,378	13.77	3,811,022
1970	211,356	42.00	119.50	252,570	13.32	2,815,295
1969	185,332	42.00	121.36	224,922	12.87	2,385,813
1968	143,840	42.00	123.19	177,200	12.43	1,788,473
1967	123,893	42.00	124.99	154,857	12.00	1,486,927
1966	105,238	42.00	126.76	133,403	11.58	1,218,332
1965	94,051	42.00	128.50	120,859	11.16	1,049,529

**Docket Nos. 160186-EI / 160170-EI  
Depreciation  
Exhibit BCA-1, Page 46 of 73**

1964	69,302	42.00	130.21	90,241	10.75	744,892
1963	63,745	42.00	131.90	84,078	10.34	659,421
1962	66,060	42.00	133.55	88,225	9.95	657,137
1961	71,275	42.00	135.18	96,348	9.56	681,185
1960	67,634	42.00	136.78	92,509	9.17	620,419
1959	70,645	42.00	138.35	97,737	8.80	621,372
1958	52,279	42.00	139.90	73,137	8.42	440,417
1957	48,796	42.00	141.42	69,008	8.06	393,266
1956	42,644	42.00	142.91	60,944	7.70	328,384
1955	31,792	42.00	144.39	45,903	7.35	233,585
1954	23,923	42.00	145.83	34,888	7.00	167,472
1953	20,450	42.00	147.25	30,114	6.66	136,181
1952	14,132	42.00	148.65	21,008	6.32	89,361
1951	12,132	42.00	150.03	18,201	5.99	72,715
1950	10,393	42.00	151.38	15,734	5.67	58,915
1949	10,212	42.00	152.71	15,596	5.35	54,629
1948	7,418	42.00	154.02	11,424	5.04	37,351
1947	6,296	42.00	155.31	9,778	4.73	29,752
1946	4,070	42.00	156.58	6,372	4.42	17,994
1945	2,044	42.00	157.83	3,226	4.12	8,421
1944	955	42.00	159.07	1,519	3.82	3,650
1943	275	42.00	160.29	440	3.53	970
1942	426	42.00	161.53	688	3.23	1,378
1941	483	42.00	162.76	785	2.94	1,417
1940	363	42.00	164.02	596	2.64	957
1939	294	42.00	165.32	487	2.32	684
1938	260	42.00	166.67	433	2.00	519
1937	216	42.00	168.07	362	1.66	359
1936	129	42.00	169.44	219	1.33	172
1935	39	42.00	170.76	66	1.02	39
1934	11	42.00	172.03	19	0.71	8
<b>Total</b>	<b>\$ 61,968,191</b>			<b>\$ 32,386,834</b>		<b>\$ 1,825,380,013</b>

### **Account 369.2 - Underground Services**

This account is for Underground Services. Per the FERC Uniform System of Accounts for Account 369, "This account shall include the cost installed of overhead and underground conductors leading from a point where wires leave the last pole of the overhead system or the distribution box or manhole, or the top of the pole of the distribution line, to the point of connection with the customer's outlet or wiring. Conduit used for underground service conductors shall be included herein." This subaccount is for underground services only, which can include brackets, cables and wires, conduit, insulators, inspection, overhead to underground connections, permits, pavement, suspension wire, service switch, and protection of street openings, as they pertain to underground services.

#### **Adjustment**

No adjustment is proposed.

**Calculation of Depreciation Parameters**

Account	369.2	Total Annual Accrual	\$1,473,478
Survivor Curve	45-R2.5	Composite Remaining Life	32.87
Net Salvage	-20%	Theoretical Reserve	\$18,471,837
Book Reserve	\$20,106,639	Accrual Rate	2.58%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2016	\$ 3,753,881	45.00	1.26	\$ 47,283	44.53	\$ 167,151,511
2015	3,329,490	45.00	3.77	125,563	43.59	145,118,401
2014	2,737,718	45.00	6.27	171,702	42.65	116,758,471
2013	2,887,056	45.00	8.76	252,915	41.71	120,433,198
2012	1,077,541	45.00	11.24	121,076	40.79	43,948,977
2011	1,542,803	45.00	13.70	211,337	39.86	61,500,993
2010	1,358,687	45.00	16.15	219,374	38.95	52,914,373
2009	1,308,069	45.00	18.58	243,026	38.03	49,749,614
2008	2,042,168	45.00	21.00	428,781	37.13	75,818,267
2007	1,999,612	45.00	23.40	467,846	36.23	72,438,310
2006	2,549,561	45.00	25.78	657,265	35.33	90,082,768
2005	2,001,412	45.00	28.14	563,283	34.45	68,940,414
2004	2,154,225	45.00	30.49	656,829	33.57	72,309,051
2003	2,512,683	45.00	32.82	824,579	32.69	82,149,000
2002	3,120,884	45.00	35.12	1,096,102	31.83	99,335,961
2001	2,359,884	45.00	37.41	882,720	30.97	73,092,820
2000	2,035,796	45.00	39.67	807,540	30.12	61,328,078
1999	1,920,399	45.00	41.91	804,769	29.29	56,239,113
1998	2,268,929	45.00	44.12	1,001,089	28.45	64,560,994
1997	921,681	45.00	46.31	426,851	27.63	25,468,760
1996	544,395	45.00	48.48	263,912	26.82	14,601,085
1995	796,883	45.00	50.62	403,371	26.02	20,733,314
1994	1,162,906	45.00	52.73	613,238	25.23	29,334,319
1993	1,050,353	45.00	54.82	575,799	24.44	25,673,433
1992	612,160	45.00	56.88	348,188	23.67	14,490,188
1991	719,573	45.00	58.91	423,896	22.91	16,484,669
1990	760,493	45.00	60.91	463,229	22.16	16,851,075
1989	808,291	45.00	62.88	508,282	21.42	17,312,493
1988	997,123	45.00	64.82	646,376	20.69	20,631,441
1987	648,586	45.00	66.73	432,823	19.97	12,955,493
1986	1,176,650	45.00	68.61	807,305	19.27	22,675,313
1985	1,251,307	45.00	70.45	881,600	18.58	23,248,815
1984	1,053,568	45.00	72.26	761,323	17.90	18,860,949
1983	101,802	45.00	74.03	75,367	17.24	1,754,843
1982	280,055	45.00	75.77	212,188	16.59	4,645,406
1981	358,850	45.00	77.46	277,973	15.95	5,724,270
1980	309,634	45.00	79.12	244,971	15.33	4,747,139
1979	229,724	45.00	80.73	185,449	14.73	3,383,224
1978	3,121	45.00	82.29	2,568	14.14	44,129
1977	10,202	45.00	83.82	8,551	13.57	138,427
1976	1,210	45.00	85.29	1,032	13.02	15,753
1975	55,267	45.00	86.72	47,927	12.48	689,751
1974	85,130	45.00	88.10	74,996	11.96	1,018,511
1973	103,949	45.00	89.42	92,953	11.47	1,191,959
1972	60,745	45.00	90.70	55,094	10.99	667,494
1971	24,492	45.00	91.92	22,513	10.53	257,898
1970	7,605	45.00	93.09	7,079	10.09	76,738
1969	1,069	45.00	94.21	1,007	9.67	10,336
1967	1,686	45.00	96.30	1,624	8.89	14,988
1966	4,803	45.00	97.27	4,672	8.52	40,938
1965	2,157	45.00	98.19	2,118	8.18	17,639
1964	1,629	45.00	99.08	1,614	7.85	12,782
1963	851	45.00	99.91	850	7.53	6,407
1962	916	45.00	100.72	923	7.23	6,626
1961	827	45.00	101.49	840	6.94	5,743
1960	2,045	45.00	102.22	2,091	6.67	13,633
1959	2,545	45.00	102.94	2,620	6.40	16,285
1958	307	45.00	103.62	319	6.14	1,888
1957	346	45.00	104.29	361	5.89	2,039
1956	1,329	45.00	104.95	1,395	5.64	7,503
1955	1,182	45.00	105.59	1,248	5.40	6,386
1954	675	45.00	106.21	717	5.17	3,493
1953	435	45.00	106.83	465	4.94	2,151
1952	858	45.00	107.44	922	4.71	4,042
1951	90	45.00	108.03	97	4.49	404
1950	22	45.00	108.62	24	4.27	93
<b>Total</b>	<b>\$ 57,120,322</b>			<b>\$ 18,471,837</b>		<b>\$ 1,877,720,584</b>

**Account 370.0 - Meters**

This account is for meters. Per the FERC Uniform System of Accounts, "This account shall include the cost installed of meters or devices and appurtenances thereto, for use in measuring the electricity delivered to its users, whether actually in service or held in reserve." This includes labor of first installation, alternating current, watt-hour meters, current limiting device, demand indicators, demand meters, maximum demand meters, meter fittings, connections, and shelves, meter switches and cut-outs, instrument transformers, etc. This account excludes Advanced Metering Infrastructure ("AMI") equipment.

**Adjustment**

No adjustment is proposed.

**Calculation of Depreciation Parameters**

Account	370					Total Annual Accrual	\$2,896,656
Survivor Curve	16-R1					Composite Remaining Life	11.46
Net Salvage	10%					Theoretical Reserve	\$9,335,914
Book Reserve	(\$288,419)					Accrual Rate	7.92%
Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life	
2016	\$ 2,942,042	16.00	2.07	\$ 60,952	15.63	\$ 45,989,079	
2015	3,630,690	16.00	6.17	224,135	14.90	54,106,424	
2014	1,296,606	16.00	10.20	132,255	14.19	18,394,498	
2013	1,615,732	16.00	14.16	228,768	13.48	21,784,719	
2012	4,126,187	16.00	18.06	745,049	12.79	52,773,677	
2011	8,068,092	16.00	21.90	1,766,935	12.11	97,677,295	
2010	3,185,232	16.00	25.69	818,232	11.43	36,417,369	
2009	1,568,749	16.00	29.41	461,377	10.77	16,897,727	
2008	992,684	16.00	33.05	328,118	10.12	10,049,735	
2007	907,189	16.00	36.60	332,073	9.49	8,611,496	
2006	1,130,561	16.00	40.05	452,823	8.88	10,038,792	
2005	1,598,297	16.00	43.39	693,495	8.29	13,243,960	
2004	1,109,870	16.00	46.61	517,287	7.71	8,561,708	
2003	756,764	16.00	49.70	376,142	7.16	5,421,251	
2002	856,731	16.00	52.68	451,302	6.64	5,684,561	
2001	531,110	16.00	55.53	294,913	6.13	3,254,869	
2000	552,416	16.00	58.26	321,821	5.64	3,117,396	
1999	545,602	16.00	60.87	332,100	5.18	2,825,635	
1998	300,954	16.00	63.37	190,703	4.73	1,424,978	
1997	175,835	16.00	65.75	115,620	4.31	757,900	
1996	161,409	16.00	68.04	109,820	3.90	630,200	
1995	132,072	16.00	70.22	92,742	3.52	464,400	
1994	127,643	16.00	72.31	92,296	3.15	401,478	
1993	81,715	16.00	74.30	60,715	2.79	228,063	
1992	78,429	16.00	76.20	59,767	2.45	192,343	
1991	26,646	16.00	78.02	20,790	2.13	56,735	
1990	33,270	16.00	79.76	26,536	1.82	60,577	
1989	16,512	16.00	81.42	13,444	1.53	25,195	
1988	4,149	16.00	83.03	3,445	1.24	5,143	
1987	9,620	16.00	84.67	8,145	0.95	9,124	
1986	4,767	16.00	86.33	4,116	0.65	3,108	
<b>Total</b>	<b>\$ 36,567,578</b>			<b>\$ 9,335,914</b>		<b>\$ 419,109,436</b>	



**Account 370.1 AMI - Meters**

This account is for Advanced Metering Infrastructure (AMI) meters. Per the FERC Uniform System of Accounts, "This account shall include the cost installed of meters or devices and appurtenances thereto, for use in measuring the electricity delivered to its users, whether actually in service or held in reserve. " This includes labor of first installation, alternating current, watt-hour meters, current limiting device, demand indicators, demand meters, maximum demand meters, meter fittings, connections, and shelves, meter switches and cut-outs, instrument transformers, etc, as they pertain to AMI equipment.

**Adjustment**

No adjustment is proposed.

