UGI Electric Exhibit C (Future) Witness: J. F. Wiedmayer

## UGI UTILITIES, INC. - ELECTRIC DIVISION

DOCKET NO. R-2017-2640058

### **2018 DEPRECIATION STUDY**

CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AS OF SEPTEMBER 30, 2018

Prepared by:



Excellence Delivered As Promised

## UGI UTILITIES, INC. - ELECTRIC DIVISION Docket No. R-2017-2640058

#### 2018 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO ELECTRIC PLANT
AS OF SEPTEMBER 30, 2018



#### Excellence Delivered As Promised

January 15, 2018

Ms. Megan Mattern
Controller and Principal Accounting Officer
UGI Utilities, Inc. – Electric Division
2525 N. 12<sup>th</sup> Street, Suite 360
Reading, PA 19605-2771

#### Ladies and Gentlemen:

Pursuant to your request, we have determined the annual depreciation accruals applicable to electric plant in service for each of the three respective test year periods. The results of our study for the future test year period ending as of September 30, 2018 are presented in the attached report labeled as UGI Electric Exhibit C (Future).

The results of our study for the historic test year period ending as of September 30, 2017 are presented in our report titled "2017 Depreciation Study - Calculated Annual Depreciation Accruals Related to Electric Plant as of September 30, 2017". This report is identified for purposes of this filing as Exhibit C (Historic). The results of our study for the fully projected future test year period ending as of September 30, 2019 are presented in our report titled "2019 Depreciation Study - Calculated Annual Depreciation Accruals Related to Electric Plant as of September 30, 2019". This report is identified for purposes of this filing as Exhibit C (Fully Projected). The same methods, procedures and estimates are used in all three studies. The results for each respective test year are set forth in three, separately bound reports.

The attached report sets forth a description of the methods and procedures upon which the studies were based, the estimates of survivor curves and the calculated annual depreciation rates as of September 30, 2018.

Respectfully submitted,

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC Yohn F. Wiedmayer

JOHN F. WIEDMAYER, C.D.P. Project Manager, Depreciation Studies

JFW:mle

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#### PART I. INTRODUCTION



## UGI UTILITIES, INC. - ELECTRIC DIVISION DEPRECIATION STUDY

#### PART I. INTRODUCTION

#### SCOPE

This report sets forth the results of the depreciation study conducted for UGI Utilities, Inc. – Electric Division to determine the annual depreciation accrual rates and amounts for ratemaking purposes applicable to the original cost of electric plant as of September 30, 2018.

The depreciation accrual rates and amounts presented herein are based on estimated survivor curves and on methods and procedures set forth in previous orders approved by the Pennsylvania Public Utility Commission. The estimated survivor curves presented herein were based on the results of a service life study incorporating statistical analyses of data through 2016.

#### **BASIS OF STUDY**

#### **Depreciation and Amortization**

Depreciation, as defined in the Uniform System of Accounts, is the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of electric plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand, and requirements of public authorities.

Depreciation, as used in accounting, is a method of distributing fixed capital costs over a period of time by allocating annual amounts to expense. Each annual amount of



such depreciation expense is part of that year's total cost of providing utility service. Normally, the period of time over which the fixed capital cost is allocated to the cost of service is equal to the period of time over which an item renders service, that is, the item's service life. The most prevalent method of allocation is to distribute an equal amount of cost to each year of service life. This method is known as the straight line method of depreciation.

The calculation of annual and accrued depreciation based on the straight line method requires the estimation of survivor curves and the selection of group depreciation procedures. These subjects are discussed in the sections which follow.

For most plant accounts, depreciation accruals and accrued depreciation were calculated using the straight line method, the remaining life basis, the average service life (ASL) procedure for plant installed prior to 1982 and the equal life group (ELG) procedure for 1982 and subsequent vintages. The calculations were based on the attained ages and estimated service life characteristics for each depreciable group of electric property. For certain general plant accounts, the amortization amounts, annual and accrued, were based on the age of the vintage and the selected amortization period.

Survivor curves were used to reflect the expected dispersion of retirements, thus providing a consistent method of estimating service lives and depreciation for mass property. Iowa type curves were used to depict the estimated survivor curves. For life span groups, the estimate of life characteristics is consistent because the calculated lives of the units within a group are obtained by employing a single probable retirement date for the entire group.

#### **Service Life Estimates**

The method of estimating service life consisted of compiling the service life history of the plant accounts, subaccounts or depreciable groups, reducing this history to trends through the use of acceptable actuarial techniques, and forecasting the trend of survivors for each depreciable group on the basis of interpretations of past trends and consideration of Company plans for the future. The combination of the historical trend and the estimated future trend yielded a complete pattern of life characteristics from which the average service life was derived.

The Company's service life estimates used in the depreciation calculation incorporated historical data compiled through 2016 from the property records of the Company. Such data included plant additions, retirements, transfers and other activity. Generally, retirement data for the years 1960 through 2016 were used in the actuarial life table computations which were the primary statistical support of the service life estimates.

A general understanding of the function of the plant and information with respect to the reasons for past retirements and the expected future causes of retirement was obtained through field trips conducted during the course of the service life study. Discussions with operating and management personnel also provided information regarding plans for the future which was incorporated in the interpretation and extrapolation of the statistical analyses.

#### AMORTIZATION OF NET SALVAGE

Inasmuch as this report relates primarily to Pennsylvania rate regulation practices, under which experienced costs of negative net salvage are amortized after their occurrence, no adjustments for expected salvage were made to either the annual

depreciation accrual or the calculated accrued depreciation for the individual accounts. The annual provision for recovering negative net salvage is based on the amortization of experienced and estimated net salvage recorded October 1, 2013 through September 30, 2018 over a five-year period.

PART II. ESTIMATION OF SURVIVOR CURVES

#### PART II. ESTIMATION OF SURVIVOR CURVES

#### **Survivor Curves**

The use of an average service life for a property group implies that the various units in the group have different lives. Thus, the average life may be obtained by determining the separate lives of each of the units, or by constructing a survivor curve by plotting the number of units which survive at successive ages. The use of survivor curves, which reflect experienced and expected dispersion of service lives, is a systematic and rational means of estimating average service lives to be used to calculate depreciation for utility property. A discussion of the general concept of survivor curves and the lowa type survivor curves is presented.

The survivor curve graphically depicts the amount of property existing at each age throughout the life of an original group. From the survivor curve, the average life of the group, the remaining life expectancy, the probable life and the frequency curve can be calculated. In Figure 1, a typical smooth survivor curve and the derived curves are illustrated. The average life is obtained by calculating the area under the survivor curve, from age zero to the maximum age, and dividing this area by the ordinate at age zero. The remaining life expectancy at any age can be calculated by obtaining the area under the curve, from the observation age to the maximum age, and dividing this area by the percent surviving at the observation age. For example, in Figure 1 the remaining life at age 30 years is equal to the crosshatched area under the survivor curve divided by 29.5 percent surviving at age 30. The probable life at any age is developed by adding the age and remaining life. If the probable life of the property is calculated for each year of age, the probable life curve shown in the chart can be developed. The frequency curve presents the number of units retired in each age



interval and is derived by obtaining the differences between the amount of property surviving at the beginning and at the end of each interval.

#### <u>Iowa Type Curves</u>

The range of survivor characteristics usually experienced by utility and industrial properties is encompassed by a system of generalized survivor curves known as the lowa type curves. There are four families in the lowa system, labeled in accordance with the location of the modes of the retirements in relationship to the average life and the relative height of the modes. The left moded curves, presented in Figure 2, are those in which the greatest frequency of retirement occurs to the left of, or prior to, average service life. The symmetrical moded curves, presented in Figure 3, are those in which the greatest frequency of retirement occurs at average service life. The right moded curves, presented in Figure 4, are those in which the greatest frequency occurs to the right of, or after, average service life. The origin moded curves, presented in Figure 5, are those in which the greatest frequency of retirement occurs at the origin, or immediately after age zero. The letter designation of each family of curves (L, S, R or 0) represents the location of the mode of the associated frequency curve with respect to the average service life. The numerical subscripts represent the relative heights of the modes of the frequency curves within each family.

The lowa curves were developed at the lowa State College Engineering Experiment Station through an extensive process of observation and classification of the ages at which industrial property had been retired. A report of the study which resulted in the classification of property survivor characteristics into 18 type curves, which constitute three of the four families, was published in 1935 in the form of the

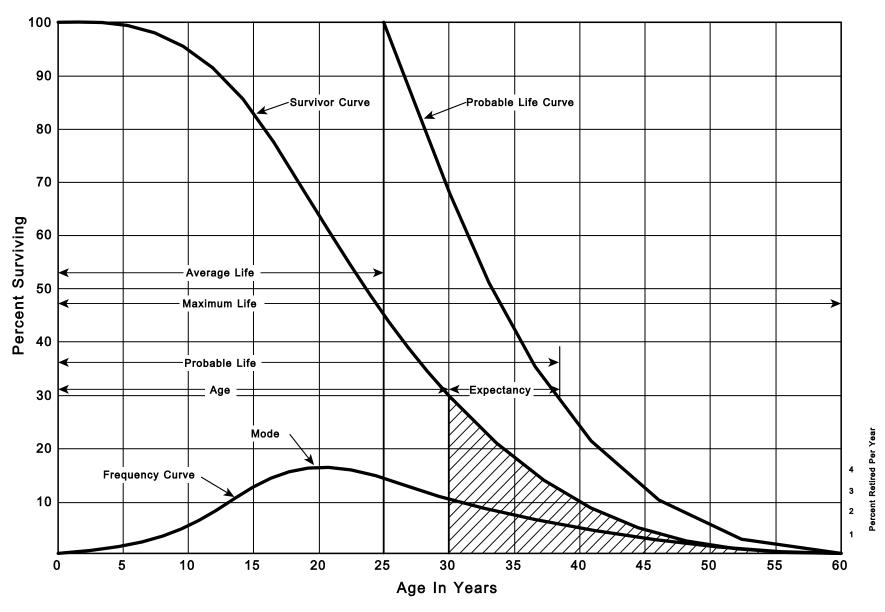


Figure 1. A Typical Survivor Curve and Derived Curves

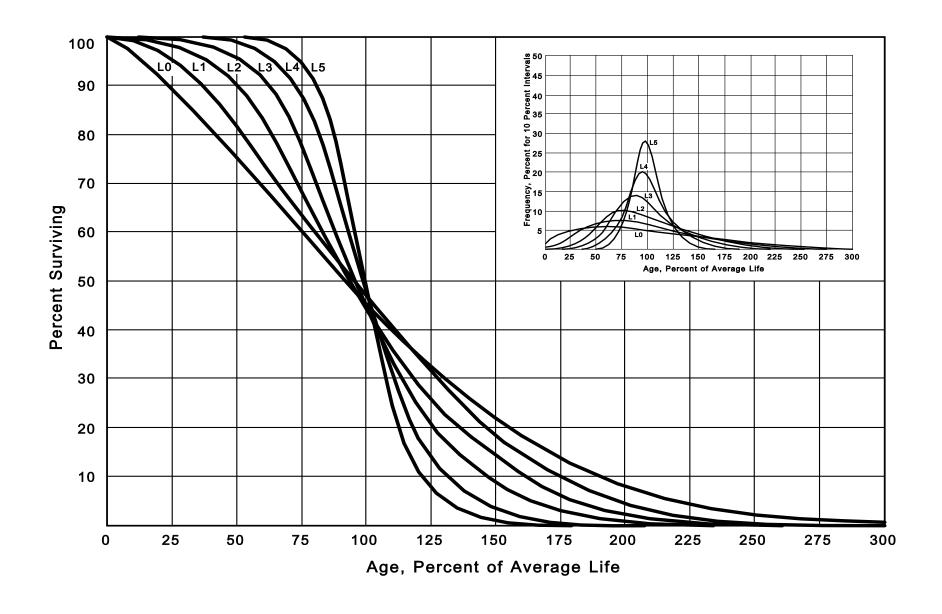


Figure 2. Left Modal or "L" lowa Type Survivor Curves

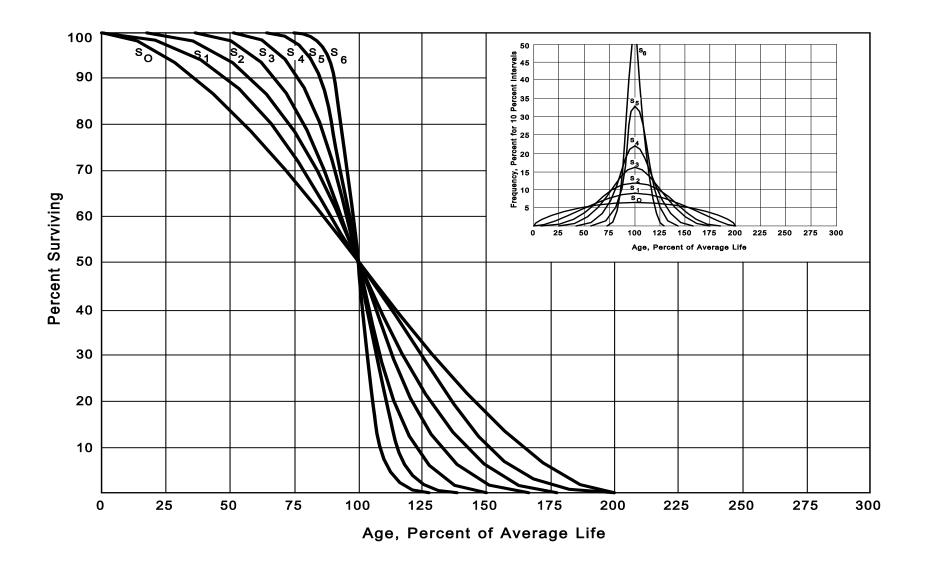


Figure 3. Symmetrical or "S" lowa Type Survivor Curves

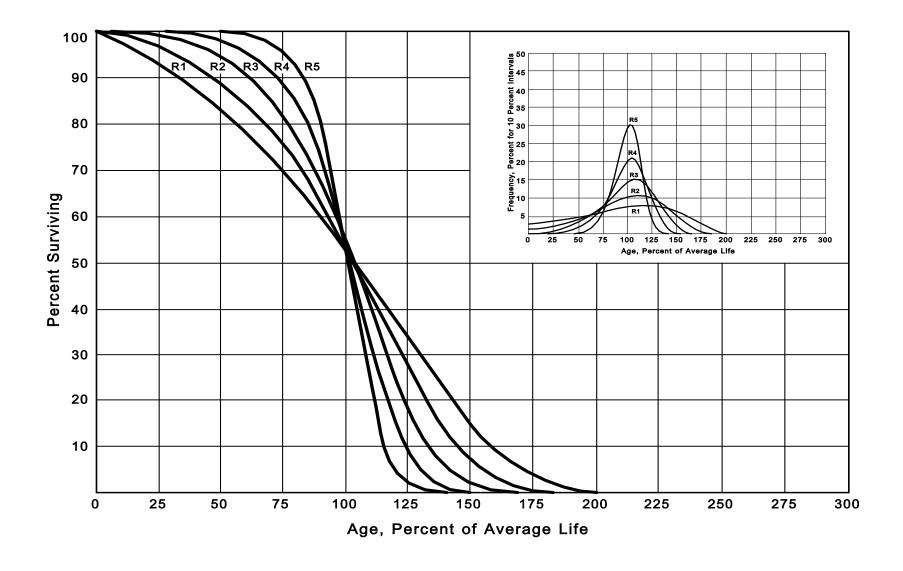


Figure 4. Right Modal or "R" lowa Type Survivor Curves

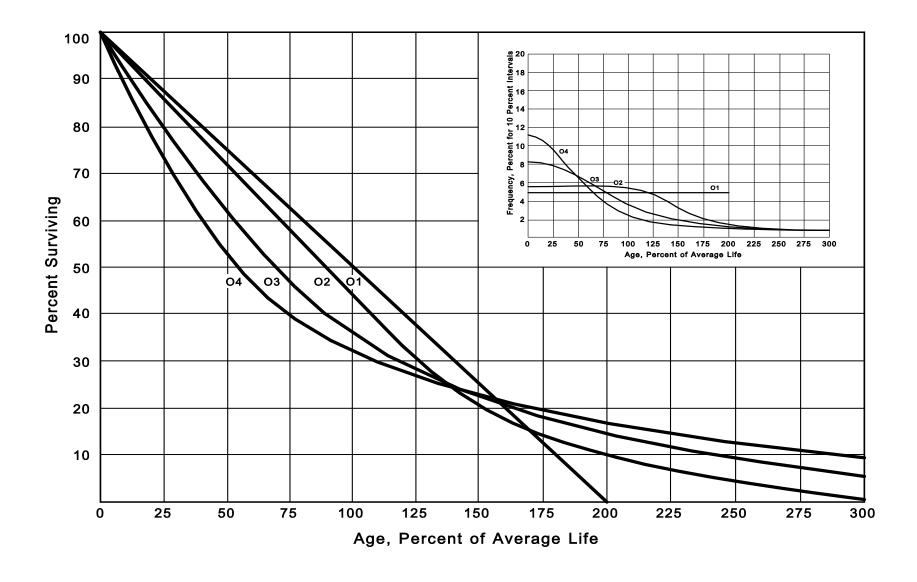


Figure 5. Origin Modal or "O" lowa Type Survivor Curves

Experiment Station's Bulletin 125.<sup>1</sup> These curve types have also been presented in subsequent Experiment Station bulletins and in the text, "Engineering Valuation and Depreciation." In 1957, Frank V. B. Couch, Jr., an Iowa State College graduate student submitted a thesis presenting his development of the fourth family consisting of the four O type survivor curves.

Survivor curves for groups in which all property is expected to be retired concurrently, such as power plants, are obtained by truncating smooth survivor curves at an age before zero percent surviving is reached. Such groups to which truncated survivor curves are applicable are designated as life span groups. In life span groups of one or more vintages, future retirements of all property included in the group are anticipated to occur at a specific date or over a restricted range of future dates which are represented by an estimated probable retirement date. Survivor curves for life span groups can be developed using both available historical experience and known or forecasted retirement dates. The life span of both the original installation and a subsequent addition is the number of years which elapse between its installation and the final retirement of the group. During the life of the group as a whole, interim retirements normally occur between age zero and the maximum age to produce a survivor pattern which is referred to as an "interim survivor curve".

#### **Retirement Rate Method of Analysis**

The retirement rate method is an actuarial method of deriving survivor curves using the average rates at which property of each age group is retired. The method relates to

<sup>&</sup>lt;sup>2</sup>Marston, Anson, Robley Winfrey and Jean C. Hempstead. Engineering Valuation and Depreciation, 2nd Edition. New York, McGraw-Hill Book Company. 1953.



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<sup>&</sup>lt;sup>1</sup> Winfrey, Robley. <u>Statistical Analyses of Industrial Property Retirements</u>. Iowa State College, Engineering Experiment Station, Bulletin 125. 1935.

property groups for which aged accounting experience is available or for which aged accounting experience is developed by statistically aging unaged amounts and is the method used to develop the original stub survivor curves in this study. The method (also known as the annual rate method) is illustrated through the use of an example in the following text, and is also explained in several publications, including "Statistical Analyses of Industrial Property Retirements," "Engineering Valuation and Depreciation," and "Depreciation Systems."

The average rate of retirement used in the calculation of the percent surviving for the survivor curve (life table) requires two sets of data: first, the property retired during a period of observation, identified by the property's age at retirement; and second, the property exposed to retirement at the beginning of the age intervals during the same period. The period of observation is referred to as the <u>experience band</u>, and the band of years which represent the installation dates of the property exposed to retirement during the experience band is referred to as the <u>placement band</u>. An example of the calculations used in the development of a life table follows. The example includes schedules of annual aged property transactions, a schedule of plant exposed to retirement, a life table and illustrations of smoothing the stub survivor curve.

#### Schedules of Annual Transactions in Plant Records.

The property group used to illustrate the retirement rate method is observed for the experience band 2008-2017 during which there were placements during the years 2003-2017. In order to illustrate the summation of the aged data by age interval, the data

<sup>&</sup>lt;sup>5</sup>Wolf, Frank K. and W. Chester Fitch. <u>Depreciation Systems</u>. Iowa State University Press. 1994.



<sup>&</sup>lt;sup>3</sup>Winfrey, Robley, Supra Note 1.

<sup>&</sup>lt;sup>4</sup>Marston, Anson, Robley Winfrey, and Jean C. Hempstead, Supra Note 2.

were compiled in the manner presented in Schedules 1 and 2 on pages II-12 and II-13. In Schedule 1, the year of installation (year placed) and the year of retirement are shown. The age interval during which a retirement occurred is determined from this information. In the example which follows, \$10,000 of the dollars invested in 2003 were retired in 2008. The \$10,000 retirement occurred during the age interval between 4½ and 5½ years on the basis that approximately one-half of the amount of property was installed prior to and subsequent to July 1 of each year. That is, on the average, property installed during a year is placed in service at the midpoint of the year for the purpose of the analysis. All retirements also are stated as occurring at the midpoint of a one-year age interval of time, except the first age interval which encompasses only one-half year.

The total retirements occurring in each age interval in a band are determined by summing the amounts for each transaction year-installation year combination for that age interval. For example, the total of \$143,000 retired for age interval  $4\frac{1}{2}$ - $5\frac{1}{2}$  is the sum of the retirements entered on Schedule 1 immediately above the stairstep line drawn on the table beginning with the 2008 retirements of 2003 installations and ending with the 2017 retirements of the 2012 installations. Thus, the total amount of 143 for age interval  $4\frac{1}{2}$ - $5\frac{1}{2}$  equals the sum of:

$$10 + 12 + 13 + 11 + 13 + 13 + 15 + 17 + 19 + 20$$
.

In Schedule 2, other transactions which affect the group are recorded in a similar manner. The entries illustrated include transfers and sales. The entries which are credits to the plant account are shown in parentheses. The items recorded on this schedule are not totaled with the retirements but are used in developing the exposures at the beginning of each age interval.

#### SCHEDULE 1. RETIREMENTS FOR EACH YEAR 2008-2017 SUMMARIZED BY AGE INTERVAL

Experience Band 2008-2017

Placement Band 2003-2017

_	Retirements, Thousands of Dollars											
Year				Total During	Age							
<u>Placed</u>	2008	2009	<u>2010</u>	<u>2011</u>	2012	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	2017	Age Interval	Interval
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2003	10	_ 11	12	13	14	16	23	24	25	26	26	13½-14½
2004	11	12	_ 13	15	16	18	20	21	22	19	44	12½-13½
2005	11	12	13	14	16	17	19	21	22	18	64	11½-12½
2006	8	9	10	11	11	13	14	15	16	17	83	10½-11½
2007	9	10	11	12	13	14	16	17	19	20	93	9½-10½
2008	4	9	10	11	12	13	14	15	16	20	105	81/2-91/2
2009		5	11	12	13	14	15	16	18	20	113	71/2-81/2
2010			6	12	13	15	16	17	19	19	124	61/2-71/2
2011				6	13	15	16	17	19	19	131	5½-6½
2012					7	14	16	17	19	20	143	41/2-51/2
2013						8	18	20	22	23	146	31/2-41/2
2014							9	20	22	25	150	2½-3½
2015								11	23	25	151	1½-2½
2016									11	24	153	1/2-11/2
2017						-				13	80	0-1/2
Total	53	68	86	106	128	157	196	231	273	308	1,606	

## SCHEDULE 2. OTHER TRANSACTIONS FOR EACH YEAR 2008-2017 SUMMARIZED BY AGE INTERVAL

Experience Band 2008-2017

Placement Band 2003-2017

_	Acquisitions, Transfers and Sales, Thousands of Dollars											
Year <u>Placed</u>	2008	2009	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	2017	Total During <u>Age Interval</u>	Age <u>Interval</u>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2003	-	-	-	-	-	-	60 <sup>a</sup>	-	-	-	-	13½-14½
2004	-	-	-	-	-	-	-	-	-	-	-	12½-13½
2005	-	-	-	-	-	-	-	-	-	-	-	11½-12½
2006	-	-	-	-	-	-	-	(5) <sup>b</sup>	-	-	60	10½-11½
2007	-	-	-	-	-	-	-	6 <sup>a</sup>	-	-	-	9½-10½
2008	-	-	-	-	-	-	-	-	-	-	(5)	81/2-91/2
2009		-	-	-	-	-	-	-	-	-	6	71/2-81/2
2010			-	-	-	-	-	-	-	-	-	61/2-71/2
2011				-	-	-	-	(12) <sup>b</sup>	-	-	-	51/2-61/2
2012					-	-	-	-	22 <sup>a</sup>	-	-	4½-5½
2013						-	-	(19) <sup>b</sup>	-	-	10	31/2-41/2
2014							-	-	-	-	-	21/2-31/2
2015								-	-	$(102)^{c}$	(121)	1½-2½
2016									-	-	-	1/2-11/2
2017												0-1/2
Total							60	(30)	22	(102)	(50)	

<sup>&</sup>lt;sup>a</sup> Transfer Affecting Exposures at Beginning of Year

Parentheses Denote Credit Amount.

