RAILROAD COMMISSION OF TEXAS

STATEMENT OF INTENT TO CHANGE THE RATE CGS AND RATE PT OF ATMOS PIPELINE – TEXAS	GUD NO. 10580

DIRECT TESTIMONY OF

DAVID J. GARRETT

ON BEHALF OF

THE CITY OF DALLAS

MARCH 22, 2017

TABLE OF CONTENTS

APPENDICES

Appendix A: The Depreciation System

Appendix B: Iowa Curves

Appendix C: Actuarial Analysis

LIST OF EXHIBITS

Exhibit DJG-1 Curriculum Vitae

Exhibit DJG-2 Summary Adjustment

Exhibit DJG-3 Detailed Adjustment

Exhibit DJG-4 Depreciation Rate Development

Exhibit DJG-5 Account 356 – Detailed Curve Fitting Analysis

Exhibit DJG-6 Account 365.20 – Detailed Curve Fitting Analysis

Exhibit DJG-7 Actuarial Observed Life Tables and Iowa Curve Fitting Graphs

Exhibit DJG-8 Remaining Life Development (Average Life Procedure)

Alternative Recommendation (ELG Accelerated Depreciation)

Exhibit DJG-9 Summary Adjustment (ELG Accelerated)

Exhibit DJG-10 Detailed Adjustment (ELG Accelerated)

Exhibit DJG-11 Depreciation Rate Development (ELG Accelerated)

Exhibit DJG-12 Remaining Life Development (ELG Accelerated)

I. INTRODUCTION

Q. State your name and occupation.

A. My name is David J. Garrett. I am a consultant specializing in public utility regulation. I am the managing member of Resolve Utility Consulting, PLLC. I focus my practice on the primary capital recovery mechanisms for public utility companies: cost of capital and depreciation.

Q. Summarize your educational background and professional experience.

A. I received a B.B.A., with a major in Finance, an M.B.A., and a Juris Doctor from the University of Oklahoma. I worked in private legal practice for several years before accepting a position as assistant general counsel at the Oklahoma Corporation Commission in 2011. At the Oklahoma Commission, I worked in the Office of General Counsel in regulatory proceedings. In 2012, I began working for the Public Utility Division as a regulatory analyst providing testimony in regulatory proceedings. After leaving the commission I formed Resolve Utility Consulting, PLLC, where I have represented various consumer groups and state agencies in utility regulatory proceedings, primarily in the areas of cost of capital and depreciation. I am a Certified Depreciation Professional through the Society of Depreciation Professionals. I am also a Certified Rate of Return Analyst through the Society of Utility and Regulatory Financial Analysts. I have testified in many regulatory proceedings on cost of capital, depreciation, and other issues. A more complete

description of my qualifications and regulatory experience is included in my curriculum vitae.[1]

Q. Describe the purpose and scope of your testimony in this proceeding.

A. I am testifying on behalf of the City of Dallas ("Dallas") regarding the depreciation study and proposed depreciation expense of Atmos Pipeline – Texas ("APT" or the "Company"). The depreciation study is sponsored by Company witness Mr. Dane A. Watson of the Alliance Consulting Group.

II. EXECUTIVE SUMMARY

Q. Summarize the key points of your testimony.

A. In the context of utility ratemaking, "depreciation" refers to a cost allocation system designed to measure the rate by which a utility may recover its capital investments in a systematic and rational manner. I employed a well-established depreciation system and used actuarial analysis to statistically analyze the Company's depreciable assets in order to develop reasonable depreciation rates in this case. The table below compares the proposed depreciation accrual amounts by plant function.[2]

[1] Direct Exhibit DJG-1.

[2] *See also* Exhibit DJG-2. The accrual amounts shown are calculated by applying the proposed depreciation rates to plant balances as of the study date. These depreciation rates must be applied to updated plant balances to determine the final expense adjustment.

Figure 1:
Summary Adjustment

Plant Function	Plant Balance	Company Accrual	City of Dallas Accrual	City of Dallas Adjustment
Underground Storage Plant	$ 305,550,724	$ 10,035,700	$ 6,262,204	$ (3,773,496)
Transmission Plant	2,070,119,871	65,722,116	36,657,225	(29,064,891)
General Plant - Depreciated	10,892,894	632,743	490,148	(142,595)
General Plant - Amortized	27,647,361	2,085,808	2,085,808	-
Total Plant Studied	$ 2,414,210,850	$ 78,476,366	$ 45,495,384	**$ (32,980,982)**

The City of Dallas's total adjustment would reduce the Company's proposed annual depreciation accrual by $33 million. I have also included an alternative recommendation that is discussed later in my testimony.

Q. Summarize the primary factors driving your adjustment.

A. While I have proposed different average lives for several accounts based on Iowa curve fitting techniques, the primary driver of my adjustment is the proposal to calculate APT's depreciation rates in this case using the average life procedure instead of the equal life procedure as proposed by Mr. Watson. The differences between these two models will be discussed further below, but in short, the equal life procedure proposed by the Company imposes more costs on current ratepayers than future ratepayers. This statement is not an opinion, but rather a factual, mathematical byproduct of the equal life procedure. By unnecessarily imposing a greater depreciation expense on current customers, the Company has clearly failed to meet its burden of proof in this case to make a convincing showing that tis proposed rates are not excessive. The average life procedure I am proposing provides a more balanced, even application of depreciation rates across generations of ratepayers, which reduces intergenerational inequity and avoids accelerating depreciation

expense for current customers. In addition, the average life procedure is more widely accepted across the country.

Q. Describe why it is important not to overestimate depreciation rates.

A. Under the rate base rate of return model, the utility is allowed to recover the original cost of its prudent investments required to provide service. Depreciation systems are designed to allocate those costs in a systematic and rational manner – specifically, over the service life of the utility's assets. If depreciation rates are overestimated (i.e., service lives are underestimated), it encourages economic inefficiency. Unlike competitive firms, regulated utility companies are not always incentivized by natural market forces to make the most economically efficient decisions.[3] If a utility is allowed to recover the cost of an asset before the end of its useful life, this could incentivize the utility to unnecessarily replace the asset in order to increase rate base, which results in economic waste. Thus, from a public policy perspective, it is preferable for regulators to ensure that assets are not depreciated before the end of their true useful lives. While underestimating the useful lives of depreciable assets could financially harm current ratepayers and encourage economic waste, unintentionally overestimating depreciable lives (i.e., underestimating depreciation rates) does not harm the Company. This is because if an asset's life is overestimated, there are a variety of measures that regulators can use to ensure the utility is not financially harmed. One such measure would be the use of a regulatory asset account. In that case, the Company's original cost investment in these assets would remain in the Company's

[3] An obvious example of this fact can be seen in the very low debt ratios of regulated utilities.

rate base until they are recovered. Thus, the process of depreciation strives for a perfect match between actual and estimated useful life. When these estimates are not exact, however, it is better that useful lives are overestimated rather than underestimated.

III. LEGAL STANDARDS

Q. Discuss the standard by which regulated utilities are allowed to recover depreciation expense.

A. In *Lindheimer v. Illinois Bell Telephone Co.*, the U.S. Supreme Court stated that "depreciation is the loss, not restored by current maintenance, which is due to all the factors causing the ultimate retirement of the property. These factors embrace wear and tear, decay, inadequacy, and obsolescence."[4] The *Lindheimer* Court also recognized that the original cost of plant assets, rather than present value or some other measure, is the proper basis for calculating depreciation expense.[5] Moreover, the *Lindheimer* Court found:

> [T]he company has the burden of making a convincing showing that the amounts it has charged to operating expenses for depreciation have not been excessive. That burden is not sustained by proof that its general accounting system has been correct. The calculations are mathematical, but the predictions underlying them are essentially matters of opinion.[6]

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[4] *Lindheimer v. Illinois Bell Tel. Co.*, 292 U.S. 151, 167 (1934).

[5] *Id*. (Referring to the straight-line method, the *Lindheimer* Court stated that "[a]ccording to the principle of this accounting practice, the loss is computed upon the actual cost of the property as entered upon the books, less the expected salvage, and the amount charged each year is one year's pro rata share of the total amount."). The original cost standard was reaffirmed by the Court in *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591, 606 (1944). The *Hope* Court stated: "Moreover, this Court recognized in [*Lindheimer*], supra, the propriety of basing annual depreciation on cost. By such a procedure the utility is made whole and the integrity of its investment maintained. No more is required."

[6] *Id*. at 169.

Thus, the Commission must ultimately determine if the Company has met its burden of proof by making a convincing showing that its proposed depreciation rates are not excessive.

Q. Should depreciation represent an allocated cost of capital to operation, rather than a mechanism to determine loss of value?

A. Yes. While the *Lindheimer* case and other early literature recognized depreciation as a necessary expense, the language indicated that depreciation was primarily a mechanism to determine loss of value.[7] Adoption of this "value concept" would require annual appraisals of extensive utility plant, and is thus not practical in this context. Rather, the "cost allocation concept" recognizes that depreciation is a cost of providing service, and that in addition to receiving a "return on" invested capital through the allowed rate of return, a utility should also receive a "return of" its invested capital in the form of recovered depreciation expense. The cost allocation concept also satisfies several fundamental accounting principles, including verifiability, neutrality, and the matching principle.[8] The definition of "depreciation accounting" published by the American Institute of Certified Public Accountants ("AICPA") properly reflects the cost allocation concept:

[7] *See* Frank K. Wolf & W. Chester Fitch, *Depreciation Systems* 71 (Iowa State University Press 1994).

[8] National Association of Regulatory Utility Commissioners, *Public Utility Depreciation Practices* 12 (NARUC 1996).

> Depreciation accounting is a system of accounting that aims to distribute cost or other basic value of tangible capital assets, less salvage (if any), over the estimated useful life of the unit (which may be a group of assets) in a systematic and rational manner. It is a process of allocation, not of valuation.[9]

Thus, the concept of depreciation as "the allocation of cost has proven to be the most useful and most widely used concept."[10]

IV. ANALYTIC METHODS

Q. Discuss your approach to analyzing the Company's depreciable property in this case.

A. I obtained and reviewed all of the data that was used to conduct the Company's depreciation study. The depreciation rates proposed by Mr. Watson were developed based on depreciable property recorded as of September 30, 2016. Mr. Watson is also proposing rates for the Company's Shared Services Unit ("SSU"). I am not recommending changes to the proposed rates for the SSU. For the APT division, however, I am recommending adjustments to the Company's proposed rates, as discussed further below.

Q. Discuss the definition and purpose of a depreciation system, as well as the depreciation system you employed for this project.

A. The legal standards set forth above do not mandate a specific procedure for conducting depreciation analysis. These standards, however, direct that analysts use a system for estimating depreciation rates that will result in the "systematic and rational" allocation of capital recovery for the utility. Over the years, analysts have developed "depreciation

[9] American Institute of Accountants, *Accounting Terminology Bulletins Number 1: Review and Résumé* 25 (American Institute of Accountants 1953).

[10] Wolf *supra* n. 7, at 73.

systems" designed to analyze grouped property in accordance with this standard. A depreciation system may be defined by several primary parameters: 1) a method of allocation; 2) a procedure for applying the method of allocation; 3) a technique of applying the depreciation rate; and 4) a model for analyzing the characteristics of vintage property groups.[11] In this case, I used the straight line method, the average life procedure, the remaining life technique, and the broad group model to analyze the Company's actuarial data; this system would be denoted as an "SL-AL-RL-BG" system. This depreciation system conforms to the legal standards set forth above, and is commonly used by depreciation analysts in regulatory proceedings. I provide a more detailed discussion of depreciation system parameters, theories, and equations in Appendix A

Q. Did Mr. Watson use the same depreciation system?

A. No. While both Mr. Watson used the straight line allocation method and the remaining life application technique, we used different grouping procedures. Specifically, I used the average life grouping procedure and Mr. Watson used the equal life grouping procedure.[12]

Q. What are the differences between the average life procedure and the equal life procedure?

A. Essentially, in the average life procedure, a constant accrual rate based on the average life of all property in the group is applied to the surviving property.[13] In the equal life procedure, property is divided into subgroups that each have a common life. I will

[11] *See* Wolf *supra* n. 7, at 70, 140.

[12] *See* Direct Testimony of Dane A. Watson, p. 9:16-18.

[13] Wolf *supra* n. 7, at 74-75.

demonstrate and discuss below why the use of the equal life procedure is especially inappropriate in this case, as it results of millions of dollars of depreciation expense being unnecessarily imposed on current ratepayers for the sole benefit of Company shareholders. To the extent the Commission wants to avoid intergenerational inequity and accelerated depreciation rates for current customers, the Company's proposed rates should not be adopted.

Q. Does use of the equal life procedure result in accelerated depreciation rates for current ratepayers?

A. Yes. Although Mr. Watson and I might disagree on several issues regarding depreciation analyses in this case, this point is not debatable. As noted by Wolf:

> When contrasted with the average life procedure, the equal life group procedure results in annual accruals that are higher during the early years and lower in the later years.[14]

The NARUC *Public Utility Depreciation Practices* also makes the same conclusion about the equal life group ("ELG") procedure:

> [T]he ELG procedure results in annual accruals that are higher during the early years of a vintage's life, thereby causing an increase in depreciation expense and revenue requirements during these years.[15]

In contrast, use of the average life results in the same depreciation rate applied to each age interval.

[14] *Id*. at 93.

[15] NARUC *supra* n. 8 at 176.

Q. Does use of the equal life procedure result in intergeneration inequity?

A. Yes. The depreciation texts cited above clearly state that the equal life accelerated depreciation procedure charges current customers with higher depreciation expense than future customers. Thus, use of the equal life procedure necessarily contemplates intergenerational inequity on its face. In other words, a natural, mathematical byproduct of the equal life procedure is higher depreciation rates for current customers, and lower depreciation rates for future customers. This inequity is exacerbated by realities of ratemaking procedure. Under the equal life procedure, depreciation rates are supposed to go down each subsequent year of an asset's remaining life. This makes sense because current customers are charged higher rates than future customers under the equal life procedure. However, because we do not hold rate cases every year and true up the equal life depreciation rates, it results in current customers being charged with an even higher depreciation expense than what would otherwise be imposed by the equal life procedure. This is the reason why it is preferable to use depreciation systems that result in a consistent, "straight -line" allocation of costs among different generations of customers.

Q. Does use of the average life procedure you have proposed apply the same depreciation through all generations of customers?

A. Yes. Unlike the equal life group procedure proposed by Mr. Watson, the average life procedure avoids intergeneration inequity by applying the same average life through all age intervals. For this reason, use of the average life procedure promotes more fair and reasonable rates, instead of burdening current customers with unnecessarily high depreciation rates.

Q. Provide a specific example from this case of the intergenerational inequity that necessarily results from using the equal life procedure.

A. I will use Account 367.03 (Mains), to demonstrate the inequity that would be imposed on current ratepayers if the equal life procedure is adopted in this case. For this account, Mr. Watson and I used the same plant balance, the same reserve amount, the same net salvage percentage, the same Iowa curve, and the same average life estimate of 70 years. Since there is an original cost of $1.6 billion in this account, a basic, straight-line depreciation accrual would be calculated as follows: $1.6 billion / 70 years = $23 million. In other words, if we simply allocated the current balance in this account over 70 years it would result in an annual depreciation expense of $23 million to ratepayers. Mr. Watson, however, is proposing that the depreciation expense for current customers be based on a remaining life of only 34 years – which is less than half of the service life for these assets. As a result, the annual accrual proposed by Mr. Watson is about twice as what we would expect, at $46 million per year. In other words, Mr. Watson is suggesting that current ratepayers should pay nearly twice the amount that would be required than if the account were simply allocated over the service life of 70 years that Mr. Watson himself has proposed, while future ratepayers pay only a fraction of the cost. Again, this is the very definition of intergenerational inequity, and especially given the substantial size of this account alone, the Company's proposal is entirely inappropriate. Furthermore, even if the Commission were to adopt the equal life procedure in this case, there is no practical way to correctly implement the procedure, as it would require a true up of the rates during each accounting period to reflect the rate decrease that is required under the equal life procedure. Therefore, what the Company is proposing in this case is not even an accurate reflection of

the rates that would be charged by a correct application of the equal life procedure, but rather some kind of distorted accelerated depreciation model.

Q. Do you have any other criticism of Mr. Watson's approach?

A. Yes, although in light of the foregoing discussion, any other criticisms are minor by comparison. I have been involved in several cases with Mr. Watson, and he routinely attempts to discredit my proposals because of the fact that I do not reallocate the theoretical reserve (or "Calculated Accumulated Depreciation" or "CAD") based on my proposed depreciation parameters. The authoritative texts are clear that when using the remaining life technique (as both Mr. Watson and I do), no separate reallocation of the CAD is required or even necessary. According to Wolf:

> Users of remaining life depreciation often do not explicitly calculate the CAD. As previously discussed, calculation of the CAD is implicit in the use of the remaining life method of adjustment, because the variation between the CAD and the accumulated provision for depreciation is automatically amortized over the remaining life.[16]

The NARUC manual also agrees that no separate reallocation of the theoretical reserve is required when using the remaining life technique:

[16] Wolf *supra* n. 7, at 178 (emphasis added).

> The desirability of using the remaining life technique is that any necessary adjustments of depreciation reserves, because of changes to the estimates of life on net salvage, are accrued automatically over the remaining life of the property.[17]

V. ACTUARIAL ANALYSIS

Q. Describe the actuarial process you used to analyze the Company's depreciable property.

A. The study of retirement patterns of industrial property is derived from the actuarial process used to study human mortality. Just as actuarial analysts study historical human mortality data in order to predict how long a group of people will live, depreciation analysts study historical plant data in order to estimate the average lives of property groups. The most common actuarial method used by depreciation analysts is called the "retirement rate method." In the retirement rate method, original property data, including additions, retirements, transfers, and other transactions, are organized by vintage and transaction year.[18] The retirement rate method is ultimately used to develop an "observed life table," ("OLT") which shows the percentage of property surviving at each age interval. This pattern of property retirement is described as a "survivor curve." The survivor curve derived from the observed life table, however, must be fitted and smoothed with a complete curve in order to determine the ultimate average life of the group.[19] The most widely used survivor curves for this curve fitting process were developed at Iowa State University in

[17] NARUC *supra* n. 8, at 65.

[18] The "vintage" year refers to the year that a group of property was placed in service (aka "placement" year). The "transaction" year refers to the accounting year in which a property transaction occurred, such as an addition, retirement, or transfer (aka "experience" year).

[19] *See* Appendix C for a more detailed discussion of the actuarial analysis used to determine the average lives of grouped industrial property.

the early 1900s and are commonly known as the "Iowa curves."[20] A more detailed explanation of how the Iowa curves are used in the actuarial analysis of depreciable property is set forth in Appendix C.

A. Service Life Estimates

Q. Generally describe your approach in estimating the service lives of mass property.

A. I used all of the Company's aged property data to create an observed life table ("OLT") for each account. The data points on the OLT can be plotted to form a curve (the "OLT curve"). The OLT curve is not a theoretical curve, rather, it is actual observed data from the Company's records that indicate the rate of retirement for each property group. An OLT curve by itself, however, is rarely a smooth curve, and is often not a "complete" curve (i.e., it does not end at zero percent surviving). In order to calculate average life (the area under a curve), a complete survivor curve is needed. The Iowa curves are empirically-derived curves based on the extensive studies of the actual mortality patterns of many different types of industrial property. The curve-fitting process involves selecting the best Iowa curve to fit the OLT curve. This can be accomplished through a combination of visual and mathematical curve-fitting techniques, as well as professional judgment. The first step of my approach to curve-fitting involves visually inspecting the OLT curve for any irregularities. For example, if the "tail" end of the curve is erratic and shows a sharp decline over a short period of time, it may indicate that this portion of the data is less reliable, as further discussed below. After inspecting the OLT curve, I use a mathematical curve-

[20] *See* Appendix B for a more detailed discussion of the Iowa curves.

fitting technique which essentially involves measuring the distance between the OLT curve and the selected Iowa curve in order to get an objective, mathematical assessment of how well the curve fits. After selecting an Iowa curve, I observe the OLT curve along with the Iowa curve on the same graph to determine how well the curve fits. I may repeat this process several times for any given account to ensure that the most reasonable Iowa curve is selected.

Q. Do you always select the mathematically best-fitting curve?

A. Not necessarily. Mathematical fitting is an important part of the curve-fitting process because it promotes objective, unbiased results. While mathematical curve fitting is important, however, it may not always yield the optimum result; therefore, it should not necessarily be adopted without further analysis.

Q. Should every portion of the OLT curve be given equal weight?

A. Not necessarily. Many analysts have observed that the points comprising the "tail end" of the OLT curve may often have less analytical value than other portions of the curve. In fact, "[p]oints at the end of the curve are often based on fewer exposures and may be given less weight than points based on larger samples. The weight placed on those points will depend on the size of the exposures."[21] In accordance with this standard, an analyst may decide to truncate the tail end of the OLT curve at a certain percent of initial exposures, such as one percent. Using this approach puts a greater emphasis on the most valuable portions of the curve. For my analysis in this case, I not only considered the entirety of the

[21] Wolf *supra* n. 7, at 46.

OLT curve, but also conducted further analyses that involved fitting Iowa curves to the most significant part of the OLT curve for certain accounts. In other words, to verify the accuracy of my curve selection, I narrowed the focus of my additional calculation to consider the top 99% of the "exposures" (i.e., dollars exposed to retirement) and to eliminate the tail end of the curve representing the bottom 1% of exposures. I will illustrate an example of this approach in the discussion below.

Q. Describe your adjustments to the service lives and Iowa curves proposed by Mr. Watson.

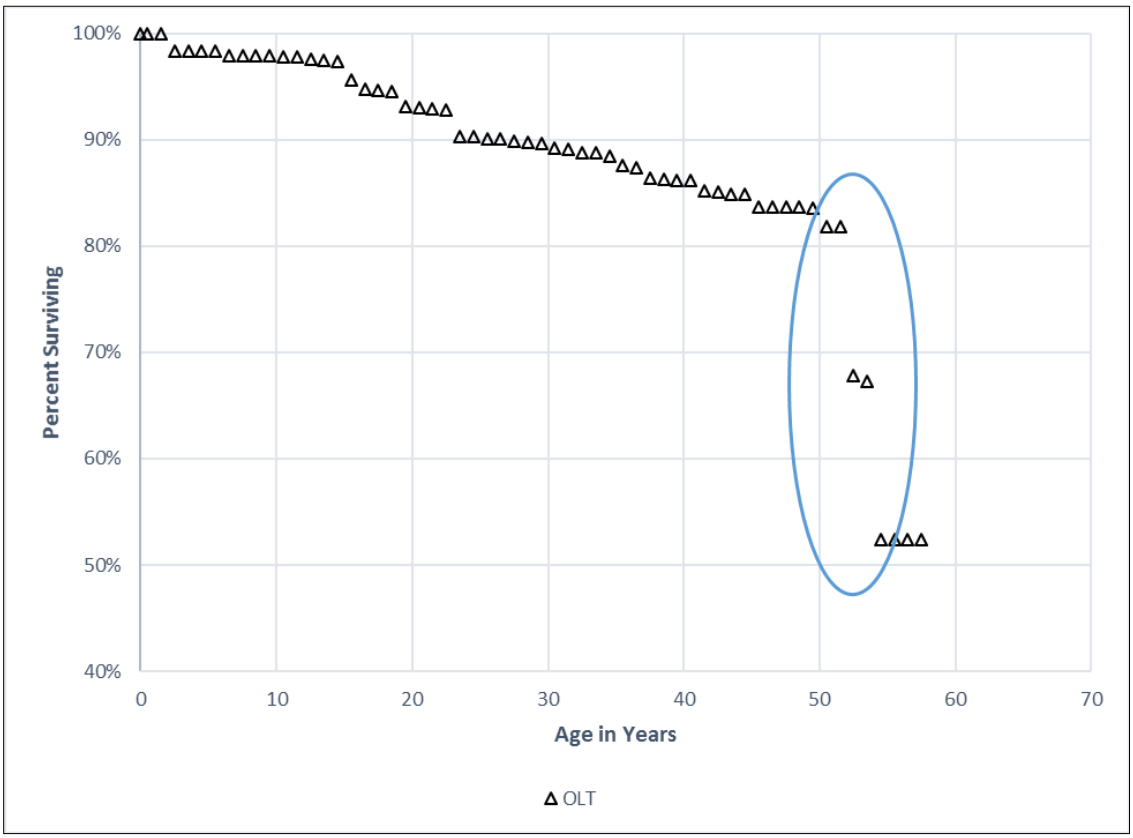
A. I made adjustments to the Iowa curve and average lives proposed by Mr. Watson for the following five Underground Storage Plant accounts and two Transmission Plant accounts: 351, 353, 354, 355, 356, 365.20, and 370. The specific adjustments are provided in Exhibit DJG-3. As discussed above however, the dollar impact of my adjustment is primarily attributable to my reliance on the average life procedure, and less so on my Iowa curve recommendations. As a matter of principle, it is far more important for the Commission to adopt my proposed rates because they are based on the average life procedure. In addition, for most if not all of the accounts to which I made service life adjustments, my recommendations are based on better-fitting Iowa curves from an objective, mathematical perspective. The detailed calculations supporting all of my adjustments are included in my exhibits, but I will provide a few examples and detailed discussions of adjustments I made to Mr. Watson's proposals in the following sections. These examples will demonstrate that my service life recommendations are based on better and more accurate and reasonable statistical analyses.

B. Account 356 – Structures and Improvements

Q. Describe your service life estimate for this account, and compare it with the Company's estimate.

A. While I often emphasize the importance of objective mathematical curve-fitting techniques in my testimony, Account 356 provides a good example of why it is important to simply perform mathematical curve fitting to the entire OLT curve without further analysis. Again, the OLT curve is generated from the Company's actual, historical plant data. In the following graphs, the OLT curve is shown by the black triangles. We the curve-fitting process to attempt to find the best fitting Iowa curve to the OLT curve. use Iowa curves to "fit" the OLT curve. The observed survivor curve for this account provides a good example of how the tail end of the observed survivor curve can be unreliable and statistically irrelevant.

Figure 2:
Account 390 – Structures and Improvements



Notice that from age zero to age 52, the OLT curve steadily declines from 100% surviving to about 80% surviving. At that point, the curve drops sharply to 67% surviving, then to 52% surviving over only five age intervals. Examination of the observed life table provides further explanation of this sudden change in the OLT curve. The figure below shows the pertinent portion of the observed life table for this account

Figure 3:
Account 356 – Portion of Observed Life Table

Age	Exposures	Retirements	Retirement Ratio	Percent Surviving
0	$ 53,539,516	$ -	0.000	100.00%
0.5	53,583,580	9,537	0.000	100.00%
1.5	53,560,174	870,806	0.016	99.98%
2.5	52,666,941	391	0.000	98.36%
3.5	50,772,597	5,695	0.000	98.36%
4.5	41,035,087	32,630	0.001	98.34%
5.5	25,100,716	99,356	0.004	98.27%
6.5	13,751,072	-	0.000	97.88%
7.5	12,464,059	710	0.000	97.88%
8.5	12,498,486	4,236	0.000	97.87%
9.5	9,728,006	4,986	0.001	97.84%
48.5	653,295	148	0.000	83.62%
49.5	465,466	9,658	0.021	83.60%
50.5	450,328	306	0.001	81.87%
51.5	448,870	76,553	0.171	**81.81%**
52.5	370,996	3,438	0.009	**67.86%**
53.5	354,239	78,168	0.221	67.23%
54.5	276,071	-	0.000	52.40%
55.5	266,672	-	0.000	52.40%

This life table shows the dollars exposed to retirement (or "exposures") at the beginning of each age interval and the dollars retired during each age interval. The retirement ratio is calculated by dividing the retirements by the exposures. The percent surviving at each age interval is shown in the far-right column. At age interval 51.5, we notice a substantial decrease in the percent surviving – from 81.81% to 67.86%. This interval corresponds with the gap in the OLT curve shown in the previous graph. In an account with beginning exposures of $53.5 million, a mere $76,553 of retirements cause a

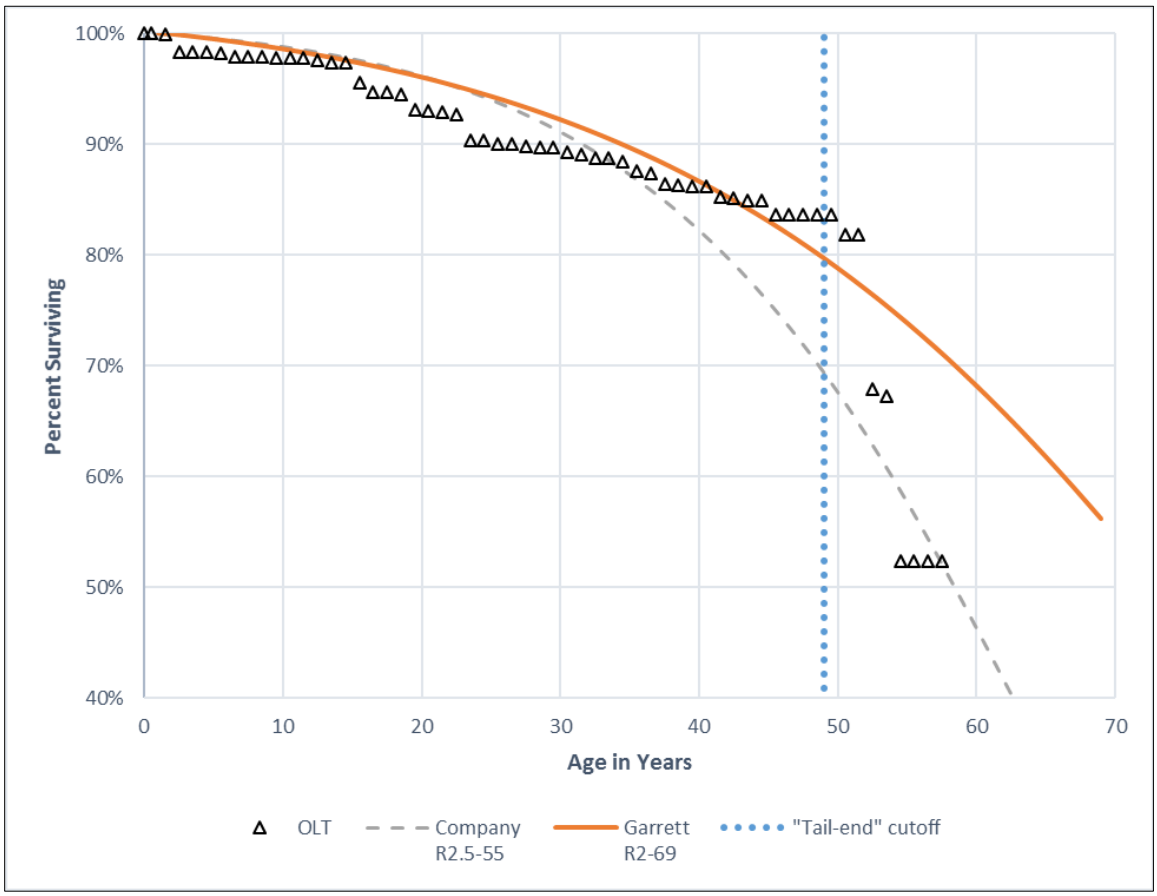
substantial decrease in the OLT curve. This is why authoritative depreciation texts remind us that we should not give the same analytical weight to the remaining data points in the OLT curve after this point. This illustration demonstrates that when the tail end of the OLT curve contains far fewer exposures than other portions of the OLT curve, it can be erratic and very problematic from a statistical standpoint.

Q. Did the Company's selected Iowa curve for this account appear to track the tail end of the OLT curve.

A. Yes. In fact, the Iowa curve chosen by Mr. Watson appears to cut straight through the tail end of the OLT curve. For this account, the Company selected the Iowa R2.5-55 curve and I selected the Iowa R2-69 curve. These two curves are shown along with the OLT curve in the graph below.[22]

[22] *See also* Exhibit DJG-6.

Figure 4:
Account 390 – Structures and Improvements



The vertical dotted line at age 49 shows the erratic drop in the OLT curve discussed above. The data points of the OLT curve to the right of this line should be ignored from a statistical standpoint. The Company's R2.5-55 curve, however, declines sharply below the actual OLT curve beginning at the age 35 and continues through the problematic "tail" of the OLT curve.

Q. Is your selected Iowa curve a better mathematical fit to the relevant portion of the OLT curve?

A. Yes. Although it is visually clear that the R2.5-55 curve is a better fit to the relevant portion of the OLT curve, this fact can also be confirmed mathematically. Mathematical curve

fitting essentially involves measuring the distance between the OLT curve and the selected Iowa curve. The best mathematically-fitted curve is the one that minimizes the distance between the OLT curve and the Iowa curve, thus providing the closest fit. The "distance" between the curves is calculated using the "sum-of-squared differences" ("SSD") technique. In Account 356, the total SSD, or "distance" between the Company's curve and the relevant portion of the OLT curve is 0.1238, while the total SSD between better-fitting R2-69 curve and the OLT curve is only 0.0168. Thus, the R2-69 curve is a better mathematical fit.[23] Applying the R2-69 curve to this account results in a remaining life of 61.6 years, a depreciation rate of 2.69%, and an annual accrual of $695,526.[24]

C. Account 365.20 – ROW – City Gate

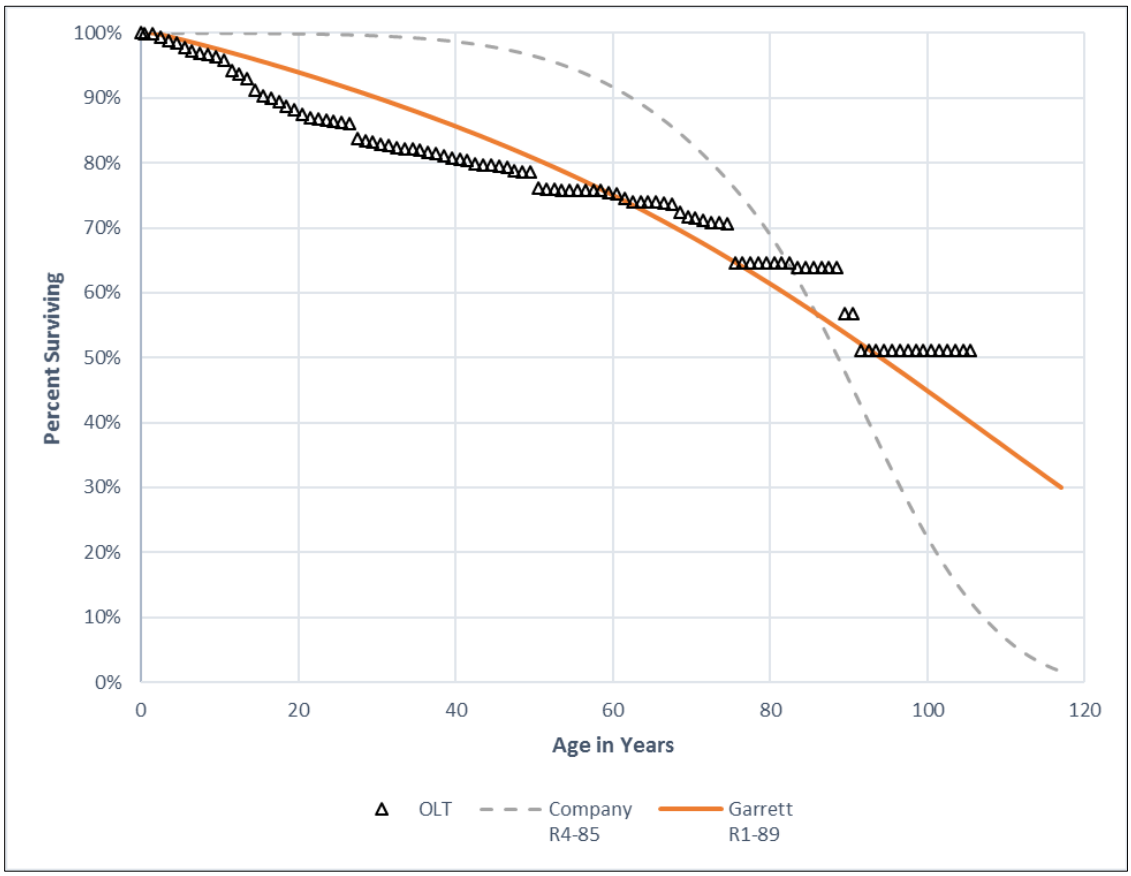
Q. Describe your service life estimate for this account, and compare it with the Company's estimate.

A. Account 365.20 highlights the importance of not only considering the average life inherent in an Iowa curve, but also the shape and mode of the curve. For this account, the Company is proposing an 85-year average life while I am proposing an 89-year average life – a difference of only four years. However, the Company and I are proposing different curve shapes: R4 and R1 respectively. The graph below shows the OLT curve along with the two proposed curves.

[23] *See* Exhibit DJG-5. Incidentally, the R2-69 curve I selected also provides a better mathematical fit to the entirety of the OLT curve as well.

[24] *See* Exhibit DJG-4 for depreciation calculations on all accounts; *see also* Exhibit DJG-8 for detailed remaining life calculations.

Figure 5:
Account 390 – Structures and Improvements



The OLT curve shows a relatively flat, smooth decline throughout the entirety of the curve. We use Iowa curves to help us analyze historical retirement patters in order to make predictions about future retirement patters. When an OLT curve is relatively short, opposing witnesses may choose Iowa curves that both provide good fits to the OLT curve, but then take different directions based on differing opinions of future retirement patterns. With Account 390 however, Mr. Watson and I not only have different opinions regarding the future, but apparently regarding the past as well. According to Mr. Watson, there are about 90% of the assets surviving in this account at 60 years, but the historical retirement pattern indicates a very different result of only 75% surviving. On the lower end of the

curve, Mr. Watson is suggesting that at the age interval of 100 years, there is only 20% surviving, while the data is telling a very different story. In short, it is visually clear that Mr. Watson's selected Iowa curve for this account provides a very poor fit to the observed data, and thus it results in a very poor service life and depreciation rate recommendation.

Q. Is your selected Iowa curve a better mathematical fit to the relevant portion of the OLT curve?

A. Yes. Although it is visually clear that the R1-89 curve I selected for this account provides a much better fit to the OLT curve, this result can be confirmed mathematically as well. Specifically, the SSD or "distance" between the Company's curve and the OLT curve is 2.8465, while the total SSD between better-fitting R1-89 curve and the OLT curve is only 0.1706. Thus, the R1-89 curve is a better mathematical fit and results in a more reasonable depreciation rate.[25]

VI. ALTERNATIVE EQUAL LIFE GROUP RECOMMENDATION

Q. Summarize the problems resulting from the application of the equal life procedure.

A. As discussed above, the equal life procedure results in accelerated depreciation rates for current customers and intergenerational inequity. Moreover, under the equal life procedure, depreciation rates are supposed to decrease each year. This makes sense because if early customers are going to be charged higher than the "average" rate, then later customers must be charged lower than the "average" rate. However, because the Company is not going to file a rate case every year, this means that the higher-than-average rates

[25] *See* Exhibit DJG-5.

imposed under the equal life procedure will stay the same each year until the next rate case is filed. Thus, not only does the equal life procedure result in accelerated depreciation rates for current customers, but the "lag" between rate cases guarantees that customers over the next few years will be charged even higher rates than what would otherwise be imposed by the equal life procedure. This arrangement is inequitable on its face. Moreover, the Company has failed to meet its burden of proof as mandated by the Supreme Court in *Lindheimer*. Again, the Court said that the "company has the burden of making a convincing showing that the amounts it has charged to operating expenses for depreciation have not been excessive."[26] In reality, the Company has done the exact opposite, by making a convincing showing that its proposed depreciation rates are excessive.

Q. Discuss an alternative recommendation to your primary recommendation discussed above.

A. Clearly, it would be better for the Commission to adopt my proposed depreciation rates as determined under the average life procedure, which are presented in Exhibit DJG-3. However, to the extent the Commission is persuaded to adopt the equal life procedure, I have recalculated my depreciation rate proposals under the equal life procedure, and have presented them in Exhibit DJG-10. This adjustment is summarized in the following table.

[26] *Id*. at 169.

Figure 6:
Summary Alternative Adjustment (Equal Life "Accelerated" Procedure)

Plant Function	Plant Balance	Company Accrual	City of Dallas Accrual	City of Dallas Adjustment
Underground Storage Plant	$ 305,550,724	$ 10,035,700	$ 9,184,151	$ (851,549)
Transmission Plant	2,070,119,871	65,722,116	64,289,981	(1,432,134)
General Plant - Depreciated	10,892,894	632,743	597,907	(34,836)
General Plant - Amortized	27,647,361	2,085,808	2,085,808	-
Total Plant Studied	$ 2,414,210,850	$ 78,476,366	$ 76,157,847	**$ (2,318,519)**

As shown in the table, when using the same Iowa curves, service lives, and net salvage rates as proposed above, the equal life "accelerated" procedure results in an adjustment of only $2.3 million, as opposed to the $33 million adjustment under the average life procedure. This means that the equal life "accelerated" procedure would impose an additional $30 million dollars on current customers. To be clear, this alternative recommendation should not be construed as an endorsement of the equal life grouping procedure. Rather, it presents the Commission with an alternative recommendation under the equal life procedure that results in more reasonable rates than those proposed under the Company's equal life procedure because such rates are based on more objective and reasonable Iowa curves and average life estimates, as discussed and illustrated above. The exhibits supporting the alternative recommendation under the equal life accelerated procedure are presented in Exhibits DJG-9, 10, 11, and 12.

VII. CONCLUSION AND RECOMMENDATION

Q. Summarize the key points of your testimony.

A. As discussed above, the primary difference between my recommendation and the Company's recommendation is the depreciation system used to analyze the depreciation rates in this case. The system used by the Company results in an unfair and unreasonable

acceleration of depreciation rates and expense, whereby current customers are forced to pay higher rates than future customers. In other words, the depreciation system proposed by the Company results in intergenerational inequity. The inequity imposed by using the equal life procedure in this case is so extreme in fact, that when the Company proposed an average service life of 70 years for one account, it allocated the cost for account over 34 years – only half of the service life, which effectively results in an accelerated depreciation expense to current customers of about $23 million. I also proposed better-fitting, more reasonable Iowa curves for several of the Company's accounts.

Q. What is the City of Dallas's recommendation to the Commission regarding depreciation rates and expense?

A. The City of Dallas recommends that the Commission adopt the proposed depreciation rates presented in Exhibit DJG-3. These rates should be applied to the Company's updated plant balances to determine the proper depreciation expense. Alternatively, to the extent the Commission is persuaded to adopt the equal life procedure, the City of Dallas recommends that the Commission adopt the proposed depreciation rates presented in Exhibit DJG-10, which are based on more objective and reasonable average estimates than those proposed by the Company.

Q. Does this conclude your testimony?

A. Yes, including any exhibits, appendices, and other items attached hereto. I reserve the right to supplement this testimony as needed with any additional information that has been requested from the Company but not yet provided. To the extent any testimony from the Company was not specifically addressed, it does not constitute an agreement with such testimony.

APPENDIX A:

THE DEPRECIATION SYSTEM

A depreciation accounting system may be thought of as a dynamic system in which estimates of life and salvage are inputs to the system, and the accumulated depreciation account is a measure of the state of the system at any given time.[27] The primary objective of the depreciation system is the timely recovery of capital. The process for calculating the annual accruals is determined by the factors required to define the system. A depreciation system should be defined by four primary factors: 1) a method of allocation; 2) a procedure for applying the method of allocation to a group of property; 3) a technique for applying the depreciation rate; and 4) a model for analyzing the characteristics of vintage groups comprising a continuous property group.[28] The figure below illustrates the basic concept of a depreciation system and includes some of the available parameters.[29]

There are hundreds of potential combinations of methods, procedures, techniques, and models, but in practice, analysts use only a few combinations. Ultimately, the system selected must result in the systematic and rational allocation of capital recovery for the utility. Each of the four primary factors defining the parameters of a depreciation system is discussed further below.

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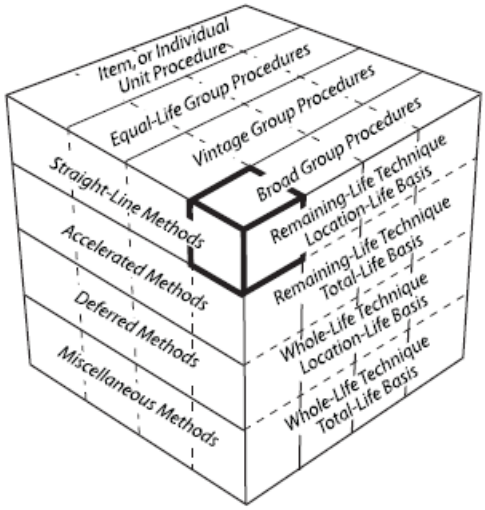
[27] Wolf *supra* n. 7, at 69-70.

[28] *Id.* at 70, 139-40.

[29] Edison Electric Institute, *Introduction to Depreciation* (inside cover) (EEI April 2013). Some definitions of the terms shown in this diagram are not consistent among depreciation practitioners and literature due to the fact that depreciation analysis is a relatively small and fragmented field. This diagram simply illustrates the some of the available parameters of a depreciation system.

Figure 7:
The Depreciation System Cube



1. Allocation Methods

The "method" refers to the pattern of depreciation in relation to the accounting periods. The method most commonly used in the regulatory context is the "straight-line method" – a type of age-life method in which the depreciable cost of plant is charged in equal amounts to each accounting period over the service life of plant.[30] Because group depreciation rates and plant balances often change, the amount of the annual accrual rarely remains the same, even when the straight-line method is employed.[31] The basic formula for the straight-line method is as follows:[32]

[30] NARUC *supra* n. 8, at 56.

[31] *Id*.

[32] *Id*.

Equation 1:
Straight-Line Accrual

$$Annual\ Accrual = \frac{Gross\ Plant - Net\ Salavage}{Service\ Life}$$

Gross plant is a known amount from the utility's records, while both net salvage and service life must be estimated in order to calculate the annual accrual. The straight-line method differs from accelerated methods of recovery, such as the "sum-of-the-years-digits" method and the "declining balance" method. Accelerated methods are primarily used for tax purposes and are rarely used in the regulatory context for determining annual accruals.[33] In practice, the annual accrual is expressed as a rate which is applied to the original cost of plant in order to determine the annual accrual in dollars. The formula for determining the straight-line rate is as follows:[34]

Equation 2:
Straight-Line Rate

$$Depreciation\ Rate\ \% = \frac{100 - Net\ Salvage\ \%}{Service\ Life}$$

2. Grouping Procedures

The "procedure" refers to the way the allocation method is applied through subdividing the total property into groups.[35] While single units may be analyzed for depreciation, a group plan of depreciation is particularly adaptable to utility property. Employing a grouping procedure allows for a composite application of depreciation rates to groups of similar property, rather than

[33] *Id*. at 57.

[34] *Id*. at 56.

[35] Wolf *supra* n. 7, at 74-75.

excessively conducting calculations for each unit. Whereas an individual unit of property has a single life, a group of property displays a dispersion of lives and the life characteristics of the group must be described statistically.[36] When analyzing mass property categories, it is important that each group contains homogenous units of plant that are used in the same general manner throughout the plant and operated under the same general conditions.[37]

The "average life" and "equal life" grouping procedures are the two most common. In the average life procedure, a constant annual accrual rate based on the average life of all property in the group is applied to the surviving property. While property having shorter lives than the group average will not be fully depreciated, and likewise, property having longer lives than the group average will be over-depreciated, the ultimate result is that the group will be fully depreciated by the time of the final retirement.[38] Thus, the average life procedure treats each unit as though its life is equal to the average life of the group. In contrast, the equal life procedure treats each unit in the group as though its life was known.[39] Under the equal life procedure the property is divided into subgroups that each has a common life.[40]

3. Application Techniques

The third factor of a depreciation system is the "technique" for applying the depreciation rate. There are two commonly used techniques: "whole life" and "remaining life." The whole life

[36] *Id*. at 74.

[37] NARUC *supra* n. 8, at 61-62.

[38] *See* Wolf *supr*a n. 7, at 74-75.

[39] *Id*. at 75.

[40] *Id*.

technique applies the depreciation rate on the estimated average service life of a group, while the remaining life technique seeks to recover undepreciated costs over the remaining life of the plant.[41]

In choosing the application technique, consideration should be given to the proper level of the accumulated depreciation account. Depreciation accrual rates are calculated using estimates of service life and salvage. Periodically these estimates must be revised due to changing conditions, which cause the accumulated depreciation account to be higher or lower than necessary. Unless some corrective action is taken, the annual accruals will not equal the original cost of the plant at the time of final retirement.[42] Analysts can calculate the level of imbalance in the accumulated depreciation account by determining the "calculated accumulated depreciation," (a.k.a. "theoretical reserve" and referred to in these appendices as "CAD"). The CAD is the calculated balance that would be in the accumulated depreciation account at a point in time using current depreciation parameters.[43] An imbalance exists when the actual accumulated depreciation account does not equal the CAD. The choice of application technique will affect how the imbalance is dealt with.

Use of the whole life technique requires that an adjustment be made to accumulated depreciation after calculation of the CAD. The adjustment can be made in a lump sum or over a period of time. With use of the remaining life technique, however, adjustments to accumulated depreciation are amortized over the remaining life of the property and are automatically included

[41] NARUC *supra* n. 8, at 63-64.

[42] Wolf *supra* n. 7, at 83.

[43] NARUC *supra* n. 8, at 325.

in the annual accrual.[44] This is one reason that the remaining life technique is popular among practitioners and regulators. The basic formula for the remaining life technique is as follows:[45]

Equation 3:
Remaining Life Accrual

$$Annual\ Accrual = \frac{Gross\ Plant - Accumulated\ Depreciation - Net\ Salvage}{Average\ Remaining\ Life}$$

The remaining life accrual formula is similar to the basic straight-line accrual formula above with two notable exceptions. First, the numerator has an additional factor in the remaining life formula: the accumulated depreciation. Second, the denominator is "average remaining life" instead of "average life." Essentially, the future accrual of plant (gross plant less accumulated depreciation) is allocated over the remaining life of plant. Thus, the adjustment to accumulated depreciation is "automatic" in the sense that it is built into the remaining life calculation.[46]

4. Analysis Model

The fourth parameter of a depreciation system, the "model," relates to the way of viewing the life and salvage characteristics of the vintage groups that have been combined to form a continuous property group for depreciation purposes.[47] A continuous property group is created when vintage groups are combined to form a common group. Over time, the characteristics of the property may change, but the continuous property group will continue. The two analysis models

[44] NARUC *supra* n. 8, at 65 ("The desirability of using the remaining life technique is that any necessary adjustments of [accumulated depreciation] . . . are accrued automatically over the remaining life of the property. Once commenced, adjustments to the depreciation reserve, outside of those inherent in the remaining life rate would require regulatory approval.").

[45] *Id*. at 64.

[46] Wolf *supra* n. 7, at 178.

[47] *See* Wolf *supra* n. 7, at 139 (I added the term "model" to distinguish this fourth depreciation system parameter from the other three parameters).

used among practitioners, the “broad group” and the “vintage group,” are two ways of viewing the life and salvage characteristics of the vintage groups that have been combined to from a continuous property group.

The broad group model views the continuous property group as a collection of vintage groups that each has the same life and salvage characteristics. Thus, a single survivor curve and a single salvage schedule are chosen to describe all the vintages in the continuous property group. In contrast, the vintage group model views the continuous property group as a collection of vintage groups that may have different life and salvage characteristics. Typically, there is not a significant difference between vintage group and broad group results unless vintages within the applicable property group experienced dramatically different retirement levels than anticipated in the overall estimated life for the group. For this reason, many analysts utilize the broad group procedure because it is more efficient.

APPENDIX B:

IOWA CURVES

Early work in the analysis of the service life of industrial property was based on models that described the life characteristics of human populations.[48] This explains why the word "mortality" is often used in the context of depreciation analysis. In fact, a group of property installed during the same accounting period is analogous to a group of humans born during the same calendar year. Each period the group will incur a certain fraction of deaths / retirements until there are no survivors. Describing this pattern of mortality is part of actuarial analysis, and is regularly used by insurance companies to determine life insurance premiums. The pattern of mortality may be described by several mathematical functions, particularly the survivor curve and frequency curve. Each curve may be derived from the other so that if one curve is known, the other may be obtained. A survivor curve is a graph of the percent of units remaining in service expressed as a function of age.[49] A frequency curve is a graph of the frequency of retirements as a function of age. Several types of survivor and frequency curves are illustrated in the figures below.

1. Development

The survivor curves used by analysts today were developed over several decades from extensive analysis of utility and industrial property. In 1931 Edwin Kurtz and Robley Winfrey used extensive data from a range of 65 industrial property groups to create survivor curves representing the life characteristics of each group of property.[50] They generalized the 65 curves

[48] Wolf *supra* n. 7, at 276.

[49] *Id*. at 23.

[50] *Id*. at 34.

into 13 survivor curve types and published their results in *Bulletin 103: Life Characteristics of Physical Property*. The 13 type curves were designed to be used as valuable aids in forecasting probable future service lives of industrial property. Over the next few years, Winfrey continued gathering additional data, particularly from public utility property, and expanded the examined property groups from 65 to 176.[51] This resulted in 5 additional survivor curve types for a total of 18 curves. In 1935, Winfrey published *Bulletin 125: Statistical Analysis of Industrial Property Retirements*. According to Winfrey, "[t]he 18 type curves are expected to represent quite well all survivor curves commonly encountered in utility and industrial practices."[52] These curves are known as the "Iowa curves" and are used extensively in depreciation analysis in order to obtain the average service lives of property groups. (Use of Iowa curves in actuarial analysis is further discussed in Appendix C.)

In 1942, Winfrey published *Bulletin 155: Depreciation of Group Properties*. In Bulletin 155, Winfrey made some slight revisions to a few of the 18 curve types, and published the equations, tables of the percent surviving, and probable life of each curve at five-percent intervals.[53] Rather than using the original formulas, analysts typically rely on the published tables containing the percentages surviving. This is because absent knowledge of the integration technique applied to each age interval, it is not possible to recreate the exact original published table values. In the 1970s, John Russo collected data from over 2,000 property accounts reflecting

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[51] *Id.*

[52] Robley Winfrey, *Bulletin 125: Statistical Analyses of Industrial Property Retirements* 85, Vol. XXXIV, No. 23 (Iowa State College of Agriculture and Mechanic Arts 1935).

[53] Robley Winfrey, Bulletin 155: Depreciation of Group Properties 121-28, Vol XLI, No. 1 (The Iowa State College Bulletin 1942); see also Wolf supra n. 7, at 305-38 (publishing the percent surviving for each Iowa curve, including "O" type curve, at one percent intervals).

observations during the period 1965 – 1975 as part of his Ph.D. dissertation at Iowa State. Russo essentially repeated Winfrey's data collection, testing, and analysis methods used to develop the original Iowa curves, except that Russo studied industrial property in service several decades after Winfrey published the original Iowa curves. Russo drew three major conclusions from his research:[54]

1. No evidence was found to conclude that the Iowa curve set, as it stands, is not a valid system of standard curves;

2. No evidence was found to conclude that new curve shapes could be produced at this time that would add to the validity of the Iowa curve set; and

3. No evidence was found to suggest that the number of curves within the Iowa curve set should be reduced.

Prior to Russo's study, some had criticized the Iowa curves as being potentially obsolete because their development was rooted in the study of industrial property in existence during the early 1900s. Russo's research, however, negated this criticism by confirming that the Iowa curves represent a sufficiently wide range of life patterns, and that though technology will change over time, the underlying patterns of retirements remain constant and can be adequately described by the Iowa curves.[55]

Over the years, several more curve types have been added to Winfrey's 18 Iowa curves. In 1967, Harold Cowles added four origin-modal curves. In addition, a square curve is sometimes used to depict retirements which are all planned to occur at a given age. Finally, analysts

[54] *See* Wolf *supra* n. 7, at 37.

[55] *Id*.

commonly rely on several "half curves" derived from the original Iowa curves. Thus, the term "Iowa curves" could be said to describe up to 31 standardized survivor curves.

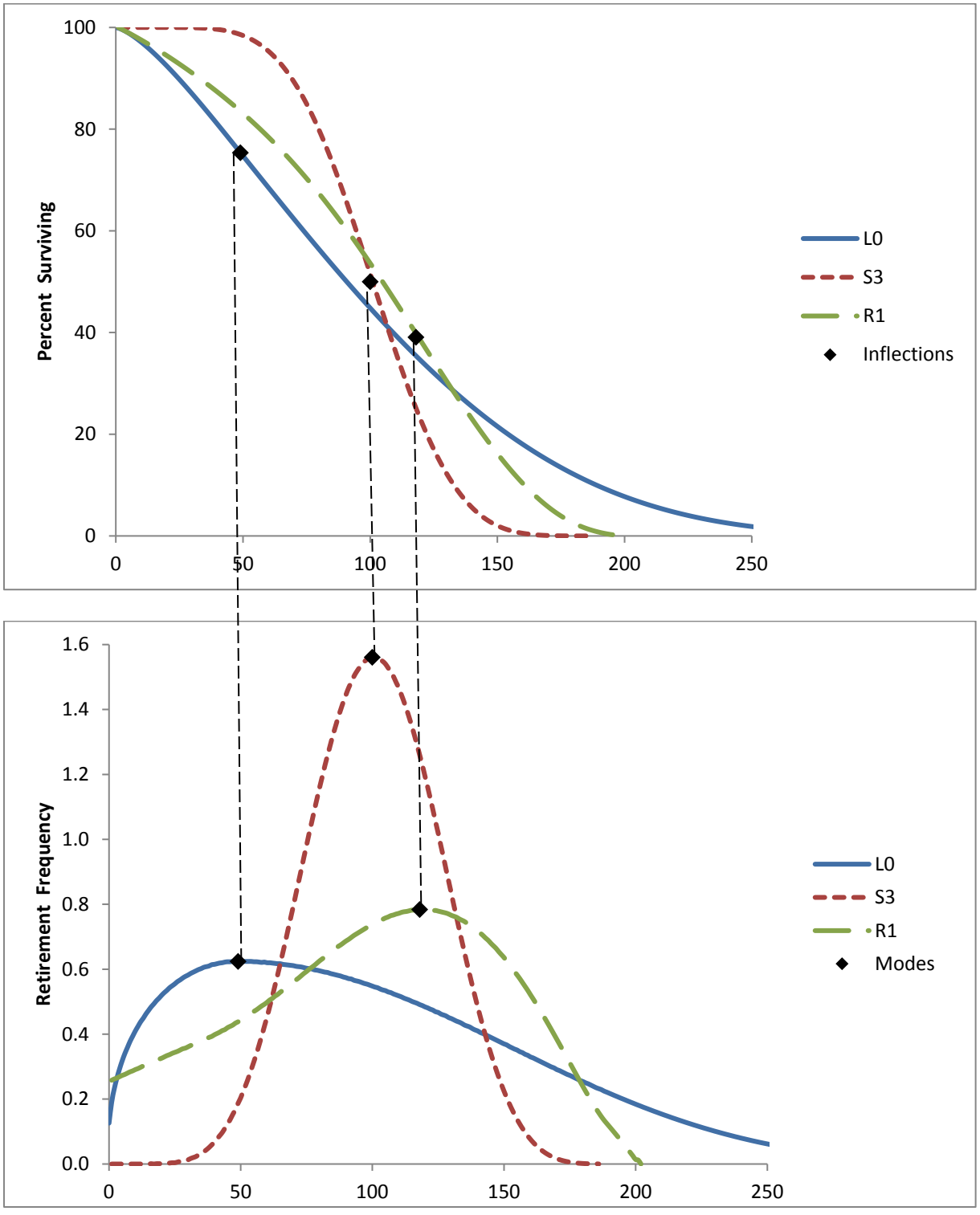
2. Classification

The Iowa curves are classified by three variables: modal location, average life, and variation of life. First, the mode is the percent life that results in the highest point of the frequency curve and the "inflection point" on the survivor curve. The modal age is the age at which the greatest rate of retirement occurs. As illustrated in the figure below, the modes appear at the steepest point of each survivor curve in the top graph, as well as the highest point of each corresponding frequency curve in the bottom graph.

The classification of the survivor curves was made according to whether the mode of the retirement frequency curves was to the left, to the right, or coincident with average service life. There are three modal "families" of curves: six left modal curves (L0, L1, L2, L3, L4, L5); five right modal curves (R1, R2, R3, R4, R5); and seven symmetrical curves (S0, S1, S2, S3, S4, S5, S6).[56] In the figure below, one curve from each family is shown: L0, S3 and R1, with average life at 100 on the x-axis. It is clear from the graphs that the modes for the L0 and R1 curves appear to the left and right of average life respectively, while the S3 mode is coincident with average life.

[56] In 1967, Harold A. Cowles added four origin-modal curves known as "O type" curves. There are also several "half" curves and a square curve, so the total amount of survivor curves commonly called "Iowa" curves is about 31 (see NARUC supra n. 8, at 68).

Figure 8:
Modal Age Illustration



The second Iowa curve classification variable is average life. The Iowa curves were designed using a single parameter of age expressed as a percent of average life instead of actual age. This was necessary in order for the curves to be of practical value. As Winfrey notes:

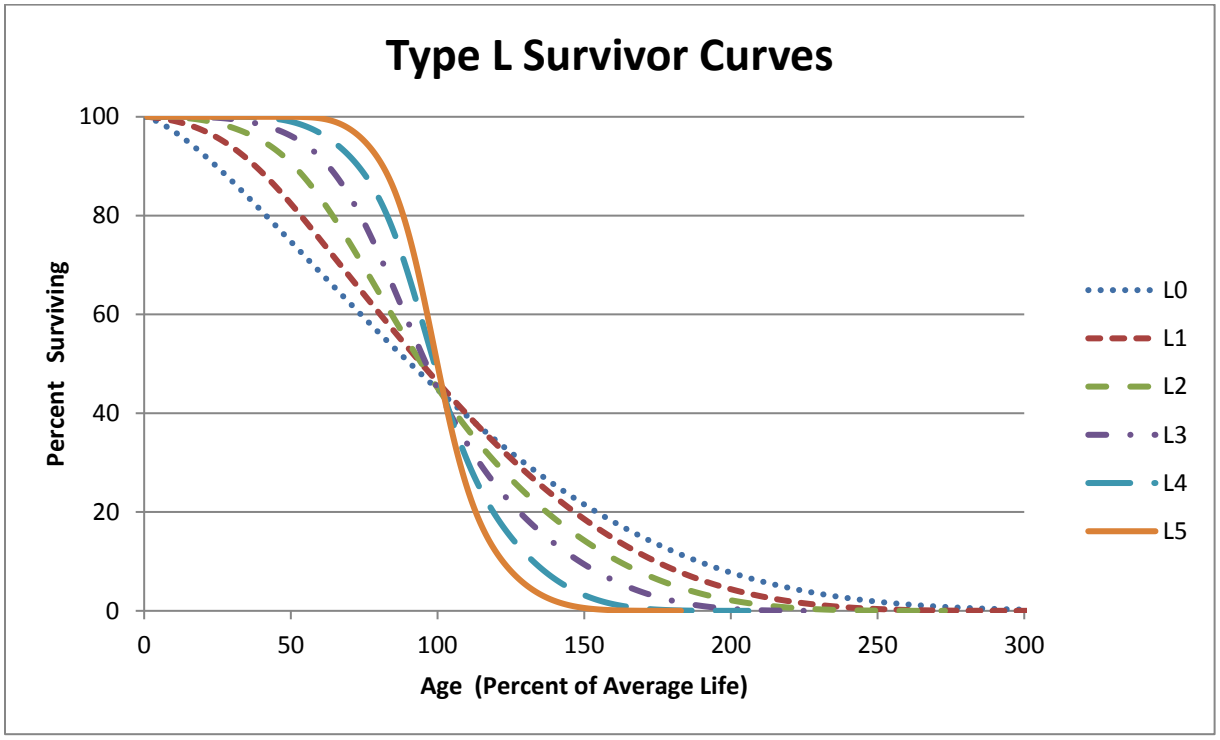
> Since the location of a particular survivor on a graph is affected by both its span in years and the shape of the curve, it is difficult to classify a group of curves unless one of these variables can be controlled. This is easily done by expressing the age in percent of average life."[57]

Because age is expressed in terms of percent of average life, any particular Iowa curve type can be modified to forecast property groups with various average lives.