**Calculation of Depreciation Parameters**

Account	370 AMI				Total Annual Accrual	\$1,985,123
Survivor Curve	15-R1				Composite Remaining Life	11.82
Net Salvage	0%				Theoretical Reserve	\$8,858,910
Book Reserve	\$18,329,633				Accrual Rate	4.75%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2015	\$ 383,245	15.00	7.31	\$ 28,013	13.90	\$ 5,328,478
2013	215,891	15.00	16.75	36,154	12.49	2,696,048
2012	41,195,806	15.00	21.35	8,794,743	11.80	486,015,939
<b>Total</b>	<b>\$ 41,794,941</b>			<b>\$ 8,858,910</b>		<b>\$ 494,040,466</b>

**Account 373 - Street Lighting and Signal Systems**

This account is for street lighting and signal systems. Per the FERC Uniform System of Accounts, "This account shall include the cost installed of equipment used wholly for public street and highway lighting or traffic, fire alarm, police, and other signal systems." This includes automatic control equipment, conductors, lamps, municipal inspection, lamp posts, permits, series contactors, switches, etc.

**Adjustment**

No adjustment is proposed.

**Calculation of Depreciation Parameters**

Account	373	Total Annual Accrual	\$3,122,217			
Survivor Curve	23-R0.5	Composite Remaining Life	15.85			
Net Salvage	-20%	Theoretical Reserve	\$28,174,468			
Book Reserve	\$41,162,451	Accrual Rate	4.13%			
Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2016	\$ 8,479,166	23.00	1.61	\$ 136,424	22.69	\$ 192,406,022
2015	3,477,849	23.00	4.83	168,082	22.07	76,768,943
2014	2,605,160	23.00	8.04	209,395	21.46	55,905,261
2013	2,806,197	23.00	11.22	314,956	20.85	58,505,868
2012	1,410,176	23.00	14.39	202,948	20.24	28,544,204
2011	1,926,448	23.00	17.54	337,963	19.64	37,830,670
2010	2,275,297	23.00	20.68	470,515	19.04	43,313,615
2009	2,293,907	23.00	23.80	545,973	18.44	42,295,383
2008	3,349,037	23.00	26.91	901,159	17.84	59,755,635
2007	3,311,595	23.00	30.00	993,383	17.25	57,126,839
2006	4,668,541	23.00	33.07	1,543,669	16.66	77,789,448
2005	3,758,274	23.00	36.11	1,357,068	16.08	60,429,846
2004	3,181,661	23.00	39.12	1,244,739	15.50	49,320,705
2003	2,577,955	23.00	42.10	1,085,387	14.93	38,489,713
2002	2,140,454	23.00	45.05	964,184	14.37	30,750,261
2001	2,783,293	23.00	47.95	1,334,511	13.81	38,437,591
2000	2,413,510	23.00	50.80	1,226,180	13.26	32,008,942
1999	2,245,833	23.00	53.62	1,204,118	12.72	28,575,233
1998	3,136,377	23.00	56.38	1,768,191	12.19	38,246,357
1997	1,813,789	23.00	59.09	1,071,725	11.67	21,175,759
1996	1,732,197	23.00	61.75	1,069,569	11.17	19,340,456
1995	1,754,839	23.00	64.35	1,129,278	10.67	18,716,809
1994	1,336,104	23.00	66.91	893,927	10.18	13,596,790
1993	1,206,632	23.00	69.41	837,476	9.70	11,700,907
1992	1,008,155	23.00	71.85	724,407	9.23	9,303,101
1991	1,413,670	23.00	74.25	1,049,690	8.77	12,395,358
1990	1,053,248	23.00	76.60	806,805	8.32	8,760,929
1989	1,438,103	23.00	78.90	1,134,712	7.88	11,327,721
1988	903,542	23.00	81.16	733,318	7.44	6,726,198
1987	755,472	23.00	83.38	629,880	7.02	5,303,154
1986	528,608	23.00	85.55	452,238	6.60	3,490,085
1985	455,393	23.00	87.69	399,356	6.19	2,819,704
1984	389,155	23.00	89.81	349,493	5.79	2,251,955
1983	281,509	23.00	91.90	258,698	5.39	1,516,326
1982	199,410	23.00	93.97	187,379	4.99	994,982
1981	123,035	23.00	96.03	118,148	4.59	565,288
1980	102,304	23.00	98.09	100,348	4.20	429,665
1979	70,874	23.00	100.15	70,984	3.80	269,582
1978	47,679	23.00	102.24	48,749	3.40	162,259
1977	38,813	23.00	104.37	40,508	3.00	116,298
1976	3,845	23.00	106.54	4,096	2.58	9,922
1975	16,330	23.00	108.77	17,762	2.15	35,147
1974	15,694	23.00	111.07	17,431	1.71	26,860
1973	12,522	23.00	113.42	14,202	1.26	15,797
1972	4,704	23.00	115.72	5,444	0.82	3,858
<b>Total</b>	<b>\$ 75,546,351</b>			<b>\$ 28,174,468</b>		<b>\$ 1,197,555,447</b>

**Account 390 – Structures and Improvements**

This account is for Structures and Improvements for general plant. Per the FERC Uniform System of Accounts, “This account shall include the cost in place of structures and improvements used for utility purposes, the cost of which is not properly includible in other structures and improvements accounts.” This includes structures and improvements for buildings not related to other plants.

**Account 390 Fitting Analysis Results**

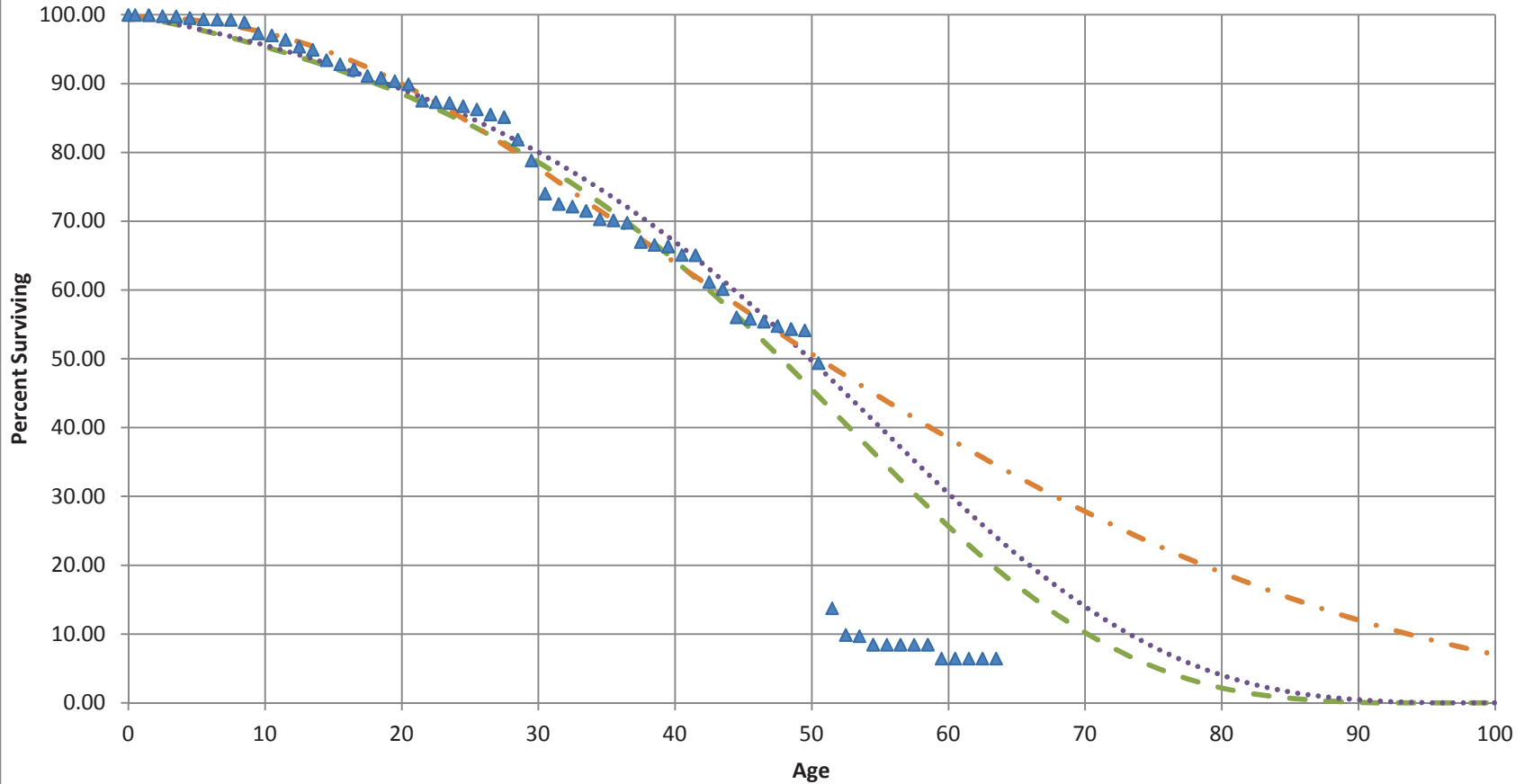
<b>Iowa Curve</b>	<b>Average Service Life</b>	<b>SSD</b>
L1	54.5	108.94
S0	51.3	154.48
S0.5	49.4	157.88
L0.5	57.6	226.52
R1.5	47.3	237.91
L1.5	52.0	282.36
R1	49.2	359.13
S1	48.0	440.61
R2	46.1	479.23
L0	62.1	551.10
R0.5	53.3	787.34
L2	50.4	857.57
S1.5	47.1	973.97
R2.5	45.6	1150.67
O2	67.4	1239.49
O1	60.1	1253.55
O3	95.6	1490.29
O4	127.4	1611.95
L2.5	49.0	1637.83
S2	46.5	1823.38
R3	45.3	2248.39
S2.5	46.1	2813.65
L3	48.0	2903.52
S3	45.9	4109.14
R4	45.4	5212.45
L4	46.5	6065.33
S4	45.9	8064.21
L5	46.5	10208.23
R5	46.1	10517.71
S5	46.4	12738.75
S6	47.3	17682.29
SQ	127.4	31868.68
Gulf Proposal Curve 46-R1.5		319.69
BCA Proposal Curve 48-R1.5		261.81

# Account 390 - Structures and Improvements

Original & Smooth Survivor Curves

Placements 1900-2014

Experience 1986-2014



▲ Original Curve

— Gulf Proposal 46-R1.5

..... BCA Proposal 48-R1.5

- . - Best Fit 54-L1

**Calculation of Depreciation Parameters**

Account 390  
 Survivor Curve 48-R1.5  
 Net Salvage -5%  
 Book Reserve \$31,641,511