<sup>&</sup>lt;sup>b</sup> Transfer Affecting Exposures at End of Year

<sup>&</sup>lt;sup>c</sup> Sale with Continued Use

#### Schedule of Plant Exposed to Retirement.

The development of the amount of plant exposed to retirement at the beginning of each age interval is illustrated in Schedule 3 on page II-15.

The surviving plant at the beginning of each year from 2008 through 2017 is recorded by year in the portion of the table headed "Annual Survivors at the Beginning of the Year". The last amount entered in each column is the amount of new plant added to the group during the year. The amounts entered in Schedule 3 for each successive year following the beginning balance or addition are obtained by adding or subtracting the net entries shown on Schedules 1 and 2. For the purpose of determining the plant exposed to retirement, transfers-in are considered as being exposed to retirement in this group at the beginning of the year in which they occurred, and the sales and transfers-out are considered to be removed from the plant exposed to retirement at the beginning of the following year. Thus, the amounts of plant shown at the beginning of each year are the amounts of plant from each placement year considered to be exposed to retirement at the beginning of each successive transaction year. For example, the exposures for the installation year 2013 are calculated in the following manner:

```
Exposures at age 0 = amount of addition = $750,000 Exposures at age \frac{1}{2} = $750,000 = $742,000 Exposures at age \frac{1}{2} = $742,000 = $724,000 Exposures at age \frac{2}{2} = $724,000 + $19,000 = $685,000 Exposures at age \frac{3}{2} = $685,000 = $663,000
```

For the entire experience band 2007-2016 the total exposures at the beginning of an age interval are obtained by summing diagonally in a manner similar to the summing of the retirements during an age interval (Schedule 1). For example, the figure of 3,789,

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#### SCHEDULE 3. PLANT EXPOSED TO RETIREMENT JANUARY 1 OF EACH YEAR 2007-2016 SUMMARIZED BY AGE INTERVAL

Experience Band 2008-2017

Placement Band 2003-2017

E S				Total at									
Ţ.	Year	Annual Survivors at the Beginning of the Year											Age
eming	<u>Placed</u>	2008	2009	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	Age Interval	Interval
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	2002	255	245	234	222	209	195	239	216	192	167	167	13½-14½
	2003	279	268	256	243	228	212	194	174	153	131	323	12½-13½
	2004	307	296	284	271	257	241	224	205	184	162	531	11½-12½
_	2005	338	330	321	311	300	289	276	262	242	226	823	10½-11½
II-15	2006	376	367	357	346	334	321	307	297	280	261	1,097	9½-10½
O.	2007	420a	416	407	397	386	374	361	347	332	316	1,503	81/2-91/2
	2008		460a	455	444	432	419	405	390	374	356	1,952	71/2-81/2
	2009			510a	504	492	479	464	448	431	412	2,463	61/2-71/2
	2010				580a	574	561	546	530	501	482	3,057	5½-6½
	2011					660a	653	639	623	628	609	3,789	4½-5½
	2012						750a	742	724	685	663	4,332	31/2-41/2
UGI	2013							850a	841	821	799	4,955	2½-3½
UGI Utilities,	2014								960a	949	926	5,719	1½-2½
ties	2015									1,080a	1,069	6,579	1/2-11/2
Inc. Septe	2016										1,220a	7,490	0-1/2
s, Inc Electric - September 30, 2	Total	<u>1,975</u>	2,382	<u>2,824</u>	3,318	3,872	4,494	5,247	<u>6,017</u>	<u>6,852</u>	<u>7,799</u>	44,780	
- FTY 2018		<sup>a</sup> Additions du	ıring the yea	r									

shown as the total exposures at the beginning of age interval  $4\frac{1}{2}$ - $5\frac{1}{2}$ , is obtained by summing:

#### **Original Life Table**

The original life table, illustrated in Schedule 4 on page II-17, is developed from the totals shown on the schedules of retirements and exposures, Schedules 1 and 3, respectively. The exposures at the beginning of the age interval are obtained from the corresponding age interval of the exposure schedule, and the retirements during the age interval are obtained from the corresponding age interval of the retirement schedule. The retirement ratio is the result of dividing the retirements during the age interval by the exposures at the beginning of the age interval. The percent surviving at the beginning of each age interval is derived from survivor ratios, each of which equals one minus the retirement ratio. The percent surviving is developed by starting with 100% at age zero and successively multiplying the percent surviving at the beginning of each interval by the survivor ratio, i.e., one minus the retirement ratio for that age interval.

The calculations necessary to determine the percent surviving at age 5½ are as follows:

Percent surviving at age  $4\frac{1}{2}$  = 88.15 Exposures at age  $4\frac{1}{2}$  = 3,789,000 Retirements from age  $4\frac{1}{2}$  to  $5\frac{1}{2}$  = 143,000

Retirement Ratio = 143,000 + 3,789,000 = 0.0377Survivor Ratio = 1.000 - 0.0377 = 0.9623Percent surviving at age 5½ =  $(88.15) \times (0.9623) = 84.83$ 



## SCHEDULE 4. ORIGINAL LIFE TABLE CALCULATED BY THE RETIREMENT RATE METHOD

Experience Band 2008-2017

Placement Band 2003-2017

(Exposure and Retirement Amounts are in Thousands of Dollars)

					Percent
Age at	Exposures at	Retirements			Surviving at
Beginning of	Beginning of	During Age	Retirement	Survivor	Beginning of
<u>Interval</u>	Age Interval	<u>Interval</u>	<u>Ratio</u>	<u>Ratio</u>	Age Interval
(1)	(2)	(3)	(4)	(5)	(6)
0.0	7,490	80	0.0107	0.9893	100.00
0.5	6,579	153	0.0233	0.9767	98.93
1.5	5,719	151	0.0264	0.9736	96.62
2.5	4,955	150	0.0303	0.9697	94.07
3.5	4,332	146	0.0337	0.9663	91.22
4.5	3,789	143	0.0377	0.9623	88.15
5.5	3,057	131	0.0429	0.9571	84.83
6.5	2,463	124	0.0503	0.9497	81.19
7.5	1,952	113	0.0579	0.9421	77.11
8.5	1,503	105	0.0699	0.9301	72.65
9.5	1,097	93	0.0848	0.9152	67.57
10.5	823	83	0.1009	0.8991	61.84
11.5	531	64	0.1205	0.8795	55.60
12.5	323	44	0.1362	0.8638	48.90
13.5	<u> 167</u>	<u>26</u>	0.1557	0.8443	42.24
					35.66
Total	<u>44,780</u>	<u>1,606</u>			

Column 2 from Schedule 3, Column 12, Plant Exposed to Retirement.

Column 3 from Schedule 1, Column 12, Retirements for Each Year.

Column 4 = Column 3 divided by Column 2.

Column 5 = 1.0000 minus Column 4.

Column 6 = Column 5 multiplied by Column 6 as of the Preceding Age Interval.



The totals of the exposures and retirements (Columns 2 and 3) are shown for the purpose of checking with the respective totals in Schedules 1 and 3. The ratio of the total retirements to the total exposures, other than for each age interval, is meaningless.

The original survivor curve is plotted from the original life table (Column 6, Schedule 4). When the curve terminates at a percent surviving greater than zero, it is called a stub survivor curve. Survivor curves developed from retirement rate studies generally are stub curves.

#### **Smoothing the Original Survivor Curve**

The smoothing of the original survivor curve eliminates any irregularities and serves as the basis for the preliminary extrapolation to zero percent surviving of the original stub curve. Even if the original survivor curve is complete from 100% to zero percent, it is desirable to eliminate any irregularities, as there is still an extrapolation for the vintages which have not yet lived to the age at which the curve reaches zero percent. In this study, the smoothing of the original curve with established type curves was used to eliminate irregularities in the original curve.

The lowa type curves are used in this study to smooth those original stub curves which are expressed as percents surviving at ages in years. Each original survivor curve was compared to the lowa curves using visual and mathematical matching in order to determine the better fitting smooth curves. In Figures 6, 7, and 8, the original curve developed in Schedule 4 is compared with the L, S, and R lowa type curves which most nearly fit the original survivor curve. In Figure 6, the L1 curve with an average life between 12 and 13 years appears to be the best fit. In Figure 7, the SO type curve with a 12-year average life appears to be the best fit and appears to be better than the L1 fitting. In Figure 8, the R1 type curve with a 12-year average life appears to be the best fit and

appears to be better than either the L1 or the SO. In Figure 9, the three fittings, 12-L1, 12-SO, and 12-R1 are drawn for comparison purposes. It is probable that the 12-R1 lowa curve would be selected as the most representative of the plotted survivor characteristics of the group, assuming no contrary relevant factors external to the analysis of historical data.

FIGURE 6. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN L1 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES

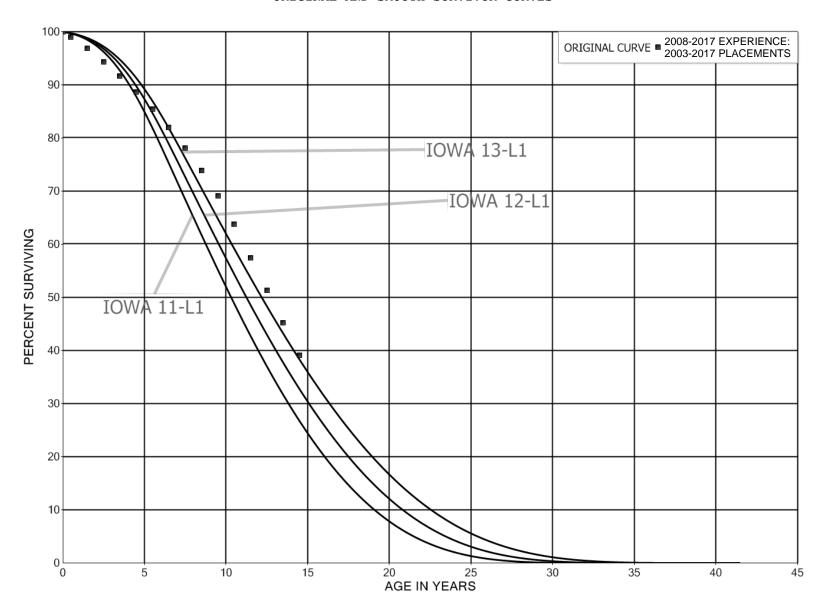


FIGURE 7. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN SO IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES

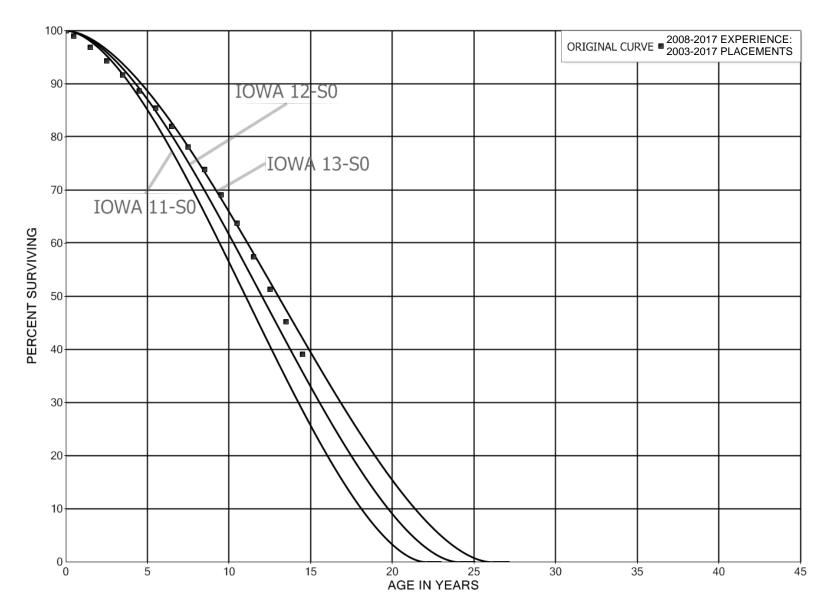


FIGURE 8. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN R1 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES

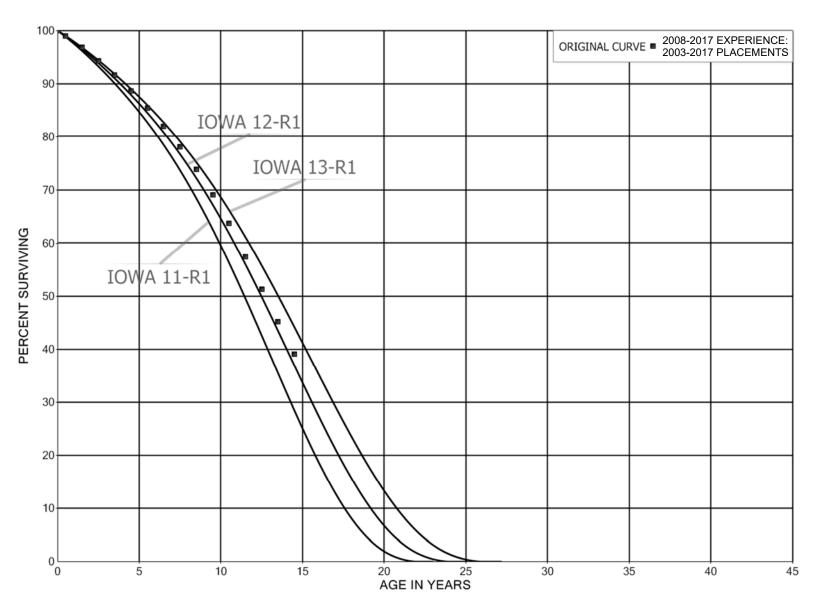
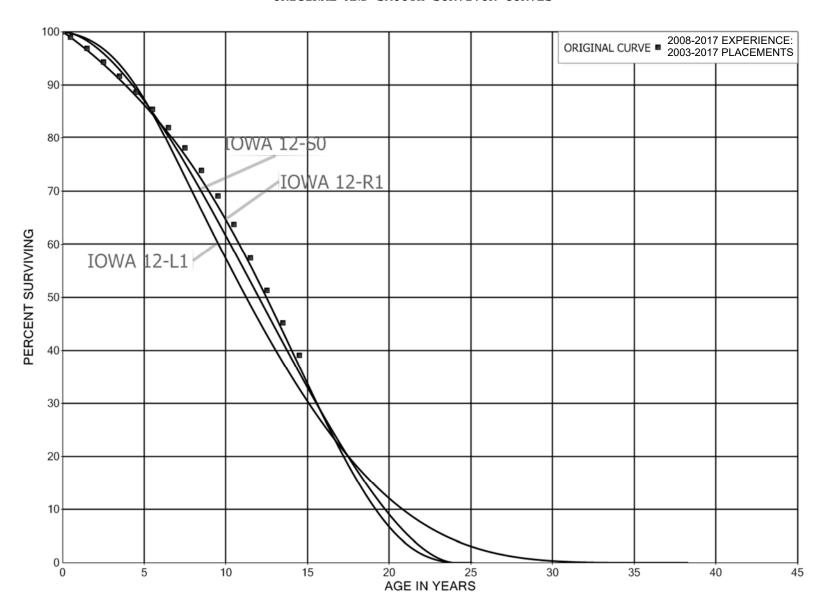


FIGURE 9. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN L1, SO AND R1 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES



## PART III. SERVICE LIFE CONSIDERATIONS

#### PART III. SERVICE LIFE CONSIDERATIONS

#### Field Trips

In order to be familiar with the operation of the Company and observe representative portions of the plant, field trips have been conducted periodically. A general understanding of the function of the plant and information with respect to the reasons for past retirements and the expected future causes of retirements are obtained during these field trips. This knowledge and information were incorporated in the interpretation and extrapolation of the statistical analyses.

The following is a list of the locations visited during the most recent trips:

#### January 27, 2017

Empire Administrative Office
Hunlock Transmission Substation
Huntsville Transmission Substation
Mountain Transmission Substation
Power Control Center

#### December 14, 2011

Empire Administrative Office
Hanover Industrial Park Office
Hanover Industrial Park Transmission Substation
Mountain Transmission Substation
Hunlock Transmission Substation
Plymouth Transmission Substation
Swoyersville Transmission Substation
Kingston Transmission Substation
Courtdale Transmission Substation
Lincoln Street Transmission Substation
Nanticoke Service Center
Forty Fort Warehouse

#### May 14, 2007

Hanover Industrial Park Transmission Substation
Hanover Industrial Park Office
Hunlock Transmission Substation
Mountain Transmission Substation
Swoyersville Transmission Substation
Forty Fort Warehouse
Courtdale Transmission Substation
Plymouth Storeroom



#### May 8, 2002

**Hunlock Transmission Substation** 

Nanticoke Transmission Substation

Nanticoke Service Center

Plymouth Transmission Substation

Kingston Transmission and Distribution Substation

Mountain Transmission Substation

**Huntsville Transmission Substation** 

Kunkle Transmission Substation

Dallas Transmission Substation

Glenview Substation

Swoyersville Transmission Substation

Forty Fort Warehouse

Courtdale Transmission Substation

Plymouth Storeroom

#### October 16, 1996

Hunlock Generating and Transmission Substation

Hanover Industrial Park Transmission Substation

Nanticoke Transmission Substation

Nanticoke Service Center

Plymouth Transmission Substation

Kingston Transmission and Distribution Substation

Mountain Transmission Substation

**Huntsville Transmission Substation** 

**Idetown Distribution Substation** 

Alderson Distribution Substation

Kunkle Transmission Substation

**Dallas Transmission Substation** 

Glenview Substation

Swoyersville Transmission Substation

Koonsville Transmission Substation

Forty Fort Warehouse

Courtdale Transmission Substation

Plymouth Storeroom

#### <u>Judgment.</u>

The survivor curve estimates were based on judgment which considered a number of factors. The primary factors were the statistical analyses of data; current Company policies and outlook as determined during the field trips and other conversations with management; and the survivor curve estimates from previous studies of this company and other electric companies.



The current service life study is based on data through 2016. For a majority of the mass plant accounts and subaccounts for which survivor curves were estimated, the statistical analyses resulted in reasonable indications of the survivor patterns experienced. Generally, the information external to the statistics led to no significant departure from the indicated survivor curves for the following accounts:

### Account Number and Title

- 353 Station Equipment
  355 Poles and Fixtures
  356 O Overhood Conductors
- 356.0 Overhead Conductors and Devices
- 362 Station Equipment
- 364 Poles, Towers & Fixtures
- 365 Overhead Conductors and Devices
- 367 Underground Conductors & Devices
- 368.1 Transformers
- 368.2 Transformer Installations
- 369 Services
- 370.1 Meters
- 371.0 Installations on Customers' Premises
- 371.5 Installations on Customers' Premises Dusk to Dawn Lights
- 373.0 Street Lighting and Signal Systems
- 392.1 Transportation Equipment Passenger Cars
- 392.2 Transportation Equipment Light Trucks
- 392.4 Transportation Equipment Heavy Trucks

Account 368.1, Transformers, is used to illustrate the manner in which the study was conducted for the groups in the preceding list. Aged retirement and other plant accounting data were compiled for the years 1960 through 2016. These data were coded in the course of the Company's normal recordkeeping according to plant account or property group, type of transaction, year in which the transaction took place, and year in which the electric plant was placed in service. The data were analyzed by the retirement rate method of life analysis. The survivor curve chart for the account is presented on page VI-40 and the life table for the experience band plotted on the chart follows it.

The rates of retirements of transformers have been consistent throughout the experience band. Retirements of transformers are primarily caused by storm damage, deterioration, fire or third-party damage, capacity or loading issues, etc. Most of the pre-1983 line transformers that contained PCB's have been removed. Discussions with operating and management personnel indicated that the life characteristics of transformers will be similar in the future as they have been in the past. Typical service lives for line transformers of other electric companies range from 30 to 45 years. The lowa 43-S1 survivor curve reflects the outlook of management, is within the range of service life estimates used by other electric companies and is a reasonable interpretation of the significant portion of the stub survivor curve through age 54.

For Account 365.0, Overhead Conductors and Devices, the estimate of survivor characteristics is based on the 1960-2016 experience band. Most retirements have been due to deterioration, inadequacy and voltage conversions. Typical service lives for overhead conductors and devices range from 40 to 55 years. The Iowa 55-R1 survivor curve is within the range of other estimates, is a reasonable interpretation of a significant portion of the survivor curve through age 57 and reflects the outlook of management.

The estimate for Account 367, the 40-R2, is based on management's expectation of a relatively short life for the direct buried conductor which represents a significant portion of the pre-1986 vintage conductor in this account. Other electric companies have experienced significant levels of early retirements; thus, management's service life outlook for direct buried conductor is much less than overhead conductor. Improvements in the insulating material for conductors installed subsequent to 1985

have greatly reduced early retirements for this account.

Similar studies were performed for the remaining significant mass plant accounts. The results of the statistical analyses are presented in account sequence in this report, beginning on page VI-2.

The survivor curve estimates for Accounts 352, 353.2, 354, 357, 358, 361, 366, 370.2, 370.3, 390.1 and 396 were based on engineering judgment giving consideration to the nature of the property units in each account and the low rates of retirements experienced to date.

The life span technique was used for Account 390.1, Structures and Improvements. A life span was estimated for each structure based on individual circumstances such as size, condition, type of construction, location, and management's plans. An interim survivor curve was estimated for the Forty Fort warehouse complex, inasmuch as interim retirements are normal for such structures and, in fact, have been experienced.

The company plans to relocate their electric operations into a new office and service center in 2019. With the addition of the new office and service center, the existing facilities at the Forty Fort warehouse, a building that was originally constructed in 1927, and the Nanticoke Service Center will no longer be needed and are projected to be retired in 2019. The major structures in Account 390, Structures and Improvements include two primary locations, Forty Fort warehouse and the Nanticoke (a.k.a., Dundee) Service Center. A third major facility is located at the Empire facility in Wilkes Barre, PA. One floor of Empire's administrative office houses most of the electric division's offices however the Empire facility is included with UGI PNG for

accounting purposes. The Empire facility was previously owned by PG Energy before being acquired by UGI. Shortly after PG Energy was acquired in 2006 by UGI, the electric division personnel relocated to Empire from their nearby leased office building in Hanover Industrial Park. For ratemaking purposes in the current proceeding, none of the plant and depreciated related costs at Empire have been allocated to the electric division. That is, all plant and depreciation related costs associated with the Empire facility are assigned to UGI PNG due to the planned addition of the new electric division headquarter office and service center.

Amortization accounting is being used for certain General Plant accounts. The accounts for which amortization accounting is being used comprises a relatively minor percent of the total depreciable electric plant in service.

Generally, the survivor curve estimates for the remainder of the accounts were based on judgments which considered the nature of the plant and equipment, reviews of available historical retirement data, and a general knowledge of the service lives for similar equipment in other electric companies.

# PART IV. CALCULATION OF ANNUAL AND ACCRUED DEPRECIATION

### PART IV. CALCULATION OF ANNUAL AND ACCRUED DEPRECIATION

### **Group Depreciation Procedures**

A group procedure for depreciation is appropriate when considering more than a single item of property. Normally, the items within a group do not have identical service lives, but have lives that are dispersed over a range of time. There are two primary group procedures, namely, average service life and equal life group.