The third variable, variation of life, is represented by the numbers next to each letter. A lower number (e.g., L1) indicates a relatively low mode, large variation, and large maximum life; a higher number (e.g., L5) indicates a relatively high mode, small variation, and small maximum life. All three classification variables – modal location, average life, and variation of life – are used to describe each Iowa curve. For example, a 13-L1 Iowa curve describes a group of property with a 13-year average life, with the greatest number of retirements occurring before (or to the left of) the average life, and a relatively low mode. The graphs below show these 18 survivor curves, organized by modal family.

[57] Winfrey *supra* n. 75, at 60.

Figure 9:
Type L Survivor and Frequency Curves



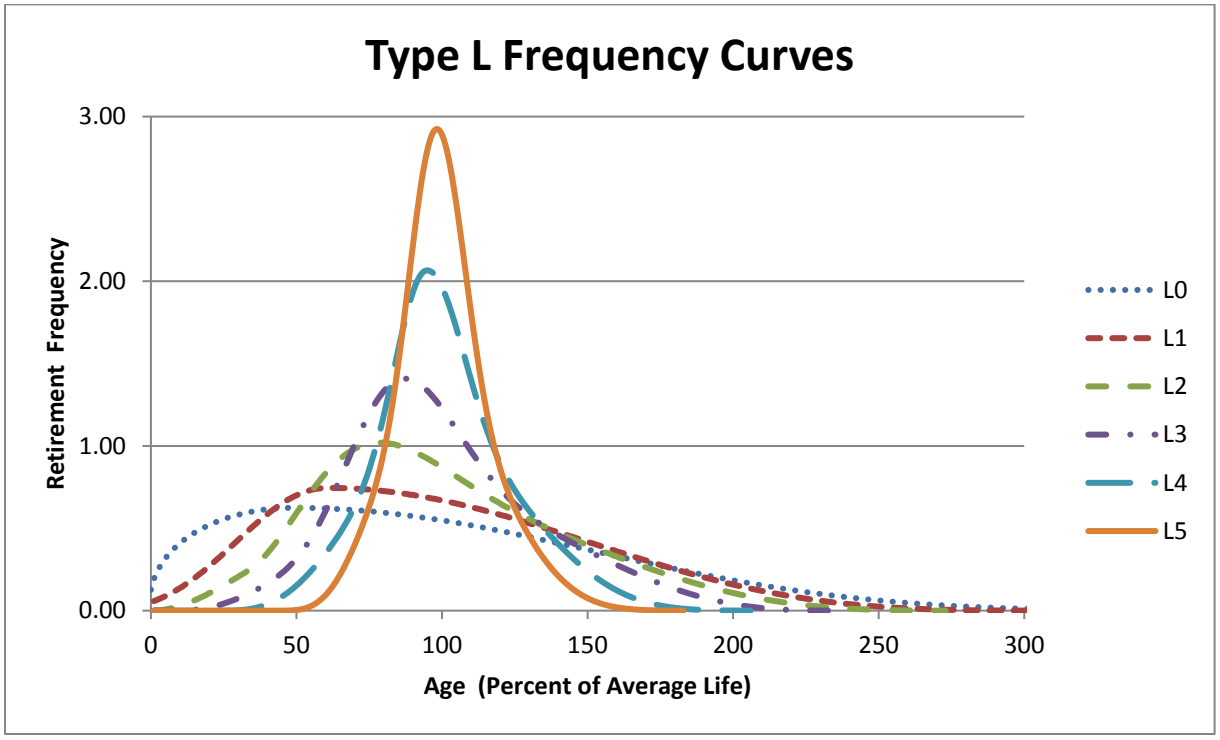
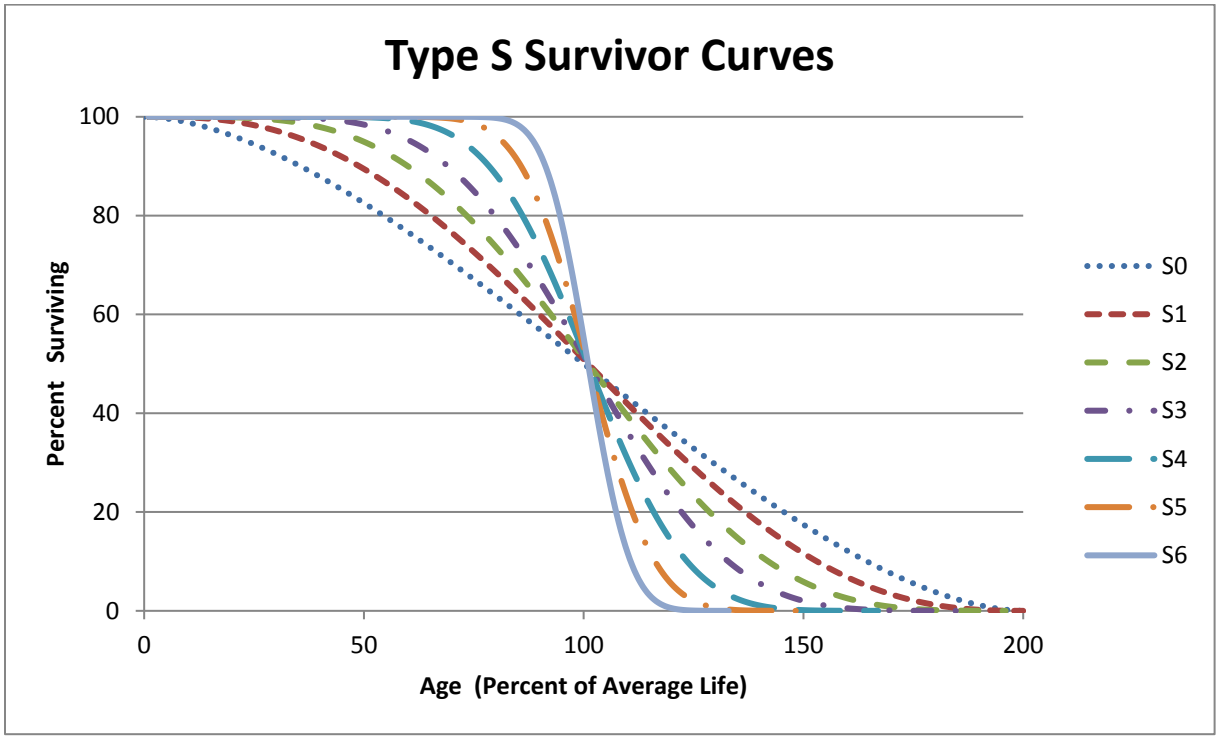


Figure 10:
Type S Survivor and Frequency Curves



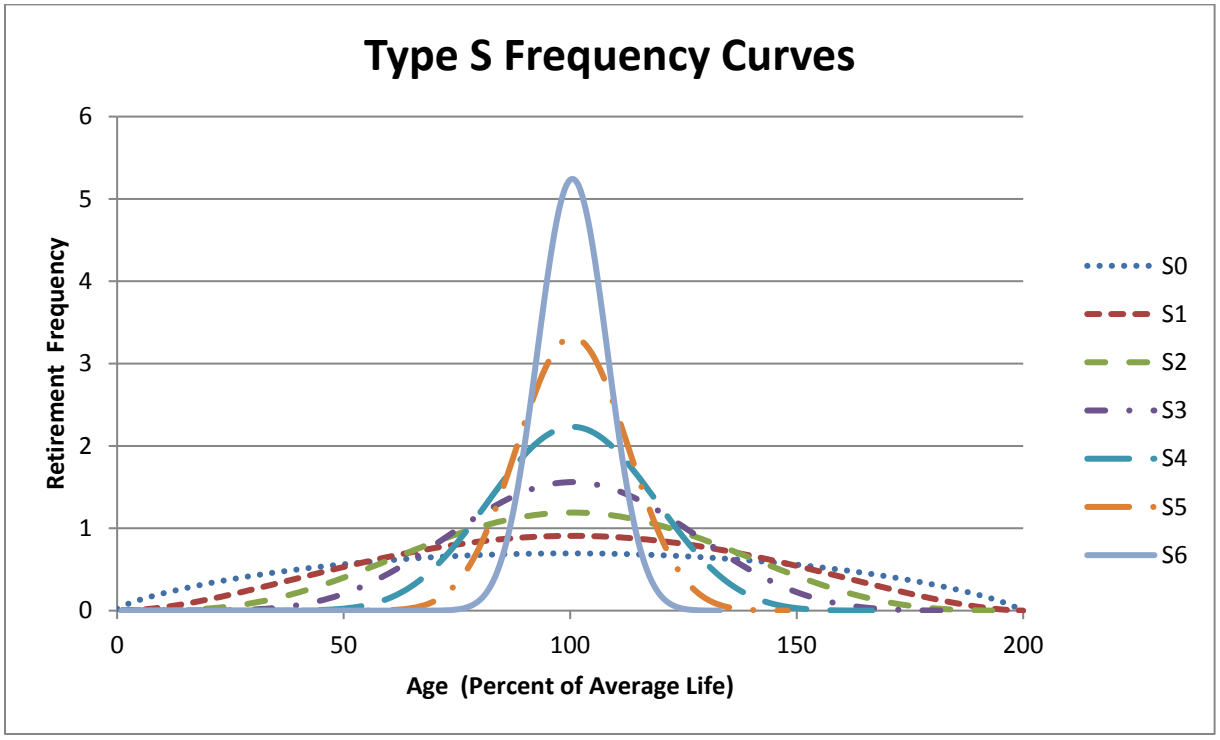
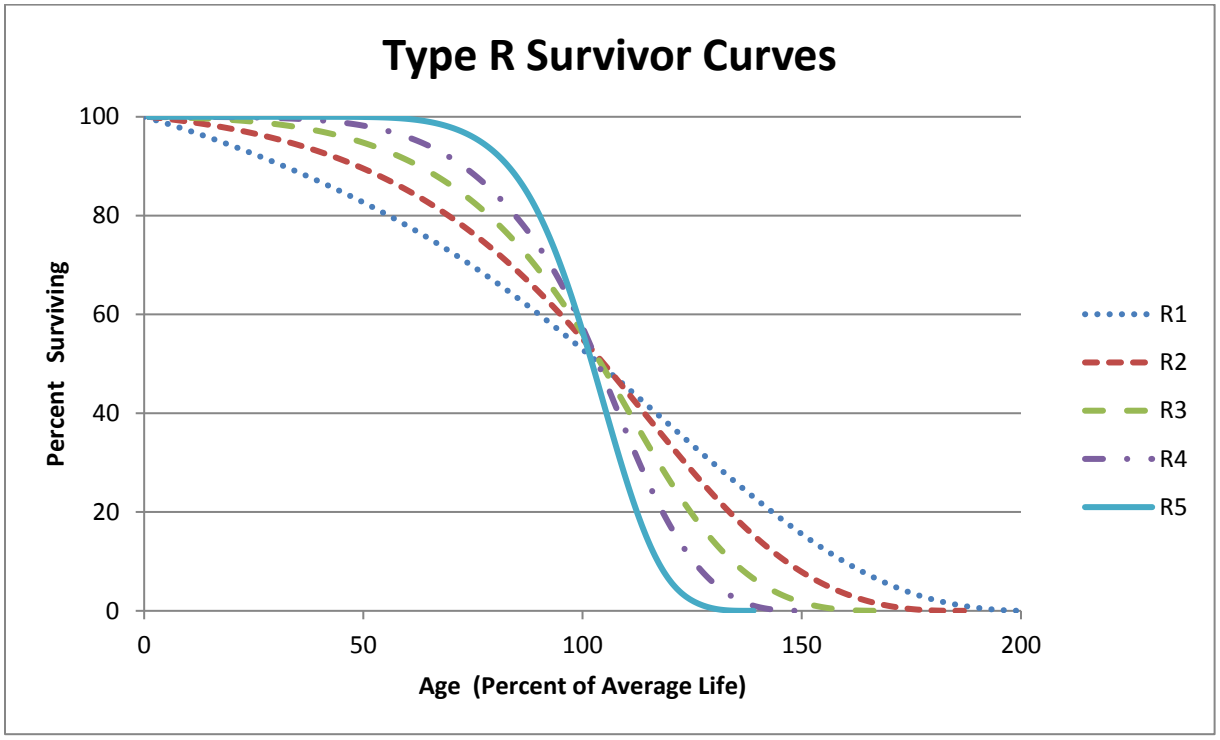
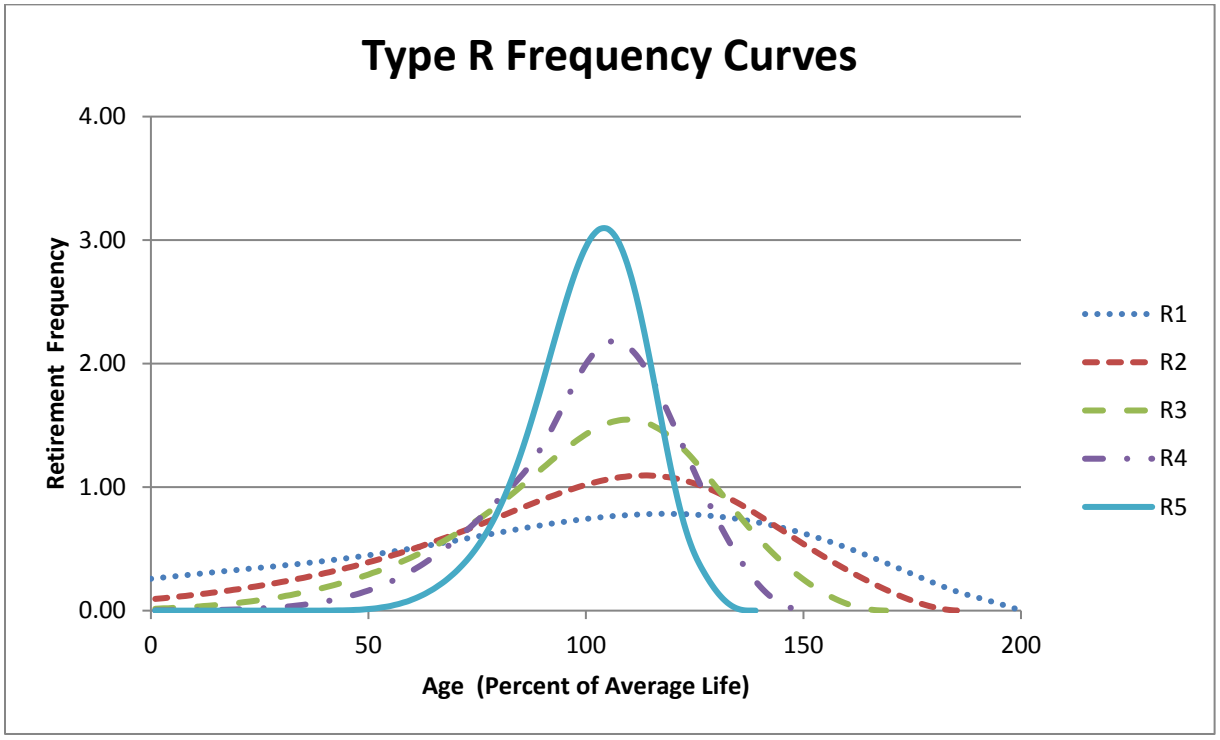


Figure 11:
Type R Survivor and Frequency Curves





As shown in the graphs above, the modes for the L family frequency curves occur to the left of average life (100% on the x-axis), while the S family modes occur at the average, and the R family modes occur after the average.

3. Types of Lives

Several other important statistical analyses and types of lives may be derived from an Iowa curve. These include: 1) average life; 2) realized life; 3) remaining life; and 4) probable life. The figure below illustrates these concepts. It shows the frequency curve, survivor curve, and probable life curve. Age M_x on the x-axis represents the modal age, while age AL_x represents the average age. Thus, this figure illustrates an "L type" Iowa curve since the mode occurs before the average.[58]

First, average life is the area under the survivor curve from age zero to maximum life. Because the survivor curve is measured in percent, the area under the curve must be divided by 100% to convert it from percent-years to years. The formula for average life is as follows:[59]

Equation 4:
Average Life

$$Average\ Life\ = \frac{Area\ Under\ Survivor\ Curve\ from\ Age\ 0\ to\ Max\ Life}{100\%}$$

Thus, average life may not be determined without a complete survivor curve. Many property groups being analyzed will not have experienced full retirement. This results in a "stub" survivor

[58] From age zero to age M_x on the survivor curve, it could be said that the percent surviving from this property group is decreasing at an increasing rate. Conversely, from point M_x to maximum on the survivor curve, the percent surviving is decreasing at a decreasing rate.

[59] *See* NARUC *supra* n. 8, at 71.

curve. Iowa curves are used to extend stub curves to maximum life in order for the average life calculation to be made (see Appendix C).

Realized life is similar to average life, except that realized life is the average years of service experienced to date from the vintage's original installations.[60] As shown in the figure below, realized life is the area under the survivor curve from zero to age RL_X. Likewise, unrealized life is the area under the survivor curve from age RL_X to maximum life. Thus, it could be said that average life equals realized life plus unrealized life.

Average remaining life represents the future years of service expected from the surviving property.[61] Remaining life is sometimes referred to as "average remaining life" and "life expectancy." To calculate average remaining life at age x, the area under the estimated future potion of the survivor curve is divided by the percent surviving at age x (denoted S_X). Thus, the average remaining life formula is:

Equation 5:
Average Remaining Life

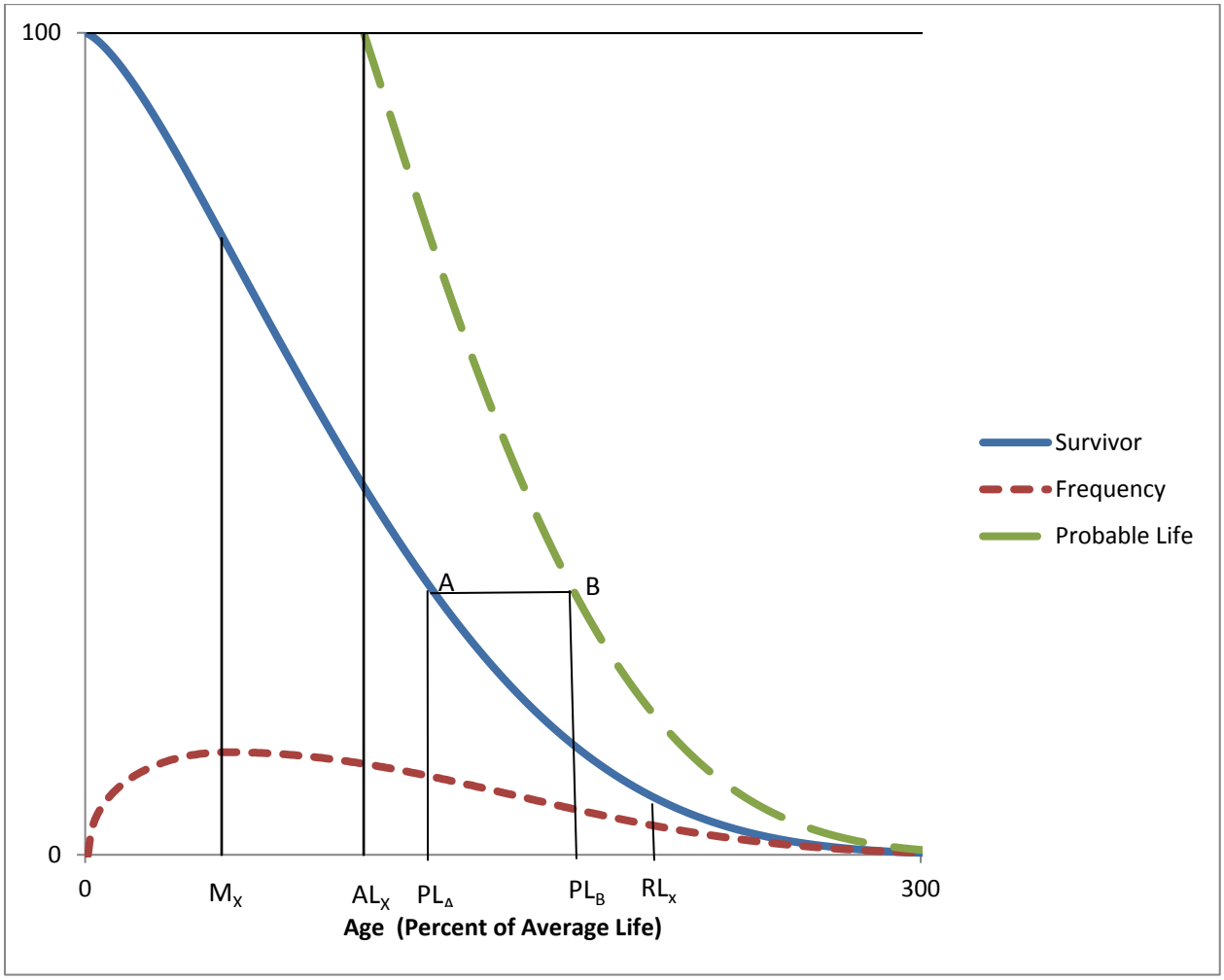
$$Average\ Remaining\ Life\ = \frac{Area\ Under\ Survivor\ Curve\ from\ Age\ x\ to\ Max\ Life}{S_X}$$

It is necessary to determine average remaining life in order to calculate the annual accrual under the remaining life technique.

[60] *Id*. at 73.

[61] *Id*. at 74.

Figure 12:
Iowa Curve Derivations



Finally, the probable life may also be determined from the Iowa curve. The probable life of a property group is the total life expectancy of the property surviving at any age and is equal to the remaining life plus the current age.[62] The probable life is also illustrated in this figure. The probable life at age PL_A is the age at point PL_B. Thus, to read the probable life at age PL_A, see the

[62] Wolf *supra* n. 7, at 28.

corresponding point on the survivor curve above at point "A," then horizontally to point "B" on the probable life curve, and back down to the age corresponding to point "B." It is no coincidence that the vertical line from AL_X connects at the top of the probable life curve. This is because at age zero, probable life equals average life.

APPENDIX C:

ACTUARIAL ANALYSIS

Actuarial science is a discipline that applies various statistical methods to assess risk probabilities and other related functions. Actuaries often study human mortality. The results from historical mortality data are used to predict how long similar groups of people who are alive will live today. Insurance companies rely of actuarial analysis in determining premiums for life insurance policies.

The study of human mortality is analogous to estimating service lives of industrial property groups. While some humans die solely from chance, most deaths are related to age; that is, death rates generally increase as age increases. Similarly, physical plant is also subject to forces of retirement. These forces include physical, functional, and contingent factors, as shown in the table below.[63]

Figure 13:
Forces of Retirement

Physical Factors	Functional Factors	Contingent Factors
Wear and tear Decay or deterioration Action of the elements	Inadequacy Obsolescence Changes in technology Regulations Managerial discretion	Casualties or disasters Extraordinary obsolescence

While actuaries study historical mortality data in order to predict how long a group of people will live, depreciation analysts must look at a utility's historical data in order to estimate the average lives of property groups. A utility's historical data is often contained in the Continuing Property Records ("CPR"). Generally, a CPR should contain 1) an inventory of property record

[63] NARUC *supra* n. 8, at 14-15.

units; 2) the association of costs with such units; and 3) the dates of installation and removal of plant. Since actuarial analysis includes the examination of historical data to forecast future retirements, the historical data used in the analysis should not contain events that are anomalous or unlikely to recur.[64] Historical data is used in the retirement rate actuarial method, which is discussed further below.

The Retirement Rate Method

There are several systematic actuarial methods that use historical data in order to calculating observed survivor curves for property groups. Of these methods, the retirement rate method is superior, and is widely employed by depreciation analysts.[65] The retirement rate method is ultimately used to develop an observed survivor curve, which can be fitted with an Iowa curve discussed in Appendix B in order to forecast average life. The observed survivor curve is calculated by using an observed life table ("OLT"). The figures below illustrate how the OLT is developed. First, historical property data are organized in a matrix format, with placement years on the left forming rows, and experience years on the top forming columns. The placement year (a.k.a. "vintage year" or "installation year") is the year of placement of a group of property. The experience year (a.k.a. "activity year") refers to the accounting data for a particular calendar year. The two matrices below use aged data – that is, data for which the dates of placements, retirements, transfers, and other transactions are known. Without aged data, the retirement rate actuarial method may not be employed. The first matrix is the exposure matrix, which shows the exposures

[64] *Id*. at 112-13.

[65] Anson Marston, Robley Winfrey & Jean C. Hempstead, *Engineering Valuation and Depreciation* 154 (2nd ed., McGraw-Hill Book Company, Inc. 1953).

at the beginning of each year.[66] An exposure is simply the depreciable property subject to retirement during a period. The second matrix is the retirement matrix, which shows the annual retirements during each year. Each matrix covers placement years 2003–2015, and experience years 2008-2015. In the exposure matrix, the number in the 2009 experience column and the 2003 placement row is $192,000. This means at the beginning of 2012, there was $192,000 still exposed to retirement from the vintage group placed in 2003. Likewise, in the retirement matrix, $19,000 of the dollars invested in 2003 was retired during 2012.

Figure 14:
Exposure Matrix

	Experience Years									
	Exposures at January 1 of Each Year (Dollars in 000's)									
Placement Years	2008	2009	2010	2011	2012	2013	2014	2015	Total at Start of Age Interval	Age Interval
2003	261	245	228	211	**192**	173	152	131	131	11.5 - 12.5
2004	267	252	236	220	202	**184**	165	145	297	10.5 - 11.5
2005	304	291	277	263	248	232	**216**	198	536	9.5 - 10.5
2006	345	334	322	310	298	284	270	**255**	**847**	8.5 - 9.5
2007	367	357	347	335	324	312	299	286	1,201	7.5 - 8.5
2008	375	366	357	347	336	325	314	302	1,581	6.5 - 7.5
2009		377	366	356	346	336	327	319	1,986	5.5 - 6.5
2010			381	369	358	347	336	327	2,404	4.5 - 5.5
2011				386	372	359	346	334	2,559	3.5 - 4.5
2012					395	380	366	352	2,722	2.5 - 3.5
2013						401	385	370	2,866	1.5 - 2.5
2014							410	393	2,998	0.5 - 1.5
2015								416	3,141	0.0 - 0.5
Total	1919	2222	2514	2796	3070	3333	3586	3827	23,268	

[66] Technically, the last numbers in each column are "gross additions" rather than exposures. Gross additions do not include adjustments and transfers applicable to plant placed in a previous year. Once retirements, adjustments, and transfers are factored in, the balance at the beginning of the next account period is called an "exposure" rather than an addition.

Figure 15:
Retirement Matrix

Placement Years	Experience Years: Retirments During the Year (Dollars in 000's) 2008	2009	2010	2011	2012	2013	2014	2015	Total During Age Interval	Age Interval
2003	16	17	18	19	**19**	20	21	23	23	11.5 - 12.5
2004	15	16	17	17	18	**19**	20	21	43	10.5 - 11.5
2005	13	14	14	15	16	17	**17**	18	59	9.5 - 10.5
2006	11	12	12	13	13	14	15	**15**	**71**	8.5 - 9.5
2007	10	11	11	12	12	13	13	14	82	7.5 - 8.5
2008	9	9	10	10	11	11	12	13	91	6.5 - 7.5
2009		11	10	10	9	9	9	8	95	5.5 - 6.5
2010			12	11	11	10	10	9	100	4.5 - 5.5
2011				14	13	13	12	11	93	3.5 - 4.5
2012					15	14	14	13	91	2.5 - 3.5
2013						16	15	14	93	1.5 - 2.5
2014							17	16	100	0.5 - 1.5
2015								18	112	0.0 - 0.5
Total	74	89	104	121	139	157	175	194	1,052	

These matrices help visualize how exposure and retirement data are calculated for each age interval. An age interval is typically one year. A common convention is to assume that any unit installed during the year is installed in the middle of the calendar year (i.e., July 1st). This convention is called the "half-year convention" and effectively assumes that all units are installed uniformly during the year.[67] Adoption of the half-year convention leads to age intervals of 0-0.5 years, 0.5-1.5 years, etc., as shown in the matrices.

The purpose of the matrices is to calculate the totals for each age interval, which are shown in the second column from the right in each matrix. This column is calculated by adding each number from the corresponding age interval in the matrix. For example, in the exposure matrix, the total amount of exposures at the beginning of the 8.5-9.5 age interval is $847,000. This number was calculated by adding the numbers shown on the "stairs" to the left (192+184+216+255=847).

[67] Wolf *supra* n. 7, at 22.

The same calculation is applied to each number in the column. The amounts retired during the year in the retirements matrix affect the exposures at the beginning of each year in the exposures matrix. For example, the amount exposed to retirement in 2008 from the 2003 vintage is $261,000. The amount retired during 2008 from the 2003 vintage is $16,000. Thus, the amount exposed to retirement in 2009 from the 2003 vintage is $245,000 ($261,000 - $16,000). The company's property records may contain other transactions which affect the property, including sales, transfers, and adjusting entries. Although these transactions are not shown in the matrices above, they would nonetheless affect the amount exposed to retirement at the beginning of each year.

The totaled amounts for each age interval in both matrices are used to form the exposure and retirement columns in the OLT, as shown in the chart below. This chart also shows the retirement ratio and the survivor ratio for each age interval. The retirement ratio for an age interval is the ratio of retirements during the interval to the property exposed to retirement at the beginning of the interval. The retirement ratio represents the probability that the property surviving at the beginning of an age interval will be retired during the interval. The survivor ratio is simply the complement to the retirement ratio (1 – retirement ratio). The survivor ratio represents the probability that the property surviving at the beginning of an age interval will survive to the next age interval.

Figure 16:
Observed Life Table

Age at Start of Interval	Exposures at Start of Age Interval	Retirements During Age Interval	Retirement Ratio	Survivor Ratio	Percent Surviving at Start of Age Interval
A	B	C	D = C / B	E = 1 - D	F
0.0	3,141	112	0.036	0.964	**100.00**
0.5	2,998	100	0.033	0.967	**96.43**
1.5	2,866	93	0.032	0.968	**93.21**
2.5	2,722	91	0.033	0.967	**90.19**
3.5	2,559	93	0.037	0.963	**87.19**
4.5	2,404	100	0.042	0.958	**84.01**
5.5	1,986	95	0.048	0.952	**80.50**
6.5	1,581	91	0.058	0.942	**76.67**
7.5	1,201	82	0.068	0.932	**72.26**
8.5	847	71	0.084	0.916	**67.31**
9.5	536	59	0.110	0.890	**61.63**
10.5	297	43	0.143	0.857	**54.87**
11.5	131	23	0.172	0.828	**47.01**
					38.91
Total	23,268	1,052			

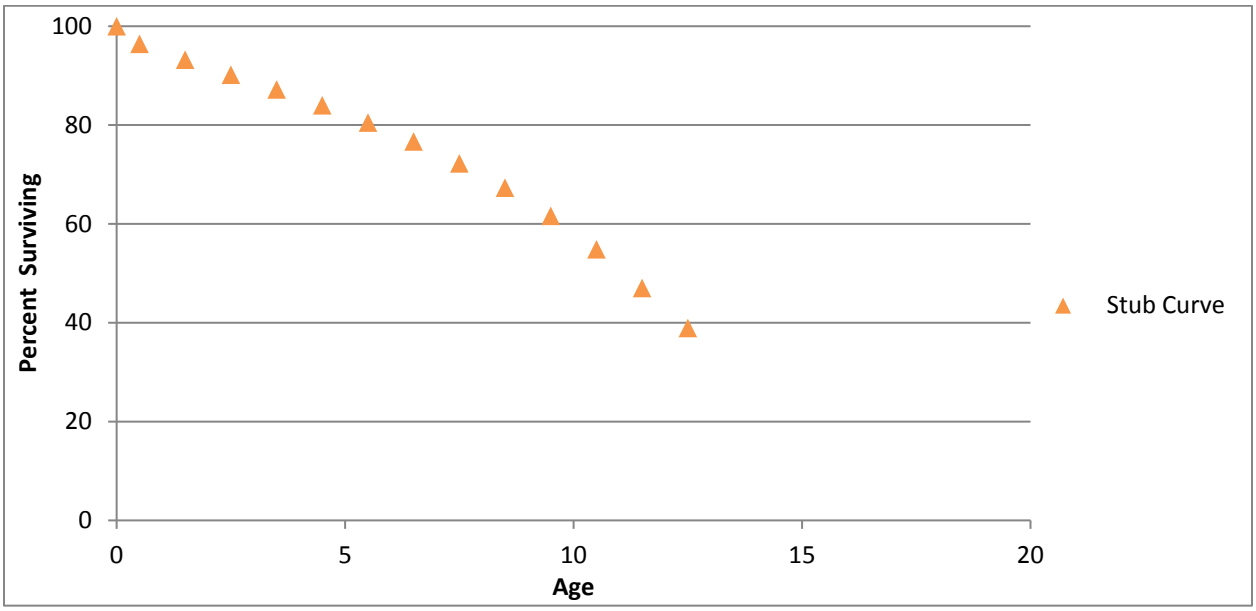
Column F on the right shows the percentages surviving at the beginning of each age interval. This column starts at 100% surviving. Each consecutive number below is calculated by multiplying the percent surviving from the previous age interval by the corresponding survivor ratio for that age interval. For example, the percent surviving at the start of age interval 1.5 is 93.21%, which was calculated by multiplying the percent surviving for age interval 0.5 (96.43%) by the survivor ratio for age interval 0.5 (0.967)[68].

The percentages surviving in Column F are the numbers that are used to form the original survivor curve. This particular curve starts at 100% surviving and ends at 38.91% surviving. An

[68] Multiplying 96.43 by 0.967 does not equal 93.21 exactly due to rounding.

observed survivor curve such as this that does not reach zero percent surviving is called a "stub" curve. The figure below illustrates the stub survivor curve derived from the OLT table above.

Figure 17:
Original "Stub" Survivor Curve



The matrices used to develop the basic OLT and stub survivor curve provide a basic illustration of the retirement rate method in that only a few placement and experience years were used. In reality, analysts may have several decades of aged property data to analyze. In that case, it may be useful to use a technique called "banding" in order to identify trends in the data.

Banding

The forces of retirement and characteristics of industrial property are constantly changing. A depreciation analyst may examine the magnitude of these changes. Analysts often use a technique called "banding" to assist with this process. Banding refers to the merging of several years of data into a single data set for further analysis, and it is a common technique associated

with the retirement rate method.[69] There are three primary benefits of using bands in depreciation analysis:

1. Increasing the sample size. In statistical analyses, the larger the sample size in relation to the body of total data, the greater the reliability of the result;

2. Smooth the observed data. Generally, the data obtained from a single activity or vintage year will not produce an observed life table that can be easily fit; and

3. Identify trends. By looking at successive bands, the analyst may identify broad trends in the data that may be useful in projecting the future life characteristics of the property.[70]

Two common types of banding methods are the "placement band" method and the "experience band" method." A placement band, as the name implies, isolates selected placement years for analysis. The figure below illustrates the same exposure matrix shown above, except that only the placement years 2005-2008 are considered in calculating the total exposures at the beginning of each age interval.

[69] NARUC *supra* n. 8, at 113.

[70] *Id*.

Figure 18:
Placement Bands

Placement Years	Experience Years: Exposures at January 1 of Each Year (Dollars in 000's) 2008	2009	2010	2011	2012	2013	2014	2015	Total at Start of Age Interval	Age Interval
2003	261	245	228	211	192	173	152	131		11.5 - 12.5
2004	267	252	236	220	202	184	165	145		10.5 - 11.5
2005	304	291	277	263	248	232	216	198	198	9.5 - 10.5
2006	345	334	322	310	298	284	270	255	471	8.5 - 9.5
2007	367	357	347	335	324	312	299	286	788	7.5 - 8.5
2008	375	366	357	347	336	325	314	302	1,133	6.5 - 7.5
2009		377	366	356	346	336	327	319	1,186	5.5 - 6.5
2010			381	369	358	347	336	327	1,237	4.5 - 5.5
2011				386	372	359	346	334	1,285	3.5 - 4.5
2012					395	380	366	352	1,331	2.5 - 3.5
2013						401	385	370	1,059	1.5 - 2.5
2014							410	393	733	0.5 - 1.5
2015								416	375	0.0 - 0.5
Total	1919	2222	2514	2796	3070	3333	3586	3827	9,796	

The shaded cells within the placement band equal the total exposures at the beginning of age interval 4.5–5.5 ($1,237). The same placement band would be used for the retirement matrix covering the same placement years of 2005 – 2008. This of course would result in a different OLT and original stub survivor curve than those that were calculated above without the restriction of a placement band.

Analysts often use placement bands for comparing the survivor characteristics of properties with different physical characteristics.[71] Placement bands allow analysts to isolate the effects of changes in technology and materials that occur in successive generations of plant. For example, if in 2005 an electric utility began placing transmission poles with a special chemical treatment that extended the service lives of the poles, an analyst could use placement bands to isolate and analyze the effect of that change in the property group's physical characteristics. While placement

[71] Wolf *supra* n. 7, at 182.

bands are very useful in depreciation analysis, they also possess an intrinsic dilemma. A fundamental characteristic of placement bands is that they yield fairly complete survivor curves for older vintages. However, with newer vintages, which are arguably more valuable for forecasting, placement bands yield shorter survivor curves. Longer "stub" curves are considered more valuable for forecasting average life. Thus, an analyst must select a band width broad enough to provide confidence in the reliability of the resulting curve fit, yet narrow enough so that an emerging trend may be observed.[72]

Analysts also use "experience bands." Experience bands show the composite retirement history for all vintages during a select set of activity years. The figure below shows the same data presented in the previous exposure matrices, except that the experience band from 2011 – 2013 is isolated, resulting in different interval totals.

[72] NARUC *supra* n. 8, at 114.

Figure 19:
Experience Bands

Placement Years	Experience Years: Exposures at January 1 of Each Year (Dollars in 000's) 2008	2009	2010	2011	2012	2013	2014	2015	Total at Start of Age Interval	Age Interval
2003	261	245	228	211	192	173	152	131		11.5 - 12.5
2004	267	252	236	220	202	184	165	145		10.5 - 11.5
2005	304	291	277	263	248	232	216	198	173	9.5 - 10.5
2006	345	334	322	310	298	284	270	255	376	8.5 - 9.5
2007	367	357	347	335	324	312	299	286	645	7.5 - 8.5
2008	375	366	357	347	336	325	314	302	752	6.5 - 7.5
2009		377	366	356	346	336	327	319	872	5.5 - 6.5
2010			381	369	358	347	336	327	959	4.5 - 5.5
2011				386	372	359	346	334	1,008	3.5 - 4.5
2012					395	380	366	352	1,039	2.5 - 3.5
2013						401	385	370	1,072	1.5 - 2.5
2014							410	393	1,121	0.5 - 1.5
2015								416	1,182	0.0 - 0.5
Total	1919	2222	2514	2796	3070	3333	3586	3827	9,199	

The shaded cells within the experience band equal the total exposures at the beginning of age interval 4.5–5.5 ($1,237). The same experience band would be used for the retirement matrix covering the same experience years of 2011 – 2013. This of course would result in a different OLT and original stub survivor than if the band had not been used. Analysts often use experience bands to isolate and analyze the effects of an operating environment over time.[73] Likewise, the use of experience bands allows analysis of the effects of an unusual environmental event. For example, if an unusually severe ice storm occurred in 2013, destruction from that storm would affect an electric utility's line transformers of all ages. That is, each of the line transformers from each placement year would be affected, including those recently installed in 2012, as well as those installed in 2003. Using experience bands, an analyst could isolate or even eliminate the 2013 experience year from the analysis. In contrast, a placement band would not effectively isolate the

[73] *Id.*

ice storm's effect on life characteristics. Rather, the placement band would show an unusually large rate of retirement during 2013, making it more difficult to accurately fit the data with a smooth Iowa curve. Experience bands tend to yield the most complete stub curves for recent bands because they have the greatest number of vintages included. Longer stub curves are better for forecasting. The experience bands, however, may also result in more erratic retirement dispersion making the curve fitting process more difficult.

Depreciation analysts must use professional judgment in determining the types of bands to use and the band widths. In practice, analysts may use various combinations of placement and experience bands in order to increase the data sample size, identify trends and changes in life characteristics, and isolate unusual events. Regardless of which bands are used, observed survivor curves in depreciation analysis rarely reach zero percent. This is because, as seen in the OLT above, relatively newer vintage groups have not yet been fully retired at the time the property is studied. An analyst could confine the analysis to older, fully retired vintage groups in order to get complete survivor curves, but such analysis would ignore some the property currently in service and would arguably not provide an accurate description of life characteristics for current plant in service. Because a complete curve is necessary to calculate the average life of the property group, however, curve fitting techniques using Iowa curves or other standardized curves may be employed in order to complete the stub curve.

Curve Fitting

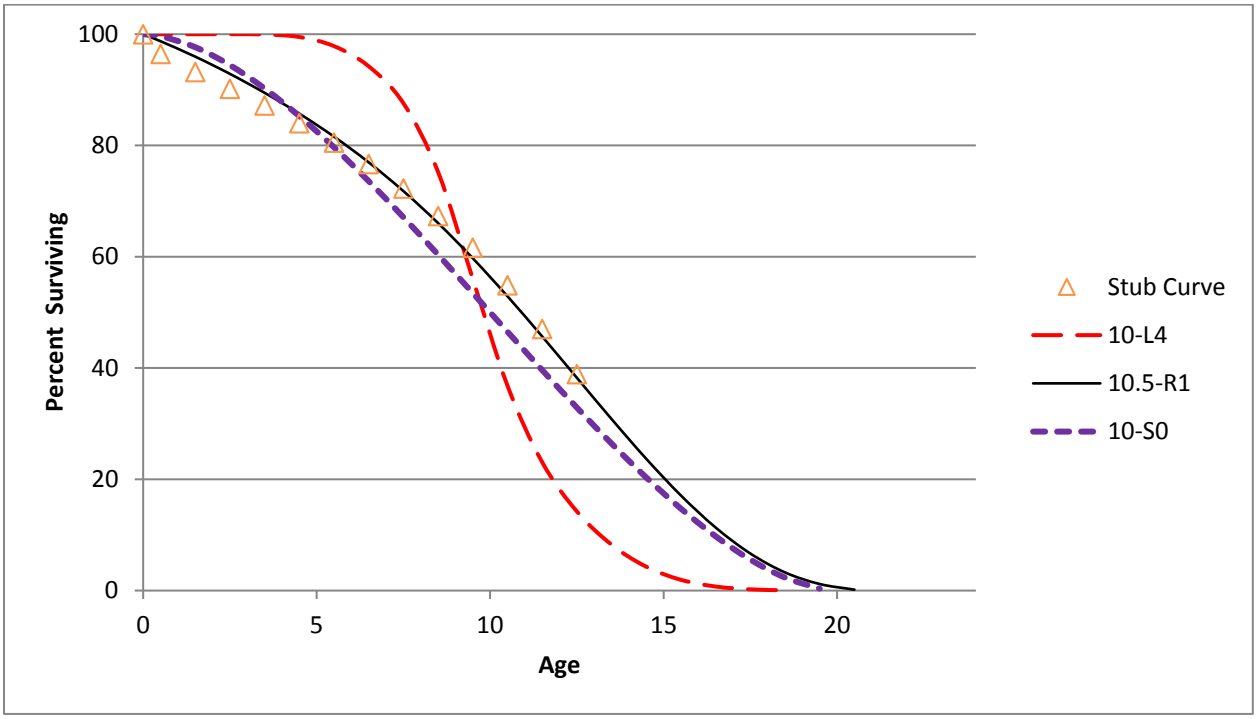
Depreciation analysts typically use the survivor curve rather than the frequency curve to fit the observed stub curves. The most commonly used generalized survivor curves used in the curve fitting process are the Iowa curves discussed above. As Wolf notes, if "the Iowa curves are

adopted as a model, an underlying assumption is that the process describing the retirement pattern is one of the 22 [or more] processes described by the Iowa curves."[74]

Curve fitting may be done through visual matching or mathematical matching. In visual curve fitting, the analyst visually examines the plotted data to make an initial judgment about the Iowa curves that may be a good fit. The figure below illustrates the stub survivor curve shown above. It also shows three different Iowa curves: the 10-L4, the 10.5-R1, and the 10-S0. Visually, it is clear that the 10.5-R1 curve is a better fit than the other two curves.

[74] Wolf *supra* n. 7, at 46 (22 curves includes Winfrey's 18 original curves plus Cowles's four "O" type curves).

Figure 20:
Visual Curve Fitting



In mathematical fitting, the least squares method is used to calculate the best fit. This mathematical method would be excessively time consuming if done by hand. With the use of modern computer software however, mathematical fitting is an efficient and useful process. The typical logic for a computer program, as well as the software employed for the analysis in this testimony is as follows:

> First (an Iowa curve) curve is arbitrarily selected. . . . If the observed curve is a stub curve, . . . calculate the area under the curve and up to the age at final data point. Call this area the realized life. Then systematically vary the average life of the theoretical survivor curve and calculate its realized life at the age corresponding to the study date. This trial and error procedure ends when you find an average life such that the realized life of the theoretical curve equals the realized life of the observed curve. Call this the average life.
>
> Once the average life is found, calculate the difference between each percent surviving point on the observed survivor curve and the corresponding point on the Iowa curve. Square each difference and sum them. The sum of squares is used as a measure of goodness of fit for that particular Iowa type curve. This procedure is

> repeated for the remaining 21 Iowa type curves. The "best fit" is declared to be the type of curve that minimizes the sum of differences squared.[75]

Mathematical fitting requires less judgment from the analyst, and is thus less subjective. Blind reliance on mathematical fitting, however, may lead to poor estimates. Thus, analysts should employ both mathematical and visual curve fitting in reaching their final estimates. This way, analysts may utilize the objective nature of mathematical fitting while still employing professional judgment. As Wolf notes: "The results of mathematical curve fitting serve as a guide for the analyst and speed the visual fitting process. But the results of the mathematical fitting should be checked visually and the final determination of the best fit be made by the analyst."[76]

In the graph above, visual fitting was sufficient to determine that the 10.5-R1 Iowa curve was a better fit than the 10-L4 and the 10-S0 curves. Using the sum of least squares method, mathematical fitting confirms the same result. In the chart below, the percentages surviving from the OLT that formed the original stub curve are shown in the left column, while the corresponding percentages surviving for each age interval are shown for the three Iowa curves. The right portion of the chart shows the differences between the points on each Iowa curve and the stub curve. These differences are summed at the bottom. Curve 10.5-R1 is the best fit because the sum of the squared differences for this curve is less than the same sum of the other two curves. Curve 10-L4 is the worst fit, which was also confirmed visually.

---

[75] Wolf *supra* n. 7, at 47.

[76] *Id*. at 48.

Figure 21:
Mathematical Fitting

Age Interval	Stub Curve	Iowa Curves			Squared Differences		
		10-L4	10-S0	10.5-R1	10-L4	10-S0	10.5-R1
0.0	100.0	100.0	100.0	100.0	0.0	0.0	0.0
0.5	96.4	100.0	99.7	98.7	12.7	10.3	5.3
1.5	93.2	100.0	97.7	96.0	46.1	19.8	7.6
2.5	90.2	100.0	94.4	92.9	96.2	18.0	7.2
3.5	87.2	100.0	90.2	89.5	162.9	9.3	5.2
4.5	84.0	99.5	85.3	85.7	239.9	1.6	2.9
5.5	80.5	97.9	79.7	81.6	301.1	0.7	1.2
6.5	76.7	94.2	73.6	77.0	308.5	9.5	0.1
7.5	72.3	87.6	67.1	71.8	235.2	26.5	0.2
8.5	67.3	75.2	60.4	66.1	62.7	48.2	1.6
9.5	61.6	56.0	53.5	59.7	31.4	66.6	3.6
10.5	54.9	36.8	46.5	52.9	325.4	69.6	3.9
11.5	47.0	23.1	39.6	45.7	572.6	54.4	1.8
12.5	38.9	14.2	32.9	38.2	609.6	36.2	0.4
SUM					**3004.2**	**371.0**	**41.0**

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EDUCATION

University of Oklahoma — Norman, OK
Master of Business Administration — 2014
Areas of Concentration: Finance, Energy

University of Oklahoma College of Law — Norman, OK
Juris Doctor — 2007
Member, American Indian Law Review

University of Oklahoma — Norman, OK
Bachelor of Business Administration — 2003
Major: Finance

PROFESSIONAL DESIGNATIONS

Society of Depreciation Professionals
Certified Depreciation Professional (CDP)

Society of Utility and Regulatory Financial Analysts
Certified Rate of Return Analyst (CRRA)

The Mediation Institute
Certified Civil / Commercial & Employment Mediator

WORK EXPERIENCE

Resolve Utility Consulting PLLC — Oklahoma City, OK
Managing Member — 2016 – Present
Provide expert analysis and testimony specializing in depreciation and cost of capital issues for clients in utility regulatory proceedings.

Oklahoma Corporation Commission — Oklahoma City, OK
Public Utility Regulatory Analyst — 2012 – 2016
Assistant General Counsel — 2011 – 2012
Represented commission staff in utility regulatory proceedings and provided legal opinions to commissioners. Provided expert analysis and testimony in depreciation, cost of capital, incentive compensation, payroll and other issues.

Perebus Counsel, PLLC — Oklahoma City, OK
Managing Member — 2009 – 2011
Represented clients in the areas of family law, estate planning, debt negotiations, business organization, and utility regulation.

Moricoli & Schovanec, P.C. — Oklahoma City, OK
Associate Attorney — 2007 – 2009
Represented clients in the areas of contracts, oil and gas, business structures and estate administration.

TEACHING EXPERIENCE

University of Oklahoma — Norman, OK
Adjunct Instructor – "Conflict Resolution" — 2014 – Present
Adjunct Instructor – "Ethics in Leadership"

Rose State College — Midwest City, OK
Adjunct Instructor – "Legal Research" — 2013 – 2015
Adjunct Instructor – "Oil & Gas Law"

PUBLICATIONS

American Indian Law Review — Norman, OK
"Vine of the Dead: Reviving Equal Protection Rites for Religious Drug Use" — 2006
(31 Am. Indian L. Rev. 143)

VOLUNTEER EXPERIENCE

Calm Waters — Oklahoma City, OK
Board Member — 2015 – Present
Participate in management of operations, attend meetings, review performance, compensation, and financial records. Assist in fundraising events.

Group Facilitator & Fundraiser — 2014 – Present
Facilitate group meetings designed to help children and families cope with divorce and tragic events. Assist in fundraising events.

St. Jude Children's Research Hospital — Oklahoma City, OK
Oklahoma Fundraising Committee — 2008 – 2010
Raised money for charity by organizing local fundraising events.

PROFESSIONAL ASSOCIATIONS

Oklahoma Bar Association 2007 – Present

Society of Depreciation Professionals 2014 – Present
Board Member – President 2017
Participate in management of operations, attend meetings, review performance, organize presentation agenda.

Society of Utility Regulatory Financial Analysts 2014 – Present

SELECTED CONTINUING PROFESSIONAL EDUCATION

Society of Depreciation Professionals — Austin, TX
"Life and Net Salvage Analysis" — 2015
Extensive instruction on utility depreciation, including actuarial and simulation life analysis modes, gross salvage, cost of removal, life cycle analysis, and technology forecasting.

Society of Depreciation Professionals — New Orleans, LA
"Introduction to Depreciation" and "Extended Training" — 2014
Extensive instruction on utility depreciation, including average lives and net salvage.

Society of Utility and Regulatory Financial Analysts — Indianapolis, IN
46th Financial Forum. "The Regulatory Compact: Is it Still Relevant?" — 2014
Forum discussions on current issues.

New Mexico State University, Center for Public Utilities — Santa Fe, NM
Current Issues 2012, "The Santa Fe Conference" — 2012
Forum discussions on various current issues in utility regulation.

Michigan State University, Institute of Public Utilities — Clearwater, FL
"39th Eastern NARUC Utility Rate School" — 2011
One-week, hands-on training emphasizing the fundamentals of the utility ratemaking process.

New Mexico State University, Center for Public Utilities — Albuquerque, NM
"The Basics: Practical Regulatory Training for the Changing Electric Industries" — 2010
One-week, hands-on training designed to provide a solid foundation in core areas of utility ratemaking.

The Mediation Institute — Oklahoma City, OK
"Civil / Commercial & Employment Mediation Training" — 2009
Extensive instruction and mock mediations designed to build foundations in conducting mediations in civil matters.