Total Annual Accrual \$1,691,657  
 Composite Remaining Life 33.59  
 Theoretical Reserve \$26,561,318  
 Accrual Rate 2.01%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2016	\$ 4,517,073	48.00	0.90	\$ 40,643	47.59	\$ 214,961,555
2015	1,079,363	48.00	2.69	29,083	46.77	50,479,918
2014	9,852,700	48.00	4.48	441,275	45.95	452,757,013
2013	465,726	48.00	6.25	29,120	45.14	21,023,656
2012	2,085,400	48.00	8.02	167,162	44.34	92,457,510
2011	1,407,172	48.00	9.77	137,461	43.53	61,260,339
2010	2,725,873	48.00	11.51	313,768	42.74	116,498,215
2009	2,756,738	48.00	13.24	365,055	41.95	115,635,206
2008	3,822,832	48.00	14.96	572,016	41.16	157,346,666
2007	6,740,332	48.00	16.67	1,123,835	40.38	272,160,616
2006	808,229	48.00	18.37	148,493	39.60	32,006,701
2005	212,043	48.00	20.06	42,539	38.83	8,233,457
2004	577,015	48.00	21.74	125,437	38.06	21,962,471
2003	378,164	48.00	23.41	88,511	37.30	14,105,669
2002	1,209,147	48.00	25.06	303,025	36.54	44,186,464
2001	767,012	48.00	26.71	204,835	35.79	27,452,718
2000	116,828	48.00	28.34	33,107	35.05	4,094,266
1999	675,288	48.00	29.96	202,316	34.30	23,165,116
1998	176,581	48.00	31.57	55,745	33.57	5,927,552
1997	65,514	48.00	33.17	21,728	32.84	2,151,379
1996	217,814	48.00	34.75	75,688	32.11	6,995,061
1995	113,006	48.00	36.32	41,042	31.40	3,548,062
1994	235,723	48.00	37.87	89,278	30.69	7,233,422
1993	537,556	48.00	39.42	211,879	29.98	16,116,808
1992	200,049	48.00	40.94	81,901	29.28	5,858,277
1991	394,763	48.00	42.45	167,578	28.59	11,287,904
1990	189,775	48.00	43.94	83,394	27.91	5,296,895
1989	1,551,192	48.00	45.42	704,556	27.24	42,248,959
1988	1,249,272	48.00	46.88	585,654	26.57	33,192,335
1987	22,419,064	48.00	48.32	10,833,139	25.91	580,885,882
1986	4,403,948	48.00	49.74	2,190,715	25.26	111,242,532
1985	1,788,530	48.00	51.15	914,812	24.62	44,029,454
1984	702,779	48.00	52.53	369,199	23.98	16,855,751
1983	40,775	48.00	53.90	21,977	23.36	952,502
1982	4,741,196	48.00	55.25	2,619,278	22.75	107,839,013
1981	239,141	48.00	56.57	135,282	22.14	5,294,449
1980	930,469	48.00	57.87	538,495	21.54	20,045,604
1979	584,965	48.00	59.16	346,038	20.96	12,259,445
1978	1,767,858	48.00	60.42	1,068,059	20.38	36,031,646
1977	6,045	48.00	61.65	3,727	19.82	119,782
1976	33,065	48.00	62.87	20,788	19.26	636,833
1975	200,271	48.00	64.06	128,296	18.71	3,748,032
1974	537,731	48.00	65.23	350,766	18.18	9,776,078
1973	416,006	48.00	66.38	276,132	17.66	7,345,119
1970	6,121	48.00	69.67	4,265	16.15	98,855
1969	22,925	48.00	70.72	16,214	15.67	359,208
1964	1,634	48.00	75.62	1,236	13.43	21,949
1961	246	48.00	78.28	193	12.21	3,010
1960	33,404	48.00	79.12	26,430	11.83	395,137
1958	9,541	48.00	80.75	7,704	11.09	105,779
1956	272	48.00	82.29	224	10.38	2,820
1955	2,558	48.00	83.04	2,124	10.04	25,674
1954	28,536	48.00	83.77	23,905	9.70	276,926
1953	4	48.00	84.49	3	9.38	34
1952	1,200	48.00	85.19	1,022	9.06	10,864
1949	200,848	48.00	87.22	175,173	8.13	1,632,784
<b>Total</b>	<b>\$ 84,247,313</b>			<b>\$ 26,561,318</b>		<b>\$ 2,829,639,373</b>

**Account 392.1 - Automobiles**

This sub account is for Automobiles. Per the FERC Uniform System of Accounts, "This account shall include the cost of transportation vehicles used for utility purposes."

**Adjustment**

No adjustment is proposed.

**Calculation of Depreciation Parameters**

Account	392.1					Total Annual Accrual	\$2,459
Survivor Curve	7-R4					Composite Remaining Life	3.59
Net Salvage	15%					Theoretical Reserve	\$12,372
Book Reserve	\$16,553					Accrual Rate	8.24%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2013	\$ 29,848	7.00	41.45	\$ 12,372	3.59	\$ 107,048
<b>Total</b>	<b>\$ 29,848</b>			<b>\$ 12,372</b>	<b>3.586431251</b>	<b>\$ 107,048</b>

**Account 392.2 - Transportation Equipment - Light Trucks**

This sub account is for Light Trucks in Transportation Equipment. Per the FERC Uniform System of Accounts, "This account shall include the cost of transportation vehicles used for utility purposes."

**Account 392.2 Fitting Analysis Results**

<b>Iowa Curve</b>	<b>Average Service Life</b>	<b>SSD</b>
R4	11.9	102.81
L4	12.2	215.59
S3	12.0	241.86
R3	11.7	257.80
S4	12.1	300.16
S2.5	12.0	398.18
L5	12.2	457.30
R2.5	11.7	598.03
R5	12.1	663.74
S2	12.0	683.85
L3	12.5	694.14
S5	12.2	923.95
S1.5	12.0	1074.73
L2.5	12.6	1079.20
R2	11.6	1142.20
S1	12.0	1605.69
L2	12.8	1642.09
R1.5	11.5	1844.33
S6	12.3	1885.06
S0.5	12.0	2218.18
L1.5	12.9	2258.57
R1	11.5	2746.87
S0	12.1	2967.72
L1	13.1	3049.96
L0.5	13.4	3719.44
R0.5	11.9	3898.73
L0	14.0	4485.60
O1	12.6	5159.12
O2	14.2	5175.56
O3	20.3	6109.95
O4	27.2	6511.92
SQ	27.2	26591.10

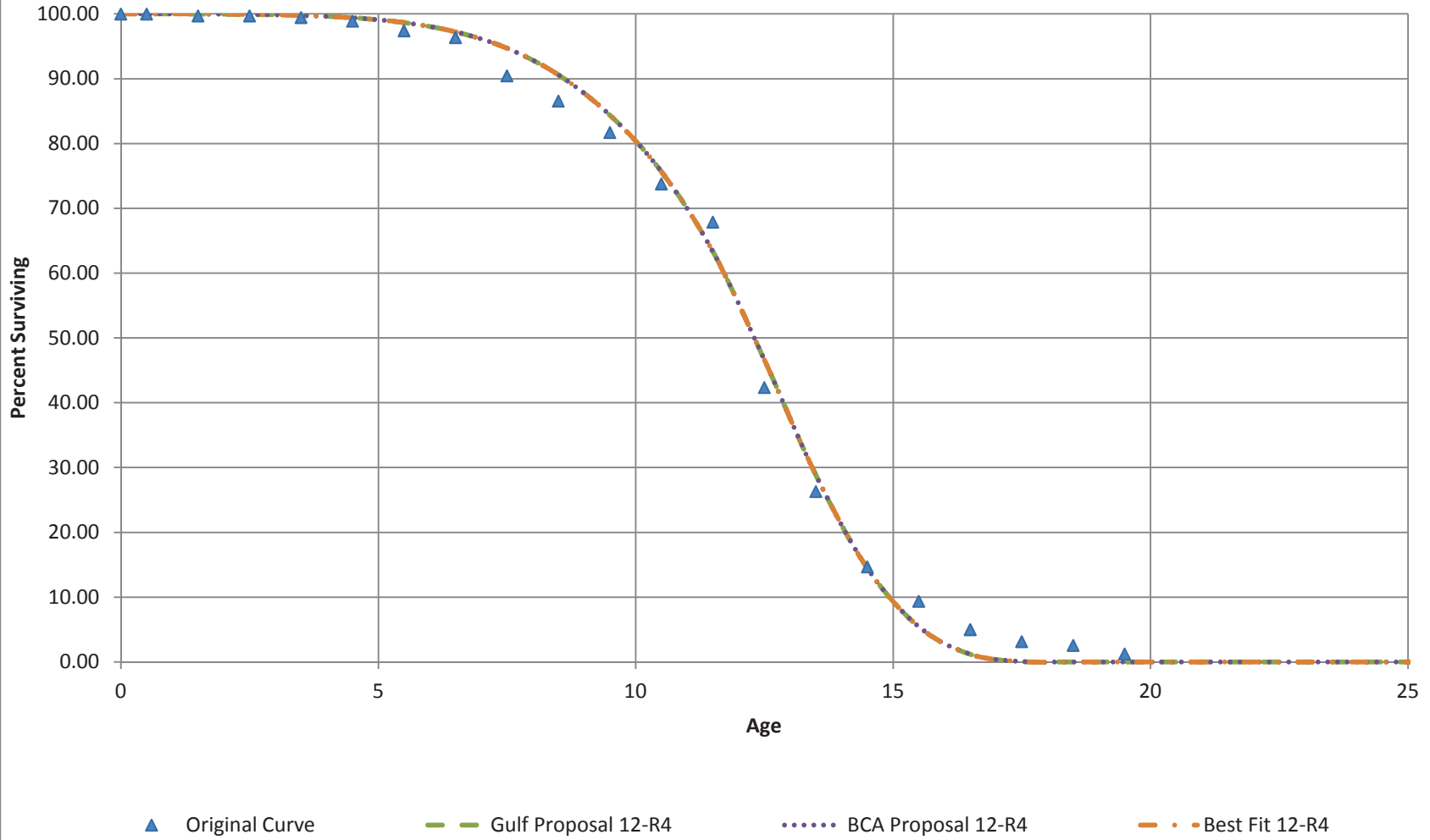
Gulf Proposal Curve 12-R4	108.15
BCA Proposal Curve 12-R4	108.15

# Account 392.2 - Transportation Equipment - Light Trucks

## Original & Smooth Survivor Curves

Placements 1985-2014

Experience 1998-2014





**Calculation of Depreciation Parameters**

Account	392.2		Total Annual Accrual	\$1,321,248
Survivor Curve	12-R4		Composite Remaining Life	2.21
Net Salvage	5%		Theoretical Reserve	\$5,826,354
Book Reserve	\$4,220,267		Accrual Rate	17.57%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2016	\$ 739,079	12.00	3.95	\$ 29,220	11.50	\$ 8,499,856
2003	6,458,323	12.00	85.24	5,505,311	1.23	7,959,106
2000	321,851	12.00	90.67	291,823	0.55	176,030
<b>Total</b>	<b>\$ 7,519,254</b>			<b>\$ 5,826,354</b>		<b>\$ 16,634,991</b>

**Account 392.3 - Transportation Equipment - Heavy Trucks**

This sub account is for Heavy Trucks in Transportation Equipment. Per the FERC Uniform System of Accounts, "This account shall include the cost of transportation vehicles used for utility purposes."

**Account 392.3 Fitting Analysis Results**

<b>Iowa Curve</b>	<b>Average Service Life</b>	<b>SSD</b>
L4	13.0	95.90
S4	12.9	208.05
L5	12.9	245.78
R4	12.7	276.43
S3	12.8	336.25
R3	12.5	579.73
S2.5	12.8	606.85
R5	12.8	629.14
S5	12.8	763.11
L3	13.2	1025.81
R2.5	12.4	1032.69
S2	12.7	1046.67
S1.5	12.6	1638.71
R2	12.3	1754.81
L2.5	13.2	1776.50
S6	12.8	1785.63
S1	12.5	2426.71
R1.5	12.2	2691.16
L2	13.2	2785.33
S0.5	12.4	3349.17
L1.5	13.1	3825.37
R1	12.0	3912.20
S0	12.2	4472.07
L1	13.0	5090.79
R0.5	11.9	5641.16
L0.5	13.1	6221.00
L0	13.2	7524.57
O1	11.7	7800.43
O2	13.4	8326.16
O3	17.7	11356.99
O4	23.2	12815.27
SQ	23.2	63877.04