In the average service life procedure, the rate of annual depreciation is based on the average life or average remaining life of the group, and this rate is applied to the surviving balances of the group's cost. A characteristic of this procedure is that the cost of plant retired prior to average life is not fully recouped at the time of retirement, whereas the cost of plant retired subsequent to average life is more than fully recouped. Over the entire life cycle, the portion of cost not recouped prior to average life is balanced by the cost recouped subsequent to average life.

In the equal life group procedure, the property group is subdivided according to service life. That is, each equal life group includes that portion of the property which experiences the life of that specific group. The relative size of each equal life group is determined from the property's life dispersion curve. This procedure eliminates the need to base depreciation on average lives, inasmuch as each group is equivalent to a unit having a single life. The full costs of short-lived units are accrued during their lives, leaving no deferral of accruals required to be added to the annual costs associated with long-lived units. The calculated depreciation for the property group is the summation of the calculated depreciation based on the service life of each equal life group.

### **Remaining Life Annual Accruals**

For the purpose of calculating remaining life accrual rates as of September 30, 2018, the estimated book depreciation reserve for each plant account is allocated among vintages in proportion to the calculated accrued depreciation for the account. Explanations of remaining life accruals and calculated accrued depreciation for the vintages calculated by the average service life procedure and for the vintages calculated by the equal life group procedure follow. The detailed calculations are set forth in the Results of Study section of the report.

### **Average Service Life Procedure**

In the average service life procedure, the remaining life annual accrual for each vintage is determined by dividing future book accruals (original cost less book reserve) by the average remaining life of the vintage. The average remaining life is a directly weighted average derived from the estimated future survivor curve in accordance with the average service life procedure.

The calculated accrued depreciation for each depreciable property group represents that portion of the depreciable cost of the group which would not be allocated to expense through future whole life depreciation accruals if current forecasts of life characteristics are used as the basis for such accruals. The accrued depreciation calculation consists of applying an appropriate ratio to the surviving original cost of each vintage of each account, based upon the attained age and service life. The straight line accrued depreciation ratios are calculated as follows for the average service life procedure:

$$Ratio = 1 - \frac{Average \ Remaining \ Life \ Expectancy}{Average \ Service \ Life}.$$



### **Equal Life Group Procedure**

In the equal life group procedure, the remaining life annual accrual for each vintage is determined by dividing future book accruals (original cost less book reserve) by the composite remaining life for the surviving original cost of that vintage. The composite remaining life is derived by compositing the individual equal life group remaining lives in accordance with the following equation:

Composite Remaining Life - 
$$\frac{(\frac{Book \ Cost}{Life} x \ Remaining \ Life)}{\frac{Book \ Cost}{Life}}$$

The book costs and lives of the several equal life groups which are summed in the foregoing equation are defined by the estimated future survivor curve.

Inasmuch as book cost divided by life equals the whole life annual accrual, the foregoing equation reduces to the following form:

$$Composite \ Remaining \ Life = \frac{\sum Whole \ Life \ Future \ Accruals}{\sum Whole \ Life \ Annual \ Accruals}$$
 or 
$$Composite \ Remaining \ Life = \frac{\sum Book \ Cost \ - \ Calc. \ Reserve}{\sum Whole \ Life \ Annual \ Accrual}.$$

The annual accrual rate for each account is equal to the sum of the remaining life annual accruals for all vintages divided by the account's total original cost. The account's "composite remaining life" is calculated by dividing the sum of the future book accruals for all vintages by the sum of the remaining life annual accruals for all vintages.

The calculated accrued depreciation in the equal life group procedure also represents that portion of depreciable cost which will not be allocated to expense through

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future accruals. However, the calculation is based at the equal life group level rather than the vintage group level, and does not require the use of averages. The equal life group accrued depreciation ratio is calculated as follows:

$$Ratio = 1 - \frac{Remaining \ Life}{Average \ Service \ Life}.$$

Inasmuch as service life minus remaining life equals age, when averages are not employed, the foregoing equation reduces to:

$$Ratio = \frac{Age}{Service \, Life}.$$

The table on the following page illustrates the procedure for calculating straight line equal life group accrued depreciation, using an Iowa 20-S0 survivor curve and a September 30, 2018 calculation date.

In the table, each equal life group is defined by the age interval shown in columns 1 and 2, which identify the ages at which the first and last retirement of each group occur. The group's designated life, shown in column 3, is the midpoint of the interval. In the calculation, the equal life groups of each vintage are arranged such that the midpoint of each one-year age interval coincides with the calculation date, e.g., September 30 in this case. This enables the calculation of annual accruals which are centered on, or as of, the same date as the calculation of accrued depreciation.

The retirement during each age interval, shown in column 4, is the size of each equal life group. It is derived from the lowa 20-S0 survivor curve and is the difference between the percents surviving (not shown) at the beginning and end of the age interval.

INPUT PARAMETERS:

CALCULATION DATE.. 9-30-2018 SURVIVOR CURVE.... 20-S0 IN-SERVICE MONTH..

ZŒF TN	TERVAL	R	ETIREMENTS DURING	GROUP ANNUAL	YEAR	SUMMATION OF ANNUAL	AVERAGE PERCENT	ANNUAL	ACCRUED
BEG	END	LIFE	INTERVAL	ACCRUAL	INST	ACCRUALS	SURVIVING	FACTOR	FACTOR
(1)	(2)	(3)	(4)	(5)=(4)/(3)	(6)	(7)	(8)	(9)	(10)
(-)	(2)	(3)	( - /	(3) (2)/(3)	(0)	( , ,	(0)	(2)	(10)
0.000	1.000	0.500	0.35012	0.35012000000	2018	7.85656929733	99.868498	0.0787	0.0394
1.000	2.000	1.500	0.81284	0.54189333333	2017	7.23550263066	99.243460	0.0729	0.1094
2.000	3.000	2.500	1.17125	0.46850000000	2016	6.73030596400	98.251415	0.0685	0.1713
3.000	4.000	3.500	1.47766	0.42218857143	2015	6.28496167828	96.926960	0.0648	0.2268
4.000	5.000	4.500	1.74739	0.38830888889	2014	5.87971294812	95.314435	0.0617	0.2777
5.000	6.000	5.500	1.98798	0.36145090909	2013	5.50483304913	93.446750	0.0589	0.3240
6.000	7.000	6.500	2.20398	0.33907384615	2012	5.15457067151	91.350770	0.0564	0.3666
7.000	8.000	7.500	2.39831	0.31977466667	2011	4.82514641510	89.049625	0.0542	0.4065
8.000	9.000	8.500	2.57310	0.30271764706	2010	4.51390025824	86.563920	0.0521	0.4429
9.000	10.000	9.500	2.72988	0.28735578947	2009	4.21886353997	83.912430	0.0503	0.4779
10.000	11.000	10.500	2.86981	0.27331523810	2008	3.93852802619	81.112585	0.0486	0.5103
11.000	12.000	11.500	2.99382	0.26033217391	2007	3.67170432018	78.180770	0.0470	0.5405
12.000	13.000	12.500	3.10262	0.24820960000	2006	3.41743343323	75.132550	0.0455	0.5688
13.000	14.000	13.500	3.19677	0.23679777778	2005	3.17492974434	71.982855	0.0441	0.5954
14.000	15.000	14.500	3.27673	0.22598137931	2004	2.94354016579	68.746105	0.0428	0.6206
15.000	16.000	15.500	3.34287	0.21566903226	2003	2.72271496001	65.436305	0.0416	0.6448
16.000	17.000	16.500	3.39546	0.20578545455	2002	2.51198771660	62.067140	0.0405	0.6683
17.000	18.000	17.500	3.43473	0.19627028571	2001	2.31095984647	58.652045	0.0394	0.6895
18.000	19.000	18.500	3.46083	0.18707189189	2000	2.11928875767	55.204265	0.0384	0.7104
19.000	20.000	19.500	3.47385	0.17814615385	1999	1.93667973480	51.736925	0.0374	0.7293
20.000	21.000	20.500	3.47385	0.16945609756	1998	1.76287860910	48.263075	0.0365	0.7483
21.000	22.000	21.500	3.46083	0.16096883721	1997	1.59766614171	44.795735	0.0357	0.7676
22.000	23.000	22.500	3.43473	0.15265466667	1996	1.44085438977	41.347955	0.0348	0.7830
23.000	24.000	23.500	3.39546	0.14448765957	1995	1.29228322665	37.932860	0.0341	0.8014
24.000	25.000	24.500	3.34287	0.13644367347	1994	1.15181756013	34.563695	0.0333	0.8159
25.000	26.000	25.500	3.27673	0.12849921569	1993	1.01934611555	31.253895	0.0326	0.8313
26.000	27.000	26.500	3.19677	0.12063283019	1992	0.89478009261	28.017145	0.0319	0.8454
27.000	28.000	27.500	3.10261	0.11282218182	1991	0.77805258661	24.867455	0.0313	0.8608
28.000	29.000	28.500	2.99383	0.10504666667	1990	0.66911816236	21.819235	0.0307	0.8750
29.000	30.000	29.500	2.86981	0.09728169492	1989	0.56795398157	18.887415	0.0301	0.8880
30.000	31.000	30.500	2.72988	0.08950426230	1988	0.47456100296	16.087570	0.0295	0.8998
31.000	32.000 33.000	31.500 32.500	2.57310 2.39831	0.08168571429 0.07379415385	1987 1986	0.38896601466	13.436080 10.950375	0.0289 0.0284	0.9104 0.9230
33.000	34.000	32.500	2.20398	0.06579044776	1985	0.31122608059 0.24143377979	8.649230	0.0284	0.9230
34.000	35.000	34.500	1.98798	0.05762260870	1984	0.17972725156	6.553250	0.0279	0.9347
35.000	36.000	35.500	1.74739	0.04922225352	1983	0.12630482045	4.685565	0.0274	0.9455
36.000	37.000	36.500	1.47766	0.04922225552	1982	0.08145177588	3.073040	0.0270	0.9565
37.000	38.000	37.500	1.47766	0.03123333333	1982	0.04559319140	1.748585	0.0265	0.9673
38.000	39.000	38.500	0.81284	0.0312333333	1981	0.01942016110	0.756540	0.0261	0.9766
39.000	40.000	39.500	0.35012	0.00886379747	1979	0.00443189874	0.175060	0.0257	1.0000
JJ.000	10.000	000.00	0.33012	0.00000379747	1213	0.00443109074	0.175000	0.0233	1.0000
TOTAL			100.00000						

Each equal life group's whole life annual accrual, shown in column 5, equals the group's size (column 4) divided by its life (column 3), except that for the first age interval, the annual accrual is set equal to the group's size.

Columns 6 through 10 show the derivation of the whole life annual factor and accrued factor for each vintage based on the data developed in the first five columns. The



TOTAL

year installed is shown in column 6. For all vintages other than the first and last year (2018 and 1979), the summation of annual accruals for each year installed, shown in column 7, is calculated by adding one-half of the group annual accrual (column 5) for that vintage's current age interval plus the group annual accruals for all succeeding age intervals. For example, the figure 7.23550263066 for 2017 equals one-half of 0.54189333333 plus all of the succeeding figures in column 5. Only one-half of the annual accrual for the vintage's current age interval group is included in the summation because the equal life group for that interval expires at the midpoint of the current year.

The summation of annual accruals (column 7) for installations during 2018 is calculated on the basis of a mid-year in-service date. Consequentially, the accrual for 2018 installation represents only one-half of one year. The first figure in column 7, for vintage 2018, equals all of the group annual accrual for the first equal life group (2018) plus all of the accruals for all of the subsequent equal life groups. For vintage 1979, the attained age at the beginning of the year is 39.00 years leaving only 0.500 year remaining. Thus, the accrual in 1979 is .500 times the normal annual accrual in column 5.

The average percent surviving, derived from the lowa 20-S0 survivor curve, is shown in column 8 for each age interval. The annual factor, shown in column 9, is the result of dividing the summation of annual accruals (column 7) by the average percent surviving (column 8).

The accrued depreciation factor, shown in column 10, equals the annual factor multiplied by the age of the group as of September 30, 2018.

### CALCULATION OF ANNUAL AND ACCRUED AMORTIZATION

Amortization, as defined in the Uniform System of Accounts, is the gradual extinguishment of an amount in an account by distributing such amount over a fixed period, over the life of the asset or liability to which it applies, or over the period during which it is anticipated the benefit will be realized. Normally, the distribution of the amount is in equal amounts to each year of the amortization period.

The calculation of annual and accrued amortization requires the selection of an amortization period. The amortization periods used in this report were based on judgment which incorporated a consideration of the period during which the assets will render most of their service, the amortization periods and service lives used by other utilities, and the service life estimates previously used for the asset under depreciation accounting.

Amortization accounting is appropriate for certain General Plant accounts that represent numerous units of property, but a very small portion of depreciable electric plant in service. The accounts and their amortization periods are as follows:

<u>Account</u>	Amortization Period, <u>Years</u>
ELECTRIC DIVISION	
391, Office Furniture and Equ	ipment
Furniture	20
Equipment	5
Outage Management	Software 5
393, Stores Equipment	10
394, Tools, Shop and Garage	Equipment 20
395, Laboratory Equipment	10
397, Communication Equipme	ent 10
398, Miscellaneous Equipmen	nt 10

### COMMON PLANT

391,	Office Furniture and Equipment Furniture Equipment	20 5
	RMATION SERVICES Office Furniture and Equipment	
	Furniture	20
	Equipment	5
	Computer Software	10

Computer Software - Major

For the purpose of calculating annual amortization amounts as of September 30, 2018, the book depreciation reserve for each plant account or subaccount is assigned or allocated to vintages. The book reserve assigned to vintages with an age greater than the amortization period is equal to the vintage's original cost. The remaining book reserve is allocated among vintages with an age less than the amortization period in proportion to the calculated accrued amortization. The calculated accrued amortization is equal to the original cost multiplied by the ratio of the vintage's age to its amortization period. The annual amortization amount is determined by dividing the future amortizations (original cost less allocated book reserve) by the remaining period of amortization for the vintage.

### AMORTIZATION OF NET SALVAGE

Experienced salvage is incorporated in the results of the study, as it was reported on the Company's books and records for the period October 1, 2013 through September 30, 2017, and as estimated for the twelve months ended September 30, 2018. The five-year amortization calculations are shown in Table 4.

Net salvage experienced during the five-year period is presented in this manner to determine the amount of negative net salvage to be amortized for book purposes. In developing the amount to be amortized, the data for the accounts which experienced



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positive net salvage have been netted with those for accounts which experienced negative net salvage.

In order to be consistent with this manner of recognizing salvage, no adjustments for salvage were made to the annual accruals and accrued depreciation calculated for each individual account. Also, there were no exclusions from the 2014 through 2018 experienced and estimated net salvage amounts that were used to determine the five-year net salvage amortization amount for each account.

### PART V. RESULTS OF STUDY



### PART V. RESULTS OF STUDY

### **DESCRIPTION OF SUMMARY TABULATIONS**

Tables 1 through 4 presented on pages V-4 through V-10 summarize the results of the depreciation study as of September 30, 2018. Table 1 sets forth, by depreciable group, the estimated survivor curve, original cost, book depreciation reserve as of September 30, 2018, future book accruals, calculated annual accrual amount and rate, and composite remaining life for plant in service. Table 2 presents the bringforward of the book reserve to September 30, 2018. Table 3 sets forth the calculation of the depreciation accruals for the twelve months ended September 30, 2018. Table 4 presents the annual amortization of experienced and estimated net salvage based on the period 2014 through 2018.

### **DESCRIPTION OF DETAILED TABULATIONS**

Supporting statistical data for the estimates of average service lives and survivor curves, the annual depreciation calculations, and salvage and cost of removal for the years 2014-2018 are presented in three sections.

The section beginning on page VI-1 sets forth, for each depreciable group analyzed by the retirement rate method, a chart depicting the original and estimated survivor curves followed by a tabular presentation of the original life table(s) plotted on the chart. A cumulative summary, by year installed, for electric plant and the supporting data for the original cost depreciation calculations are presented in the section beginning on page VII-2. The tabulations of experienced and estimated net salvage by year by

account for the five-year period, 2014-2018, are presented in the section beginning on page VIII-1.

In Part VI, the survivor curves estimated for the depreciable groups are shown as dark smooth curves on the charts. Each smooth survivor curve is denoted by a numeral followed by the type curve designation. The numeral used is the average life derived from the entire curve from 100 percent to zero percent surviving. In cases where only a segment of the estimated curve is used in the depreciation calculation, the numeral used for identification purposes is not a designation of the average life of the group. The titles of the charts indicate the group, the symbol used to plot the points of the original life table, and the experience and placement bands of the life tables which were plotted. The experience band indicates the range of years for which the retirements were used to develop the stub survivor curve. The placements indicate, for the related experience band, the range of years of installations which appear in the experience.

The tables of the calculated annual depreciation related to original cost are presented in Part VII and indicate the estimated average survivor curves used in the calculations. The tables set forth, for each installation year, the original cost, calculated accrued depreciation, allocated book reserve, future book accruals, remaining life expectancy and the calculated annual accrual.

Detailed tabulations setting forth the cost of removal and salvage amounts, by plant account for each year, are presented beginning on page VIII-2. The total salvage and removal costs, by year, were used to calculate the five-year net salvage amortization presented in Table 4 in Part V on pages V-9 and V-10.



## TABLE 1. ESTIMATED SURVIVOR CURVES, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AT SEPTEMBER 30, 2018

	ACCOUNT	PROBABLE RETIREMENT	SURVIVOR CURVE	ORIGINAL COST	BOOK	FUTURE BOOK	ANNUAL	JLATED ACCRUAL AMOUNT	
-	ACCOUNT (1)	YEAR (2)	(3)	(4)	RESERVE (5)	ACCRUALS (6)	(7)	(8)	
ELECTRIC	• •	(-)	(0)	(4)	(0)	(0)	(,,	(0)	
	BUTION PLANT								
361	STRUCTURES AND IMPROVEMENTS		50 - R3	11,459	7,647	3,812	2.43	278	
362	STATION EQUIPMENT		40 - S1	4,771,246	65,347	4,705,899	3.51	167,555	
364	POLES, TOWERS AND FIXTURES		56 - R2.5	40,691,964	12,836,360	27,855,604	1.98	805,462	
365	OVERHEAD CONDUCTORS AND DEVICES		55 - R1	35,145,285	10,349,964	24,795,321	2.27	797,822	
366	UNDERGROUND CONDUIT		65 - R3	6,316,070	1,849,398	4,466,672	1.54	96,969	
367	UNDERGROUND CONDUCTORS AND DEVICES		40 - R2	8,979,682	2,751,761	6,227,921	3.07	275,335	
368.1	TRANSFORMERS		43 - S1	13,880,645	7,213,446	6,667,199	2.04	282,821	
368.2	TRANSFORMER INSTALLATIONS		35 - R2	9,767,058	5,106,927	4,660,131	2.49	243,175	
369	SERVICES		50 - R2	14,124,193	6,505,019	7,619,174	1.85	261,407	
370.1	METERS		33 - R1.5	2,782,014	1,949,884	832,130	2.23	61,972	
370.2	METER INSTALLATIONS		70 - R5	1,897,531	711,001	1,186,530	1.33	25,215	
370.3	ELECTRONIC METERS		20 - S3	4,920,183	3,468,920	1,451,263	3.29	161,828	
371	INSTALLATIONS ON CUSTOMER PREMISES		30 - O1	1,933,832	820,517	1,113,315	3.76	72,696	
371.5	INSTALLATIONS ON CUSTOMER PREMISES - DUSK TO DAWN LIGHTS		20 - R1.5	347,656	317,118	30,538	1.39	4,838	
373	STREET LIGHTING AND SIGNAL SYSTEMS		34 - L0	1,600,853	768,258	832,595	3.12	49,877	
TOTAL	DISTRIBUTION PLANT			147,169,671	54,721,567	92,448,104	2.25	3,307,250	
GENER	AL PLANT								
390.1	STRUCTURES AND IMPROVEMENTS								
390.1	FORTY FORT	06-2032	100 - R1	1,074,596	687,831	386,765	2.75	29,538	
	PLYMOUTH	06-2023	SQUARE	15.111	15.111	0	2.75	25,550	
	IDETOWN	00-2023	FULLY ACCRUED	14,541	14,541	0	-	0	
	NANTICOKE	06-2025	100 - R1	76,179	76,179	0	-	0	
	EMPIRE YARD	12-2047	100 - R1	19,895	19,895	0	-	0	
	SUBTOTAL ACCOUNT 390.1	12-2047	100 - KI	1,200,322	813,557	386.765	- 2.46	29,538	
				1,200,322	613,337	360,703	2.40	29,556	
390.2	IMPROVEMENTS TO LEASED PROPERTY								
391	OFFICE FURNITURE AND EQUIPMENT - FURNITURE		20 - SQ	154,677	16,219	138,458	5.01	7,749	
391.1	OFFICE FURNITURE AND EQUIPMENT - EQUIPMENT		5 - SQ	105,614	20,263	85,351	19.78	20,894	
391.92	OFFICE FURNITURE AND EQUIPMENT - OUTAGE MANAGEMENT SOFTW	1	5 - SQ	750,000	10,627	739,373	21.91	164,305	
393	STORES EQUIPMENT		10 - SQ	3,217	839	2,378	11.38	366	
394	TOOLS, SHOP AND GARAGE EQUIPMENT		20 - SQ	952,931	366,605	586,326	4.92	46,892	
395	LABORATORY EQUIPMENT		10 - SQ	169,293	100,361	68,932	9.61	16,274	
397	COMMUNICATION EQUIPMENT		10 - SQ	1,100,594	736,111	364,483	9.08	99,956	
398	MISCELLANEOUS EQUIPMENT		10 - SQ	78,859	58,229	20,630	8.58	6,763	
TOTAL	GENERAL PLANT			4,515,507	2,122,811	2,392,696	8.70	392,737	
SPECIA	AL DEPRECIABLE PLANT								
392.2	TRANSPORTATION EQUIPMENT - TRUCKS								
396	POWER OPERATED EQUIPMENT		20 - S0	145,839	143,476	2,363	0.19	282	
	SPECIAL DEPRECIABLE PLANT		20 00	145,839	143,476	2,363	0.19	282	
TOTAL	DEPRECIABLE PLANT			151,831,017	56,987,854	94,843,163	2.44	3,700,269	
NOND	EDDECIADI E DI ANT								
	PRECIABLE PLANT			4.000					
301.1	ORGANIZATION			1,602					
302.1	FRANCHISES AND CONSENTS - PERPETUAL			6,436					
360.1	LAND AND LAND RIGHTS - LAND			83,832					

### TABLE 1. ESTIMATED SURVIVOR CURVES, ORIGINAL COST, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO ELECTRIC PLANT AT SEPTEMBER 30, 2018

	PROBABLE RETIREMENT	SURVIVOR		воок	FUTURE BOOK	ANNUAL	ULATED . ACCRUAL
ACCOUNT	YEAR	CURVE	ORIGINAL COST	RESERVE	ACCRUALS	RATE	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
360.2 LAND AND LAND RIGHTS - LAND RIGHTS			14,336				
389.1 LAND AND LAND RIGHTS - LAND			89,222				
TOTAL NONDEPRECIABLE PLANT			195,428				
TOTAL ELECTRIC PLANT			152,026,445				
LESS GENERAL AND INTANGIBLE PLANT ALLOCATED TO TRANSMISSION - 22.5	572%		1,073,408	511,211	540,258		88,654
TOTAL ELECTRIC PLANT RELATED TO DISTRIBUTION OPERATIONS			150,953,037	56,476,643	94,302,905		3,611,615
OTHER UTILITY PLANT ALLOCATED TO ELECTRIC DIVISION							
COMMON PLANT							
301 ORGANIZATION (NONDEPRECIABLE)			138,964				
389.1 LAND AND LAND RIGHTS - LAND (NONDEPRECIABLE)			6,947,278				
390.2 STRUCTURES AND IMPROVEMENTS - LEASED PROPERTY	03-2019	SQUARE	163,321	134,707	28,614	17.52	28,614
391 OFFICE FURNITURE AND EQUIPMENT - FURNITURE		20 - SQ	840,391	232,426	607,965	7.08	59,480
391.1 OFFICE FURNITURE AND EQUIPMENT - EQUIPMENT		5 - SQ	60,502	11,462	49,040	45.60	27,586
392.1 TRANSPORTATION EQUIPMENT - CARS TOTAL COMMON PLANT		7 - L2.5	71,637 <b>8.222.093</b>	65,970 <b>444,565</b>	5,667 <b>691.286</b>	3.05 <b>1.46</b>	2,188 117,868
TOTAL COMMON PLANT			0,222,093	444,565	091,200	1.40	117,000
TOTAL COMMON PLANT ALLOCATED TO ELECTRIC DIVISION - 5.66%			465,370	25,162	39,127		6,671
INFORMATION SERVICES (IS)							
391 OFFICE FURNITURE AND EQUIPMENT - FURNITURE		20 - SQ	46,765	36,966	9,799	5.13	2,397
391.1 OFFICE FURNITURE AND EQUIPMENT - EQUIPMENT		5 - SQ	9,389,332	4,061,171	5,328,161	19.87	1,865,274
391.3 OFFICE FURNITURE AND EQUIPMENT - SYSTEM DEV. COSTS - 10 YEAR	RS	10 - SQ	8,289,902	4,420,391	3,869,511	8.62	714,196
391.4 OFFICE FURNITURE AND EQUIPMENT - SYSTEM DEV. COSTS - 15 YEAR	R!	15 - SQ	90,828,715	13,284,023	77,544,692	6.98	6,335,868
TOTAL INFORMATION SERVICES			108,554,714	21,802,551	86,752,163	8.21	8,917,735
TOTAL INFORMATION SERVICES ALLOCATED TO ELECTRIC DIVISION - 9.32%			10,117,299	2,031,998	8,085,302		831,133
READING SERVICE CENTER							
390 STRUCTURES AND IMPROVEMENTS	06-2030	100 - R1	1,970,709	1,259,462	711,247	3.17	62,433
TOTAL READING SERVICE CENTER ALLOCATED TO ELECTRIC DIVISION - 11.21	1%		220,916	141,186	79,731		6,999
TOTAL OTHER UTILITY PLANT ALLOCATED TO ELECTRIC DIVISION			10,803,585	2,198,346	8,204,160		844,803
LESS OTHER UTILITY PLANT ALLOCATED TO ELECTRIC TRANSMISSION - 22.55	72%		2,436,986	495,885	1,850,629		190,564
TOTAL OTHER PLANT ALLOCATED TO ELECTRIC RELATED TO DISTRIBUTION OP	PERATIONS		8,366,599	1,702,461	6,353,531		654,239
TOTAL PLANT IN SERVICE RELATED TO DISTRIBUTION OPERATIONS			159,319,636	58,179,104	100,656,436		4,265,854
AMORTIZATION OF NEGATIVE NET SALVAGE							558,880
GRAND TOTAL			159,319,636	58,179,104	100,656,436		4,824,734

<sup>\*</sup> SURVIVOR CURVES FOR ACCOUNT 390 ARE INTERIM SURVIVOR CURVES. INDIVIDUAL BUILDINGS ARE LIFE SPANNED.