Utility Regulatory Proceedings

State	Regulatory Agency / Company-Applicant	Docket Number	Testimony / Analysis		
			Issues	Type	Date
OK	Oklahoma Corporation Commission Empire District Electric Co.	PUD 201600468	Cost of capital, depreciation rates, terminal net salvage, lifespans	Prefiled	3/13/2017
TX	Public Utility Commision of Texas Sharlyland Utilities	PUC 45414	Depreciation rates, simulated and actuarial analysis	Prefiled	2/28/2017
TX	Railroad Commission of Texas CenterPoint Energy Texas Gas	GUD 10567	Depreciation rates, simulated and actuarial analysis	Prefiled	2/21/2017
AR	Arkansas Public Service Commission Oklahoma Gas & Electric Co.	160-159-GU	Cost of capital, depreciation rates, terminal salvage, lifespans	Prefiled	1/31/2017
FL	Florida Public Service Commission Peoples Gas	160-159-GU	Depreciation rates	Report	11/4/2016
AZ	Arizona Corporation Commission Arizona Public Service Co.	E-01345A-16-0036	Cost of capital, depreciation rates, terminal salvage, lifespans	Pre-filed	12/28/2016
NV	Nevada Public Utilities Commission Sierra Pacific Power Co.	16-06008	Depreciation rates, terminal salvage, lifespans, theoretical reserve	Pre-filed	9/23/2016
OK	Oklahoma Corporation Commission Oklahoma Gas & Electric Co.	PUD 201500273	Cost of capital, depreciation rates, terminal salvage, lifespans	Pre-filed Live	3/21/2016 5/3/2016
OK	Oklahoma Corporation Commission Public Service Co. of Oklahoma	PUD 201500208	Cost of capital, depreciation rates, terminal salvage, lifespans	Pre-filed Live	10/14/2015 12/8/2015
OK	Oklahoma Corporation Commission Oklahoma Natural Gas Co.	PUD 201500213	Cost of capital and depreciation rates	Pre-filed	10/19/2015
OK	Oklahoma Corporation Commission Oak Hills Water System	PUD 201500123	Cost of capital and depreciation rates	Pre-filed Live	7/8/2015 8/14/2015

Utility Regulatory Proceedings

State	Regulatory Agency / Company-Applicant	Docket Number	Testimony / Analysis		
			Issues	Type	Date
OK	Oklahoma Corporation Commission CenterPoint Energy Oklahoma Gas	PUD 201400227	Fuel prudence review and fuel adjustment clause	Pre-filed Live	11/3/2014 2/10/2015
OK	Oklahoma Corporation Commission Public Service Co. of Oklahoma	PUD 201400233	Certificate of authority to issue new debt securities	Pre-filed Live	9/12/2014 9/25/2014
OK	Oklahoma Corporation Commission Empire District Electric Co.	PUD 201400226	Fuel prudence review and fuel adjustment clause	Pre-filed Live	12/9/2014 1/22/2015
OK	Oklahoma Corporation Commission Fort Cobb Fuel Authority	PUD 201400219	Fuel prudence review and fuel adjustment clause	Pre-filed Live	 1/29/2015
OK	Oklahoma Corporation Commission Fort Cobb Fuel Authority	PUD 201400140	Outside services, legislative advocacy, payroll expense, and insurance expense	Pre-filed	12/16/2014
OK	Oklahoma Corporation Commission Public Service Co. of Oklahoma	PUD 201300201	Authorization of standby and supplemental tariff	Pre-filed Live	12/9/2013 12/19/2013
OK	Oklahoma Corporation Commission Fort Cobb Fuel Authority	PUD 201300134	Fuel prudence review and fuel adjustment clause	Pre-filed Live	10/23/2013 1/30/2014
OK	Oklahoma Corporation Commission Empire District Electric Co.	PUD 201300131	Fuel prudence review and fuel adjustment clause	Pre-filed Live	11/21/2013 12/19/2013
OK	Oklahoma Corporation Commission CenterPoint Energy Oklahoma Gas	PUD 201300127	Fuel prudence review and fuel adjustment clause	Pre-filed Live	10/21/2013 1/23/2014
OK	Oklahoma Corporation Commission Oklahoma Gas & Electric Co.	PUD 201200185	Gas transportation contract extension	Pre-filed Live	9/20/2012 10/9/2012

Utility Regulatory Proceedings

State	Regulatory Agency / Company-Applicant	Docket Number	Testimony / Analysis		
			Issues	Type	Date
OK	Oklahoma Corporation Commission Empire District Electric Co.	PUD 201200170	Fuel prudence review and fuel adjustment clause	Pre-filed Live	10/31/2012 12/13/2012
OK	Oklahoma Corporation Commission Oklahoma Gas & Electric Co.	PUD 201200169	Fuel prudence review and fuel adjustment clause	Pre-filed Live	12/19/2012 4/4/2013

Summary Expense Adjustment

Plant Function	Plant Balance	Company Accrual	City of Dallas Accrual	City of Dallas Adjustment
Underground Storage Plant	$ 305,550,724	$ 10,035,700	$ 6,262,204	$ (3,773,496)
Transmission Plant	2,070,119,871	65,722,116	36,657,225	(29,064,891)
General Plant - Depreciated	10,892,894	632,743	490,148	(142,595)
General Plant - Amortized	27,647,361	2,085,808	2,085,808	-
Total Plant Studied	$ 2,414,210,850	$ 78,476,366	$ 45,495,384	**$ (32,980,982)**

*See Exhibit DJG-3 for details; plant balances as of the study date

Detailed Rate Comparison

Account No.	Description	[1] Original Cost	[2] Company Proposal Iowa Curve Type	AL	Rate	Annual Accrual	[3] City of Dallas Proposal Iowa Curve Type	AL	Rate	Annual Accrual	[4] Difference Rate	Annual Accrual
	Underground Storage Plant											
350.20	Rights Of Way	32,563	R4	55	2.23%	726	R4	55	2.13%	695	-0.10%	(31)
351.00	Structures & Improvements	24,613,950	S3	52	2.39%	588,987	R2.5	75	1.37%	336,821	-1.02%	(252,166)
352.00	Wells	78,334,938	R0.5	55	3.27%	2,561,261	R0.5	55	1.89%	1,481,851	-1.38%	(1,079,410)
353.00	Lines	13,244,531	R0.5	40	3.66%	485,025	R0.5	42	2.31%	305,595	-1.35%	(179,429)
354.00	Compressor Station Equipment	88,180,195	R1.5	40	3.36%	2,958,943	L2	42	2.47%	2,174,213	-0.89%	(784,730)
355.00	Meas. & Reg. Equipment	50,619,681	R0.5	40	4.59%	2,323,554	R0.5	42	2.47%	1,250,785	-2.12%	(1,072,770)
356.00	Purification Equipment	49,904,221	R2.5	55	2.20%	1,097,856	R2	69	1.39%	695,526	-0.81%	(402,330)
357.00	Other Equipment	620,643	R2.5	40	3.12%	19,347	R2.5	40	2.69%	16,718	-0.42%	(2,629)
	Total Underground Storage Plant	305,550,724			3.28%	10,035,700			2.05%	6,262,204	-1.23%	(3,773,496)
	Transmission Plant											
365.20	ROW - City Gate	18,967,308	R4	85	1.31%	248,564	R1	89	1.23%	232,664	-0.08%	(15,900)
366.00	Structures & Improvements	11,462,500	L0	45	4.06%	465,303	L0	45	2.39%	273,576	-1.67%	(191,726)
367.03	Mains - All	1,642,131,650	L0	70	2.83%	46,440,537	L0	70	1.52%	25,010,087	-1.31%	(21,430,450)
368.00	Compressor Station Equipment	149,930,747	L0	32	4.40%	6,597,250	L0	32	2.75%	4,125,843	-1.65%	(2,471,407)
369.00	M&R Station Equipment	228,574,767	L0	37	4.82%	11,019,272	L0	37	2.80%	6,397,236	-2.02%	(4,622,036)
370.00	Communication Equipment	14,133,747	L2	25	5.47%	773,582	R1.5	28	3.50%	494,346	-1.98%	(279,236)
371.00	Other Equipment	4,919,152	L0	34	3.61%	177,607	L0	34	2.51%	123,471	-1.10%	(54,136)
	Total Transmission Plant	2,070,119,871			3.17%	65,722,116			1.77%	36,657,225	-1.40%	(29,064,891)
	General Plant - Depreciated											
390.00	Structures & Improvements	6,279,606	R1.5	40	3.38%	212,345	R1.5	40	2.55%	160,214	-0.83%	(52,131)
392.00	Transportation Equipment	1,561,599	L1	7	13.28%	207,393	L1	7	10.40%	162,437	-2.88%	(44,956)
396.00	Power Operated Equipment	3,051,689	R1.5	15	6.98%	213,005	R1.5	15	5.49%	167,498	-1.49%	(45,508)
	Total General Plant - Depreciated	10,892,894			5.81%	632,743			4.50%	490,148	-1.31%	(142,595)
	General Plant - Amortized											
391.00	Office Furniture & Equipment	4,874,479	SQ	24	7.20%	351,183	SQ	24	7.20%	351,183	0.00%	-
394.00	Tools,Shop, & Garage	9,837,772	SQ	20	6.20%	609,659	SQ	20	6.20%	609,659	0.00%	-
395.00	Laboratory Equipment	172,495	SQ	21	6.03%	10,409	SQ	21	6.03%	10,409	0.00%	-
397.00	Communication Equipment - All	930,477	SQ	22	7.11%	66,191	SQ	22	7.11%	66,191	0.00%	-
398.00	Miscellaneous Equipment	8,186,506	SQ	32	5.49%	449,114	SQ	32	5.49%	449,114	0.00%	-

Detailed Rate Comparison

		[1]	[2]				[3]				[4]	
			Company Proposal				City of Dallas Proposal				Difference	
Account No.	Description	Original Cost	Iowa Curve Type	AL	Rate	Annual Accrual	Iowa Curve Type	AL	Rate	Annual Accrual	Rate	Annual Accrual
399.00	Other Tangible Property	71,110	SQ	7	15.93%	11,326	SQ	7	15.93%	11,326	0.00%	-
399.01	Servers Hardware	611,913	SQ	10	11.08%	67,779	SQ	10	11.08%	67,779	0.00%	-
399.02	Servers Software	1,407,444	SQ	10	12.61%	177,439	SQ	10	12.61%	177,439	0.00%	-
399.03	Network Hardware	71,335	SQ	10	10.98%	7,833	SQ	10	10.98%	7,833	0.00%	-
399.06	PC Hardware	792,972	SQ	5	22.06%	174,963	SQ	5	22.06%	174,963	0.00%	-
399.07	PC Software	690,857	SQ	5	23.15%	159,911	SQ	5	23.15%	159,911	0.00%	-
	Total General Plant - Amortized	27,647,361			7.54%	2,085,808			7.54%	2,085,808	0.00%	-
	TOTAL PLANT STUDIED	**2,414,210,850**			**3.25%**	**78,476,366**			**1.88%**	**45,495,384**	**-1.37%**	**(32,980,982)**

[1] From Company depreciation study; plant balance as of the study date
[2] From Company depreciation study
[3] Rates and Accruals from Rate Development exhibit. (Some unadjusted accounts may be hard coded to match Company proposal due to rounding differences)
[4] = [3] - [2]

Depreciation Rate Development
(SL-AL-RL-BG System)

Account No.	Description	[1] Original Cost	[2] Iowa Curve Type	[2] Iowa Curve AL	[3] Net Salvage	[4] Depreciable Base	[5] Book Reserve	[6] Future Accruals	[7] Remaining Life	[8] Service Life Accrual	[9] Service Life Rate	[10] Net Salvage Accrual	[11] Net Salvage Rate	[12] Total Accrual	[13] Total Rate
	Underground Storage Plant														
350.20	Rights Of Way	32,563	R4	55	0.0%	32,563	14,767	17,796	25.6	695	2.13%	-	0.00%	695	**2.13%**
351.00	Structures & Improvements	24,613,950	R2.5	75	-10.0%	27,075,345	5,855,602	21,219,743	63.0	297,752	1.21%	39,070	0.16%	336,821	**1.37%**
352.00	Wells	78,334,938	R0.5	55	-10.0%	86,168,432	14,298,665	71,869,767	48.5	1,320,336	1.69%	161,515	0.21%	1,481,851	**1.89%**
353.00	Lines	13,244,531	R0.5	42	-5.0%	13,906,757	3,699,870	10,206,887	33.4	285,768	2.16%	19,827	0.15%	305,595	**2.31%**
354.00	Compressor Station Equipment	88,180,195	L2	42	-5.0%	92,589,205	18,665,963	73,923,242	34.0	2,044,536	2.32%	129,677	0.15%	2,174,213	**2.47%**
355.00	Meas. & Reg. Equipment	50,619,681	R0.5	42	-10.0%	55,681,650	7,776,600	47,905,049	38.3	1,118,618	2.21%	132,166	0.26%	1,250,785	**2.47%**
356.00	Purification Equipment	49,904,221	R2	69	0.0%	49,904,221	7,059,844	42,844,377	61.6	695,526	1.39%	-	0.00%	695,526	**1.39%**
357.00	Other Equipment	620,643	R2.5	40	-5.0%	651,675	206,980	444,696	26.6	15,551	2.51%	1,167	0.19%	16,718	**2.69%**
	Total Underground Storage Plant	305,550,724				326,009,849	57,578,292	268,431,557	42.9	5,778,782	1.89%	483,422	0.16%	6,262,204	**2.05%**
	Transmission Plant														
365.20	ROW - City Gate	18,967,308	R1	89	0.0%	18,967,308	5,589,104	13,378,204	57.5	232,664	1.23%	-	0.00%	232,664	**1.23%**
366.00	Structures & Improvements	11,462,500	L0	45	-20.0%	13,755,000	3,140,237	10,614,764	38.8	214,491	1.87%	59,085	0.52%	273,576	**2.39%**
367.03	Mains - All	1,642,131,650	L0	70	-15.0%	1,888,451,398	292,807,832	1,595,643,566	63.8	21,149,276	1.29%	3,860,811	0.24%	25,010,087	**1.52%**
368.00	Compressor Station Equipment	149,930,747	L0	32	-2.0%	152,929,362	42,356,758	110,572,604	26.8	4,013,955	2.68%	111,889	0.07%	4,125,843	**2.75%**
369.00	M&R Station Equipment	228,574,767	L0	37	-15.0%	262,860,982	55,590,538	207,270,444	32.4	5,339,019	2.34%	1,058,217	0.46%	6,397,236	**2.80%**
370.00	Communication Equipment	14,133,747	R1.5	28	-10.0%	15,547,122	4,671,511	10,875,610	22.0	430,102	3.04%	64,244	0.45%	494,346	**3.50%**
371.00	Other Equipment	4,919,152	L0	34	-3.0%	5,066,726	1,942,900	3,123,826	25.3	117,638	2.39%	5,833	0.12%	123,471	**2.51%**
	Total Transmission Plant	2,070,119,871				2,357,577,898	406,098,881	1,951,479,017	53.2	31,497,146	1.52%	5,160,079	0.25%	36,657,225	**1.77%**
	General Plant - Depreciated														
390.00	Structures & Improvements	6,279,606	R1.5	40	-5.0%	6,593,587	1,338,571	5,255,015	32.8	150,641	2.40%	9,573	0.15%	160,214	**2.55%**
392.00	Transportation Equipment	1,561,599	L1	7	20.0%	1,249,279	578,415	670,864	4.1	238,059	15.24%	(75,622)	-4.84%	162,437	**10.40%**
396.00	Power Operated Equipment	3,051,689	R1.5	15	15.0%	2,593,936	701,214	1,892,722	11.3	208,007	6.82%	(40,509)	-1.33%	167,498	**5.49%**
	Total General Plant - Depreciated	10,892,894				10,436,801	2,618,199	7,818,602	16.0	596,707	5.48%	(106,559)	-0.98%	490,148	**4.50%**
	General Plant - Amortized														
391.00	Office Furniture & Equipment	4,874,479	SQ	24	0.0%	4,874,479	2,724,584	2,149,895	6.9	309,792	6.36%	-	0.00%	309,792	**6.36%**
394.00	Tools,Shop, & Garage	9,837,772	SQ	20	0.0%	9,837,772	2,166,906	7,670,866	14.4	532,788	5.42%	-	0.00%	532,788	**5.42%**
395.00	Laboratory Equipment	172,495	SQ	21	0.0%	172,495	40,384	132,111	14.7	8,958	5.19%	-	0.00%	8,958	**5.19%**
397.00	Communication Equipment - All	930,477	SQ	22	0.0%	930,477	372,576	557,901	10.4	53,821	5.78%	-	0.00%	53,821	**5.78%**
398.00	Miscellaneous Equipment	8,186,506	SQ	32	0.0%	8,186,506	3,556,347	4,630,159	14.3	323,311	3.95%	-	0.00%	323,311	**3.95%**
399.00	Other Tangible Property	71,110	SQ	7	0.0%	71,110	21,487	49,623	4.3	11,513	16.19%	-	0.00%	11,513	**16.19%**
399.01	Servers Hardware	611,913	SQ	10	0.0%	611,913	121,216	490,697	7.5	65,595	10.72%	-	0.00%	65,595	**10.72%**
399.02	Servers Software	1,407,444	SQ	10	0.0%	1,407,444	675,152	732,293	3.9	187,795	13.34%	-	0.00%	187,795	**13.34%**
399.03	Network Hardware	71,335	SQ	10	0.0%	71,335	12,875	58,461	7.7	7,588	10.64%	-	0.00%	7,588	**10.64%**
399.06	PC Hardware	792,972	SQ	5	0.0%	792,972	301,166	491,805	14.8	33,293	4.20%	-	0.00%	33,293	**4.20%**
399.07	PC Software	690,857	SQ	5	0.0%	690,857	503,432	187,424	1.3	142,171	20.58%	-	0.00%	142,171	**20.58%**
	Total General Plant - Amortized	27,647,361				27,647,361	10,496,125	17,151,235	10.2	1,676,626	6.06%	-	0.00%	1,676,626	**6.06%**
	TOTAL PLANT STUDIED	**2,414,210,850**				**2,721,671,909**	**476,791,497**	**2,244,880,412**	**49.8**	**39,549,261**	**1.64%**	**5,536,942**	**0.23%**	**45,086,202**	**1.87%**

[1] From Company depreciation study
[2] Selected Iowa curve type and average life through mathematical and visual curve fitting-techniques and professional judgement
[3] Estimated net salvage through historical statistical analysis

Depreciation Rate Development
(SL-AL-RL-BG System)

Account No.	Description	[1] Original Cost	[2] Iowa Curve Type	[2] Iowa Curve AL	[3] Net Salvage	[4] Depreciable Base	[5] Book Reserve	[6] Future Accruals	[7] Remaining Life	[8] Service Life Accrual	[9] Service Life Rate	[10] Net Salvage Accrual	[11] Net Salvage Rate	[12] Total Accrual	[13] Total Rate

[4] = [1]*(1-[3])
[5] Book reserve balances from Company workpapers (for negative balances, Company reallocation was used)
[6] = [4] - [5]
[7] Average remaining life based on Iowas Curve in Column [2]
[8] = ([1] - [5]) / [7]
[9] = [8] / [1]
[10] = [12] - [8]
[11] = [13] - [9]
[12] = [6] / [7]. Some unadjusted accruals may be hard coded to match the Company's proposed accrual.
[13] = [12] / [1]. Some unadjusted rates may be hard coded to match the Company's proposed rate.

Account 356 Detailed Curve Comparison

[1]	[2]	[3]	[4]	[5]	[6]	[7]
Age (Years)	**Exposures (Dollars)**	**Observed Life Table (OLT)**	**Company R2.5-55**	**Garrett R2-69**	**Company SSD**	**Garrett SSD**
0.0	53,539,516	100.00%	100.00%	100.00%	0.0000	0.0000
0.5	53,583,580	100.00%	99.95%	99.93%	0.0000	0.0000
1.5	53,560,174	99.98%	99.84%	99.79%	0.0000	0.0000
2.5	52,666,941	98.36%	99.73%	99.64%	0.0002	0.0002
3.5	50,772,597	98.36%	99.61%	99.48%	0.0002	0.0001
4.5	41,035,087	98.34%	99.47%	99.32%	0.0001	0.0001
5.5	25,100,716	98.27%	99.33%	99.15%	0.0001	0.0001
6.5	13,751,072	97.88%	99.18%	98.97%	0.0002	0.0001
7.5	12,464,059	97.88%	99.01%	98.78%	0.0001	0.0001
8.5	12,498,486	97.87%	98.84%	98.58%	0.0001	0.0001
9.5	9,728,006	97.84%	98.65%	98.37%	0.0001	0.0000
10.5	9,961,983	97.79%	98.44%	98.16%	0.0000	0.0000
11.5	9,327,710	97.78%	98.22%	97.93%	0.0000	0.0000
12.5	9,322,669	97.61%	97.99%	97.70%	0.0000	0.0000
13.5	9,307,349	97.43%	97.74%	97.45%	0.0000	0.0000
14.5	9,652,699	97.39%	97.47%	97.19%	0.0000	0.0000
15.5	9,678,851	95.60%	97.18%	96.92%	0.0002	0.0002
16.5	9,501,815	94.77%	96.87%	96.64%	0.0004	0.0004
17.5	9,492,265	94.68%	96.54%	96.35%	0.0003	0.0003
18.5	9,415,832	94.50%	96.19%	96.05%	0.0003	0.0002
19.5	8,873,277	93.10%	95.81%	95.73%	0.0007	0.0007
20.5	8,750,778	93.03%	95.41%	95.40%	0.0006	0.0006
21.5	8,634,617	92.93%	94.99%	95.05%	0.0004	0.0005
22.5	6,111,936	92.75%	94.53%	94.69%	0.0003	0.0004
23.5	5,988,127	90.32%	94.05%	94.32%	0.0014	0.0016
24.5	5,988,684	90.32%	93.53%	93.93%	0.0010	0.0013
25.5	4,753,877	90.06%	92.99%	93.53%	0.0009	0.0012
26.5	2,593,843	90.04%	92.41%	93.11%	0.0006	0.0009
27.5	2,333,201	89.87%	91.80%	92.67%	0.0004	0.0008
28.5	2,300,205	89.69%	91.14%	92.22%	0.0002	0.0006
29.5	2,301,459	89.68%	90.46%	91.75%	0.0001	0.0004
30.5	1,855,628	89.25%	89.73%	91.26%	0.0000	0.0004
31.5	1,562,574	89.09%	88.96%	90.76%	0.0000	0.0003
32.5	1,553,904	88.75%	88.15%	90.23%	0.0000	0.0002
33.5	1,553,464	88.72%	87.29%	89.69%	0.0002	0.0001
34.5	1,588,125	88.46%	86.38%	89.13%	0.0004	0.0000
35.5	1,552,194	87.60%	85.43%	88.54%	0.0005	0.0001
36.5	1,528,078	87.34%	84.42%	87.94%	0.0009	0.0000
37.5	1,499,224	86.39%	83.36%	87.31%	0.0009	0.0001
38.5	1,066,260	86.32%	82.25%	86.66%	0.0017	0.0000
39.5	1,064,113	86.17%	81.08%	85.99%	0.0026	0.0000
40.5	999,503	86.17%	79.85%	85.29%	0.0040	0.0001
41.5	987,261	85.22%	78.56%	84.57%	0.0044	0.0000
42.5	960,109	85.12%	77.20%	83.83%	0.0063	0.0002
43.5	947,422	84.88%	75.78%	83.06%	0.0083	0.0003
44.5	931,224	84.88%	74.29%	82.27%	0.0112	0.0007
45.5	918,162	83.62%	72.73%	81.45%	0.0119	0.0005
46.5	854,249	83.62%	71.09%	80.60%	0.0157	0.0009
47.5	672,466	83.62%	69.39%	79.73%	0.0202	0.0015

Account 356 Detailed Curve Comparison

[1]	[2]	[3]	[4]	[5]	[6]	[7]
Age (Years)	**Exposures (Dollars)**	**Observed Life Table (OLT)**	**Company R2.5-55**	**Garrett R2-69**	**Company SSD**	**Garrett SSD**
48.5	653,295	83.62%	67.62%	78.83%	0.0256	0.0023
49.5	465,466	83.60%	65.77%	77.90%	0.0318	0.0033
50.5	450,328	81.87%	63.85%	76.94%	0.0325	0.0024
51.5	448,870	81.81%	61.86%	75.96%	0.0398	0.0034
52.5	370,996	67.86%	59.80%	74.94%	0.0065	0.0050
53.5	354,239	67.23%	57.68%	73.90%	0.0091	0.0044
54.5	276,071	52.40%	55.50%	72.83%	0.0010	0.0417
55.5	266,672	52.40%	53.26%	71.72%	0.0001	0.0373
56.5	266,672	52.40%	50.97%	70.59%	0.0002	0.0331
57.5	238,964	52.40%	48.64%	69.43%	0.0014	0.0290
58.5			46.28%	68.23%		
59.5			43.90%	67.01%		
60.5			41.51%	65.76%		
61.5			39.11%	64.48%		
62.5			36.73%	63.17%		
63.5			34.37%	61.84%		
64.5			32.05%	60.47%		
65.5			29.77%	59.08%		
66.5			27.54%	57.66%		
67.5			25.39%	56.23%		
Sum of Squared Differences for Total OLT				[8]	0.2461	0.1782
Sum of Squared Differences (SSD) for Most Relevant Portion				[9]	0.1238	0.0186

[1] Age in years using half-year convention

[2] Dollars exposed to retirement at the beginning of each age interval

[3] Observed life table based on the Company's property records. These numbers form the original survivor curve.

[4] The Company's selected Iowa curve to be fitted to the OLT.

[5] My selected Iowa curve to be fitted to the OLT.

[6] = ([4] - [3])^2. This is the squared difference between each point on the Company's curve and the observed survivor curve.

[7] = ([5] - [3])^2. This is the squared difference between each point on my curve and the observed survivor curve.

[8] = Sum of squared differences for total OLT curve.

[9] = Sum of squared differences excluding less than 1% of beginning exposures.

*Below the bold horizontal line represents less than 1% of beginning exposures.

Account 365.20 Detailed Curve Comparison

[1]	[2]	[3]	[4]	[5]	[6]	[7]
Age (Years)	**Exposures (Dollars)**	**Observed Life Table (OLT)**	**Company R4-85**	**Garrett R1-89**	**Company SSD**	**Garrett SSD**
0.0	21,834,437	100.00%	100.00%	100.00%	0.0000	0.0000
0.5	22,063,699	99.99%	100.00%	99.86%	0.0000	0.0000
1.5	21,954,572	99.89%	100.00%	99.56%	0.0000	0.0000
2.5	21,161,158	99.40%	100.00%	99.27%	0.0000	0.0000
3.5	21,238,684	98.90%	100.00%	98.96%	0.0001	0.0000
4.5	20,550,955	98.47%	99.99%	98.66%	0.0002	0.0000
5.5	20,579,756	97.81%	99.99%	98.35%	0.0005	0.0000
6.5	20,128,769	97.29%	99.99%	98.03%	0.0007	0.0001
7.5	20,104,644	96.97%	99.99%	97.71%	0.0009	0.0001
8.5	19,488,329	96.63%	99.98%	97.39%	0.0011	0.0001
9.5	19,124,906	96.34%	99.98%	97.06%	0.0013	0.0001
10.5	13,982,581	95.86%	99.97%	96.72%	0.0017	0.0001
11.5	12,404,426	94.14%	99.97%	96.38%	0.0034	0.0005
12.5	12,478,242	93.61%	99.96%	96.04%	0.0040	0.0006
13.5	12,452,549	93.04%	99.96%	95.69%	0.0048	0.0007
14.5	12,282,460	91.30%	99.95%	95.34%	0.0075	0.0016
15.5	12,189,961	90.30%	99.94%	94.99%	0.0093	0.0022
16.5	12,275,664	89.99%	99.93%	94.63%	0.0099	0.0021
17.5	12,260,912	89.39%	99.91%	94.26%	0.0111	0.0024
18.5	11,904,314	88.67%	99.90%	93.89%	0.0126	0.0027
19.5	11,778,888	88.14%	99.88%	93.52%	0.0138	0.0029
20.5	11,383,754	87.53%	99.86%	93.14%	0.0152	0.0031
21.5	11,212,946	86.97%	99.84%	92.75%	0.0166	0.0033
22.5	10,887,008	86.69%	99.82%	92.37%	0.0172	0.0032
23.5	10,593,831	86.60%	99.79%	91.97%	0.0174	0.0029
24.5	10,265,778	86.44%	99.76%	91.58%	0.0178	0.0026
25.5	8,764,918	86.30%	99.73%	91.18%	0.0180	0.0024
26.5	8,602,792	86.07%	99.69%	90.77%	0.0186	0.0022
27.5	8,262,420	83.67%	99.65%	90.36%	0.0255	0.0045
28.5	8,126,359	83.47%	99.60%	89.95%	0.0260	0.0042
29.5	7,746,211	83.16%	99.55%	89.53%	0.0269	0.0041
30.5	7,694,317	82.84%	99.49%	89.11%	0.0277	0.0039
31.5	7,132,320	82.61%	99.42%	88.68%	0.0283	0.0037
32.5	7,150,707	82.36%	99.35%	88.25%	0.0289	0.0035
33.5	7,122,684	82.24%	99.27%	87.82%	0.0290	0.0031
34.5	7,061,209	82.09%	99.17%	87.38%	0.0292	0.0028
35.5	6,892,636	81.90%	99.08%	86.93%	0.0295	0.0025
36.5	6,661,321	81.71%	98.97%	86.48%	0.0298	0.0023
37.5	6,572,085	81.48%	98.84%	86.02%	0.0302	0.0021
38.5	6,720,658	81.07%	98.71%	85.56%	0.0311	0.0020
39.5	6,588,159	80.76%	98.56%	85.09%	0.0317	0.0019
40.5	6,507,444	80.56%	98.41%	84.62%	0.0318	0.0016
41.5	6,336,526	80.32%	98.23%	84.14%	0.0321	0.0015
42.5	6,151,016	79.78%	98.04%	83.65%	0.0333	0.0015
43.5	5,797,636	79.66%	97.83%	83.16%	0.0330	0.0012
44.5	4,776,625	79.60%	97.60%	82.67%	0.0324	0.0009
45.5	4,567,586	79.50%	97.36%	82.16%	0.0319	0.0007
46.5	4,160,091	79.29%	97.09%	81.65%	0.0317	0.0006
47.5	3,994,925	78.81%	96.80%	81.13%	0.0324	0.0005

Account 365.20 Detailed Curve Comparison

[1]	[2]	[3]	[4]	[5]	[6]	[7]
Age (Years)	**Exposures (Dollars)**	**Observed Life Table (OLT)**	**Company R4-85**	**Garrett R1-89**	**Company SSD**	**Garrett SSD**
48.5	3,901,311	78.64%	96.49%	80.61%	0.0319	0.0004
49.5	3,169,330	78.58%	96.15%	80.08%	0.0309	0.0002
50.5	2,893,083	76.13%	95.78%	79.54%	0.0386	0.0012
51.5	2,802,266	75.97%	95.39%	78.99%	0.0377	0.0009
52.5	2,710,587	75.87%	94.97%	78.44%	0.0365	0.0007
53.5	2,513,535	75.77%	94.52%	77.88%	0.0352	0.0004
54.5	2,281,503	75.75%	94.04%	77.31%	0.0334	0.0002
55.5	2,169,099	75.75%	93.52%	76.74%	0.0316	0.0001
56.5	2,113,657	75.74%	92.96%	76.15%	0.0297	0.0000
57.5	1,951,241	75.69%	92.37%	75.56%	0.0278	0.0000
58.5	1,835,939	75.69%	91.74%	74.96%	0.0258	0.0001
59.5	1,763,987	75.45%	91.07%	74.36%	0.0244	0.0001
60.5	1,703,953	75.31%	90.36%	73.74%	0.0227	0.0002
61.5	1,590,497	74.45%	89.61%	73.12%	0.0230	0.0002
62.5	1,517,389	74.00%	88.81%	72.49%	0.0219	0.0002
63.5	1,437,444	73.95%	87.97%	71.85%	0.0197	0.0004
64.5	1,509,112	73.95%	87.08%	71.20%	0.0173	0.0008
65.5	1,417,588	73.92%	86.15%	70.55%	0.0150	0.0011
66.5	1,258,203	73.81%	85.17%	69.88%	0.0129	0.0015
67.5	1,151,928	73.73%	84.13%	69.21%	0.0108	0.0020
68.5	1,057,056	72.35%	83.05%	68.53%	0.0115	0.0015
69.5	1,034,922	71.65%	81.92%	67.84%	0.0106	0.0015
70.5	1,019,596	71.56%	80.74%	67.14%	0.0084	0.0019
71.5	1,003,483	71.19%	79.51%	66.44%	0.0069	0.0023
72.5	989,356	70.73%	78.22%	65.73%	0.0056	0.0025
73.5	980,435	70.72%	76.87%	65.01%	0.0038	0.0033
74.5	976,681	70.70%	75.46%	64.28%	0.0023	0.0041
75.5	792,514	64.54%	73.98%	63.54%	0.0089	0.0001
76.5	662,242	64.52%	72.42%	62.80%	0.0062	0.0003
77.5	662,242	64.52%	70.76%	62.04%	0.0039	0.0006
78.5	649,193	64.52%	69.02%	61.29%	0.0020	0.0010
79.5	649,070	64.52%	67.18%	60.52%	0.0007	0.0016
80.5	606,076	64.52%	65.24%	59.74%	0.0001	0.0023
81.5	596,909	64.52%	63.21%	58.96%	0.0002	0.0031
82.5	576,079	64.52%	61.08%	58.17%	0.0012	0.0040
83.5	336,024	63.87%	58.86%	57.38%	0.0025	0.0042
84.5	336,024	63.87%	56.55%	56.58%	0.0054	0.0053
85.5	336,024	63.87%	54.17%	55.77%	0.0094	0.0066
86.5	330,938	63.87%	51.73%	54.96%	0.0147	0.0079
87.5	310,139	63.87%	49.24%	54.14%	0.0214	0.0095
88.5	275,797	63.86%	46.70%	53.31%	0.0294	0.0111
89.5	57,826	56.77%	44.15%	52.48%	0.0159	0.0018
90.5	47,296	56.77%	41.58%	51.64%	0.0231	0.0026
91.5	42,294	51.19%	39.02%	50.80%	0.0148	0.0000
92.5	42,294	51.19%	36.48%	49.95%	0.0216	0.0002
93.5	29,443	51.19%	33.97%	49.10%	0.0296	0.0004
94.5	28,117	51.19%	31.52%	48.25%	0.0387	0.0009
95.5	28,018	51.19%	29.13%	47.39%	0.0487	0.0014
96.5	10,197	51.19%	26.80%	46.52%	0.0595	0.0022

Account 365.20 Detailed Curve Comparison

[1]	[2]	[3]	[4]	[5]	[6]	[7]
Age (Years)	**Exposures (Dollars)**	**Observed Life Table (OLT)**	**Company R4-85**	**Garrett R1-89**	**Company SSD**	**Garrett SSD**
97.5	10,141	51.19%	24.56%	45.66%	0.0709	0.0031
98.5	10,135	51.19%	22.40%	44.79%	0.0829	0.0041
99.5	9,515	51.19%	20.35%	43.91%	0.0951	0.0053
100.5	3,456	51.19%	18.40%	43.04%	0.1075	0.0066
101.5	2,011	51.19%	16.55%	42.16%	0.1200	0.0081
102.5	2,011	51.19%	14.82%	41.28%	0.1323	0.0098
103.5	773	51.19%	13.19%	40.41%	0.1444	0.0116
104.5	773	51.19%	11.66%	39.53%	0.1562	0.0136
105.5	772	51.19%	10.26%	38.64%	0.1675	0.0157
106.5			8.97%	37.76%		
107.5			7.78%	36.88%		
108.5			6.69%	36.00%		
109.5			5.70%	35.13%		
110.5			4.81%	34.25%		
111.5			4.02%	33.37%		
112.5			3.31%	32.50%		
113.5			2.70%	31.63%		
114.5			2.16%	30.77%		
115.5			1.69%	29.90%		
Sum of Squared Differences for Total OLT				[8]	2.8465	0.2582
Sum of Squared Differences (SSD) for Most Relevant Portion				[9]	1.5177	0.1706

[1] Age in years using half-year convention

[2] Dollars exposed to retirement at the beginning of each age interval

[3] Observed life table based on the Company's property records. These numbers form the original survivor curve.

[4] The Company's selected Iowa curve to be fitted to the OLT.

[5] My selected Iowa curve to be fitted to the OLT.

[6] = ([4] - [3])^2. This is the squared difference between each point on the Company's curve and the observed survivor curve.

[7] = ([5] - [3])^2. This is the squared difference between each point on my curve and the observed survivor curve.

[8] = Sum of squared differences for total OLT curve.

[9] = Sum of squared differences excluding less than 1% of beginning exposures.

*Below the bold horizontal line represents less than 1% of beginning exposures.

APT
Electric Division
350.20 Rights of Way
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2002

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
0.0 - 0.5	$248,749.09	$0.00	0.00000	100.00
0.5 - 1.5	$248,878.37	$0.00	0.00000	100.00
1.5 - 2.5	$246,782.12	$0.00	0.00000	100.00
2.5 - 3.5	$248,878.37	$0.00	0.00000	100.00
3.5 - 4.5	$249,365.48	$0.00	0.00000	100.00
4.5 - 5.5	$249,365.48	$0.00	0.00000	100.00
5.5 - 6.5	$250,029.02	$0.00	0.00000	100.00
6.5 - 7.5	$250,617.24	$0.00	0.00000	100.00
7.5 - 8.5	$250,617.24	$0.00	0.00000	100.00
8.5 - 9.5	$250,617.24	$0.00	0.00000	100.00
9.5 - 10.5	$265,117.05	$0.00	0.00000	100.00
10.5 - 11.5	$265,248.60	$0.00	0.00000	100.00
11.5 - 12.5	$258,182.25	$0.00	0.00000	100.00
12.5 - 13.5	$260,278.50	$0.00	0.00000	100.00
13.5 - 14.5	$268,686.54	$0.00	0.00000	100.00
14.5 - 15.5	$260,409.21	$85.17	0.00033	100.00
15.5 - 16.5	$260,324.04	$90.36	0.00035	99.97
16.5 - 17.5	$260,233.68	$131.55	0.00051	99.93
17.5 - 18.5	$260,102.13	$0.00	0.00000	99.88
18.5 - 19.5	$260,214.04	$0.00	0.00000	99.88
19.5 - 20.5	$260,214.04	$212.13	0.00082	99.88
20.5 - 21.5	$260,001.91	$0.00	0.00000	99.80
21.5 - 22.5	$47,187.69	$0.00	0.00000	99.80
22.5 - 23.5	$45,487.69	$0.00	0.00000	99.80
23.5 - 24.5	$45,387.69	$0.00	0.00000	99.80
24.5 - 25.5	$45,387.69	$111.91	0.00247	99.80
25.5 - 26.5	$39,515.78	$588.22	0.01489	99.55
26.5 - 27.5	$38,927.56	$0.00	0.00000	98.07
27.5 - 28.5	$38,927.56	$0.00	0.00000	98.07
28.5 - 29.5	$38,927.56	$2,923.56	0.07510	98.07
29.5 - 30.5	$36,004.00	$0.00	0.00000	90.71
30.5 - 31.5	$30,453.75	$0.00	0.00000	90.71
31.5 - 32.5	$30,453.75	$0.00	0.00000	90.71
32.5 - 33.5	$30,453.75	$0.00	0.00000	90.71
33.5 - 34.5	$30,453.75	$0.00	0.00000	90.71
34.5 - 35.5	$30,453.75	$0.00	0.00000	90.71
35.5 - 36.5	$30,453.75	$0.00	0.00000	90.71

APT
Electric Division
350.20 Rights of Way
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2002

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
36.5 - 37.5	$30,453.75	$0.00	0.00000	90.71
37.5 - 38.5	$30,453.75	$0.00	0.00000	90.71
38.5 - 39.5	$26,676.82	$4,291.03	0.16085	90.71
39.5 - 40.5	$22,385.79	$0.00	0.00000	76.12
40.5 - 41.5	$22,385.79	$0.00	0.00000	76.12
41.5 - 42.5	$22,385.79	$0.00	0.00000	76.12
42.5 - 43.5	$22,385.79	$0.00	0.00000	76.12
43.5 - 44.5	$22,385.79	$0.00	0.00000	76.12
44.5 - 45.5	$22,385.79	$0.00	0.00000	76.12
45.5 - 46.5	$22,385.79	$0.00	0.00000	76.12
46.5 - 47.5	$22,385.79	$0.00	0.00000	76.12
47.5 - 48.5	$21,378.24	$0.00	0.00000	76.12
48.5 - 49.5	$21,378.24	$0.00	0.00000	76.12
49.5 - 50.5	$21,293.76	$0.00	0.00000	76.12
50.5 - 51.5	$21,293.76	$0.00	0.00000	76.12
51.5 - 52.5	$21,164.48	$0.00	0.00000	76.12
52.5 - 53.5	$21,164.48	$0.00	0.00000	76.12
53.5 - 54.5	$4,568.42	$0.00	0.00000	76.12
54.5 - 55.5	$4,568.42	$0.00	0.00000	76.12
55.5 - 56.5	$4,568.42	$0.00	0.00000	76.12
56.5 - 57.5	$3,904.88	$0.00	0.00000	76.12
57.5 - 58.5	$3,904.88	$0.00	0.00000	76.12
58.5 - 59.5	$3,904.88	$0.00	0.00000	76.12
59.5 - 60.5	$3,904.88	$0.00	0.00000	76.12
60.5 - 61.5	$3,904.88	$0.00	0.00000	76.12
61.5 - 62.5	$3,904.88	$0.00	0.00000	76.12
62.5 - 63.5	$3,904.88	$0.00	0.00000	76.12
63.5 - 64.5	$3,904.88	$0.00	0.00000	76.12
64.5 - 65.5	$722,873.70	$0.00	0.00000	76.12
65.5 - 66.5	$722,873.70	$0.00	0.00000	76.12
66.5 - 67.5	$722,873.70	$0.00	0.00000	76.12
67.5 - 68.5	$722,873.70	$0.00	0.00000	76.12
68.5 - 69.5	$722,873.70	$0.00	0.00000	76.12
69.5 - 70.5	$0.00	$0.00	0.00000	76.12
70.5 - 71.5	$0.00	$0.00	0.00000	76.12
71.5 - 72.5	$0.00	$0.00	0.00000	76.12
72.5 - 73.5	$0.00	$0.00	0.00000	76.12

APT
Electric Division
350.20 Rights of Way
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2002

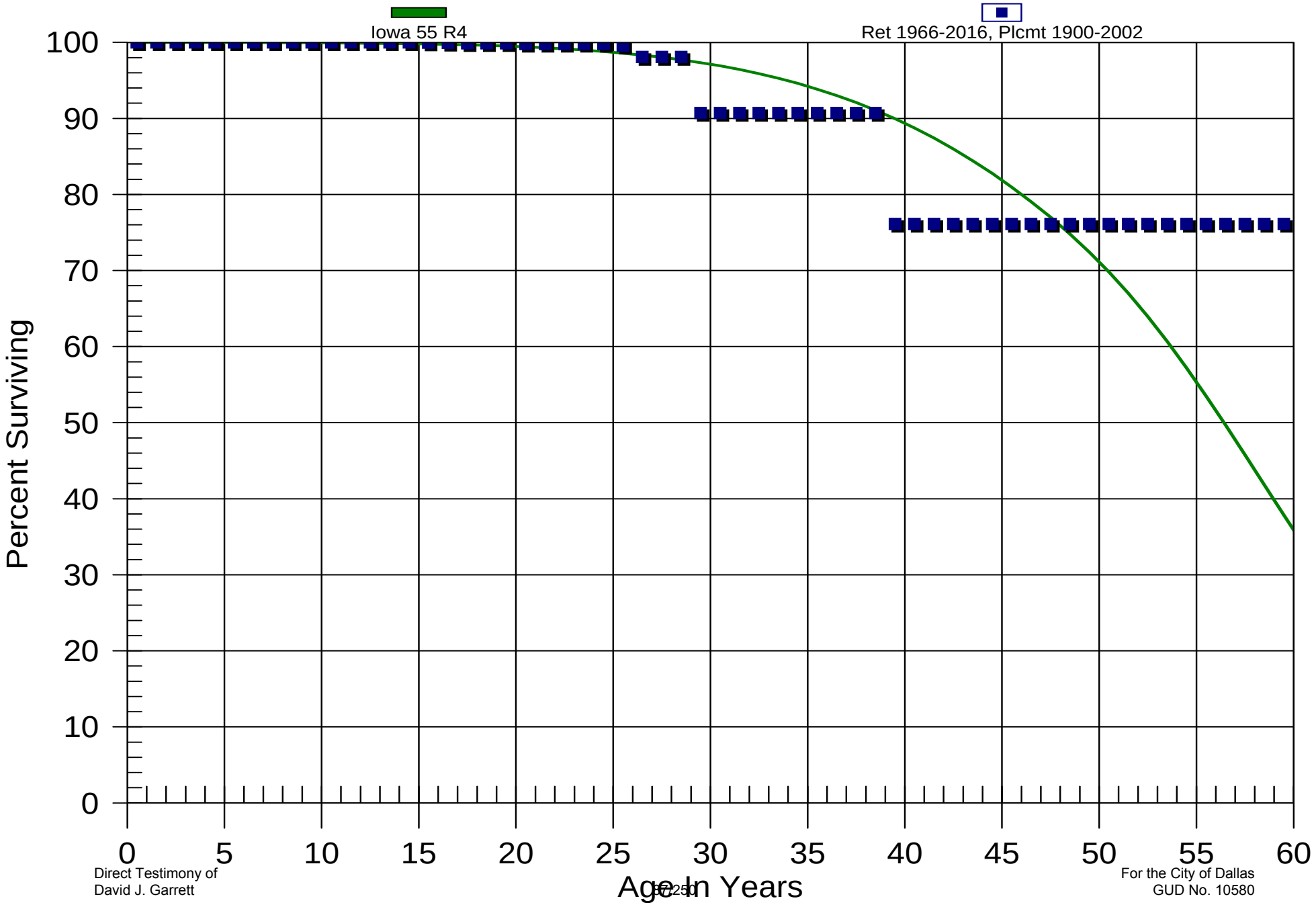
Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
73.5 - 74.5	$0.00	$0.00	0.00000	76.12
74.5 - 75.5	$0.00	$0.00	0.00000	76.12
75.5 - 76.5	$0.00	$0.00	0.00000	76.12
76.5 - 77.5	$0.00	$0.00	0.00000	76.12
77.5 - 78.5	$0.00	$0.00	0.00000	76.12
78.5 - 79.5	$0.00	$0.00	0.00000	76.12
79.5 - 80.5	$0.00	$0.00	0.00000	76.12
80.5 - 81.5	$0.00	$0.00	0.00000	76.12
81.5 - 82.5	$0.00	$0.00	0.00000	76.12
82.5 - 83.5	$0.00	$0.00	0.00000	76.12
83.5 - 84.5	$0.00	$0.00	0.00000	76.12
84.5 - 85.5	$0.00	$0.00	0.00000	76.12
85.5 - 86.5	$0.00	$0.00	0.00000	76.12
86.5 - 87.5	$0.00	$0.00	0.00000	76.12
87.5 - 88.5	$0.00	$0.00	0.00000	76.12
88.5 - 89.5	$0.00	$0.00	0.00000	76.12
89.5 - 90.5	$0.00	$0.00	0.00000	76.12
90.5 - 91.5	$0.00	$0.00	0.00000	76.12
91.5 - 92.5	$0.00	$0.00	0.00000	76.12
92.5 - 93.5	$0.00	$0.00	0.00000	76.12
93.5 - 94.5	$0.00	$0.00	0.00000	76.12
94.5 - 95.5	$0.00	$0.00	0.00000	76.12
95.5 - 96.5	$0.00	$0.00	0.00000	76.12
96.5 - 97.5	$0.00	$0.00	0.00000	76.12
97.5 - 98.5	$0.00	$0.00	0.00000	76.12
98.5 - 99.5	$0.00	$0.00	0.00000	76.12
99.5 - 100.5	$0.00	$0.00	0.00000	76.12
100.5 - 101.5	$0.00	$0.00	0.00000	76.12
101.5 - 102.5	$0.00	$0.00	0.00000	76.12
102.5 - 103.5	$0.00	$0.00	0.00000	76.12
103.5 - 104.5	$0.00	$0.00	0.00000	76.12
104.5 - 105.5	$0.00	$0.00	0.00000	76.12
105.5 - 106.5	$0.00	$0.00	0.00000	76.12
106.5 - 107.5	$0.00	$0.00	0.00000	76.12
107.5 - 108.5	$0.00	$0.00	0.00000	76.12
108.5 - 109.5	$0.00	$0.00	0.00000	76.12
109.5 - 110.5	$0.00	$0.00	0.00000	76.12

APT
Electric Division
350.20 Rights of Way
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2002

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
110.5 - 111.5	$0.00	$0.00	0.00000	76.12
111.5 - 112.5	$0.00	$0.00	0.00000	76.12
112.5 - 113.5	$0.00	$0.00	0.00000	76.12
113.5 - 114.5	$0.00	$0.00	0.00000	76.12
114.5 - 115.5	$0.00	$0.00	0.00000	76.12
115.5 - 116.5	$0.00	$0.00	0.00000	76.12

APT

Electric Division
350.20 Rights of Way
Original And Smooth Survivor Curves



APT
Electric Division
351.00 Structures & Improvements
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1947 TO 2016

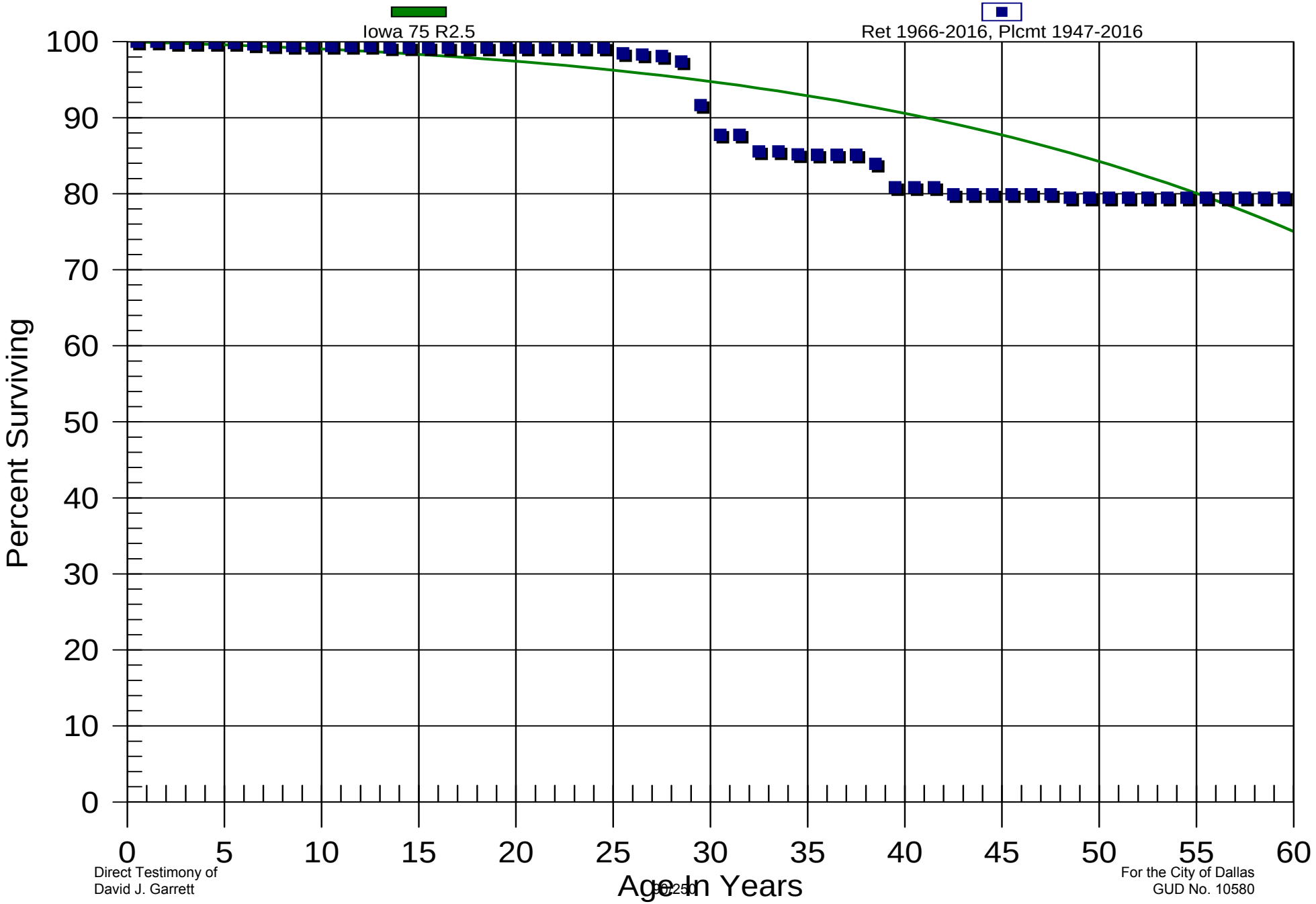
Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
0.0 - 0.5	$24,480,756.88	$0.00	0.00000	100.00
0.5 - 1.5	$22,733,071.25	$0.00	0.00000	100.00
1.5 - 2.5	$22,244,995.10	$43,040.58	0.00193	100.00
2.5 - 3.5	$21,155,701.59	$0.00	0.00000	99.81
3.5 - 4.5	$18,221,011.70	$0.00	0.00000	99.81
4.5 - 5.5	$16,479,958.08	$35.43	0.00000	99.81
5.5 - 6.5	$14,216,529.83	$27,169.40	0.00191	99.81
6.5 - 7.5	$14,119,360.81	$12,834.06	0.00091	99.62
7.5 - 8.5	$11,071,732.20	$9,481.87	0.00086	99.53
8.5 - 9.5	$11,036,644.45	$0.00	0.00000	99.44
9.5 - 10.5	$10,022,877.98	$399.68	0.00004	99.44
10.5 - 11.5	$10,155,250.12	$0.00	0.00000	99.44
11.5 - 12.5	$8,646,156.04	$0.00	0.00000	99.44
12.5 - 13.5	$8,585,776.93	$16,215.89	0.00189	99.44
13.5 - 14.5	$8,694,500.54	$152.09	0.00002	99.25
14.5 - 15.5	$8,687,386.80	$1,010.88	0.00012	99.25
15.5 - 16.5	$8,686,375.92	$936.20	0.00011	99.23
16.5 - 17.5	$8,684,861.85	$0.00	0.00000	99.22
17.5 - 18.5	$8,650,312.87	$0.00	0.00000	99.22
18.5 - 19.5	$8,579,766.52	$630.16	0.00007	99.22
19.5 - 20.5	$8,462,902.58	$0.00	0.00000	99.22
20.5 - 21.5	$8,369,457.09	$327.35	0.00004	99.22
21.5 - 22.5	$8,346,361.43	$146.67	0.00002	99.21
22.5 - 23.5	$8,292,796.08	$314.03	0.00004	99.21
23.5 - 24.5	$8,291,818.17	$0.00	0.00000	99.21
24.5 - 25.5	$8,291,818.17	$61,913.88	0.00747	99.21
25.5 - 26.5	$7,900,669.36	$13,764.79	0.00174	98.47
26.5 - 27.5	$7,344,157.73	$14,425.31	0.00196	98.30
27.5 - 28.5	$670,221.58	$4,973.76	0.00742	98.10
28.5 - 29.5	$665,247.82	$39,146.61	0.05885	97.37
29.5 - 30.5	$626,101.21	$26,543.81	0.04240	91.64
30.5 - 31.5	$601,502.03	$0.00	0.00000	87.76
31.5 - 32.5	$601,502.03	$15,075.67	0.02506	87.76
32.5 - 33.5	$564,530.00	$0.00	0.00000	85.56
33.5 - 34.5	$559,530.00	$2,429.61	0.00434	85.56
34.5 - 35.5	$556,479.83	$402.17	0.00072	85.19
35.5 - 36.5	$556,077.66	$0.00	0.00000	85.13

APT
Electric Division
351.00 Structures & Improvements
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1947 TO 2016

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
36.5 - 37.5	$565,916.87	$0.00	0.00000	85.13
37.5 - 38.5	$572,621.53	$8,116.37	0.01417	85.13
38.5 - 39.5	$487,945.20	$17,797.10	0.03647	83.92
39.5 - 40.5	$470,148.10	$0.00	0.00000	80.86
40.5 - 41.5	$459,475.03	$0.00	0.00000	80.86
41.5 - 42.5	$452,395.37	$5,264.59	0.01164	80.86
42.5 - 43.5	$404,596.32	$0.00	0.00000	79.92
43.5 - 44.5	$404,596.32	$0.00	0.00000	79.92
44.5 - 45.5	$403,881.33	$0.00	0.00000	79.92
45.5 - 46.5	$353,038.92	$0.00	0.00000	79.92
46.5 - 47.5	$338,977.72	$0.00	0.00000	79.92
47.5 - 48.5	$337,473.36	$1,865.18	0.00553	79.92
48.5 - 49.5	$331,497.16	$0.00	0.00000	79.48
49.5 - 50.5	$283,384.99	$0.00	0.00000	79.48
50.5 - 51.5	$282,435.64	$0.00	0.00000	79.48
51.5 - 52.5	$282,109.96	$0.00	0.00000	79.48
52.5 - 53.5	$282,022.65	$0.00	0.00000	79.48
53.5 - 54.5	$279,504.85	$0.00	0.00000	79.48
54.5 - 55.5	$279,504.85	$0.00	0.00000	79.48
55.5 - 56.5	$274,374.44	$0.00	0.00000	79.48
56.5 - 57.5	$270,897.02	$0.00	0.00000	79.48
57.5 - 58.5	$259,977.78	$0.00	0.00000	79.48
58.5 - 59.5	$259,977.78	$0.00	0.00000	79.48
59.5 - 60.5	$259,977.78	$0.00	0.00000	79.48
60.5 - 61.5	$259,977.78	$0.00	0.00000	79.48
61.5 - 62.5	$127,205.96	$0.00	0.00000	79.48
62.5 - 63.5	$127,205.96	$0.00	0.00000	79.48
63.5 - 64.5	$118,348.67	$0.00	0.00000	79.48
64.5 - 65.5	$0.00	$0.00	0.00000	79.48
65.5 - 66.5	$0.00	$0.00	0.00000	79.48
66.5 - 67.5	$0.00	$0.00	0.00000	79.48
67.5 - 68.5	$0.00	$0.00	0.00000	79.48
68.5 - 69.5	$0.00	$0.00	0.00000	79.48

APT

Electric Division
351.00 Structures & Improvements
Original And Smooth Survivor Curves



APT
Electric Division
352.00 Wells
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2016

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
0.0 - 0.5	$84,374,867.46	$33,031.82	0.00039	100.00
0.5 - 1.5	$81,929,055.46	$297,157.29	0.00363	99.96
1.5 - 2.5	$45,770,772.29	$747,705.29	0.01634	99.60
2.5 - 3.5	$44,163,924.98	$730,986.59	0.01655	97.97
3.5 - 4.5	$40,207,352.86	$1,245,428.83	0.03098	96.35
4.5 - 5.5	$33,152,838.41	$117,228.77	0.00354	93.37
5.5 - 6.5	$32,460,257.69	$409,511.78	0.01262	93.04
6.5 - 7.5	$30,617,279.16	$256,652.59	0.00838	91.86
7.5 - 8.5	$29,549,809.13	$12,202.12	0.00041	91.09
8.5 - 9.5	$29,552,273.23	$66,915.63	0.00226	91.05
9.5 - 10.5	$29,194,958.73	$55,596.99	0.00190	90.85
10.5 - 11.5	$30,354,786.32	$14,460.70	0.00048	90.67
11.5 - 12.5	$30,341,196.19	$1,548,416.34	0.05103	90.63
12.5 - 13.5	$28,659,350.28	$77,419.20	0.00270	86.01
13.5 - 14.5	$30,072,673.61	$8,904.44	0.00030	85.77
14.5 - 15.5	$26,602,743.42	$29,101.58	0.00109	85.75
15.5 - 16.5	$26,207,128.98	$62,907.85	0.00240	85.65
16.5 - 17.5	$24,808,303.43	$8,853.42	0.00036	85.45
17.5 - 18.5	$24,799,450.01	$23,306.85	0.00094	85.42
18.5 - 19.5	$24,757,537.17	$100,900.34	0.00408	85.34
19.5 - 20.5	$22,902,515.76	$4,703.11	0.00021	84.99
20.5 - 21.5	$22,689,489.65	$2,425.20	0.00011	84.97
21.5 - 22.5	$22,687,064.45	$36,253.40	0.00160	84.96
22.5 - 23.5	$22,559,002.23	$15,087.61	0.00067	84.83
23.5 - 24.5	$22,543,914.62	$80,631.21	0.00358	84.77
24.5 - 25.5	$21,076,678.45	$218,554.58	0.01037	84.47
25.5 - 26.5	$17,941,153.04	$151,772.53	0.00846	83.59
26.5 - 27.5	$11,945,455.38	$7,109.49	0.00060	82.89
27.5 - 28.5	$9,284,340.52	$57,287.63	0.00617	82.84
28.5 - 29.5	$8,740,099.18	$95,850.70	0.01097	82.32
29.5 - 30.5	$8,644,248.48	$2,420.24	0.00028	81.42
30.5 - 31.5	$7,005,243.89	$616,982.55	0.08807	81.40
31.5 - 32.5	$5,669,900.59	$0.00	0.00000	74.23
32.5 - 33.5	$5,357,582.53	$25,867.69	0.00483	74.23
33.5 - 34.5	$5,331,714.84	$40,361.01	0.00757	73.87
34.5 - 35.5	$5,291,353.83	$426,656.22	0.08063	73.31
35.5 - 36.5	$4,756,122.09	$0.00	0.00000	67.40

APT
Electric Division
352.00 Wells
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2016

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
36.5 - 37.5	$4,728,422.50	$31,817.82	0.00673	67.40
37.5 - 38.5	$4,069,013.48	$8,528.76	0.00210	66.95
38.5 - 39.5	$3,814,567.41	$129,091.49	0.03384	66.81
39.5 - 40.5	$3,683,366.88	$117.38	0.00003	64.55
40.5 - 41.5	$3,682,682.55	$0.00	0.00000	64.54
41.5 - 42.5	$3,587,120.12	$0.00	0.00000	64.54
42.5 - 43.5	$3,283,161.67	$202.87	0.00006	64.54
43.5 - 44.5	$3,282,958.80	$0.00	0.00000	64.54
44.5 - 45.5	$3,282,958.80	$202.86	0.00006	64.54
45.5 - 46.5	$3,240,329.88	$63,581.38	0.01962	64.54
46.5 - 47.5	$3,176,509.02	$0.00	0.00000	63.27
47.5 - 48.5	$3,176,428.47	$221,076.81	0.06960	63.27
48.5 - 49.5	$2,716,621.63	$237,887.70	0.08757	58.87
49.5 - 50.5	$2,439,130.90	$0.00	0.00000	53.71
50.5 - 51.5	$2,439,130.90	$0.00	0.00000	53.71
51.5 - 52.5	$2,439,130.90	$0.00	0.00000	53.71
52.5 - 53.5	$2,439,130.90	$0.00	0.00000	53.71
53.5 - 54.5	$2,439,130.90	$0.00	0.00000	53.71
54.5 - 55.5	$2,439,130.90	$0.00	0.00000	53.71
55.5 - 56.5	$2,439,130.90	$0.00	0.00000	53.71
56.5 - 57.5	$2,429,160.78	$0.00	0.00000	53.71
57.5 - 58.5	$2,179,615.95	$0.00	0.00000	53.71
58.5 - 59.5	$2,179,615.95	$0.00	0.00000	53.71
59.5 - 60.5	$2,179,615.95	$0.00	0.00000	53.71
60.5 - 61.5	$2,179,397.26	$0.00	0.00000	53.71
61.5 - 62.5	$1,223,971.62	$561.29	0.00046	53.71
62.5 - 63.5	$1,223,410.33	$0.00	0.00000	53.69
63.5 - 64.5	$1,223,410.33	$0.00	0.00000	53.69
64.5 - 65.5	($1,131,859.56)	$0.00	0.00000	53.69
65.5 - 66.5	($1,131,859.56)	$0.00	0.00000	53.69
66.5 - 67.5	($1,131,859.56)	$0.00	0.00000	53.69
67.5 - 68.5	($1,131,859.56)	$0.00	0.00000	53.69
68.5 - 69.5	($1,131,859.56)	$0.00	0.00000	53.69
69.5 - 70.5	$0.00	$0.00	0.00000	53.69
70.5 - 71.5	$0.00	$0.00	0.00000	53.69
71.5 - 72.5	$0.00	$0.00	0.00000	53.69
72.5 - 73.5	$0.00	$0.00	0.00000	53.69

APT
Electric Division
352.00 Wells
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2016

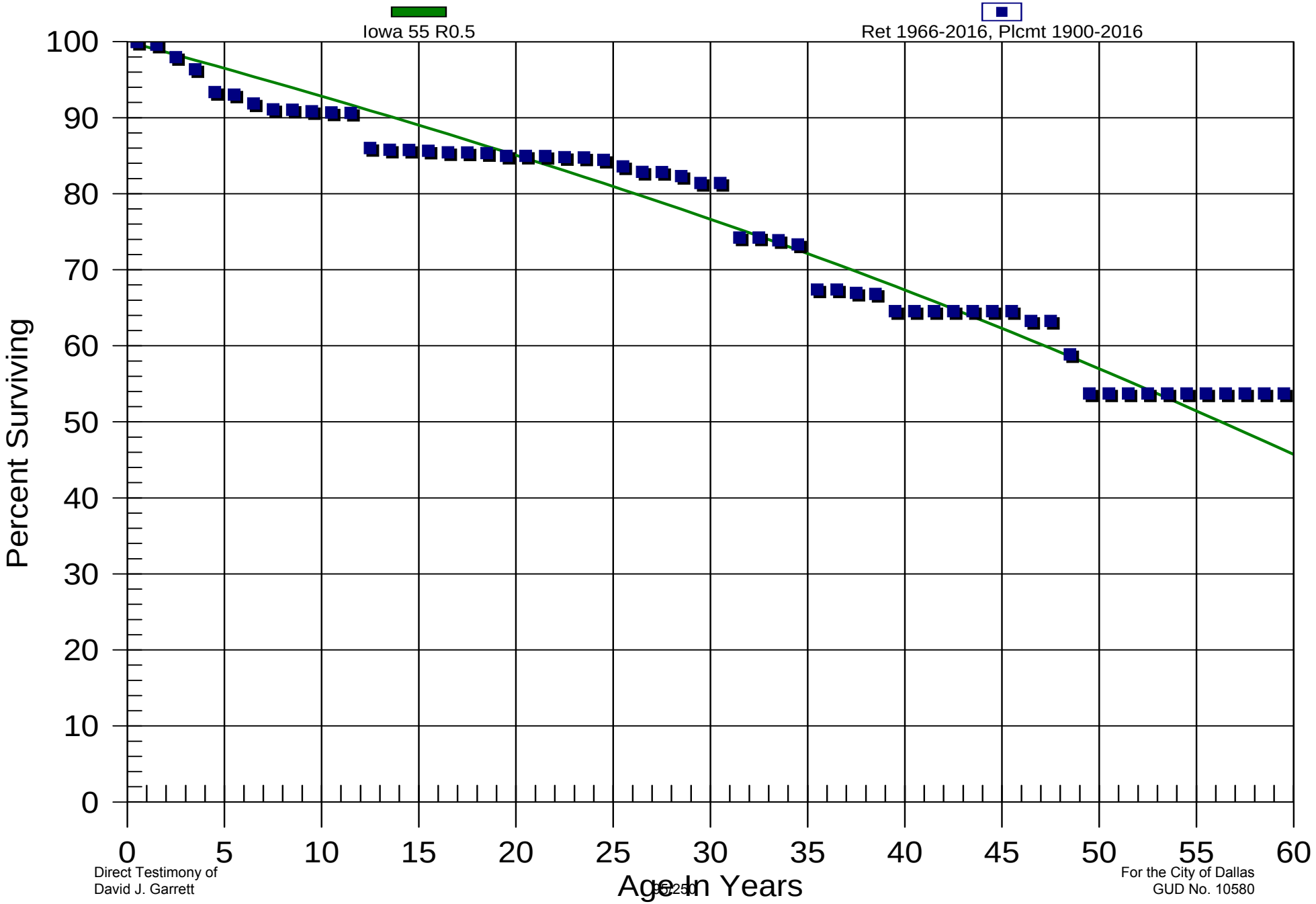
Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
73.5 - 74.5	$0.00	$0.00	0.00000	53.69
74.5 - 75.5	$0.00	$0.00	0.00000	53.69
75.5 - 76.5	$0.00	$0.00	0.00000	53.69
76.5 - 77.5	$0.00	$0.00	0.00000	53.69
77.5 - 78.5	$0.00	$0.00	0.00000	53.69
78.5 - 79.5	$0.00	$0.00	0.00000	53.69
79.5 - 80.5	$0.00	$0.00	0.00000	53.69
80.5 - 81.5	$0.00	$0.00	0.00000	53.69
81.5 - 82.5	$0.00	$0.00	0.00000	53.69
82.5 - 83.5	$0.00	$0.00	0.00000	53.69
83.5 - 84.5	$0.00	$0.00	0.00000	53.69
84.5 - 85.5	$0.00	$0.00	0.00000	53.69
85.5 - 86.5	$0.00	$0.00	0.00000	53.69
86.5 - 87.5	$0.00	$0.00	0.00000	53.69
87.5 - 88.5	$0.00	$0.00	0.00000	53.69
88.5 - 89.5	$0.00	$0.00	0.00000	53.69
89.5 - 90.5	$0.00	$0.00	0.00000	53.69
90.5 - 91.5	$0.00	$0.00	0.00000	53.69
91.5 - 92.5	$0.00	$0.00	0.00000	53.69
92.5 - 93.5	$0.00	$0.00	0.00000	53.69
93.5 - 94.5	$0.00	$0.00	0.00000	53.69
94.5 - 95.5	$0.00	$0.00	0.00000	53.69
95.5 - 96.5	$0.00	$0.00	0.00000	53.69
96.5 - 97.5	$0.00	$0.00	0.00000	53.69
97.5 - 98.5	$0.00	$0.00	0.00000	53.69
98.5 - 99.5	$0.00	$0.00	0.00000	53.69
99.5 - 100.5	$0.00	$0.00	0.00000	53.69
100.5 - 101.5	$0.00	$0.00	0.00000	53.69
101.5 - 102.5	$0.00	$0.00	0.00000	53.69
102.5 - 103.5	$0.00	$0.00	0.00000	53.69
103.5 - 104.5	$0.00	$0.00	0.00000	53.69
104.5 - 105.5	$0.00	$0.00	0.00000	53.69
105.5 - 106.5	$0.00	$0.00	0.00000	53.69
106.5 - 107.5	$0.00	$0.00	0.00000	53.69
107.5 - 108.5	$0.00	$0.00	0.00000	53.69
108.5 - 109.5	$0.00	$0.00	0.00000	53.69
109.5 - 110.5	$0.00	$0.00	0.00000	53.69

APT
Electric Division
352.00 Wells
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2016