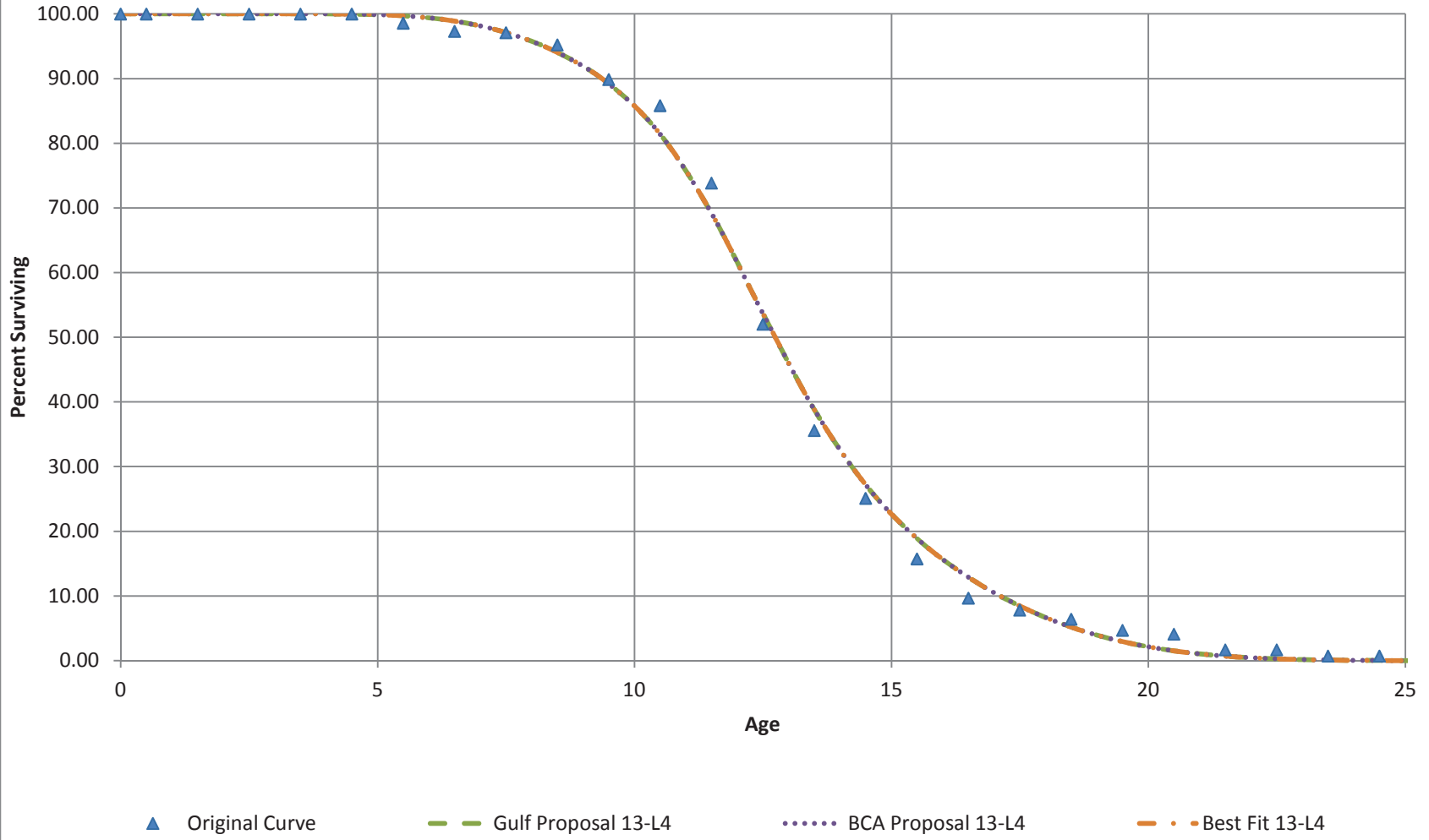
Gulf Proposal Curve 13-L4	96.75
Gulf Proposal Curve 13-L4	96.75

# Account 392.3 - Transportation Equipment - Heavy Trucks

Original & Smooth Survivor Curves

Placements 1981-2014

Experience 1999-2014



**Calculation of Depreciation Parameters**

Account	392.3		Total Annual Accrual	\$2,195,338
Survivor Curve	13-L4		Composite Remaining Life	3.18
Net Salvage	15%		Theoretical Reserve	\$15,745,698
Book Reserve	\$13,863,301		Accrual Rate	8.95%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2016	\$ 1,667,454	13.00	3.27	\$ 54,513	12.50	\$ 20,843,180
2003	22,413,620	13.00	68.57	15,369,109	2.51	56,320,096
2000	435,028	13.00	72.01	313,247	1.99	864,525
1997	11,631	13.00	75.91	8,829	1.39	16,171
<b>Total</b>	<b>\$ 24,527,733</b>			<b>\$ 15,745,698</b>		<b>\$ 78,043,972</b>

**Account 392.4 - Transportation Equipment - Trailers**

This sub account is for Trailers in Transportation Equipment. Per the FERC Uniform System of Accounts, "This account shall include the cost of transportation vehicles used for utility purposes."

**Account 392.4 Fitting Analysis Results**

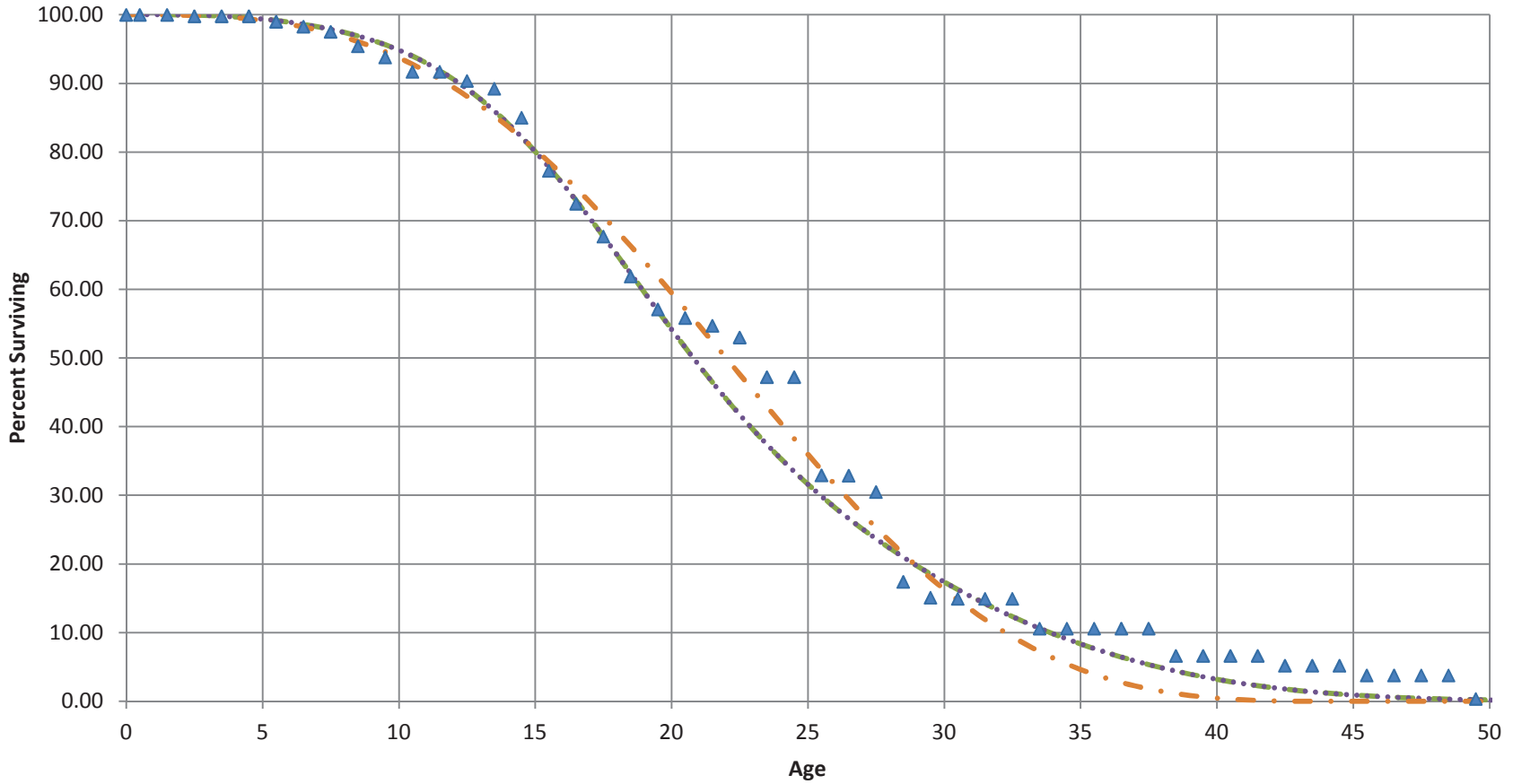
<b>Iowa Curve</b>	<b>Average Service Life</b>	<b>SSD</b>
S1.5	22.3	301.62
S1	22.2	379.22
L2.5	22.9	418.44
R2	21.9	437.02
L2	23.1	489.69
S2	22.4	539.84
R1.5	21.7	677.15
R2.5	22.1	684.23
L3	22.8	748.70
S0.5	22.1	782.72
L1.5	23.1	910.63
S2.5	22.5	1065.42
R1	21.5	1371.05
R3	22.4	1376.78
S0	22.0	1508.18
L1	23.2	1705.86
S3	22.6	1872.39
L0.5	23.6	2601.31
R0.5	21.5	2681.40
L4	22.8	2851.38
R4	22.7	3630.59
L0	24.1	3743.37
O1	21.8	4548.09
O2	24.6	4713.88
S4	22.8	4887.94
L5	22.9	6103.69
O3	33.1	6917.66
R5	23.0	7550.54
O4	43.2	8002.63
S5	23.0	8735.46
S6	23.2	12623.49
SQ	43.2	67610.55
Gulf Proposal Curve 22-L2.5		661.65
BCA Proposal Curve 22-L2.5		661.65

# Account 392.4 - Transportation Equipment - Trailers

Original & Smooth Survivor Curves

Placements 1949-2014

Experience 1999-2014



▲ Original Curve      - - Gulf Proposal 22-L2.5      ..... BCA Proposal 22-L2.5      - . Best Fit 22-S1.5

**Calculation of Depreciation Parameters**

Account 392.4  
 Survivor Curve 22-L2.5  
 Net Salvage 8%  
 Book Reserve \$709,817

Total Annual Accrual \$49,260  
 Composite Remaining Life 10.26  
 Theoretical Reserve \$648,547  
 Accrual Rate 3.73%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2016	\$ 137,558	22.00	2.09	\$ 2,876	21.50	\$ 2,957,502
2012	7,600	22.00	18.45	1,402	17.59	133,665
2003	555,515	22.00	48.48	269,304	10.41	5,781,456
2002	2,479	22.00	50.74	1,258	9.87	24,462
2000	85,948	22.00	54.43	46,778	8.99	772,256
1999	16,917	22.00	55.87	9,452	8.64	146,155
1998	48,836	22.00	57.09	27,881	8.35	407,669
1997	27,507	22.00	58.13	15,989	8.10	222,809
1996	4,736	22.00	59.03	2,795	7.89	37,341
1995	58,679	22.00	59.84	35,113	7.69	451,264
1994	102,709	22.00	60.62	62,258	7.50	770,809
1993	120,185	22.00	61.39	73,787	7.32	879,594
1991	9,375	22.00	63.06	5,912	6.92	64,873
1990	76,918	22.00	63.97	49,204	6.70	515,582
1988	46,129	22.00	65.90	30,399	6.24	287,898
1982	19,301	22.00	71.73	13,844	4.85	93,577
1981	405	22.00	72.61	294	4.64	1,876
<b>Total</b>	<b>\$ 1,320,796</b>			<b>\$ 648,547</b>		<b>\$ 13,548,790</b>

**Account 396 - Power Operated Equipment**

This account is for Power Operated Equipment. Per the FERC Uniform System of Accounts, “This account shall include the cost of power operated equipment used in construction or repair work exclusive of equipment includible in other accounts. Include, also, the tools and accessories acquired for use with such equipment and the vehicle on which such equipment is mounted.” This includes large units as are generally self-propelled or mounted on movable equipment, such as bulldozers, forklifts, and other equipment not licensed for public roadways.