### TABLE 2. BOOK RESERVE AT SEPTEMBER 30, 2017 PROJECTED TO SEPTEMBER 30, 2018

		BOOK RESERVE							BOOK RESERVE	BOOK RESERVE AS A PERCENT
	ACCOUNT	AT BEGINNING OF YEAR	ANNUAL ACCRUAL	AMORTIZATION OF NET SALVAGE	RETIREMENTS	GROSS SALVAGE	COST OF REMOVAL	TRANSFERS AND ADJUSTMENTS	AT END OF YEAR	OF ORIGINAL COST
-	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ELECTRIC PLA	NT									
DISTRIBUTION	ON DI ANT									
	RUCTURES AND IMPROVEMENTS	7.361	286	0	0	0	0	0	7.647	66.73
	ATION EQUIPMENT	136.836	169.042	(3)	(218,662)	21,866	(43,732)	0	65.347	1.37
	LES. TOWERS AND FIXTURES	12,500,003	770,738	277,724	(259,005)	0	(453,100)	0	12,836,360	31.55
	ERHEAD CONDUCTORS AND DEVICES	9,696,167	767,907	74,778	(113,036)	16,955	(92,807)	0	10,349,964	29.45
366 UN	DERGROUND CONDUIT	1,811,798	91,468	4,320	(48,490)	0	(9,698)	0	1.849.398	29.28
367 UN	DERGROUND CONDUCTORS AND DEVICES	2,696,846	258,781	8.553	(193,165)	0	(19,254)	0	2,751,761	30.64
368.1 TR	ANSFORMERS	7,113,929	270,829	2,262	(185,687)	18,569	(6,456)	0	7.213.446	51.97
368.2 TR	ANSFORMER INSTALLATIONS	4.977.211	226.097	16.000	(71,163)	0	(41,218)	0	5,106,927	52.29
369 SEI	RVICES	6,251,682	251,268	70,230	(25,721)	2,572	(45,012)	0	6,505,019	46.06
370.1 ME	TERS	1,904,272	65,612	0	(20,000)	0	0	0	1,949,884	70.09
370.2 ME	TER INSTALLATIONS	683,500	25,174	3,567	(522)	0	(718)	0	711,001	37.47
370.3 ELE	ECTRONIC METERS	3,316,563	164,357	0	(12,000)	0	0	0	3,468,920	70.50
371 INS	STALLATIONS ON CUSTOMER PREMISES	730,370	81,636	16,595	(5,590)	0	(2,494)	0	820,517	42.43
371.5 INS	STALLATIONS ON CUSTOMER PREMISES - DUSK TO DAWN LIGHTS	311,695	5,423	0	0	0	0	0	317,118	91.22
373 STI	REET LIGHTING AND SIGNAL SYSTEMS	826,763	44,200	13,993	(94,235)	0	(22,463)	0	768,258	47.99
TOTAL DIST	RIBUTION PLANT	52,964,996	3,192,818	488,019	(1,247,276)	59,962	(736,952)	0	54,721,567	37.18
GENERAL P	LANT									
390.1 STI	RUCTURES AND IMPROVEMENTS	751,929	32,214	18,994	0	0	0	10,420	813,557	67.78
390.2 IMF	PROVEMENTS TO LEASED PROPERTY	63,803	0	0	(53,383)	0	0	(10,420)	0	0.00
391 OF	FICE FURNITURE AND EQUIPMENT - FURNITURE	11,472	4,747	0	0	0	0	0	16,219	10.49
391.1 OF	FICE FURNITURE AND EQUIPMENT - EQUIPMENT	10,623	9,640	0	0	0	0	0	20,263	19.19
391.92 OF	FICE FURNITURE AND EQUIPMENT - OUTAGE MANAGEMENT SOFTWARE	517,036	101,284	0	(607,693)	0	0	0	10,627	1.42
392.2 TR	ANSPORTATION EQUIPMENT - TRUCKS	100	0	(100)	0	0	0	0	0	0.00
393 ST	ORES EQUIPMENT	12,827	451	0	(12,439)	0	0	0	839	26.08
394 TO	OLS, SHOP AND GARAGE EQUIPMENT	322,714	43,891	0	0	0	0	0	366,605	38.47
395 LAE	BORATORY EQUIPMENT	83,567	16,794	0	0	0	0	0	100,361	59.28
396 PO	WER OPERATED EQUIPMENT	143,170	306	0	0	0	0	0	143,476	98.38
397 CO	MMUNICATION EQUIPMENT	864,570	101,504	0	(229,963)	0	0	0	736,111	66.88
398 MIS	SCELLANEOUS EQUIPMENT	68,903	8,120	0	(18,794)	0	0	0	58,229	73.84
TOTAL GEN	ERAL PLANT	2,850,714	318,951	18,894	(922,272)	0	0	0	2,266,287	48.62
TOTAL DEPRE	CIABLE PLANT	55,815,710	3,511,769	506,913	(2,169,548)	59,962	(736,952)	0	56,987,854	37.53
LESS GENE	RAL PLANT ALLOCATED TO TRANSMISSION - 22.5572%	643,041	71,946	4,262	(208,039)	0	0	0	511,211	
TOTAL DEPRE	CIABLE PLANT RELATED TO DISTRIBUTION OPERATIONS	55,172,669	3,439,823	502,651	(1,961,509)	59,962	(736,952)	0	56,476,643	



### TABLE 2. BOOK RESERVE AT SEPTEMBER 30, 2017 PROJECTED TO SEPTEMBER 30, 2018

ACCOUNT (1)	BOOK RESERVE AT BEGINNING OF YEAR (2)	ANNUAL ACCRUAL (3)	AMORTIZATION OF NET SALVAGE (4)	RETIREMENTS (5)	GROSS SALVAGE (6)	COST OF REMOVAL (7)	TRANSFERS AND ADJUSTMENTS (8)	BOOK RESERVE AT END OF YEAR (9)	BOOK RESERVE AS A PERCENT OF ORIGINAL COST (10)
OTHER UTILITY PLANT ALLOCATED TO ELECTRIC DIVISION									
COMMON PLANT									
390.2 STRUCTURES AND IMPROVEMENTS - LEASED PROPERTY	77,496	57,211	0	0	0	0	0	134,707	82.48
391 OFFICE FURNITURE AND EQUIPMENT - FURNITURE	173,431	58,995	0	0	0	0	0	232,426	27.66
391.1 OFFICE FURNITURE AND EQUIPMENT - EQUIPMENT	96,429	41,338	0	(126,305)	0	0	0	11,462	18.94
392.1 TRANSPORTATION EQUIPMENT - CARS	63,262	2,708	0	0	0	0	0	65,970	92.09
TOTAL COMMON PLANT	410,618	160,252	0	(126,305)	0	0	0	444,565	39.14
TOTAL COMMON PLANT ALLOCATED TO ELECTRIC DIVISION - 5.66%	23,241	9,070	0	(7,149)	0	0	0	25,162	
INFORMATION SERVICES (IS)									
391 OFFICE FURNITURE AND EQUIPMENT - FURNITURE	59,091	2,505	0	(24,630)	0	0	0	36,966	79.05
391.1 OFFICE FURNITURE AND EQUIPMENT - EQUIPMENT	2,776,901	1,895,635	0	(611,365)	0	0	0	4,061,171	43.25
391.3 OFFICE FURNITURE AND EQUIPMENT - SYSTEM DEV. COSTS - 10 YEARS	14,295,647	716,513	0	(10,591,769)	0	0	0	4,420,391	53.32
391.4 OFFICE FURNITURE & EQUIPMENT - SYSTEM DEV. COSTS - 15 YEARS	7,227,155	6,056,868	0	0	0	0	0	13,284,023	14.63
TOTAL INFORMATION SERVICES	24,358,794	8,671,521	0	(11,227,764)	0	0	0	21,802,551	20.08
TOTAL INFORMATION SERVICES ALLOCATED TO ELECTRIC DIVISION - 9.32%	2,270,240	808,186	0	(1,046,428)	0	0	0	2,031,998	
READING SERVICE CENTER									
390 STRUCTURES AND IMPROVEMENTS	1,196,596	62,866	0	0	0	0	0	1,259,462	
TOTAL READING SERVICE CENTER ALLOCATED TO ELECTRIC DIVISION - 11.21%	134,138	7,047	0	0	0	0	0	141,186	
TOTAL OTHER UTILITY PLANT ALLOCATED TO ELECTRIC DIVISION	2,427,619	824,303	0	(1,053,577)	0	0	0	2,198,346	
LESS OTHER UTILITY PLANT ALLOCATED TO ELECTRIC TRANSMISSION - 22.5572%	547,603	185,940	0	(237,657)	0	0	0	495,885	
TOTAL OTHER PLANT ALLOCATED TO ELECTRIC RELATED TO DISTRIBUTION OPERATION	1,880,016	638,363	0	(815,920)	0	0	0	1,702,461	
TOTAL DEPRECIABLE PLANT IN SERVICE RELATED TO DISTRIBUTION OPERATIONS	57,052,685	4,078,186	502,651	(2,777,429)	59,962	(736,952)	0	58,179,104	

### TABLE 3. CALCULATION OF DEPRECIATION ACCRUALS FOR THE TWELVE MONTHS ENDED SEPTEMBER 30, 2018

Command   Comm		ACCOUNT	BEGINNING OF YEAR BALANCE	ADDITIONS	RETIREMENTS	END OF YEAR BALANCE	AVERAGE BALANCE	ANNUAL ACCRUAL RATE	ANNUAL ACCRUAL AMOUNT
DISTRIBUTION PLANT   11,450		(1)				(5)	(6)		
STRUCTURES AND IMPROVEMENTS	ELECTRIC	PLANT							
SECONDATION EQUIPMENT   1,74,2008   32,47,000   (218,682)   4,771,246   3,257,077   5.19   199,072	DISTRI	BUTION PLANT							
POLES, TOMERS AND FIXTURES   \$3,38.069			11,459	0	0	11,459	11,459	2.50	286
Section   Sect	362	STATION EQUIPMENT	1,742,908	3,247,000	(218,662)	4,771,246	3,257,077	5.19	169,042
See   UNDERGROUND CONDUIT	364	POLES, TOWERS AND FIXTURES	38,358,069	2,592,900	(259,005)	40,691,964	39,525,017	1.95	770,738
MOMERICATION CONDUCTORS AND DEVICES   8.158.147   1.014.700 (1938.165)   8.979.682   8.66.915   3.02   258.781   3.880.681   3.02   258.781   3.880.681   3.541.484   2.00   270.292   388.2   TRANSFORMERS   3.15.167.484   8.13.150 (17.163)   9.767.058   3.401.15   2.39   226.097   3.685.281   3.541.484   3.15.00   (17.163)   3.767.058   3.401.15   2.39   226.097   3.685.281   3.00   3.00   3.00   2.782.014   2.792.014   2					(113,036)	35,145,285	33,978,178		
18,000,000,000,000,000,000,000,000,000,0			, ,						
SABLE   TRANSFORMER INSTALLATIONS   9,153,171   685,060   (71,163)   9,767,058   9,460,115   2,39   225,097     SABLE SEVICES   13,33,768   813,160   (25,72)   14,124,193   13,730,479   1.83   251,288     STOL									
\$   \$   \$   \$   \$   \$   \$   \$   \$   \$			, ,			, ,			,
			, ,			, ,			,
\$70.2   METER INSTALLATIONS   1.888 0.53   1.000   (15.22)   1.887.531   1.882.792   1.33   25.174   37.33   1.882.792   3.33   3.58   3.703   1.882.672   3.703   1.882.673   3.703   1.882.673   3.703   1.882.673   3.70									,
\$\frac{1}{3}   \frac{1}{3}   \frac{1}{3}									
STALLATIONS ON CUSTOMER PREMISES   1,916,922   22,500   (5,580)   1,933,832   1,926,377   4,24   81,636   371,55   871,51   871									
STALLATIONS ON CUSTOMER PREMISES - DUSK TO DAWN LIGHTS   347,656   1.60   3.47,656   1.600   3.47,656   1.600   3.47,656   1.600   3.47,656   1.600   3.47,656   1.600   3.47,656   1.600   3.47,656   1.600   3.47,656   1.600   3.47,656   1.600   3.47,656   1.600   3.47,656   1.600   3.47,656   1.600   3.400									
1.667.588   1.27.500   (34.235)   1.600.853   1.584.221   2.79   3.44.200   1.000.853   1.600.853   1.584.221   2.79   3.44.200   1.000.853   1.600.853   1.584.221   2.79   3.44.200   1.000.853   1.000.853   1.600.853									
TOTAL DISTRIBUTION PLANT   136,067,947   12,349,000   (1,247,279)   147,169,671   141,618,809   3,192,818									
CENERAL PLANT   390.1   STRUCTURES AND IMPROVEMENTS   1,200,322   0   0   1,200,322   1,200,322   2,68   32,214   390.2   IMPROVEMENTS TO LEASED PROPERTY   53,383   0   (53,383)   0   26,692   0   0   0   154,677   93,627   5.07   4,747   391.1   OFFICE FURNITURE AND EQUIPMENT - FURNITURE   32,577   122,100   0   154,677   93,627   5.07   4,747   391.1   OFFICE FURNITURE AND EQUIPMENT EQUIPMENT   24,214   81,400   0   105,614   64,914   14,85   9,640   392.2   TRANSPORTATION EQUIPMENT - CULTAGE MANAGEMENT SOFTWARE   607,693   750,000   750,000   75								2.79	
390.1   STRUCTURES AND IMPROVEMENTS   1,200,322   0   0   1,200,322   1,200,322   2,88   32,214   3390.2   MPROVEMENTS TO LEASED PROPERTY   53,383   0   (53,383)   0   26,692   - 0   -	IOIAL	DISTRIBUTION PLANT	136,067,947	12,349,000	(1,247,276)	147,169,671	141,618,809		3,192,818
MINORDEPINATION   MINORDEPIN	GENER	AL PLANT							
OFFICE FURNITURE AND EQUIPMENT - FURNITURE   32,577   122,100   0   154,677   93,627   5,07   4,747   391,120   0   105,614   64,914   14,85   9,640   391,92   0   0   0   0   0   0   0   0   0	390.1	STRUCTURES AND IMPROVEMENTS	1,200,322	0	0	1,200,322	1,200,322	2.68	32,214
391.1   OFFICE FURNITURE AND EQUIPMENT - EQUIPMENT   24,214   81,400   0   10,5614   64,914   14,85   9,604   391.92   OFFICE FURNITURE AND EQUIPMENT - OUTAGE MANAGEMENT SOFTWARE   607,693   750,000   (607,693)   750,000   678,847   14,92   101,284   392.2   TRANSPORTATION EQUIPMENT - TRUCKS   0   0   0   0   0   0   0   0   0	390.2	IMPROVEMENTS TO LEASED PROPERTY	53,383	0	(53,383)	0	26,692	-	0
391.92   OFFICE FURNITURE AND EQUIPMENT - OUTAGE MANAGEMENT SOFTWARE   607,693   750,000   607,693   750,000   607,847   14.92   101,284   392.2   TRANSPORTATION EQUIPMENT - TRUCKS   0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	391	OFFICE FURNITURE AND EQUIPMENT - FURNITURE	32,577	122,100	0	154,677	93,627	5.07	4,747
TRANSPORTATION EQUIPMENT - TRUCKS   0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	391.1			81,400	0	105,614	64,914	14.85	9,640
393   STORES EQUIPMENT   15,656   0   (12,439)   3,217   9,437   4,78   451   394   TOOLS, SHOP AND GARAGE EQUIPMENT   816,881   136,050   0   952,931   884,906   4,96   43,891   395   LABORATORY EQUIPMENT   169,293   0   0   169,293   169,293   9.92   16,794   396   POWER OPERATED EQUIPMENT   148,839   0   0   0   145,839   145,839   0.21   306   397   COMMUNICATION EQUIPMENT   1,188,107   142,450   (229,963)   1,100,594   1,144,351   8.87   101,504   398   MISCELLANEOUS EQUIPMENT   9,7653   0   (18,794)   78,859   88,256   9.20   8,120   10,704   1,144,351   1,105,404   1,144,351   1								14.92	
TOOLS, SHOP AND GARAGE EQUIPMENT   816,881   136,050   0   952,931   884,906   4.96   43,891						-		-	
169,293   169,293   169,293   169,293   169,293   169,293   169,293   169,293   169,293   169,293   169,293   169,293   169,293   169,293   169,293   169,293   145,839   145,831,835   145,831,835   145,831,835   146,1346   145,839   146,1346   145,839   146,1346   145,839   146,1346   145,839   146,1346   145,839   146,1346   145,839   146,1346   145,839   146,1346   146			,						
396         POWER OPERATED EQUIPMENT         145,839         0         0         145,839         145,839         0.21         306           397         COMMUNICATION EQUIPMENT         1,188,107         142,450         (229,963)         1,100,594         1,144,351         8.87         101,504           398         MISCELLANEACUS EQUIPMENT         97,653         0         (18,794)         78,859         88,26         9.20         8,120           TOTAL GENERAL PLANT         4,351,618         1,232,000         (922,272)         4,661,346         4,506,482         318,951           TOTAL DEPRECIABLE PLANT         140,419,565         13,581,000         (2,169,548)         151,831,017         146,125,291         3,511,769           NONDEPRECIABLE PLANT         1,602         0         0         1,602         <									
397         COMMUNICATION EQUIPMENT 398         1,188,107 97,653         142,450 97,653         (229,963) (18,794)         1,100,594 78,859         1,144,351 88,256         8.87 9.20         101,504 8,120           TOTAL GENERAL PLANT         4,351,618         1,232,000         (922,272)         4,661,346         4,506,482         318,951           TOTAL DEPRECIABLE PLANT         140,419,565         13,581,000         (2,169,548)         151,831,017         146,125,291         3,511,769           NONDEPRECIABLE PLANT         1,602         0         0         1,602         1,602         1,602         1,602         3,511,769           301.1         ORGANIZATION         1,602         0         0         1,602         1,602         3,602         3,602         1,602         3,602         3,602         3,802         8,436         3,802         8,436         3,802         8,436         3,802         3,80			,			,			,
NONDEPRECIABLE PLANT   140,419,565   13,581,000   (2,169,548)   151,831,017   146,125,291   3,511,769   (2,169,548)   (2,169,5			,	-					
TOTAL GENERAL PLANT         4,351,618         1,232,000         (922,272)         4,661,346         4,506,482         318,951           TOTAL DEPRECIABLE PLANT         140,419,565         13,581,000         (2,169,548)         151,831,017         146,125,291         3,511,769           NONDEPRECIABLE PLANT           301.1         ORGANIZATION         1,602         0         0         1,602         1,602           302.1         FRANCHISES AND CONSENTS - PERPETUAL         6,436         0         0         6,436         6,436           360.1         LAND AND LAND RIGHTS - LAND         83,832         0         0         6,436         6,436           360.2         LAND AND LAND RIGHTS - LAND RIGHTS         14,336         0         0         14,336         14,336           389.1         LAND AND LAND RIGHTS - LAND         89,222         0         0         89,222         89,222           TOTAL NONDEPRECIABLE PLANT         195,428         0         0         195,428         195,428           TOTAL ELECTRIC PLANT         140,614,993         13,581,000         (2,169,548)         15,20,26,445         146,320,719           LESS GENERAL AND INTANGIBLE PLANT ALLOCATED TO TRANSMISSION - 22,5572%         1,003,542         277,905			, ,		, , ,				
NONDEPRECIABLE PLANT         140,419,565         13,581,000         (2,169,548)         151,831,017         146,125,291         3,511,769           NONDEPRECIABLE PLANT         301.1         ORGANIZATION         1,602         0         0         1,602         1,602           302.1         FRANCHISES AND CONSENTS - PERPETUAL         6,436         0         0         6,436         6,436           360.1         LAND AND LAND RIGHTS - LAND         83,832         0         0         83,832         83,832           360.2         LAND AND LAND RIGHTS - LAND RIGHTS         14,336         0         0         14,336         14,336           389.1         LAND AND LAND RIGHTS - LAND         89,222         0         0         89,222         89,222         10         0         89,222         89,222         10         0         195,428								9.20	
NONDEPRECIABLE PLANT         301.1 ORGANIZATION       1,602       0       0       1,602       1,602         302.1 FRANCHISES AND CONSENTS - PERPETUAL       6,436       0       0       6,436       6,436         360.1 LAND AND LAND RIGHTS - LAND       83,832       0       0       83,832       83,832         360.2 LAND AND LAND RIGHTS - LAND RIGHTS       14,336       0       0       14,336       14,336         389.1 LAND AND LAND RIGHTS - LAND       89,222       0       0       89,222       89,222         TOTAL NONDEPRECIABLE PLANT       195,428       0       0       195,428       195,428         TOTAL ELECTRIC PLANT       140,614,993       13,581,000       (2,169,548)       152,026,445       146,320,719         LESS GENERAL AND INTANGIBLE PLANT ALLOCATED TO TRANSMISSION - 22.5572%       1,003,542       277,905       (208,039)       1,073,408       1,038,475       71,946	IOIAL	GENERAL PLANT	4,351,618	1,232,000	(922,272)	4,661,346	4,506,482		318,951
301.1       ORGANIZATION       1,602       0       0       1,602       1,602         302.1       FRANCHISES AND CONSENTS - PERPETUAL       6,436       0       0       6,436       6,436         360.1       LAND AND LAND RIGHTS - LAND       83,832       0       0       83,832       83,832         360.2       LAND AND LAND RIGHTS - LAND RIGHTS       14,336       0       0       14,336       14,336         389.1       LAND AND LAND RIGHTS - LAND       89,222       0       0       89,222       89,222         TOTAL NONDEPRECIABLE PLANT       195,428       0       0       195,428       195,428         TOTAL ELECTRIC PLANT       140,614,993       13,581,000       (2,169,548)       152,026,445       146,320,719         LESS GENERAL AND INTANGIBLE PLANT ALLOCATED TO TRANSMISSION - 22.5572%       1,003,542       277,905       (208,039)       1,073,408       1,038,475       71,946	TOTAL DE	PRECIABLE PLANT	140,419,565	13,581,000	(2,169,548)	151,831,017	146,125,291		3,511,769
301.1       ORGANIZATION       1,602       0       0       1,602       1,602         302.1       FRANCHISES AND CONSENTS - PERPETUAL       6,436       0       0       6,436       6,436         360.1       LAND AND LAND RIGHTS - LAND       83,832       0       0       83,832       83,832         360.2       LAND AND LAND RIGHTS - LAND RIGHTS       14,336       0       0       14,336       14,336         389.1       LAND AND LAND RIGHTS - LAND       89,222       0       0       89,222       89,222         TOTAL NONDEPRECIABLE PLANT       195,428       0       0       195,428       195,428         TOTAL ELECTRIC PLANT       140,614,993       13,581,000       (2,169,548)       152,026,445       146,320,719         LESS GENERAL AND INTANGIBLE PLANT ALLOCATED TO TRANSMISSION - 22.5572%       1,003,542       277,905       (208,039)       1,073,408       1,038,475       71,946	NONDE	PRECIABLE PLANT							
302.1       FRANCHISES AND CONSENTS - PERPETUAL       6,436       0       0       6,436       6,436         360.1       LAND AND LAND RIGHTS - LAND       83,832       0       0       83,832       83,832         360.2       LAND AND LAND RIGHTS - LAND RIGHTS       14,336       0       0       14,336       14,336         389.1       LAND AND LAND RIGHTS - LAND       89,222       0       0       89,222       89,222         TOTAL NONDEPRECIABLE PLANT       195,428       0       0       195,428       195,428     TOTAL ELECTRIC PLANT  LESS GENERAL AND INTANGIBLE PLANT ALLOCATED TO TRANSMISSION - 22.5572%  1,003,542 277,905 277,905 (208,039) 1,073,408 1,038,475 71,946	301.1	ORGANIZATION	1,602	0	0	1,602	1,602		
360.2       LAND AND LAND RIGHTS - LAND RIGHTS       14,336       0       0       14,336       14,336         389.1       LAND AND LAND RIGHTS - LAND       89,222       0       0       89,222       89,222         TOTAL NONDEPRECIABLE PLANT       195,428       0       0       195,428       195,428         TOTAL ELECTRIC PLANT       140,614,993       13,581,000       (2,169,548)       152,026,445       146,320,719         LESS GENERAL AND INTANGIBLE PLANT ALLOCATED TO TRANSMISSION - 22.5572%       1,003,542       277,905       (208,039)       1,073,408       1,038,475       71,946	302.1	FRANCHISES AND CONSENTS - PERPETUAL		0	0				
389.1         LAND AND LAND RIGHTS - LAND         89,222         0         0         89,222         89,222           TOTAL NONDEPRECIABLE PLANT         195,428         0         0         195,428         195,428           TOTAL ELECTRIC PLANT         140,614,993         13,581,000         (2,169,548)         152,026,445         146,320,719           LESS GENERAL AND INTANGIBLE PLANT ALLOCATED TO TRANSMISSION - 22.5572%         1,003,542         277,905         (208,039)         1,073,408         1,038,475         71,946	360.1	LAND AND LAND RIGHTS - LAND	83,832	0	0	83,832	83,832		
TOTAL NONDEPRECIABLE PLANT         195,428         0         0         195,428         195,428           TOTAL ELECTRIC PLANT         140,614,993         13,581,000         (2,169,548)         152,026,445         146,320,719           LESS GENERAL AND INTANGIBLE PLANT ALLOCATED TO TRANSMISSION - 22.5572%         1,003,542         277,905         (208,039)         1,073,408         1,038,475         71,946	360.2	LAND AND LAND RIGHTS - LAND RIGHTS	14,336	0	0	14,336	14,336		
TOTAL ELECTRIC PLANT         140,614,993         13,581,000         (2,169,548)         152,026,445         146,320,719           LESS GENERAL AND INTANGIBLE PLANT ALLOCATED TO TRANSMISSION - 22.5572%         1,003,542         277,905         (208,039)         1,073,408         1,038,475         71,946	389.1	LAND AND LAND RIGHTS - LAND	89,222	0	0	89,222	89,222		
LESS GENERAL AND INTANGIBLE PLANT ALLOCATED TO TRANSMISSION - 22.5572% 1,003,542 277,905 (208,039) 1,073,408 1,038,475 71,946	TOTAL	NONDEPRECIABLE PLANT		0	0				
	TOTAL EL	ECTRIC PLANT	140,614,993	13,581,000	(2,169,548)	152,026,445	146,320,719		
TOTAL ELECTRIC PLANT RELATED TO DISTRIBUTION OPERATIONS 139,611,451 13,303,095 (1,961,509) 150,953,037 145,282,244 3,439,823	LESS G	ENERAL AND INTANGIBLE PLANT ALLOCATED TO TRANSMISSION - 22.5572%	1,003,542	277,905	(208,039)	1,073,408	1,038,475		71,946
	TOTAL EL	ECTRIC PLANT RELATED TO DISTRIBUTION OPERATIONS	139,611,451	13,303,095	(1,961,509)	150,953,037	145,282,244		3,439,823