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
110.5 - 111.5	$0.00	$0.00	0.00000	53.69
111.5 - 112.5	$0.00	$0.00	0.00000	53.69
112.5 - 113.5	$0.00	$0.00	0.00000	53.69
113.5 - 114.5	$0.00	$0.00	0.00000	53.69
114.5 - 115.5	$0.00	$0.00	0.00000	53.69
115.5 - 116.5	$0.00	$0.00	0.00000	53.69

APT

Electric Division
352.00 Wells
Original And Smooth Survivor Curves



APT
Electric Division
353.00 Lines
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2016

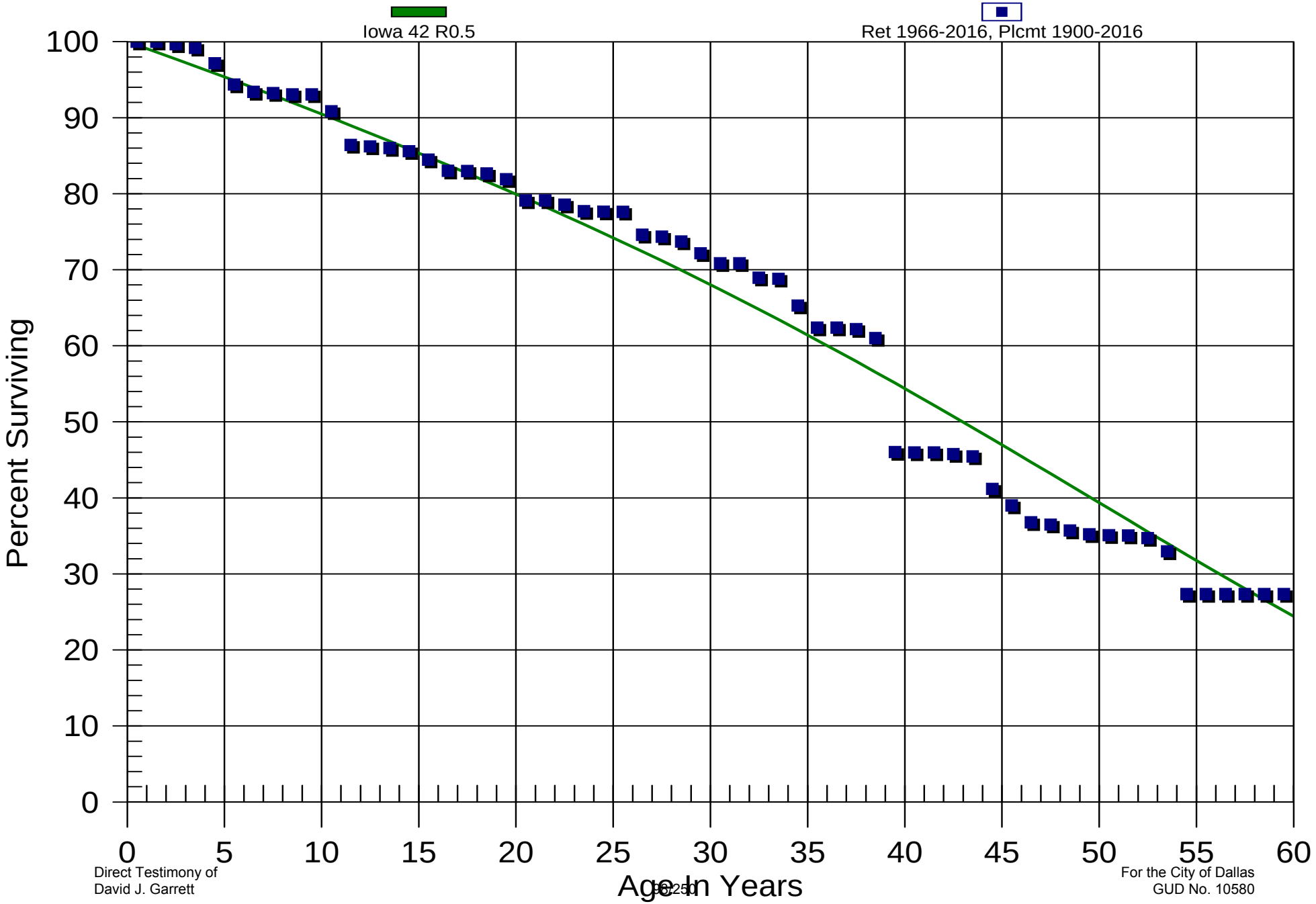
Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
0.0 - 0.5	$11,054,269.16	$0.00	0.00000	100.00
0.5 - 1.5	$10,828,222.43	$0.00	0.00000	100.00
1.5 - 2.5	$7,760,874.75	$26,205.72	0.00338	100.00
2.5 - 3.5	$7,689,106.40	$37,778.85	0.00491	99.66
3.5 - 4.5	$8,385,928.10	$169,553.41	0.02022	99.17
4.5 - 5.5	$7,258,199.90	$209,160.54	0.02882	97.17
5.5 - 6.5	$6,737,338.31	$68,917.73	0.01023	94.37
6.5 - 7.5	$7,258,534.45	$14,153.78	0.00195	93.40
7.5 - 8.5	$5,537,368.29	$9,136.29	0.00165	93.22
8.5 - 9.5	$5,193,388.03	$160.88	0.00003	93.07
9.5 - 10.5	$5,212,064.41	$124,080.46	0.02381	93.06
10.5 - 11.5	$5,049,177.15	$245,360.55	0.04859	90.85
11.5 - 12.5	$3,721,585.13	$9,342.02	0.00251	86.43
12.5 - 13.5	$3,150,214.03	$8,194.16	0.00260	86.22
13.5 - 14.5	$3,920,534.45	$18,002.47	0.00459	85.99
14.5 - 15.5	$3,608,298.19	$47,390.46	0.01313	85.60
15.5 - 16.5	$3,610,355.83	$62,366.65	0.01727	84.47
16.5 - 17.5	$3,478,471.12	$1,620.73	0.00047	83.01
17.5 - 18.5	$3,228,235.16	$12,223.59	0.00379	82.97
18.5 - 19.5	$3,078,359.99	$28,278.03	0.00919	82.66
19.5 - 20.5	$2,955,867.87	$101,084.67	0.03420	81.90
20.5 - 21.5	$2,858,300.86	$0.00	0.00000	79.10
21.5 - 22.5	$2,903,629.94	$20,422.36	0.00703	79.10
22.5 - 23.5	$2,884,829.54	$30,989.78	0.01074	78.54
23.5 - 24.5	$3,436,462.12	$2,766.37	0.00081	77.70
24.5 - 25.5	$4,451,352.22	$941.40	0.00021	77.64
25.5 - 26.5	$4,404,600.70	$170,807.55	0.03878	77.62
26.5 - 27.5	$4,248,186.39	$14,206.85	0.00334	74.61
27.5 - 28.5	$3,582,607.39	$30,682.03	0.00856	74.36
28.5 - 29.5	$2,466,131.09	$52,450.28	0.02127	73.73
29.5 - 30.5	$2,413,680.81	$43,041.57	0.01783	72.16
30.5 - 31.5	$1,992,316.41	$20.06	0.00001	70.87
31.5 - 32.5	$1,994,325.40	$53,782.16	0.02697	70.87
32.5 - 33.5	$1,939,918.68	$4,178.05	0.00215	68.96
33.5 - 34.5	$1,923,280.95	$97,855.71	0.05088	68.81
34.5 - 35.5	$1,992,535.23	$88,664.07	0.04450	65.31
35.5 - 36.5	$1,901,657.78	$560.10	0.00029	62.40

APT
Electric Division
353.00 Lines
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2016

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
36.5 - 37.5	$1,866,083.67	$5,329.01	0.00286	62.38
37.5 - 38.5	$1,855,019.98	$35,702.05	0.01925	62.21
38.5 - 39.5	$1,334,878.42	$327,845.11	0.24560	61.01
39.5 - 40.5	$1,007,396.77	$938.26	0.00093	46.03
40.5 - 41.5	$998,950.73	$474.60	0.00048	45.98
41.5 - 42.5	$415,309.11	$1,854.32	0.00446	45.96
42.5 - 43.5	$357,595.74	$2,487.48	0.00696	45.76
43.5 - 44.5	$361,235.13	$33,833.18	0.09366	45.44
44.5 - 45.5	$329,167.96	$17,473.97	0.05309	41.18
45.5 - 46.5	$287,506.99	$16,340.05	0.05683	39.00
46.5 - 47.5	$270,724.85	$2,309.09	0.00853	36.78
47.5 - 48.5	$245,375.99	$5,103.08	0.02080	36.47
48.5 - 49.5	$238,093.98	$3,320.19	0.01394	35.71
49.5 - 50.5	$181,732.40	$551.96	0.00304	35.21
50.5 - 51.5	$181,180.44	$292.88	0.00162	35.10
51.5 - 52.5	$175,070.52	$1,725.86	0.00986	35.05
52.5 - 53.5	$175,377.63	$8,858.35	0.05051	34.70
53.5 - 54.5	$166,339.47	$28,282.01	0.17003	32.95
54.5 - 55.5	$138,057.46	$0.00	0.00000	27.35
55.5 - 56.5	$129,306.55	$0.00	0.00000	27.35
56.5 - 57.5	$120,282.85	$0.00	0.00000	27.35
57.5 - 58.5	$118,857.82	$0.00	0.00000	27.35
58.5 - 59.5	$118,857.82	$0.00	0.00000	27.35
59.5 - 60.5	$118,857.82	$0.00	0.00000	27.35
60.5 - 61.5	$663,599.00	$0.00	0.00000	27.35
61.5 - 62.5	$663,599.00	$0.00	0.00000	27.35
62.5 - 63.5	$663,599.00	$0.00	0.00000	27.35
63.5 - 64.5	$663,599.00	$0.00	0.00000	27.35

APT

Electric Division
353.00 Lines
Original And Smooth Survivor Curves



APT
Electric Division
354.00 Compressor Station Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1930 TO 2016

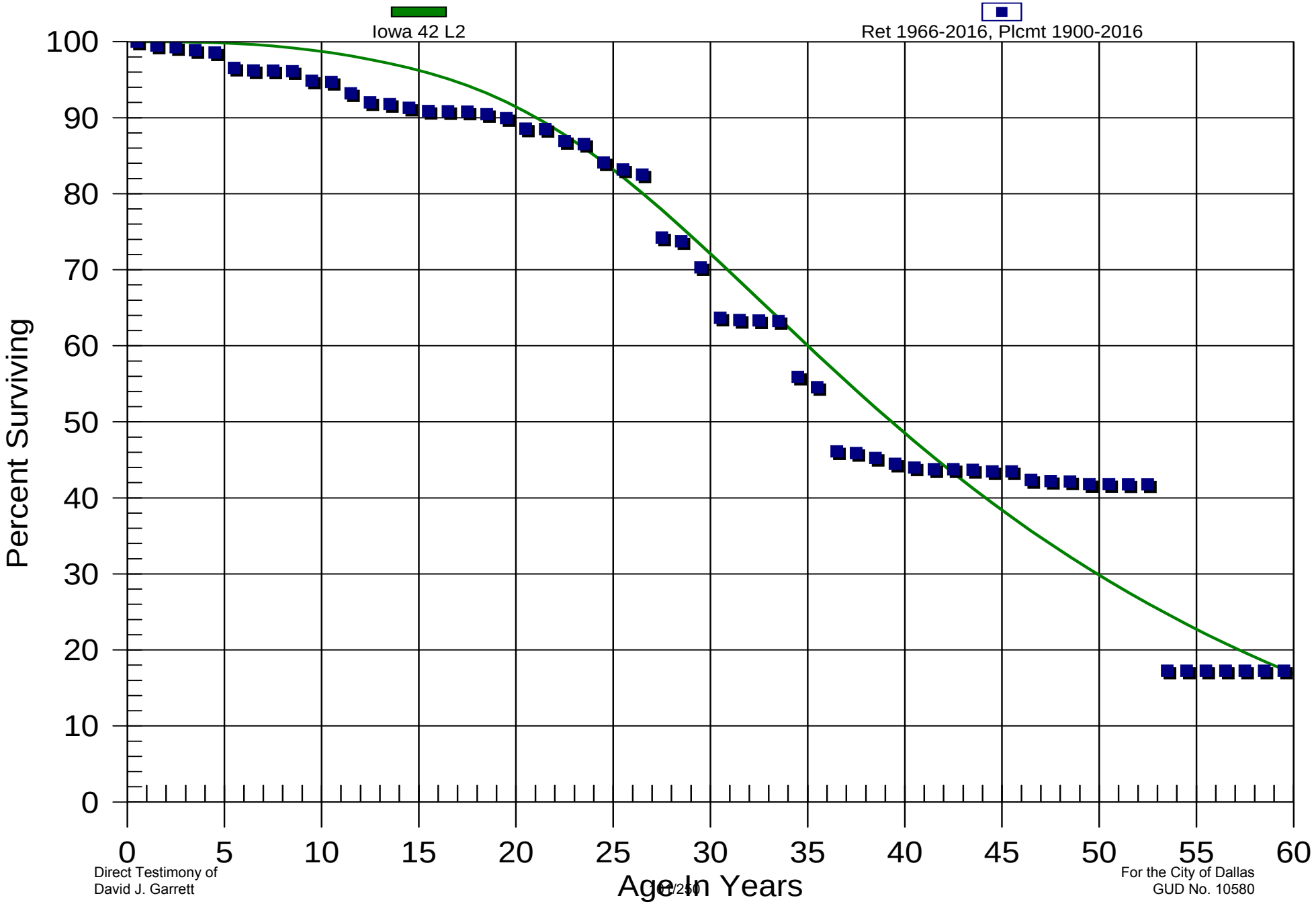
Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
0.0 - 0.5	$101,095,800.13	$1,916.06	0.00002	100.00
0.5 - 1.5	$98,192,544.44	$500,107.76	0.00509	100.00
1.5 - 2.5	$94,925,656.86	$205,141.75	0.00216	99.49
2.5 - 3.5	$91,574,437.30	$373,844.82	0.00408	99.27
3.5 - 4.5	$89,644,592.92	$263,487.66	0.00294	98.87
4.5 - 5.5	$83,047,217.51	$1,703,993.73	0.02052	98.58
5.5 - 6.5	$68,006,492.12	$236,081.28	0.00347	96.56
6.5 - 7.5	$50,388,140.63	$16,889.56	0.00034	96.22
7.5 - 8.5	$48,799,351.20	$36,359.24	0.00075	96.19
8.5 - 9.5	$46,075,268.20	$606,038.89	0.01315	96.12
9.5 - 10.5	$26,134,908.59	$40,985.90	0.00157	94.85
10.5 - 11.5	$26,793,520.97	$420,629.28	0.01570	94.70
11.5 - 12.5	$20,547,066.03	$266,852.79	0.01299	93.22
12.5 - 13.5	$20,032,657.28	$44,378.64	0.00222	92.01
13.5 - 14.5	$19,886,734.92	$109,365.24	0.00550	91.80
14.5 - 15.5	$19,628,017.83	$87,449.40	0.00446	91.30
15.5 - 16.5	$19,272,437.99	$6,696.51	0.00035	90.89
16.5 - 17.5	$19,236,994.86	$13,298.63	0.00069	90.86
17.5 - 18.5	$19,148,176.91	$69,858.07	0.00365	90.80
18.5 - 19.5	$15,934,496.85	$93,968.46	0.00590	90.46
19.5 - 20.5	$15,753,113.13	$240,961.96	0.01530	89.93
20.5 - 21.5	$15,217,349.26	$11,639.75	0.00076	88.56
21.5 - 22.5	$14,735,750.29	$259,723.67	0.01763	88.49
22.5 - 23.5	$14,240,165.51	$63,342.89	0.00445	86.93
23.5 - 24.5	$11,930,770.42	$331,964.68	0.02782	86.54
24.5 - 25.5	$11,567,197.95	$130,491.85	0.01128	84.13
25.5 - 26.5	$9,450,942.18	$77,141.79	0.00816	83.18
26.5 - 27.5	$9,214,696.55	$924,488.02	0.10033	82.51
27.5 - 28.5	$5,730,314.72	$37,418.73	0.00653	74.23
28.5 - 29.5	$5,683,253.91	$263,949.98	0.04644	73.74
29.5 - 30.5	$5,417,803.51	$510,892.13	0.09430	70.32
30.5 - 31.5	$4,738,998.51	$21,474.16	0.00453	63.69
31.5 - 32.5	$4,715,495.30	$5,244.24	0.00111	63.40
32.5 - 33.5	$4,711,856.53	$5,803.74	0.00123	63.33
33.5 - 34.5	$4,706,052.79	$546,711.56	0.11617	63.25
34.5 - 35.5	$3,899,737.18	$94,594.06	0.02426	55.90
35.5 - 36.5	$3,806,094.67	$587,870.57	0.15446	54.55

APT
Electric Division
354.00 Compressor Station Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1930 TO 2016

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
36.5 - 37.5	$3,218,224.10	$16,008.30	0.00497	46.12
37.5 - 38.5	$3,190,801.85	$43,782.83	0.01372	45.89
38.5 - 39.5	$1,994,191.94	$34,560.62	0.01733	45.26
39.5 - 40.5	$1,959,893.60	$22,535.40	0.01150	44.48
40.5 - 41.5	$1,911,343.37	$8,600.88	0.00450	43.97
41.5 - 42.5	$1,858,580.68	$913.66	0.00049	43.77
42.5 - 43.5	$1,700,956.87	$3,156.13	0.00186	43.75
43.5 - 44.5	$1,696,598.00	$6,999.76	0.00413	43.67
44.5 - 45.5	$1,686,482.38	$0.00	0.00000	43.49
45.5 - 46.5	$1,627,826.47	$42,718.10	0.02624	43.49
46.5 - 47.5	$1,581,488.57	$5,263.36	0.00333	42.34
47.5 - 48.5	$1,580,830.01	$1,749.05	0.00111	42.20
48.5 - 49.5	$1,570,886.43	$13,666.87	0.00870	42.16
49.5 - 50.5	$1,347,708.95	$73.65	0.00005	41.79
50.5 - 51.5	$1,347,635.30	$611.89	0.00045	41.79
51.5 - 52.5	$1,350,997.94	$0.00	0.00000	41.77
52.5 - 53.5	$1,348,822.84	$791,041.60	0.58647	41.77
53.5 - 54.5	$557,238.46	$0.00	0.00000	17.27
54.5 - 55.5	$557,238.46	$0.00	0.00000	17.27
55.5 - 56.5	$546,761.79	$0.00	0.00000	17.27
56.5 - 57.5	$545,963.50	$0.00	0.00000	17.27
57.5 - 58.5	$545,816.77	$0.00	0.00000	17.27
58.5 - 59.5	$545,816.77	$0.00	0.00000	17.27
59.5 - 60.5	$545,816.77	$0.00	0.00000	17.27
60.5 - 61.5	$1,294.28	$0.00	0.00000	17.27
61.5 - 62.5	$1,294.28	$0.00	0.00000	17.27
62.5 - 63.5	$1,294.28	$0.00	0.00000	17.27
63.5 - 64.5	$1,294.28	$0.00	0.00000	17.27
64.5 - 65.5	$1,294.28	$0.00	0.00000	17.27
65.5 - 66.5	$1,294.28	$0.00	0.00000	17.27
66.5 - 67.5	$1,294.28	$0.00	0.00000	17.27
67.5 - 68.5	$1,294.28	$0.00	0.00000	17.27
68.5 - 69.5	$1,294.28	$0.00	0.00000	17.27
69.5 - 70.5	$1,294.28	$0.00	0.00000	17.27

APT

Electric Division
354.00 Compressor Station Equipment
Original And Smooth Survivor Curves



APT
Electric Division
355.00 Meas. & Reg. Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1948 TO 2016

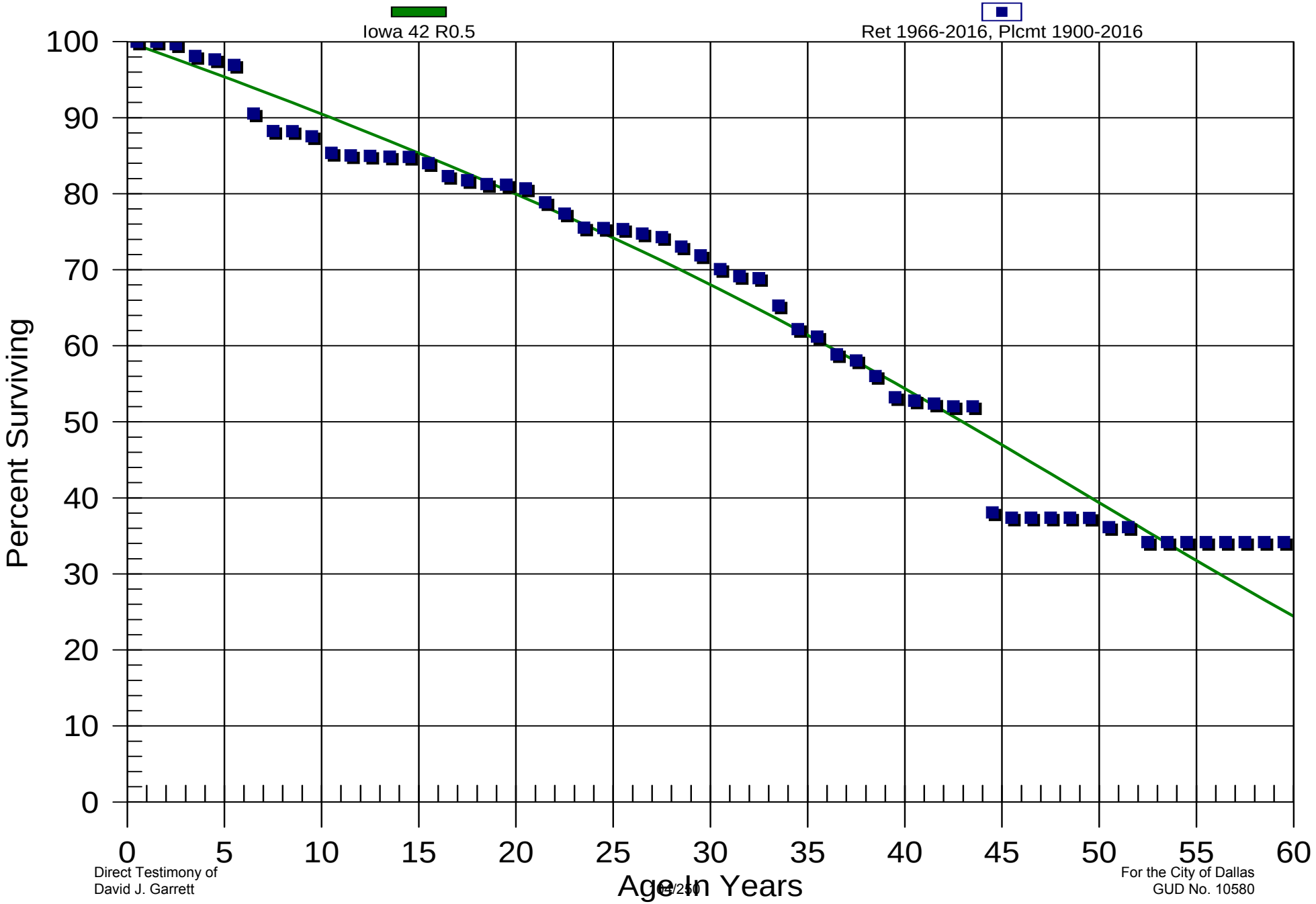
Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
0.0 - 0.5	$47,226,085.17	$0.00	0.00000	100.00
0.5 - 1.5	$36,778,135.58	$1,035.37	0.00003	100.00
1.5 - 2.5	$24,716,454.85	$85,791.70	0.00347	100.00
2.5 - 3.5	$23,312,877.45	$360,867.24	0.01548	99.65
3.5 - 4.5	$16,303,499.22	$74,828.77	0.00459	98.11
4.5 - 5.5	$7,121,250.29	$51,436.53	0.00722	97.66
5.5 - 6.5	$7,015,543.26	$464,350.98	0.06619	96.95
6.5 - 7.5	$5,941,431.23	$149,943.68	0.02524	90.53
7.5 - 8.5	$4,280,158.75	$1,239.84	0.00029	88.25
8.5 - 9.5	$4,315,755.34	$32,220.19	0.00747	88.22
9.5 - 10.5	$4,175,773.71	$104,573.18	0.02504	87.57
10.5 - 11.5	$4,143,239.93	$16,843.98	0.00407	85.37
11.5 - 12.5	$3,740,810.57	$2,359.11	0.00063	85.03
12.5 - 13.5	$3,581,722.95	$4,322.63	0.00121	84.97
13.5 - 14.5	$3,612,910.38	$1,527.15	0.00042	84.87
14.5 - 15.5	$3,260,397.67	$31,129.19	0.00955	84.83
15.5 - 16.5	$3,149,728.35	$63,436.66	0.02014	84.02
16.5 - 17.5	$2,443,966.60	$16,618.02	0.00680	82.33
17.5 - 18.5	$2,384,857.19	$14,297.05	0.00599	81.77
18.5 - 19.5	$2,336,713.68	$2,463.90	0.00105	81.28
19.5 - 20.5	$2,271,692.16	$13,883.66	0.00611	81.20
20.5 - 21.5	$2,010,346.73	$45,508.44	0.02264	80.70
21.5 - 22.5	$2,209,449.35	$41,345.08	0.01871	78.87
22.5 - 23.5	$4,063,103.51	$96,962.08	0.02386	77.40
23.5 - 24.5	$5,545,238.84	$5,605.51	0.00101	75.55
24.5 - 25.5	$5,415,168.29	$10,033.61	0.00185	75.47
25.5 - 26.5	$5,133,962.72	$39,107.78	0.00762	75.33
26.5 - 27.5	$2,543,399.07	$16,237.23	0.00638	74.76
27.5 - 28.5	$398,076.39	$6,645.19	0.01669	74.28
28.5 - 29.5	$418,667.42	$6,580.11	0.01572	73.04
29.5 - 30.5	$400,657.14	$10,134.46	0.02529	71.89
30.5 - 31.5	$386,838.17	$5,146.21	0.01330	70.08
31.5 - 32.5	$379,118.79	$1,436.73	0.00379	69.14
32.5 - 33.5	$346,633.27	$18,064.82	0.05212	68.88
33.5 - 34.5	$328,568.45	$15,520.86	0.04724	65.29
34.5 - 35.5	$312,748.74	$5,140.90	0.01644	62.21
35.5 - 36.5	$306,387.06	$11,615.45	0.03791	61.19

APT
Electric Division
355.00 Meas. & Reg. Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1948 TO 2016

Age Interval	$ Surviving At Beginning of Age Interval	$ Retired During The Age Interval	Retirement Ratio	% Surviving At Beginning of Age Interval
36.5 - 37.5	$299,409.22	$4,056.55	0.01355	58.87
37.5 - 38.5	$300,177.65	$10,621.34	0.03538	58.07
38.5 - 39.5	$163,788.59	$8,158.14	0.04981	56.01
39.5 - 40.5	$155,361.23	$1,316.94	0.00848	53.22
40.5 - 41.5	$149,094.42	$1,062.85	0.00713	52.77
41.5 - 42.5	$149,173.30	$1,001.55	0.00671	52.40
42.5 - 43.5	$123,645.91	$0.00	0.00000	52.04
43.5 - 44.5	$125,734.23	$33,750.53	0.26843	52.04
44.5 - 45.5	$93,195.89	$1,671.42	0.01793	38.07
45.5 - 46.5	$97,120.09	$0.00	0.00000	37.39
46.5 - 47.5	$96,070.24	$0.00	0.00000	37.39
47.5 - 48.5	$69,349.37	$0.00	0.00000	37.39
48.5 - 49.5	$66,986.56	$30.91	0.00046	37.39
49.5 - 50.5	$35,060.05	$1,162.21	0.03315	37.37
50.5 - 51.5	$33,273.45	$0.00	0.00000	36.14
51.5 - 52.5	$33,264.29	$1,793.83	0.05393	36.14
52.5 - 53.5	$32,653.89	$0.00	0.00000	34.19
53.5 - 54.5	$39,392.51	$0.00	0.00000	34.19
54.5 - 55.5	$39,392.51	$0.00	0.00000	34.19
55.5 - 56.5	$24,068.93	$0.00	0.00000	34.19
56.5 - 57.5	$19,171.96	$0.00	0.00000	34.19
57.5 - 58.5	$570.75	$0.00	0.00000	34.19
58.5 - 59.5	$570.75	$0.00	0.00000	34.19
59.5 - 60.5	$570.75	$0.00	0.00000	34.19

APT

Electric Division
355.00 Meas. & Reg. Equipment
Original And Smooth Survivor Curves



APT
Electric Division
356.00 Purification Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1952 TO 2015

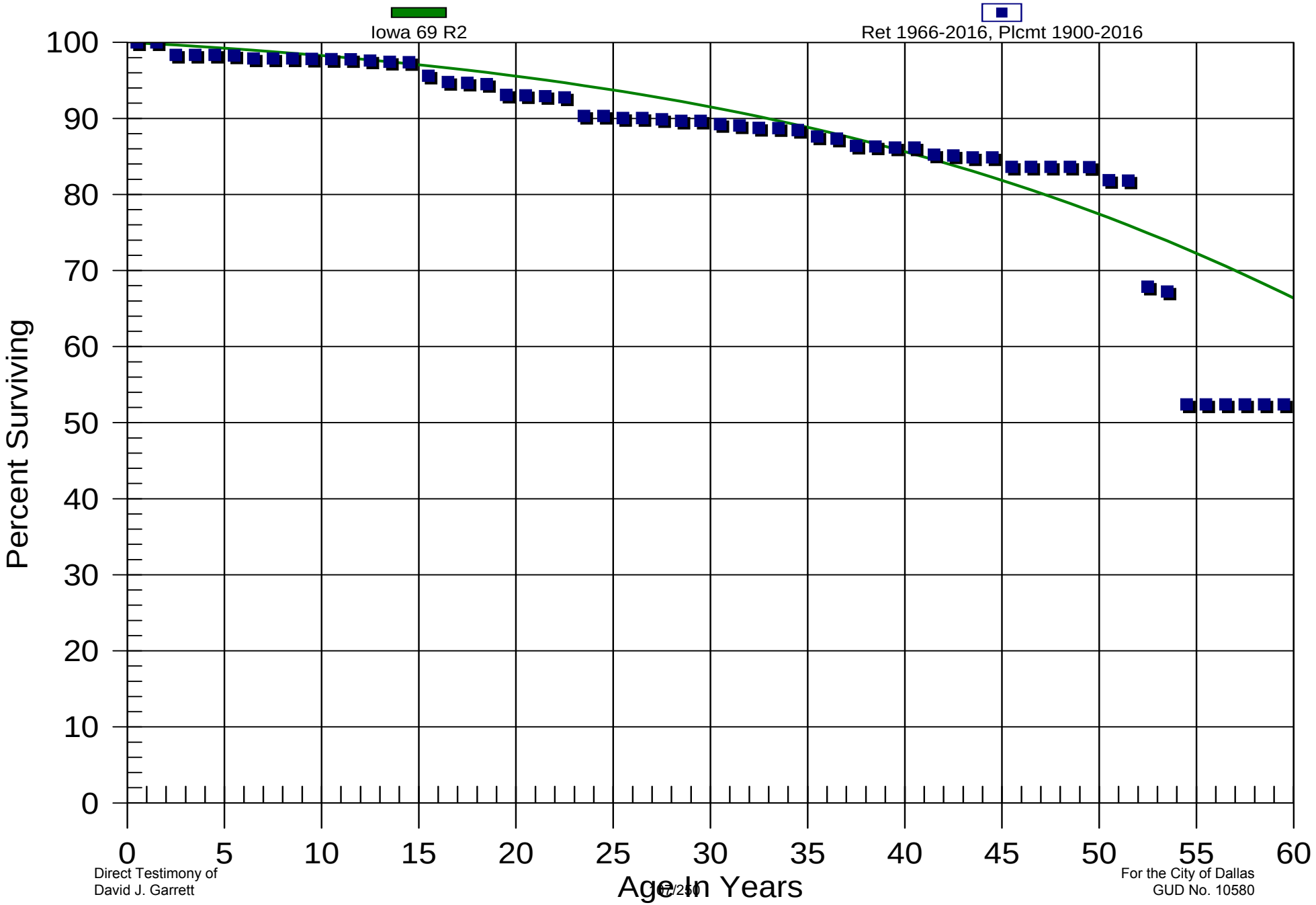
Age Interval	$ Surviving At Beginning of Age Interval	$ Retired During The Age Interval	Retirement Ratio	% Surviving At Beginning of Age Interval
0.0 - 0.5	$53,539,515.93	$0.00	0.00000	100.00
0.5 - 1.5	$53,583,580.14	$9,537.25	0.00018	100.00
1.5 - 2.5	$53,560,174.13	$870,805.54	0.01626	99.98
2.5 - 3.5	$52,666,941.09	$390.61	0.00001	98.36
3.5 - 4.5	$50,772,596.68	$5,694.54	0.00011	98.36
4.5 - 5.5	$41,035,086.91	$32,630.05	0.00080	98.34
5.5 - 6.5	$25,100,716.16	$99,356.15	0.00396	98.27
6.5 - 7.5	$13,751,071.92	$0.00	0.00000	97.88
7.5 - 8.5	$12,464,058.72	$710.09	0.00006	97.88
8.5 - 9.5	$12,498,486.07	$4,236.03	0.00034	97.87
9.5 - 10.5	$9,728,005.99	$4,986.24	0.00051	97.84
10.5 - 11.5	$9,961,983.38	$492.44	0.00005	97.79
11.5 - 12.5	$9,327,710.33	$16,382.67	0.00176	97.78
12.5 - 13.5	$9,322,668.81	$17,159.94	0.00184	97.61
13.5 - 14.5	$9,307,349.29	$4,134.90	0.00044	97.43
14.5 - 15.5	$9,652,698.96	$177,014.55	0.01834	97.39
15.5 - 16.5	$9,678,851.08	$84,553.81	0.00874	95.60
16.5 - 17.5	$9,501,815.37	$8,459.35	0.00089	94.77
17.5 - 18.5	$9,492,264.86	$17,950.40	0.00189	94.68
18.5 - 19.5	$9,415,832.05	$139,754.35	0.01484	94.50
19.5 - 20.5	$8,873,276.82	$6,608.07	0.00074	93.10
20.5 - 21.5	$8,750,777.51	$9,909.84	0.00113	93.03
21.5 - 22.5	$8,634,616.90	$16,490.72	0.00191	92.93
22.5 - 23.5	$6,111,935.55	$159,821.16	0.02615	92.75
23.5 - 24.5	$5,988,127.00	$0.00	0.00000	90.32
24.5 - 25.5	$5,988,683.88	$17,552.39	0.00293	90.32
25.5 - 26.5	$4,753,876.80	$1,250.72	0.00026	90.06
26.5 - 27.5	$2,593,843.37	$4,658.30	0.00180	90.04
27.5 - 28.5	$2,333,201.16	$4,674.16	0.00200	89.87
28.5 - 29.5	$2,300,205.46	$246.94	0.00011	89.69
29.5 - 30.5	$2,301,458.94	$11,107.81	0.00483	89.68
30.5 - 31.5	$1,855,628.07	$3,385.36	0.00182	89.25
31.5 - 32.5	$1,562,573.76	$5,949.34	0.00381	89.09
32.5 - 33.5	$1,553,904.28	$439.79	0.00028	88.75
33.5 - 34.5	$1,553,464.49	$4,691.94	0.00302	88.72
34.5 - 35.5	$1,588,125.01	$15,402.49	0.00970	88.46
35.5 - 36.5	$1,552,193.55	$4,641.02	0.00299	87.60

APT
Electric Division
356.00 Purification Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1952 TO 2015

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
36.5 - 37.5	$1,528,077.55	$16,484.61	0.01079	87.34
37.5 - 38.5	$1,499,224.45	$1,363.67	0.00091	86.39
38.5 - 39.5	$1,066,260.26	$1,840.42	0.00173	86.32
39.5 - 40.5	$1,064,113.00	$0.00	0.00000	86.17
40.5 - 41.5	$999,502.55	$10,993.31	0.01100	86.17
41.5 - 42.5	$987,261.34	$1,209.75	0.00123	85.22
42.5 - 43.5	$960,108.64	$2,661.53	0.00277	85.12
43.5 - 44.5	$947,422.08	$0.00	0.00000	84.88
44.5 - 45.5	$931,224.06	$13,773.98	0.01479	84.88
45.5 - 46.5	$918,162.16	$0.00	0.00000	83.62
46.5 - 47.5	$854,248.98	$0.00	0.00000	83.62
47.5 - 48.5	$672,465.86	$0.00	0.00000	83.62
48.5 - 49.5	$653,294.83	$148.44	0.00023	83.62
49.5 - 50.5	$465,466.23	$9,658.48	0.02075	83.60
50.5 - 51.5	$450,327.70	$306.43	0.00068	81.87
51.5 - 52.5	$448,869.89	$76,552.58	0.17055	81.81
52.5 - 53.5	$370,995.83	$3,438.48	0.00927	67.86
53.5 - 54.5	$354,239.10	$78,168.05	0.22066	67.23
54.5 - 55.5	$276,071.05	$0.00	0.00000	52.40
55.5 - 56.5	$266,671.70	$0.00	0.00000	52.40
56.5 - 57.5	$266,671.70	$0.00	0.00000	52.40
57.5 - 58.5	$238,963.63	$0.00	0.00000	52.40
58.5 - 59.5	$238,963.63	$0.00	0.00000	52.40
59.5 - 60.5	$238,963.63	$0.00	0.00000	52.40

APT

Electric Division
356.00 Purification Equipment
Original And Smooth Survivor Curves



APT
Electric Division
357.00 Other Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1952 TO 2015

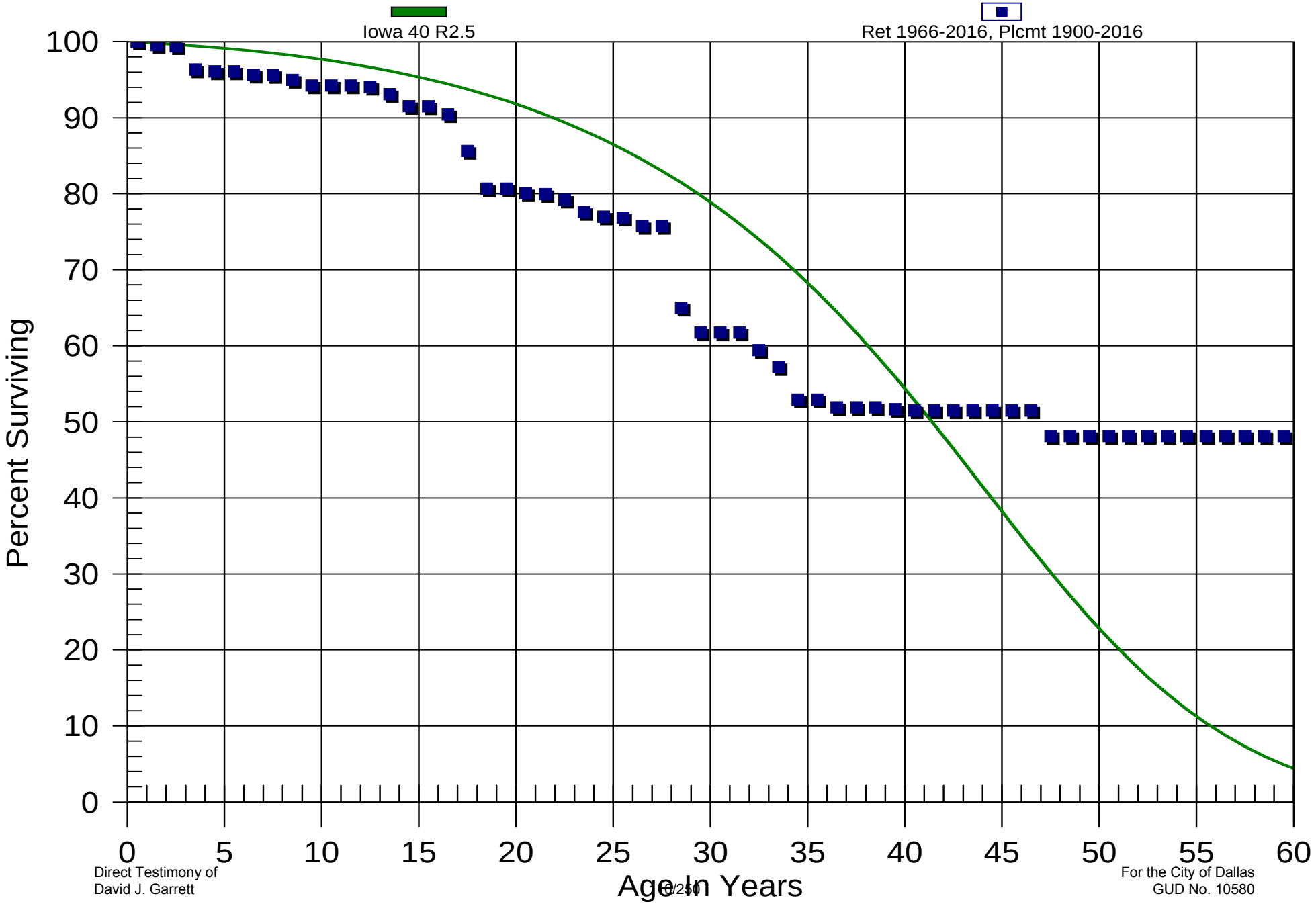
Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
0.0 - 0.5	$1,165,356.88	$0.00	0.00000	100.00
0.5 - 1.5	$1,218,512.49	$5,410.52	0.00444	100.00
1.5 - 2.5	$1,175,228.13	$2,078.24	0.00177	99.56
2.5 - 3.5	$1,362,874.42	$41,831.64	0.03069	99.38
3.5 - 4.5	$1,274,913.80	$3,410.20	0.00267	96.33
4.5 - 5.5	$1,274,551.34	$0.00	0.00000	96.07
5.5 - 6.5	$1,284,959.10	$5,954.84	0.00463	96.07
6.5 - 7.5	$1,237,581.13	$257.30	0.00021	95.63
7.5 - 8.5	$1,135,010.46	$7,587.44	0.00668	95.61
8.5 - 9.5	$1,094,310.47	$8,661.08	0.00791	94.97
9.5 - 10.5	$1,088,695.51	$0.00	0.00000	94.22
10.5 - 11.5	$760,618.12	$0.00	0.00000	94.22
11.5 - 12.5	$760,618.12	$1,488.70	0.00196	94.22
12.5 - 13.5	$714,055.62	$7,223.76	0.01012	94.03
13.5 - 14.5	$696,701.93	$11,790.27	0.01692	93.08
14.5 - 15.5	$607,303.97	$72.66	0.00012	91.51
15.5 - 16.5	$550,114.88	$6,295.74	0.01144	91.49
16.5 - 17.5	$562,015.09	$30,018.87	0.05341	90.45
17.5 - 18.5	$501,756.82	$29,111.48	0.05802	85.62
18.5 - 19.5	$391,692.42	$0.00	0.00000	80.65
19.5 - 20.5	$353,322.04	$2,568.72	0.00727	80.65
20.5 - 21.5	$332,977.14	$461.11	0.00138	80.06
21.5 - 22.5	$303,646.44	$2,846.62	0.00937	79.95
22.5 - 23.5	$233,567.04	$4,727.44	0.02024	79.20
23.5 - 24.5	$180,145.59	$1,410.22	0.00783	77.60
24.5 - 25.5	$178,735.37	$379.36	0.00212	76.99
25.5 - 26.5	$167,943.67	$2,386.14	0.01421	76.83
26.5 - 27.5	$146,591.13	$0.00	0.00000	75.74
27.5 - 28.5	$118,731.88	$16,842.23	0.14185	75.74
28.5 - 29.5	$42,869.42	$2,157.88	0.05034	64.99
29.5 - 30.5	$38,018.24	$0.00	0.00000	61.72
30.5 - 31.5	$38,018.24	$0.00	0.00000	61.72
31.5 - 32.5	$38,018.24	$1,414.76	0.03721	61.72
32.5 - 33.5	$36,419.40	$1,365.53	0.03749	59.42
33.5 - 34.5	$35,053.87	$2,619.34	0.07472	57.20
34.5 - 35.5	$32,434.53	$0.00	0.00000	52.92
35.5 - 36.5	$32,434.53	$630.04	0.01942	52.92

APT
Electric Division
357.00 Other Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1952 TO 2015

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
36.5 - 37.5	$31,386.22	$0.00	0.00000	51.89
37.5 - 38.5	$31,386.22	$0.00	0.00000	51.89
38.5 - 39.5	$31,020.82	$139.91	0.00451	51.89
39.5 - 40.5	$30,488.50	$97.94	0.00321	51.66
40.5 - 41.5	$25,748.12	$0.00	0.00000	51.49
41.5 - 42.5	$25,748.12	$0.00	0.00000	51.49
42.5 - 43.5	$25,673.12	$0.00	0.00000	51.49
43.5 - 44.5	$25,673.12	$0.00	0.00000	51.49
44.5 - 45.5	$24,504.39	$0.00	0.00000	51.49
45.5 - 46.5	$22,537.39	$0.00	0.00000	51.49
46.5 - 47.5	$22,537.39	$1,476.03	0.06549	51.49
47.5 - 48.5	$10,469.37	$0.00	0.00000	48.12
48.5 - 49.5	$10,469.37	$0.00	0.00000	48.12
49.5 - 50.5	$8,544.60	$0.00	0.00000	48.12
50.5 - 51.5	$8,503.30	$0.00	0.00000	48.12
51.5 - 52.5	$8,048.84	$0.00	0.00000	48.12
52.5 - 53.5	$6,909.40	$0.00	0.00000	48.12
53.5 - 54.5	$6,909.40	$0.00	0.00000	48.12
54.5 - 55.5	$6,753.00	$0.00	0.00000	48.12
55.5 - 56.5	$1,687.17	$0.00	0.00000	48.12
56.5 - 57.5	$1,573.72	$0.00	0.00000	48.12
57.5 - 58.5	$1,573.72	$0.00	0.00000	48.12
58.5 - 59.5	$1,573.72	$0.00	0.00000	48.12
59.5 - 60.5	$1,573.72	$0.00	0.00000	48.12
60.5 - 61.5	$1,573.72	$0.00	0.00000	48.12
61.5 - 62.5	$1,573.72	$0.00	0.00000	48.12
62.5 - 63.5	$1,573.72	$0.00	0.00000	48.12
63.5 - 64.5	$1,573.72	$0.00	0.00000	48.12

APT

Electric Division
357.00 Other Equipment
Original And Smooth Survivor Curves



APT
Electric Division
365.20 ROW - City Gate
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2015

Age Interval	$ Surviving At Beginning of Age Interval	$ Retired During The Age Interval	Retirement Ratio	% Surviving At Beginning of Age Interval
0.0 - 0.5	$21,834,437.05	$1,921.78	0.00009	100.00
0.5 - 1.5	$22,063,699.21	$22,010.97	0.00100	99.99
1.5 - 2.5	$21,954,571.70	$107,985.07	0.00492	99.89
2.5 - 3.5	$21,161,157.59	$106,421.70	0.00503	99.40
3.5 - 4.5	$21,238,684.28	$91,499.30	0.00431	98.90
4.5 - 5.5	$20,550,954.93	$139,402.87	0.00678	98.47
5.5 - 6.5	$20,579,756.06	$108,703.43	0.00528	97.81
6.5 - 7.5	$20,128,768.93	$65,461.26	0.00325	97.29
7.5 - 8.5	$20,104,643.70	$71,055.26	0.00353	96.97
8.5 - 9.5	$19,488,329.48	$58,757.77	0.00302	96.63
9.5 - 10.5	$19,124,905.97	$96,017.64	0.00502	96.34
10.5 - 11.5	$13,982,580.89	$250,266.24	0.01790	95.86
11.5 - 12.5	$12,404,426.40	$70,193.27	0.00566	94.14
12.5 - 13.5	$12,478,242.25	$75,659.23	0.00606	93.61
13.5 - 14.5	$12,452,548.71	$232,694.92	0.01869	93.04
14.5 - 15.5	$12,282,459.95	$134,763.50	0.01097	91.30
15.5 - 16.5	$12,189,961.21	$41,593.95	0.00341	90.30
16.5 - 17.5	$12,275,663.54	$81,620.76	0.00665	89.99
17.5 - 18.5	$12,260,911.52	$99,377.27	0.00811	89.39
18.5 - 19.5	$11,904,313.97	$70,309.18	0.00591	88.67
19.5 - 20.5	$11,778,888.04	$82,248.30	0.00698	88.14
20.5 - 21.5	$11,383,753.80	$73,062.56	0.00642	87.53
21.5 - 22.5	$11,212,946.22	$35,527.14	0.00317	86.97
22.5 - 23.5	$10,887,008.37	$10,899.47	0.00100	86.69
23.5 - 24.5	$10,593,831.10	$20,348.34	0.00192	86.60
24.5 - 25.5	$10,265,777.77	$16,087.89	0.00157	86.44
25.5 - 26.5	$8,764,917.68	$23,563.45	0.00269	86.30
26.5 - 27.5	$8,602,791.79	$239,592.66	0.02785	86.07
27.5 - 28.5	$8,262,419.67	$19,843.16	0.00240	83.67
28.5 - 29.5	$8,126,359.02	$30,872.36	0.00380	83.47
29.5 - 30.5	$7,746,210.96	$29,243.07	0.00378	83.16
30.5 - 31.5	$7,694,317.43	$21,187.69	0.00275	82.84
31.5 - 32.5	$7,132,319.63	$22,034.54	0.00309	82.61
32.5 - 33.5	$7,150,706.52	$10,161.36	0.00142	82.36
33.5 - 34.5	$7,122,684.11	$13,144.56	0.00185	82.24
34.5 - 35.5	$7,061,209.11	$16,589.96	0.00235	82.09
35.5 - 36.5	$6,892,635.82	$15,540.39	0.00225	81.90

APT
Electric Division
365.20 ROW - City Gate
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2015

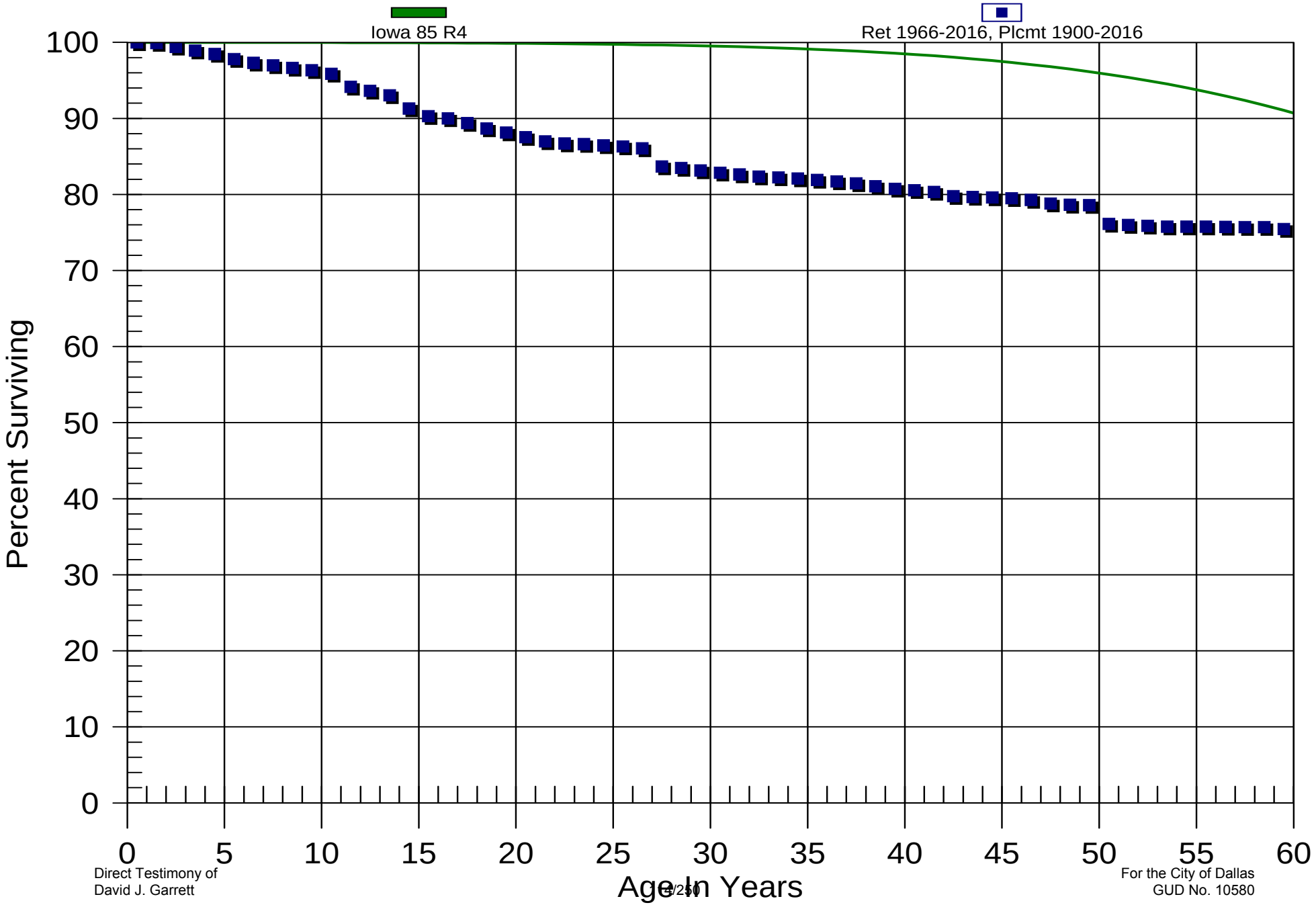
Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
36.5 - 37.5	$6,661,321.27	$19,322.76	0.00290	81.71
37.5 - 38.5	$6,572,084.62	$32,960.98	0.00502	81.48
38.5 - 39.5	$6,720,658.12	$25,640.51	0.00382	81.07
39.5 - 40.5	$6,588,158.58	$16,168.88	0.00245	80.76
40.5 - 41.5	$6,507,443.88	$19,023.91	0.00292	80.56
41.5 - 42.5	$6,336,525.61	$42,531.20	0.00671	80.32
42.5 - 43.5	$6,151,015.88	$9,231.71	0.00150	79.78
43.5 - 44.5	$5,797,635.67	$4,797.32	0.00083	79.66
44.5 - 45.5	$4,776,624.96	$5,844.16	0.00122	79.60
45.5 - 46.5	$4,567,585.76	$12,094.76	0.00265	79.50
46.5 - 47.5	$4,160,091.46	$25,204.76	0.00606	79.29
47.5 - 48.5	$3,994,925.49	$8,697.71	0.00218	78.81
48.5 - 49.5	$3,901,311.37	$3,111.07	0.00080	78.64
49.5 - 50.5	$3,169,329.93	$98,698.22	0.03114	78.58
50.5 - 51.5	$2,893,083.08	$6,012.28	0.00208	76.13
51.5 - 52.5	$2,802,265.84	$3,801.87	0.00136	75.97
52.5 - 53.5	$2,710,586.65	$3,449.63	0.00127	75.87
53.5 - 54.5	$2,513,534.54	$623.71	0.00025	75.77
54.5 - 55.5	$2,281,503.46	$0.90	0.00000	75.75
55.5 - 56.5	$2,169,099.41	$223.48	0.00010	75.75
56.5 - 57.5	$2,113,657.21	$1,440.04	0.00068	75.74
57.5 - 58.5	$1,951,241.10	$0.00	0.00000	75.69
58.5 - 59.5	$1,835,939.09	$5,856.81	0.00319	75.69
59.5 - 60.5	$1,763,987.17	$3,211.23	0.00182	75.45
60.5 - 61.5	$1,703,952.51	$19,451.94	0.01142	75.31
61.5 - 62.5	$1,590,497.03	$9,694.16	0.00610	74.45
62.5 - 63.5	$1,517,389.22	$1,046.45	0.00069	74.00
63.5 - 64.5	$1,437,443.88	$79.69	0.00006	73.95
64.5 - 65.5	$1,509,111.94	$538.12	0.00036	73.95
65.5 - 66.5	$1,417,588.43	$2,097.73	0.00148	73.92
66.5 - 67.5	$1,258,203.46	$1,434.16	0.00114	73.81
67.5 - 68.5	$1,151,927.54	$21,447.88	0.01862	73.73
68.5 - 69.5	$1,057,056.38	$10,339.08	0.00978	72.35
69.5 - 70.5	$1,034,921.98	$1,234.75	0.00119	71.65
70.5 - 71.5	$1,019,596.17	$5,309.45	0.00521	71.56
71.5 - 72.5	$1,003,483.16	$6,506.94	0.00648	71.19
72.5 - 73.5	$989,355.86	$81.80	0.00008	70.73

APT
Electric Division
365.20 ROW - City Gate
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2015

Age Interval	$ Surviving At Beginning of Age Interval	$ Retired During The Age Interval	Retirement Ratio	% Surviving At Beginning of Age Interval
73.5 - 74.5	$980,435.10	$247.12	0.00025	70.72
74.5 - 75.5	$976,680.73	$85,072.64	0.08710	70.70
75.5 - 76.5	$792,514.14	$246.23	0.00031	64.54
76.5 - 77.5	$662,242.06	$0.00	0.00000	64.52
77.5 - 78.5	$662,242.06	$0.00	0.00000	64.52
78.5 - 79.5	$649,193.10	$0.00	0.00000	64.52
79.5 - 80.5	$649,069.72	$0.00	0.00000	64.52
80.5 - 81.5	$606,075.88	$0.00	0.00000	64.52
81.5 - 82.5	$596,908.74	$0.00	0.00000	64.52
82.5 - 83.5	$576,079.34	$5,817.63	0.01010	64.52
83.5 - 84.5	$336,023.54	$0.00	0.00000	63.87
84.5 - 85.5	$336,023.54	$0.00	0.00000	63.87
85.5 - 86.5	$336,023.54	$0.00	0.00000	63.87
86.5 - 87.5	$330,938.31	$0.00	0.00000	63.87
87.5 - 88.5	$310,138.91	$72.10	0.00023	63.87
88.5 - 89.5	$275,796.72	$30,603.30	0.11096	63.86
89.5 - 90.5	$57,825.57	$0.00	0.00000	56.77
90.5 - 91.5	$47,295.58	$4,647.06	0.09826	56.77
91.5 - 92.5	$42,293.50	$0.00	0.00000	51.19
92.5 - 93.5	$42,293.50	$0.00	0.00000	51.19
93.5 - 94.5	$29,443.11	$0.00	0.00000	51.19
94.5 - 95.5	$28,116.91	$0.00	0.00000	51.19
95.5 - 96.5	$28,017.81	$0.00	0.00000	51.19
96.5 - 97.5	$10,197.16	$0.00	0.00000	51.19
97.5 - 98.5	$10,141.40	$0.00	0.00000	51.19
98.5 - 99.5	$10,135.07	$0.00	0.00000	51.19
99.5 - 100.5	$9,514.50	$0.00	0.00000	51.19
100.5 - 101.5	$3,456.05	$0.00	0.00000	51.19
101.5 - 102.5	$2,011.08	$0.00	0.00000	51.19
102.5 - 103.5	$2,011.08	$0.00	0.00000	51.19
103.5 - 104.5	$773.14	$0.00	0.00000	51.19
104.5 - 105.5	$773.14	$0.00	0.00000	51.19
105.5 - 106.5	$772.33	$0.00	0.00000	51.19

APT

Electric Division
365.20 ROW - City Gate
Original And Smooth Survivor Curves



APT
Electric Division
366.00 Structures & Improvements
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2016

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
0.0 - 0.5	$16,256,316.57	$4,671.60	0.00029	100.00
0.5 - 1.5	$15,482,920.64	$101,657.16	0.00657	99.97
1.5 - 2.5	$13,949,495.60	$65,383.45	0.00469	99.31
2.5 - 3.5	$12,729,440.91	$74,120.30	0.00582	98.85
3.5 - 4.5	$11,267,336.11	$16,439.23	0.00146	98.27
4.5 - 5.5	$10,494,905.57	$167,091.65	0.01592	98.13
5.5 - 6.5	$9,843,811.09	$120,672.74	0.01226	96.57
6.5 - 7.5	$8,800,248.90	$150,032.17	0.01705	95.38
7.5 - 8.5	$8,606,672.34	$26,604.33	0.00309	93.76
8.5 - 9.5	$7,714,263.24	$103,354.10	0.01340	93.47
9.5 - 10.5	$6,769,083.83	$192,773.94	0.02848	92.22
10.5 - 11.5	$6,217,757.96	$183,221.12	0.02947	89.59
11.5 - 12.5	$5,822,227.87	$275,782.32	0.04737	86.95
12.5 - 13.5	$5,607,184.39	$330,214.50	0.05889	82.83
13.5 - 14.5	$5,453,340.42	$219,641.34	0.04028	77.95
14.5 - 15.5	$5,135,349.54	$103,609.26	0.02018	74.81
15.5 - 16.5	$5,260,891.71	$68,989.04	0.01311	73.30
16.5 - 17.5	$5,616,961.05	$66,269.70	0.01180	72.34
17.5 - 18.5	$5,727,188.85	$76,337.84	0.01333	71.49
18.5 - 19.5	$5,320,258.83	$145,647.12	0.02738	70.54
19.5 - 20.5	$5,105,178.32	$81,603.31	0.01598	68.61
20.5 - 21.5	$4,808,269.05	$63,426.18	0.01319	67.51
21.5 - 22.5	$3,834,508.76	$78,994.15	0.02060	66.62
22.5 - 23.5	$3,562,212.61	$47,929.39	0.01345	65.25
23.5 - 24.5	$3,267,505.71	$94,299.83	0.02886	64.37
24.5 - 25.5	$3,036,115.74	$149,994.93	0.04940	62.51
25.5 - 26.5	$2,806,248.39	$98,953.47	0.03526	59.42
26.5 - 27.5	$2,574,039.48	$45,648.12	0.01773	57.33
27.5 - 28.5	$2,452,147.22	$86,918.98	0.03545	56.31
28.5 - 29.5	$2,146,071.30	$153,940.69	0.07173	54.31
29.5 - 30.5	$2,043,820.30	$88,561.66	0.04333	50.42
30.5 - 31.5	$2,085,128.61	$33,081.53	0.01587	48.23
31.5 - 32.5	$1,993,679.49	$89,932.60	0.04511	47.47
32.5 - 33.5	$1,850,833.07	$41,364.61	0.02235	45.33
33.5 - 34.5	$1,697,570.54	$39,121.58	0.02305	44.31
34.5 - 35.5	$1,614,000.83	$66,002.31	0.04089	43.29
35.5 - 36.5	$1,476,275.86	$56,069.07	0.03798	41.52

APT
Electric Division
366.00 Structures & Improvements
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2016