**Account 396 Fitting Analysis Results**

Iowa Curve	Average Service Life	SSD
L0	25.0	1452.98
L0.5	24.2	1483.20
O2	26.1	1587.78
R0.5	22.4	1592.44
O1	23.2	1595.16
L1	23.6	1716.16
O3	34.7	1764.30
S0	22.4	1778.70
O4	45.0	1919.49
R1	22.0	1926.38
L1.5	23.1	2180.29
S0.5	22.3	2256.12
R1.5	22.0	2608.04
L2	22.8	2942.51
S1	22.2	2979.52
R2	22.0	3623.57
S1.5	22.2	3935.93
L2.5	22.5	4050.67
R2.5	22.2	5077.75
S2	22.2	5137.99
L3	22.2	5477.67
S2.5	22.2	6529.38
R3	22.4	6861.69
S3	22.3	8146.22
L4	22.1	9937.71
R4	22.9	10956.73
S4	22.6	13121.76
L5	22.2	14991.45
R5	23.3	17105.53
S5	23.0	18816.61
S6	22.0	24013.11
SQ	45.0	39199.07
Gulf Proposal Curve 16-R4		22395.01
BCA Proposal Curve 18-R4		16962.32

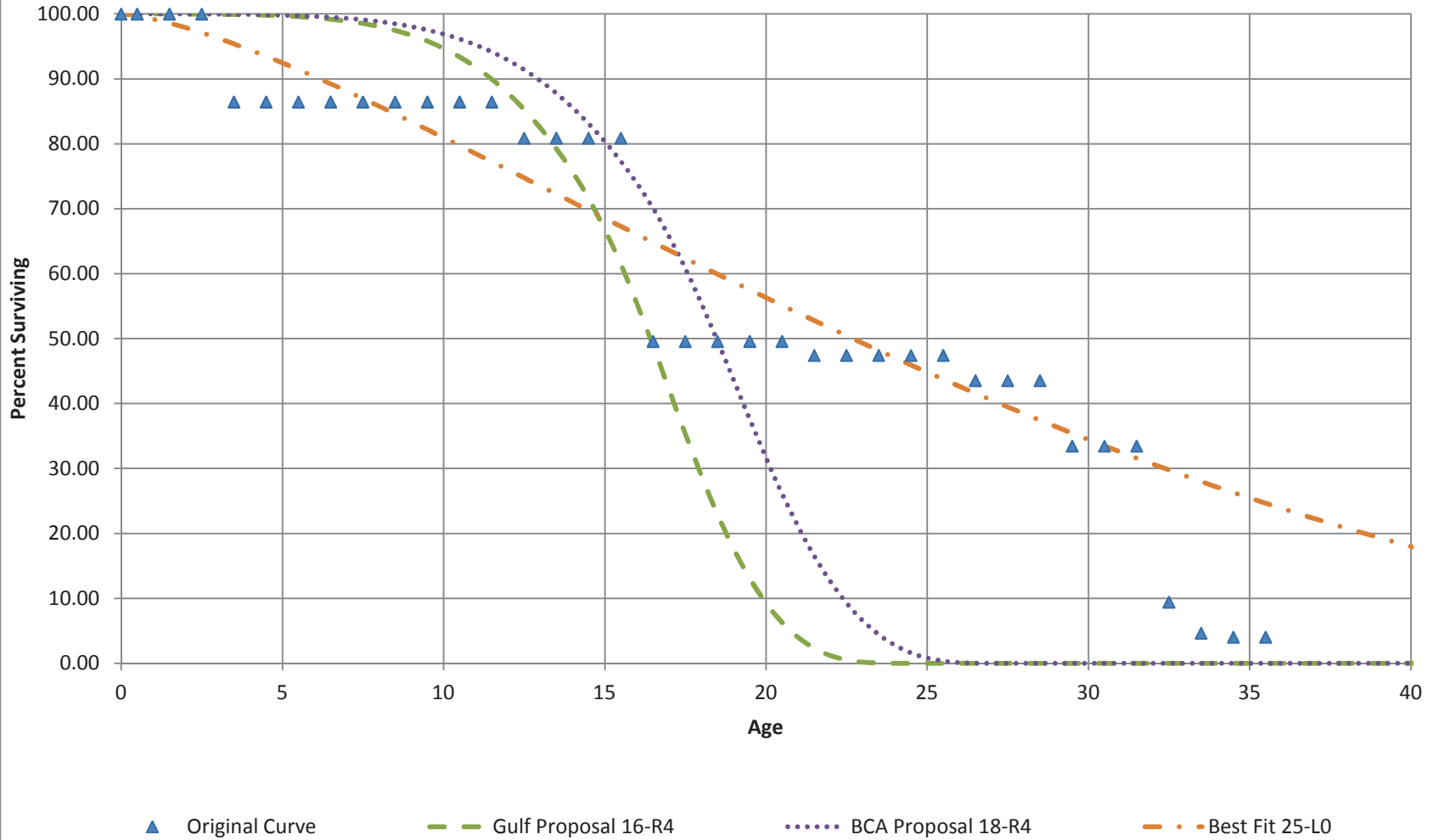


# Account 396 - Power Operated Equipment

Original & Smooth Survivor Curves

Placements 1955-2014

Experience 1994-2014



**Calculation of Depreciation Parameters**

Account 396  
 Survivor Curve 18-R4  
 Net Salvage 20%  
 Book Reserve \$671,383

Total Annual Accrual \$12,786  
 Composite Remaining Life 5.80  
 Theoretical Reserve \$505,337  
 Accrual Rate 1.37%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2013	\$ 3,754	18.00	15.50	\$ 582	14.51	\$ 54,483
2012	28,169	18.00	19.90	5,606	13.52	380,918
2011	173,846	18.00	24.26	42,184	12.54	2,180,098
2010	132,485	18.00	28.58	37,867	11.57	1,532,712
2004	8,391	18.00	52.28	4,387	6.24	52,341
2002	42,324	18.00	58.87	24,915	4.76	201,253
1999	61,183	18.00	67.14	41,081	2.89	176,968
1998	329,204	18.00	69.19	227,775	2.43	800,730
1993	26,262	18.00	75.79	19,904	0.95	24,892
1988	372	18.00	80.00	297	0.00	-
1985	16,748	18.00	80.00	13,398	0.00	-
1984	496	18.00	80.00	397	0.00	-
1983	1,569	18.00	80.00	1,255	0.00	-
1979	2,028	18.00	80.00	1,622	0.00	-
1900	105,084	18.00	80.00	84,067	0.00	-
<b>Total</b>	<b>\$ 931,916</b>			<b>\$ 505,337</b>		<b>\$ 5,404,396</b>

**Account 397 - Communication Equipment**

This account is for Communication Equipment. Per the FERC Uniform System of Accounts, "This account shall include the cost installed of telephone, telegraph, and wireless equipment for general use in connection with utility operations." This includes equipment like antennae, booths, cables, distributing boards, extension cords, poles and fixtures used wholly for telephone or telegraph wire, towers, and underground conduit used wholly for telephone or telegraph wires and cable wires.

**Account 397 Fitting Analysis Results**

<b>Iowa Curve</b>	<b>Average Service Life</b>	<b>SSD</b>
S0	16.1	114.73
S0.5	16.3	119.64
L1.5	16.6	120.63
L1	16.5	227.30
R1	16.0	277.07
L2	16.7	324.93
S1	16.4	405.67
R1.5	16.2	466.66
R0.5	15.8	517.32
L0.5	16.6	607.73
L2.5	16.7	842.02
S1.5	16.5	956.47
R2	16.4	1055.02
L0	16.7	1231.04
O1	15.4	1322.35
L3	16.7	1705.65
S2	16.6	1776.21
O2	17.1	1798.81
R2.5	16.5	1936.40
S2.5	16.6	2714.79
R3	16.6	3197.02
S3	16.6	3879.55
O3	21.1	4151.85
L4	16.7	4640.18
O4	26.6	5652.86
R4	16.6	5902.30
S4	16.6	7094.55
L5	16.6	7936.40
R5	16.5	9467.54
S5	16.5	10342.67
S6	16.4	13230.76
SQ	26.6	69128.83

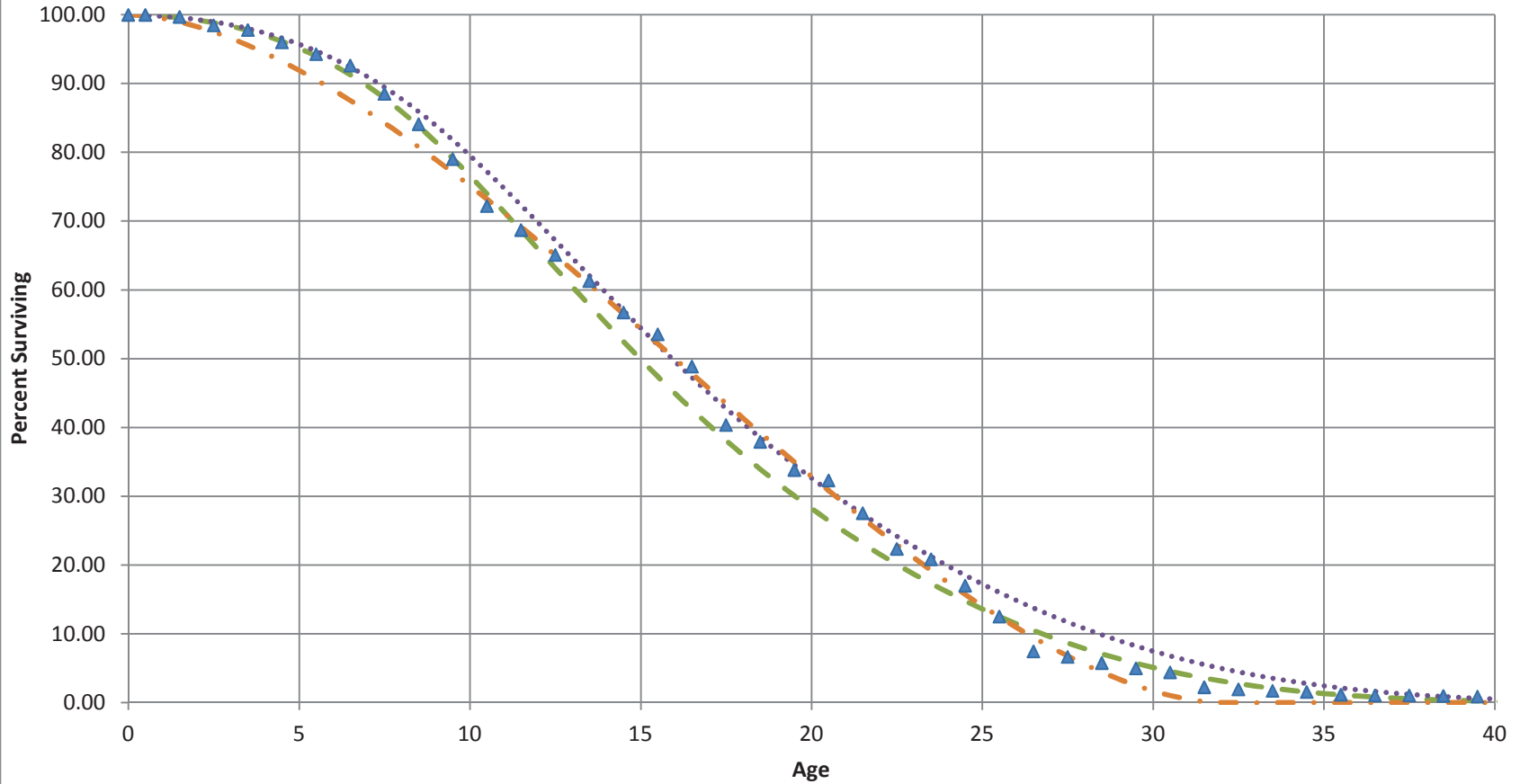
Gulf Proposal Curve 16-L1.5	245.27
BCA Proposal Curve 17-L1.5	167.79

# Account 397 - Communication Equipment

Original & Smooth Survivor Curves

Placements 1947-2014

Experience 1989-2014



▲ Original Curve

— Gulf Proposal 16-L1.5

..... BCA Proposal 17-L1.5

-.-.- Best Fit 16-S0

**Calculation of Depreciation Parameters**

Account 397  
Survivor Curve 17-L1.5  
Net Salvage 0%  
Book Reserve \$9,823,909

Total Annual Accrual \$1,280,521  
Composite Remaining Life 11.48  
Theoretical Reserve \$7,959,834  
Accrual Rate 5.22%

Year Installed	Surviving Balance	Average Life	Rate	Theoretical Reserve Amount	Remaining Life	\$*Remaining Life
2016	\$ 4,129,000	17.00	2.84	\$ 117,335	16.52	\$ 68,198,299
2015	1,347,260	17.00	8.41	113,270	15.57	20,977,835
2014	2,582,823	17.00	13.74	354,946	14.66	37,873,915
2013	1,038,023	17.00	18.80	195,106	13.80	14,329,584
2012	1,984,735	17.00	23.54	467,255	13.00	25,797,171
2011	403,941	17.00	27.98	113,019	12.24	4,945,682
2010	900,461	17.00	32.10	289,073	11.54	10,393,582
2009	2,150,351	17.00	35.86	771,173	10.90	23,446,019
2008	1,452,371	17.00	39.22	569,608	10.33	15,006,974
2007	617,319	17.00	42.18	260,382	9.83	6,067,932
2006	830,763	17.00	44.80	372,151	9.38	7,796,396
2005	440,217	17.00	47.13	207,486	8.99	3,956,428
2004	45,897	17.00	49.24	22,597	8.63	396,091
2003	115,175	17.00	51.15	58,914	8.30	956,435
2002	442,649	17.00	52.93	234,292	8.00	3,542,069
2001	224,999	17.00	54.61	122,870	7.72	1,736,188
2000	9,123	17.00	56.22	5,129	7.44	67,890
1999	172,964	17.00	57.80	99,977	7.17	1,240,776
1998	520,688	17.00	59.36	309,072	6.91	3,597,476
1997	250,057	17.00	60.90	152,289	6.65	1,662,050
1996	3,572,320	17.00	62.44	2,230,393	6.39	22,812,771
1995	272,389	17.00	63.96	174,212	6.13	1,669,018
1994	9,801	17.00	65.46	6,416	5.87	57,545
1993	289,810	17.00	66.94	194,009	5.62	1,628,629
1992	80,677	17.00	68.40	55,180	5.37	433,450
1991	314,289	17.00	69.82	219,422	5.13	1,612,727
1990	116,162	17.00	71.20	82,707	4.90	568,749
1989	99,180	17.00	72.54	71,949	4.67	462,931
1988	3,111	17.00	73.85	2,298	4.45	13,831
1987	47,150	17.00	75.11	35,416	4.23	199,471
1986	20,252	17.00	76.34	15,461	4.02	81,457
1982	38,780	17.00	80.88	31,364	3.25	126,079
1974	5,732	17.00	88.35	5,064	1.98	11,349
<b>Total</b>	<b>\$ 24,528,470</b>			<b>\$ 7,959,834</b>		<b>\$ 281,666,800</b>