### TABLE 3. CALCULATION OF DEPRECIATION ACCRUALS FOR THE TWELVE MONTHS ENDED SEPTEMBER 30, 2018

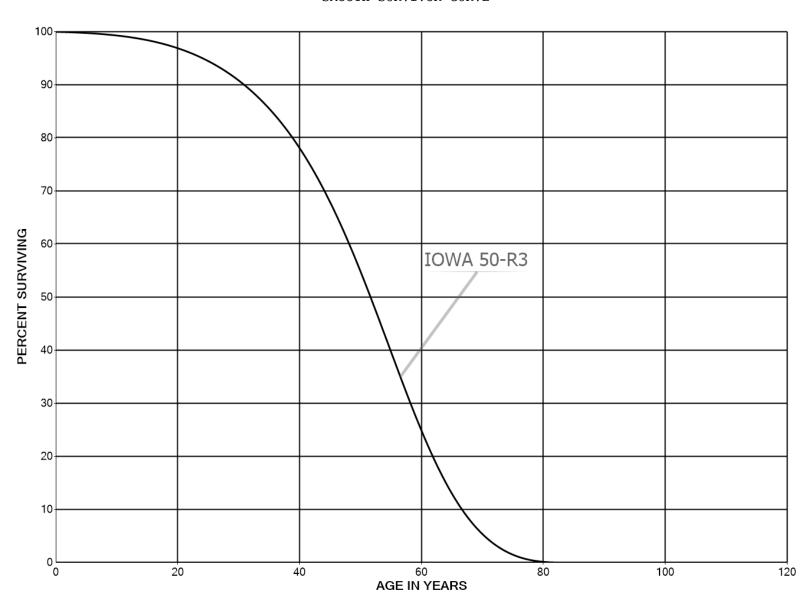
400011117	BEGINNING OF YEAR	ADDITIONS	DETIDEMENTO	END OF YEAR	AVERAGE	ANNUAL ACCRUAL	ANNUAL ACCRUAL
ACCOUNT	BALANCE	ADDITIONS	RETIREMENTS	BALANCE	BALANCE	RATE	AMOUNT
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)=(6)*(7)
OTHER UTILITY PLANT ALLOCATED TO ELECTRIC DIVISION							
COMMON PLANT							
301 ORGANIZATION (NONDEPRECIABLE)	138,964	0	0	138,964	138,964		
389.1 LAND AND LAND RIGHTS - LAND (NONDEPRECIABLE)	6,947,278	0	0	6,947,278	6,947,278		
390.2 STRUCTURES AND IMPROVEMENTS - LEASED PROPERTY	163,321	0	0	163,321	163,321	35.03	57,211
391 OFFICE FURNITURE AND EQUIPMENT - FURNITURE	840,391	0	0	840,391	840,391	7.02	58,995
391.1 OFFICE FURNITURE AND EQUIPMENT - EQUIPMENT	186,806	0	(126,305)	60,502	123,654	33.43	41,338
392.1 TRANSPORTATION EQUIPMENT - CARS	71,637	0	0	71,637	71,637	3.78	2,708
TOTAL COMMON PLANT	8,348,397	0	(126,305)	8,222,093	8,285,245		160,252
TOTAL COMMON PLANT ALLOCATED TO ELECTRIC DIVISION - 5.66%	472,519	0	(7,149)	465,370	468,945		9,070
INFORMATION SERVICES (IS)							
391 OFFICE FURNITURE AND EQUIPMENT - FURNITURE	71,395	0	(24,630)	46,765	59,080	4.24	2,505
391.1 OFFICE FURNITURE AND EQUIPMENT - EQUIPMENT	9,050,697	950,000	(611,365)	9,389,332	9,220,015	20.56	1,895,635
391.3 OFFICE FURNITURE AND EQUIPMENT - SYSTEM DEV. COSTS - 10 YEARS	18,881,670	0	(10,591,769)	8,289,902	13,585,786	3.85	716,513
391.4 OFFICE FURNITURE & EQUIPMENT - SYSTEM DEV. COSTS - 15 YEARS	80,027,929	10,800,786	0	90,828,715	85,428,322	7.09	6,056,868
TOTAL INFORMATION SERVICES	108,031,691	11,750,786	(11,227,764)	108,554,714	108,293,203		8,671,521
TOTAL INFORMATION SERVICES ALLOCATED TO ELECTRIC DIVISION - 9.32%	10,068,554	1,095,173	(1,046,428)	10,117,299	10,092,926		808,186
READING SERVICE CENTER							
390 STRUCTURES AND IMPROVEMENTS	1,970,709	0	0	1,970,709	1,970,709	3.19	62,866
TOTAL READING SERVICE CENTER ALLOCATED TO ELECTRIC DIVISION - 11.21%	220,916	0	0	220,916	220,916		7,047
TOTAL OTHER UTILITY PLANT ALLOCATED TO ELECTRIC DIVISION	10,761,989	1,095,173	(1,053,577)	10,803,585	10,782,787		824,303
LESS OTHER UTILITY PLANT ALLOCATED TO ELECTRIC TRANSMISSION - 22.5572%	2,427,603	247,040	(237,657)	2,436,986	2,432,295		185,940
TOTAL OTHER PLANT ALLOCATED TO ELECTRIC RELATED TO DISTRIBUTION OPERATIONS	8,334,386	848,133	(815,920)	8,366,599	8,350,492		638,363
TOTAL PLANT IN SERVICE RELATED TO DISTRIBUTION OPERATIONS	147,945,837	14,151,228	(2,777,429)	159,319,636	153,632,736		4,078,186

### TABLE 4. AMORTIZATION OF EXPERIENCED AND ESTIMATED NET SALVAGE

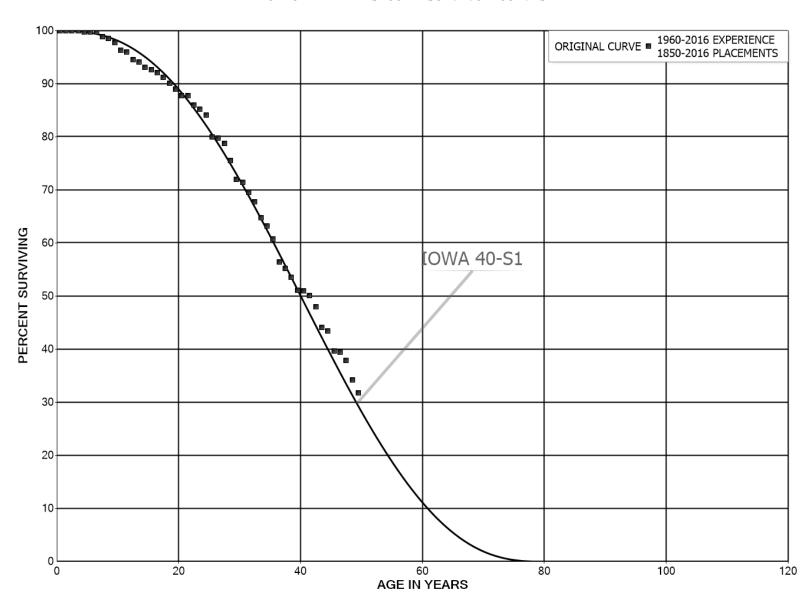
	201	4	20	015	20	116	20	017	2	018	FIVE YEAR	NET
ACCOUNT	GROSS SALVAGE	COST OF REMOVAL	NET SALVAGE TOTAL	SALVAGE ACCRUAL								
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)=(12)/5
ELECTRIC PLANT												
DISTRIBUTION PLA	NT											
361	0	0	0	0	0	0	0	0	0	0	0	0
362	0	0	(2,000)	2,021	0	(34)	0	0	(21,866)	43,732	21,853	4,371
364	0	205,410	0	327,581	0	351,318	0	315,585	0	453,100	1,652,994	330,599
365 366	0	63,043 2,781	0	81,961 3,074	0	75,887 884	0	91,147 13,832	(16,955) 0	92,807 9,698	387,890 30,269	77,578 6,054
367	0	9,392	0	8,629	0	3,188	0	12,707	0	19,254	53,170	10,634
368.1	0	708	0	2,387	0	3,166	0	7,007	(18,569)	6,456	(2,011)	(402)
368.2	0	13,090	0	19,592	0	20,208	0	16,645	(10,000)	41,218	110,753	22,151
369	0	63,878	0	67,963	0	64,224	0	59,124	(2,572)	45,012	297,629	59,526
370.1	0	0	0	0	0	0 .,22 .	0	0	(2,0.2)	0	0	0
370.2	0	3,442	0	3,378	0	3,071	0	2,789	0	718	13,398	2,680
370.3	0	0	0	0	0	0	0	0	0	0	0	0
371	0	23,317	0	10,296	0	19,949	0	13,648	0	2,494	69,704	13,941
371.5	0	0	0	0	0	0	0	0	0	0	0	0
373	0	7,986	0	22,892	0	15,458	0	16,397	0	22,463	85,196	17,039
TOTAL	0	393,047	(2,000)	549,774	0	554,153	0	548,881	(59,962)	736,952	2,720,845	544,171
GENERAL PLANT												
390.1	0	0	0	93,483	0	1,488	0	0	0	0	94,971	18,994
390.2	0	0	0	0	0	0	0	0	0	0	0	0
391 391.1	0	0	0	0	0	0	0	0	0	0	0	0
391.92	0	0	0	0	0	0	0	0	0	0	0	0
392.2	0	0	0	0	0	0	0	0	0	0	0	0
393	0	0	0	0	0	0	0	0	0	0	0	0
394	0	0	0	0	0	0	0	0	0	0	0	0
395	0	0	0	0	0	0	0	0	0	0	0	0
396	0	0	0	0	0	0	0	0	0	0	0	0
397	0	0	0	0	0	0	0	0	0	0	0	0
398	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	93,483	0	1,488	0	0	0	0	94,971	18,994
TOTAL ELECTRIC	0	393,047	(2,000)	643,257	0	555,641	0	548,881	(59,962)	736,952	2,815,816	563,165
LESS GENERAL PLA	ANT ALLOCATED	TO TRANSMIS	SION - 22.55729	%								
	0	0	0	21,087	0	336	0	0	0	0	21,423	4,285
TOTAL	0	393,047	(2,000)	622,170	0	555,305	0	548,881	(59,962)	736,952	2,794,393	558,880
OTHER UTILITY PLANT	ALLOCATED T	O ELECTRIC DI	VISION									
COMMON PLANT												
390.2	0	0	0	0	0	0	0	0	0	0	0	0
391	0	0	0	0	0	0	0	0	0	0	0	0
391.1	0	0	0	0	0	0	0	0	0	0	0	0
392.1	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
INFORMATION SER												
391	0	0	0	0	0	0	0	0	0	0	0	0
391.1	0	0	0	0	0	0	0	0	0	0	0	0
391.3	0	0	0	0	0	0	0	0	0	0	0	0
391.4	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL	0	393,047	(2,000)	622,170	0	555,305	0	548,881	(59,962)	736,952	2,794,393	558,880

# PART VI. SERVICE LIFE STATISTICS

# UGI UTILITIES, INC. - ELECTRIC DIVISION ACCOUNT 361 - STRUCTURES AND IMPROVEMENTS SMOOTH SURVIVOR CURVE



## UGI UTILITIES, INC. - ELECTRIC DIVISION ACCOUNT 362 - STATION EQUIPMENT ORIGINAL AND SMOOTH SURVIVOR CURVES



### ACCOUNT 362 - STATION EQUIPMENT

### ORIGINAL LIFE TABLE

PLACEMENT	BAND 1850-2016		EXPER	RIENCE BAN	D 1960-2016
AGE AT	EXPOSURES AT	RETIREMENTS			PCT SURV
BEGIN OF	BEGINNING OF	DURING AGE	RETMT	SURV	BEGIN OF
INTERVAL	AGE INTERVAL	INTERVAL	RATIO	RATIO	INTERVAL
0.0	685,795		0.0000	1.0000	100.00
0.5	718,281		0.0000	1.0000	100.00
1.5	640,228	224	0.0004	0.9996	100.00
2.5	681,056	128	0.0002	0.9998	99.96
3.5	734,354	1,328	0.0018	0.9982	99.95
4.5	759,820	222	0.0003	0.9997	99.77
5.5	777,077	215	0.0003	0.9997	99.74
6.5	778,907	7,150	0.0092	0.9908	99.71
7.5	855,271	2,241	0.0026	0.9974	98.79
8.5	855,409	6,857	0.0080	0.9920	98.53
9.5	882,239	12,995	0.0147	0.9853	97.74
10.5	901,626	3,702	0.0041	0.9959	96.30
11.5	948,142	14,405	0.0152	0.9848	95.91
12.5	931,457	3,693	0.0040	0.9960	94.45
13.5	918,832	10,273	0.0112	0.9888	94.08
14.5	908,864	4,524	0.0050	0.9950	93.03
15.5	903,657	5,028	0.0056	0.9944	92.56
16.5	931,651	9,033	0.0097	0.9903	92.05
17.5	934,097	11,520	0.0123	0.9877	91.16
18.5	929,137	11,604	0.0125	0.9875	90.03
19.5	901,179	12,006	0.0133	0.9867	88.91
20.5	847,260	256	0.0003	0.9997	87.72
21.5	858,670	17,605	0.0205	0.9795	87.70
22.5	847,960	7,229	0.0085	0.9915	85.90
23.5	841,218	10,668	0.0127	0.9873	85.17
24.5	831,548	40,805	0.0491	0.9509	84.09
25.5	770,548	1,871	0.0024	0.9976	79.96
26.5	768,567	9,623	0.0125	0.9875	79.77
27.5	766,205	31,611		0.9587	78.77
28.5	735,092	34,205	0.0465	0.9535	75.52
29.5	739,952	5,808	0.0078	0.9922	72.00
30.5	817,464	22,512	0.0275	0.9725	71.44
31.5	804,597	20,717	0.0257	0.9743	69.47
32.5	787,487	34,581	0.0439	0.9561	67.68
33.5	821,921	19,361	0.0236	0.9764	64.71
34.5	927,556	36,771	0.0396	0.9604	63.19
35.5	910,479	64,825	0.0712	0.9288	60.68
36.5	854,237	18,623	0.0218	0.9782	56.36
37.5	827,628	23,847	0.0288	0.9712	55.13
38.5	817,005	37,128	0.0454	0.9546	53.54