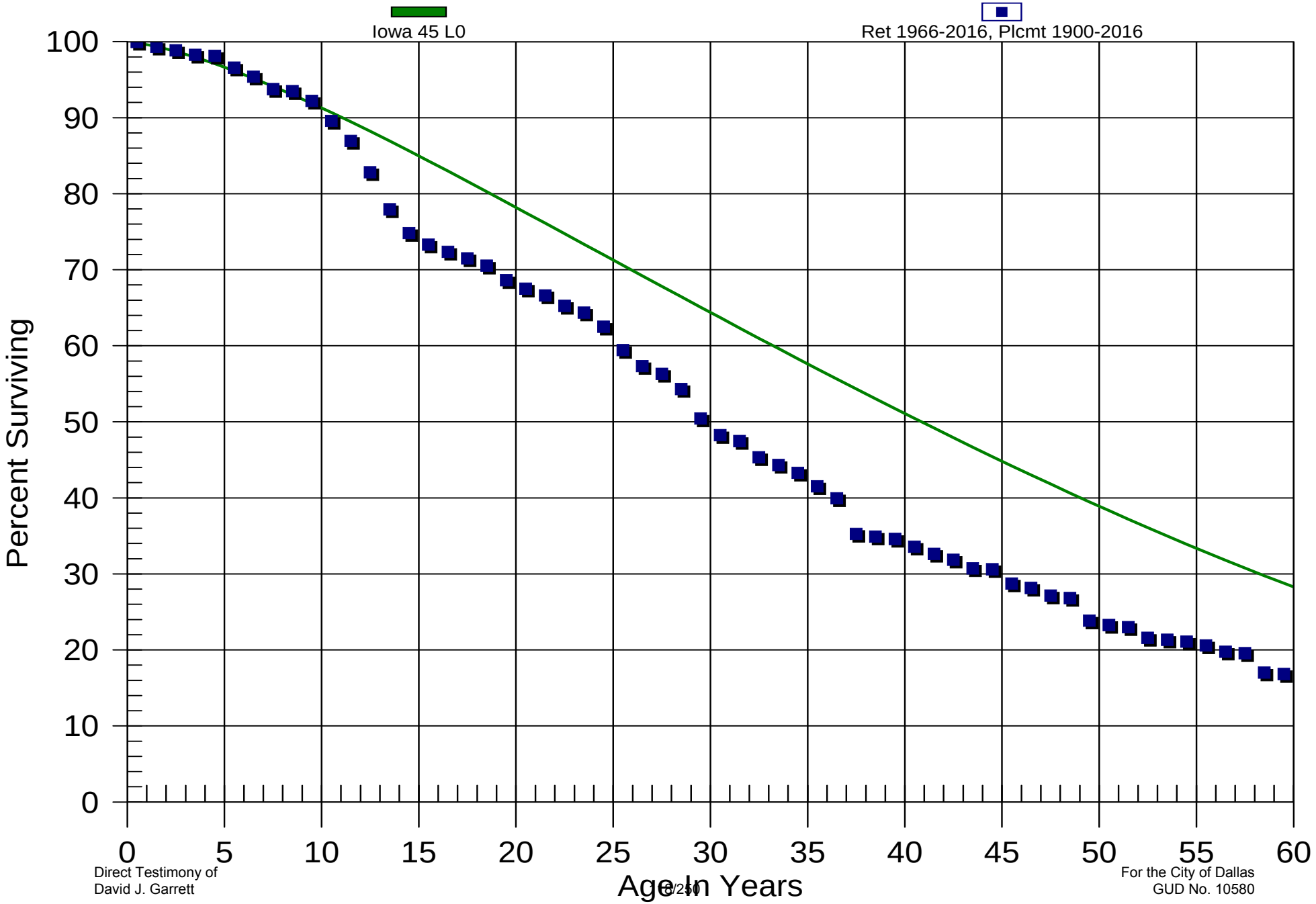
Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
36.5 - 37.5	$1,591,190.00	$186,603.48	0.11727	39.95
37.5 - 38.5	$1,382,714.10	$13,926.58	0.01007	35.26
38.5 - 39.5	$1,411,363.82	$12,938.56	0.00917	34.91
39.5 - 40.5	$1,425,593.77	$41,939.65	0.02942	34.59
40.5 - 41.5	$1,423,902.34	$39,857.38	0.02799	33.57
41.5 - 42.5	$1,444,961.68	$34,264.18	0.02371	32.63
42.5 - 43.5	$1,448,175.80	$51,800.81	0.03577	31.85
43.5 - 44.5	$1,353,368.05	$4,998.98	0.00369	30.72
44.5 - 45.5	$1,288,384.21	$79,328.70	0.06157	30.60
45.5 - 46.5	$1,190,488.07	$23,294.11	0.01957	28.72
46.5 - 47.5	$1,130,115.84	$40,506.46	0.03584	28.16
47.5 - 48.5	$1,020,418.22	$12,197.17	0.01195	27.15
48.5 - 49.5	$981,293.74	$108,427.70	0.11049	26.82
49.5 - 50.5	$841,917.81	$20,677.36	0.02456	23.86
50.5 - 51.5	$799,397.25	$10,042.24	0.01256	23.27
51.5 - 52.5	$839,951.21	$51,329.83	0.06111	22.98
52.5 - 53.5	$754,322.30	$8,082.99	0.01072	21.58
53.5 - 54.5	$737,784.22	$8,676.73	0.01176	21.34
54.5 - 55.5	$732,652.37	$17,882.78	0.02441	21.09
55.5 - 56.5	$756,046.56	$30,503.29	0.04035	20.58
56.5 - 57.5	$694,533.73	$6,541.14	0.00942	19.75
57.5 - 58.5	$684,713.99	$89,014.76	0.13000	19.56
58.5 - 59.5	$574,535.38	$6,645.80	0.01157	17.02
59.5 - 60.5	$556,663.50	$12,964.51	0.02329	16.82
60.5 - 61.5	$536,190.32	$4,586.03	0.00855	16.43
61.5 - 62.5	$502,099.59	$4,746.54	0.00945	16.29
62.5 - 63.5	$493,143.52	$60,549.71	0.12278	16.14
63.5 - 64.5	$427,832.05	$6,726.49	0.01572	14.15
64.5 - 65.5	$447,712.72	$801.93	0.00179	13.93
65.5 - 66.5	$577,836.37	$6,632.70	0.01148	13.91
66.5 - 67.5	$548,109.15	$2,095.18	0.00382	13.75
67.5 - 68.5	$526,539.44	$1,746.64	0.00332	13.70
68.5 - 69.5	$465,745.16	$2,637.37	0.00566	13.65
69.5 - 70.5	$457,048.96	$36,752.48	0.08041	13.57
70.5 - 71.5	$397,199.01	$4,367.06	0.01099	12.48
71.5 - 72.5	$356,122.16	$4,731.53	0.01329	12.34
72.5 - 73.5	$351,390.63	$36,646.71	0.10429	12.18

APT
Electric Division
366.00 Structures & Improvements
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2016

Age Interval	$ Surviving At Beginning of Age Interval	$ Retired During The Age Interval	Retirement Ratio	% Surviving At Beginning of Age Interval
73.5 - 74.5	$314,255.99	$62,973.44	0.20039	10.91
74.5 - 75.5	$243,057.90	$40,116.81	0.16505	8.72
75.5 - 76.5	$198,910.48	$3,044.14	0.01530	7.28
76.5 - 77.5	$186,020.59	$505.03	0.00271	7.17
77.5 - 78.5	$185,515.56	$0.00	0.00000	7.15
78.5 - 79.5	$154,423.14	$5,013.95	0.03247	7.15
79.5 - 80.5	$149,109.57	$1,187.53	0.00796	6.92
80.5 - 81.5	$147,922.04	$23,066.58	0.15594	6.87
81.5 - 82.5	$116,073.55	$0.00	0.00000	5.79
82.5 - 83.5	$113,058.60	$2,151.05	0.01903	5.79
83.5 - 84.5	$68,530.51	$0.00	0.00000	5.68
84.5 - 85.5	$66,976.05	$0.00	0.00000	5.68
85.5 - 86.5	$66,976.05	$0.00	0.00000	5.68
86.5 - 87.5	$64,176.96	$0.00	0.00000	5.68
87.5 - 88.5	$48,641.09	$654.75	0.01346	5.68
88.5 - 89.5	$40,932.42	$938.05	0.02292	5.61
89.5 - 90.5	$19,525.61	$0.00	0.00000	5.48
90.5 - 91.5	$11,741.88	$4,294.12	0.36571	5.48
91.5 - 92.5	$7,447.76	$0.00	0.00000	3.48
92.5 - 93.5	$7,447.76	$0.00	0.00000	3.48
93.5 - 94.5	$5,861.64	$0.00	0.00000	3.48
94.5 - 95.5	$3,498.92	$0.00	0.00000	3.48
95.5 - 96.5	$1,146.96	$0.00	0.00000	3.48
96.5 - 97.5	$1,146.96	$0.00	0.00000	3.48
97.5 - 98.5	$1,146.96	$0.00	0.00000	3.48
98.5 - 99.5	$1,146.17	$0.00	0.00000	3.48
99.5 - 100.5	$639.80	$0.00	0.00000	3.48
100.5 - 101.5	$553.89	$0.00	0.00000	3.48
101.5 - 102.5	$518.04	$0.00	0.00000	3.48
102.5 - 103.5	$518.04	$0.00	0.00000	3.48
103.5 - 104.5	$518.04	$0.00	0.00000	3.48
104.5 - 105.5	$518.04	$0.00	0.00000	3.48
105.5 - 106.5	$517.38	$0.00	0.00000	3.48

APT

Electric Division
366.00 Structures & Improvements
Original And Smooth Survivor Curves



APT
Electric Division
367.03 Mains - All
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2016

Age Interval	$ Surviving At Beginning of Age Interval	$ Retired During The Age Interval	Retirement Ratio	% Surviving At Beginning of Age Interval
0.0 - 0.5	$1,782,557,851.46	$421,200.63	0.00024	100.00
0.5 - 1.5	$1,568,259,491.98	$9,381,448.58	0.00598	99.98
1.5 - 2.5	$1,364,403,028.82	$5,302,724.25	0.00389	99.38
2.5 - 3.5	$1,184,142,851.87	$6,990,389.85	0.00590	98.99
3.5 - 4.5	$945,455,495.27	$4,539,228.59	0.00480	98.41
4.5 - 5.5	$808,479,700.65	$7,565,224.50	0.00936	97.94
5.5 - 6.5	$747,729,832.49	$4,533,926.00	0.00606	97.02
6.5 - 7.5	$727,495,200.25	$5,065,534.69	0.00696	96.43
7.5 - 8.5	$654,319,654.64	$5,936,761.02	0.00907	95.76
8.5 - 9.5	$602,806,147.89	$2,189,798.65	0.00363	94.89
9.5 - 10.5	$578,826,522.12	$4,708,414.39	0.00813	94.55
10.5 - 11.5	$530,934,463.59	$4,845,483.98	0.00913	93.78
11.5 - 12.5	$488,283,503.13	$2,501,432.37	0.00512	92.92
12.5 - 13.5	$468,958,925.60	$3,670,135.31	0.00783	92.44
13.5 - 14.5	$460,011,659.30	$7,875,948.03	0.01712	91.72
14.5 - 15.5	$441,772,966.39	$3,506,729.27	0.00794	90.15
15.5 - 16.5	$435,695,277.93	$3,266,549.21	0.00750	89.44
16.5 - 17.5	$420,139,208.69	$3,179,787.54	0.00757	88.76
17.5 - 18.5	$408,210,694.98	$5,166,139.57	0.01266	88.09
18.5 - 19.5	$391,357,633.69	$3,507,141.21	0.00896	86.98
19.5 - 20.5	$386,456,452.72	$2,528,642.72	0.00654	86.20
20.5 - 21.5	$369,135,695.49	$2,614,863.66	0.00708	85.63
21.5 - 22.5	$360,050,168.10	$1,474,988.09	0.00410	85.03
22.5 - 23.5	$345,664,093.64	$1,360,661.55	0.00394	84.68
23.5 - 24.5	$339,159,517.85	$1,603,531.09	0.00473	84.35
24.5 - 25.5	$327,290,256.56	$1,743,153.51	0.00533	83.95
25.5 - 26.5	$312,681,655.83	$1,963,122.08	0.00628	83.50
26.5 - 27.5	$287,114,423.47	$5,417,297.81	0.01887	82.98
27.5 - 28.5	$271,729,878.55	$2,544,353.95	0.00936	81.41
28.5 - 29.5	$262,253,174.37	$1,462,576.12	0.00558	80.65
29.5 - 30.5	$240,115,367.43	$1,890,526.54	0.00787	80.20
30.5 - 31.5	$236,745,174.69	$2,391,431.00	0.01010	79.57
31.5 - 32.5	$228,209,206.56	$4,466,598.06	0.01957	78.76
32.5 - 33.5	$221,266,538.92	$786,549.32	0.00355	77.22
33.5 - 34.5	$219,731,091.59	$1,384,305.64	0.00630	76.95
34.5 - 35.5	$213,169,239.61	$755,346.79	0.00354	76.46
35.5 - 36.5	$208,957,504.46	$8,579,695.32	0.04106	76.19

APT
Electric Division
367.03 Mains - All
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2016

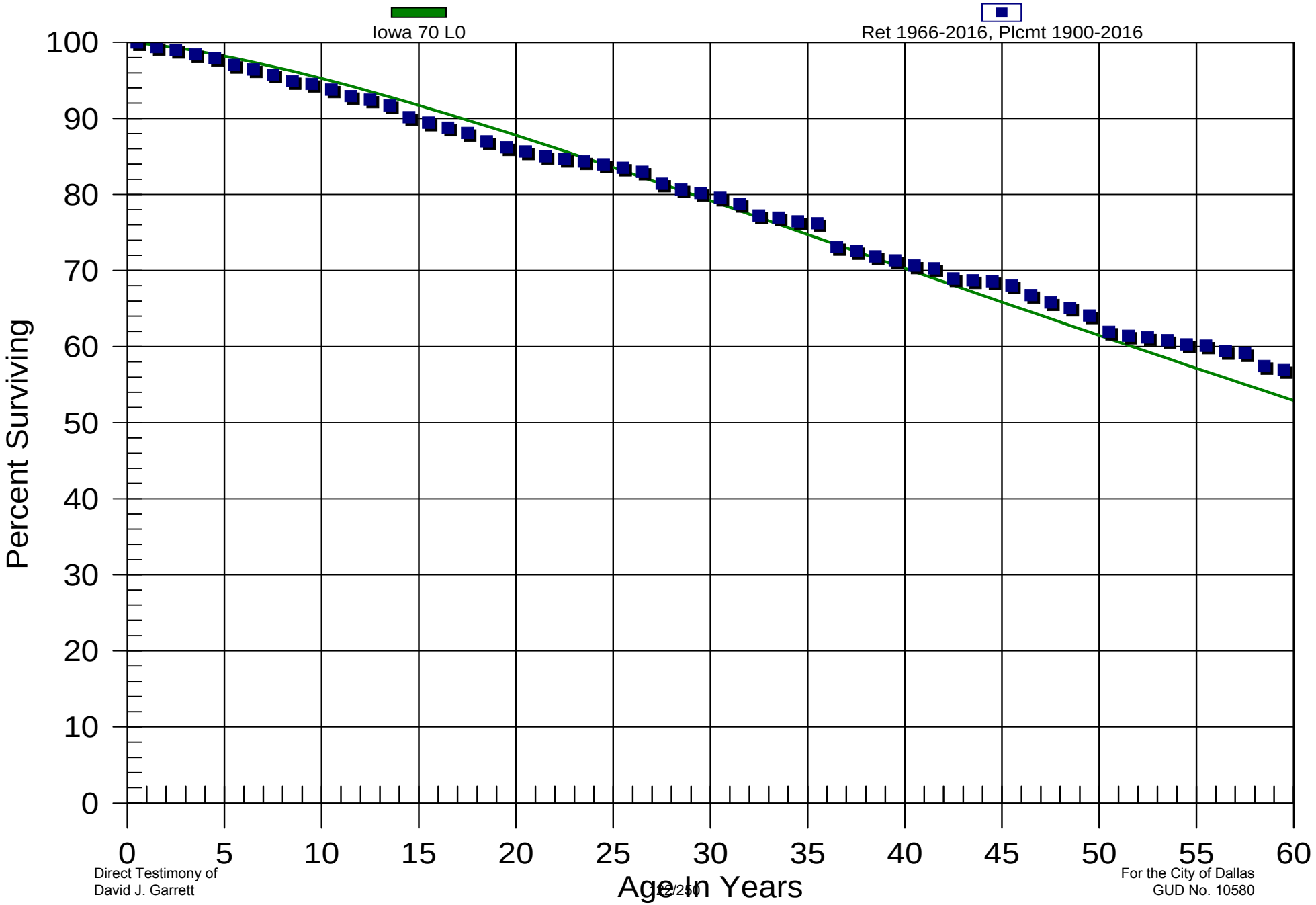
Age Interval	$ Surviving At Beginning of Age Interval	$ Retired During The Age Interval	Retirement Ratio	% Surviving At Beginning of Age Interval
36.5 - 37.5	$201,561,220.87	$1,383,448.49	0.00686	73.06
37.5 - 38.5	$198,315,800.29	$1,912,647.28	0.00964	72.56
38.5 - 39.5	$199,517,318.57	$1,435,961.91	0.00720	71.86
39.5 - 40.5	$195,949,602.61	$1,902,458.15	0.00971	71.34
40.5 - 41.5	$191,321,938.53	$991,140.02	0.00518	70.65
41.5 - 42.5	$186,761,108.22	$3,549,210.10	0.01900	70.29
42.5 - 43.5	$180,767,139.49	$616,049.26	0.00341	68.95
43.5 - 44.5	$176,115,543.30	$313,210.43	0.00178	68.72
44.5 - 45.5	$114,382,266.65	$907,839.91	0.00794	68.59
45.5 - 46.5	$109,896,385.94	$2,092,619.51	0.01904	68.05
46.5 - 47.5	$100,775,917.86	$1,436,163.11	0.01425	66.75
47.5 - 48.5	$93,655,794.01	$1,035,019.18	0.01105	65.80
48.5 - 49.5	$91,540,223.55	$1,382,655.68	0.01510	65.07
49.5 - 50.5	$64,978,301.15	$2,176,947.52	0.03350	64.09
50.5 - 51.5	$60,681,945.51	$499,788.40	0.00824	61.94
51.5 - 52.5	$57,550,105.95	$223,278.66	0.00388	61.43
52.5 - 53.5	$55,654,362.94	$314,956.14	0.00566	61.20
53.5 - 54.5	$51,087,499.18	$476,744.76	0.00933	60.85
54.5 - 55.5	$47,661,213.72	$127,600.90	0.00268	60.28
55.5 - 56.5	$45,905,134.56	$555,961.38	0.01211	60.12
56.5 - 57.5	$44,431,329.49	$197,282.16	0.00444	59.39
57.5 - 58.5	$42,147,459.97	$1,205,806.14	0.02861	59.13
58.5 - 59.5	$37,859,712.20	$348,780.35	0.00921	57.44
59.5 - 60.5	$36,692,999.44	$520,394.74	0.01418	56.91
60.5 - 61.5	$35,153,770.97	$1,998,405.09	0.05685	56.10
61.5 - 62.5	$32,827,710.73	$482,421.31	0.01470	52.91
62.5 - 63.5	$31,239,604.81	$828,409.28	0.02652	52.13
63.5 - 64.5	$28,611,443.67	$1,145,477.57	0.04004	50.75
64.5 - 65.5	$30,984,514.82	$477,823.43	0.01542	48.72
65.5 - 66.5	$30,258,523.93	$698,339.18	0.02308	47.97
66.5 - 67.5	$26,458,835.65	$301,047.05	0.01138	46.86
67.5 - 68.5	$22,636,351.84	$585,914.21	0.02588	46.33
68.5 - 69.5	$20,244,698.02	$519,573.43	0.02566	45.13
69.5 - 70.5	$19,483,858.26	$241,073.07	0.01237	43.97
70.5 - 71.5	$19,017,807.48	$1,916,468.77	0.10077	43.43
71.5 - 72.5	$15,184,150.01	$471,047.38	0.03102	39.05
72.5 - 73.5	$14,565,639.65	$581,880.18	0.03995	37.84

APT
Electric Division
367.03 Mains - All
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2016

Age Interval	$ Surviving At Beginning of Age Interval	$ Retired During The Age Interval	Retirement Ratio	% Surviving At Beginning of Age Interval
73.5 - 74.5	$13,983,759.47	$570,682.29	0.04081	36.33
74.5 - 75.5	$11,809,281.70	$533,933.45	0.04521	34.84
75.5 - 76.5	$11,032,577.79	$407,765.29	0.03696	33.27
76.5 - 77.5	$9,785,588.18	$132,229.22	0.01351	32.04
77.5 - 78.5	$9,653,358.96	$162,347.30	0.01682	31.61
78.5 - 79.5	$9,151,400.95	$224,274.50	0.02451	31.08
79.5 - 80.5	$8,925,976.50	$279,033.76	0.03126	30.31
80.5 - 81.5	$8,630,627.88	$115,618.45	0.01340	29.37
81.5 - 82.5	$8,387,155.07	$71,459.40	0.00852	28.97
82.5 - 83.5	$8,206,545.50	$113,384.93	0.01382	28.73
83.5 - 84.5	$5,584,373.01	$151,922.18	0.02720	28.33
84.5 - 85.5	$5,416,615.49	$75,759.17	0.01399	27.56
85.5 - 86.5	$5,340,856.32	$140,670.36	0.02634	27.17
86.5 - 87.5	$5,170,520.42	$157,765.61	0.03051	26.46
87.5 - 88.5	$2,855,332.76	$0.00	0.00000	25.65
88.5 - 89.5	$2,659,228.20	$494,877.13	0.18610	25.65
89.5 - 90.5	$782,985.91	$11.04	0.00001	20.88
90.5 - 91.5	$772,275.22	$218.75	0.00028	20.88
91.5 - 92.5	$746,056.01	$32,704.29	0.04384	20.87
92.5 - 93.5	$713,351.72	$0.00	0.00000	19.96
93.5 - 94.5	$651,000.50	$439.94	0.00068	19.96
94.5 - 95.5	$638,526.24	$0.00	0.00000	19.94
95.5 - 96.5	$638,526.24	$5,047.24	0.00790	19.94
96.5 - 97.5	$500,237.11	$623.15	0.00125	19.78
97.5 - 98.5	$499,613.96	$248,947.68	0.49828	19.76
98.5 - 99.5	$250,666.28	$102.45	0.00041	9.91
99.5 - 100.5	$225,190.14	$0.00	0.00000	9.91
100.5 - 101.5	$3,423.04	$135.48	0.03958	9.91
101.5 - 102.5	$3,287.56	$0.00	0.00000	9.52
102.5 - 103.5	$3,287.56	$0.00	0.00000	9.52
103.5 - 104.5	$3,287.56	$0.00	0.00000	9.52
104.5 - 105.5	$3,287.56	$102.45	0.03116	9.52
105.5 - 106.5	$3,185.11	$0.00	0.00000	9.22

APT

Electric Division
367.03 Mains - All
Original And Smooth Survivor Curves



APT
Electric Division
368.00 Compressor Station Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2016

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
0.0 - 0.5	$199,012,933.57	$705,324.16	0.00354	100.00
0.5 - 1.5	$193,885,653.79	$2,434,838.63	0.01256	99.65
1.5 - 2.5	$189,900,097.26	$4,309,755.40	0.02269	98.39
2.5 - 3.5	$166,869,457.99	$2,221,665.06	0.01331	96.16
3.5 - 4.5	$141,292,563.16	$1,840,609.82	0.01303	94.88
4.5 - 5.5	$133,689,767.14	$10,306,709.51	0.07709	93.64
5.5 - 6.5	$120,501,521.50	$3,376,669.27	0.02802	86.43
6.5 - 7.5	$115,591,626.55	$2,112,483.77	0.01828	84.00
7.5 - 8.5	$111,962,946.77	$980,128.15	0.00875	82.47
8.5 - 9.5	$99,388,561.42	$1,370,604.80	0.01379	81.75
9.5 - 10.5	$90,784,317.48	$1,796,511.78	0.01979	80.62
10.5 - 11.5	$67,778,236.37	$1,681,175.82	0.02480	79.02
11.5 - 12.5	$44,615,437.66	$3,491,350.99	0.07825	77.06
12.5 - 13.5	$41,012,996.62	$1,839,658.55	0.04486	71.03
13.5 - 14.5	$39,821,138.33	$908,617.32	0.02282	67.85
14.5 - 15.5	$38,608,766.00	$478,673.99	0.01240	66.30
15.5 - 16.5	$38,218,731.88	$1,672,240.84	0.04375	65.48
16.5 - 17.5	$33,862,029.76	$647,653.86	0.01913	62.61
17.5 - 18.5	$34,028,380.78	$2,451,541.63	0.07204	61.41
18.5 - 19.5	$32,333,015.22	$1,862,240.41	0.05760	56.99
19.5 - 20.5	$30,230,786.71	$268,793.66	0.00889	53.71
20.5 - 21.5	$30,254,973.60	$639,516.39	0.02114	53.23
21.5 - 22.5	$13,999,741.30	$622,070.91	0.04443	52.10
22.5 - 23.5	$12,481,937.43	$175,084.40	0.01403	49.79
23.5 - 24.5	$9,945,169.29	$579,145.19	0.05823	49.09
24.5 - 25.5	$9,392,316.22	$522,884.34	0.05567	46.23
25.5 - 26.5	$8,927,542.72	$1,129,105.60	0.12647	43.66
26.5 - 27.5	$7,253,764.86	$82,978.36	0.01144	38.14
27.5 - 28.5	$7,370,196.93	$362,249.87	0.04915	37.70
28.5 - 29.5	$7,017,514.92	$374,034.81	0.05330	35.85
29.5 - 30.5	$7,234,641.49	$709,951.31	0.09813	33.94
30.5 - 31.5	$6,456,926.59	$328,311.07	0.05085	30.61
31.5 - 32.5	$6,034,348.61	$698,344.22	0.11573	29.05
32.5 - 33.5	$5,185,427.85	$596,037.74	0.11494	25.69
33.5 - 34.5	$4,578,055.92	$317,080.30	0.06926	22.74
34.5 - 35.5	$3,847,292.68	$1,141,293.03	0.29665	21.16
35.5 - 36.5	$2,010,880.37	$418,116.11	0.20793	14.88

APT
Electric Division
368.00 Compressor Station Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2016

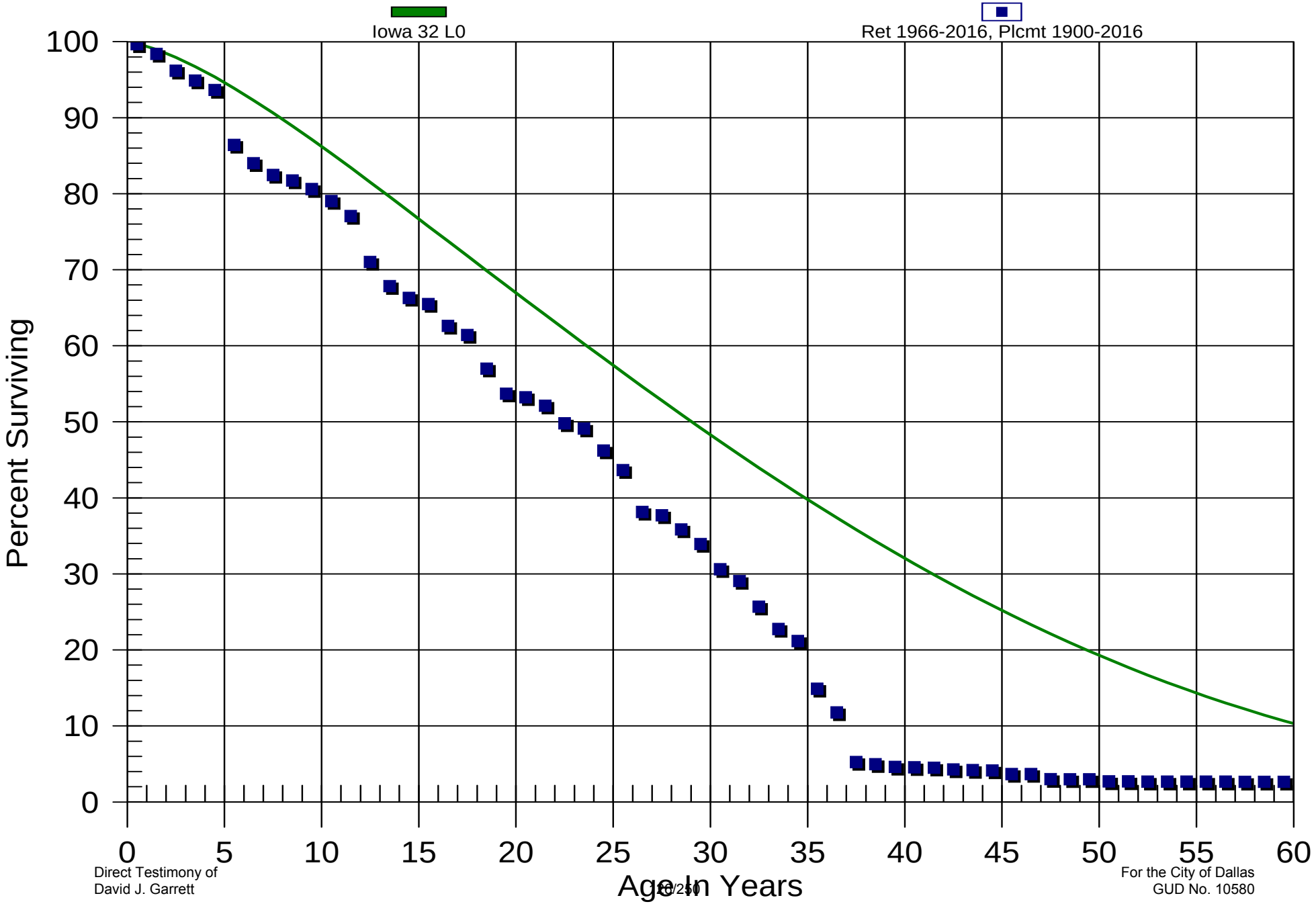
Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
36.5 - 37.5	$1,858,936.20	$1,033,141.58	0.55577	11.79
37.5 - 38.5	$822,627.54	$42,099.84	0.05118	5.24
38.5 - 39.5	$764,915.05	$54,034.76	0.07064	4.97
39.5 - 40.5	$1,031,578.39	$13,161.92	0.01276	4.62
40.5 - 41.5	$1,008,139.07	$12,594.79	0.01249	4.56
41.5 - 42.5	$1,230,698.73	$64,675.73	0.05255	4.50
42.5 - 43.5	$1,166,475.82	$17,139.67	0.01469	4.27
43.5 - 44.5	$1,146,603.68	$13,823.60	0.01206	4.20
44.5 - 45.5	$1,134,016.89	$130,121.89	0.11474	4.15
45.5 - 46.5	$1,003,297.56	$5,515.90	0.00550	3.68
46.5 - 47.5	$1,074,029.64	$194,568.99	0.18116	3.66
47.5 - 48.5	$879,460.65	$1,848.01	0.00210	2.99
48.5 - 49.5	$877,612.64	$1,046.98	0.00119	2.99
49.5 - 50.5	$877,674.42	$82,483.09	0.09398	2.98
50.5 - 51.5	$791,897.85	$3,000.16	0.00379	2.70
51.5 - 52.5	$788,892.02	$3,396.31	0.00431	2.69
52.5 - 53.5	$784,258.90	$3,933.81	0.00502	2.68
53.5 - 54.5	$778,406.89	$1,396.82	0.00179	2.67
54.5 - 55.5	$773,716.05	$653.62	0.00084	2.66
55.5 - 56.5	$775,929.50	$340.82	0.00044	2.66
56.5 - 57.5	$774,729.68	$1,192.49	0.00154	2.66
57.5 - 58.5	$771,804.25	$0.00	0.00000	2.66
58.5 - 59.5	$771,661.12	$0.00	0.00000	2.66
59.5 - 60.5	$771,661.12	$390,681.97	0.50629	2.66
60.5 - 61.5	$384,189.59	$933.23	0.00243	1.31
61.5 - 62.5	$383,256.36	$345.52	0.00090	1.31
62.5 - 63.5	$382,523.78	$344,842.17	0.90149	1.31
63.5 - 64.5	$34,857.65	$406.14	0.01165	0.13
64.5 - 65.5	$109,750.13	$31,210.52	0.28438	0.13
65.5 - 66.5	$252,415.36	$0.00	0.00000	0.09
66.5 - 67.5	$251,853.16	$30.55	0.00012	0.09
67.5 - 68.5	$251,822.61	$30.93	0.00012	0.09
68.5 - 69.5	$251,791.68	$884.80	0.00351	0.09
69.5 - 70.5	$250,906.88	$161,620.43	0.64415	0.09
70.5 - 71.5	$89,286.45	$2,225.86	0.02493	0.03
71.5 - 72.5	$87,060.59	$1,549.92	0.01780	0.03
72.5 - 73.5	$85,510.67	$272.87	0.00319	0.03

APT
Electric Division
368.00 Compressor Station Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2016

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
73.5 - 74.5	$85,237.80	$788.12	0.00925	0.03
74.5 - 75.5	$84,449.68	$2,260.58	0.02677	0.03
75.5 - 76.5	$80,391.21	$0.00	0.00000	0.03
76.5 - 77.5	$80,391.21	$0.00	0.00000	0.03
77.5 - 78.5	$80,391.21	$486.88	0.00606	0.03
78.5 - 79.5	$79,904.33	$123.44	0.00154	0.03
79.5 - 80.5	$79,780.89	$1,434.00	0.01797	0.03
80.5 - 81.5	$78,659.38	$0.00	0.00000	0.03
81.5 - 82.5	$78,659.38	$0.00	0.00000	0.03
82.5 - 83.5	$78,659.38	$0.00	0.00000	0.03
83.5 - 84.5	$5,408.36	$2,197.92	0.40639	0.03

APT

Electric Division
368.00 Compressor Station Equipment
Original And Smooth Survivor Curves



APT
Electric Division
369.00 M&R Station Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2016

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
0.0 - 0.5	$263,114,812.08	$58,082.04	0.00022	100.00
0.5 - 1.5	$248,939,135.50	$1,250,589.82	0.00502	99.98
1.5 - 2.5	$216,577,309.29	$1,563,665.24	0.00722	99.48
2.5 - 3.5	$179,385,008.96	$2,083,769.09	0.01162	98.76
3.5 - 4.5	$158,208,522.00	$1,491,346.24	0.00943	97.61
4.5 - 5.5	$134,686,642.81	$2,628,178.50	0.01951	96.69
5.5 - 6.5	$120,149,552.89	$2,293,771.78	0.01909	94.80
6.5 - 7.5	$109,782,594.05	$1,824,437.50	0.01662	92.99
7.5 - 8.5	$97,622,507.88	$899,229.76	0.00921	91.45
8.5 - 9.5	$87,508,617.92	$1,171,876.35	0.01339	90.61
9.5 - 10.5	$79,685,172.42	$1,034,574.63	0.01298	89.39
10.5 - 11.5	$72,087,590.66	$1,598,217.37	0.02217	88.23
11.5 - 12.5	$67,575,762.60	$1,533,850.51	0.02270	86.28
12.5 - 13.5	$59,641,752.70	$1,198,673.33	0.02010	84.32
13.5 - 14.5	$56,731,077.29	$865,048.82	0.01525	82.62
14.5 - 15.5	$53,573,623.44	$1,673,084.18	0.03123	81.36
15.5 - 16.5	$49,244,299.59	$914,792.05	0.01858	78.82
16.5 - 17.5	$45,528,736.54	$1,053,869.27	0.02315	77.36
17.5 - 18.5	$41,976,974.85	$942,647.92	0.02246	75.57
18.5 - 19.5	$38,342,249.69	$1,087,461.30	0.02836	73.87
19.5 - 20.5	$37,108,822.10	$1,813,802.73	0.04888	71.78
20.5 - 21.5	$33,028,228.46	$805,050.41	0.02437	68.27
21.5 - 22.5	$29,788,573.01	$919,177.58	0.03086	66.60
22.5 - 23.5	$26,654,983.93	$767,660.65	0.02880	64.55
23.5 - 24.5	$24,924,467.80	$568,047.76	0.02279	62.69
24.5 - 25.5	$22,716,764.98	$723,508.76	0.03185	61.26
25.5 - 26.5	$19,625,763.29	$308,618.34	0.01573	59.31
26.5 - 27.5	$17,323,451.69	$747,258.44	0.04314	58.38
27.5 - 28.5	$14,837,322.65	$593,992.24	0.04003	55.86
28.5 - 29.5	$13,245,744.12	$313,895.41	0.02370	53.62
29.5 - 30.5	$12,158,826.00	$484,915.75	0.03988	52.35
30.5 - 31.5	$10,780,453.34	$431,075.47	0.03999	50.26
31.5 - 32.5	$8,509,880.60	$405,541.27	0.04766	48.25
32.5 - 33.5	$7,831,021.74	$259,175.47	0.03310	45.95
33.5 - 34.5	$7,295,104.31	$178,007.12	0.02440	44.43
34.5 - 35.5	$6,637,113.25	$362,015.80	0.05454	43.35
35.5 - 36.5	$5,902,773.81	$324,636.58	0.05500	40.98

APT
Electric Division
369.00 M&R Station Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2016

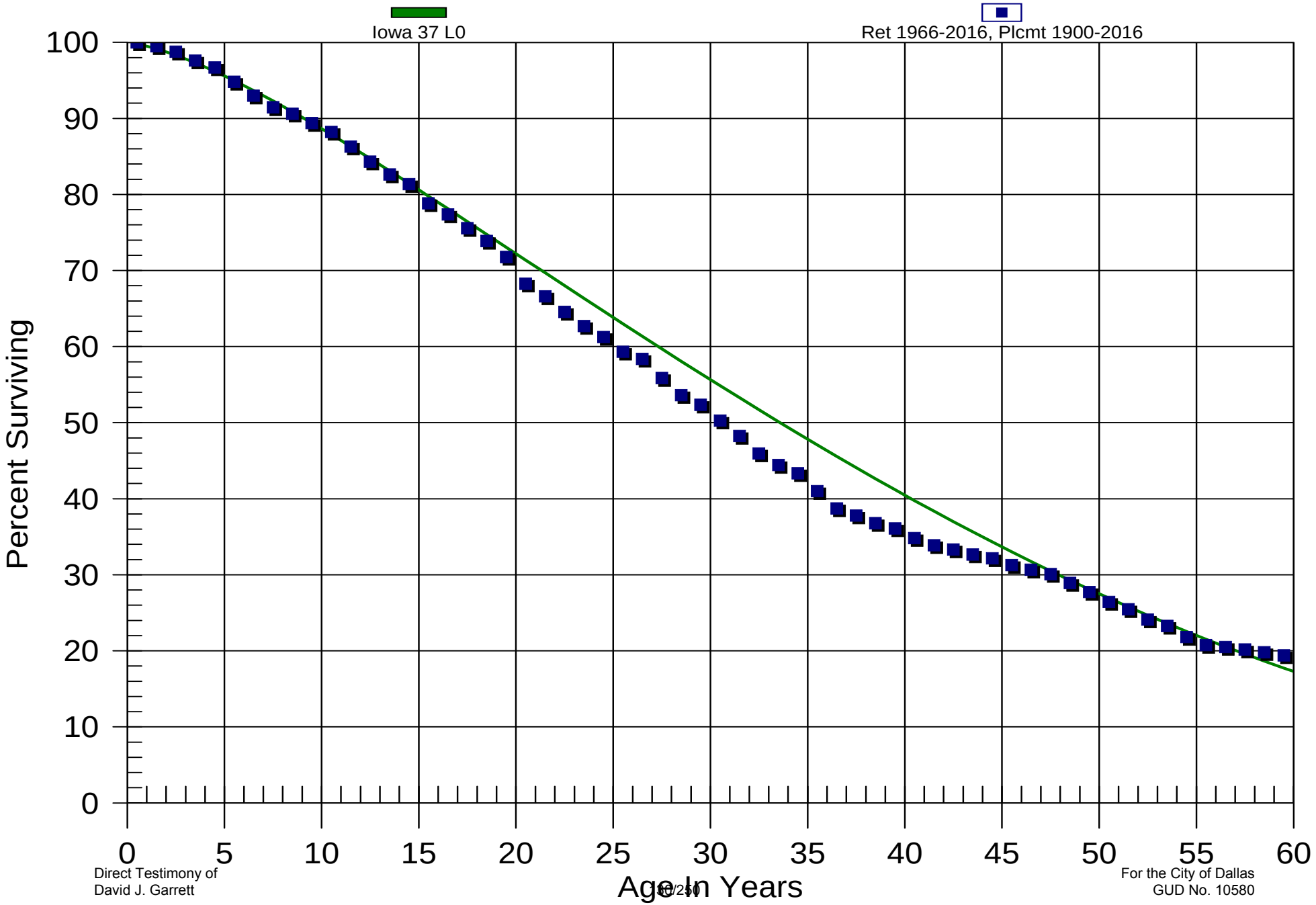
Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
36.5 - 37.5	$5,478,408.25	$136,782.29	0.02497	38.73
37.5 - 38.5	$5,283,680.70	$139,355.85	0.02637	37.76
38.5 - 39.5	$5,075,565.08	$91,882.68	0.01810	36.77
39.5 - 40.5	$4,880,839.25	$174,267.91	0.03570	36.10
40.5 - 41.5	$4,729,836.96	$126,613.10	0.02677	34.81
41.5 - 42.5	$4,623,152.04	$77,416.31	0.01675	33.88
42.5 - 43.5	$4,401,979.49	$86,155.18	0.01957	33.31
43.5 - 44.5	$4,123,022.40	$64,302.06	0.01560	32.66
44.5 - 45.5	$3,532,337.08	$96,582.28	0.02734	32.15
45.5 - 46.5	$3,278,067.03	$63,344.21	0.01932	31.27
46.5 - 47.5	$2,990,756.98	$58,182.82	0.01945	30.67
47.5 - 48.5	$2,618,129.28	$100,715.22	0.03847	30.07
48.5 - 49.5	$2,328,049.02	$94,604.36	0.04064	28.92
49.5 - 50.5	$1,736,623.38	$81,613.96	0.04700	27.74
50.5 - 51.5	$1,517,507.49	$56,526.92	0.03725	26.44
51.5 - 52.5	$1,346,107.81	$71,739.35	0.05329	25.45
52.5 - 53.5	$1,201,294.75	$40,487.02	0.03370	24.10
53.5 - 54.5	$1,014,720.73	$64,308.05	0.06338	23.28
54.5 - 55.5	$796,791.15	$38,970.15	0.04891	21.81
55.5 - 56.5	$647,419.29	$7,746.93	0.01197	20.74
56.5 - 57.5	$489,047.94	$7,444.11	0.01522	20.49
57.5 - 58.5	$463,150.49	$8,762.52	0.01892	20.18
58.5 - 59.5	$440,851.11	$9,011.04	0.02044	19.80
59.5 - 60.5	$380,356.51	$24,482.76	0.06437	19.39
60.5 - 61.5	$342,686.97	$39,491.37	0.11524	18.15
61.5 - 62.5	$291,975.75	$13,296.92	0.04554	16.05
62.5 - 63.5	$267,642.70	$18,679.42	0.06979	15.32
63.5 - 64.5	$206,637.24	$8,307.73	0.04020	14.25
64.5 - 65.5	$358,560.61	$4,308.91	0.01202	13.68
65.5 - 66.5	$359,258.29	$7,272.87	0.02024	13.52
66.5 - 67.5	$347,824.64	$6,454.88	0.01856	13.24
67.5 - 68.5	$319,298.82	$10,242.00	0.03208	13.00
68.5 - 69.5	$306,079.24	$7,569.28	0.02473	12.58
69.5 - 70.5	$295,286.37	$2,982.36	0.01010	12.27
70.5 - 71.5	$287,234.31	$16,870.81	0.05874	12.15
71.5 - 72.5	$301,139.10	$1,836.08	0.00610	11.43
72.5 - 73.5	$296,482.43	$6,614.79	0.02231	11.36

APT
Electric Division
369.00 M&R Station Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2016

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
73.5 - 74.5	$254,276.94	$21,475.15	0.08446	11.11
74.5 - 75.5	$228,856.88	$1,626.71	0.00711	10.17
75.5 - 76.5	$227,230.17	$1,210.65	0.00533	10.10
76.5 - 77.5	$225,280.61	$1,411.28	0.00626	10.04
77.5 - 78.5	$223,869.33	$2,814.43	0.01257	9.98
78.5 - 79.5	$221,200.86	$7,157.67	0.03236	9.86
79.5 - 80.5	$214,043.19	$32,223.16	0.15055	9.54
80.5 - 81.5	$181,729.82	$1,866.86	0.01027	8.10
81.5 - 82.5	$179,586.24	$0.00	0.00000	8.02
82.5 - 83.5	$179,868.11	$994.28	0.00553	8.02
83.5 - 84.5	$44,806.30	$10,729.80	0.23947	7.97
84.5 - 85.5	$33,615.29	$996.02	0.02963	6.06
85.5 - 86.5	$32,619.27	$0.00	0.00000	5.88
86.5 - 87.5	$31,948.11	$530.56	0.01661	5.88
87.5 - 88.5	$29,013.56	$3,494.98	0.12046	5.79
88.5 - 89.5	$11,721.36	$6,443.89	0.54976	5.09
89.5 - 90.5	$3,942.08	$851.70	0.21605	2.29
90.5 - 91.5	$1,459.21	$0.00	0.00000	1.80
91.5 - 92.5	$1,396.18	$0.00	0.00000	1.80
92.5 - 93.5	$1,396.18	$0.00	0.00000	1.80
93.5 - 94.5	$1,374.46	$268.82	0.19558	1.80
94.5 - 95.5	$1,105.64	$0.00	0.00000	1.45
95.5 - 96.5	$1,105.64	$0.00	0.00000	1.45
96.5 - 97.5	$1,105.64	$0.00	0.00000	1.45
97.5 - 98.5	$1,105.64	$0.00	0.00000	1.45
98.5 - 99.5	$1,105.64	$0.00	0.00000	1.45
99.5 - 100.5	$1,105.64	$0.00	0.00000	1.45
100.5 - 101.5	$1,105.64	$0.00	0.00000	1.45
101.5 - 102.5	$1,105.64	$0.00	0.00000	1.45
102.5 - 103.5	$1,105.64	$0.00	0.00000	1.45
103.5 - 104.5	$1,105.64	$0.00	0.00000	1.45

APT

Electric Division
369.00 M&R Station Equipment
Original And Smooth Survivor Curves



APT
Electric Division
370.00 Communication Equipment
Observed Life Table
Retirement Expr. 2009 TO 2016
Placement Years 1965 TO 2016

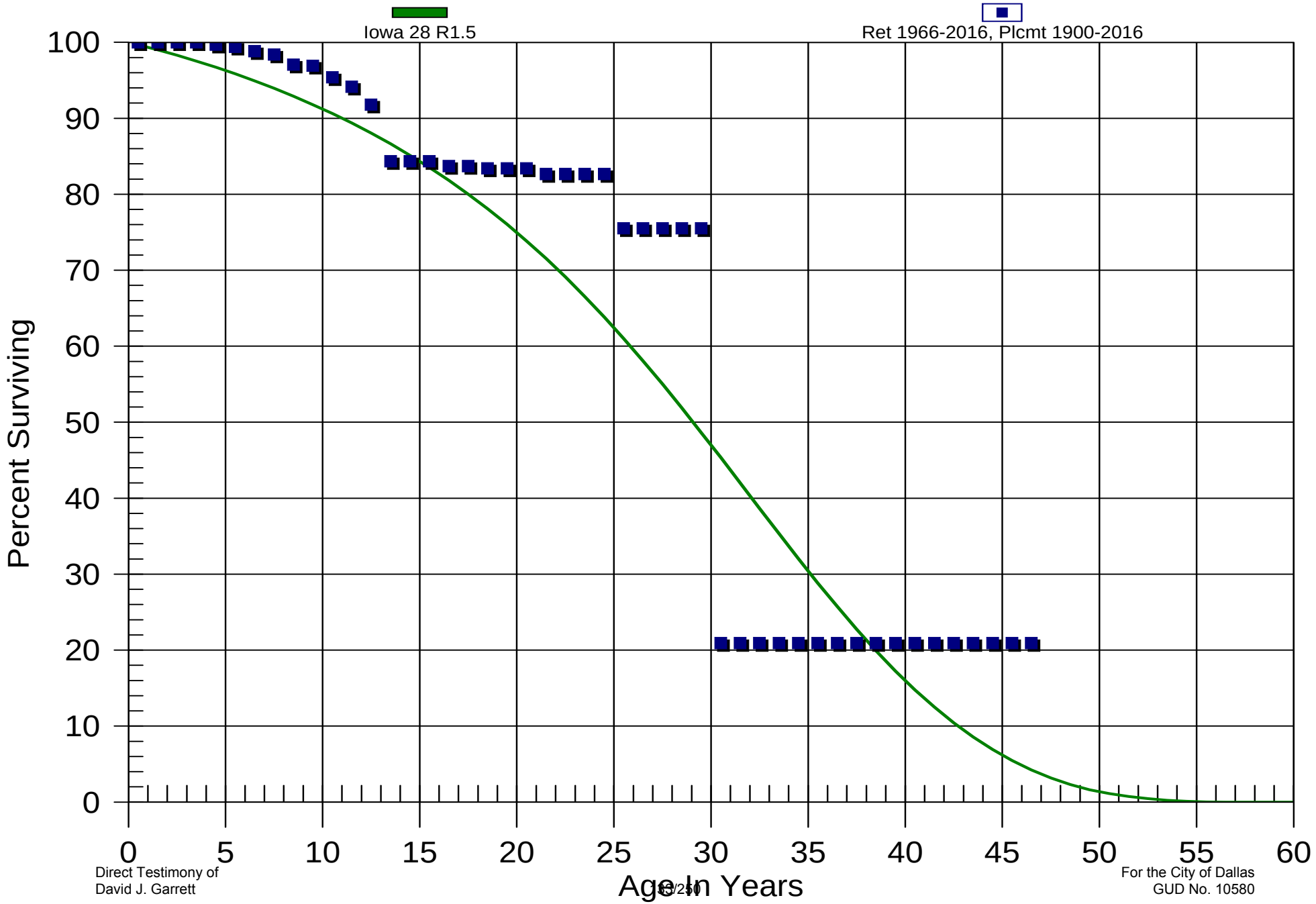
Age Interval	$ Surviving At Beginning of Age Interval	$ Retired During The Age Interval	Retirement Ratio	% Surviving At Beginning of Age Interval
0.0 - 0.5	$8,760,215.13	$0.00	0.00000	100.00
0.5 - 1.5	$8,975,270.97	$0.00	0.00000	100.00
1.5 - 2.5	$9,253,189.94	$0.00	0.00000	100.00
2.5 - 3.5	$5,420,524.54	$0.00	0.00000	100.00
3.5 - 4.5	$11,804,611.17	$38,680.02	0.00328	100.00
4.5 - 5.5	$10,778,450.26	$28,726.88	0.00267	99.67
5.5 - 6.5	$10,833,174.38	$63,062.11	0.00582	99.41
6.5 - 7.5	$5,428,597.16	$25,514.71	0.00470	98.83
7.5 - 8.5	$4,954,730.91	$68,522.58	0.01383	98.36
8.5 - 9.5	$4,748,465.91	$6,581.04	0.00139	97.00
9.5 - 10.5	$3,880,075.96	$62,936.87	0.01622	96.87
10.5 - 11.5	$3,934,030.74	$51,783.08	0.01316	95.30
11.5 - 12.5	$486,154.77	$12,142.89	0.02498	94.04
12.5 - 13.5	$151,558.14	$25,746.55	0.16988	91.69
13.5 - 14.5	$318,360.14	$0.00	0.00000	76.12
14.5 - 15.5	$342,362.50	$0.00	0.00000	76.12
15.5 - 16.5	$306,570.55	$2,281.00	0.00744	76.12
16.5 - 17.5	$324,854.97	$0.00	0.00000	75.55
17.5 - 18.5	$282,860.66	$1,140.50	0.00403	75.55
18.5 - 19.5	$216,924.42	$0.00	0.00000	75.25
19.5 - 20.5	$211,591.13	$0.00	0.00000	75.25
20.5 - 21.5	$211,591.13	$1,884.87	0.00891	75.25
21.5 - 22.5	$44,003.56	$0.00	0.00000	74.58
22.5 - 23.5	$34,943.06	$0.00	0.00000	74.58
23.5 - 24.5	$37,018.34	$0.00	0.00000	74.58
24.5 - 25.5	$37,018.34	$3,197.17	0.08637	74.58
25.5 - 26.5	$33,821.17	$0.00	0.00000	68.14
26.5 - 27.5	$12,743.33	$0.00	0.00000	68.14
27.5 - 28.5	$1,702.16	$0.00	0.00000	68.14
28.5 - 29.5	$1,702.16	$0.00	0.00000	68.14
29.5 - 30.5	$1,702.16	$1,230.50	0.72291	68.14
30.5 - 31.5	$471.66	$0.00	0.00000	18.88
31.5 - 32.5	$0.00	$0.00	0.00000	18.88
32.5 - 33.5	$0.00	$0.00	0.00000	18.88
33.5 - 34.5	$0.00	$0.00	0.00000	18.88
34.5 - 35.5	$0.00	$0.00	0.00000	18.88
35.5 - 36.5	$0.00	$0.00	0.00000	18.88

APT
Electric Division
370.00 Communication Equipment
Observed Life Table
Retirement Expr. 2009 TO 2016
Placement Years 1965 TO 2016

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
36.5 - 37.5	$0.00	$0.00	0.00000	18.88
37.5 - 38.5	$0.00	$0.00	0.00000	18.88
38.5 - 39.5	$0.00	$0.00	0.00000	18.88
39.5 - 40.5	$0.00	$0.00	0.00000	18.88
40.5 - 41.5	$0.00	$0.00	0.00000	18.88
41.5 - 42.5	$0.00	$0.00	0.00000	18.88
42.5 - 43.5	($1,935.47)	$0.00	0.00000	18.88
43.5 - 44.5	$0.00	$0.00	0.00000	18.88
44.5 - 45.5	$0.00	$0.00	0.00000	18.88
45.5 - 46.5	$1,935.47	$0.00	0.00000	18.88

APT

Electric Division
370.00 Communication Equipment
Original And Smooth Survivor Curves



APT
Electric Division
371.00 Other Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2013

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
0.0 - 0.5	$10,454,156.39	$32,287.74	0.00309	100.00
0.5 - 1.5	$10,479,977.65	$140,246.53	0.01338	99.69
1.5 - 2.5	$10,311,040.89	$213,908.84	0.02075	98.36
2.5 - 3.5	$10,535,278.49	$93,474.31	0.00887	96.32
3.5 - 4.5	$10,150,223.42	$93,222.55	0.00918	95.46
4.5 - 5.5	$9,696,916.83	$155,250.66	0.01601	94.59
5.5 - 6.5	$9,175,415.13	$258,564.39	0.02818	93.07
6.5 - 7.5	$7,738,655.79	$157,536.82	0.02036	90.45
7.5 - 8.5	$7,675,927.62	$127,740.25	0.01664	88.61
8.5 - 9.5	$7,558,855.64	$158,740.96	0.02100	87.13
9.5 - 10.5	$7,199,689.80	$391,120.65	0.05432	85.30
10.5 - 11.5	$6,463,761.07	$235,465.81	0.03643	80.67
11.5 - 12.5	$6,140,020.55	$316,001.30	0.05147	77.73
12.5 - 13.5	$5,712,331.24	$317,234.98	0.05554	73.73
13.5 - 14.5	$5,411,946.47	$149,392.58	0.02760	69.63
14.5 - 15.5	$5,119,146.41	$104,537.69	0.02042	67.71
15.5 - 16.5	$4,963,595.54	$326,224.65	0.06572	66.33
16.5 - 17.5	$4,162,157.67	$223,585.52	0.05372	61.97
17.5 - 18.5	$3,973,826.27	$151,309.10	0.03808	58.64
18.5 - 19.5	$3,675,932.16	$56,192.53	0.01529	56.41
19.5 - 20.5	$3,541,042.71	$62,832.38	0.01774	55.55
20.5 - 21.5	$3,379,430.37	$45,434.25	0.01344	54.56
21.5 - 22.5	$2,794,446.78	$82,254.87	0.02944	53.83
22.5 - 23.5	$2,622,836.45	$37,313.02	0.01423	52.24
23.5 - 24.5	$2,477,061.55	$49,346.51	0.01992	51.50
24.5 - 25.5	$2,350,637.25	$192,106.17	0.08173	50.47
25.5 - 26.5	$2,075,950.83	$57,105.16	0.02751	46.35
26.5 - 27.5	$1,704,578.28	$86,573.88	0.05079	45.07
27.5 - 28.5	$1,326,659.48	$40,535.88	0.03055	42.78
28.5 - 29.5	$1,162,578.92	$75,447.53	0.06490	41.48
29.5 - 30.5	$990,697.03	$33,047.49	0.03336	38.79
30.5 - 31.5	$941,336.31	$21,449.03	0.02279	37.49
31.5 - 32.5	$887,082.30	$59,179.16	0.06671	36.64
32.5 - 33.5	$816,608.33	$8,950.26	0.01096	34.19
33.5 - 34.5	$792,060.11	$75,238.99	0.09499	33.82
34.5 - 35.5	$678,697.26	$39,929.23	0.05883	30.61
35.5 - 36.5	$610,898.08	$7,489.90	0.01226	28.81

APT
Electric Division
371.00 Other Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2013

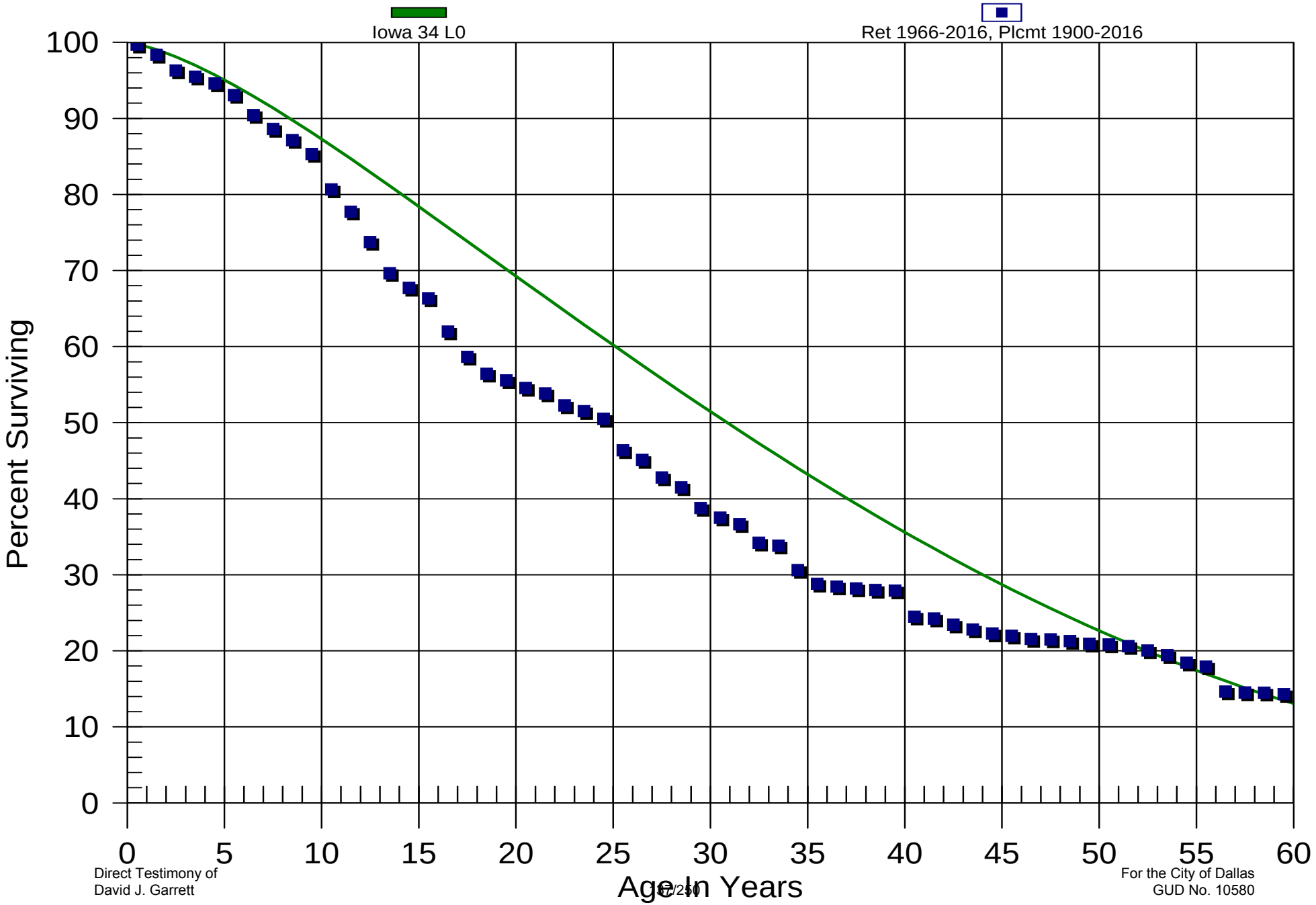
Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
36.5 - 37.5	$596,162.73	$5,549.53	0.00931	28.45
37.5 - 38.5	$604,601.33	$3,796.52	0.00628	28.19
38.5 - 39.5	$682,792.00	$2,413.36	0.00353	28.01
39.5 - 40.5	$644,484.40	$79,329.31	0.12309	27.91
40.5 - 41.5	$743,758.75	$7,466.69	0.01004	24.48
41.5 - 42.5	$735,673.66	$24,521.06	0.03333	24.23
42.5 - 43.5	$712,759.85	$19,252.39	0.02701	23.42
43.5 - 44.5	$697,073.87	$15,764.98	0.02262	22.79
44.5 - 45.5	$661,542.40	$8,769.95	0.01326	22.27
45.5 - 46.5	$596,563.11	$11,614.60	0.01947	21.98
46.5 - 47.5	$567,034.90	$1,281.38	0.00226	21.55
47.5 - 48.5	$564,747.36	$5,629.05	0.00997	21.50
48.5 - 49.5	$538,853.45	$9,608.07	0.01783	21.29
49.5 - 50.5	$499,501.77	$1,948.97	0.00390	20.91
50.5 - 51.5	$490,630.27	$5,134.60	0.01047	20.83
51.5 - 52.5	$590,475.09	$16,521.78	0.02798	20.61
52.5 - 53.5	$579,311.26	$17,753.54	0.03065	20.03
53.5 - 54.5	$557,956.02	$28,701.43	0.05144	19.42
54.5 - 55.5	$464,528.74	$12,249.77	0.02637	18.42
55.5 - 56.5	$451,421.23	$83,309.40	0.18455	17.93
56.5 - 57.5	$365,104.56	$2,393.14	0.00655	14.62
57.5 - 58.5	$341,740.58	$587.73	0.00172	14.53
58.5 - 59.5	$318,183.97	$4,345.65	0.01366	14.50
59.5 - 60.5	$283,508.00	$2,107.77	0.00743	14.31
60.5 - 61.5	$274,969.61	$11,795.30	0.04290	14.20
61.5 - 62.5	$236,653.78	$9,744.65	0.04118	13.59
62.5 - 63.5	$225,237.63	$369.30	0.00164	13.03
63.5 - 64.5	$212,047.74	$1,670.36	0.00788	13.01
64.5 - 65.5	$201,869.94	$2,746.88	0.01361	12.91
65.5 - 66.5	$239,643.94	$4,081.86	0.01703	12.73
66.5 - 67.5	$235,217.33	$25.19	0.00011	12.51
67.5 - 68.5	$185,559.08	$4,082.09	0.02200	12.51
68.5 - 69.5	$170,568.89	$5,518.11	0.03235	12.24
69.5 - 70.5	$161,356.03	$1,943.04	0.01204	11.84
70.5 - 71.5	$158,567.00	$21.94	0.00014	11.70
71.5 - 72.5	$151,659.09	$6,356.53	0.04191	11.70
72.5 - 73.5	$145,302.56	$18,501.60	0.12733	11.21