**Table 2**  
**Reserve Imbalance**

Account	Book Reserve	Gulf		BCA		Difference Gulf vs. BCA
		Theoretical Reserve	Reserve Imbalance	Theoretical Reserve	Reserve Imbalance	
353	\$ 33,409,988	\$ 44,761,649	\$ (11,351,661)	\$ 38,782,427	\$ (5,372,439)	\$ (5,979,222)
354	24,879,312	23,268,888	1,610,424	21,659,251	3,220,061	(1,609,638)
355	28,946,820	47,321,011	(18,374,191)	52,900,799	(23,953,979)	5,579,788
358	8,392,435	7,442,406	950,029	6,988,786	1,403,649	(453,620)
361	8,307,855	7,179,948	1,127,907	6,937,867	1,369,988	(242,080)
364	79,425,237	67,451,759	11,973,478	67,776,229	11,649,008	324,471
390	31,641,511	28,098,547	3,542,964	26,561,318	5,080,193	(1,537,229)
396	671,383	532,879	138,504	505,337	166,046	(27,542)
397	9,823,909	8,266,595	1,557,314	7,959,834	1,864,074	(306,760)
<b>Total</b>	<b>\$ 225,498,450</b>	<b>\$ 234,323,681</b>	<b>\$ (8,825,231)</b>	<b>\$ 230,071,849</b>	<b>\$ (4,573,399)</b>	<b>\$ (4,251,833)</b>

### **Benchmarking**

This section contains the results of a benchmarking exercise that was performed to ensure that the resulting depreciation parameters for each account calculated by the BCA Model match the parameters calculated by the Gannett Fleming software used by Mr. Dane Watson on behalf of Gulf. Additionally this exercise ensured no errors were made on behalf of Mr. Watson. As is shown below the two models only differ by \$3,517 (0.00%) out of \$74.3 million of depreciation expense for these accounts. This benchmarking exercise proves that the BCA Model is an accurate and acceptable tool for calculating depreciation expense and depreciation rates.

During this benchmarking exercise, it was discovered that Mr. Watson calculated the depreciation parameters for Account 390 utilizing the incorrect survivor curve. The Account 390 depreciation parameters proposed by Mr. Watson are indicative of the 45-R1.5, not the 46-R1.5 survivor curve that is recommended by the Gulf Depreciation Study.

Table 3 - Benchmarking Exercise

Comparison of Gulf & BCA

Depreciation Models

Account	Composite Remaining Life			Theoretical Reserve			Total Annual Accrual		
	Gulf	BCA	Delta	Gulf	BCA	Delta	Gulf	BCA	Delta
350.1	27.66	27.66	0.00	\$ 7,270,108	\$ 7,270,194	\$ 86	\$ 193,211	\$ 193,214	\$ 3
352 <sup>1</sup>	46.65	46.65	0.00	3,879,607	3,890,209	\$ 10,602	419,779	419,779	\$ (0)
353	33.49	33.49	0.00	44,761,649	44,756,184	\$ (5,466)	7,215,956	7,215,785	\$ (171)
354	30.79	30.79	0.00	23,268,888	23,268,617	\$ (271)	908,837	908,829	\$ (8)
355	35.30	35.30	0.00	47,321,011	47,326,251	\$ 5,240	10,597,785	10,597,941	\$ 156
356	42.14	42.14	0.00	25,293,966	25,290,442	\$ (3,525)	3,158,157	3,158,075	\$ (82)
358	24.16	24.16	0.00	7,442,406	7,442,334	\$ (72)	248,729	248,726	\$ (3)
359	42.00	42.09	0.09	55,781	55,396	\$ (386)	4,381	4,371	\$ (9)
<b>Total Transmission</b>				<b>\$ 151,967,528</b>	<b>\$ 151,974,037</b>	<b>\$ 6,509</b>	<b>\$ 22,549,244</b>	<b>\$ 22,549,135</b>	<b>\$ (108)</b>
360.1	44.50	44.59	0.09	38,979	38,642	(337)	3,726	3,718	(8)
361	37.06	37.06	0.00	7,179,948	7,179,879	(68)	524,225	524,224	(2)
362	28.03	28.04	0.01	61,464,238	61,457,066	(7,172)	6,641,352	6,641,077	(275)
364	23.94	23.95	0.00	67,451,759	67,438,346	(13,412)	6,948,834	6,948,311	(522)
365	32.53	32.53	0.00	63,664,644	63,640,015	(24,629)	5,458,007	5,457,814	(193)
366	27.34	27.34	0.00	686,392	686,400	9	13,060	13,060	0
367	30.52	30.52	0.00	46,476,590	46,475,682	(907)	3,864,802	3,864,776	(26)
368	24.96	24.97	0.00	83,899,805	83,881,394	(18,411)	9,600,819	9,600,141	(678)
369.1	29.46	29.46	0.00	32,389,783	32,386,834	(2,949)	2,386,736	2,386,644	(93)
369.2	32.87	32.87	0.00	18,472,024	18,471,837	(186)	1,473,483	1,473,478	(5)
370	11.46	11.46	0.00	9,339,691	9,335,914	(3,777)	2,897,120	2,896,656	(464)
370 AMI	11.82	11.82	0.00	8,864,118	8,858,910	(5,208)	1,985,437	1,985,123	(314)
373	15.85	15.85	0.00	28,184,724	28,174,468	(10,256)	3,122,730	3,122,217	(513)
<b>Total Distribution</b>				<b>\$ 428,073,714</b>	<b>\$ 427,986,747</b>	<b>\$ (86,967)</b>	<b>\$ 44,916,606</b>	<b>\$ 44,913,520</b>	<b>\$ (3,085)</b>
390 <sup>2</sup>	30.71	30.71	0.00	28,098,547	28,090,325	(8,222)	1,850,197	1,850,136	(62)
396	4.56	4.56	0.00	532,879	532,861	(18)	16,247	16,246	(1)
397	10.61	10.61	0.00	8,266,595	8,265,650	(945)	1,386,219	1,386,139	(81)
<b>Total General</b>				<b>\$ 36,898,021</b>	<b>\$ 36,888,837</b>	<b>\$ (9,184)</b>	<b>\$ 3,252,664</b>	<b>\$ 3,252,520</b>	<b>\$ (144)</b>
392.1	3.59	3.59	0.00	12,359	12,372	13	2,456	2,459	2
392.2	2.21	2.21	0.00	5,826,541	5,826,354	(187)	1,321,436	1,321,248	(187)
392.3	3.18	3.18	0.00	15,745,694	15,745,698	4	2,195,336	2,195,338	2
392.4	10.26	10.26	0.00	648,487	648,547	59	49,255	49,260	5
<b>Total Transportation</b>				<b>\$ 22,220,722</b>	<b>\$ 22,220,599</b>	<b>\$ (123)</b>	<b>\$ 3,566,027</b>	<b>\$ 3,565,847</b>	<b>\$ (180)</b>
<b>Total</b>				<b>\$ 639,159,984</b>	<b>\$ 639,070,220</b>	<b>\$ (89,764)</b>	<b>\$ 74,284,540</b>	<b>\$ 74,281,023</b>	<b>\$ (3,517)</b>

<sup>1</sup>Account 352 includes Smith Reg Asset Adjustment

<sup>2</sup>Account 390 parameters were calculated using a 45-R1.5 survivor curve, not the 46-R1.5 survivor curve that is recommended by Gulf.



Simulated Plant Record Analysis  
Gulf Power

Docket Nos. 160186-EI / 160170-EI  
Depreciation  
Exhibit BCA-2, Page 1 of 10

Account: 364

Version: Gulf Power SPR @ 2014

Method: Simulated Balances

No. of Test Points: 93      Interval: 0      Observation Band: 1922 - 2014

Dispersion	Avg Service Life	Sum of Squared Differences	Index of Variation	Conformance Index	Retirement Experience Index
L0	36.1	4.29E+14	72.6937	13.76	98.52
<b>R0.5</b>	<b>33.0</b>	<b>4.35E+14</b>	<b>73.1714</b>	<b>13.67</b>	<b>100.00</b>
L0.5	33.6	4.91E+14	77.7281	12.87	99.62
R1	31.1	5.05E+14	78.8459	12.68	100.00
S0	31.1	5.51E+14	82.3403	12.14	100.00
L1	31.8	5.60E+14	83.0288	12.04	100.00
R1.5	29.7	5.61E+14	83.1178	12.03	100.00
S0.5	29.7	6.04E+14	86.2368	11.60	100.00
L1.5	30.4	6.16E+14	87.1005	11.48	100.00
R2	28.7	6.21E+14	87.4546	11.43	100.00
S1	29.0	6.61E+14	90.2004	11.09	100.00
R2.5	27.9	6.65E+14	90.5010	11.05	100.00
L2	29.3	6.78E+14	91.3802	10.94	100.00
S1.5	28.2	6.96E+14	92.5702	10.80	100.00
L2.5	28.6	7.13E+14	93.6989	10.67	100.00
R3	27.2	7.14E+14	93.7096	10.67	100.00
S2	27.5	7.35E+14	95.1320	10.51	100.00
L3	27.9	7.54E+14	96.3341	10.38	100.00
S2.5	27.1	7.56E+14	96.4446	10.37	100.00
R4	26.3	7.71E+14	97.3897	10.27	100.00
S3	26.7	7.79E+14	97.9152	10.21	100.00
L4	26.6	7.92E+14	98.7027	10.13	100.00
S4	26.0	8.06E+14	99.5908	10.04	100.00
R5	25.9	8.09E+14	99.7799	10.02	100.00
L5	26.1	8.12E+14	99.9531	10.00	100.00
S5	25.9	8.16E+14	100.1837	9.98	100.00
S6	25.8	8.25E+14	100.7731	9.92	100.00
SQ	28.1	1.36E+15	129.1805	7.74	100.00

Simulated Plant Record Analysis  
Gulf Power

Docket Nos. 160186-EI / 160170-EI  
Depreciation  
Exhibit BCA-2, Page 2 of 10

Account: 364

Version: Gulf Power SPR @ 2014

Method: Simulated Balances

No. of Test Points: 90      Interval: 0      Observation Band: 1925 - 2014

Dispersion	Avg Service Life	Sum of Squared Differences	Index of Variation	Conformance Index	Retirement Experience Index
L0	36.1	4.29E+14	71.5122	13.98	98.52
<b>R0.5</b>	<b>33.0</b>	<b>4.35E+14</b>	<b>71.9822</b>	<b>13.89</b>	<b>100.00</b>
L0.5	33.6	4.91E+14	76.4648	13.08	99.62
R1	31.1	5.05E+14	77.5645	12.89	100.00
S0	31.1	5.51E+14	81.0021	12.35	100.00
L1	31.8	5.60E+14	81.6794	12.24	100.00
R1.5	29.7	5.61E+14	81.7669	12.23	100.00
S0.5	29.7	6.04E+14	84.8353	11.79	100.00
L1.5	30.4	6.16E+14	85.6848	11.67	100.00
R2	28.7	6.21E+14	86.0332	11.62	100.00
S1	29.0	6.61E+14	88.7344	11.27	100.00
R2.5	27.9	6.65E+14	89.0301	11.23	100.00
L2	29.3	6.78E+14	89.8950	11.12	100.00
S1.5	28.2	6.96E+14	91.0657	10.98	100.00
L2.5	28.6	7.13E+14	92.1761	10.85	100.00
R3	27.2	7.14E+14	92.1866	10.85	100.00
S2	27.5	7.35E+14	93.5859	10.69	100.00
L3	27.9	7.54E+14	94.7684	10.55	100.00
S2.5	27.1	7.56E+14	94.8771	10.54	100.00
R4	26.3	7.71E+14	95.8069	10.44	100.00
S3	26.7	7.79E+14	96.3238	10.38	100.00
L4	26.6	7.92E+14	97.0985	10.30	100.00
S4	26.0	8.06E+14	97.9721	10.21	100.00
R5	25.9	8.09E+14	98.1582	10.19	100.00
L5	26.1	8.12E+14	98.3286	10.17	100.00
S5	25.9	8.16E+14	98.5554	10.15	100.00
S6	25.8	8.25E+14	99.1352	10.09	100.00
SQ	28.1	1.36E+15	127.0810	7.87	100.00