### ACCOUNT 362 - STATION EQUIPMENT

### ORIGINAL LIFE TABLE, CONT.

AGE AT   BEGIN OF   DURING AGE   RETIMT   SURV   BEGIN OF   INTERVAL	PLACEMENT E	BAND 1850-2016		EXPER	RIENCE BAN	D 1960-2016
INTERVAL   AGE INTERVAL   INTERVAL   RATIO   RATIO   INTERVAL						
39.5       772,265       1,887       0.0024       0.9976       51.11         40.5       763,251       14,475       0.0190       0.9810       50.98         41.5       742,739       31,210       0.0420       0.9580       50.02         42.5       711,883       57.063       0.0802       0.9198       47.92         43.5       620,184       8,812       0.0142       0.9858       44.08         44.5       580,201       51,031       0.0880       0.9120       43.45         45.5       517,846       2,991       0.0058       0.9942       39.63         46.5       511,672       20,507       0.0401       0.9599       39.40         47.5       449,856       43,465       0.0966       0.9934       37.82         48.5       403,096       29,437       0.9713       31.47         49.5       348,083       2,160       0.0062       0.9938       31.67         50.5       342,533       9,843       0.0287       0.9713       31.47         51.5       325,646       4,667       0.0143       0.9986       30.13         53.5       304,675       1,081       0.0035       0.9965 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td></t<>						
40.5       763,251       14,475       0.0190       0.9810       50.98         41.5       742,739       31,210       0.0420       0.9580       50.02         42.5       711,883       57,063       0.0802       0.9198       47.92         43.5       620,184       8,812       0.0142       0.9858       44.08         44.5       580,201       51,031       0.0880       0.9120       43.45         45.5       517,846       2,991       0.0058       0.9942       39.63         46.5       511,672       20,507       0.0401       0.9599       39.40         47.5       449,856       43,465       0.0966       0.9034       37.82         48.5       403,096       29,437       0.0730       0.9270       34.17         49.5       348,083       2,160       0.0062       0.9938       31.67         50.5       342,533       9,843       0.0287       0.9713       31.47         51.5       325,646       4,667       0.0143       0.9857       30.57         52.5       310,651       126       0.0004       0.9996       30.13         53.5       260,289       6,919       0.0266	INTERVAL	AGE INTERVAL	INTERVAL	RATIO	RATIO	INTERVAL
41.5       742,739       31,210       0.0420       0.9580       50.02         42.5       711,883       57,063       0.0802       0.9198       47.92         43.5       620,184       8,812       0.0142       0.9858       44.08         44.5       580,201       51,031       0.0880       0.9120       43.45         45.5       517,846       2,991       0.0058       0.9942       39.63         46.5       511,672       20,507       0.0401       0.9599       39.40         47.5       449,856       43,465       0.0966       0.9034       37.82         48.5       403,096       29,437       0.0730       0.9270       34.17         49.5       348,083       2,160       0.0062       0.9938       31.67         50.5       342,533       9,843       0.0287       0.9713       31.47         51.5       325,646       4,667       0.0143       0.9857       30.57         52.5       310,651       126       0.0004       0.9996       30.13         53.5       344,675       1,081       0.0035       0.9965       30.12         54.5       260,289       6,919       0.0266       0						
42.5       711,883       57,063       0.0802       0.9198       47.92         43.5       620,184       8,812       0.0142       0.9858       44.08         44.5       580,201       51,031       0.0880       0.9120       43.45         45.5       517,846       2,991       0.0058       0.9942       39.63         46.5       511,672       20,507       0.0401       0.9599       39.40         47.5       449,856       43,465       0.9966       0.9034       37.82         48.5       403,096       29,437       0.0730       0.9270       34.17         49.5       348,083       2,160       0.0062       0.9938       31.67         50.5       342,533       9,843       0.0287       0.9713       31.47         51.5       325,646       4,667       0.0143       0.9857       30.57         52.5       310,651       126       0.0004       0.9996       30.13         53.5       304,675       1,081       0.0035       0.9965       30.12         54.5       260,289       6,919       0.0266       0.9734       30.01         55.5       238,656       0.0000       1.0000       2						
43.5       620,184       8,812       0.0142       0.9858       44.08         44.5       580,201       51,031       0.0880       0.9120       43.45         45.5       517,846       2,991       0.0088       0.9942       39.63         46.5       511,672       20,507       0.0401       0.9599       39.40         47.5       449,856       43,465       0.0966       0.9934       37.82         48.5       403,096       29,437       0.0730       0.9270       34.17         49.5       348,083       2,160       0.0062       0.9938       31.67         50.5       342,533       9,843       0.0287       0.9713       31.47         51.5       325,646       4,667       0.0143       0.9857       30.57         52.5       310,651       126       0.0004       0.9996       30.13         53.5       304,675       1,081       0.0035       0.9965       30.12         54.5       260,289       6,919       0.0266       0.9734       30.01         55.5       244,111       499       0.020       0.9980       29.21         56.5       238,656       0.0000       1.0000       29.15						
44.5       580,201       51,031       0.0880       0.9120       43.45         45.5       517,846       2,991       0.0058       0.9942       39.63         46.5       511,672       20,507       0.0401       0.9599       39.40         47.5       449,856       43,465       0.0966       0.9034       37.82         48.5       403,096       29,437       0.0730       0.9270       34.17         49.5       348,083       2,160       0.0062       0.9938       31.67         50.5       342,533       9,843       0.0287       0.9713       31.47         51.5       325,646       4,667       0.0143       0.9857       30.57         52.5       310,651       126       0.0004       0.9996       30.13         53.5       304,675       1,081       0.003       0.9938       30.12         54.5       260,289       6,919       0.0266       0.9734       30.01         55.5       244,111       499       0.0020       0.9980       29.21         56.5       238,656       0.0000       1.0000       29.15         57.5       227,355       133       0.0066       0.9994       29.15 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
45.5       517,846       2,991       0.0058       0.9942       39.63         46.5       511,672       20,507       0.0401       0.9599       39.40         47.5       449,856       43,465       0.0966       0.9034       37.82         48.5       403,096       29,437       0.0730       0.9270       34.17         49.5       348,083       2,160       0.0062       0.9938       31.67         50.5       342,533       9,843       0.0287       0.9713       31.47         51.5       325,646       4,667       0.0143       0.9857       30.57         52.5       310,651       126       0.0004       0.9996       30.13         53.5       304,675       1,081       0.0035       0.9965       30.12         54.5       260,289       6,919       0.0266       0.9734       30.01         55.5       244,111       499       0.020       0.9980       29.21         56.5       238,656       0.0000       1.0000       29.15         57.5       227,355       133       0.0066       0.9994       29.15         58.5       195,290       0.0000       1.0000       29.14						
46.5       511,672       20,507       0.0401       0.9599       39.40         47.5       449,856       43,465       0.0966       0.9034       37.82         48.5       403,096       29,437       0.0730       0.9270       34.17         49.5       348,083       2,160       0.0062       0.9938       31.67         50.5       342,533       9,843       0.0287       0.9713       31.47         51.5       325,646       4,667       0.0143       0.9857       30.57         52.5       310,651       126       0.0004       0.9996       30.13         53.5       304,675       1,081       0.035       0.9965       30.12         54.5       260,289       6,919       0.0266       0.9734       30.01         55.5       234,111       499       0.0200       0.9980       29.21         56.5       238,656       0.0000       1.0000       29.15         57.5       227,355       133       0.0066       0.9994       29.15         58.5       195,290       0.0000       1.0000       29.14         60.5       177,001       1,510       0.085       0.9915       27.51						
47.5       449,856       43,465       0.0966       0.9034       37.82         48.5       403,096       29,437       0.0730       0.9270       34.17         49.5       348,083       2,160       0.0062       0.9938       31.67         50.5       342,533       9,843       0.0287       0.9713       31.47         51.5       325,646       4,667       0.0143       0.9857       30.57         52.5       310,651       126       0.0004       0.9996       30.13         53.5       304,675       1,081       0.0035       0.9965       30.12         54.5       260,289       6,919       0.0266       0.9734       30.01         55.5       244,111       499       0.0200       0.9980       29.21         56.5       238,656       0.0000       1.0000       29.15         57.5       227,355       133       0.0066       0.9994       29.15         58.5       195,290       0.0000       1.0000       29.14         60.5       177,001       1,510       0.085       0.9915       27.51         61.5       143,050       1,568       0.0110       0.9890       27.27						
48.5       403,096       29,437       0.0730       0.9270       34.17         49.5       348,083       2,160       0.0062       0.9938       31.67         50.5       342,533       9,843       0.0287       0.9713       31.47         51.5       325,646       4,667       0.0143       0.9857       30.57         52.5       310,651       126       0.0004       0.9996       30.13         53.5       304,675       1,081       0.035       0.9965       30.12         54.5       260,289       6,919       0.0266       0.9734       30.01         55.5       244,111       499       0.0020       0.9980       29.21         56.5       238,656       0.0000       1.0000       29.15         57.5       227,355       133       0.0066       0.9994       29.15         58.5       195,290       0.0000       1.0000       29.14         60.5       177,001       1,510       0.0085       0.9915       27.51         61.5       143,050       1,568       0.0110       0.9890       27.27         62.5       141,481       133       0.000       0.9975       26.77						
49.5       348,083       2,160       0.0062       0.9938       31.67         50.5       342,533       9,843       0.0287       0.9713       31.47         51.5       325,646       4,667       0.0143       0.9857       30.57         52.5       310,651       126       0.0004       0.9996       30.13         53.5       304,675       1,081       0.0035       0.9965       30.12         54.5       260,289       6,919       0.026       0.9734       30.01         55.5       244,111       499       0.0020       0.9980       29.21         56.5       238,656       0.0000       1.0000       29.15         57.5       227,355       133       0.0006       0.9994       29.15         58.5       195,290       0.0000       1.0000       29.14         60.5       177,001       1,510       0.0085       0.9915       27.51         61.5       143,050       1,568       0.0110       0.9890       27.27         62.5       141,481       133       0.0009       0.9991       26.97         63.5       141,234       906       0.0044       0.9936       26.95						
50.5       342,533       9,843       0.0287       0.9713       31.47         51.5       325,646       4,667       0.0143       0.9857       30.57         52.5       310,651       126       0.0004       0.9996       30.13         53.5       304,675       1,081       0.0035       0.9965       30.12         54.5       260,289       6,919       0.0266       0.9734       30.01         55.5       244,111       499       0.0020       0.9980       29.21         56.5       238,656       0.0000       1.0000       29.15         57.5       227,355       133       0.0006       0.9994       29.15         58.5       195,290       0.0000       1.0000       29.14         59.5       194,343       10,891       0.0560       0.9440       29.14         60.5       177,001       1,510       0.0085       0.9915       27.51         61.5       143,050       1,568       0.0110       0.9890       27.27         62.5       141,481       133       0.0009       0.9991       26.97         64.5       117,901       290       0.0025       0.9975       26.77	48.5	403,096	29,437	0.0730	0.9270	34.17
51.5       325,646       4,667       0.0143       0.9857       30.57         52.5       310,651       126       0.0004       0.9996       30.13         53.5       304,675       1,081       0.0035       0.9965       30.12         54.5       260,289       6,919       0.0266       0.9734       30.01         55.5       244,111       499       0.0020       0.9980       29.21         56.5       238,656       0.0000       1.0000       29.15         57.5       227,355       133       0.0066       0.9994       29.15         58.5       195,290       0.0000       1.0000       29.14         59.5       194,343       10,891       0.0560       0.9440       29.14         60.5       177,001       1,510       0.085       0.9915       27.51         61.5       143,050       1,568       0.0110       0.9890       27.27         62.5       141,481       133       0.0009       0.9991       26.97         63.5       141,234       906       0.0064       0.9936       26.95         64.5       117,901       290       0.025       0.9975       26.77 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td></t<>						
52.5       310,651       126       0.0004       0.9996       30.13         53.5       304,675       1,081       0.0035       0.9965       30.12         54.5       260,289       6,919       0.0266       0.9734       30.01         55.5       244,111       499       0.0020       0.9980       29.21         56.5       238,656       0.0000       1.0000       29.15         57.5       227,355       133       0.0006       0.9994       29.15         58.5       195,290       0.0000       1.0000       29.14         60.5       177,001       1,510       0.085       0.9915       27.51         61.5       143,050       1,568       0.0110       0.9890       27.27         62.5       141,481       133       0.0009       0.9991       26.97         63.5       141,234       906       0.0064       0.9936       26.95         64.5       117,901       290       0.0025       0.9975       26.77         65.5       101,059       17,790       0.1760       0.8240       26.71         67.5       62,731       12,281       0.1958       0.8462       17.70         <						
53.5       304,675       1,081       0.0035       0.9965       30.12         54.5       260,289       6,919       0.0266       0.9734       30.01         55.5       244,111       499       0.0020       0.9980       29.21         56.5       238,656       0.0000       1.0000       29.15         57.5       227,355       133       0.0006       0.9994       29.15         58.5       195,290       0.0000       1.0000       29.14         60.5       177,001       1,510       0.085       0.9915       27.51         61.5       143,050       1,568       0.0110       0.9890       27.27         62.5       141,481       133       0.0009       0.9991       26.97         63.5       141,234       906       0.0064       0.9936       26.95         64.5       117,901       290       0.0025       0.9975       26.77         65.5       10,059       17,790       0.1760       0.8240       26.71         67.5       62,731       12,281       0.1958       0.8042       22.01         68.5       47,868       7,360       0.1538       0.8462       17.70         <						
54.5       260,289       6,919       0.0266       0.9734       30.01         55.5       244,111       499       0.0020       0.9980       29.21         56.5       238,656       0.0000       1.0000       29.15         57.5       227,355       133       0.0006       0.9994       29.15         58.5       195,290       0.0000       1.0000       29.14         59.5       194,343       10,891       0.0560       0.9440       29.14         60.5       177,001       1,510       0.0085       0.9915       27.51         61.5       143,050       1,568       0.0110       0.9890       27.27         62.5       141,481       133       0.0009       0.9991       26.97         63.5       141,234       906       0.0064       0.9936       26.95         64.5       117,901       290       0.0025       0.9975       26.77         65.5       10,059       17,790       0.1760       0.8240       26.71         67.5       62,731       12,281       0.1958       0.8042       22.01         68.5       47,868       7,360       0.1538       0.8462       17.70						
55.5       244,111       499       0.0020       0.9980       29.21         56.5       238,656       0.0000       1.0000       29.15         57.5       227,355       133       0.0006       0.9994       29.15         58.5       195,290       0.0000       1.0000       29.14         59.5       194,343       10,891       0.0560       0.9440       29.14         60.5       177,001       1,510       0.0085       0.9915       27.51         61.5       143,050       1,568       0.0110       0.9890       27.27         62.5       141,481       133       0.0009       0.9991       26.97         63.5       141,234       906       0.0064       0.9936       26.95         64.5       117,901       290       0.0025       0.9975       26.77         65.5       110,700       0.0000       1.0000       26.71         66.5       101,059       17,790       0.1760       0.8240       26.71         67.5       62,731       12,281       0.1958       0.8042       22.01         68.5       40,508       5,755       0.1421       0.8579       14.98         70.5						
56.5       238,656       0.0000       1.0000       29.15         57.5       227,355       133       0.0006       0.9994       29.15         58.5       195,290       0.0000       1.0000       29.14         59.5       194,343       10,891       0.0560       0.9440       29.14         60.5       177,001       1,510       0.0085       0.9915       27.51         61.5       143,050       1,568       0.0110       0.9890       27.27         62.5       141,481       133       0.0009       0.9991       26.97         63.5       141,234       906       0.0064       0.9936       26.95         64.5       117,901       290       0.0025       0.9975       26.77         65.5       101,0700       0.0000       1.0000       26.71         66.5       101,059       17,790       0.1760       0.8240       26.71         67.5       62,731       12,281       0.1958       0.8462       17.70         69.5       40,508       5,755       0.1421       0.8579       14.98         70.5       34,583       0.0000       1.0000       12.85         72.5       32,916						
57.5       227,355       133       0.0006       0.9994       29.15         58.5       195,290       0.0000       1.0000       29.14         59.5       194,343       10,891       0.0560       0.9440       29.14         60.5       177,001       1,510       0.0085       0.9915       27.51         61.5       143,050       1,568       0.0110       0.9890       27.27         62.5       141,481       133       0.0009       0.9991       26.97         63.5       141,234       906       0.0064       0.9936       26.95         64.5       117,901       290       0.0025       0.9975       26.77         65.5       110,700       0.0000       1.0000       26.71         66.5       101,059       17,790       0.1760       0.8240       26.71         67.5       62,731       12,281       0.1958       0.8042       22.01         68.5       47,868       7,360       0.1538       0.8462       17.70         69.5       40,508       5,755       0.1421       0.8579       14.98         70.5       34,753       0.0000       1.0000       12.85         72.5			499			
58.5       195,290       0.0000       1.0000       29.14         59.5       194,343       10,891       0.0560       0.9440       29.14         60.5       177,001       1,510       0.0085       0.9915       27.51         61.5       143,050       1,568       0.0110       0.9890       27.27         62.5       141,481       133       0.0009       0.9991       26.97         63.5       141,234       906       0.0064       0.9936       26.95         64.5       117,901       290       0.0025       0.9975       26.77         65.5       110,700       0.0000       1.0000       26.71         66.5       101,059       17,790       0.1760       0.8240       26.71         67.5       62,731       12,281       0.1958       0.8042       22.01         68.5       47,868       7,360       0.1538       0.8462       17.70         69.5       40,508       5,755       0.1421       0.8579       14.98         70.5       34,583       0.0000       1.0000       12.85         72.5       32,916       0.0000       1.0000       12.85         74.5       28,617						
59.5       194,343       10,891       0.0560       0.9440       29.14         60.5       177,001       1,510       0.0085       0.9915       27.51         61.5       143,050       1,568       0.0110       0.9890       27.27         62.5       141,481       133       0.0009       0.9991       26.97         63.5       141,234       906       0.0064       0.9936       26.95         64.5       117,901       290       0.0025       0.9975       26.77         65.5       110,700       0.0000       1.0000       26.71         66.5       101,059       17,790       0.1760       0.8240       26.71         67.5       62,731       12,281       0.1958       0.8042       22.01         68.5       47,868       7,360       0.1538       0.8462       17.70         69.5       40,508       5,755       0.1421       0.8579       14.98         70.5       34,753       0.0000       1.0000       12.85         71.5       34,583       0.0000       1.0000       12.85         73.5       32,916       0.0000       1.0000       12.85         75.5       27,724			133			
60.5       177,001       1,510       0.0085       0.9915       27.51         61.5       143,050       1,568       0.0110       0.9890       27.27         62.5       141,481       133       0.0009       0.9991       26.97         63.5       141,234       906       0.0064       0.9936       26.95         64.5       117,901       290       0.0025       0.9975       26.77         65.5       110,700       0.0000       1.0000       26.71         66.5       101,059       17,790       0.1760       0.8240       26.71         67.5       62,731       12,281       0.1958       0.8042       22.01         68.5       47,868       7,360       0.1538       0.8462       17.70         69.5       40,508       5,755       0.1421       0.8579       14.98         70.5       34,753       0.0000       1.0000       12.85         72.5       32,916       0.0000       1.0000       12.85         74.5       28,617       233       0.0081       0.9919       12.85         75.5       27,724       0.0000       1.0000       12.74         76.5       27,724 <t< td=""><td>58.5</td><td>195,290</td><td></td><td>0.0000</td><td>1.0000</td><td>29.14</td></t<>	58.5	195,290		0.0000	1.0000	29.14
61.5       143,050       1,568       0.0110       0.9890       27.27         62.5       141,481       133       0.0009       0.9991       26.97         63.5       141,234       906       0.0064       0.9936       26.95         64.5       117,901       290       0.0025       0.9975       26.77         65.5       110,700       0.0000       1.0000       26.71         66.5       101,059       17,790       0.1760       0.8240       26.71         67.5       62,731       12,281       0.1958       0.8042       22.01         68.5       47,868       7,360       0.1538       0.8462       17.70         69.5       40,508       5,755       0.1421       0.8579       14.98         70.5       34,753       0.0000       1.0000       12.85         72.5       32,916       0.0000       1.0000       12.85         73.5       32,916       0.0000       1.0000       12.85         75.5       27,724       0.0000       1.0000       12.74         76.5       27,724       0.0000       1.0000       12.74         76.5       27,513       0.0000       1.0000						
62.5       141,481       133       0.0009       0.9991       26.97         63.5       141,234       906       0.0064       0.9936       26.95         64.5       117,901       290       0.0025       0.9975       26.77         65.5       110,700       0.0000       1.0000       26.71         66.5       101,059       17,790       0.1760       0.8240       26.71         67.5       62,731       12,281       0.1958       0.8042       22.01         68.5       47,868       7,360       0.1538       0.8462       17.70         69.5       40,508       5,755       0.1421       0.8579       14.98         70.5       34,753       0.0000       1.0000       12.85         71.5       34,583       0.0000       1.0000       12.85         73.5       32,916       0.0000       1.0000       12.85         75.5       27,724       0.0000       1.0000       12.74         76.5       27,724       0.0000       1.0000       12.74         77.5       27,513       0.0000       1.0000       12.74						
63.5       141,234       906       0.0064       0.9936       26.95         64.5       117,901       290       0.0025       0.9975       26.77         65.5       110,700       0.0000       1.0000       26.71         66.5       101,059       17,790       0.1760       0.8240       26.71         67.5       62,731       12,281       0.1958       0.8042       22.01         68.5       47,868       7,360       0.1538       0.8462       17.70         69.5       40,508       5,755       0.1421       0.8579       14.98         70.5       34,753       0.0000       1.0000       12.85         71.5       34,583       0.0000       1.0000       12.85         72.5       32,916       0.0000       1.0000       12.85         74.5       28,617       233       0.0081       0.9919       12.85         75.5       27,724       0.0000       1.0000       12.74         76.5       27,724       0.0000       1.0000       12.74         77.5       27,513       0.0000       1.0000       12.74						
64.5       117,901       290       0.0025       0.9975       26.77         65.5       110,700       0.0000       1.0000       26.71         66.5       101,059       17,790       0.1760       0.8240       26.71         67.5       62,731       12,281       0.1958       0.8042       22.01         68.5       47,868       7,360       0.1538       0.8462       17.70         69.5       40,508       5,755       0.1421       0.8579       14.98         70.5       34,753       0.0000       1.0000       12.85         71.5       34,583       0.0000       1.0000       12.85         73.5       32,916       0.0000       1.0000       12.85         74.5       28,617       233       0.0081       0.9919       12.85         75.5       27,724       0.0000       1.0000       12.74         76.5       27,724       0.0000       1.0000       12.74         77.5       27,513       0.0000       1.0000       12.74						
65.5       110,700       0.0000       1.0000       26.71         66.5       101,059       17,790       0.1760       0.8240       26.71         67.5       62,731       12,281       0.1958       0.8042       22.01         68.5       47,868       7,360       0.1538       0.8462       17.70         69.5       40,508       5,755       0.1421       0.8579       14.98         70.5       34,753       0.0000       1.0000       12.85         71.5       34,583       0.0000       1.0000       12.85         72.5       32,916       0.0000       1.0000       12.85         74.5       28,617       233       0.0081       0.9919       12.85         75.5       27,724       0.0000       1.0000       12.74         76.5       27,724       0.0000       1.0000       12.74         77.5       27,513       0.0000       1.0000       12.74						
66.5       101,059       17,790       0.1760       0.8240       26.71         67.5       62,731       12,281       0.1958       0.8042       22.01         68.5       47,868       7,360       0.1538       0.8462       17.70         69.5       40,508       5,755       0.1421       0.8579       14.98         70.5       34,753       0.0000       1.0000       12.85         71.5       34,583       0.0000       1.0000       12.85         72.5       32,916       0.0000       1.0000       12.85         74.5       28,617       233       0.0081       0.9919       12.85         75.5       27,724       0.0000       1.0000       12.74         76.5       27,724       0.0000       1.0000       12.74         77.5       27,513       0.0000       1.0000       12.74			290			
67.5       62,731       12,281       0.1958       0.8042       22.01         68.5       47,868       7,360       0.1538       0.8462       17.70         69.5       40,508       5,755       0.1421       0.8579       14.98         70.5       34,753       0.0000       1.0000       12.85         71.5       34,583       0.0000       1.0000       12.85         72.5       32,916       0.0000       1.0000       12.85         74.5       28,617       233       0.0081       0.9919       12.85         75.5       27,724       0.0000       1.0000       12.74         76.5       27,724       0.0000       1.0000       12.74         77.5       27,513       0.0000       1.0000       12.74						
68.5       47,868       7,360       0.1538       0.8462       17.70         69.5       40,508       5,755       0.1421       0.8579       14.98         70.5       34,753       0.0000       1.0000       12.85         71.5       34,583       0.0000       1.0000       12.85         72.5       32,916       0.0000       1.0000       12.85         73.5       32,916       0.0000       1.0000       12.85         74.5       28,617       233       0.0081       0.9919       12.85         75.5       27,724       0.0000       1.0000       12.74         76.5       27,724       0.0000       1.0000       12.74         77.5       27,513       0.0000       1.0000       12.74						
69.5       40,508       5,755       0.1421       0.8579       14.98         70.5       34,753       0.0000       1.0000       12.85         71.5       34,583       0.0000       1.0000       12.85         72.5       32,916       0.0000       1.0000       12.85         73.5       32,916       0.0000       1.0000       12.85         74.5       28,617       233       0.0081       0.9919       12.85         75.5       27,724       0.0000       1.0000       12.74         76.5       27,724       0.0000       1.0000       12.74         77.5       27,513       0.0000       1.0000       12.74						
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	68.5	47,868	7,360	0.1538	0.8462	17.70
71.5       34,583       0.0000       1.0000       12.85         72.5       32,916       0.0000       1.0000       12.85         73.5       32,916       0.0000       1.0000       12.85         74.5       28,617       233       0.0081       0.9919       12.85         75.5       27,724       0.0000       1.0000       12.74         76.5       27,724       0.0000       1.0000       12.74         77.5       27,513       0.0000       1.0000       12.74			5,755			
72.5       32,916       0.0000       1.0000       12.85         73.5       32,916       0.0000       1.0000       12.85         74.5       28,617       233       0.0081       0.9919       12.85         75.5       27,724       0.0000       1.0000       12.74         76.5       27,724       0.0000       1.0000       12.74         77.5       27,513       0.0000       1.0000       12.74						
73.5       32,916       0.0000       1.0000       12.85         74.5       28,617       233       0.0081       0.9919       12.85         75.5       27,724       0.0000       1.0000       12.74         76.5       27,724       0.0000       1.0000       12.74         77.5       27,513       0.0000       1.0000       12.74		34,583				
74.5       28,617       233       0.0081       0.9919       12.85         75.5       27,724       0.0000       1.0000       12.74         76.5       27,724       0.0000       1.0000       12.74         77.5       27,513       0.0000       1.0000       12.74				0.0000		
75.5       27,724       0.0000       1.0000       12.74         76.5       27,724       0.0000       1.0000       12.74         77.5       27,513       0.0000       1.0000       12.74						
76.5       27,724       0.0000       1.0000       12.74         77.5       27,513       0.0000       1.0000       12.74			233			
77.5 27,513 0.0000 1.0000 12.74						
78.5 27,289 0.0000 1.0000 12.74						
	78.5	27,289		0.0000	1.0000	12.74