APT
Electric Division
371.00 Other Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2013

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
73.5 - 74.5	$126,800.96	$16,204.19	0.12779	9.78
74.5 - 75.5	$100,970.77	$2,125.77	0.02105	8.53
75.5 - 76.5	$87,446.89	$1,191.76	0.01363	8.35
76.5 - 77.5	$61,695.10	$3,054.61	0.04951	8.24
77.5 - 78.5	$58,640.49	$0.00	0.00000	7.83
78.5 - 79.5	$54,207.80	$1,083.60	0.01999	7.83
79.5 - 80.5	$53,124.20	$0.00	0.00000	7.67
80.5 - 81.5	$53,124.20	$9,261.32	0.17433	7.67
81.5 - 82.5	$43,007.94	$0.00	0.00000	6.33
82.5 - 83.5	$42,535.05	$0.00	0.00000	6.33
83.5 - 84.5	$31,533.07	$0.00	0.00000	6.33
84.5 - 85.5	$31,533.07	$815.77	0.02587	6.33
85.5 - 86.5	$30,717.30	$0.00	0.00000	6.17
86.5 - 87.5	$30,717.30	$0.00	0.00000	6.17
87.5 - 88.5	$23,210.81	$3,581.43	0.15430	6.17
88.5 - 89.5	$13,674.56	$3,033.88	0.22186	5.22
89.5 - 90.5	$4,161.50	$0.00	0.00000	4.06
90.5 - 91.5	$4,161.50	$0.00	0.00000	4.06
91.5 - 92.5	$4,132.13	$0.00	0.00000	4.06
92.5 - 93.5	$4,132.13	$0.00	0.00000	4.06
93.5 - 94.5	$4,132.13	$0.00	0.00000	4.06
94.5 - 95.5	$3,830.61	$0.00	0.00000	4.06
95.5 - 96.5	$3,830.61	$0.00	0.00000	4.06
96.5 - 97.5	$3,830.61	$0.00	0.00000	4.06
97.5 - 98.5	$3,830.61	$0.00	0.00000	4.06
98.5 - 99.5	$3,830.61	$0.00	0.00000	4.06
99.5 - 100.5	$4.98	$0.00	0.00000	4.06
100.5 - 101.5	$4.98	$0.00	0.00000	4.06
101.5 - 102.5	$4.98	$0.00	0.00000	4.06
102.5 - 103.5	$4.98	$0.00	0.00000	4.06
103.5 - 104.5	$4.98	$0.00	0.00000	4.06
104.5 - 105.5	$4.98	$0.00	0.00000	4.06

APT

Electric Division
371.00 Other Equipment
Original And Smooth Survivor Curves



APT
Electric Division
390.00 Structures & Improvements
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1910 TO 2016

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
0.0 - 0.5	$8,864,653.54	$0.00	0.00000	100.00
0.5 - 1.5	$8,756,586.26	$2,391.40	0.00027	100.00
1.5 - 2.5	$7,375,806.17	$14,813.25	0.00201	99.97
2.5 - 3.5	$6,338,290.51	$9,832.81	0.00155	99.77
3.5 - 4.5	$6,305,272.57	$11,580.16	0.00184	99.62
4.5 - 5.5	$6,296,423.25	$17,476.08	0.00278	99.43
5.5 - 6.5	$4,859,452.29	$21,965.67	0.00452	99.16
6.5 - 7.5	$4,435,678.06	$196,980.83	0.04441	98.71
7.5 - 8.5	$3,921,327.84	$71,853.06	0.01832	94.33
8.5 - 9.5	$3,128,650.11	$28,629.81	0.00915	92.60
9.5 - 10.5	$3,112,456.24	$38,528.74	0.01238	91.75
10.5 - 11.5	$3,004,680.65	$32,281.04	0.01074	90.61
11.5 - 12.5	$2,783,859.44	$197,435.03	0.07092	89.64
12.5 - 13.5	$2,588,636.21	$3,627.60	0.00140	83.28
13.5 - 14.5	$2,623,603.38	$901.67	0.00034	83.17
14.5 - 15.5	$2,549,524.33	$21,117.42	0.00828	83.14
15.5 - 16.5	$2,123,014.39	$87,235.29	0.04109	82.45
16.5 - 17.5	$1,602,794.56	$12,084.35	0.00754	79.06
17.5 - 18.5	$1,172,383.48	$105,906.00	0.09033	78.47
18.5 - 19.5	$1,190,696.58	$5,271.16	0.00443	71.38
19.5 - 20.5	$1,223,410.87	$21,093.44	0.01724	71.06
20.5 - 21.5	$1,147,791.83	$4,835.77	0.00421	69.84
21.5 - 22.5	$1,125,602.86	$28,970.82	0.02574	69.54
22.5 - 23.5	$1,111,960.45	$9,288.00	0.00835	67.75
23.5 - 24.5	$1,101,045.05	$19,432.70	0.01765	67.19
24.5 - 25.5	$1,049,947.44	$50,029.67	0.04765	66.00
25.5 - 26.5	$869,190.00	$36,251.81	0.04171	62.86
26.5 - 27.5	$651,173.08	$27,845.35	0.04276	60.23
27.5 - 28.5	$752,991.05	$7,449.08	0.00989	57.66
28.5 - 29.5	$598,881.56	$55,236.94	0.09223	57.09
29.5 - 30.5	$547,823.41	$31,310.68	0.05715	51.82
30.5 - 31.5	$514,949.00	$3,086.55	0.00599	48.86
31.5 - 32.5	$513,322.30	$62,420.02	0.12160	48.57
32.5 - 33.5	$435,656.48	$19,555.66	0.04489	42.66
33.5 - 34.5	$404,267.02	$5,019.16	0.01242	40.75
34.5 - 35.5	$396,689.08	$13,955.58	0.03518	40.24
35.5 - 36.5	$351,486.81	$86.43	0.00025	38.83

APT
Electric Division
390.00 Structures & Improvements
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1910 TO 2016

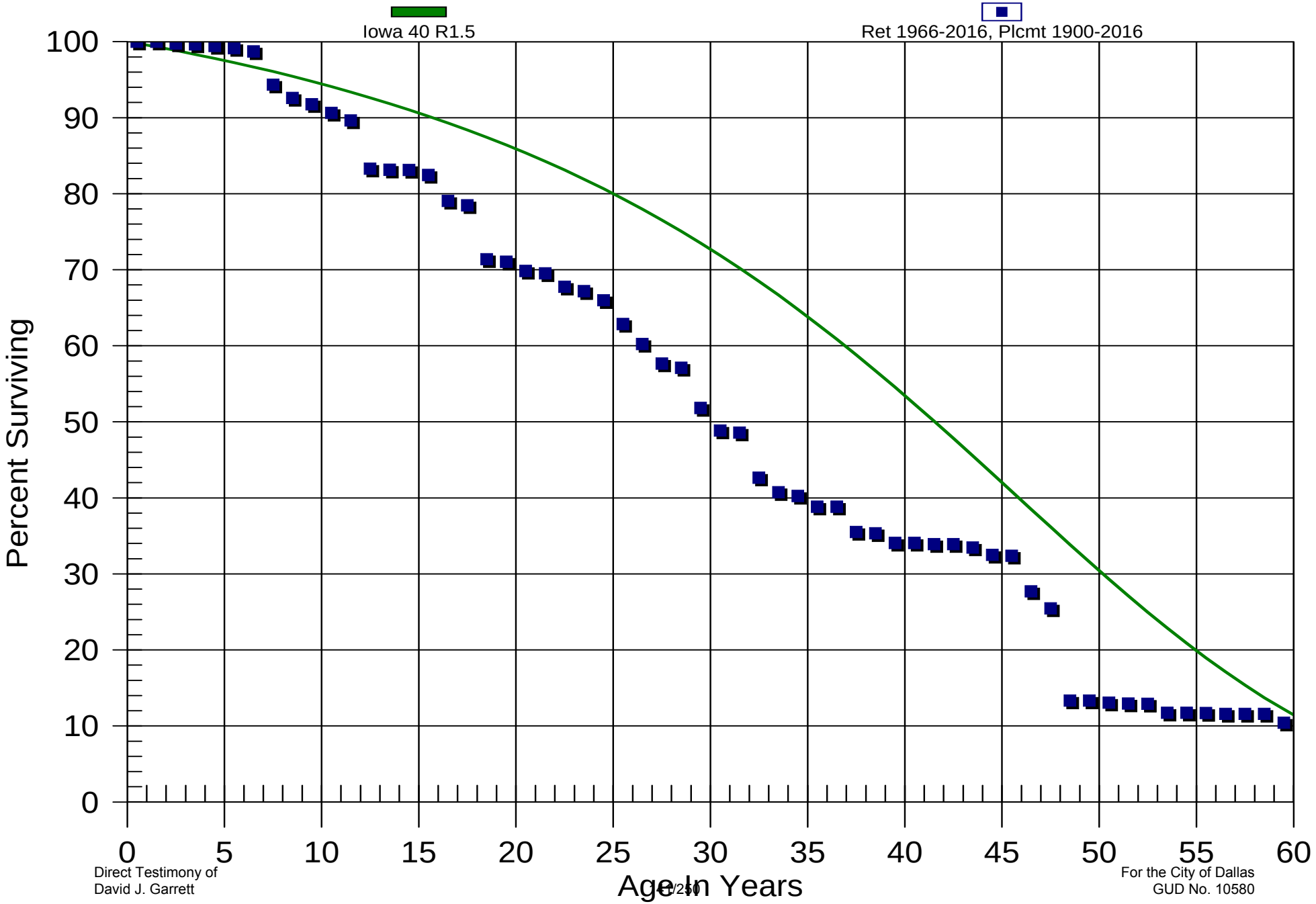
Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
36.5 - 37.5	$334,478.78	$28,421.40	0.08497	38.82
37.5 - 38.5	$559,960.71	$2,739.97	0.00489	35.52
38.5 - 39.5	$807,795.63	$29,492.03	0.03651	35.34
39.5 - 40.5	$863,146.98	$0.00	0.00000	34.05
40.5 - 41.5	$1,619,776.28	$7,109.46	0.00439	34.05
41.5 - 42.5	$1,766,694.83	$0.00	0.00000	33.90
42.5 - 43.5	$1,687,901.77	$22,655.27	0.01342	33.90
43.5 - 44.5	$1,659,449.61	$47,909.66	0.02887	33.45
44.5 - 45.5	$1,674,032.01	$4,870.28	0.00291	32.48
45.5 - 46.5	$1,672,208.78	$241,970.35	0.14470	32.39
46.5 - 47.5	$1,446,562.75	$117,271.00	0.08107	27.70
47.5 - 48.5	$1,329,291.75	$633,620.00	0.47666	25.46
48.5 - 49.5	$680,345.80	$0.00	0.00000	13.32
49.5 - 50.5	$693,003.29	$13,270.17	0.01915	13.32
50.5 - 51.5	$562,126.13	$5,738.30	0.01021	13.07
51.5 - 52.5	$556,387.83	$1,314.04	0.00236	12.93
52.5 - 53.5	$555,073.79	$51,027.10	0.09193	12.90
53.5 - 54.5	$503,342.53	$0.00	0.00000	11.72
54.5 - 55.5	$503,342.53	$265.69	0.00053	11.72
55.5 - 56.5	$503,076.84	$5,259.65	0.01045	11.71
56.5 - 57.5	$497,817.19	$0.00	0.00000	11.59
57.5 - 58.5	$497,817.19	$0.00	0.00000	11.59
58.5 - 59.5	$497,817.19	$50,222.32	0.10089	11.59
59.5 - 60.5	$447,594.87	$0.00	0.00000	10.42
60.5 - 61.5	$447,594.87	$0.00	0.00000	10.42
61.5 - 62.5	$469,811.59	$0.00	0.00000	10.42
62.5 - 63.5	$469,811.59	$0.00	0.00000	10.42
63.5 - 64.5	$452,382.96	$211,343.83	0.46718	10.42
64.5 - 65.5	$241,039.13	$0.00	0.00000	5.55
65.5 - 66.5	$241,039.13	$36,995.34	0.15348	5.55
66.5 - 67.5	$204,043.79	$200,894.60	0.98457	4.70
67.5 - 68.5	$3,149.19	$0.00	0.00000	0.07
68.5 - 69.5	$3,149.19	$0.00	0.00000	0.07
69.5 - 70.5	$7,081.07	$0.00	0.00000	0.07
70.5 - 71.5	$27,194.72	$0.00	0.00000	0.07
71.5 - 72.5	$64,229.97	$0.00	0.00000	0.07
72.5 - 73.5	$64,229.97	$0.00	0.00000	0.07

APT
Electric Division
390.00 Structures & Improvements
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1910 TO 2016

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
73.5 - 74.5	$64,229.97	$0.00	0.00000	0.07
74.5 - 75.5	$64,229.97	$0.00	0.00000	0.07
75.5 - 76.5	$64,229.97	$0.00	0.00000	0.07
76.5 - 77.5	$64,229.97	$0.00	0.00000	0.07
77.5 - 78.5	$64,229.97	$0.00	0.00000	0.07
78.5 - 79.5	$85,617.50	$0.00	0.00000	0.07
79.5 - 80.5	$85,617.50	$0.00	0.00000	0.07
80.5 - 81.5	$85,617.50	$0.00	0.00000	0.07
81.5 - 82.5	$85,617.50	$37,035.25	0.43257	0.07
82.5 - 83.5	$48,582.25	$0.00	0.00000	0.04
83.5 - 84.5	$48,582.25	$0.00	0.00000	0.04
84.5 - 85.5	$48,582.25	$0.00	0.00000	0.04
85.5 - 86.5	$48,582.25	$0.00	0.00000	0.04
86.5 - 87.5	$48,582.25	$20,113.65	0.41401	0.04
87.5 - 88.5	$28,468.60	$0.00	0.00000	0.02
88.5 - 89.5	$28,468.60	$0.00	0.00000	0.02
89.5 - 90.5	$40,056.87	$0.00	0.00000	0.02
90.5 - 91.5	$40,056.87	$0.00	0.00000	0.02
91.5 - 92.5	$40,056.87	$0.00	0.00000	0.02
92.5 - 93.5	$40,056.87	$0.00	0.00000	0.02
93.5 - 94.5	$40,056.87	$0.00	0.00000	0.02
94.5 - 95.5	$40,056.87	$0.00	0.00000	0.02
95.5 - 96.5	$11,588.27	$0.00	0.00000	0.02
96.5 - 97.5	$11,588.27	$0.00	0.00000	0.02
97.5 - 98.5	$11,588.27	$0.00	0.00000	0.02
98.5 - 99.5	$11,588.27	$0.00	0.00000	0.02
99.5 - 100.5	$11,588.27	$0.00	0.00000	0.02
100.5 - 101.5	$11,588.27	$0.00	0.00000	0.02
101.5 - 102.5	$11,588.27	$0.00	0.00000	0.02
102.5 - 103.5	$11,588.27	$0.00	0.00000	0.02
103.5 - 104.5	$11,588.27	$0.00	0.00000	0.02
104.5 - 105.5	$0.00	$0.00	0.00000	0.02
105.5 - 106.5	$0.00	$0.00	0.00000	0.02

APT

Electric Division
390.00 Structures & Improvements
Original And Smooth Survivor Curves



APT
Electric Division
392.00 Transportation Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2015

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
0.0 - 0.5	$41,665,189.91	$317,145.55	0.00761	100.00
0.5 - 1.5	$41,369,813.05	$1,084,489.08	0.02621	99.24
1.5 - 2.5	$39,853,164.83	$1,337,578.71	0.03356	96.64
2.5 - 3.5	$37,909,569.68	$3,729,908.94	0.09839	93.39
3.5 - 4.5	$34,103,864.42	$6,577,005.39	0.19285	84.20
4.5 - 5.5	$26,916,624.80	$5,930,528.13	0.22033	67.97
5.5 - 6.5	$20,504,169.77	$4,509,068.76	0.21991	52.99
6.5 - 7.5	$15,371,237.47	$3,344,691.04	0.21759	41.34
7.5 - 8.5	$11,960,272.25	$1,471,679.37	0.12305	32.34
8.5 - 9.5	$10,153,791.49	$1,856,248.10	0.18281	28.36
9.5 - 10.5	$8,155,904.09	$1,562,154.26	0.19154	23.18
10.5 - 11.5	$6,868,911.45	$1,693,467.55	0.24654	18.74
11.5 - 12.5	$5,224,980.31	$1,497,053.88	0.28652	14.12
12.5 - 13.5	$3,833,165.77	$1,283,625.81	0.33487	10.07
13.5 - 14.5	$2,759,879.26	$530,612.02	0.19226	6.70
14.5 - 15.5	$2,551,062.64	$501,859.80	0.19673	5.41
15.5 - 16.5	$2,027,913.81	$310,085.61	0.15291	4.35
16.5 - 17.5	$1,812,983.91	$189,155.04	0.10433	3.68
17.5 - 18.5	$1,581,166.84	$244,508.99	0.15464	3.30
18.5 - 19.5	$1,406,717.24	$179,276.53	0.12744	2.79
19.5 - 20.5	$1,263,015.41	$205,691.26	0.16286	2.43
20.5 - 21.5	$1,198,505.48	$214,413.51	0.17890	2.04
21.5 - 22.5	$984,091.97	$325,569.68	0.33083	1.67
22.5 - 23.5	$639,336.49	$54,182.11	0.08475	1.12
23.5 - 24.5	$590,634.56	$59,062.94	0.10000	1.02
24.5 - 25.5	$532,920.99	$24,659.01	0.04627	0.92
25.5 - 26.5	$494,538.59	$74,406.43	0.15046	0.88
26.5 - 27.5	$441,709.90	$50,780.86	0.11496	0.75
27.5 - 28.5	$373,968.66	$173,330.27	0.46349	0.66
28.5 - 29.5	$200,638.39	$18,711.11	0.09326	0.35
29.5 - 30.5	$216,704.09	$15,308.27	0.07064	0.32
30.5 - 31.5	$176,350.58	$4,545.89	0.02578	0.30
31.5 - 32.5	$120,337.28	$26,027.34	0.21629	0.29
32.5 - 33.5	$86,224.19	$12,950.71	0.15020	0.23
33.5 - 34.5	$55,379.67	$14,118.42	0.25494	0.19
34.5 - 35.5	$17,580.15	$0.00	0.00000	0.14
35.5 - 36.5	$10,987.54	$6,111.32	0.55620	0.14

APT
Electric Division
392.00 Transportation Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2015

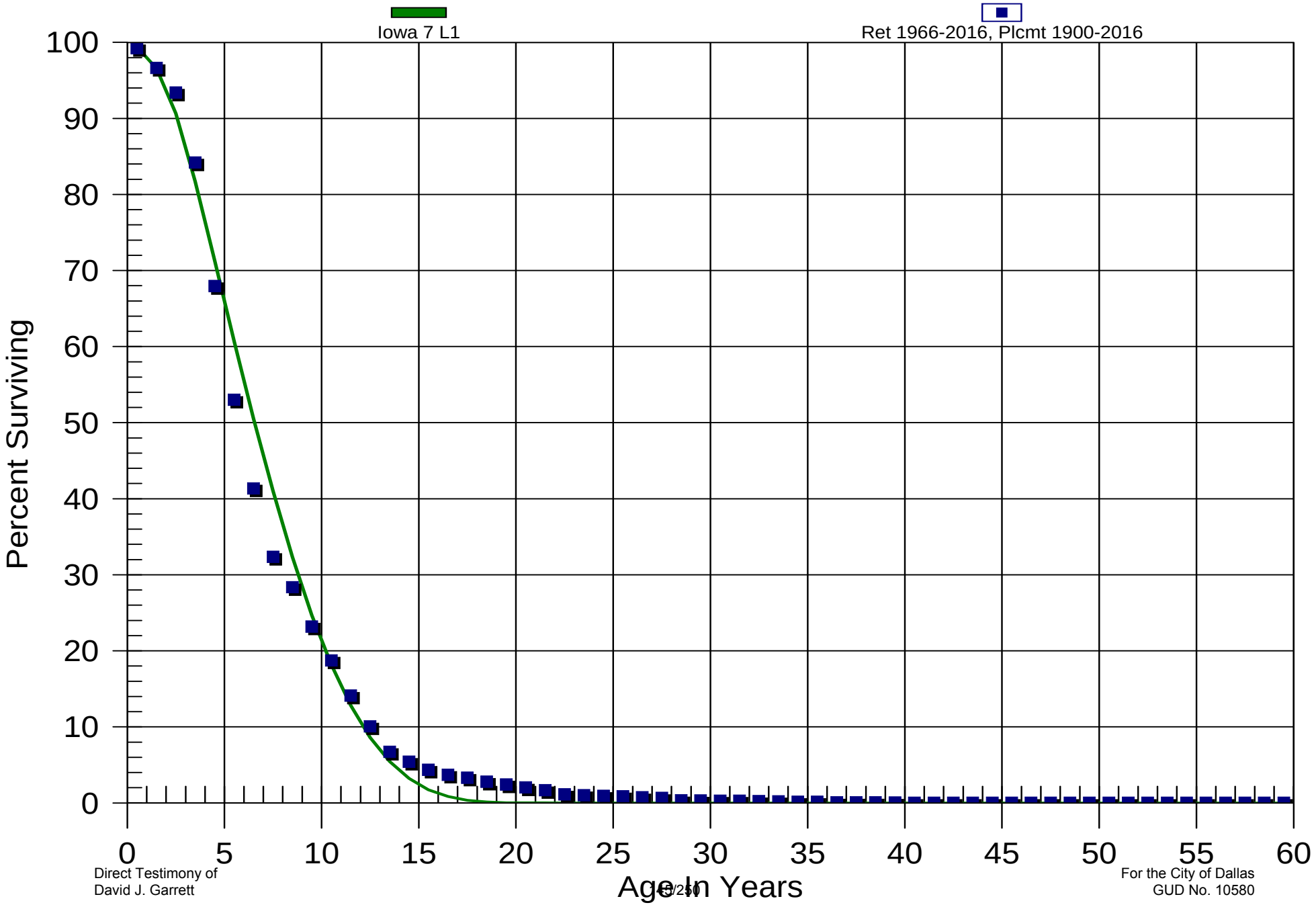
Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
36.5 - 37.5	($1,977.08)	$0.00	0.00000	0.06
37.5 - 38.5	$8,681.78	$0.00	0.00000	0.06
38.5 - 39.5	$16,789.62	$7,513.44	0.44751	0.06
39.5 - 40.5	$15,489.31	$9,186.66	0.59310	0.04
40.5 - 41.5	$2,993.50	$0.00	0.00000	0.01
41.5 - 42.5	$6,413.37	$0.00	0.00000	0.01
42.5 - 43.5	$6,413.37	$1,219.00	0.19007	0.01
43.5 - 44.5	$5,194.37	$94.26	0.01815	0.01
44.5 - 45.5	$5,100.11	$245.18	0.04807	0.01
45.5 - 46.5	$4,854.93	$1,110.99	0.22884	0.01
46.5 - 47.5	$5,243.94	$0.00	0.00000	0.01
47.5 - 48.5	$5,243.94	$6.50	0.00124	0.01
48.5 - 49.5	$5,492.75	$6.84	0.00125	0.01
49.5 - 50.5	$5,485.91	$0.00	0.00000	0.01
50.5 - 51.5	$5,485.91	$0.00	0.00000	0.01
51.5 - 52.5	$5,485.91	$0.00	0.00000	0.01
52.5 - 53.5	$5,485.91	$0.00	0.00000	0.01
53.5 - 54.5	$5,485.91	$0.00	0.00000	0.01
54.5 - 55.5	$5,485.91	$5,191.40	0.94632	0.01
55.5 - 56.5	$294.51	$0.00	0.00000	0.00
56.5 - 57.5	$294.51	$0.00	0.00000	0.00
57.5 - 58.5	$294.51	$0.00	0.00000	0.00
58.5 - 59.5	$294.51	$0.00	0.00000	0.00
59.5 - 60.5	$294.51	$0.00	0.00000	0.00
60.5 - 61.5	$294.51	$0.00	0.00000	0.00
61.5 - 62.5	$294.51	$0.00	0.00000	0.00
62.5 - 63.5	$294.51	$0.00	0.00000	0.00
63.5 - 64.5	$294.51	$0.00	0.00000	0.00
64.5 - 65.5	$5,240.96	$0.00	0.00000	0.00
65.5 - 66.5	$227,933.56	$2,196.72	0.00964	0.00
66.5 - 67.5	$225,537.11	$22,488.33	0.09971	0.00
67.5 - 68.5	$203,048.78	$98,561.57	0.48541	0.00
68.5 - 69.5	$102,590.21	$6,703.47	0.06534	0.00
69.5 - 70.5	$95,886.74	$0.00	0.00000	0.00
70.5 - 71.5	$83,189.15	$0.00	0.00000	0.00
71.5 - 72.5	$77,542.97	$157.00	0.00202	0.00
72.5 - 73.5	$79,374.71	$63,676.07	0.80222	0.00

APT
Electric Division
392.00 Transportation Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1900 TO 2015

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
73.5 - 74.5	$18,025.07	$10,500.43	0.58255	0.00
74.5 - 75.5	$18,703.52	$3,026.51	0.16181	0.00
75.5 - 76.5	$15,677.01	$5,074.09	0.32366	0.00
76.5 - 77.5	$10,602.92	$0.00	0.00000	0.00
77.5 - 78.5	$10,602.92	$4,959.57	0.46776	0.00
78.5 - 79.5	$5,643.35	$5,588.10	0.99021	0.00
79.5 - 80.5	$55.25	$28.58	0.51729	0.00
80.5 - 81.5	$26.67	$0.00	0.00000	0.00
81.5 - 82.5	$26.67	$0.00	0.00000	0.00
82.5 - 83.5	$26.67	$0.00	0.00000	0.00

APT

Electric Division
392.00 Transportation Equipment
Original And Smooth Survivor Curves



APT
Electric Division
396.00 Power Operated Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1929 TO 2016

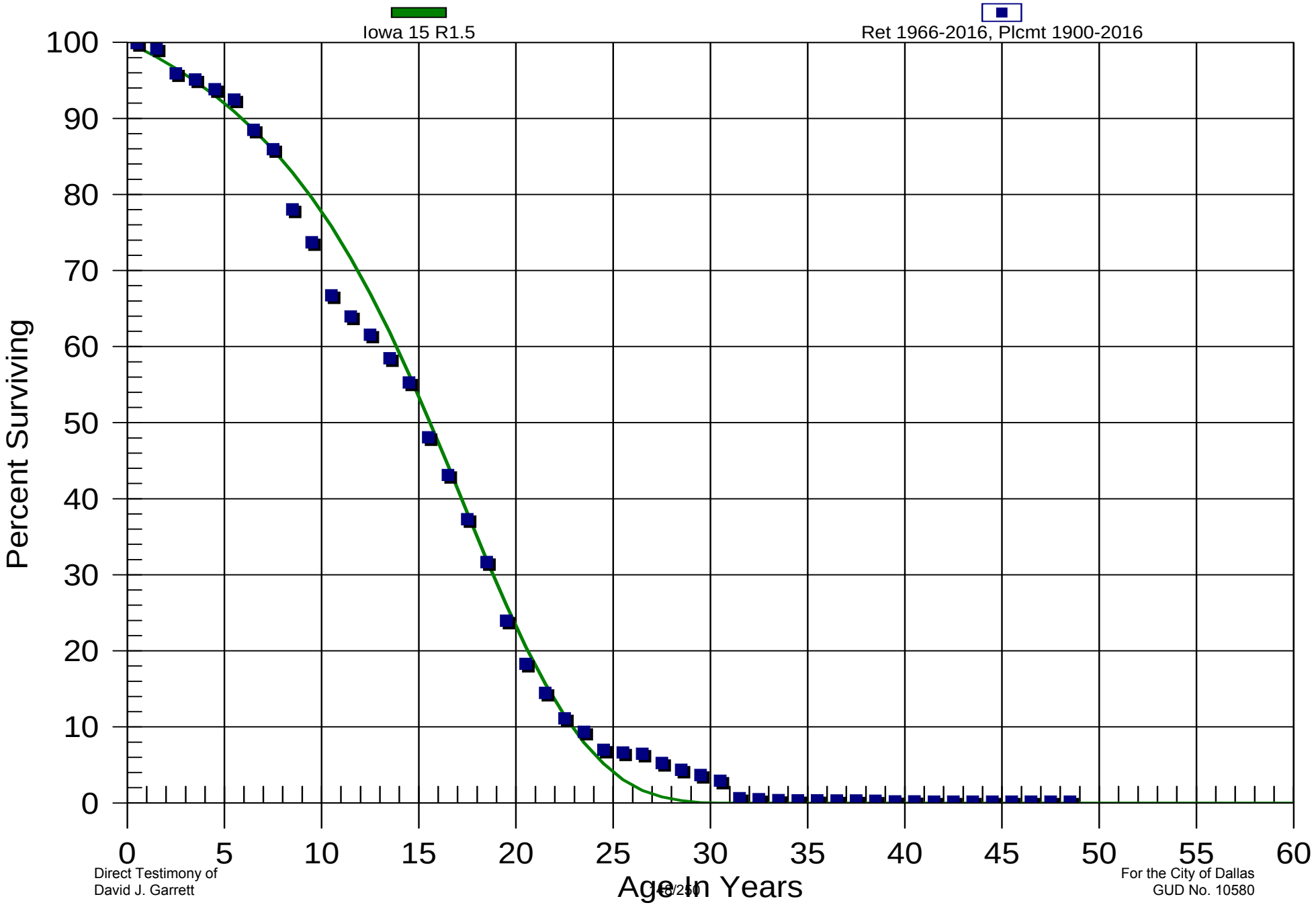
Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
0.0 - 0.5	$15,895,387.61	$14,600.28	0.00092	100.00
0.5 - 1.5	$15,755,998.16	$112,710.40	0.00715	99.91
1.5 - 2.5	$15,512,724.02	$512,441.89	0.03303	99.19
2.5 - 3.5	$14,667,897.82	$120,873.39	0.00824	95.92
3.5 - 4.5	$14,525,674.82	$196,440.25	0.01352	95.13
4.5 - 5.5	$14,162,700.83	$203,412.73	0.01436	93.84
5.5 - 6.5	$12,819,092.84	$552,967.05	0.04314	92.49
6.5 - 7.5	$12,098,486.82	$348,772.29	0.02883	88.50
7.5 - 8.5	$11,613,013.00	$1,068,347.06	0.09200	85.95
8.5 - 9.5	$10,385,698.49	$575,320.66	0.05540	78.04
9.5 - 10.5	$9,799,993.60	$926,977.48	0.09459	73.72
10.5 - 11.5	$8,820,089.03	$368,370.77	0.04176	66.75
11.5 - 12.5	$8,626,658.56	$325,302.58	0.03771	63.96
12.5 - 13.5	$8,349,887.91	$417,374.41	0.04999	61.55
13.5 - 14.5	$8,071,171.22	$442,084.53	0.05477	58.47
14.5 - 15.5	$7,708,898.80	$1,003,373.83	0.13016	55.27
15.5 - 16.5	$6,792,889.39	$699,342.24	0.10295	48.08
16.5 - 17.5	$6,205,336.20	$838,894.31	0.13519	43.13
17.5 - 18.5	$5,546,611.63	$837,795.13	0.15105	37.30
18.5 - 19.5	$4,755,121.92	$1,156,100.38	0.24313	31.66
19.5 - 20.5	$3,587,740.95	$848,160.86	0.23641	23.96
20.5 - 21.5	$2,727,993.76	$570,805.45	0.20924	18.30
21.5 - 22.5	$2,091,128.90	$486,532.34	0.23266	14.47
22.5 - 23.5	$1,609,985.28	$253,550.65	0.15749	11.10
23.5 - 24.5	$1,356,268.88	$343,735.41	0.25344	9.35
24.5 - 25.5	$1,009,514.98	$50,530.01	0.05005	6.98
25.5 - 26.5	$956,701.60	$24,156.14	0.02525	6.63
26.5 - 27.5	$931,557.73	$176,566.16	0.18954	6.47
27.5 - 28.5	$755,513.85	$128,223.80	0.16972	5.24
28.5 - 29.5	$627,290.05	$96,937.54	0.15453	4.35
29.5 - 30.5	$527,220.89	$108,156.21	0.20514	3.68
30.5 - 31.5	$416,882.18	$328,394.50	0.78774	2.92
31.5 - 32.5	$120,742.05	$26,891.82	0.22272	0.62
32.5 - 33.5	$97,130.48	$22,143.55	0.22798	0.48
33.5 - 34.5	$58,081.57	$2,891.19	0.04978	0.37
34.5 - 35.5	$61,375.49	$0.00	0.00000	0.35
35.5 - 36.5	$61,375.49	$5,872.20	0.09568	0.35

APT
Electric Division
396.00 Power Operated Equipment
Observed Life Table
Retirement Expr. 1966 TO 2016
Placement Years 1929 TO 2016

Age Interval	*$ Surviving At Beginning of Age Interval*	*$ Retired During The Age Interval*	*Retirement Ratio*	*% Surviving At Beginning of Age Interval*
36.5 - 37.5	$53,166.02	$0.00	0.00000	0.32
37.5 - 38.5	$59,081.00	$3,280.25	0.05552	0.32
38.5 - 39.5	$55,528.68	$18,216.00	0.32805	0.30
39.5 - 40.5	$37,312.68	$1,068.44	0.02863	0.20
40.5 - 41.5	$49,755.89	$1,924.72	0.03868	0.20
41.5 - 42.5	$52,308.66	$0.00	0.00000	0.19
42.5 - 43.5	$47,311.64	$1,836.42	0.03882	0.19
43.5 - 44.5	$22,270.12	$0.00	0.00000	0.18
44.5 - 45.5	$29,080.62	$0.00	0.00000	0.18
45.5 - 46.5	$14,055.55	$0.00	0.00000	0.18
46.5 - 47.5	($1,686.45)	$0.00	0.00000	0.18
47.5 - 48.5	$1,331.69	$0.00	0.00000	0.18

APT

Electric Division
396.00 Power Operated Equipment
Original And Smooth Survivor Curves



APT
Electric Division
350.20 Rights of Way
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: *55* ***Survivor Curve:*** *R4*

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
1952	3,904.88	55.00	71.00	4.72	335.31
1960	663.54	55.00	12.06	7.49	90.42
1963	2,096.25	55.00	38.11	8.91	339.62
1965	129.28	55.00	2.35	10.01	23.52
1967	84.48	55.00	1.54	11.21	17.21
1969	520.44	55.00	9.46	12.50	118.29
1978	3,776.93	55.00	68.67	19.01	1,305.10
1986	5,550.25	55.00	100.91	25.69	2,592.64
1991	5,760.00	55.00	104.73	30.23	3,166.34
1993	100.00	55.00	1.82	32.11	58.38
1994	1,700.00	55.00	30.91	33.06	1,021.84
2002	8,277.33	55.00	150.50	40.83	6,144.06
Total	32,563.38	55.00	592.06	25.69	15,212.72

Composite Average Remaining Life ... 25.6 Years

APT
Electric Division
351.00 Structures & Improvements
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 75 **Survivor Curve:** R2.5

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1952	118,348.67	75.00	1,577.98	23.51	37,101.39
1953	8,857.29	75.00	118.10	24.10	2,845.93
1955	132,771.82	75.00	1,770.29	25.29	44,776.63
1959	10,919.24	75.00	145.59	27.80	4,048.07
1960	3,477.42	75.00	46.37	28.45	1,319.26
1961	5,130.41	75.00	68.41	29.11	1,991.29
1963	4,223.75	75.00	56.32	30.45	1,715.01
1964	87.31	75.00	1.16	31.13	36.24
1965	927.52	75.00	12.37	31.83	393.60
1966	949.35	75.00	12.66	32.52	411.70
1967	48,112.17	75.00	641.49	33.23	21,316.18
1968	4,111.02	75.00	54.81	33.94	1,860.60
1969	1,504.36	75.00	20.06	34.66	695.29
1970	14,312.66	75.00	190.84	35.39	6,753.62
1971	50,669.52	75.00	675.59	36.13	24,406.56
1972	943.56	75.00	12.58	36.87	463.81
1974	54,167.33	75.00	722.23	38.37	27,711.88
1975	7,079.66	75.00	94.40	39.13	3,693.72
1976	10,673.07	75.00	142.31	39.90	5,677.59
1978	76,559.96	75.00	1,020.80	41.45	42,313.95
1980	217.69	75.00	2.90	43.03	124.90
1983	5,000.00	75.00	66.67	45.44	3,029.54
1984	20,290.89	75.00	270.54	46.26	12,514.93
1989	6,659,510.84	75.00	88,793.36	50.42	4,476,856.80
1990	542,746.84	75.00	7,236.61	51.27	370,993.32
1991	329,234.93	75.00	4,389.79	52.12	228,787.61
1993	663.88	75.00	8.85	53.84	476.57

APT
Electric Division
351.00 Structures & Improvements
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: *75* ***Survivor Curve:*** *R2.5*

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
1994	53,418.68	75.00	712.25	54.71	38,964.03
1995	22,768.31	75.00	303.58	55.58	16,872.44
1996	93,445.49	75.00	1,245.94	56.45	70,339.16
1997	116,897.66	75.00	1,558.63	57.33	89,363.97
1998	75,810.94	75.00	1,010.81	58.22	58,850.44
1999	36,402.16	75.00	485.36	59.11	28,689.67
2000	577.87	75.00	7.70	60.00	462.32
2002	8,277.33	75.00	110.36	61.80	6,820.70
2004	73,545.90	75.00	980.61	63.62	62,381.99
2005	1,509,094.08	75.00	20,121.23	64.53	1,298,367.05
2007	1,029,221.94	75.00	13,722.94	66.36	910,679.47
2008	41,693.07	75.00	555.91	67.28	37,403.42
2009	3,034,986.95	75.00	40,466.44	68.21	2,760,145.35
2010	146,580.09	75.00	1,954.40	69.14	135,121.58
2011	2,265,444.64	75.00	30,205.89	70.07	2,116,466.28
2012	1,773,894.27	75.00	23,651.89	71.00	1,679,318.66
2013	2,933,356.73	75.00	39,111.37	71.94	2,813,621.61
2014	1,050,476.68	75.00	14,006.34	72.88	1,020,749.98
2015	484,875.96	75.00	6,465.00	73.82	477,240.71
2016	1,751,689.79	75.00	23,355.83	74.64	1,743,393.37
Total	24,613,949.70	75.00	328,185.56	63.04	20,687,568.20

Composite Average Remaining Life ... 63.0 Years

APT
Electric Division
352.00 Wells

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 55 **Survivor Curve:** R0.5

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1952	1,223,410.33	55.00	22,243.42	19.49	433,428.85
1955	955,425.64	55.00	17,371.06	20.83	361,855.16
1959	249,544.83	55.00	4,537.10	22.68	102,898.66
1960	9,970.12	55.00	181.27	23.15	4,196.76
1967	39,603.03	55.00	720.04	26.57	19,134.82
1968	238,730.03	55.00	4,340.47	27.08	117,543.00
1969	80.55	55.00	1.46	27.59	40.41
1970	239.48	55.00	4.35	28.11	122.37
1971	41,566.06	55.00	755.73	28.62	21,632.11
1974	303,958.45	55.00	5,526.42	30.20	166,917.66
1975	95,562.43	55.00	1,737.47	30.74	53,406.93
1977	2,109.04	55.00	38.35	31.82	1,220.13
1978	245,917.31	55.00	4,471.14	32.36	144,707.69
1979	627,591.20	55.00	11,410.54	32.91	375,575.65
1980	27,699.59	55.00	503.62	33.47	16,855.29
1981	108,575.52	55.00	1,974.06	34.03	67,167.89
1984	312,318.06	55.00	5,678.41	35.71	202,802.49
1985	718,360.75	55.00	13,060.87	36.28	473,905.05
1986	1,636,584.35	55.00	29,755.54	36.86	1,096,694.70
1988	486,953.71	55.00	8,853.54	38.01	336,520.35
1989	2,653,496.35	55.00	48,244.51	38.59	1,861,718.27
1990	5,727,513.22	55.00	104,134.71	39.17	4,079,150.60
1991	2,916,970.83	55.00	53,034.87	39.76	2,108,485.79
1992	304,903.03	55.00	5,543.59	40.34	223,646.80
1994	14,000.67	55.00	254.55	41.52	10,569.59
1996	208,323.00	55.00	3,787.62	42.71	161,758.56
1997	1,753,906.47	55.00	31,888.63	43.30	1,380,841.77

APT
Electric Division
352.00 Wells

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: *55* ***Survivor Curve:*** *R0.5*

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
1998	18,605.99	55.00	338.28	43.90	14,850.06
2000	1,335,917.70	55.00	24,288.97	45.09	1,095,272.90
2001	366,512.86	55.00	6,663.75	45.69	304,487.30
2002	3,461,025.75	55.00	62,926.60	46.29	2,913,115.42
2003	24,378.96	55.00	443.25	46.90	20,786.36
2004	129,163.56	55.00	2,348.39	47.50	111,545.80
2007	329,596.15	55.00	5,992.55	49.32	295,527.27
2009	817,878.04	55.00	14,870.24	50.53	751,456.33
2010	1,989,077.96	55.00	36,164.40	51.15	1,849,649.59
2011	585,528.25	55.00	10,645.77	51.76	551,003.62
2012	5,828,405.82	55.00	105,969.09	52.37	5,549,859.19
2013	3,300,229.98	55.00	60,003.09	52.99	3,179,469.59
2014	861,116.81	55.00	15,656.38	53.61	839,275.51
2015	35,894,410.54	55.00	652,613.79	54.23	35,388,010.75
2016	2,489,775.77	55.00	45,267.83	54.77	2,479,215.38
Total	78,334,938.19	55.00	1,424,245.73	48.56	69,166,322.39

Composite Average Remaining Life ... 48.5 Years

APT
Electric Division
353.00 Lines

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 42 **Survivor Curve:** R0.5

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1952	663,599.00	42.00	15,799.56	8.60	135,861.34
1959	1,425.03	42.00	33.93	11.40	386.93
1960	9,023.70	42.00	214.84	11.82	2,538.40
1961	8,750.91	42.00	208.35	12.23	2,547.99
1963	179.81	42.00	4.28	13.07	55.95
1965	371.51	42.00	8.85	13.92	123.17
1967	53,189.08	42.00	1,266.37	14.80	18,740.98
1968	2,178.93	42.00	51.88	15.24	790.78
1969	18,008.63	42.00	428.77	15.69	6,728.27
1970	442.09	42.00	10.53	16.15	169.95
1971	43,622.92	42.00	1,038.61	16.61	17,247.05
1972	412.92	42.00	9.83	17.07	167.82
1973	363.46	42.00	8.65	17.54	151.79
1974	56,213.27	42.00	1,338.38	18.02	24,111.98
1975	1,965.48	42.00	46.80	18.50	865.59
1976	7,748.20	42.00	184.48	18.98	3,501.96
1978	484,439.51	42.00	11,533.97	19.97	230,365.85
1979	7,700.16	42.00	183.33	20.48	3,753.84
1980	35,014.01	42.00	833.64	20.98	17,493.57
1981	2,213.38	42.00	52.70	21.50	1,132.92
1982	4,811.44	42.00	114.56	22.02	2,522.21
1983	12,459.68	42.00	296.65	22.54	6,687.31
1986	563,531.19	42.00	13,417.06	24.15	323,999.22
1988	1,085,794.27	42.00	25,851.56	25.24	652,591.07
1989	650,691.21	42.00	15,492.24	25.80	399,673.30
1990	60,335.27	42.00	1,436.52	26.36	37,862.42
1991	35,872.87	42.00	854.09	26.92	22,993.06

APT
Electric Division
353.00 Lines

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: ***42*** ***Survivor Curve:*** ***R0.5***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
1992	63,097.51	42.00	1,502.28	27.49	41,295.13
1993	21,665.91	42.00	515.84	28.06	14,474.45
1994	50,818.93	42.00	1,209.94	28.63	34,646.31
1996	14,929.37	42.00	355.45	29.79	10,590.51
1997	141,120.00	42.00	3,359.91	30.38	102,069.66
1998	155,859.59	42.00	3,710.84	30.97	114,909.45
1999	248,615.23	42.00	5,919.25	31.56	186,782.98
2000	79,346.41	42.00	1,889.15	32.15	60,729.64
2002	137,914.23	42.00	3,283.59	33.34	109,460.01
2003	7,430.01	42.00	176.90	33.93	6,002.63
2004	18,296.01	42.00	435.61	34.53	15,041.97
2005	1,085,231.64	42.00	25,838.17	35.13	907,714.98
2008	335,655.32	42.00	7,991.58	36.94	295,208.46
2009	1,708,684.34	42.00	40,681.89	37.55	1,527,468.45
2010	32,039.44	42.00	762.82	38.15	29,105.40
2011	337,889.08	42.00	8,044.77	38.76	311,853.45
2012	974,633.46	42.00	23,204.95	39.38	913,745.14
2013	398,269.53	42.00	9,482.36	39.99	379,209.65
2014	75,147.20	42.00	1,789.17	40.61	72,653.58
2015	3,139,806.24	42.00	74,755.32	41.23	3,081,821.31
2016	407,723.35	42.00	9,707.44	41.77	405,460.66
Total	13,244,530.73	42.00	315,337.67	33.40	10,533,308.54

Composite Average Remaining Life ... 33.4 Years

APT
Electric Division
354.00 Compressor Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 42 **Survivor Curve:** L2

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1959	146.73	42.00	3.49	12.59	43.99
1960	798.29	42.00	19.01	12.85	244.16
1961	10,476.67	42.00	249.44	13.10	3,267.55
1963	542.78	42.00	12.92	13.60	175.78
1965	1,471.00	42.00	35.02	14.10	493.89
1967	209,194.80	42.00	4,980.83	14.60	72,702.63
1968	7,324.01	42.00	174.38	14.84	2,588.28
1969	1,007.32	42.00	23.98	15.09	361.86
1970	3,619.80	42.00	86.19	15.33	1,321.05
1971	34,438.09	42.00	819.95	15.57	12,766.54
1972	430.80	42.00	10.26	15.81	162.15
1973	587.94	42.00	14.00	16.05	224.65
1974	156,493.06	42.00	3,726.03	16.29	60,692.36
1976	29,977.40	42.00	713.75	16.77	11,969.42
1978	1,062,473.00	42.00	25,296.98	17.26	436,680.72
1979	4,021.40	42.00	95.75	17.52	1,677.14
1986	13,253.16	42.00	315.55	19.57	6,176.52
1988	5,407.97	42.00	128.76	20.31	2,615.25
1989	2,559,893.81	42.00	60,949.87	20.71	1,262,524.61
1990	54,363.62	42.00	1,294.37	21.14	27,367.06
1991	1,981,163.11	42.00	47,170.56	21.60	1,019,068.86
1992	31,607.79	42.00	752.57	22.09	16,625.82
1993	43,004.76	42.00	1,023.92	22.62	23,156.60
1994	168,879.63	42.00	4,020.94	23.17	93,166.61
1995	246,174.42	42.00	5,861.30	23.76	139,258.65
1996	284,172.53	42.00	6,766.01	24.39	165,007.26
1997	86,359.80	42.00	2,056.19	25.05	51,503.29

APT
Electric Division
354.00 Compressor Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 42 **Survivor Curve:** L2

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1998	3,084,650.13	42.00	73,444.07	25.75	1,890,872.10
1999	71,615.10	42.00	1,705.12	26.47	45,141.97
2000	26,765.67	42.00	637.28	27.23	17,354.67
2001	252,720.88	42.00	6,017.17	28.02	168,602.73
2002	435.52	42.00	10.37	28.83	298.93
2003	100,055.70	42.00	2,382.28	29.65	70,643.43
2004	815,424.54	42.00	19,414.87	30.50	592,098.12
2005	5,826,096.77	42.00	138,716.62	31.35	4,349,308.77
2006	105,946.03	42.00	2,522.53	32.23	81,295.78
2007	19,360,302.45	42.00	460,959.68	33.12	15,265,471.27
2008	2,693,411.61	42.00	64,128.86	34.02	2,181,730.66
2009	1,573,973.69	42.00	37,475.57	34.94	1,309,510.31
2010	17,636,663.80	42.00	419,920.66	35.88	15,066,251.44
2011	13,449,136.29	42.00	320,217.60	36.83	11,793,254.73
2012	7,102,499.30	42.00	169,107.16	37.79	6,391,300.90
2013	557,408.07	42.00	13,271.62	38.77	514,545.38
2014	3,017,597.45	42.00	71,847.57	39.76	2,856,466.48
2015	2,780,352.37	42.00	66,198.88	40.75	2,697,687.79
2016	2,727,856.32	42.00	64,948.97	41.63	2,703,501.28
Total	88,180,195.38	42.00	2,099,528.93	34.01	71,407,179.46

Composite Average Remaining Life ... 34.0 Years

APT
Electric Division
355.00 Meas. & Reg. Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 42 **Survivor Curve:** R0.5

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1959	18,601.21	42.00	442.87	11.40	5,050.62
1960	4,896.97	42.00	116.59	11.82	1,377.53
1961	15,323.58	42.00	364.84	12.23	4,461.75
1963	3,026.31	42.00	72.05	13.07	941.65
1964	98.14	42.00	2.34	13.49	31.53
1965	739.20	42.00	17.60	13.92	245.07
1966	656.86	42.00	15.64	14.36	224.57
1967	32,063.72	42.00	763.40	14.80	11,297.53
1968	2,926.90	42.00	69.69	15.24	1,062.24
1969	26,751.78	42.00	636.93	15.69	9,994.83
1970	1,706.71	42.00	40.63	16.15	656.11
1971	1,141.73	42.00	27.18	16.61	451.40
1972	234.10	42.00	5.57	17.07	95.15
1973	520.74	42.00	12.40	17.54	217.47
1974	28,447.60	42.00	677.31	18.02	12,202.24
1976	5,183.97	42.00	123.42	18.98	2,343.00
1977	342.73	42.00	8.16	19.48	158.92
1978	149,098.30	42.00	3,549.87	19.97	70,900.81
1979	602.09	42.00	14.34	20.48	293.52
1980	546.36	42.00	13.01	20.98	272.97
1981	1,876.83	42.00	44.69	21.50	960.66
1982	49,249.57	42.00	1,172.58	22.02	25,817.14
1984	31,998.77	42.00	761.86	23.07	17,577.94
1985	3,200.54	42.00	76.20	23.61	1,798.97
1986	77,682.72	42.00	1,849.54	24.15	44,663.26
1987	11,430.17	42.00	272.14	24.69	6,720.03
1988	4,762.55	42.00	113.39	25.24	2,862.42

APT
Electric Division
355.00 Meas. & Reg. Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 42 **Survivor Curve:** R0.5

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1989	2,129,942.99	42.00	50,711.59	25.80	1,308,272.39
1990	2,581,251.68	42.00	61,456.76	26.36	1,619,822.84
1991	275,772.77	42.00	6,565.85	26.92	176,759.24
1992	124,465.04	42.00	2,963.38	27.49	81,458.04
1993	20,519.86	42.00	488.56	28.06	13,708.80
1994	286,914.40	42.00	6,831.12	28.63	195,606.73
1995	57,033.88	42.00	1,357.91	29.21	39,668.36
1996	258,091.15	42.00	6,144.87	29.79	183,083.29
1997	419,508.05	42.00	9,988.02	30.38	303,422.94
1998	123,132.30	42.00	2,931.64	30.97	90,780.84
1999	77,726.17	42.00	1,850.57	31.56	58,395.16
2000	694,125.33	42.00	16,526.36	32.15	531,265.16
2001	102,584.93	42.00	2,442.43	32.74	79,966.04
2002	451,508.79	42.00	10,749.93	33.34	358,354.31
2004	203,713.84	42.00	4,850.20	34.53	167,482.24
2005	392,552.05	42.00	9,346.23	35.13	328,340.39
2007	122,699.26	42.00	2,921.33	36.34	106,147.77
2009	1,625,441.82	42.00	38,699.98	37.55	1,453,054.28
2010	639,179.34	42.00	15,218.16	38.15	580,645.98
2011	55,062.03	42.00	1,310.97	38.76	50,819.29
2012	9,076,868.50	42.00	216,110.23	39.38	8,509,808.87
2013	6,621,496.70	42.00	157,650.53	39.99	6,304,613.50
2014	1,323,124.66	42.00	31,502.14	40.61	1,279,219.23
2015	12,077,896.80	42.00	287,561.40	41.23	11,854,846.09
2016	10,405,958.97	42.00	247,754.40	41.77	10,348,210.44

APT
Electric Division
355.00 Meas. & Reg. Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: *42* ***Survivor Curve:*** *R0.5*

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Total	50,619,681.46	42.00	1,205,198.78	38.37	46,246,431.54

Composite Average Remaining Life ... 38.3 Years

APT
Electric Division
356.00 Purification Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 69 **Survivor Curve:** R2

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1959	27,708.07	69.00	401.57	25.27	10,147.87
1961	9,399.35	69.00	136.22	26.44	3,601.60
1963	1,847.37	69.00	26.77	27.64	740.01
1964	1,321.48	69.00	19.15	28.25	541.05
1966	5,447.58	69.00	78.95	29.50	2,328.94
1967	187,680.16	69.00	2,719.99	30.14	81,967.92
1968	19,477.46	69.00	282.28	30.78	8,687.89
1969	191,387.72	69.00	2,773.73	31.43	87,174.36
1970	63,004.86	69.00	913.11	32.09	29,297.85
1971	172.26	69.00	2.50	32.75	81.76
1972	16,198.02	69.00	234.75	33.42	7,846.18
1973	1,540.44	69.00	22.33	34.10	761.31
1974	10,326.19	69.00	149.65	34.79	5,206.28
1976	65,382.75	69.00	947.57	36.18	34,284.75
1978	431,600.52	69.00	6,255.06	37.60	235,198.44
1979	5,663.83	69.00	82.08	38.32	3,145.49
1980	4,234.11	69.00	61.36	39.04	2,395.94
1981	20,215.65	69.00	292.98	39.78	11,654.41
1984	3,664.89	69.00	53.11	42.01	2,231.44
1985	289,668.95	69.00	4,198.09	42.77	179,552.67
1986	328,231.57	69.00	4,756.97	43.53	207,079.99
1988	556.88	69.00	8.07	45.07	363.79
1989	282,551.48	69.00	4,094.94	45.86	187,775.02
1990	2,275,194.62	69.00	32,973.74	46.64	1,537,909.85
1991	1,217,254.69	69.00	17,641.32	47.43	836,732.01
1993	9,703.43	69.00	140.63	49.03	6,894.86
1994	416,365.44	69.00	6,034.26	49.84	300,728.32

APT
Electric Division
356.00 Purification Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: *69* ***Survivor Curve:*** *R2*

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
1995	5,689.86	69.00	82.46	50.65	4,176.53
1996	115,891.24	69.00	1,679.58	51.47	86,441.76
1998	64,489.56	69.00	934.63	53.12	49,643.79
2000	17,260.35	69.00	250.15	54.78	13,704.15
2001	51,087.56	69.00	740.40	55.63	41,186.02
2002	43,416.62	69.00	629.22	56.47	35,533.92
2004	18,207.40	69.00	263.87	58.18	15,352.11
2005	538,775.79	69.00	7,808.32	59.04	461,006.51
2007	2,766,244.05	69.00	40,090.38	60.77	2,436,439.75
2009	1,295,013.59	69.00	18,768.26	62.52	1,173,439.21
2010	11,481,164.06	69.00	166,393.20	63.40	10,550,134.95
2011	15,945,678.64	69.00	231,096.12	64.29	14,857,011.77
2012	9,756,089.84	69.00	141,392.20	65.18	9,215,852.85
2013	1,887,854.84	69.00	27,360.14	66.07	1,807,732.59
2014	12,178.23	69.00	176.50	66.97	11,819.78
2015	19,380.07	69.00	280.87	67.87	19,062.42
Total	49,904,221.47	69.00	723,247.50	61.61	44,562,868.10

Composite Average Remaining Life ... *61.6* ***Years***

APT
Electric Division
357.00 Other Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 40 **Survivor Curve:** R2.5

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1952	1,573.72	40.00	39.34	2.66	104.74
1960	113.45	40.00	2.84	4.44	12.59
1961	5,065.83	40.00	126.65	4.67	590.96
1962	156.40	40.00	3.91	4.91	19.19
1965	273.96	40.00	6.85	5.65	38.70
1966	41.30	40.00	1.03	5.92	6.11
1967	1,924.77	40.00	48.12	6.19	298.06
1969	375.50	40.00	9.39	6.79	63.73
1971	160.10	40.00	4.00	7.45	29.82
1978	365.40	40.00	9.13	10.40	94.97
1980	418.27	40.00	10.46	11.43	119.55
1984	184.08	40.00	4.60	13.75	63.26
1987	2,693.30	40.00	67.33	15.67	1,055.19
1988	59,020.23	40.00	1,475.50	16.34	24,115.08
1989	1,291.68	40.00	32.29	17.03	550.03
1990	18,966.40	40.00	474.16	17.73	8,409.01
1991	10,412.34	40.00	260.31	18.45	4,803.21
1993	2,119.87	40.00	53.00	19.92	1,055.93
1994	43,645.60	40.00	1,091.14	20.68	22,563.21
1995	21,624.85	40.00	540.62	21.45	11,594.57
1997	37,706.50	40.00	942.66	23.02	21,696.65
1998	27,560.74	40.00	689.02	23.82	16,410.52
2006	326,157.72	40.00	8,153.92	30.59	249,456.20
2007	7,630.21	40.00	190.75	31.48	6,005.15
2009	32,928.88	40.00	823.22	33.28	27,394.79
2014	3,070.83	40.00	76.77	37.88	2,908.30
2015	15,161.28	40.00	379.03	38.82	14,714.45

APT
Electric Division
357.00 Other Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: ***40*** ***Survivor Curve:*** ***R2.5***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Total	620,643.21	40.00	15,516.03	26.69	414,173.98

Composite Average Remaining Life ... 26.6 Years

APT
Electric Division
365.20 ROW - City Gate
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 85 **Survivor Curve:** R4

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1910	772.33	85.00	9.09	5.37	48.82
1911	0.81	85.00	0.01	5.64	0.05
1913	1,237.94	85.00	14.56	6.17	89.89
1915	1,444.97	85.00	17.00	6.73	114.38
1916	5,658.96	85.00	66.58	7.01	466.89
1918	6.33	85.00	0.07	7.60	0.57
1920	17,820.65	85.00	209.65	8.19	1,717.76
1921	99.10	85.00	1.17	8.51	9.92
1922	1,326.20	85.00	15.60	8.83	137.82
1923	196.67	85.00	2.31	9.17	21.21
1925	355.02	85.00	4.18	9.87	41.21
1926	10,529.99	85.00	123.88	10.24	1,268.34
1927	186,748.26	85.00	2,197.03	10.62	23,339.64
1928	34,270.09	85.00	403.18	11.02	4,444.24
1929	16,806.40	85.00	197.72	11.44	2,261.66
1930	3,865.88	85.00	45.48	11.87	540.07
1933	86,620.68	85.00	1,019.06	13.28	13,536.46
1934	10,678.43	85.00	125.63	13.79	1,732.40
1935	9,167.14	85.00	107.85	14.32	1,543.89
1936	41,393.75	85.00	486.98	14.87	7,240.84
1937	123.38	85.00	1.45	15.43	22.40
1938	13,048.96	85.00	153.52	16.02	2,458.82
1940	126,137.60	85.00	1,483.96	17.23	25,571.31
1941	93,665.93	85.00	1,101.95	17.86	19,682.63
1942	1,551.07	85.00	18.25	18.51	337.82
1943	9,412.77	85.00	110.74	19.17	2,122.72
1944	7,743.74	85.00	91.10	19.83	1,806.99

APT
Electric Division
365.20 ROW - City Gate
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 85 **Survivor Curve:** R4

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1945	271.22	85.00	3.19	20.51	65.44
1946	14,182.90	85.00	166.86	21.19	3,536.03
1947	5,997.63	85.00	70.56	21.89	1,544.37
1948	73,253.21	85.00	861.80	22.59	19,465.14
1949	100,014.85	85.00	1,176.64	23.29	27,408.50
1950	154,937.92	85.00	1,822.79	24.01	43,763.69
1951	97,604.21	85.00	1,148.28	24.73	28,400.08
1952	69,441.15	85.00	816.95	25.46	20,803.39
1953	70,893.66	85.00	834.04	26.21	21,860.92
1954	62,045.81	85.00	729.95	26.96	19,680.48
1955	90,880.17	85.00	1,069.17	27.72	29,638.27
1956	54,594.44	85.00	642.28	28.49	18,297.79
1957	66,129.93	85.00	778.00	29.27	22,768.16
1958	109,924.15	85.00	1,293.22	30.05	38,861.71
1959	159,722.33	85.00	1,879.08	30.85	57,969.84
1960	56,080.07	85.00	659.76	31.65	20,884.07
1961	125,623.52	85.00	1,477.92	32.47	47,982.23
1962	239,408.12	85.00	2,816.55	33.29	93,753.60
1963	175,109.80	85.00	2,060.11	34.12	70,281.33
1964	120,281.54	85.00	1,415.07	34.96	49,466.01
1965	94,923.02	85.00	1,116.74	35.80	39,982.05
1966	170,716.39	85.00	2,008.42	36.66	73,621.24
1967	688,686.25	85.00	8,102.15	37.52	303,973.33
1968	69,182.97	85.00	813.91	38.39	31,243.08
1969	93,489.63	85.00	1,099.87	39.26	43,183.30
1970	377,066.13	85.00	4,436.05	40.15	178,102.24
1971	219,973.86	85.00	2,587.91	41.04	106,206.38