Simulated Plant Record Analysis  
Gulf Power

Docket Nos. 160186-EI / 160170-EI  
Depreciation  
Exhibit BCA-2, Page 3 of 10

Account: 364

Version: Gulf Power SPR @ 2014

Method: Simulated Balances

No. of Test Points: 80      Interval: 0      Observation Band: 1935 - 2014

Dispersion	Avg Service Life	Sum of Squared Differences	Index of Variation	Conformance Index	Retirement Experience Index
L0	36.1	4.29E+14	67.5106	14.81	98.52
<b>R0.5</b>	<b>33.0</b>	<b>4.35E+14</b>	<b>67.9542</b>	<b>14.72</b>	<b>100.00</b>
L0.5	33.6	4.91E+14	72.1862	13.85	99.62
R1	31.1	5.05E+14	73.2243	13.66	100.00
S0	31.1	5.51E+14	76.4697	13.08	100.00
L1	31.8	5.60E+14	77.1091	12.97	100.00
R1.5	29.7	5.61E+14	77.1917	12.95	100.00
S0.5	29.7	6.04E+14	80.0884	12.49	100.00
L1.5	30.4	6.16E+14	80.8905	12.36	100.00
R2	28.7	6.21E+14	81.2193	12.31	100.00
S1	29.0	6.61E+14	83.7694	11.94	100.00
R2.5	27.9	6.65E+14	84.0486	11.90	100.00
L2	29.3	6.78E+14	84.8651	11.78	100.00
S1.5	28.2	6.96E+14	85.9703	11.63	100.00
L2.5	28.6	7.13E+14	87.0185	11.49	100.00
R3	27.2	7.14E+14	87.0284	11.49	100.00
S2	27.5	7.35E+14	88.3494	11.32	100.00
L3	27.9	7.54E+14	89.4658	11.18	100.00
S2.5	27.1	7.56E+14	89.5684	11.16	100.00
R4	26.3	7.71E+14	90.4462	11.06	100.00
S3	26.7	7.79E+14	90.9342	11.00	100.00
L4	26.6	7.92E+14	91.6655	10.91	100.00
S4	26.0	8.06E+14	92.4903	10.81	100.00
R5	25.9	8.09E+14	92.6660	10.79	100.00
L5	26.1	8.12E+14	92.8268	10.77	100.00
S5	25.9	8.16E+14	93.0409	10.75	100.00
S6	25.8	8.25E+14	93.5883	10.69	100.00
SQ	28.1	1.36E+15	119.9704	8.34	100.00

Simulated Plant Record Analysis  
Gulf Power

Docket Nos. 160186-EI / 160170-EI  
Depreciation  
Exhibit BCA-2, Page 4 of 10

Account: 364

Version: Gulf Power SPR @ 2014

Method: Simulated Balances

No. of Test Points: 70      Interval: 0      Observation Band: 1945 - 2014

Dispersion	Avg Service Life	Sum of Squared Differences	Index of Variation	Conformance Index	Retirement Experience Index
L0	36.1	4.29E+14	63.3290	15.79	98.52
<b>R0.5</b>	<b>33.0</b>	<b>4.35E+14</b>	<b>63.7450</b>	<b>15.69</b>	<b>100.00</b>
L0.5	33.6	4.91E+14	67.7152	14.77	99.62
R1	31.1	5.05E+14	68.6888	14.56	100.00
S0	31.1	5.51E+14	71.7332	13.94	100.00
L1	31.8	5.60E+14	72.3331	13.82	100.00
R1.5	29.7	5.61E+14	72.4104	13.81	100.00
S0.5	29.7	6.04E+14	75.1277	13.31	100.00
L1.5	30.4	6.16E+14	75.8799	13.18	100.00
R2	28.7	6.21E+14	76.1882	13.13	100.00
S1	29.0	6.61E+14	78.5802	12.73	100.00
R2.5	27.9	6.65E+14	78.8418	12.68	100.00
L2	29.3	6.78E+14	79.6078	12.56	100.00
S1.5	28.2	6.96E+14	80.6443	12.40	100.00
L2.5	28.6	7.13E+14	81.6274	12.25	100.00
R3	27.2	7.13E+14	81.6364	12.25	100.00
S2	27.5	7.35E+14	82.8756	12.07	100.00
L3	27.9	7.54E+14	83.9224	11.92	100.00
S2.5	27.1	7.56E+14	84.0187	11.90	100.00
R4	26.3	7.71E+14	84.8415	11.79	100.00
S3	26.7	7.79E+14	85.2993	11.72	100.00
L4	26.6	7.92E+14	85.9850	11.63	100.00
S4	26.0	8.06E+14	86.7582	11.53	100.00
R5	25.9	8.09E+14	86.9228	11.50	100.00
L5	26.1	8.12E+14	87.0737	11.48	100.00
S5	25.9	8.15E+14	87.2744	11.46	100.00
S6	25.8	8.25E+14	87.7878	11.39	100.00
SQ	28.1	1.36E+15	112.5369	8.89	100.00

Simulated Plant Record Analysis  
Gulf Power

Docket Nos. 160186-EI / 160170-EI  
Depreciation  
Exhibit BCA-2, Page 5 of 10

Account: 364

Version: Gulf Power SPR @ 2014

Method: Simulated Balances

No. of Test Points: 60      Interval: 0      Observation Band: 1955 - 2014

Dispersion	Avg Service Life	Sum of Squared Differences	Index of Variation	Conformance Index	Retirement Experience Index
L0	36.1	4.29E+14	59.0861	16.92	98.52
<b>R0.5</b>	<b>33.0</b>	<b>4.34E+14</b>	<b>59.4769</b>	<b>16.81</b>	<b>100.00</b>
L0.5	33.6	4.90E+14	63.1771	15.83	99.62
R1	31.1	5.04E+14	64.0847	15.60	100.00
S0	31.1	5.50E+14	66.9220	14.94	100.00
L1	31.8	5.59E+14	67.4827	14.82	100.00
R1.5	29.7	5.60E+14	67.5525	14.80	100.00
S0.5	29.7	6.03E+14	70.0871	14.27	100.00
L1.5	30.4	6.16E+14	70.7904	14.13	100.00
R2	28.7	6.20E+14	71.0715	14.07	100.00
S1	29.0	6.60E+14	73.3038	13.64	100.00
R2.5	27.9	6.64E+14	73.5426	13.60	100.00
L2	29.3	6.77E+14	74.2662	13.47	100.00
S1.5	28.2	6.95E+14	75.2275	13.29	100.00
R3	27.2	7.12E+14	76.1459	13.13	100.00
L2.5	28.6	7.12E+14	76.1476	13.13	100.00
S2	27.5	7.34E+14	77.3079	12.94	100.00
L3	27.9	7.53E+14	78.2869	12.77	100.00
S2.5	27.1	7.54E+14	78.3726	12.76	100.00
R4	26.3	7.69E+14	79.1333	12.64	100.00
S3	26.7	7.78E+14	79.5662	12.57	100.00
L4	26.6	7.90E+14	80.2057	12.47	100.00
S4	26.0	8.04E+14	80.9242	12.36	100.00
R5	25.9	8.07E+14	81.0720	12.33	100.00
L5	26.1	8.10E+14	81.2172	12.31	100.00
S5	25.9	8.14E+14	81.3995	12.29	100.00
S6	25.8	8.23E+14	81.8753	12.21	100.00
SQ	28.1	1.35E+15	104.9633	9.53	100.00

Simulated Plant Record Analysis  
Gulf Power

Docket Nos. 160186-EI / 160170-EI  
Depreciation  
Exhibit BCA-2, Page 6 of 10

Account: 364

Version: Gulf Power SPR @ 2014

Method: Simulated Balances

No. of Test Points: 50      Interval: 0      Observation Band: 1965 - 2014

Dispersion	Avg Service Life	Sum of Squared Differences	Index of Variation	Conformance Index	Retirement Experience Index
L0	36.1	4.20E+14	54.5796	18.32	98.52
<b>R0.5</b>	<b>33.0</b>	<b>4.26E+14</b>	<b>54.9766</b>	<b>18.19</b>	<b>100.00</b>
L0.5	33.6	4.80E+14	58.3540	17.14	99.62
R1	31.1	4.94E+14	59.2063	16.89	100.00
S0	31.1	5.38E+14	61.7970	16.18	100.00
L1	31.8	5.47E+14	62.3071	16.05	100.00
R1.5	29.7	5.48E+14	62.3870	16.03	100.00
S0.5	29.7	5.90E+14	64.7138	15.45	100.00
L1.5	30.7	6.01E+14	65.3390	15.30	100.00
R2	28.7	6.06E+14	65.6042	15.24	100.00
S1	29.0	6.44E+14	67.6465	14.78	100.00
R2.5	27.9	6.49E+14	67.8697	14.73	100.00
L2	29.3	6.62E+14	68.5423	14.59	100.00
S1.5	28.2	6.79E+14	69.4141	14.41	100.00
R3	27.2	6.95E+14	70.2622	14.23	100.00
L2.5	28.6	6.95E+14	70.2670	14.23	100.00
S2	27.5	7.17E+14	71.3301	14.02	100.00
L3	27.9	7.35E+14	72.2329	13.84	100.00
S2.5	27.1	7.36E+14	72.3136	13.83	100.00
R4	26.3	7.51E+14	73.0350	13.69	100.00
S3	26.7	7.59E+14	73.4180	13.62	100.00
L4	26.6	7.71E+14	74.0112	13.51	100.00
S4	26.0	7.86E+14	74.6895	13.39	100.00
R5	25.9	7.89E+14	74.8301	13.36	100.00
L5	26.1	7.91E+14	74.9572	13.34	100.00
S5	25.9	7.95E+14	75.1303	13.31	100.00
S6	25.8	8.04E+14	75.5823	13.23	100.00
SQ	28.1	1.33E+15	97.2369	10.28	100.00

Simulated Plant Record Analysis  
Gulf Power

Docket Nos. 160186-EI / 160170-EI  
Depreciation  
Exhibit BCA-2, Page 7 of 10

Account: 364

Version: Gulf Power SPR @ 2014

Method: Simulated Balances

No. of Test Points: 40      Interval: 0      Observation Band: 1975 - 2014

Dispersion	Avg Service Life	Sum of Squared Differences	Index of Variation	Conformance Index	Retirement Experience Index
L0	36.1	3.83E+14	48.8596	20.47	98.52
<b>R0.5</b>	<b>33.2</b>	<b>3.89E+14</b>	<b>49.1870</b>	<b>20.33</b>	<b>100.00</b>
L0.5	33.9	4.38E+14	52.2098	19.15	99.57
R1	31.2	4.50E+14	52.9381	18.89	100.00
S0	31.1	4.91E+14	55.2736	18.09	100.00
R1.5	29.8	4.98E+14	55.6749	17.96	100.00
L1	31.9	4.99E+14	55.7496	17.94	99.99
S0.5	30.0	5.37E+14	57.8192	17.30	100.00
L1.5	30.5	5.48E+14	58.3843	17.13	100.00
R2	28.8	5.49E+14	58.4824	17.10	100.00
S1	29.0	5.85E+14	60.3699	16.56	100.00
R2.5	28.1	5.86E+14	60.4006	16.56	100.00
L2	29.4	6.01E+14	61.1909	16.34	100.00
S1.5	28.2	6.15E+14	61.8638	16.16	100.00
R3	27.4	6.26E+14	62.4098	16.02	100.00
L2.5	28.7	6.31E+14	62.6554	15.96	100.00
S2	27.5	6.48E+14	63.5096	15.75	100.00
S2.5	27.1	6.64E+14	64.2799	15.56	100.00
L3	27.7	6.64E+14	64.2841	15.56	100.00
R4	26.4	6.70E+14	64.5633	15.49	100.00
S3	26.7	6.82E+14	65.1682	15.34	100.00
L4	26.7	6.91E+14	65.5801	15.25	100.00
R5	26.0	6.98E+14	65.9442	15.16	100.00
S4	26.3	6.99E+14	65.9541	15.16	100.00
S5	25.9	7.03E+14	66.1573	15.12	100.00
L5	26.2	7.03E+14	66.1716	15.11	100.00
S6	25.8	7.09E+14	66.4460	15.05	100.00
SQ	28.1	1.21E+15	86.8145	11.52	100.00