### ACCOUNT 362 - STATION EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT E	BAND 1850-2016		EXPER	RIENCE BAN	D 1960-2016
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5 80.5 81.5 82.5 83.5 84.5 85.5 86.5 87.5	26,886 26,886 26,886 26,886 26,886 26,886 26,886 10,784		0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	12.74 12.74 12.74 12.74 12.74 12.74 12.74 12.74 12.74 12.74
89.5 90.5 91.5 92.5 93.5 94.5 95.5 96.5 97.5 98.5	9,945 3,618 2,726		0.0000 0.0000 0.0000	1.0000 1.0000 1.0000	12.74 12.74 12.74 12.74
99.5 100.5 101.5 102.5 103.5 104.5 105.5 106.5 107.5					
109.5 110.5 111.5 112.5 113.5 114.5 115.5 116.5 117.5	400 400 400 400 400 400 400 400 400		0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000		



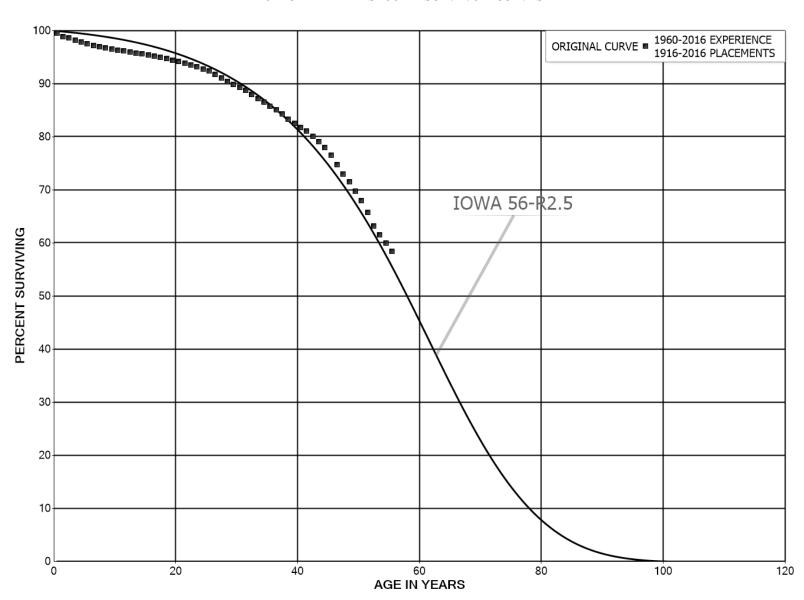
### ACCOUNT 362 - STATION EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT	BAND 1850-2016		EXPER	IENCE BAN	D 1960-2016
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
119.5 120.5 121.5 122.5 123.5 124.5 125.5 126.5 127.5 128.5 129.5 130.5 131.5 132.5 133.5 134.5 135.5 136.5 137.5 136.5 137.5 140.5 140.5 141.5 142.5 143.5	400 400 400 400 400 400 400 400 400 400	INTERVAL	0.0000 0.0000	RATIO	INTERVAL
147.5 148.5	400 400	400	0.0000		

149.5

### UGI UTILITIES, INC. - ELECTRIC DIVISION ACCOUNT 364 - POLES, TOWERS AND FIXTURES ORIGINAL AND SMOOTH SURVIVOR CURVES



### ACCOUNT 364 - POLES, TOWERS AND FIXTURES

### ORIGINAL LIFE TABLE

PLACEMENT	BAND 1916-2016		EXPER	RIENCE BAN	D 1960-2016
AGE AT BEGIN OF	EXPOSURES AT BEGINNING OF	RETIREMENTS DURING AGE	RETMT	SURV	PCT SURV BEGIN OF
INTERVAL	AGE INTERVAL	INTERVAL	RATIO	RATIO	INTERVAL
0.0	37,389,819	192,809	0.0052	0.9948	100.00
0.5	35,937,266	215,961	0.0060	0.9940	99.48
1.5	34,354,387	104,419	0.0030	0.9970	98.89
2.5	32,725,680	127,536	0.0039	0.9961	98.59
3.5	31,532,811	116,401	0.0037	0.9963	98.20
4.5	30,605,201	108,884	0.0036	0.9964	97.84
5.5	29,109,543	98,043	0.0034	0.9966	97.49
6.5	28,030,357	75,861	0.0027	0.9973	97.16
7.5	26,951,756	49,513	0.0018	0.9982	96.90
8.5	25,895,878	49,841	0.0019	0.9981	96.72
9.5	24,999,944	51,845	0.0021	0.9979	96.54
10.5	23,928,672	41,168	0.0017	0.9983	96.34
11.5	22,839,771	48,278	0.0021	0.9979	96.17
12.5	21,736,139	48,316	0.0022	0.9978	95.97
13.5	20,783,085	40,771	0.0020	0.9980	95.75
14.5	19,990,631	40,128	0.0020	0.9980	95.57
15.5	19,039,939	46,874	0.0025	0.9975	95.37
16.5	18,334,867	45,945	0.0025	0.9975	95.14
17.5	17,517,696	40,725	0.0023	0.9977	94.90
18.5	16,583,960	49,083	0.0030	0.9970	94.68
19.5	15,610,911	42,909	0.0027	0.9973	94.40
20.5	14,360,108	49,530	0.0034	0.9966	94.14
21.5	13,054,445	45,960	0.0035	0.9965	93.82
22.5	12,091,292	43,938	0.0036	0.9964	93.48
23.5	11,339,142	49,664	0.0044	0.9956	93.15
24.5	10,358,391	44,215	0.0043	0.9957	92.74
25.5	9,641,928	63,112	0.0065	0.9935	92.34
26.5	8,975,128	62,746	0.0070	0.9930	91.74
27.5	8,246,368	60,372	0.0073	0.9927	91.10
28.5	7,732,723	54,027	0.0070	0.9930	90.43
29.5	7,271,466	43,953	0.0060	0.9940	89.80
30.5	6,880,003	43,672	0.0063	0.9937	89.25
31.5	6,571,255	54,199	0.0082	0.9918	88.69
32.5	6,214,196	54,377	0.0088	0.9912	87.96
33.5	5,857,641	43,466	0.0074	0.9926	87.19
34.5	5,557,949	52,866	0.0095	0.9905	86.54
35.5	5,265,420	42,973	0.0082	0.9918	85.72
36.5	4,994,213	45,565	0.0091	0.9909	85.02
37.5	4,563,434	49,095	0.0108	0.9892	84.24
38.5	4,191,232	42,158	0.0101	0.9899	83.33



### ACCOUNT 364 - POLES, TOWERS AND FIXTURES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT	BAND 1916-2016		EXPER	RIENCE BAN	D 1960-2016
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5	3,861,951 3,565,270 3,283,594 2,930,688 2,657,227 2,471,598 2,208,804 1,992,031 1,808,739 1,668,970	37,022 28,800 38,898 37,784 37,362 46,235 50,938 46,789 36,954	0.0096 0.0081 0.0118 0.0129 0.0141 0.0187 0.0231 0.0235 0.0204 0.0252	0.9904 0.9919 0.9882 0.9871 0.9859 0.9813 0.9769 0.9765 0.9796	82.50 81.71 81.05 80.09 79.05 77.94 76.48 74.72 72.96 71.47
48.5 49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	1,569,658 1,440,248 1,293,178 1,186,410 1,103,464 1,026,407 941,483 883,724 817,755 755,902	42,034 38,348 47,198 51,289 30,254 27,314 27,646 16,513 15,907 14,414 16,345	0.0244 0.0328 0.0397 0.0255 0.0248 0.0269 0.0175 0.0180 0.0176	0.9748 0.9756 0.9672 0.9603 0.9745 0.9752 0.9731 0.9825 0.9820 0.9824 0.9784	69.67 67.97 65.74 63.14 61.53 60.00 58.39 57.36 56.33 55.34
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5	710,747 661,050 595,062 557,003 512,396 478,538 433,546 397,219 347,589 297,488	19,286 23,237 10,920 21,655 8,080 9,839 18,439 23,746 22,661 9,358	0.0271 0.0352 0.0184 0.0389 0.0158 0.0206 0.0425 0.0598 0.0652 0.0315	0.9729 0.9648 0.9816 0.9611 0.9842 0.9794 0.9575 0.9402 0.9348 0.9685	54.14 52.67 50.82 49.89 47.95 47.19 46.22 44.26 41.61 38.90
69.5 70.5 71.5 72.5 73.5 74.5 75.5 76.5 77.5	266,394 233,627 208,268 188,763 169,109 148,357 129,052 115,668 106,340 101,068	9,035 8,653 5,444 4,418 9,583 3,200 3,908 3,681 1,609 716	0.0339 0.0370 0.0261 0.0234 0.0567 0.0216 0.0303 0.0318 0.0151 0.0071	0.9661 0.9630 0.9739 0.9766 0.9433 0.9784 0.9697 0.9682 0.9849	37.67 36.40 35.05 34.13 33.33 31.44 30.77 29.83 28.88 28.45



### ACCOUNT 364 - POLES, TOWERS AND FIXTURES

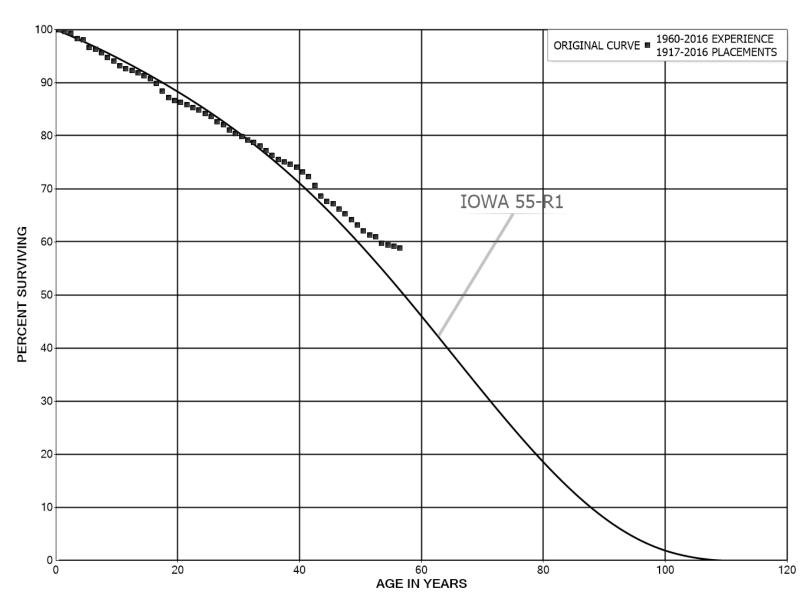
### ORIGINAL LIFE TABLE, CONT.

#### PLACEMENT BAND 1916-2016 EXPERIENCE BAND 1960-2016 AGE AT EXPOSURES AT RETIREMENTS PCT SURV BEGIN OF BEGIN OF BEGINNING OF DURING AGE RETMT SURV INTERVAL AGE INTERVAL INTERVAL INTERVAL RATIO RATIO 79.5 93,240 0.0096 0.9904 28.25 80.5 77,250 1,388 0.0180 0.9820 27.97 81.5 63,344 690 0.0109 0.9891 27.47 82.5 55,791 0.1497 27.17 8,352 0.8503 83.5 38,832 2,401 0.0618 0.9382 23.10 84.5 32,151 0.0945 0.9055 21.68 3,039 85.5 28,404 2,267 0.0798 0.9202 19.63 22,079 86.5 614 0.0278 0.9722 18.06 20,611 0.0082 87.5 169 0.9918 17.56 19,020 88.5 0.0081 0.9919 17.41 155 89.5 17,659 260 0.0147 0.9853 17.27 90.5 15,882 77 0.0049 0.9951 17.02 91.5 15,649 3,339 0.2133 0.7867 16.93 92.5 12,185 0.0000 1.0000 13.32 93.5 11,982 0.0000 1.0000 13.32 94.5 11,935 0.0000 1.0000 13.32 95.5 11,871 0.0000 1.0000 13.32 96.5 6,555 0.0000 1.0000 13.32

97.5

13.32

## UGI UTILITIES, INC. - ELECTRIC DIVISION ACCOUNT 365 - OVERHEAD CONDUCTORS AND DEVICES ORIGINAL AND SMOOTH SURVIVOR CURVES



# ACCOUNT 365 - OVERHEAD CONDUCTORS AND DEVICES

	_				
PLACEMENT :	BAND 1917-2016		EXPER	RIENCE BAN	D 1960-2016
AGE AT	EXPOSURES AT	RETIREMENTS			PCT SURV
BEGIN OF	BEGINNING OF	DURING AGE	RETMT	SURV	BEGIN OF
INTERVAL	AGE INTERVAL	INTERVAL	RATIO	RATIO	INTERVAL
0.0	31,301,367	3,062	0.0001	0.9999	100.00
0.5	30,405,411	122,371	0.0040	0.9960	99.99
1.5	28,391,236	96,052	0.0034	0.9966	99.59
2.5	26,653,058	259,726	0.0097	0.9903	99.25
3.5	24,804,882	58,752	0.0024	0.9976	98.28
4.5	23,626,936	345,908	0.0146	0.9854	98.05
5.5	22,524,311	84,252	0.0037	0.9963	96.62
6.5	21,659,351	138,418	0.0064	0.9936	96.25
7.5	20,476,856	186,412	0.0091	0.9909	95.64
8.5	19,151,808	143,782	0.0075	0.9925	94.77
9.5	17,915,918	166,834	0.0093	0.9907	94.06
10.5	17,121,333	100,800	0.0059	0.9941	93.18
11.5	16,073,768	62,633	0.0039	0.9961	92.63
12.5	15,482,011	74,498	0.0048	0.9952	92.27
13.5	14,840,530	83,762	0.0056	0.9944	91.83
14.5	14,342,633	96,531	0.0067	0.9933	91.31
15.5	13,601,792	131,284	0.0097	0.9903	90.69
16.5	13,059,304	202,951	0.0155	0.9845	89.82
17.5	12,342,662	176,834	0.0143	0.9857	88.42
18.5	11,488,603	68,494	0.0060	0.9940	87.16
19.5	10,762,081	44,353	0.0041	0.9959	86.64
20.5	9,926,303	50,096	0.0050	0.9950	86.28
21.5	9,060,027	55,402	0.0061	0.9939	85.84
22.5	8,511,698	47,409	0.0056	0.9944	85.32
23.5	8,102,444	64,886	0.0080	0.9920	84.84
24.5	7,417,078	49,095	0.0066	0.9934	84.16
25.5	6,883,521	77,631	0.0113	0.9887	83.61
26.5	6,521,113	45,343	0.0070	0.9930	82.66
27.5	6,199,583	74,973	0.0121	0.9879	82.09
28.5	5,887,500	49,970	0.0085	0.9915	81.10
29.5	5,745,626	44,510	0.0077	0.9923	80.41
30.5	5,575,413	40,390	0.0072	0.9928	79.79
31.5	5,477,978	35,913	0.0066	0.9934	79.21
32.5	5,403,570	40,312	0.0075	0.9925	78.69
33.5	5,324,533	62,630	0.0118	0.9882	78.10
34.5	5,088,675	62,740	0.0123	0.9877	77.18
35.5	4,834,574	43,484	0.0090	0.9910	76.23
36.5	4,624,526	32,047	0.0069	0.9931	75.55
37.5	4,350,628	25,398	0.0058	0.9942	75.02
38.5	4,072,937	30,045	0.0074	0.9926	74.58



#### ACCOUNT 365 - OVERHEAD CONDUCTORS AND DEVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT 1	BAND 1917-2016		EXPER	RIENCE BAN	D 1960-2016
AGE AT	EXPOSURES AT	RETIREMENTS			PCT SURV
BEGIN OF	BEGINNING OF	DURING AGE	RETMT	SURV	BEGIN OF
INTERVAL	AGE INTERVAL	INTERVAL	RATIO	RATIO	INTERVAL
39.5	3,709,283	42,238	0.0114	0.9886	74.03
40.5	3,448,149	43,897	0.0127	0.9873	73.19
41.5	3,120,912	69,248	0.0222	0.9778	72.26
42.5	2,791,082	80,238	0.0287	0.9713	70.66
43.5	2,555,990	36,412	0.0142	0.9858	68.62
44.5	2,399,185	18,086	0.0075	0.9925	67.65
45.5	2,173,625	30,372	0.0140	0.9860	67.14
46.5	1,962,997	28,262	0.0144	0.9856	66.20
47.5	1,725,410	27,226	0.0158	0.9842	65.25
48.5	1,603,488	24,774	0.0155	0.9845	64.22
49.5	1,541,082	27,852	0.0181	0.9819	63.22
50.5	1,457,382	18,975	0.0130	0.9870	62.08
51.5	1,343,103	7,894	0.0059	0.9941	61.27
52.5	1,221,326	23,489	0.0192	0.9808	60.91
53.5	1,118,414	6,567	0.0059	0.9941	59.74
54.5	1,061,125	4,299	0.0041	0.9959	59.39
55.5	1,003,888	5,536	0.0055	0.9945	59.15
56.5	962,540	2,881	0.0030	0.9970	58.82
57.5	926,190	5,311	0.0057	0.9943	58.65
58.5	894,879	4,876	0.0054	0.9946	58.31
59.5	838,081	4,290	0.0051	0.9949	57.99
60.5	798,656	6,697	0.0084	0.9916	57.70
61.5	734,694	16,199	0.0220	0.9780	57.21
62.5	682,657	13,852	0.0203	0.9797	55.95
63.5	647,247	6,407	0.0099	0.9901	54.82
64.5	619,105	10,080	0.0163	0.9837	54.27
65.5	574,893	3,100	0.0054	0.9946	53.39
66.5	535,787	2,733	0.0051	0.9949	53.10
67.5	487,145	3,601	0.0074	0.9926	52.83
68.5	456,135	5,694	0.0125	0.9875	52.44
69.5	418,491	3,289	0.0079	0.9921	51.79
70.5	392,999	6,218	0.0158	0.9842	51.38
71.5	377,566	5,517	0.0146	0.9854	50.57
72.5	368,178	2,899	0.0079	0.9921	49.83
73.5	359,892	1,218	0.0034	0.9966	49.44
74.5	356,123	6,663	0.0187	0.9813	49.27



75.5

76.5

77.5

78.5

338,847

316,907

290,220

269,545

48.35

47.24

46.06

44.29

7,719

7,979

5,214

11,099

0.0228

0.0252

0.0382

0.0193

0.9772

0.9748

0.9618

0.9807

#### ACCOUNT 365 - OVERHEAD CONDUCTORS AND DEVICES

#### ORIGINAL LIFE TABLE, CONT.

#### PLACEMENT BAND 1917-2016 EXPERIENCE BAND 1960-2016 AGE AT EXPOSURES AT RETIREMENTS PCT SURV BEGIN OF BEGIN OF BEGINNING OF DURING AGE RETMT SURV AGE INTERVAL INTERVAL INTERVAL INTERVAL RATIO RATIO 79.5 259,082 3,648 0.0141 0.9859 43.44 80.5 253,535 2,502 0.0099 0.9901 42.83 81.5 242,769 1,646 0.0068 0.9932 42.40 82.5 223,251 2,442 0.0109 42.12 0.9891 83.5 197,358 1,688 0.0086 0.9914 41.65 84.5 179,272 1,543 0.0086 0.9914 41.30 85.5 40.94 163,694 1,825 0.0112 0.9888 86.5 131,504 1,864 0.0142 0.9858 40.49 114,421 0.0083 39.91 87.5 954 0.9917 93,287 88.5 0.0237 39.58 2,215 0.9763 89.5 74,200 0.0192 0.9808 38.64 1,422 90.5 28,195 1,066 0.0378 0.9622 37.90 91.5 9,038 1,686 0.1866 0.8134 36.47

173

1.0000

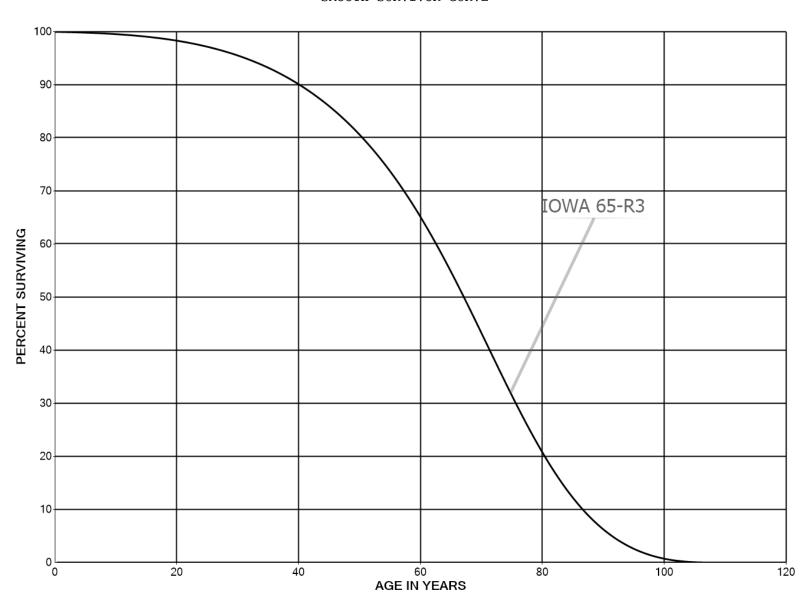
173

92.5

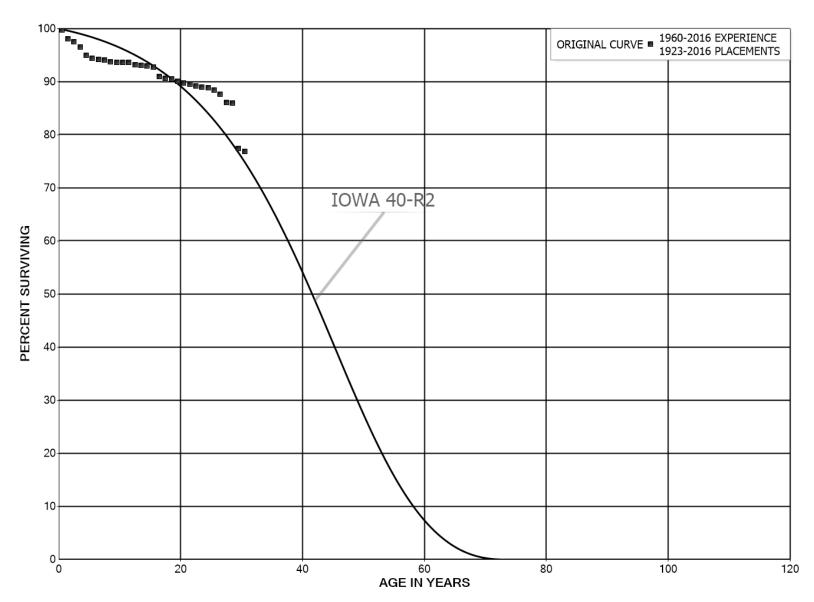
93.5

29.66

# UGI UTILITIES, INC. - ELECTRIC DIVISION ACCOUNT 366 - UNDERGROUND CONDUIT SMOOTH SURVIVOR CURVE



# UGI UTILITIES, INC. - ELECTRIC DIVISION ACCOUNT 367 - UNDERGROUND CONDUCTORS AND DEVICES ORIGINAL AND SMOOTH SURVIVOR CURVES