APT
Electric Division
365.20 ROW - City Gate
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 85 **Survivor Curve:** R4

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1972	1,020,250.58	85.00	12,002.89	41.94	503,357.51
1973	339,704.07	85.00	3,996.50	42.84	171,208.51
1974	134,091.81	85.00	1,577.54	43.75	69,015.81
1975	154,695.02	85.00	1,819.93	44.66	81,285.52
1976	40,387.24	85.00	475.14	45.59	21,660.76
1977	196,279.77	85.00	2,309.16	46.51	107,410.02
1978	21,293.43	85.00	250.51	47.45	11,885.80
1979	116,953.21	85.00	1,375.91	48.38	66,570.81
1980	241,542.59	85.00	2,841.66	49.32	140,162.61
1981	172,602.89	85.00	2,030.61	50.27	102,082.18
1982	32,087.42	85.00	377.50	51.22	19,336.07
1983	15,586.43	85.00	183.37	52.18	9,567.40
1984	44,151.26	85.00	519.42	53.13	27,598.72
1985	569,186.13	85.00	6,696.27	54.09	362,230.58
1986	23,137.44	85.00	272.20	55.06	14,987.16
1987	382,495.14	85.00	4,499.92	56.03	252,118.63
1988	146,741.08	85.00	1,726.36	57.00	98,398.49
1989	106,553.55	85.00	1,253.56	57.97	72,670.12
1990	72,784.80	85.00	856.29	58.95	50,474.90
1991	1,570,496.78	85.00	18,476.34	59.92	1,107,174.23
1992	397,083.91	85.00	4,671.55	60.90	284,514.65
1993	286,662.47	85.00	3,372.48	61.89	208,710.79
1994	305,027.32	85.00	3,588.54	62.87	225,611.70
1995	328,183.32	85.00	3,860.96	63.86	246,543.11
1996	262,250.83	85.00	3,085.29	64.84	200,056.77
1997	121,968.96	85.00	1,434.92	65.83	94,461.34
1998	61,036.41	85.00	718.07	66.82	47,981.73

APT
Electric Division
365.20 ROW - City Gate

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: *85* ***Survivor Curve:*** *R4*

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
1999	7,609.46	85.00	89.52	67.81	6,070.61
2001	63,857.07	85.00	751.26	69.80	52,434.05
2002	121,540.12	85.00	1,429.88	70.79	101,219.02
2003	56,128.88	85.00	660.34	71.78	47,400.83
2004	51,390.95	85.00	604.60	72.78	44,001.34
2005	1,525,841.42	85.00	17,950.99	73.77	1,324,309.18
2006	4,381,629.91	85.00	51,548.33	74.77	3,854,254.47
2007	126,031.46	85.00	1,482.72	75.77	112,339.91
2008	311,577.81	85.00	3,665.60	76.76	281,383.96
2009	83,897.98	85.00	987.03	77.76	76,752.22
2010	52,186.70	85.00	613.96	78.76	48,354.54
2014	661,216.30	85.00	7,778.98	82.75	643,729.58
2015	120,048.54	85.00	1,412.33	83.75	118,284.66
Total	18,967,308.39	85.00	223,143.69	57.50	12,830,911.69

Composite Average Remaining Life ... 57.5 Years

APT
Electric Division
366.00 Structures & Improvements
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 45 **Survivor Curve:** L0

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1910	517.38	45.00	11.50	12.18	140.10
1911	0.66	45.00	0.01	12.36	0.18
1915	35.85	45.00	0.80	13.05	10.40
1918	0.79	45.00	0.02	13.58	0.24
1921	2,351.96	45.00	52.27	14.13	738.59
1922	2,362.72	45.00	52.51	14.31	751.57
1926	7,783.73	45.00	172.98	15.07	2,607.25
1927	8,580.74	45.00	190.69	15.26	2,910.50
1928	7,053.92	45.00	156.76	15.46	2,423.19
1929	15,535.87	45.00	345.25	15.66	5,404.92
1930	2,173.44	45.00	48.30	15.85	765.74
1935	8,781.91	45.00	195.16	16.87	3,292.27
1938	19.47	45.00	0.43	17.50	7.57
1940	2,590.22	45.00	57.56	17.93	1,032.01
1941	3,511.39	45.00	78.03	18.15	1,416.06
1942	4,554.57	45.00	101.22	18.37	1,859.06
1943	487.93	45.00	10.84	18.59	201.57
1946	2,808.11	45.00	62.40	19.27	1,202.39
1947	363.76	45.00	8.08	19.50	157.62
1948	58,743.48	45.00	1,305.45	19.73	25,759.10
1949	8,261.44	45.00	183.59	19.97	3,665.55
1950	22,921.03	45.00	509.37	20.20	10,290.81
1951	4,121.83	45.00	91.60	20.44	1,872.53
1952	10,104.71	45.00	224.56	20.69	4,644.94
1953	2,977.08	45.00	66.16	20.93	1,384.70
1954	4,209.53	45.00	93.55	21.17	1,980.87
1955	7,287.98	45.00	161.96	21.42	3,469.85

APT
Electric Division
366.00 Structures & Improvements
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 45 **Survivor Curve:** L0

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1956	5,694.91	45.00	126.56	21.68	2,743.25
1957	9,293.75	45.00	206.53	21.93	4,529.36
1958	19,846.61	45.00	441.05	22.19	9,785.07
1959	3,278.60	45.00	72.86	22.45	1,635.35
1960	30,665.96	45.00	681.49	22.71	15,474.61
1961	12,480.44	45.00	277.35	22.97	6,371.30
1962	10,436.62	45.00	231.93	23.24	5,389.98
1963	9,408.27	45.00	209.08	23.51	4,915.10
1964	31,139.32	45.00	692.00	23.78	16,456.72
1965	6,900.09	45.00	153.34	24.06	3,688.89
1966	16,128.27	45.00	358.42	24.34	8,722.32
1967	16,855.32	45.00	374.57	24.62	9,220.63
1968	23,710.57	45.00	526.92	24.90	13,120.62
1969	48,973.10	45.00	1,088.32	25.19	27,412.91
1970	32,682.57	45.00	726.30	25.48	18,505.28
1971	8,428.06	45.00	187.30	25.77	4,827.09
1972	17,365.00	45.00	385.90	26.07	10,059.84
1973	2,866.18	45.00	63.69	26.37	1,679.53
1974	20,528.10	45.00	456.19	26.67	12,167.45
1975	11,300.26	45.00	251.12	26.98	6,774.90
1976	10,192.04	45.00	226.50	27.29	6,180.53
1977	10,370.15	45.00	230.45	27.60	6,360.71
1978	9,969.29	45.00	221.55	27.92	6,184.99
1979	3,452.00	45.00	76.71	28.24	2,166.20
1980	10,846.38	45.00	241.04	28.56	6,884.36
1981	115,463.33	45.00	2,565.93	28.89	74,124.84
1982	54,493.62	45.00	1,211.00	29.22	35,384.41

APT
Electric Division
366.00 Structures & Improvements
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 45 **Survivor Curve:** L0

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1983	9,514.30	45.00	211.43	29.55	6,248.69
1984	49,410.42	45.00	1,098.04	29.89	32,822.79
1985	37,923.15	45.00	842.76	30.23	25,480.08
1986	12,436.99	45.00	276.39	30.58	8,451.89
1987	58,836.34	45.00	1,307.51	30.93	40,441.43
1988	92,383.90	45.00	2,053.03	31.28	64,227.18
1989	65,291.88	45.00	1,450.97	31.64	45,911.69
1990	144,499.88	45.00	3,211.20	32.00	102,771.01
1991	132,053.17	45.00	2,934.60	32.37	94,993.37
1992	108,095.94	45.00	2,402.20	32.74	78,649.39
1993	309,956.39	45.00	6,888.12	33.12	228,101.54
1994	158,714.43	45.00	3,527.09	33.49	118,136.98
1995	849,178.75	45.00	18,871.18	33.88	639,312.27
1996	217,329.41	45.00	4,829.68	34.27	165,495.69
1997	51,602.62	45.00	1,146.76	34.66	39,747.76
1998	132,977.19	45.00	2,955.13	35.06	103,613.69
1999	32,042.87	45.00	712.08	35.47	25,258.82
2000	69,349.14	45.00	1,541.14	35.89	55,309.76
2001	16,592.05	45.00	368.72	36.32	13,390.26
2005	146,486.83	45.00	3,255.36	38.13	124,125.84
2006	399,741.14	45.00	8,883.39	38.62	343,032.90
2007	831,517.39	45.00	18,478.69	39.12	722,803.27
2008	694,210.71	45.00	15,427.35	39.63	611,461.13
2009	21,534.22	45.00	478.55	40.17	19,224.01
2010	923,218.14	45.00	20,516.55	40.73	835,599.66
2011	316,196.70	45.00	7,026.79	41.31	290,264.11
2012	40.84	45.00	0.91	41.92	38.04

APT
Electric Division
366.00 Structures & Improvements
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: *45* ***Survivor Curve:*** *L0*

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
2013	1,488,433.24	45.00	33,077.24	42.56	1,407,725.35
2014	1,326,295.81	45.00	29,474.08	43.24	1,274,386.97
2015	1,408,070.74	45.00	31,291.36	43.97	1,375,760.83
2016	617,655.26	45.00	13,726.07	44.67	613,090.00
Total	11,462,500.15	45.00	254,729.51	38.88	9,904,632.22

Composite Average Remaining Life ... 38.8 Years

APT
Electric Division
367.03 Mains - All

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 70 **Survivor Curve:** L0

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1910	3,185.11	70.00	45.50	30.67	1,395.65
1916	220,972.14	70.00	3,156.84	32.10	101,331.03
1920	133,241.89	70.00	1,903.51	33.08	62,970.40
1922	12,034.32	70.00	171.92	33.58	5,773.81
1923	66.69	70.00	0.95	33.83	32.24
1925	26,000.46	70.00	371.45	34.34	12,757.27
1926	10,699.65	70.00	152.86	34.60	5,289.32
1927	1,381,360.61	70.00	19,734.32	34.86	687,972.86
1928	196,104.56	70.00	2,801.58	35.12	98,400.18
1929	2,027,924.19	70.00	28,971.22	35.39	1,025,201.53
1930	22,924.14	70.00	327.50	35.65	11,675.29
1932	294.25	70.00	4.20	36.18	152.11
1935	127,854.36	70.00	1,826.55	37.00	67,579.76
1936	16,314.86	70.00	233.08	37.27	8,687.85
1937	1,149.95	70.00	16.43	37.55	616.89
1938	339,464.75	70.00	4,849.64	37.83	183,461.91
1940	718,211.32	70.00	10,260.47	38.39	393,929.51
1941	248,373.48	70.00	3,548.30	38.68	137,237.33
1942	1,467,755.47	70.00	20,968.57	38.96	817,011.29
1944	115,270.76	70.00	1,646.77	39.54	65,117.07
1945	6,292.78	70.00	89.90	39.84	3,581.16
1946	91,493.40	70.00	1,307.09	40.13	52,451.84
1947	187,737.41	70.00	2,682.04	40.43	108,423.05
1948	1,799,869.99	70.00	25,713.21	40.72	1,047,133.29
1949	3,374,580.63	70.00	48,209.75	41.02	1,977,769.56
1950	3,093,904.17	70.00	44,199.97	41.33	1,826,671.91
1951	333,866.47	70.00	4,769.67	41.63	198,567.84

APT
Electric Division
367.03 Mains - All

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 70 **Survivor Curve:** L0

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1952	792,486.38	70.00	11,321.58	41.94	474,811.72
1953	1,716,920.32	70.00	24,528.18	42.25	1,036,244.76
1954	1,096,710.55	70.00	15,667.77	42.56	666,797.42
1955	305,087.74	70.00	4,358.53	42.87	186,856.91
1956	986,866.32	70.00	14,098.52	43.19	608,876.34
1957	815,939.93	70.00	11,656.64	43.51	507,127.65
1958	2,924,206.60	70.00	41,775.64	43.82	1,830,815.18
1959	2,027,210.58	70.00	28,961.03	44.15	1,278,558.87
1960	665,307.75	70.00	9,504.68	44.47	422,690.15
1961	2,644,214.13	70.00	37,775.63	44.80	1,692,306.20
1962	3,192,843.34	70.00	45,613.43	45.13	2,058,438.64
1963	4,236,924.92	70.00	60,529.33	45.46	2,751,641.00
1964	2,981,678.49	70.00	42,596.70	45.79	1,950,670.38
1965	2,623,719.52	70.00	37,482.84	46.13	1,729,080.99
1966	2,576,579.20	70.00	36,809.39	46.47	1,710,494.81
1967	25,433,134.86	70.00	363,341.49	46.81	17,008,011.83
1968	1,058,579.81	70.00	15,123.03	47.15	713,109.18
1969	4,594,823.08	70.00	65,642.32	47.50	3,118,007.60
1970	7,232,626.96	70.00	103,326.37	47.85	4,944,040.89
1971	3,641,608.66	70.00	52,024.55	48.20	2,507,598.11
1972	61,473,940.41	70.00	878,225.72	48.55	42,641,280.97
1973	3,862,909.45	70.00	55,186.09	48.91	2,699,177.49
1974	2,486,485.23	70.00	35,522.29	49.27	1,750,161.33
1975	3,925,833.79	70.00	56,085.04	49.63	2,783,564.59
1976	2,222,398.72	70.00	31,749.51	50.00	1,587,330.21
1977	3,025,668.19	70.00	43,225.14	50.36	2,176,925.51
1978	844,073.20	70.00	12,058.55	50.73	611,757.88

APT
Electric Division
367.03 Mains - All

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 70 **Survivor Curve:** L0

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1979	3,316,950.34	70.00	47,386.44	51.10	2,421,668.22
1980	1,610,790.90	70.00	23,011.99	51.48	1,184,655.57
1981	4,646,744.30	70.00	66,384.07	51.86	3,442,537.50
1982	2,146,516.63	70.00	30,665.45	52.24	1,601,923.01
1983	1,403,163.64	70.00	20,045.80	52.62	1,054,859.67
1984	2,503,926.94	70.00	35,771.47	53.01	1,896,226.90
1985	6,420,829.47	70.00	91,728.91	53.40	4,898,318.49
1986	1,992,464.52	70.00	28,464.64	53.79	1,531,248.16
1987	20,379,052.12	70.00	291,138.12	54.19	15,777,755.87
1988	6,585,648.24	70.00	94,083.54	54.60	5,136,685.35
1989	9,942,173.05	70.00	142,035.34	55.01	7,812,676.47
1990	23,469,619.25	70.00	335,290.42	55.42	18,581,450.47
1991	14,675,415.51	70.00	209,655.14	55.84	11,706,696.08
1992	11,667,961.48	70.00	166,690.21	56.26	9,378,357.72
1993	8,297,812.91	70.00	118,543.77	56.69	6,720,731.48
1994	13,389,629.76	70.00	191,286.21	57.13	10,928,417.45
1995	6,300,872.72	70.00	90,015.19	57.58	5,182,764.59
1996	14,413,939.47	70.00	205,919.65	58.03	11,949,108.09
1997	2,656,345.42	70.00	37,948.94	58.49	2,219,499.55
1998	10,168,584.94	70.00	145,269.89	58.96	8,564,489.58
1999	9,544,846.59	70.00	136,359.08	59.43	8,103,951.22
2000	14,502,686.08	70.00	207,187.50	59.92	12,414,231.41
2001	5,241,652.71	70.00	74,883.02	60.41	4,523,831.99
2002	11,270,485.97	70.00	161,011.81	60.92	9,808,618.35
2003	10,102,141.22	70.00	144,320.67	61.43	8,866,207.05
2004	21,708,519.67	70.00	310,131.09	61.96	19,216,662.22
2005	39,291,857.62	70.00	561,329.23	62.50	35,084,693.84

APT
Electric Division
367.03 Mains - All

Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: *70* ***Survivor Curve:*** *L0*

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
2006	33,252,948.99	70.00	475,056.50	63.05	29,954,568.68
2007	19,957,587.37	70.00	285,117.02	63.63	18,140,735.29
2008	41,608,574.49	70.00	594,426.19	64.21	38,166,864.65
2009	70,809,915.74	70.00	1,011,600.83	64.81	65,563,563.68
2010	34,480,218.34	70.00	492,589.45	65.43	32,230,512.21
2011	55,817,592.13	70.00	797,418.30	66.07	52,689,314.29
2012	130,420,175.30	70.00	1,863,201.73	66.74	124,350,527.24
2013	236,422,673.70	70.00	3,377,568.95	67.43	227,751,900.88
2014	171,894,687.90	70.00	2,455,712.69	68.17	167,394,744.13
2015	191,306,487.80	70.00	2,733,032.51	68.93	188,395,091.08
2016	213,164,431.10	70.00	3,045,298.29	69.65	212,103,553.22
Total	1,642,131,650.27	70.00	23,459,733.32	63.82	1,497,097,210.24

Composite Average Remaining Life ... *63.8* *Years*

APT
Electric Division
368.00 Compressor Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 32 **Survivor Curve:** L0

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1953	2,823.96	32.00	88.25	10.90	961.96
1954	387.06	32.00	12.10	11.10	134.22
1958	143.13	32.00	4.47	11.90	53.23
1959	1,183.92	32.00	37.00	12.11	447.97
1962	3,681.08	32.00	115.04	12.75	1,466.39
1963	1,918.20	32.00	59.95	12.96	777.12
1964	1,236.81	32.00	38.65	13.19	509.62
1965	5.67	32.00	0.18	13.41	2.38
1966	2,175.03	32.00	67.97	13.64	926.89
1967	75.16	32.00	2.35	13.87	32.57
1970	4,790.97	32.00	149.72	14.58	2,182.35
1971	85.30	32.00	2.67	14.82	39.50
1973	2,732.47	32.00	85.39	15.31	1,307.64
1975	50.62	32.00	1.58	15.82	25.03
1976	10,334.06	32.00	322.95	16.08	5,194.20
1977	36.52	32.00	1.14	16.35	18.66
1978	17,275.36	32.00	539.87	16.62	8,970.36
1979	5,030.91	32.00	157.22	16.89	2,654.93
1980	110,153.77	32.00	3,442.39	17.16	59,080.07
1981	703,613.76	32.00	21,988.44	17.44	383,530.48
1982	447,067.36	32.00	13,971.18	17.73	247,658.29
1983	11,925.33	32.00	372.68	18.01	6,713.60
1984	165,560.22	32.00	5,173.88	18.31	94,719.21
1985	115,098.37	32.00	3,596.91	18.60	66,917.64
1986	21,962.60	32.00	686.35	18.91	12,975.90
1987	28,725.63	32.00	897.70	19.21	17,245.95
1988	93,997.75	32.00	2,937.50	19.52	57,346.25

APT
Electric Division
368.00 Compressor Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 32 **Survivor Curve:** L0

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1989	94,859.13	32.00	2,964.42	19.84	58,807.40
1990	592,387.56	32.00	18,512.54	20.16	373,181.47
1991	7,976.35	32.00	249.27	20.48	5,105.94
1992	129,866.43	32.00	4,058.42	20.81	84,474.10
1993	2,741,817.13	32.00	85,683.77	21.15	1,812,247.32
1994	1,677,615.67	32.00	52,426.71	21.49	1,126,735.09
1995	15,576,350.44	32.00	486,772.24	21.84	10,630,155.44
1996	42,126.69	32.00	1,316.49	22.19	29,213.21
1997	128,021.43	32.00	4,000.76	22.55	90,209.47
1998	609,588.37	32.00	19,050.08	22.91	436,469.27
1999	32,480.89	32.00	1,015.05	23.28	23,631.58
2000	1,977,752.66	32.00	61,806.20	23.66	1,462,127.62
2001	507,408.60	32.00	15,856.89	24.04	381,172.04
2004	267,101.56	32.00	8,347.12	25.23	210,615.28
2005	21,718,315.64	32.00	678,713.11	25.65	17,409,948.64
2006	22,053,249.04	32.00	689,180.02	26.08	17,976,577.10
2007	7,133,288.27	32.00	222,920.43	26.53	5,914,429.21
2008	11,861,176.14	32.00	370,670.35	27.00	10,006,604.29
2009	1,473,744.00	32.00	46,055.57	27.48	1,265,576.78
2010	3,178,322.36	32.00	99,324.88	27.98	2,779,532.08
2011	3,438,499.39	32.00	107,455.60	28.52	3,064,157.98
2012	5,016,988.23	32.00	156,784.52	29.07	4,558,445.36
2013	23,410,045.93	32.00	731,580.90	29.67	21,704,613.38
2014	19,014,754.05	32.00	594,224.85	30.30	18,007,587.17
2015	1,549,566.47	32.00	48,425.08	31.00	1,501,032.29
2016	3,945,373.19	32.00	123,295.77	31.67	3,905,371.27

APT

Electric Division

368.00 Compressor Station Equipment

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of September 30, 2016

Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: *32* ***Survivor Curve:*** *L0*

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Total	149,930,746.64	32.00	4,685,444.51	26.85	125,789,913.20

Composite Average Remaining Life ... 26.8 Years

APT
Electric Division
369.00 M&R Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 37 **Survivor Curve:** L0

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1923	21.72	37.00	0.59	9.05	5.31
1925	63.03	37.00	1.70	9.38	15.97
1926	1,631.17	37.00	44.09	9.54	420.52
1927	1,335.39	37.00	36.09	9.70	350.22
1928	13,797.22	37.00	372.91	9.87	3,682.00
1929	2,403.99	37.00	64.97	10.04	652.38
1930	671.16	37.00	18.14	10.21	185.21
1932	461.21	37.00	12.47	10.56	131.60
1935	276.72	37.00	7.48	11.09	82.93
1936	90.21	37.00	2.44	11.27	27.47
1940	738.91	37.00	19.97	12.00	239.74
1942	3,944.91	37.00	106.62	12.39	1,320.62
1944	2,910.80	37.00	78.67	12.77	1,004.84
1946	3,983.35	37.00	107.66	13.17	1,417.82
1947	3,213.23	37.00	86.85	13.37	1,161.11
1948	2,977.58	37.00	80.48	13.57	1,092.31
1949	10,591.95	37.00	286.28	13.78	3,944.75
1950	3,630.62	37.00	98.13	13.99	1,372.45
1951	2,859.67	37.00	77.29	14.20	1,097.21
1952	10,214.49	37.00	276.07	14.41	3,978.10
1953	42,275.98	37.00	1,142.62	14.62	16,708.79
1954	10,776.57	37.00	291.27	14.84	4,322.28
1955	12,381.34	37.00	334.64	15.06	5,039.83
1956	9,948.69	37.00	268.89	15.28	4,108.99
1957	53,742.20	37.00	1,452.53	15.51	22,521.52
1958	14,795.48	37.00	399.89	15.73	6,290.91
1959	18,036.63	37.00	487.49	15.96	7,781.33

APT
Electric Division
369.00 M&R Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 37 **Survivor Curve:** L0

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1960	150,984.86	37.00	4,080.78	16.19	66,082.20
1961	115,305.64	37.00	3,116.45	16.43	51,197.15
1962	166,560.98	37.00	4,501.77	16.67	75,029.26
1963	146,087.00	37.00	3,948.40	16.91	66,752.86
1964	75,846.71	37.00	2,049.97	17.15	35,155.14
1965	119,771.69	37.00	3,237.16	17.40	56,314.83
1966	114,542.88	37.00	3,095.84	17.64	54,625.20
1967	472,067.24	37.00	12,758.92	17.90	228,338.73
1968	205,593.41	37.00	5,556.73	18.15	100,862.37
1969	350,515.17	37.00	9,473.64	18.41	174,413.17
1970	280,724.42	37.00	7,587.35	18.67	141,666.37
1971	243,339.29	37.00	6,576.92	18.94	124,539.77
1972	557,800.37	37.00	15,076.09	19.20	289,531.36
1973	259,987.89	37.00	7,026.89	19.48	136,852.87
1974	339,700.92	37.00	9,181.35	19.75	181,333.26
1975	301,860.95	37.00	8,158.62	20.03	163,404.37
1976	101,142.49	37.00	2,733.65	20.31	55,522.49
1977	355,685.94	37.00	9,613.39	20.60	197,996.98
1978	184,531.09	37.00	4,987.46	20.89	104,163.35
1979	209,993.80	37.00	5,675.66	21.18	120,201.75
1980	455,283.84	37.00	12,305.30	21.47	264,255.94
1981	428,623.80	37.00	11,584.74	21.78	252,263.79
1982	552,010.12	37.00	14,919.60	22.08	329,434.30
1983	320,363.22	37.00	8,658.70	22.39	193,860.31
1984	326,608.05	37.00	8,827.48	22.70	200,399.37
1985	1,869,727.13	37.00	50,534.53	23.02	1,163,240.79
1986	992,505.47	37.00	26,825.20	23.34	626,106.81

APT
Electric Division
369.00 M&R Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 37 **Survivor Curve:** L0

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1987	802,849.72	37.00	21,699.23	23.67	513,528.04
1988	1,066,039.67	37.00	28,812.66	24.00	691,380.70
1989	1,747,098.12	37.00	47,220.15	24.33	1,148,889.13
1990	2,118,942.49	37.00	57,270.27	24.67	1,412,828.09
1991	2,542,488.76	37.00	68,717.77	25.01	1,718,852.88
1992	1,458,598.80	37.00	39,422.66	25.36	999,834.32
1993	1,029,499.15	37.00	27,825.05	25.72	715,526.14
1994	2,298,655.75	37.00	62,127.51	26.07	1,619,874.89
1995	2,518,418.03	37.00	68,067.19	26.44	1,799,467.63
1996	2,353,998.77	37.00	63,623.31	26.81	1,705,423.56
1997	312,617.90	37.00	8,449.36	27.18	229,640.82
1998	3,132,626.54	37.00	84,667.87	27.56	2,333,211.68
1999	2,714,921.22	37.00	73,378.23	27.94	2,050,295.03
2000	4,493,487.24	37.00	121,448.89	28.33	3,440,933.56
2001	3,273,833.16	37.00	88,484.37	28.73	2,542,249.68
2002	1,794,325.08	37.00	48,496.58	29.14	1,413,104.67
2003	2,000,372.75	37.00	54,065.59	29.56	1,597,961.99
2004	6,600,879.34	37.00	178,406.97	29.98	5,349,526.84
2005	2,448,646.33	37.00	66,181.42	30.43	2,013,658.83
2006	6,991,174.57	37.00	188,955.78	30.88	5,835,116.69
2007	6,883,239.01	37.00	186,038.52	31.35	5,832,600.19
2008	6,215,742.75	37.00	167,997.59	31.84	5,348,907.26
2009	11,437,151.84	37.00	309,120.58	32.34	9,998,332.60
2010	8,326,215.01	37.00	225,038.93	32.87	7,397,662.47
2011	11,948,083.23	37.00	322,929.91	33.43	10,794,077.15
2012	22,009,435.72	37.00	594,865.71	34.01	20,229,079.81
2013	16,243,857.12	37.00	439,035.04	34.62	15,198,835.00

APT
Electric Division
369.00 M&R Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: *37* ***Survivor Curve:*** *L0*

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
2014	35,869,411.82	37.00	969,469.79	35.28	34,198,127.32
2015	30,006,837.53	37.00	811,017.55	35.99	29,185,030.99
2016	18,010,380.97	37.00	486,780.22	36.67	17,850,926.08
Total	228,574,766.98	37.00	6,177,863.56	32.49	200,707,385.01

Composite Average Remaining Life ... 32.4 Years

APT
Electric Division
370.00 Communication Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 28 **Survivor Curve:** R1.5

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1985	471.66	28.00	16.84	7.58	127.66
1989	11,041.17	28.00	394.32	9.36	3,691.87
1990	21,077.84	28.00	752.76	9.86	7,418.46
1993	1,329.04	28.00	47.46	11.44	543.21
1994	7,358.34	28.00	262.79	12.01	3,156.25
1995	165,702.70	28.00	5,917.79	12.59	74,524.27
1997	29,300.50	28.00	1,046.42	13.81	14,450.13
1998	102,304.59	28.00	3,653.64	14.44	52,763.47
1999	19,604.17	28.00	700.13	15.09	10,563.31
2000	141,045.67	28.00	5,037.21	15.75	79,332.97
2001	39,590.53	28.00	1,413.91	16.42	23,222.77
2002	5,010.78	28.00	178.95	17.11	3,062.26
2003	16,060.27	28.00	573.57	17.81	10,216.80
2004	159,578.18	28.00	5,699.07	18.52	105,571.45
2005	3,454,693.89	28.00	123,378.62	19.25	2,374,729.55
2006	1,299.08	28.00	46.39	19.98	926.97
2007	795,885.52	28.00	28,423.72	20.72	589,030.07
2008	426,140.86	28.00	15,218.91	21.48	326,826.86
2009	410,948.18	28.00	14,676.33	22.24	326,332.37
2010	5,223,881.32	28.00	186,562.19	23.00	4,291,763.73
2011	30,509.00	28.00	1,089.58	23.78	25,911.98
2012	1,209,590.01	28.00	43,198.49	24.57	1,061,293.49
2013	844,584.94	28.00	30,162.94	25.36	764,986.06
2014	249,845.91	28.00	8,922.83	26.16	233,463.31
2015	564,254.19	28.00	20,151.40	26.98	543,598.22
2016	202,638.64	28.00	7,236.90	27.69	200,404.01

APT
Electric Division
370.00 Communication Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: ***28*** ***Survivor Curve:*** ***R1.5***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Total	14,133,746.98	28.00	504,763.15	22.05	11,127,911.51

Composite Average Remaining Life ... 22.0 Years

APT
Electric Division
371.00 Other Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: *34* ***Survivor Curve:*** *L0*

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
1911	4.98	34.00	0.15	5.43	0.80
1922	301.52	34.00	8.87	6.99	62.00
1925	29.37	34.00	0.86	7.44	6.43
1927	6,479.18	34.00	190.57	7.76	1,478.27
1928	5,954.82	34.00	175.15	7.91	1,385.86
1929	5,211.66	34.00	153.29	8.07	1,236.97
1935	854.94	34.00	25.15	9.05	227.46
1940	23,663.25	34.00	695.99	9.91	6,894.00
1941	11,398.11	34.00	335.25	10.08	3,380.14
1942	9,493.38	34.00	279.22	10.26	2,865.31
1945	6,885.97	34.00	202.53	10.81	2,189.92
1946	845.99	34.00	24.88	11.00	273.69
1947	3,694.75	34.00	108.67	11.19	1,215.77
1948	10,796.70	34.00	317.56	11.38	3,613.23
1949	52,012.11	34.00	1,529.80	11.57	17,701.37
1950	68.08	34.00	2.00	11.77	23.56
1951	1,549.35	34.00	45.57	11.96	545.17
1952	6,393.39	34.00	188.04	12.16	2,287.15
1953	12,820.59	34.00	377.08	12.36	4,662.51
1954	1,671.50	34.00	49.16	12.57	617.92
1955	26,520.53	34.00	780.03	12.78	9,965.24
1956	4,812.31	34.00	141.54	12.98	1,837.84
1957	30,330.32	34.00	892.09	13.20	11,771.98
1958	22,968.88	34.00	675.57	13.41	9,059.43
1959	19,783.87	34.00	581.89	13.63	7,929.27
1960	2,911.85	34.00	85.64	13.85	1,185.84
1961	518.84	34.00	15.26	14.07	214.71

APT
Electric Division
371.00 Other Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 34 **Survivor Curve:** L0

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1962	67,039.12	34.00	1,971.78	14.29	28,184.54
1963	4,282.41	34.00	125.96	14.52	1,829.03
1964	312.98	34.00	9.21	14.75	135.79
1965	3,489.66	34.00	102.64	14.98	1,537.98
1966	4,341.04	34.00	127.68	15.22	1,943.35
1967	7,291.86	34.00	214.47	15.46	3,315.61
1968	1,914.80	34.00	56.32	15.70	884.30
1969	1,006.16	34.00	29.59	15.95	471.93
1970	6,167.35	34.00	181.40	16.20	2,937.84
1971	15,660.15	34.00	460.60	16.45	7,575.79
1972	218.60	34.00	6.43	16.70	107.39
1973	1,304.95	34.00	38.38	16.96	651.01
1976	31,227.79	34.00	918.48	17.76	16,311.17
1978	650.71	34.00	19.14	18.31	350.42
1979	950.70	34.00	27.96	18.59	519.82
1980	20,756.76	34.00	610.51	18.87	11,523.00
1981	33,937.28	34.00	998.18	19.16	19,128.08
1982	41,186.12	34.00	1,211.38	19.46	23,568.21
1983	19,755.51	34.00	581.06	19.75	11,477.29
1984	19,626.45	34.00	577.26	20.05	11,576.10
1985	11,994.74	34.00	352.79	20.36	7,182.50
1986	14,882.33	34.00	437.72	20.67	9,047.22
1987	92,990.86	34.00	2,735.08	20.98	57,390.52
1988	84,242.40	34.00	2,477.77	21.30	52,781.59
1989	288,069.21	34.00	8,472.80	21.63	183,230.36
1990	260,325.52	34.00	7,656.80	21.95	168,098.36
1991	134,913.66	34.00	3,968.13	22.29	88,439.56

APT
Electric Division
371.00 Other Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: *34* ***Survivor Curve:*** *L0*

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
1992	54,823.96	34.00	1,612.50	22.63	36,484.07
1993	126,912.26	34.00	3,732.79	22.97	85,738.77
1994	194,675.46	34.00	5,725.87	23.32	133,513.36
1995	300,520.59	34.00	8,839.03	23.67	209,232.72
1996	107,546.46	34.00	3,163.20	24.03	76,013.28
1997	46,780.45	34.00	1,375.92	24.40	33,565.72
1998	10,542.03	34.00	310.07	24.77	7,678.82
1999	13,084.06	34.00	384.83	25.14	9,675.04
2000	325,915.84	34.00	9,585.96	25.52	244,656.54
2001	47,505.86	34.00	1,397.26	25.91	36,203.75
2002	108,651.28	34.00	3,195.69	26.31	84,068.12
2003	50,268.42	34.00	1,478.51	26.71	39,494.42
2004	3,540.07	34.00	104.12	27.13	2,824.67
2010	1,085,981.92	34.00	31,941.32	29.94	956,261.78
2011	320,430.61	34.00	9,424.63	30.48	287,239.05
2012	525,295.98	34.00	15,450.21	31.04	479,630.01
2013	160,161.08	34.00	4,710.72	31.65	149,074.29
Total	4,919,151.69	34.00	144,684.00	25.39	3,674,185.01

Composite Average Remaining Life ... 25.3 Years

APT
Electric Division
390.00 Structures & Improvements
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: 40 **Survivor Curve:** R1.5

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1921	28,468.60	0.00	0.00	0.00	0.00
1938	7,081.07	40.00	177.02	0.78	137.97
1953	17,428.63	40.00	435.71	4.80	2,091.64
1968	15,325.95	40.00	383.14	9.42	3,609.97
1975	14,800.30	40.00	370.00	12.28	4,545.20
1978	4,952.71	40.00	123.82	13.70	1,696.51
1981	2,409.64	40.00	60.24	15.24	917.97
1983	10,779.34	40.00	269.48	16.33	4,399.74
1984	14,963.02	40.00	374.07	16.89	6,317.63
1985	18,052.80	40.00	451.31	17.46	7,882.08
1987	2,027.96	40.00	50.70	18.65	945.56
1988	2,254.49	40.00	56.36	19.26	1,085.53
1990	54,544.29	40.00	1,363.59	20.51	27,972.49
1991	111,532.86	40.00	2,788.28	21.16	58,993.26
1992	33,085.54	40.00	827.13	21.81	18,039.62
1993	3,082.52	40.00	77.06	22.47	1,731.88
1995	34,076.96	40.00	851.91	23.83	20,299.80
1996	52,896.96	40.00	1,322.40	24.52	32,423.73
1997	2,279.00	40.00	56.97	25.22	1,436.83
1998	41,184.77	40.00	1,029.60	25.93	26,693.56
1999	430,852.12	40.00	10,771.14	26.64	286,968.16
2000	350,397.58	40.00	8,759.80	27.36	239,711.19
2001	412,338.75	40.00	10,308.31	28.10	289,621.12
2002	79,750.62	40.00	1,993.73	28.83	57,484.60
2004	8,798.56	40.00	219.96	30.33	6,670.70
2005	198,852.90	40.00	4,971.25	31.08	154,524.72
2006	99,729.99	40.00	2,493.21	31.85	79,397.85

APT
Electric Division
390.00 Structures & Improvements
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: ***40*** ***Survivor Curve:*** ***R1.5***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
2007	31,949.51	40.00	798.73	32.61	26,050.04
2008	910,968.70	40.00	22,773.87	33.39	760,382.15
2009	373,850.67	40.00	9,346.12	34.17	319,348.79
2010	283,982.79	40.00	7,099.46	34.95	248,160.29
2011	1,115,464.40	40.00	27,886.18	35.75	996,856.14
2012	38,385.64	40.00	959.63	36.54	35,069.29
2013	58,638.80	40.00	1,465.95	37.35	54,751.50
2014	971,884.05	40.00	24,296.73	38.16	927,112.46
2015	348,075.45	40.00	8,701.75	38.97	339,138.55
2016	94,458.29	40.00	2,361.42	39.69	93,728.35
Total	6,279,606.23	38.92	156,276.04	32.87	5,136,196.87

Composite Average Remaining Life ... 32.8 Years

APT
Electric Division
392.00 Transportation Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: *7* ***Survivor Curve:*** *L1*

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
2007	39,271.60	7.00	5,608.76	2.64	14,834.34
2008	84,300.82	7.00	12,039.82	2.92	35,173.92
2009	359,876.09	7.00	51,397.42	3.22	165,399.78
2010	120,823.11	7.00	17,255.93	3.54	61,032.28
2011	285,493.15	7.00	40,774.07	3.88	158,241.68
2012	118,312.65	7.00	16,897.39	4.25	71,865.19
2013	108,074.09	7.00	15,435.12	4.67	72,100.23
2014	333,328.26	7.00	47,605.87	5.21	247,950.01
2015	112,118.89	7.00	16,012.79	5.91	94,633.62
Total	1,561,598.66	7.00	223,027.16	4.13	921,231.05

Composite Average Remaining Life ... 4.13 Years

APT
Electric Division
396.00 Power Operated Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon Broad Group/Remaining Life Procedure and Technique

Average Service Life: ***15*** ***Survivor Curve:*** ***R1.5***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
2008	153,012.10	15.00	10,200.01	8.75	89,211.68
2009	228,758.93	15.00	15,249.40	9.44	143,916.18
2010	307,890.70	15.00	20,524.44	10.15	208,334.13
2011	1,224,631.36	15.00	81,635.72	10.88	888,496.14
2012	301,947.52	15.00	20,128.26	11.63	234,176.83
2013	188,295.66	15.00	12,552.06	12.40	155,654.87
2014	265,788.19	15.00	17,717.83	13.18	233,581.78
2015	243,219.67	15.00	16,213.38	13.98	226,690.52
2016	138,145.29	15.00	9,208.97	14.69	135,303.49
Total	3,051,689.42	15.00	203,430.08	11.38	2,315,365.61

Composite Average Remaining Life ... ***11.3*** ***Years***

Summary Adjustment
(ELG Accelerated Depreciation)

Plant Function	Plant Balance	Company Accrual	City of Dallas Accrual	City of Dallas Adjustment
Underground Storage Plant	$ 305,550,724	$ 10,035,700	$ 9,184,151	$ (851,549)
Transmission Plant	2,070,119,871	65,722,116	64,289,981	(1,432,134)
General Plant - Depreciated	10,892,894	632,743	597,907	(34,836)
General Plant - Amortized	27,647,361	2,085,808	2,085,808	-
Total Plant Studied	$ 2,414,210,850	$ 78,476,366	$ 76,157,847	**$ (2,318,519)**

*See Exhibit DJG-10 for details; plant balances as of the study date

Detailed Adjustment
(ELG Accelerated Depreciation)

		[1]	[2]			[3]			[4]	
			Company Proposal			City of Dallas Proposal			Difference	
Account No.	Description	Original Cost	Iowa Curve Type	AL	Rate	Annual Accrual	Iowa Curve Type	AL	Rate	Annual Accrual	Rate	Annual Accrual
	Underground Storage Plant											
350.20	Rights Of Way	32,563	R4	55	2.23%	726	R4	55	2.20%	717	-0.03%	(9)
351.00	Structures & Improvements	24,613,950	S3	52	2.39%	588,987	R2.5	75	1.65%	407,211	-0.74%	(181,777)
352.00	Wells	78,334,938	R0.5	55	3.27%	2,561,261	R0.5	55	3.19%	2,497,212	-0.08%	(64,049)
353.00	Lines	13,244,531	R0.5	40	3.66%	485,025	R0.5	42	3.39%	449,445	-0.27%	(35,580)
354.00	Compressor Station Equipment	88,180,195	R1.5	40	3.36%	2,958,943	L2	42	3.12%	2,755,246	-0.23%	(203,697)
355.00	Meas. & Reg. Equipment	50,619,681	R0.5	40	4.59%	2,323,554	R0.5	42	4.27%	2,160,805	-0.32%	(162,749)
356.00	Purification Equipment	49,904,221	R2.5	55	2.20%	1,097,856	R2	69	1.79%	894,455	-0.41%	(203,401)
357.00	Other Equipment	620,643	R2.5	40	3.12%	19,347	R2.5	40	3.07%	19,061	-0.05%	(286)
	Total Underground Storage Plant	305,550,724			3.28%	10,035,700			3.01%	9,184,151	-0.28%	(851,549)
	Transmission Plant											
365.20	ROW - City Gate	18,967,308	R4	85	1.31%	248,564	R1	89	1.35%	256,632	0.04%	8,067
366.00	Structures & Improvements	11,462,500	L0	45	4.06%	465,303	L0	45	3.97%	454,594	-0.09%	(10,709)
367.03	Mains - All	1,642,131,650	L0	70	2.83%	46,440,537	L0	70	2.78%	45,655,038	-0.05%	(785,499)
368.00	Compressor Station Equipment	149,930,747	L0	32	4.40%	6,597,250	L0	32	4.27%	6,406,292	-0.13%	(190,958)
369.00	M&R Station Equipment	228,574,767	L0	37	4.82%	11,019,272	L0	37	4.69%	10,722,734	-0.13%	(296,538)
370.00	Communication Equipment	14,133,747	L2	25	5.47%	773,582	R1.5	28	4.40%	621,819	-1.07%	(151,763)
371.00	Other Equipment	4,919,152	L0	34	3.61%	177,607	L0	34	3.51%	172,874	-0.10%	(4,733)
	Total Transmission Plant	2,070,119,871			3.17%	65,722,116			3.11%	64,289,981	-0.07%	(1,432,134)
	General Plant - Depreciated											
390.00	Structures & Improvements	6,279,606	R1.5	40	3.38%	212,345	R1.5	40	3.32%	208,698	-0.06%	(3,647)
392.00	Transportation Equipment	1,561,599	L1	7	13.28%	207,393	L1	7	11.83%	184,811	-1.45%	(22,582)
396.00	Power Operated Equipment	3,051,689	R1.5	15	6.98%	213,005	R1.5	15	6.70%	204,398	-0.28%	(8,607)
	Total General Plant - Depreciated	10,892,894			5.81%	632,743			5.49%	597,907	-0.32%	(34,836)
	General Plant - Amortized											
391.00	Office Furniture & Equipment	4,874,479	SQ	24	7.20%	351,183	SQ	24	7.20%	351,183	0.00%	-
394.00	Tools,Shop, & Garage	9,837,772	SQ	20	6.20%	609,659	SQ	20	6.20%	609,659	0.00%	-
395.00	Laboratory Equipment	172,495	SQ	21	6.03%	10,409	SQ	21	6.03%	10,409	0.00%	-
397.00	Communication Equipment - All	930,477	SQ	22	7.11%	66,191	SQ	22	7.11%	66,191	0.00%	-
398.00	Miscellaneous Equipment	8,186,506	SQ	32	5.49%	449,114	SQ	32	5.49%	449,114	0.00%	-

Detailed Adjustment
(ELG Accelerated Depreciation)

		[1]	[2]				[3]				[4]	
			Company Proposal				City of Dallas Proposal				Difference	
Account No.	Description	Original Cost	Iowa Curve Type	AL	Rate	Annual Accrual	Iowa Curve Type	AL	Rate	Annual Accrual	Rate	Annual Accrual
399.00	Other Tangible Property	71,110	SQ	7	15.93%	11,326	SQ	7	15.93%	11,326	0.00%	-
399.01	Servers Hardware	611,913	SQ	10	11.08%	67,779	SQ	10	11.08%	67,779	0.00%	-
399.02	Servers Software	1,407,444	SQ	10	12.61%	177,439	SQ	10	12.61%	177,439	0.00%	-
399.03	Network Hardware	71,335	SQ	10	10.98%	7,833	SQ	10	10.98%	7,833	0.00%	-
399.06	PC Hardware	792,972	SQ	5	22.06%	174,963	SQ	5	22.06%	174,963	0.00%	-
399.07	PC Software	690,857	SQ	5	23.15%	159,911	SQ	5	23.15%	159,911	0.00%	-
	Total General Plant - Amortized	27,647,361			7.54%	2,085,808			7.54%	2,085,808	0.00%	-
	TOTAL PLANT STUDIED	**2,414,210,850**			**3.25%**	**78,476,366**			**3.15%**	**76,157,847**	**-0.10%**	**(2,318,519)**

[1] From Company depreciation study; plant balance as of the study date
[2] From Company depreciation study
[3] Rates and Accruals from Rate Development exhibit. (Some unadjusted accounts may be hard coded to match Company proposal due to rounding differences)
[4] = [3] - [2]

Depreciation Rate Development
(ELG Accelerated Depreciation)

Account No.	Description	[1] Original Cost	[2] Iowa Curve Type	[2] Iowa Curve AL	[3] Net Salvage	[4] Depreciable Base	[5] Book Reserve	[6] Future Accruals	[7] Remaining Life	[8] Service Life Accrual	[9] Service Life Rate	[10] Net Salvage Accrual	[11] Net Salvage Rate	[12] Total Accrual	[13] Total Rate
	Underground Storage Plant														
350.20	Rights Of Way	32,563	R4	55	0.0%	32,563	14,767	17,796	24.8	717	2.20%	-	0.00%	717	**2.20%**
351.00	Structures & Improvements	24,613,950	R2.5	75	-10.0%	27,075,345	5,855,602	21,219,743	52.1	359,976	1.46%	47,235	0.19%	407,211	**1.65%**
352.00	Wells	78,334,938	R0.5	55	-10.0%	86,168,432	14,298,665	71,869,767	28.8	2,225,027	2.84%	272,185	0.35%	2,497,212	**3.19%**
353.00	Lines	13,244,531	R0.5	42	-5.0%	13,906,757	3,699,870	10,206,887	22.7	420,284	3.17%	29,160	0.22%	449,445	**3.39%**
354.00	Compressor Station Equipment	88,180,195	L2	42	-5.0%	92,589,205	18,665,963	73,923,242	26.8	2,590,914	2.94%	164,331	0.19%	2,755,246	**3.12%**
355.00	Meas. & Reg. Equipment	50,619,681	R0.5	42	-10.0%	55,681,650	7,776,600	47,905,049	22.2	1,932,480	3.82%	228,325	0.45%	2,160,805	**4.27%**
356.00	Purification Equipment	49,904,221	R2	69	0.0%	49,904,221	7,059,844	42,844,377	47.9	894,455	1.79%	-	0.00%	894,455	**1.79%**
357.00	Other Equipment	620,643	R2.5	40	-5.0%	651,675	206,980	444,696	23.3	17,731	2.86%	1,330	0.21%	19,061	**3.07%**
	Total Underground Storage Plant	305,550,724				326,009,849	57,578,292	268,431,557	29.2	8,441,585	2.76%	742,567	0.24%	9,184,151	**3.01%**
	Transmission Plant														
365.20	ROW - City Gate	18,967,308	R1	89	0.0%	18,967,308	5,589,104	13,378,204	52.1	256,632	1.35%	-	0.00%	256,632	**1.35%**
366.00	Structures & Improvements	11,462,500	L0	45	-20.0%	13,755,000	3,140,237	10,614,764	23.4	356,414	3.11%	98,180	0.86%	454,594	**3.97%**
367.03	Mains - All	1,642,131,650	L0	70	-15.0%	1,888,451,398	292,807,832	1,595,643,566	35.0	38,607,262	2.35%	7,047,775	0.43%	45,655,038	**2.78%**
368.00	Compressor Station Equipment	149,930,747	L0	32	-2.0%	152,929,362	42,356,758	110,572,604	17.3	6,232,560	4.16%	173,732	0.12%	6,406,292	**4.27%**
369.00	M&R Station Equipment	228,574,767	L0	37	-15.0%	262,860,982	55,590,538	207,270,444	19.3	8,949,003	3.92%	1,773,731	0.78%	10,722,734	**4.69%**
370.00	Communication Equipment	14,133,747	R1.5	28	-10.0%	15,547,122	4,671,511	10,875,610	17.5	541,008	3.83%	80,810	0.57%	621,819	**4.40%**
371.00	Other Equipment	4,919,152	L0	34	-3.0%	5,066,726	1,942,900	3,123,826	18.1	164,707	3.35%	8,167	0.17%	172,874	**3.51%**
	Total Transmission Plant	2,070,119,871				2,357,577,898	406,098,881	1,951,479,017	30.4	55,107,586	2.66%	9,182,395	0.44%	64,289,981	**3.11%**
	General Plant - Depreciated														
390.00	Structures & Improvements	6,279,606	R1.5	40	-5.0%	6,593,587	1,338,571	5,255,015	25.2	196,229	3.12%	12,469	0.20%	208,698	**3.32%**
392.00	Transportation Equipment	1,561,599	L1	7	20.0%	1,249,279	578,415	670,864	3.6	270,850	17.34%	(86,038)	-5.51%	184,811	**11.83%**
396.00	Power Operated Equipment	3,051,689	R1.5	15	15.0%	2,593,936	701,214	1,892,722	9.3	253,831	8.32%	(49,433)	-1.62%	204,398	**6.70%**
	Total General Plant - Depreciated	10,892,894				10,436,801	2,618,199	7,818,602	13.1	720,909	6.62%	(123,002)	-1.13%	597,907	**5.49%**
	General Plant - Amortized														
391.00	Office Furniture & Equipment	4,874,479	SQ	24	0.0%	4,874,479	2,724,584	2,149,895	6.9	309,792	6.36%	-	0.00%	309,792	**6.36%**
394.00	Tools,Shop, & Garage	9,837,772	SQ	20	0.0%	9,837,772	2,166,906	7,670,866	14.4	532,788	5.42%	-	0.00%	532,788	**5.42%**
395.00	Laboratory Equipment	172,495	SQ	21	0.0%	172,495	40,384	132,111	14.7	8,958	5.19%	-	0.00%	8,958	**5.19%**
397.00	Communication Equipment - All	930,477	SQ	22	0.0%	930,477	372,576	557,901	10.4	53,821	5.78%	-	0.00%	53,821	**5.78%**
398.00	Miscellaneous Equipment	8,186,506	SQ	32	0.0%	8,186,506	3,556,347	4,630,159	14.3	323,311	3.95%	-	0.00%	323,311	**3.95%**
399.00	Other Tangible Property	71,110	SQ	7	0.0%	71,110	21,487	49,623	4.3	11,513	16.19%	-	0.00%	11,513	**16.19%**
399.01	Servers Hardware	611,913	SQ	10	0.0%	611,913	121,216	490,697	7.5	65,595	10.72%	-	0.00%	65,595	**10.72%**
399.02	Servers Software	1,407,444	SQ	10	0.0%	1,407,444	675,152	732,293	3.9	187,795	13.34%	-	0.00%	187,795	**13.34%**
399.03	Network Hardware	71,335	SQ	10	0.0%	71,335	12,875	58,461	7.7	7,588	10.64%	-	0.00%	7,588	**10.64%**
399.06	PC Hardware	792,972	SQ	5	0.0%	792,972	301,166	491,805	14.8	33,293	4.20%	-	0.00%	33,293	**4.20%**
399.07	PC Software	690,857	SQ	5	0.0%	690,857	503,432	187,424	1.3	142,171	20.58%	-	0.00%	142,171	**20.58%**
	Total General Plant - Amortized	27,647,361				27,647,361	10,496,125	17,151,235	10.2	1,676,626	6.06%	-	0.00%	1,676,626	**6.06%**
	TOTAL PLANT STUDIED	**2,414,210,850**				**2,721,671,909**	**476,791,497**	**2,244,880,412**	**29.6**	**65,946,705**	**2.73%**	**9,801,959**	**0.41%**	**75,748,665**	**3.14%**

[1] From Company depreciation study
[2] Selected Iowa curve type and average life through mathematical and visual curve fitting-techniques and professional judgement
[3] Estimated net salvage through historical statistical analysis

Depreciation Rate Development
(ELG Accelerated Depreciation)

		[1]	[2]		[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
Account No.	Description	Original Cost	Iowa Curve Type	AL	Net Salvage	Depreciable Base	Book Reserve	Future Accruals	Remaining Life	Service Life Accrual	Service Life Rate	Net Salvage Accrual	Net Salvage Rate	Total Accrual	Total Rate

[4] = [1]*(1-[3])
[5] Book reserve balances from Company workpapers (for negative balances, Company reallocation was used)
[6] = [4] - [5]
[7] Average remaining life based on Iowas Curve in Column [2]
[8] = ([1] - [5]) / [7]
[9] = [8] / [1]
[10] = [12] - [8]
[11] = [13] - [9]
[12] = [6] / [7]. Some unadjusted accruals may be hard coded to match the Company's proposed accrual.
[13] = [12] / [1]. Some unadjusted rates may be hard coded to match the Company's proposed rate.