Simulated Plant Record Analysis  
Gulf Power

Docket Nos. 160186-EI / 160170-EI  
Depreciation  
Exhibit BCA-2, Page 8 of 10

Account: 364

Version: Gulf Power SPR @ 2014

Method: Simulated Balances

No. of Test Points: 30      Interval: 0      Observation Band: 1985 - 2014

Dispersion	Avg Service Life	Sum of Squared Differences	Index of Variation	Conformance Index	Retirement Experience Index
L0	36.4	3.29E+14	43.0483	23.23	98.38
<b>R0.5</b>	<b>33.5</b>	<b>3.31E+14</b>	<b>43.1562</b>	<b>23.17</b>	<b>100.00</b>
L0.5	33.9	3.75E+14	45.9438	21.77	99.57
R1	31.2	3.81E+14	46.2859	21.60	100.00
R1.5	30.1	4.19E+14	48.5409	20.60	100.00
S0	31.1	4.19E+14	48.5424	20.60	100.00
L1	32.2	4.28E+14	49.0767	20.38	99.99
S0.5	30.0	4.56E+14	50.6415	19.75	100.00
R2	28.8	4.59E+14	50.7990	19.69	100.00
L1.5	30.8	4.68E+14	51.2850	19.50	100.00
R2.5	28.1	4.86E+14	52.3074	19.12	100.00
S1	29.0	4.96E+14	52.8381	18.93	100.00
L2	29.7	5.15E+14	53.7990	18.59	100.00
R3	27.4	5.19E+14	54.0121	18.51	100.00
S1.5	28.5	5.20E+14	54.0666	18.50	100.00
L2.5	28.7	5.36E+14	54.9211	18.21	100.00
S2	27.8	5.45E+14	55.3821	18.06	100.00
R4	26.7	5.55E+14	55.8901	17.89	100.00
S2.5	27.4	5.57E+14	55.9720	17.87	100.00
L3	28.0	5.63E+14	56.2676	17.77	100.00
S3	27.0	5.71E+14	56.6857	17.64	100.00
L4	26.7	5.81E+14	57.1929	17.48	100.00
R5	26.3	5.82E+14	57.2354	17.47	100.00
S4	26.3	5.84E+14	57.3054	17.45	100.00
S5	26.2	5.87E+14	57.4604	17.40	100.00
L5	26.4	5.90E+14	57.5993	17.36	100.00
S6	26.0	5.93E+14	57.7456	17.32	100.00
SQ	28.1	1.01E+15	75.3683	13.27	100.00



Simulated Plant Record Analysis  
Gulf Power

Docket Nos. 160186-EI / 160170-EI  
Depreciation  
Exhibit BCA-2, Page 9 of 10

Account: 364

Version: Gulf Power SPR @ 2014

Method: Simulated Balances

No. of Test Points: 20      Interval: 0      Observation Band: 1995 - 2014

Dispersion	Avg Service Life	Sum of Squared Differences	Index of Variation	Conformance Index	Retirement Experience Index
<b>R0.5</b>	<b>33.8</b>	<b>2.52E+14</b>	<b>38.1286</b>	<b>26.23</b>	<b>100.00</b>
L0	36.8	2.52E+14	38.1645	26.20	98.23
L0.5	34.6	2.87E+14	40.6877	24.58	99.46
R1	31.8	2.87E+14	40.7092	24.56	100.00
R1.5	30.4	3.14E+14	42.5748	23.49	100.00
S0	31.7	3.16E+14	42.7128	23.41	100.00
L1	32.5	3.26E+14	43.3916	23.05	99.99
S0.5	30.6	3.44E+14	44.5724	22.44	100.00
R2	29.4	3.45E+14	44.6215	22.41	100.00
L1.5	31.1	3.57E+14	45.4135	22.02	100.00
R2.5	28.6	3.69E+14	46.1303	21.68	100.00
S1	29.6	3.75E+14	46.4873	21.51	100.00
S1.5	28.8	3.93E+14	47.6404	20.99	100.00
L2	30.0	3.94E+14	47.6512	20.99	100.00
R3	27.9	3.96E+14	47.7989	20.92	100.00
L2.5	29.3	4.12E+14	48.7348	20.52	100.00
S2	28.1	4.16E+14	48.9949	20.41	100.00
S2.5	27.7	4.27E+14	49.6412	20.14	100.00
R4	26.9	4.28E+14	49.7114	20.12	100.00
L3	28.3	4.33E+14	50.0005	20.00	100.00
S3	27.3	4.41E+14	50.4268	19.83	100.00
L4	27.3	4.48E+14	50.8336	19.67	100.00
R5	26.5	4.51E+14	50.9943	19.61	100.00
S4	26.8	4.53E+14	51.1238	19.56	100.00
S5	26.4	4.54E+14	51.1626	19.55	100.00
L5	26.7	4.56E+14	51.2856	19.50	100.00
S6	26.3	4.58E+14	51.4015	19.45	100.00
SQ	28.1	7.51E+14	65.8373	15.19	100.00

Simulated Plant Record Analysis  
Gulf Power

Docket Nos. 160186-EI / 160170-EI  
Depreciation  
Exhibit BCA-2, Page 10 of 10

Account: 364

Version: Gulf Power SPR @ 2014

Method: Simulated Balances

No. of Test Points: 10      Interval: 0      Observation Band: 2005 - 2014

Dispersion	Avg Service Life	Sum of Squared Differences	Index of Variation	Conformance Index	Retirement Experience Index
L0	39.1	3.79E+13	17.2683	57.91	97.15
<b>R0.5</b>	<b>35.6</b>	<b>3.83E+13</b>	<b>17.3647</b>	<b>57.59</b>	<b>100.00</b>
L0.5	36.4	4.41E+13	18.6338	53.67	99.07
R1	33.5	4.53E+13	18.8807	52.96	100.00
S0	33.4	4.96E+13	19.7764	50.57	100.00
R1.5	32.0	5.11E+13	20.0570	49.86	100.00
L1	34.2	5.18E+13	20.1976	49.51	99.94
S0.5	32.2	5.59E+13	20.9900	47.64	100.00
R2	30.6	5.86E+13	21.4857	46.54	100.00
L1.5	32.7	5.95E+13	21.6518	46.19	99.99
S1	31.1	6.27E+13	22.2200	45.00	100.00
R2.5	29.8	6.42E+13	22.4804	44.48	100.00
L2	31.6	6.82E+13	23.1857	43.13	100.00
S1.5	30.3	6.84E+13	23.2084	43.09	100.00
R3	29.1	7.12E+13	23.6872	42.22	100.00
L2.5	30.5	7.44E+13	24.2043	41.31	100.00
S2	29.5	7.49E+13	24.2980	41.16	100.00
S2.5	29.1	7.96E+13	25.0433	39.93	100.00
L3	29.7	8.13E+13	25.2995	39.53	100.00
R4	28.3	8.26E+13	25.5087	39.20	100.00
S3	28.7	8.51E+13	25.8868	38.63	100.00
L4	28.4	9.11E+13	26.7865	37.33	100.00
S4	27.9	9.37E+13	27.1628	36.82	100.00
R5	27.6	9.73E+13	27.6910	36.11	100.00
L5	27.8	1.00E+14	28.0635	35.63	100.00
S5	27.5	1.03E+14	28.4180	35.19	100.00
S6	27.4	1.15E+14	30.1416	33.18	100.00
SQ	29.8	5.32E+14	64.7494	15.44	100.00

**CERTIFICATE OF SERVICE**  
**Docket Nos. 16-0170-EI, 16-0186-EI**

I **HEREBY CERTIFY** that a true and correct copy of the foregoing Direct Testimony of Michael P. Gorman, Amanda M. Alderson, and Brian C. Andrews has been furnished by electronic mail this 13<sup>th</sup> day of January, 2017 to the following:

**Gulf Power Company**

Robert McGee, Jr.  
One Energy Place  
Pensacola, FL 32520-0780  
[rlmcgee@southernco.com](mailto:rlmcgee@southernco.com)

**Sierra Club**

Diana Csank  
50 F. St. NW, 8<sup>th</sup> Floor  
Washington, DC 20001  
[Diana.csank@sierraclub.org](mailto:Diana.csank@sierraclub.org)

**Beggs & Lane Law Firm**

Jeffrey A. Stone  
Russell Badders  
Steve Griffin  
P.O. Box 12950  
Pensacola, FL 32591-2950  
[jas@beggslane.com](mailto:jas@beggslane.com)

**Office of Public Counsel**

c/o The Florida Legislature  
J.R. Kelly  
Stephanie A. Morse  
111 West Madison Street, Rm 812  
Tallahassee, FL 32399-1400  
[Kelly.jr@leg.state.fl.us](mailto:Kelly.jr@leg.state.fl.us)  
[Morse.stephanie@leg.state.fl.us](mailto:Morse.stephanie@leg.state.fl.us)

**ChargePoint Inc.**

Kevin G. Miller  
254 East Hacienda Ave.  
Campbell, CA 95008  
[Kevin.miller@chargepoint.com](mailto:Kevin.miller@chargepoint.com)

**Earthjustice**

Bradley Marshall  
Alisa Coe  
111 S. Martin Luther King Jr. Blvd.  
Tallahassee FL 32301  
[bmarshall@earthjustice.org](mailto:bmarshall@earthjustice.org)  
[acoe@earthjustice.org](mailto:acoe@earthjustice.org)  
[ruhland@earthjustice.org](mailto:ruhland@earthjustice.org)

**Gardner Law Firm**

Robert Scheffel Wright  
John T. La Via  
1300 Thomaswood Drive  
Tallahassee, FL 32308  
[schef@gbwlegal.com](mailto:schef@gbwlegal.com)  
[jlavia@gbwlegal.com](mailto:jlavia@gbwlegal.com)

**League of Women Voters of Florida**

540 Beverly Court  
Tallahassee, FL 32301

**Southern Alliance for Clean Energy**

P.O. Box 1842  
Knoxville, TN 37901

**WalMart Stores East, LP and Sam's East Inc.**

Steve W. Chriss  
2001 SE 10<sup>th</sup> Street  
Bentonville, AR 72716

**Florida Industrial Power Users Group**

Jon C. Moyle Jr  
Karen A. Putnal  
c/o Moyle Law Firm, PA  
118 North Gadsden Street  
Tallahassee, FL 32301  
[jmoyle@moylelaw.com](mailto:jmoyle@moylelaw.com)  
[kputnal@moylelaw.com](mailto:kputnal@moylelaw.com)

**Federal Executive Agencies**

Maj Andrew Unsicker  
Thomas A. Jernigan  
Capt Lanny Zieman  
Capt Natalie Cepak  
Ebony M. Payton  
AFLOA/JACE-ULFSC  
139 Barnes Drive, Suite 1  
Tyndall AFB, FL 32403-5319  
[Andrew.Unsicker@us.af.mil](mailto:Andrew.Unsicker@us.af.mil)  
[Thomas.Jernigan.3@us.af.mil](mailto:Thomas.Jernigan.3@us.af.mil)  
[Lanny.Zieman.1@us.af.mil](mailto:Lanny.Zieman.1@us.af.mil)  
[Natalie.Cepak.2@us.af.mil](mailto:Natalie.Cepak.2@us.af.mil)  
[Ebony.Payton.ctr@us.af.mil](mailto:Ebony.Payton.ctr@us.af.mil)

/s/ Thomas A. Jernigan

Thomas A. Jernigan  
AFCEC/JA-ULFSC  
139 Barnes Drive, Suite 1  
Tyndall Air Force Base, Florida 32403  
[Thomas.Jernigan.3@us.af.mil](mailto:Thomas.Jernigan.3@us.af.mil)