APT
Electric Division
350.20 Rights of Way
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: **55** *Survivor Curve:* **R4**

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1952	3,904.88	69.14	56.48	4.89	275.96
1960	663.54	63.64	10.43	7.39	77.01
1963	2,096.25	61.90	33.87	8.65	292.89
1965	129.28	60.88	2.12	9.63	20.44
1967	84.48	59.96	1.41	10.71	15.09
1969	520.44	59.13	8.80	11.88	104.55
1978	3,776.93	55.98	67.47	17.73	1,196.21
1986	5,550.25	54.00	102.78	23.75	2,441.03
1991	5,760.00	53.16	108.35	27.91	3,024.25
1993	100.00	52.90	1.89	29.65	56.05
1994	1,700.00	52.79	32.20	30.54	983.48
2002	8,277.33	52.16	158.71	37.91	6,015.77
Total BG	0.00	0.00	0.00	0.00	0.00
Total ELG	32,563.38	55.71	584.51	24.81	14,502.73
Total ALL	32,563.38	55.71	584.51	24.81	14,502.73
Less F.Y.	0.00				
9/30/2016	32,563.38				

APT
Electric Division
351.00 Structures & Improvements
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: **75** *Survivor Curve:* **R2.5**

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1952	118,348.67	85.70	1,380.97	21.45	29,621.39
1953	8,857.29	85.20	103.96	21.95	2,281.53
1955	132,771.82	84.21	1,576.71	22.96	36,198.59
1959	10,919.24	82.32	132.64	25.07	3,325.71
1960	3,477.42	81.87	42.48	25.62	1,088.16
1961	5,130.41	81.42	63.01	26.17	1,649.03
1963	4,223.75	80.54	52.44	27.29	1,431.22
1964	87.31	80.11	1.09	27.86	30.36
1965	927.52	79.69	11.64	28.44	330.99
1966	949.35	79.27	11.98	29.02	347.51
1967	48,112.17	78.85	610.17	29.60	18,061.10
1968	4,111.02	78.44	52.41	30.19	1,582.25
1969	1,504.36	78.03	19.28	30.78	593.46
1970	14,312.66	77.63	184.36	31.38	5,785.80
1971	50,669.52	77.24	656.04	31.99	20,983.90
1972	943.56	76.84	12.28	32.59	400.21
1974	54,167.33	76.07	712.08	33.82	24,082.05
1975	7,079.66	75.69	93.54	34.44	3,221.23
1976	10,673.07	75.31	141.72	35.06	4,968.79
1978	76,559.96	74.57	1,026.75	36.32	37,286.82
1980	217.69	73.83	2.95	37.58	110.81
1983	5,000.00	72.76	68.72	39.51	2,715.01
1984	20,290.89	72.40	280.25	40.15	11,252.86

APT
Electric Division
351.00 Structures & Improvements
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: **75** *Survivor Curve:* **R2.5**

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1989	6,659,510.84	70.66	94,241.18	43.41	4,091,438.61
1990	542,746.84	70.32	7,718.18	44.07	340,144.69
1991	329,234.93	69.98	4,704.83	44.73	210,437.86
1993	663.88	69.29	9.58	46.04	441.13
1994	53,418.68	68.95	774.73	46.70	36,181.01
1995	22,768.31	68.61	331.86	47.36	15,716.39
1996	93,445.49	68.26	1,368.88	48.01	65,725.76
1997	116,897.66	67.92	1,721.15	48.67	83,765.54
1998	75,810.94	67.57	1,121.96	49.32	55,335.25
1999	36,402.16	67.22	541.55	49.97	27,060.35
2000	577.87	66.86	8.64	50.61	437.43
2002	8,277.33	66.13	125.16	51.88	6,493.77
2004	73,545.90	65.37	1,125.02	53.12	59,764.36
2005	1,509,094.08	64.97	23,225.87	53.72	1,247,803.00
2007	1,029,221.94	64.13	16,048.31	54.88	880,775.06
2008	41,693.07	63.68	654.75	55.43	36,291.42
2009	3,034,986.95	63.20	48,025.54	55.95	2,686,801.77
2010	146,580.09	62.67	2,338.75	56.42	131,962.88
2011	2,265,444.64	62.10	36,480.49	56.85	2,073,922.05
2012	1,773,894.27	61.45	28,865.09	57.20	1,651,217.63
2013	2,933,356.73	60.70	48,323.79	57.45	2,776,304.41
2014	1,050,476.68	59.77	17,575.50	57.52	1,010,931.80
2015	484,875.96	58.49	8,289.66	57.24	474,513.89

APT

Electric Division

351.00 Structures & Improvements

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of September 30, 2016

Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique

Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***75*** *Survivor Curve:* ***R2.5***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
2016	1,751,689.79	56.06	31,245.79	55.69	1,739,972.62
Total BG	0.00	0.00	0.00	0.00	0.00
Total ELG	24,613,949.70	64.42	382,103.72	52.11	19,910,787.48
Total ALL	24,613,949.70	64.42	382,103.72	52.11	19,910,787.48
Less F.Y.	0.00				
9/30/2016	24,613,949.70				

APT
Electric Division
352.00 Wells
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: **55** *Survivor Curve:* **R0.5**

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1952	1,223,410.33	82.24	14,876.90	17.99	267,569.50
1955	955,425.64	80.31	11,897.28	19.06	226,717.51
1959	249,544.83	77.75	3,209.70	20.50	65,789.78
1960	9,970.12	77.11	129.30	20.86	2,697.12
1967	39,603.03	72.67	545.01	23.42	12,761.41
1968	238,730.03	72.03	3,314.24	23.78	78,817.73
1969	80.55	71.40	1.13	24.15	27.24
1970	239.48	70.76	3.38	24.51	82.96
1971	41,566.06	70.13	592.70	24.88	14,746.27
1974	303,958.45	68.22	4,455.40	25.97	115,717.83
1975	95,562.43	67.58	1,413.97	26.33	37,236.03
1977	2,109.04	66.30	31.81	27.05	860.54
1978	245,917.31	65.66	3,745.34	27.41	102,657.95
1979	627,591.20	65.01	9,653.31	27.76	268,005.54
1980	27,699.59	64.36	430.36	28.11	12,099.01
1981	108,575.52	63.71	1,704.19	28.46	48,502.70
1984	312,318.06	61.73	5,059.62	29.48	149,145.27
1985	718,360.75	61.06	11,765.56	29.81	350,687.07
1986	1,636,584.35	60.38	27,105.27	30.13	816,649.82
1988	486,953.71	59.00	8,252.96	30.75	253,807.49
1989	2,653,496.35	58.30	45,511.48	31.05	1,413,308.52
1990	5,727,513.22	57.60	99,444.35	31.35	3,117,099.16
1991	2,916,970.83	56.88	51,286.14	31.63	1,621,995.84

APT
Electric Division
352.00 Wells
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***55*** *Survivor Curve:* ***R0.5***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
1992	304,903.03	56.15	5,430.47	31.90	173,214.09
1994	14,000.67	54.65	256.19	32.40	8,300.51
1996	208,323.00	53.10	3,923.58	32.85	128,870.56
1997	1,753,906.47	52.29	33,540.63	33.04	1,108,249.36
1998	18,605.99	51.47	361.49	33.22	12,008.71
2000	1,335,917.70	49.76	26,847.88	33.51	899,639.64
2001	366,512.86	48.87	7,500.45	33.62	252,131.05
2002	3,461,025.75	47.94	72,190.11	33.69	2,432,316.67
2003	24,378.96	46.99	518.82	33.74	17,504.53
2004	129,163.56	46.00	2,808.00	33.75	94,765.54
2007	329,596.15	42.76	7,708.76	33.51	258,290.16
2009	817,878.04	40.29	20,302.20	33.04	670,687.10
2010	1,989,077.96	38.92	51,111.22	32.67	1,669,632.85
2011	585,528.25	37.43	15,644.22	32.18	503,396.08
2012	5,828,405.82	35.78	162,896.35	31.53	5,136,096.35
2013	3,300,229.98	33.91	97,325.38	30.66	2,983,922.48
2014	861,116.81	31.70	27,166.79	29.45	799,991.53
2015	35,894,410.54	28.87	1,243,341.15	27.62	34,340,234.10
2016	2,489,775.77	24.22	102,805.58	23.84	2,451,223.68

APT
Electric Division
352.00 Wells
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: *55* *Survivor Curve:* *R0.5*

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Total BG	0.00	0.00	0.00	0.00	0.00
Total ELG	78,334,938.19	35.83	2,186,108.67	28.78	62,917,457.27
Total ALL	78,334,938.19	35.83	2,186,108.67	28.78	62,917,457.27
Less F.Y.	0.00				
9/30/2016	78,334,938.19				

APT
Electric Division
353.00 Lines
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***42*** *Survivor Curve:* ***R0.5***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
1952	663,599.00	72.74	9,122.95	8.49	77,449.71
1959	1,425.03	68.19	20.90	10.94	228.54
1960	9,023.70	67.53	133.62	11.28	1,507.71
1961	8,750.91	66.88	130.84	11.63	1,521.99
1963	179.81	65.58	2.74	12.33	33.81
1965	371.51	64.29	5.78	13.04	75.33
1967	53,189.08	62.99	844.37	13.74	11,603.99
1968	2,178.93	62.35	34.95	14.10	492.71
1969	18,008.63	61.71	291.85	14.46	4,218.82
1970	442.09	61.06	7.24	14.81	107.25
1971	43,622.92	60.42	721.95	15.17	10,954.48
1972	412.92	59.78	6.91	15.53	107.29
1973	363.46	59.15	6.15	15.90	97.68
1974	56,213.27	58.51	960.76	16.26	15,621.07
1975	1,965.48	57.87	33.96	16.62	564.55
1976	7,748.20	57.24	135.37	16.99	2,299.62
1978	484,439.51	55.97	8,655.43	17.72	153,369.31
1979	7,700.16	55.34	139.15	18.09	2,516.70
1980	35,014.01	54.70	640.08	18.45	11,810.98
1981	2,213.38	54.07	40.94	18.82	770.36
1982	4,811.44	53.43	90.04	19.18	1,727.42
1983	12,459.68	52.80	235.98	19.55	4,613.23
1986	563,531.19	50.88	11,074.79	20.63	228,518.85

APT
Electric Division
353.00 Lines
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***42*** *Survivor Curve:* ***R0.5***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
1988	1,085,794.27	49.59	21,893.24	21.34	467,310.29
1989	650,691.21	48.94	13,294.43	21.69	288,418.05
1990	60,335.27	48.29	1,249.44	22.04	27,537.39
1991	35,872.87	47.63	753.17	22.38	16,855.37
1992	63,097.51	46.96	1,343.57	22.71	30,515.82
1993	21,665.91	46.29	468.07	23.04	10,783.39
1994	50,818.93	45.61	1,114.32	23.36	26,025.35
1996	14,929.37	44.21	337.70	23.96	8,091.03
1997	141,120.00	43.49	3,244.63	24.24	78,660.93
1998	155,859.59	42.76	3,644.71	24.51	89,343.56
1999	248,615.23	42.02	5,917.05	24.77	146,546.15
2000	79,346.41	41.25	1,923.45	25.00	48,090.36
2002	137,914.23	39.66	3,477.56	25.41	88,359.03
2003	7,430.01	38.82	191.38	25.57	4,894.23
2004	18,296.01	37.96	482.00	25.71	12,391.47
2005	1,085,231.64	37.06	29,284.11	25.81	755,785.39
2008	335,655.32	34.10	9,844.16	25.85	254,440.97
2009	1,708,684.34	32.99	51,787.32	25.74	1,333,226.28
2010	32,039.44	31.81	1,007.14	25.56	25,744.84
2011	337,889.08	30.53	11,067.24	25.28	279,786.05
2012	974,633.46	29.12	33,473.65	24.87	832,370.47
2013	398,269.53	27.52	14,473.35	24.27	351,231.13
2014	75,147.20	25.64	2,931.39	23.39	68,551.57

APT
Electric Division
353.00 Lines
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***42*** *Survivor Curve:* ***R0.5***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
2015	3,139,806.24	23.24	135,090.79	21.99	2,970,942.75
2016	407,723.35	19.34	21,081.41	18.97	399,817.82
Total BG	0.00	0.00	0.00	0.00	0.00
Total ELG	13,244,530.73	32.89	402,712.02	22.71	9,145,931.09
Total ALL	13,244,530.73	32.89	402,712.02	22.71	9,145,931.09
Less F.Y.	0.00				
9/30/2016	13,244,530.73				

APT
Electric Division
354.00 Compressor Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: **42** *Survivor Curve:* **L2**

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1959	146.73	68.97	2.13	11.72	24.94
1960	798.29	68.17	11.71	11.92	139.55
1961	10,476.67	67.36	155.54	12.11	1,883.17
1963	542.78	65.73	8.26	12.48	103.08
1965	1,471.00	64.10	22.95	12.85	294.84
1967	209,194.80	62.45	3,350.04	13.20	44,205.11
1968	7,324.01	61.61	118.87	13.36	1,588.51
1969	1,007.32	60.78	16.57	13.53	224.19
1970	3,619.80	59.94	60.39	13.69	826.55
1971	34,438.09	59.09	582.80	13.84	8,066.28
1972	430.80	58.24	7.40	13.99	103.49
1973	587.94	57.39	10.25	14.14	144.84
1974	156,493.06	56.53	2,768.26	14.28	39,534.06
1976	29,977.40	54.81	546.93	14.56	7,963.60
1978	1,062,473.00	53.09	20,014.15	14.84	296,931.83
1979	4,021.40	52.23	77.00	14.98	1,153.10
1986	13,253.16	46.35	285.91	16.10	4,604.43
1988	5,407.97	44.78	120.77	16.53	1,996.33
1989	2,559,893.81	44.02	58,152.12	16.77	975,248.59
1990	54,363.62	43.28	1,256.03	17.03	21,392.71
1991	1,981,163.11	42.57	46,542.96	17.32	805,953.47
1992	31,607.79	41.88	754.79	17.63	13,304.13
1993	43,004.76	41.21	1,043.45	17.96	18,744.66

APT
Electric Division
354.00 Compressor Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: **42** *Survivor Curve:* **L2**

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1994	168,879.63	40.58	4,161.51	18.33	76,286.08
1995	246,174.42	39.98	6,157.31	18.73	115,331.51
1996	284,172.53	39.41	7,209.96	19.16	138,170.93
1997	86,359.80	38.88	2,221.13	19.63	43,602.98
1998	3,084,650.13	38.38	80,364.13	20.13	1,618,004.70
1999	71,615.10	37.92	1,888.59	20.67	39,036.84
2000	26,765.67	37.49	713.97	21.24	15,163.71
2001	252,720.88	37.09	6,814.30	21.84	148,802.78
2002	435.52	36.71	11.86	22.46	266.45
2003	100,055.70	36.35	2,752.81	23.10	63,581.01
2004	815,424.54	36.00	22,652.27	23.75	537,934.18
2005	5,826,096.77	35.66	163,389.04	24.41	3,987,970.07
2006	105,946.03	35.33	2,998.78	25.08	75,208.58
2007	19,360,302.45	35.01	552,923.10	25.76	14,245,763.80
2008	2,693,411.61	34.72	77,586.23	26.47	2,053,325.21
2009	1,573,973.69	34.43	45,709.85	27.18	1,242,577.30
2010	17,636,663.80	34.17	516,102.53	27.92	14,411,022.99
2011	13,449,136.29	33.94	396,313.22	28.69	11,368,491.89
2012	7,102,499.30	33.72	210,600.95	29.47	6,207,445.27
2013	557,408.07	33.54	16,617.08	30.29	503,402.55
2014	3,017,597.45	33.40	90,351.98	31.15	2,814,305.49
2015	2,780,352.37	33.29	83,521.16	32.04	2,675,950.92
2016	2,727,856.32	33.22	82,119.59	32.84	2,697,061.47

APT

Electric Division

354.00 Compressor Station Equipment

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of September 30, 2016

Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique

Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: *42* *Survivor Curve:* *L2*

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Total BG	0.00	0.00	0.00	0.00	0.00
Total ELG	88,180,195.38	35.14	2,509,090.63	26.83	67,323,138.17
Total ALL	88,180,195.38	35.14	2,509,090.63	26.83	67,323,138.17
Less F.Y.	0.00				
9/30/2016	88,180,195.38				

APT

Electric Division

355.00 Meas. & Reg. Equipment

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of September 30, 2016

Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique

Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***42*** *Survivor Curve:* ***R0.5***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
1959	18,601.21	68.19	272.80	10.94	2,983.24
1960	4,896.97	67.53	72.51	11.28	818.20
1961	15,323.58	66.88	229.11	11.63	2,665.12
1963	3,026.31	65.58	46.15	12.33	569.06
1964	98.14	64.93	1.51	12.68	19.17
1965	739.20	64.29	11.50	13.04	149.89
1966	656.86	63.64	10.32	13.39	138.19
1967	32,063.72	62.99	509.01	13.74	6,995.18
1968	2,926.90	62.35	46.94	14.10	661.84
1969	26,751.78	61.71	433.54	14.46	6,267.05
1970	1,706.71	61.06	27.95	14.81	414.04
1971	1,141.73	60.42	18.90	15.17	286.71
1972	234.10	59.78	3.92	15.53	60.83
1973	520.74	59.15	8.80	15.90	139.95
1974	28,447.60	58.51	486.21	16.26	7,905.29
1976	5,183.97	57.24	90.57	16.99	1,538.57
1977	342.73	56.60	6.05	17.35	105.07
1978	149,098.30	55.97	2,663.92	17.72	47,203.22
1979	602.09	55.34	10.88	18.09	196.79
1980	546.36	54.70	9.99	18.45	184.30
1981	1,876.83	54.07	34.71	18.82	653.23
1982	49,249.57	53.43	921.69	19.18	17,681.77
1984	31,998.77	52.16	613.44	19.91	12,215.22

APT

Electric Division

355.00 Meas. & Reg. Equipment

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of September 30, 2016

Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique

Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***42*** *Survivor Curve:* ***R0.5***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
1985	3,200.54	51.52	62.12	20.27	1,259.39
1986	77,682.72	50.88	1,526.66	20.63	31,501.30
1987	11,430.17	50.24	227.51	20.99	4,775.62
1988	4,762.55	49.59	96.03	21.34	2,049.73
1989	2,129,942.99	48.94	43,517.37	21.69	944,094.53
1990	2,581,251.68	48.29	53,453.42	22.04	1,178,099.31
1991	275,772.77	47.63	5,789.98	22.38	129,575.67
1992	124,465.04	46.96	2,650.31	22.71	60,194.96
1993	20,519.86	46.29	443.31	23.04	10,212.99
1994	286,914.40	45.61	6,291.24	23.36	146,934.36
1995	57,033.88	44.91	1,269.88	23.66	30,049.03
1996	258,091.15	44.21	5,837.91	23.96	139,873.53
1997	419,508.05	43.49	9,645.32	24.24	233,835.68
1998	123,132.30	42.76	2,879.40	24.51	70,583.26
1999	77,726.17	42.02	1,849.88	24.77	45,815.66
2000	694,125.33	41.25	16,826.40	25.00	420,696.26
2001	102,584.93	40.47	2,535.03	25.22	63,925.75
2002	451,508.79	39.66	11,384.96	25.41	289,273.13
2004	203,713.84	37.96	5,366.79	25.71	137,970.68
2005	392,552.05	37.06	10,592.70	25.81	273,384.13
2007	122,699.26	35.14	3,492.21	25.89	90,396.36
2009	1,625,441.82	32.99	49,264.38	25.74	1,268,275.07
2010	639,179.34	31.81	20,092.13	25.56	513,603.52

APT

Electric Division

355.00 Meas. & Reg. Equipment

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of September 30, 2016

Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique

Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***42*** *Survivor Curve:* ***R0.5***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
2011	55,062.03	30.53	1,803.51	25.28	45,593.62
2012	9,076,868.50	29.12	311,743.73	24.87	7,751,957.63
2013	6,621,496.70	27.52	240,629.16	24.27	5,839,451.94
2014	1,323,124.66	25.64	51,613.34	23.39	1,206,994.64
2015	12,077,896.80	23.24	519,653.92	21.99	11,428,329.41
2016	10,405,958.97	19.34	538,042.01	18.97	10,204,193.22
Total BG	0.00	0.00	0.00	0.00	0.00
Total ELG	50,619,681.46	26.29	1,925,111.02	22.17	42,672,752.29
Total ALL	50,619,681.46	26.29	1,925,111.02	22.17	42,672,752.29
Less F.Y.	0.00				
9/30/2016	50,619,681.46				

APT
Electric Division
356.00 Purification Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: **69** *Survivor Curve:* **R2**

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1959	27,708.07	80.05	346.15	22.80	7,891.02
1961	9,399.35	79.00	118.98	23.75	2,825.59
1963	1,847.37	77.97	23.69	24.72	585.71
1964	1,321.48	77.46	17.06	25.21	430.14
1966	5,447.58	76.47	71.24	26.22	1,867.71
1967	187,680.16	75.97	2,470.30	26.72	66,018.03
1968	19,477.46	75.49	258.02	27.24	7,027.80
1969	191,387.72	75.00	2,551.71	27.75	70,819.48
1970	63,004.86	74.52	845.43	28.27	23,903.94
1971	172.26	74.05	2.33	28.80	67.00
1972	16,198.02	73.58	220.15	29.33	6,456.47
1973	1,540.44	73.11	21.07	29.86	629.15
1974	10,326.19	72.65	142.14	30.40	4,320.57
1976	65,382.75	71.73	911.56	31.48	28,692.35
1978	431,600.52	70.82	6,094.52	32.57	198,485.28
1979	5,663.83	70.37	80.49	33.12	2,665.60
1980	4,234.11	69.92	60.56	33.67	2,038.92
1981	20,215.65	69.47	290.98	34.22	9,958.48
1984	3,664.89	68.15	53.78	35.90	1,930.47
1985	289,668.95	67.71	4,278.40	36.46	155,969.02
1986	328,231.57	67.27	4,879.66	37.02	180,621.87
1988	556.88	66.39	8.39	38.14	319.91
1989	282,551.48	65.95	4,284.48	38.70	165,799.30

APT
Electric Division
356.00 Purification Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***69*** *Survivor Curve:* ***R2***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
1990	2,275,194.62	65.51	34,731.74	39.26	1,363,486.53
1991	1,217,254.69	65.07	18,707.80	39.82	744,882.81
1993	9,703.43	64.18	151.19	40.93	6,188.24
1994	416,365.44	63.73	6,532.94	41.48	271,007.45
1995	5,689.86	63.28	89.91	42.03	3,779.25
1996	115,891.24	62.83	1,844.54	42.58	78,539.28
1998	64,489.56	61.91	1,041.72	43.66	45,478.18
2000	17,260.35	60.96	283.15	44.71	12,659.15
2001	51,087.56	60.47	844.82	45.22	38,203.98
2002	43,416.62	59.97	723.93	45.72	33,100.58
2004	18,207.40	58.94	308.93	46.69	14,423.02
2005	538,775.79	58.39	9,226.63	47.14	434,976.19
2007	2,766,244.05	57.24	48,330.38	47.99	2,319,188.07
2009	1,295,013.59	55.95	23,147.76	48.70	1,127,192.31
2010	11,481,164.06	55.23	207,891.36	48.98	10,181,843.07
2011	15,945,678.64	54.44	292,915.66	49.19	14,407,871.41
2012	9,756,089.84	53.55	182,180.90	49.30	8,981,821.02
2013	1,887,854.84	52.52	35,944.17	49.27	1,771,036.28
2014	12,178.23	51.26	237.58	49.01	11,643.68
2015	19,380.07	49.55	391.14	48.30	18,891.15

APT

Electric Division

356.00 Purification Equipment

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of September 30, 2016

Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique

Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***69*** *Survivor Curve:* ***R2***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Total BG	0.00	0.00	0.00	0.00	0.00
Total ELG	49,904,221.47	55.85	893,557.35	47.90	42,805,535.45
Total ALL	49,904,221.47	55.85	893,557.35	47.90	42,805,535.45
Less F.Y.	0.00				
9/30/2016	49,904,221.47				

APT
Electric Division
357.00 Other Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***40*** *Survivor Curve:* ***R2.5***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
1952	1,573.72	67.18	23.43	2.93	68.57
1960	113.45	60.85	1.86	4.60	8.58
1961	5,065.83	60.06	84.34	4.81	406.05
1962	156.40	59.28	2.64	5.03	13.27
1965	273.96	56.94	4.81	5.69	27.38
1966	41.30	56.17	0.74	5.92	4.36
1967	1,924.77	55.41	34.73	6.16	214.13
1969	375.50	53.93	6.96	6.68	46.50
1971	160.10	52.49	3.05	7.24	22.09
1978	365.40	48.00	7.61	9.75	74.20
1980	418.27	46.87	8.92	10.62	94.79
1984	184.08	44.82	4.11	12.57	51.63
1987	2,693.30	43.43	62.01	14.18	879.43
1988	59,020.23	42.99	1,372.83	14.74	20,237.73
1989	1,291.68	42.56	30.35	15.31	464.70
1990	18,966.40	42.14	450.05	15.89	7,152.56
1991	10,412.34	41.73	249.50	16.48	4,112.41
1993	2,119.87	40.94	51.78	17.69	915.90
1994	43,645.60	40.55	1,076.32	18.30	19,697.45
1995	21,624.85	40.17	538.31	18.92	10,185.68
1997	37,706.50	39.43	956.24	20.18	19,298.85
1998	27,560.74	39.07	705.41	20.82	14,687.09
2006	326,157.72	36.30	8,985.81	26.05	234,053.18

APT

Electric Division

357.00 Other Equipment

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of September 30, 2016

Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique

Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: *40* *Survivor Curve:* *R2.5*

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
2007	7,630.21	35.95	212.26	26.70	5,666.83
2009	32,928.88	35.23	934.81	27.98	26,151.53
2014	3,070.83	32.91	93.31	30.66	2,860.88
2015	15,161.28	32.13	471.89	30.88	14,571.42
Total BG	0.00	0.00	0.00	0.00	0.00
Total ELG	620,643.21	37.90	16,374.09	23.33	381,967.19
Total ALL	620,643.21	37.90	16,374.09	23.33	381,967.19
Less F.Y.	0.00				
9/30/2016	620,643.21				

APT
Electric Division
365.20 ROW - City Gate
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***89*** *Survivor Curve:* ***R1***

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1910	772.33	129.40	5.97	23.15	138.15
1911	0.81	128.75	0.01	23.50	0.15
1913	1,237.94	127.47	9.71	24.22	235.23
1915	1,444.97	126.20	11.45	24.95	285.67
1916	5,658.96	125.57	45.07	25.32	1,140.93
1918	6.33	124.30	0.05	26.05	1.33
1920	17,820.65	123.05	144.82	26.80	3,881.28
1921	99.10	122.43	0.81	27.18	22.00
1922	1,326.20	121.80	10.89	27.55	300.00
1923	196.67	121.18	1.62	27.93	45.33
1925	355.02	119.95	2.96	28.70	84.94
1926	10,529.99	119.33	88.24	29.08	2,566.16
1927	186,748.26	118.72	1,573.05	29.47	46,353.71
1928	34,270.09	118.11	290.16	29.86	8,663.06
1929	16,806.40	117.50	143.04	30.25	4,326.28
1930	3,865.88	116.89	33.07	30.64	1,013.29
1933	86,620.68	115.07	752.74	31.82	23,954.93
1934	10,678.43	114.47	93.28	32.22	3,005.82
1935	9,167.14	113.87	80.50	32.62	2,626.23
1936	41,393.75	113.27	365.43	33.02	12,068.09
1937	123.38	112.68	1.09	33.43	36.60
1938	13,048.96	112.08	116.42	33.83	3,938.91
1940	126,137.60	110.90	1,137.42	34.65	39,409.47

APT
Electric Division
365.20 ROW - City Gate
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***89*** *Survivor Curve:* ***R1***

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1941	93,665.93	110.31	849.13	35.06	29,768.79
1942	1,551.07	109.72	14.14	35.47	501.42
1943	9,412.77	109.13	86.25	35.88	3,094.83
1944	7,743.74	108.55	71.34	36.30	2,589.33
1945	271.22	107.96	2.51	36.71	92.22
1946	14,182.90	107.38	132.09	37.13	4,903.83
1947	5,997.63	106.79	56.16	37.54	2,108.47
1948	73,253.21	106.21	689.69	37.96	26,181.91
1949	100,014.85	105.63	946.83	38.38	36,340.59
1950	154,937.92	105.05	1,474.87	38.80	57,227.54
1951	97,604.21	104.47	934.26	39.22	36,644.02
1952	69,441.15	103.89	668.38	39.64	26,497.58
1953	70,893.66	103.32	686.18	40.07	27,492.83
1954	62,045.81	102.74	603.91	40.49	24,452.12
1955	90,880.17	102.16	889.56	40.91	36,394.51
1956	54,594.44	101.59	537.42	41.34	22,215.06
1957	66,129.93	101.01	654.68	41.76	27,340.00
1958	109,924.15	100.43	1,094.48	42.18	46,170.42
1959	159,722.33	99.86	1,599.49	42.61	68,151.57
1960	56,080.07	99.28	564.86	43.03	24,306.80
1961	125,623.52	98.70	1,272.72	43.45	55,305.61
1962	239,408.12	98.13	2,439.78	43.88	107,050.05
1963	175,109.80	97.55	1,795.10	44.30	79,520.74

APT
Electric Division
365.20 ROW - City Gate
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***89*** *Survivor Curve:* ***R1***

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1964	120,281.54	96.97	1,240.40	44.72	55,470.56
1965	94,923.02	96.39	984.78	45.14	44,452.82
1966	170,716.39	95.81	1,781.86	45.56	81,177.94
1967	688,686.25	95.22	7,232.23	45.97	332,499.06
1968	69,182.97	94.64	731.02	46.39	33,911.42
1969	93,489.63	94.05	994.02	46.80	46,522.14
1970	377,066.13	93.46	4,034.42	47.21	190,474.10
1971	219,973.86	92.87	2,368.62	47.62	112,793.94
1972	1,020,250.58	92.28	11,056.59	48.03	530,996.52
1973	339,704.07	91.68	3,705.44	48.43	179,443.90
1974	134,091.81	91.08	1,472.32	48.83	71,886.41
1975	154,695.02	90.47	1,709.91	49.22	84,161.12
1976	40,387.24	89.86	449.45	49.61	22,296.90
1977	196,279.77	89.24	2,199.35	49.99	109,955.24
1978	21,293.43	88.62	240.27	50.37	12,103.25
1979	116,953.21	88.00	1,329.03	50.75	67,446.91
1980	241,542.59	87.37	2,764.66	51.12	141,323.72
1981	172,602.89	86.73	1,990.11	51.48	102,451.50
1982	32,087.42	86.09	372.74	51.84	19,321.12
1983	15,586.43	85.43	182.44	52.18	9,520.30
1984	44,151.26	84.77	520.82	52.52	27,354.82
1985	569,186.13	84.10	6,767.71	52.85	357,695.11
1986	23,137.44	83.42	277.35	53.17	14,747.71

APT
Electric Division
365.20 ROW - City Gate
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***89*** *Survivor Curve:* ***R1***

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1987	382,495.14	82.74	4,623.10	53.49	247,269.50
1988	146,741.08	82.04	1,788.73	53.79	96,209.41
1989	106,553.55	81.33	1,310.21	54.08	70,850.27
1990	72,784.80	80.60	903.02	54.35	49,080.63
1991	1,570,496.78	79.86	19,664.42	54.61	1,073,970.23
1992	397,083.91	79.11	5,019.17	54.86	275,369.15
1993	286,662.47	78.35	3,658.89	55.10	201,593.19
1994	305,027.32	77.56	3,932.62	55.31	217,526.63
1995	328,183.32	76.76	4,275.29	55.51	237,333.51
1996	262,250.83	75.94	3,453.23	55.69	192,322.94
1997	121,968.96	75.10	1,624.01	55.85	90,706.81
1998	61,036.41	74.24	822.14	55.99	46,032.41
1999	7,609.46	73.35	103.74	56.10	5,820.01
2001	63,857.07	71.50	893.16	56.25	50,236.33
2002	121,540.12	70.52	1,723.54	56.27	96,979.64
2003	56,128.88	69.50	807.58	56.25	45,428.50
2004	51,390.95	68.45	750.82	56.20	42,193.40
2005	1,525,841.42	67.34	22,658.34	56.09	1,270,935.14
2006	4,381,629.91	66.18	66,207.71	55.93	3,703,000.93
2007	126,031.46	64.95	1,940.35	55.70	108,083.25
2008	311,577.81	63.65	4,895.35	55.40	271,191.14
2009	83,897.98	62.25	1,347.82	55.00	74,126.28
2010	52,186.70	60.73	859.35	54.48	46,815.78

APT

Electric Division

365.20 ROW - City Gate

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of September 30, 2016

Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique

Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***89*** *Survivor Curve:* ***R1***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
2014	661,216.30	52.41	12,615.05	50.16	632,832.43
2015	120,048.54	48.97	2,451.47	47.72	116,984.21
Total BG	0.00	0.00	0.00	0.00	0.00
Total ELG	18,967,308.39	77.20	245,706.27	52.13	12,809,346.03
Total ALL	18,967,308.39	77.20	245,706.27	52.13	12,809,346.03
Less F.Y.	0.00				
9/30/2016	18,967,308.39				

APT
Electric Division
366.00 Structures & Improvements
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: **45** *Survivor Curve:* **L0**

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1910	517.38	118.02	4.38	11.77	51.60
1911	0.66	117.16	0.01	11.91	0.07
1915	35.85	113.74	0.32	12.49	3.94
1918	0.79	111.18	0.01	12.93	0.09
1921	2,351.96	108.63	21.65	13.38	289.69
1922	2,362.72	107.78	21.92	13.53	296.60
1926	7,783.73	104.39	74.57	14.14	1,054.02
1927	8,580.74	103.54	82.88	14.29	1,184.11
1928	7,053.92	102.69	68.69	14.44	991.99
1929	15,535.87	101.85	152.54	14.60	2,226.46
1930	2,173.44	101.00	21.52	14.75	317.40
1935	8,781.91	96.78	90.74	15.53	1,409.22
1938	19.47	94.26	0.21	16.01	3.31
1940	2,590.22	92.57	27.98	16.32	456.74
1941	3,511.39	91.73	38.28	16.48	630.98
1942	4,554.57	90.90	50.11	16.65	834.05
1943	487.93	90.06	5.42	16.81	91.06
1946	2,808.11	87.54	32.08	17.29	554.68
1947	363.76	86.70	4.20	17.45	73.23
1948	58,743.48	85.87	684.12	17.62	12,052.51
1949	8,261.44	85.03	97.16	17.78	1,727.56
1950	22,921.03	84.19	272.24	17.94	4,885.25
1951	4,121.83	83.36	49.45	18.11	895.43

APT
Electric Division
366.00 Structures & Improvements
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***45*** *Survivor Curve:* ***L0***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
1952	10,104.71	82.52	122.45	18.27	2,237.51
1953	2,977.08	81.69	36.44	18.44	671.96
1954	4,209.53	80.85	52.06	18.60	968.53
1955	7,287.98	80.02	91.08	18.77	1,709.35
1956	5,694.91	79.18	71.92	18.93	1,361.67
1957	9,293.75	78.35	118.62	19.10	2,265.42
1958	19,846.61	77.51	256.04	19.26	4,932.15
1959	3,278.60	76.68	42.76	19.43	830.72
1960	30,665.96	75.84	404.33	19.59	7,922.39
1961	12,480.44	75.01	166.39	19.76	3,287.63
1962	10,436.62	74.17	140.70	19.92	2,803.40
1963	9,408.27	73.34	128.28	20.09	2,577.10
1964	31,139.32	72.50	429.49	20.25	8,698.68
1965	6,900.09	71.67	96.28	20.42	1,965.83
1966	16,128.27	70.83	227.70	20.58	4,686.49
1967	16,855.32	70.00	240.81	20.75	4,995.65
1968	23,710.57	69.16	342.84	20.91	7,168.40
1969	48,973.10	68.32	716.81	21.07	15,104.03
1970	32,682.57	67.48	484.31	21.23	10,283.34
1971	8,428.06	66.64	126.46	21.39	2,705.56
1972	17,365.00	65.80	263.89	21.55	5,687.88
1973	2,866.18	64.96	44.12	21.71	957.99
1974	20,528.10	64.12	320.15	21.87	7,001.95

APT
Electric Division
366.00 Structures & Improvements
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: **45** *Survivor Curve:* **L0**

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1975	11,300.26	63.28	178.58	22.03	3,933.76
1976	10,192.04	62.43	163.25	22.18	3,621.32
1977	10,370.15	61.59	168.38	22.34	3,761.13
1978	9,969.29	60.74	164.13	22.49	3,691.18
1979	3,452.00	59.89	57.64	22.64	1,304.91
1980	10,846.38	59.04	183.72	22.79	4,186.47
1981	115,463.33	58.18	1,984.49	22.93	45,509.97
1982	54,493.62	57.33	950.59	23.08	21,935.91
1983	9,514.30	56.47	168.49	23.22	3,911.87
1984	49,410.42	55.60	888.61	23.35	20,752.69
1985	37,923.15	54.74	692.81	23.49	16,272.84
1986	12,436.99	53.87	230.88	23.62	5,452.99
1987	58,836.34	53.00	1,110.22	23.75	26,362.43
1988	92,383.90	52.12	1,772.61	23.87	42,307.60
1989	65,291.88	51.23	1,274.37	23.98	30,565.32
1990	144,499.88	50.35	2,870.10	24.10	69,159.86
1991	132,053.17	49.45	2,670.28	24.20	64,628.66
1992	108,095.94	48.55	2,226.36	24.30	54,106.81
1993	309,956.39	47.65	6,505.44	24.40	158,704.85
1994	158,714.43	46.73	3,396.36	24.48	83,145.51
1995	849,178.75	45.81	18,538.01	24.56	455,246.09
1996	217,329.41	44.88	4,842.97	24.63	119,259.32
1997	51,602.62	43.93	1,174.54	24.68	28,992.71

APT
Electric Division
366.00 Structures & Improvements
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: **45** *Survivor Curve:* **L0**

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1998	132,977.19	42.98	3,093.61	24.73	76,518.80
1999	32,042.87	42.03	762.46	24.78	18,890.38
2000	69,349.14	41.06	1,689.10	24.81	41,901.24
2001	16,592.05	40.08	413.99	24.83	10,278.64
2005	146,486.83	36.04	4,064.65	24.79	100,759.50
2006	399,741.14	34.99	11,424.29	24.74	282,642.18
2007	831,517.39	33.92	24,513.08	24.67	604,771.44
2008	694,210.71	32.83	21,147.21	24.58	519,746.19
2009	21,534.22	31.70	679.23	24.45	16,609.78
2010	923,218.14	30.54	30,226.17	24.29	734,304.59
2011	316,196.70	29.34	10,777.56	24.09	259,614.49
2012	40.84	28.07	1.45	23.82	34.66
2013	1,488,433.24	26.72	55,699.01	23.47	1,307,411.44
2014	1,326,295.81	25.25	52,536.07	23.00	1,208,089.64
2015	1,408,070.74	23.56	59,774.10	22.31	1,333,353.11
2016	617,655.26	21.22	29,104.74	20.85	606,740.98
Total BG	0.00	0.00	0.00	0.00	0.00
Total ELG	11,462,500.15	31.42	364,843.95	23.35	8,519,334.87
Total ALL	11,462,500.15	31.42	364,843.95	23.35	8,519,334.87
Less F.Y.	0.00				
9/30/2016	11,462,500.15				

APT
Electric Division
367.03 Mains - All
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: *70* *Survivor Curve:* *L0*

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1910	3,185.11	133.41	23.87	27.16	648.52
1916	220,972.14	128.40	1,720.99	28.15	48,442.50
1920	133,241.89	125.06	1,065.45	28.81	30,692.31
1922	12,034.32	123.39	97.53	29.14	2,841.82
1923	66.69	122.55	0.54	29.30	15.95
1925	26,000.46	120.88	215.09	29.63	6,373.61
1926	10,699.65	120.05	89.13	29.80	2,655.83
1927	1,381,360.61	119.21	11,587.32	29.96	347,192.38
1928	196,104.56	118.38	1,656.59	30.13	49,910.44
1929	2,027,924.19	117.54	17,252.52	30.29	522,641.89
1930	22,924.14	116.71	196.42	30.46	5,982.76
1932	294.25	115.04	2.56	30.79	78.75
1935	127,854.36	112.53	1,136.15	31.28	35,542.28
1936	16,314.86	111.70	146.06	31.45	4,593.31
1937	1,149.95	110.86	10.37	31.61	327.90
1938	339,464.75	110.03	3,085.33	31.78	98,037.82
1940	718,211.32	108.35	6,628.48	32.10	212,789.97
1941	248,373.48	107.52	2,310.12	32.27	74,536.77
1942	1,467,755.47	106.68	13,758.77	32.43	446,166.94
1944	115,270.76	105.00	1,097.80	32.75	35,954.63
1945	6,292.78	104.16	60.41	32.91	1,988.35
1946	91,493.40	103.32	885.51	33.07	29,286.56
1947	187,737.41	102.48	1,831.88	33.23	60,879.51

APT
Electric Division
367.03 Mains - All
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: *70* *Survivor Curve:* *L0*

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1948	1,799,869.99	101.64	17,707.83	33.39	591,310.90
1949	3,374,580.63	100.80	33,477.55	33.55	1,123,215.32
1950	3,093,904.17	99.96	30,951.66	33.71	1,043,356.75
1951	333,866.47	99.12	3,368.43	33.87	114,076.32
1952	792,486.38	98.27	8,064.16	34.02	274,363.99
1953	1,716,920.32	97.43	17,622.46	34.18	602,299.88
1954	1,096,710.55	96.58	11,355.17	34.33	389,850.91
1955	305,087.74	95.74	3,186.77	34.49	109,898.23
1956	986,866.32	94.89	10,400.32	34.64	360,246.99
1957	815,939.93	94.04	8,676.60	34.79	301,851.53
1958	2,924,206.60	93.19	31,379.33	34.94	1,096,360.56
1959	2,027,210.58	92.34	21,954.36	35.09	770,323.21
1960	665,307.75	91.48	7,272.35	35.23	256,237.92
1961	2,644,214.13	90.63	29,175.88	35.38	1,032,246.89
1962	3,192,843.34	89.77	35,565.30	35.52	1,263,425.76
1963	4,236,924.92	88.92	47,650.66	35.67	1,699,527.06
1964	2,981,678.49	88.06	33,860.83	35.81	1,212,450.13
1965	2,623,719.52	87.20	30,090.12	35.95	1,081,600.79
1966	2,576,579.20	86.33	29,845.03	36.08	1,076,866.29
1967	25,433,134.86	85.47	297,580.95	36.22	10,777,273.09
1968	1,058,579.81	84.60	12,513.00	36.35	454,827.39
1969	4,594,823.08	83.73	54,877.96	36.48	2,001,839.47
1970	7,232,626.96	82.86	87,292.49	36.61	3,195,349.41

APT
Electric Division
367.03 Mains - All
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: *70* *Survivor Curve:* *L0*

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1971	3,641,608.66	81.98	44,421.00	36.73	1,631,558.41
1972	61,473,940.41	81.10	757,993.72	36.85	27,932,718.17
1973	3,862,909.45	80.22	48,154.41	36.97	1,780,231.36
1974	2,486,485.23	79.33	31,341.86	37.08	1,162,291.44
1975	3,925,833.79	78.45	50,045.08	37.20	1,861,474.17
1976	2,222,398.72	77.55	28,656.19	37.30	1,068,986.98
1977	3,025,668.19	76.66	39,469.76	37.41	1,476,480.12
1978	844,073.20	75.76	11,141.74	37.51	417,901.51
1979	3,316,950.34	74.85	44,312.79	37.60	1,666,299.05
1980	1,610,790.90	73.94	21,783.99	37.69	821,121.40
1981	4,646,744.30	73.03	63,628.36	37.78	2,403,844.72
1982	2,146,516.63	72.11	29,767.36	37.86	1,126,984.55
1983	1,403,163.64	71.18	19,711.67	37.93	747,750.67
1984	2,503,926.94	70.25	35,641.38	38.00	1,354,492.46
1985	6,420,829.47	69.32	92,630.36	38.07	3,526,130.61
1986	1,992,464.52	68.37	29,140.53	38.12	1,110,963.48
1987	20,379,052.12	67.43	302,242.02	38.18	11,538,473.14
1988	6,585,648.24	66.47	99,073.34	38.22	3,786,826.48
1989	9,942,173.05	65.51	151,759.67	38.26	5,806,721.94
1990	23,469,619.25	64.55	363,606.36	38.30	13,924,952.35
1991	14,675,415.51	63.57	230,837.97	38.32	8,846,756.78
1992	11,667,961.48	62.60	186,402.01	38.35	7,147,712.71
1993	8,297,812.91	61.61	134,683.08	38.36	5,166,431.38

APT
Electric Division
367.03 Mains - All
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: *70* *Survivor Curve:* *L0*

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1994	13,389,629.76	60.62	220,890.49	38.37	8,474,816.39
1995	6,300,872.72	59.62	105,691.83	38.37	4,054,921.36
1996	14,413,939.47	58.61	245,947.78	38.36	9,433,496.92
1997	2,656,345.42	57.59	46,127.55	38.34	1,768,390.08
1998	10,168,584.94	56.56	179,789.95	38.31	6,887,418.27
1999	9,544,846.59	55.52	171,921.82	38.27	6,579,195.12
2000	14,502,686.08	54.47	266,264.75	38.22	10,175,883.86
2001	5,241,652.71	53.40	98,154.03	38.15	3,744,803.80
2002	11,270,485.97	52.32	215,401.57	38.07	8,201,013.59
2003	10,102,141.22	51.23	197,203.47	37.98	7,489,195.30
2004	21,708,519.67	50.11	433,192.13	37.86	16,401,916.06
2005	39,291,857.62	48.98	802,243.47	37.73	30,266,618.55
2006	33,252,948.99	47.82	695,405.66	37.57	26,125,040.98
2007	19,957,587.37	46.63	427,990.84	37.38	15,998,672.06
2008	41,608,574.49	45.41	916,289.20	37.16	34,049,188.56
2009	70,809,915.74	44.15	1,603,848.03	36.90	59,182,017.54
2010	34,480,218.34	42.84	804,859.47	36.59	29,449,846.63
2011	55,817,592.13	41.47	1,345,944.72	36.22	48,751,382.36
2012	130,420,175.30	40.02	3,258,829.78	35.77	116,570,148.75
2013	236,422,673.70	38.46	6,146,805.73	35.21	216,445,555.08
2014	171,894,687.90	36.74	4,678,448.16	34.49	161,368,179.53
2015	191,306,487.80	34.74	5,507,156.80	33.49	184,422,541.80
2016	213,164,431.10	31.93	6,675,050.12	31.56	210,661,287.30

APT

Electric Division

367.03 Mains - All

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of September 30, 2016

Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique

Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** ***And Subsequent***

Average Service Life: ***70*** ***Survivor Curve:*** ***L0***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
Total BG	0.00	0.00	0.00	0.00	0.00
Total ELG	1,642,131,650.27	42.34	38,788,630.13	34.95	1,355,655,013.38
Total ALL	1,642,131,650.27	42.34	38,788,630.13	34.95	1,355,655,013.38
Less F.Y.	0.00				
9/30/2016	1,642,131,650.27				

APT
Electric Division
368.00 Compressor Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: **32** *Survivor Curve:* **L0**

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1953	2,823.96	73.56	38.39	10.31	395.81
1954	387.06	72.71	5.32	10.46	55.70
1958	143.13	69.34	2.06	11.09	22.89
1959	1,183.92	68.49	17.29	11.24	194.35
1962	3,681.08	65.97	55.80	11.72	653.98
1963	1,918.20	65.13	29.45	11.88	349.90
1964	1,236.81	64.29	19.24	12.04	231.65
1965	5.67	63.45	0.09	12.20	1.09
1966	2,175.03	62.62	34.74	12.37	429.53
1967	75.16	61.78	1.22	12.53	15.24
1970	4,790.97	59.27	80.83	13.02	1,052.35
1971	85.30	58.43	1.46	13.18	19.24
1973	2,732.47	56.76	48.14	13.51	650.49
1975	50.62	55.09	0.92	13.84	12.72
1976	10,334.06	54.26	190.46	14.01	2,668.10
1977	36.52	53.42	0.68	14.17	9.69
1978	17,275.36	52.59	328.50	14.34	4,710.35
1979	5,030.91	51.75	97.21	14.50	1,409.90
1980	110,153.77	50.92	2,163.34	14.67	31,732.82
1981	703,613.76	50.08	14,049.11	14.83	208,382.68
1982	447,067.36	49.25	9,078.29	15.00	136,135.99
1983	11,925.33	48.41	246.35	15.16	3,734.22
1984	165,560.22	47.57	3,480.38	15.32	53,317.91

APT
Electric Division
368.00 Compressor Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: **32** *Survivor Curve:* **L0**

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1985	115,098.37	46.73	2,463.07	15.48	38,127.54
1986	21,962.60	45.89	478.61	15.64	7,484.69
1987	28,725.63	45.05	637.70	15.80	10,072.84
1988	93,997.75	44.20	2,126.61	15.95	33,920.90
1989	94,859.13	43.35	2,188.04	16.10	35,235.15
1990	592,387.56	42.50	13,937.27	16.25	226,534.33
1991	7,976.35	41.65	191.50	16.40	3,140.88
1992	129,866.43	40.80	3,183.39	16.55	52,669.23
1993	2,741,817.13	39.94	68,656.97	16.69	1,145,542.58
1994	1,677,615.67	39.07	42,938.04	16.82	722,244.32
1995	15,576,350.44	38.20	407,744.97	16.95	6,911,769.76
1996	42,126.69	37.33	1,128.61	17.08	19,272.29
1997	128,021.43	36.44	3,512.78	17.19	60,400.38
1998	609,588.37	35.56	17,144.75	17.31	296,696.73
1999	32,480.89	34.66	937.19	17.41	16,314.42
2000	1,977,752.66	33.75	58,599.05	17.50	1,025,518.17
2001	507,408.60	32.83	15,454.59	17.58	271,726.15
2004	267,101.56	30.00	8,902.42	17.75	158,046.91
2005	21,718,315.64	29.03	748,024.26	17.78	13,303,042.74
2006	22,053,249.04	28.05	786,197.62	17.80	13,994,723.48
2007	7,133,288.27	27.05	263,705.02	17.80	4,694,016.83
2008	11,861,176.14	26.03	455,660.05	17.78	8,101,980.69
2009	1,473,744.00	24.99	58,977.88	17.74	1,046,154.34

APT

Electric Division

368.00 Compressor Station Equipment

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of September 30, 2016

Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique

Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: *32* *Survivor Curve:* *L0*

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
2010	3,178,322.36	23.92	132,891.09	17.67	2,347,753.03
2011	3,438,499.39	22.81	150,752.42	17.56	2,647,049.19
2012	5,016,988.23	21.65	231,701.73	17.40	4,032,255.90
2013	23,410,045.93	20.43	1,145,906.78	17.18	19,685,848.90
2014	19,014,754.05	19.10	995,332.07	16.85	16,775,256.89
2015	1,549,566.47	17.60	88,027.91	16.35	1,439,531.58
2016	3,945,373.19	15.57	253,436.00	15.19	3,850,334.69
Total BG	0.00	0.00	0.00	0.00	0.00
Total ELG	149,930,746.64	25.03	5,990,807.64	17.26	103,398,852.12
Total ALL	149,930,746.64	25.03	5,990,807.64	17.26	103,398,852.12
Less F.Y.	0.00				
9/30/2016	149,930,746.64				

APT
Electric Division
369.00 M&R Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: *37* *Survivor Curve:* *L0*

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1923	21.72	102.17	0.21	8.92	1.90
1925	63.03	100.45	0.63	9.20	5.77
1926	1,631.17	99.59	16.38	9.34	152.96
1927	1,335.39	98.73	13.53	9.48	128.23
1928	13,797.22	97.87	140.97	9.62	1,356.48
1929	2,403.99	97.02	24.78	9.77	241.98
1930	671.16	96.16	6.98	9.91	69.16
1932	461.21	94.45	4.88	10.20	49.80
1935	276.72	91.89	3.01	10.64	32.04
1936	90.21	91.04	0.99	10.79	10.69
1940	738.91	87.63	8.43	11.38	95.99
1942	3,944.91	85.94	45.90	11.69	536.51
1944	2,910.80	84.24	34.55	11.99	414.42
1946	3,983.35	82.55	48.25	12.30	593.65
1947	3,213.23	81.71	39.33	12.46	489.94
1948	2,977.58	80.86	36.82	12.61	464.50
1949	10,591.95	80.02	132.36	12.77	1,690.48
1950	3,630.62	79.18	45.85	12.93	592.84
1951	2,859.67	78.34	36.50	13.09	477.74
1952	10,214.49	77.50	131.81	13.25	1,745.88
1953	42,275.98	76.66	551.51	13.41	7,393.11
1954	10,776.57	75.82	142.14	13.57	1,928.19
1955	12,381.34	74.98	165.14	13.73	2,266.61

APT
Electric Division
369.00 M&R Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: *37* *Survivor Curve:* *L0*

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1956	9,948.69	74.14	134.19	13.89	1,863.50
1957	53,742.20	73.30	733.20	14.05	10,300.16
1958	14,795.48	72.46	204.19	14.21	2,901.55
1959	18,036.63	71.62	251.83	14.37	3,619.45
1960	150,984.86	70.79	2,132.98	14.54	31,004.77
1961	115,305.64	69.95	1,648.42	14.70	24,230.56
1962	166,560.98	69.11	2,409.98	14.86	35,819.41
1963	146,087.00	68.28	2,139.62	15.03	32,152.48
1964	75,846.71	67.44	1,124.63	15.19	17,085.02
1965	119,771.69	66.61	1,798.20	15.36	27,613.84
1966	114,542.88	65.77	1,741.53	15.52	27,030.94
1967	472,067.24	64.94	7,269.66	15.69	114,036.38
1968	205,593.41	64.10	3,207.29	15.85	50,841.44
1969	350,515.17	63.27	5,540.25	16.02	88,738.53
1970	280,724.42	62.43	4,496.44	16.18	72,763.89
1971	243,339.29	61.60	3,950.46	16.35	64,581.13
1972	557,800.37	60.76	9,179.98	16.51	151,586.35
1973	259,987.89	59.93	4,338.36	16.68	72,353.64
1974	339,700.92	59.09	5,748.66	16.84	96,820.02
1975	301,860.95	58.26	5,181.61	17.01	88,119.51
1976	101,142.49	57.42	1,761.46	17.17	30,243.81
1977	355,685.94	56.58	6,286.12	17.33	108,955.72
1978	184,531.09	55.74	3,310.28	17.49	57,912.84

APT
Electric Division
369.00 M&R Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: *37* *Survivor Curve:* *L0*

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
1979	209,993.80	54.91	3,824.61	17.66	67,527.22
1980	455,283.84	54.07	8,420.86	17.82	150,027.82
1981	428,623.80	53.23	8,053.03	17.98	144,754.33
1982	552,010.12	52.38	10,538.05	18.13	191,081.74
1983	320,363.22	51.54	6,216.00	18.29	113,681.11
1984	326,608.05	50.69	6,442.92	18.44	118,823.84
1985	1,869,727.13	49.84	37,511.22	18.59	697,501.57
1986	992,505.47	48.99	20,257.64	18.74	379,711.72
1987	802,849.72	48.14	16,676.98	18.89	315,048.07
1988	1,066,039.67	47.29	22,544.86	19.04	429,147.39
1989	1,747,098.12	46.43	37,631.88	19.18	721,629.52
1990	2,118,942.49	45.56	46,505.62	19.31	898,170.07
1991	2,542,488.76	44.70	56,883.86	19.45	1,106,171.17
1992	1,458,598.80	43.82	33,282.76	19.57	651,491.96
1993	1,029,499.15	42.95	23,971.02	19.70	472,172.97
1994	2,298,655.75	42.07	54,645.22	19.82	1,082,799.68
1995	2,518,418.03	41.18	61,162.26	19.93	1,218,719.98
1996	2,353,998.77	40.28	58,441.34	20.03	1,170,561.58
1997	312,617.90	39.38	7,939.46	20.13	159,783.29
1998	3,132,626.54	38.46	81,448.31	20.21	1,646,194.96
1999	2,714,921.22	37.54	72,325.28	20.29	1,467,310.09
2000	4,493,487.24	36.60	122,762.61	20.35	2,498,594.84
2001	3,273,833.16	35.66	91,812.72	20.41	1,873,689.19

APT
Electric Division
369.00 M&R Station Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: *37* *Survivor Curve:* *L0*

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
2002	1,794,325.08	34.70	51,707.48	20.45	1,057,493.53
2003	2,000,372.75	33.73	59,299.14	20.48	1,214,659.15
2004	6,600,879.34	32.75	201,533.97	20.50	4,132,088.21
2005	2,448,646.33	31.76	77,100.55	20.51	1,581,265.17
2006	6,991,174.57	30.75	227,359.16	20.50	4,660,743.23
2007	6,883,239.01	29.72	231,591.63	20.47	4,741,016.43
2008	6,215,742.75	28.67	216,784.64	20.42	4,427,269.46
2009	11,437,151.84	27.60	414,420.14	20.35	8,432,605.85
2010	8,326,215.01	26.49	314,300.72	20.24	6,361,835.51
2011	11,948,083.23	25.34	471,430.37	20.09	9,473,073.79
2012	22,009,435.72	24.14	911,558.26	19.89	18,135,313.13
2013	16,243,857.12	22.87	710,235.90	19.62	13,935,590.45
2014	35,869,411.82	21.49	1,669,485.50	19.24	32,113,069.45
2015	30,006,837.53	19.91	1,507,118.79	18.66	28,122,939.04
2016	18,010,380.97	17.74	1,015,163.18	17.37	17,629,694.78
Total BG	0.00	0.00	0.00	0.00	0.00
Total ELG	228,574,766.98	25.27	9,044,608.22	19.33	174,824,565.12
Total ALL	228,574,766.98	25.27	9,044,608.22	19.33	174,824,565.12
Less F.Y.	0.00				
9/30/2016	228,574,766.98				

APT
Electric Division
370.00 Communication Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***28*** *Survivor Curve:* ***R1.5***

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1985	471.66	38.47	12.26	7.22	88.55
1989	11,041.17	35.93	307.31	8.68	2,666.96
1990	21,077.84	35.32	596.69	9.07	5,414.67
1993	1,329.04	33.59	39.57	10.34	408.99
1994	7,358.34	33.03	222.79	10.78	2,401.23
1995	165,702.70	32.48	5,101.63	11.23	57,293.05
1997	29,300.50	31.41	932.81	12.16	11,343.84
1998	102,304.59	30.89	3,312.25	12.64	41,856.06
1999	19,604.17	30.37	645.55	13.12	8,468.42
2000	141,045.67	29.85	4,724.62	13.60	64,270.66
2001	39,590.53	29.34	1,349.32	14.09	19,013.37
2002	5,010.78	28.83	173.81	14.58	2,534.00
2003	16,060.27	28.32	567.18	15.07	8,545.07
2004	159,578.18	27.80	5,740.59	15.55	89,255.91
2005	3,454,693.89	27.27	126,668.58	16.02	2,029,672.34
2006	1,299.08	26.74	48.59	16.49	801.08
2007	795,885.52	26.19	30,391.06	16.94	514,768.18
2008	426,140.86	25.62	16,634.39	17.37	288,907.10
2009	410,948.18	25.02	16,423.91	17.77	291,874.86
2010	5,223,881.32	24.39	214,185.98	18.14	3,885,218.95
2011	30,509.00	23.71	1,286.72	18.46	23,753.72
2012	1,209,590.01	22.97	52,667.32	18.72	985,753.92
2013	844,584.94	22.13	38,169.87	18.88	720,532.87

APT

Electric Division

370.00 Communication Equipment

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of September 30, 2016

Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique

Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***28*** *Survivor Curve:* ***R1.5***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
2014	249,845.91	21.13	11,822.48	18.88	223,245.32
2015	564,254.19	19.85	28,430.86	18.60	528,715.62
2016	202,638.64	17.63	11,495.21	17.25	198,327.93
Total BG	0.00	0.00	0.00	0.00	0.00
Total ELG	14,133,746.98	24.71	571,951.36	17.49	10,005,132.69
Total ALL	14,133,746.98	24.71	571,951.36	17.49	10,005,132.69
Less F.Y.	0.00				
9/30/2016	14,133,746.98				

APT
Electric Division
371.00 Other Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: **34** *Survivor Curve:* **L0**

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1911	4.98	110.88	0.04	5.63	0.25
1922	301.52	101.31	2.98	7.06	21.02
1925	29.37	98.71	0.30	7.46	2.22
1927	6,479.18	96.99	66.81	7.74	516.82
1928	5,954.82	96.12	61.95	7.87	487.75
1929	5,211.66	95.26	54.71	8.01	438.28
1935	854.94	90.10	9.49	8.85	84.00
1940	23,663.25	85.82	275.72	9.57	2,639.90
1941	11,398.11	84.97	134.14	9.72	1,304.03
1942	9,493.38	84.12	112.86	9.87	1,113.76
1945	6,885.97	81.57	84.42	10.32	870.88
1946	845.99	80.72	10.48	10.47	109.70
1947	3,694.75	79.87	46.26	10.62	491.18
1948	10,796.70	79.02	136.63	10.77	1,471.50
1949	52,012.11	78.17	665.35	10.92	7,267.37
1950	68.08	77.33	0.88	11.08	9.75
1951	1,549.35	76.48	20.26	11.23	227.51
1952	6,393.39	75.64	84.53	11.39	962.42
1953	12,820.59	74.79	171.42	11.54	1,978.42
1954	1,671.50	73.95	22.60	11.70	264.42
1955	26,520.53	73.10	362.77	11.85	4,300.66
1956	4,812.31	72.26	66.59	12.01	799.98
1957	30,330.32	71.42	424.67	12.17	5,168.72

APT
Electric Division
371.00 Other Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***34*** *Survivor Curve:* ***L0***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
1958	22,968.88	70.58	325.43	12.33	4,012.65
1959	19,783.87	69.74	283.68	12.49	3,543.21
1960	2,911.85	68.90	42.26	12.65	534.64
1961	518.84	68.06	7.62	12.81	97.66
1962	67,039.12	67.22	997.26	12.97	12,937.82
1963	4,282.41	66.39	64.51	13.14	847.35
1964	312.98	65.55	4.77	13.30	63.50
1965	3,489.66	64.71	53.93	13.46	725.93
1966	4,341.04	63.88	67.96	13.63	925.99
1967	7,291.86	63.04	115.67	13.79	1,595.03
1968	1,914.80	62.20	30.78	13.95	429.53
1969	1,006.16	61.37	16.40	14.12	231.48
1970	6,167.35	60.53	101.88	14.28	1,455.25
1971	15,660.15	59.70	262.32	14.45	3,790.16
1972	218.60	58.86	3.71	14.61	54.27
1973	1,304.95	58.03	22.49	14.78	332.35
1976	31,227.79	55.52	562.41	15.27	8,590.63
1978	650.71	53.85	12.08	15.60	188.54
1979	950.70	53.02	17.93	15.77	282.74
1980	20,756.76	52.18	397.79	15.93	6,336.96
1981	33,937.28	51.34	660.99	16.09	10,637.25
1982	41,186.12	50.50	815.50	16.25	13,255.26
1983	19,755.51	49.66	397.78	16.41	6,529.31

APT
Electric Division
371.00 Other Equipment
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***34*** *Survivor Curve:* ***L0***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
1984	19,626.45	48.82	401.99	16.57	6,662.27
1985	11,994.74	47.98	249.99	16.73	4,182.49
1986	14,882.33	47.14	315.73	16.89	5,331.44
1987	92,990.86	46.29	2,008.90	17.04	34,230.42
1988	84,242.40	45.44	1,853.91	17.19	31,869.40
1989	288,069.21	44.59	6,460.59	17.34	112,018.11
1990	260,325.52	43.73	5,952.48	17.48	104,072.93
1991	134,913.66	42.88	3,146.61	17.63	55,461.63
1992	54,823.96	42.01	1,304.90	17.76	23,180.02
1993	126,912.26	41.15	3,084.34	17.90	55,201.41
1994	194,675.46	40.28	4,833.55	18.03	87,129.08
1995	300,520.59	39.40	7,627.64	18.15	138,433.22
1996	107,546.46	38.52	2,792.29	18.27	51,002.60
1997	46,780.45	37.62	1,243.34	18.37	22,846.23
1998	10,542.03	36.73	287.04	18.48	5,303.48
1999	13,084.06	35.82	365.29	18.57	6,782.80
2000	325,915.84	34.90	9,338.63	18.65	174,163.10
2001	47,505.86	33.97	1,398.47	18.72	26,179.15
2002	108,651.28	33.03	3,289.65	18.78	61,773.70
2003	50,268.42	32.07	1,567.23	18.82	29,502.60
2004	3,540.07	31.11	113.80	18.86	2,146.06
2010	1,085,981.92	24.95	43,524.58	18.70	813,953.32
2011	320,430.61	23.83	13,447.97	18.58	249,828.75

APT

Electric Division

371.00 Other Equipment

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of September 30, 2016

Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique

Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: *34* *Survivor Curve:* *L0*

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
2012	525,295.98	22.65	23,188.16	18.40	426,746.31
2013	160,161.08	21.41	7,480.68	18.16	135,848.87
Total BG	0.00	0.00	0.00	0.00	0.00
Total ELG	4,919,151.69	32.08	153,358.80	18.07	2,771,777.45
Total ALL	4,919,151.69	32.08	153,358.80	18.07	2,771,777.45
Less F.Y.	0.00				
9/30/2016	4,919,151.69				

APT
Electric Division
390.00 Structures & Improvements
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: **40** *Survivor Curve:* **R1.5**

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
1921	28,468.60	0.00	0.00	0.00	0.00
1938	7,081.07	79.19	89.42	0.94	83.97
1953	17,428.63	68.21	255.52	4.96	1,267.17
1968	15,325.95	57.26	267.64	9.01	2,412.38
1975	14,800.30	52.64	281.18	11.39	3,201.56
1978	4,952.71	50.79	97.52	12.54	1,222.66
1981	2,409.64	49.02	49.16	13.77	676.84
1983	10,779.34	47.88	225.13	14.63	3,293.80
1984	14,963.02	47.32	316.19	15.07	4,765.91
1985	18,052.80	46.77	385.97	15.52	5,991.14
1987	2,027.96	45.69	44.39	16.44	729.69
1988	2,254.49	45.16	49.93	16.91	844.11
1990	54,544.29	44.11	1,236.64	17.86	22,082.59
1991	111,532.86	43.59	2,558.81	18.34	46,922.88
1992	33,085.54	43.07	768.15	18.82	14,457.88
1993	3,082.52	42.56	72.43	19.31	1,398.49
1995	34,076.96	41.53	820.46	20.28	16,642.20
1996	52,896.96	41.02	1,289.48	20.77	26,785.02
1997	2,279.00	40.51	56.26	21.26	1,196.00
1998	41,184.77	39.99	1,029.82	21.74	22,390.58
1999	430,852.12	39.47	10,915.40	22.22	242,561.46
2000	350,397.58	38.95	8,997.01	22.70	204,196.17
2001	412,338.75	38.41	10,734.45	23.16	248,638.32

APT
Electric Division
390.00 Structures & Improvements
Original Cost Of Utility Plant In Service
And Development Of Composite Remaining Life as of September 30, 2016
Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique
Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: *40* *Survivor Curve:* *R1.5*

Year	Original Cost	Avg. Service Life	Avg. Annual Accrual	Avg. Remaining Life	Future Annual Accruals
(1)	(2)	(3)	(4)	(5)	(6)
2002	79,750.62	37.87	2,105.91	23.62	49,741.37
2004	8,798.56	36.75	239.44	24.50	5,865.42
2005	198,852.90	36.16	5,499.29	24.91	136,985.86
2006	99,729.99	35.55	2,805.21	25.30	70,976.61
2007	31,949.51	34.92	914.99	25.67	23,485.82
2008	910,968.70	34.25	26,596.00	26.00	691,551.67
2009	373,850.67	33.55	11,144.13	26.30	293,055.74
2010	283,982.79	32.79	8,660.28	26.54	229,856.02
2011	1,115,464.40	31.97	34,891.15	26.72	932,285.88
2012	38,385.64	31.06	1,235.93	26.81	33,132.93
2013	58,638.80	30.02	1,953.65	26.77	52,289.44
2014	971,884.05	28.76	33,789.31	26.51	895,858.10
2015	348,075.45	27.12	12,836.48	25.87	332,029.85
2016	94,458.29	24.23	3,898.64	23.85	92,996.30
Total BG	0.00	0.00	0.00	0.00	0.00
Total ELG	6,279,606.23	33.56	187,111.37	25.18	4,711,871.82
Total ALL	6,279,606.23	33.56	187,111.37	25.18	4,711,871.82
Less F.Y.	0.00				
9/30/2016	6,279,606.23				

APT

Electric Division

392.00 Transportation Equipment

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of September 30, 2016

Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique

Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: *7* *Survivor Curve:* *L1*

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
2007	39,271.60	11.92	3,295.13	2.67	8,791.67
2008	84,300.82	11.12	7,581.95	2.87	21,749.77
2009	359,876.09	10.32	34,871.24	3.07	107,059.58
2010	120,823.11	9.52	12,690.70	3.27	41,506.23
2011	285,493.15	8.72	32,753.35	3.47	113,538.05
2012	118,312.65	7.90	14,973.45	3.65	54,675.48
2013	108,074.09	7.08	15,272.86	3.83	58,437.30
2014	333,328.26	6.29	53,014.34	4.04	214,046.00
2015	112,118.89	5.59	20,071.78	4.34	87,029.16
Total BG	0.00	0.00	0.00	0.00	0.00
Total ELG	1,561,598.66	8.03	194,524.80	3.63	706,833.23
Total ALL	1,561,598.66	8.03	194,524.80	3.63	706,833.23
Less F.Y.	0.00				
9/30/2016	1,561,598.66				

APT

Electric Division

396.00 Power Operated Equipment

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of September 30, 2016

Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique

Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: ***15*** *Survivor Curve:* ***R1.5***

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
2008	153,012.10	15.88	9,638.50	7.63	73,494.49
2009	228,758.93	15.36	14,890.61	8.11	120,802.00
2010	307,890.70	14.85	20,739.71	8.60	178,267.48
2011	1,224,631.36	14.31	85,558.21	9.06	775,450.78
2012	301,947.52	13.75	21,955.49	9.50	208,636.69
2013	188,295.66	13.14	14,327.57	9.89	141,731.05
2014	265,788.19	12.45	21,356.60	10.20	217,735.83
2015	243,219.67	11.58	21,006.69	10.33	216,961.31
2016	138,145.29	10.14	13,617.53	9.77	133,038.72
Total BG	0.00	0.00	0.00	0.00	0.00
Total ELG	3,051,689.42	13.68	223,090.91	9.26	2,066,118.35
Total ALL	3,051,689.42	13.68	223,090.91	9.26	2,066,118.35
Less F.Y.	0.00				
9/30/2016	3,051,689.42				

APT

Electric Division

396.00 Power Operated Equipment

Original Cost Of Utility Plant In Service

And Development Of Composite Remaining Life as of September 30, 2016

Based Upon A Composite of BG/ELG Procedure Plus Rem. Life Technique

Using September 30, 2016 Plant In Service And 1/2 of Future Year Additions

ELG Vintages - **1900** *And Subsequent*

Average Service Life: **15** *Survivor Curve:* **R1.5**

Year	*Original Cost*	*Avg. Service Life*	*Avg. Annual Accrual*	*Avg. Remaining Life*	*Future Annual Accruals*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*