# ACCOUNT 367 - UNDERGROUND CONDUCTORS AND DEVICES

PLACEMENT E	BAND 1923-2016		EXPER	RIENCE BAN	D 1960-2016
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5	8,841,099 9,012,413 8,904,358 8,563,358 7,509,768 7,258,143 7,109,822 6,729,121 6,410,637 5,860,510	24,158 153,074 47,413 91,743 115,246 41,098 18,112 9,854 26,442 3,044	0.0027 0.0170 0.0053 0.0107 0.0153 0.0057 0.0025 0.0015 0.0041 0.0005	0.9973 0.9830 0.9947 0.9893 0.9847 0.9943 0.9975 0.9985 0.9959	100.00 99.73 98.03 97.51 96.47 94.99 94.45 94.21 94.07 93.68
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	5,632,007 5,190,151 4,859,026 4,675,745 4,507,134 4,315,791 3,826,549 3,551,630 3,336,908 3,059,090	1,461 1,452 22,058 3,059 8,069 11,117 69,661 15,236 5,574 11,916	0.0003 0.0003 0.0045 0.0007 0.0018 0.0026 0.0182 0.0043 0.0017 0.0039	0.9997 0.9997 0.9955 0.9993 0.9982 0.9974 0.9818 0.9957 0.9983 0.9961	93.63 93.61 93.58 93.16 93.10 92.93 92.69 91.00 90.61 90.46
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	2,699,358 2,373,560 2,150,104 2,002,389 1,852,153 1,732,739 1,517,635 1,375,701 1,180,128 1,058,441	11,750 4,992 7,614 6,754 941 8,159 13,603 24,569 1,715	0.0044 0.0021 0.0035 0.0034 0.0005 0.0047 0.0090 0.0179 0.0015 0.0993	0.9956 0.9979 0.9965 0.9966 0.9995 0.9953 0.9910 0.9821 0.9985 0.9007	90.11 89.72 89.53 89.21 88.91 88.86 88.45 87.65 86.09 85.96
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	896,645 814,323 777,555 746,392 683,982 654,393 614,941 580,980 519,370 467,953	7,358 5,867 601 3,230 2,757 3,163 2,776 123	0.0082 0.0072 0.0008 0.0043 0.0040 0.0048 0.0045 0.0002 0.0000	0.9918 0.9928 0.9992 0.9957 0.9960 0.9952 0.9955 0.9998 1.0000	77.43 76.80 76.24 76.18 75.85 75.55 75.18 74.84 74.83 74.83



# ACCOUNT 367 - UNDERGROUND CONDUCTORS AND DEVICES

PLACEMENT E	BAND 1923-2016		EXPER	RIENCE BAN	D 1960-2016
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 47.5 48.5	383,188 335,529 234,684 163,575 129,054 87,972 77,499 67,006 60,382 54,462	2,610	0.0068 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0053	0.9932 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9947	74.83 74.32 74.32 74.32 74.32 74.32 74.32 74.32 74.32 74.32
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	42,344 40,463 39,959 39,959 39,959 39,031 39,031 23,908 23,908	1,755 504 928 14,198 958	0.0414 0.0125 0.0000 0.0000 0.0000 0.0232 0.0000 0.3638 0.0000 0.0401	0.9586 0.9875 1.0000 1.0000 0.9768 1.0000 0.6362 1.0000 0.9599	73.92 70.86 69.98 69.98 69.98 69.98 68.35 68.35 43.49
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5	2,208 2,057 2,057 159 159 159 159 159 159	151 1,898	0.0683 0.0000 0.9227 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	0.9317 1.0000 0.0773 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	41.75 38.89 38.89 3.01 3.01 3.01 3.01 3.01 3.01
69.5 70.5 71.5 72.5 73.5 74.5 75.5 76.5 77.5	159 159 159 159 159 159 159 159 159		0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	3.01 3.01 3.01 3.01 3.01 3.01 3.01 3.01



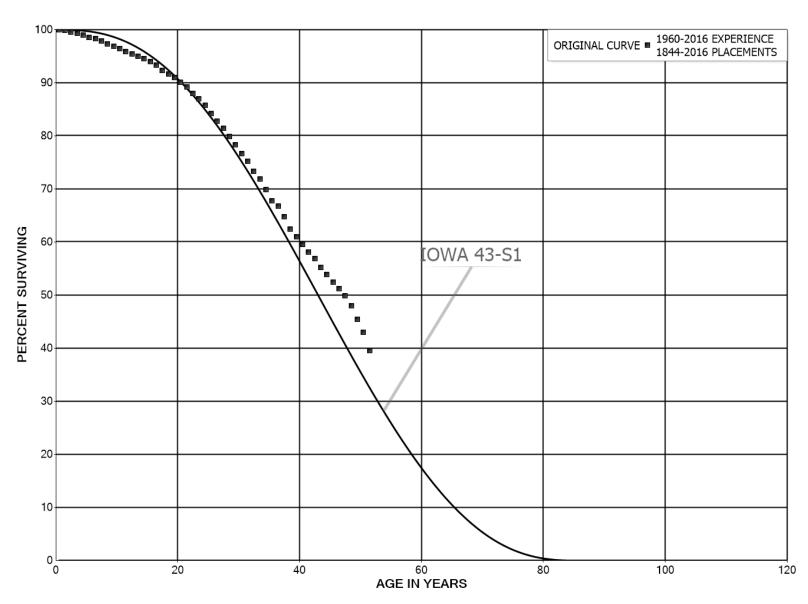
# ACCOUNT 367 - UNDERGROUND CONDUCTORS AND DEVICES

# ORIGINAL LIFE TABLE, CONT.

PLACEMENT	BAND 1923-2016		EXPE	RIENCE BAN	D 1960-2016
AGE AT	EXPOSURES AT	RETIREMENTS			PCT SURV
BEGIN OF	BEGINNING OF	DURING AGE	RETMT	SURV	BEGIN OF
INTERVAL	AGE INTERVAL	INTERVAL	RATIO	RATIO	INTERVAL
79.5	159		0.0000	1.0000	3.01
80.5	159		0.0000	1.0000	3.01
81.5	159		0.0000	1.0000	3.01
82.5	159		0.0000	1.0000	3.01
83.5	159		0.0000	1.0000	3.01
84.5	159		0.0000	1.0000	3.01
85.5	159		0.0000	1.0000	3.01
86.5	159		0.0000	1.0000	3.01
87.5	159		0.0000	1.0000	3.01
88.5	159	159	1.0000		3.01

89.5

# UGI UTILITIES, INC. - ELECTRIC DIVISION ACCOUNT 368.1 - TRANSFORMERS ORIGINAL AND SMOOTH SURVIVOR CURVES



# ACCOUNT 368.1 - TRANSFORMERS

PLACEMENT :	BAND 1844-2016		EXPER	RIENCE BAN	D 1960-2016
AGE AT	EXPOSURES AT	RETIREMENTS			PCT SURV
BEGIN OF	BEGINNING OF	DURING AGE	RETMT	SURV	BEGIN OF
INTERVAL	AGE INTERVAL	INTERVAL	RATIO	RATIO	INTERVAL
0.0	15,647,498	4,965	0.0003	0.9997	100.00
0.5	15,651,602	27,695	0.0018	0.9982	99.97
1.5	14,994,272	44,051	0.0029	0.9971	99.79
2.5	14,812,425	37,898	0.0026	0.9974	99.50
3.5	14,479,016	45,847	0.0032	0.9968	99.24
4.5	14,103,339	59,595	0.0042	0.9958	98.93
5.5	13,789,172	36,652	0.0027	0.9973	98.51
6.5	13,694,237	58,078	0.0042	0.9958	98.25
7.5	13,307,237	70,392	0.0053	0.9947	97.83
8.5	12,715,897	64,111	0.0050	0.9950	97.32
9.5	12,234,907	55,719	0.0046	0.9954	96.82
10.5	12,144,183	62,909	0.0052	0.9948	96.38
11.5	11,844,604	63,201	0.0053	0.9947	95.88
12.5	11,558,150	52,453	0.0045	0.9955	95.37
13.5	11,340,338	49,900	0.0044	0.9956	94.94
14.5	10,957,475	69,792	0.0064	0.9936	94.52
15.5	10,627,481	77,361	0.0073	0.9927	93.92
16.5	10,128,316	103,923	0.0103	0.9897	93.24
17.5	9,597,155	64,065	0.0067	0.9933	92.28
18.5	9,143,943	67,634	0.0074	0.9926	91.66
19.5	8,758,778	86,101	0.0098	0.9902	90.99
20.5	8,283,646	83,993	0.0101	0.9899	90.09
21.5	7,857,660	103,336	0.0132	0.9868	89.18
22.5	7,496,400	91,606	0.0122	0.9878	88.01
23.5	7,195,794	96,435	0.0134	0.9866	86.93
24.5	6,705,415	123,311	0.0184	0.9816	85.76
25.5	6,279,652	108,088	0.0172	0.9828	84.19
26.5	5,838,460	91,743	0.0157	0.9843	82.74
27.5	5,443,884	109,080	0.0200	0.9800	81.44
28.5	5,102,303	99,351	0.0195	0.9805	79.81
29.5	4,760,944	99,303	0.0209	0.9791	78.25
30.5	4,491,010	87,492	0.0195	0.9805	76.62
31.5	4,179,226	99,746	0.0239	0.9761	75.13
32.5	3,921,060	82,699	0.0211	0.9789	73.33
33.5	3,689,914	101,006	0.0274	0.9726	71.79
34.5	3,400,716	99,705	0.0293	0.9707	69.82
35.5	3,214,069	51,219	0.0159	0.9841	67.78
36.5	2,980,001	87,428	0.0293	0.9707	66.70
37.5	2,747,165	97,313	0.0354	0.9646	64.74
38.5	2,491,016	61,106	0.0245	0.9755	62.45



# ACCOUNT 368.1 - TRANSFORMERS

PLACEMENT I	BAND 1844-2016		EXPER	RIENCE BAN	D 1960-2016
AGE AT	EXPOSURES AT	RETIREMENTS			PCT SURV
BEGIN OF	BEGINNING OF	DURING AGE	RETMT	SURV	BEGIN OF
INTERVAL	AGE INTERVAL	INTERVAL	RATIO	RATIO	INTERVAL
39.5	2,254,264	51,168	0.0227	0.9773	60.91
40.5	2,041,763	49,478	0.0242	0.9758	59.53
41.5	1,780,365	39,786	0.0223	0.9777	58.09
42.5	1,552,427	44,616	0.0287	0.9713	56.79
43.5	1,273,162	31,754	0.0249	0.9751	55.16
44.5	1,118,109	29,179	0.0261	0.9739	53.78
45.5	970,672	21,529	0.0222	0.9778	52.38
46.5	806,906	21,291	0.0264	0.9736	51.22
47.5	697,436	26,703	0.0383	0.9617	49.87
48.5	551,897	29,054	0.0526	0.9474	47.96
49.5	452,140	24,773	0.0548	0.9452	45.43
50.5	385,516	30,731	0.0797	0.9203	42.94
51.5	340,134	18,310	0.0538	0.9462	39.52
52.5	300,098	10,663	0.0355	0.9645	37.39
53.5	281,972	8,645	0.0307	0.9693	36.06
54.5	265,527	10,656	0.0401	0.9599	34.96
55.5	238,494	7,413	0.0311	0.9689	33.56
56.5	215,082	4,510	0.0210	0.9790	32.51
57.5	184,168	6,636	0.0360	0.9640	31.83
58.5	124,681	3,952	0.0317	0.9683	30.68
59.5	108,372	5,108	0.0471	0.9529	29.71
60.5	101,147	4,488	0.0444	0.9556	28.31
61.5	75,062	5,399	0.0719	0.9281	27.05
62.5	61,303	4,067	0.0664	0.9336	25.11
63.5	56,566	2,707	0.0479	0.9521	23.44
64.5	53,350	6,186	0.1160	0.8840	22.32
65.5	47,601	1,455	0.0306	0.9694	19.73
66.5	46,147	3,369	0.0730	0.9270	19.13
67.5	30,016	898	0.0299	0.9701	17.73
68.5	20,404	1,373	0.0673	0.9327	17.20
69.5	19,030	423	0.0223	0.9777	16.04
70.5	18,607	1,253	0.0674	0.9326	15.69
71.5	17,354	539	0.0311	0.9689	14.63
72.5	16,815	454	0.0270	0.9730	14.18
73.5	16,361	4,109	0.2511	0.7489	13.79
74.5	12,252	1,157	0.0944	0.9056	10.33
75.5	9,271	336	0.0362	0.9638	9.35
76.5	8,935		0.0000	1.0000	9.02
77.5	8,935		0.0000	1.0000	9.02
78.5	8,270	51	0.0061	0.9939	9.02



# ACCOUNT 368.1 - TRANSFORMERS

PLACEMENT F	BAND 1844-2016		EXPER	RIENCE BAN	D 1960-2016
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5 80.5 81.5 82.5 83.5 84.5 85.5 86.5 87.5	8,219 7,680 7,646 16,310 16,310 16,310 16,310 16,310 16,310	539 34 51	0.0656 0.0045 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	0.9344 0.9955 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9969	8.96 8.37 8.34 8.34 8.34 8.34 8.34 8.34
89.5 90.5 91.5 92.5 93.5 94.5 95.5 96.5 97.5 98.5	16,259 11,329 10,190 833 833 833 399 399	4,931 92 190	0.3033 0.0081 0.0186 0.0000 0.0000 0.0000 0.0000 0.0000	0.6967 0.9919 0.9814 1.0000 1.0000 1.0000 1.0000 1.0000	8.31 5.79 5.74 5.64 5.64 5.64 5.64 5.64 5.64
99.5 100.5 101.5 102.5 103.5 104.5 105.5 106.5 107.5					
109.5 110.5 111.5 112.5 113.5 114.5 115.5 116.5 117.5	296 296 296 296		0.0000 0.0000 0.0000 0.0000		



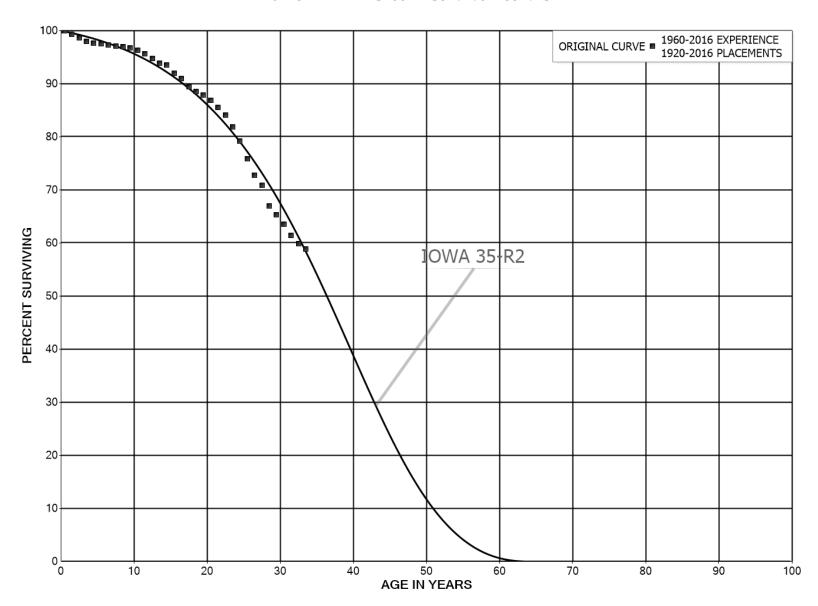
# ACCOUNT 368.1 - TRANSFORMERS

# ORIGINAL LIFE TABLE, CONT.

PLACEMENT I	BAND 1844-2016		EXPER:	IENCE BAN	D 1960-2016
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
119.5 120.5 121.5 122.5 123.5 124.5 125.5 126.5 127.5 128.5	296 296 296 296 296 296 296 296 296		0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000		
129.5 130.5 131.5 132.5 133.5 134.5 135.5 136.5 137.5 138.5	296 296 296 296 296 296 296 296 296		0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000		
139.5 140.5 141.5 142.5 143.5 144.5 145.5	296 296 296 296 296 296 296	296	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000		

146.5

# UGI UTILITIES, INC. - ELECTRIC DIVISION ACCOUNT 368.2 - TRANSFORMER INSTALLATIONS ORIGINAL AND SMOOTH SURVIVOR CURVES



# ACCOUNT 368.2 - TRANSFORMER INSTALLATIONS

PLACEMENT :	BAND 1920-2016		EXPEF	RIENCE BAN	D 1960-2016
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5	10,445,430 10,151,524 9,941,946 9,728,577 9,377,937 9,153,262 9,064,871 8,888,093 8,655,990 8,414,412	1,240 72,829 70,158 63,175 30,316 12,017 16,142 23,894 6,506 22,706	0.0001 0.0072 0.0071 0.0065 0.0032 0.0013 0.0018 0.0027 0.0008 0.0027	0.9999 0.9928 0.9929 0.9935 0.9968 0.9987 0.9982 0.9973 0.9992	100.00 99.99 99.27 98.57 97.93 97.61 97.49 97.31 97.05 96.98
9.5	7,997,855	37,673	0.0047	0.9953	96.72
10.5	7,654,926	49,358	0.0064	0.9936	96.26
11.5	7,333,545	68,171	0.0093	0.9907	95.64
12.5	6,957,489	64,039	0.0092	0.9908	94.75
13.5	6,443,567	24,721	0.0038	0.9962	93.88
14.5	6,146,825	101,494	0.0165	0.9835	93.52
15.5	5,794,327	62,341	0.0108	0.9892	91.97
16.5	5,513,818	97,404	0.0177	0.9823	90.98
17.5	5,144,347	53,140	0.0103	0.9897	89.38
18.5	4,790,875	35,570	0.0074	0.9926	88.45
19.5	4,363,329	49,504	0.0113	0.9887	87.80
20.5	3,980,209	61,763	0.0155	0.9845	86.80
21.5	3,506,358	58,965	0.0168	0.9832	85.45
22.5	3,121,361	80,155	0.0257	0.9743	84.02
23.5	2,817,105	92,655	0.0329	0.9671	81.86
24.5	2,373,839	100,195	0.0422	0.9578	79.17
25.5	2,060,365	85,691	0.0416	0.9584	75.83
26.5	1,806,459	45,983	0.0255	0.9745	72.67
27.5	1,594,711	87,460	0.0548	0.9452	70.82
28.5	1,368,603	34,408	0.0251	0.9749	66.94
29.5	1,225,663	33,707 33,826 23,635 13,864 16,511 13,381 8,149 8,123 6,583 6,102	0.0275	0.9725	65.26
30.5	1,042,619		0.0324	0.9676	63.46
31.5	901,671		0.0262	0.9738	61.40
32.5	837,638		0.0166	0.9834	59.79
33.5	759,273		0.0217	0.9783	58.80
34.5	674,431		0.0198	0.9802	57.52
35.5	604,743		0.0135	0.9865	56.38
36.5	537,551		0.0151	0.9849	55.62
37.5	445,963		0.0148	0.9852	54.78
38.5	423,963		0.0144	0.9856	53.97



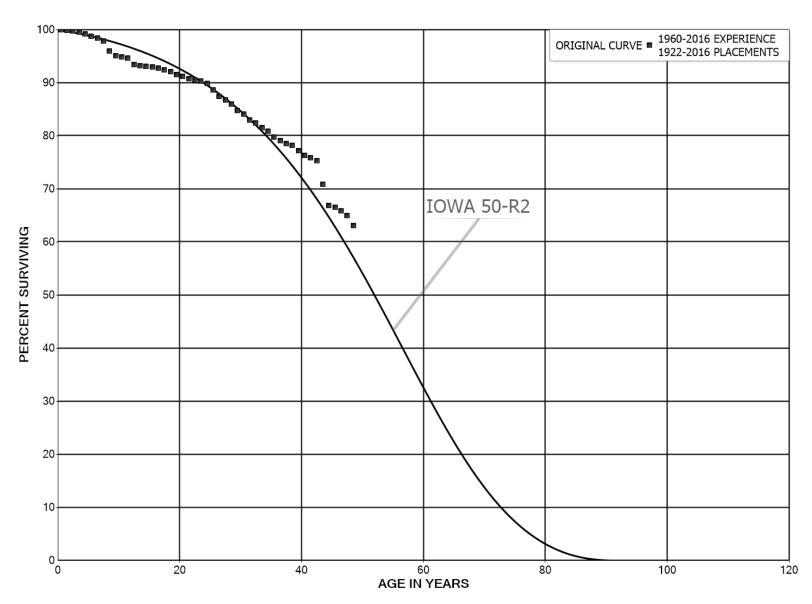
# ACCOUNT 368.2 - TRANSFORMER INSTALLATIONS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT	BAND 1920-2016		EXPER	RIENCE BAN	D 1960-2016
AGE AT	EXPOSURES AT	RETIREMENTS			PCT SURV
BEGIN OF	BEGINNING OF	DURING AGE	RETMT	SURV	BEGIN OF
INTERVAL	AGE INTERVAL	INTERVAL	RATIO	RATIO	INTERVAL
39.5	399,034	5,741	0.0144	0.9856	53.20
40.5	338,811	3,741	0.0144	0.9905	52.43
41.5	259,004	1,107	0.0033	0.9957	51.93
42.5	208,127	713	0.0013	0.9966	51.71
43.5	167,026	1,339	0.0081	0.9920	51.53
44.5	146,571	1,503	0.0103	0.9897	51.12
45.5	135,642	1,619	0.0119	0.9881	50.60
46.5	130,858		0.0405	0.9595	49.99
47.5	121,934	3,159		0.9741	47.97
48.5	116,632	725	0.0062	0.9938	46.72
49.5	111,007	1,464	0.0132	0.9868	46.43
50.5	103,779	6,414	0.0132	0.9382	45.82
51.5	96,783	7,500	0.0016	0.9225	42.99
52.5	88,168	3,626	0.0773	0.9589	39.66
53.5	83,991	14,086	0.1677	0.8323	38.03
54.5	69,085	24,998	0.3618	0.6382	31.65
55.5	41,351	16,041	0.3879	0.6121	20.20
56.5	25,230		0.3889	0.6111	12.36
57.5	15,418	,, , , = =	0.4736	0.5264	7.55
58.5	8,116	4,436	0.5466	0.4534	3.98
59.5	3,680	438	0.1191	0.8809	1.80
60.5	3,242	551	0.1699	0.8301	1.59
61.5	2,691	288	0.1072	0.8928	1.32
62.5	2,402	193	0.0805	0.9195	1.18
63.5	2,209	166	0.0752	0.9248	1.08
64.5	1,720	152	0.0885	0.9115	1.00
65.5	1,567	252	0.1605	0.8395	0.91
66.5	1,316	198	0.1503	0.8497	0.77
67.5	1,118	106	0.0944	0.9056	0.65
68.5	1,013	168	0.1656	0.8344	0.59
69.5	845	61	0.0721	0.9279	0.49
70.5	784	127	0.1623	0.8377	0.46
71.5	657	29	0.0435	0.9565	0.38
72.5	628	6	0.0091	0.9909	0.37
73.5	622	29	0.0461	0.9539	0.36
74.5	594	80	0.1345	0.8655	0.35
75.5	514	93	0.1806	0.8194	0.30
76.5	421	138	0.3274	0.6726	0.25
77.5	283	239	0.8452	0.1548	0.16
78.5	44	44	1.0000		0.03

79.5

# UGI UTILITIES, INC. - ELECTRIC DIVISION ACCOUNT 369 - SERVICES ORIGINAL AND SMOOTH SURVIVOR CURVES



# ACCOUNT 369 - SERVICES

PLACEMENT	BAND 1922-2016		EXPER	RIENCE BAN	D 1960-2016
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5	13,896,205 13,941,430 13,582,480 13,144,783 12,671,142 12,264,745 11,995,095 11,609,151 11,156,837	1,225 19,527 20,550 26,158 46,107 49,049 44,834 66,701 206,806	0.0001 0.0014 0.0015 0.0020 0.0036 0.0040 0.0037 0.0057 0.0185	0.9999 0.9986 0.9985 0.9980 0.9964 0.9960 0.9963 0.9943	100.00 99.99 99.85 99.70 99.50 99.14 98.74 98.37 97.81
8.5 9.5 10.5 11.5 12.5	10,554,151 9,887,519 9,732,534 9,311,086 8,920,560	97,530 28,837 22,397 123,927 12,678	0.0092 0.0029 0.0023 0.0133 0.0014	0.9908 0.9971 0.9977 0.9867 0.9986	96.00 95.11 94.83 94.61 93.35
13.5 14.5 15.5 16.5 17.5	8,698,188 8,452,477 8,277,686 8,052,927 7,704,138	12,078 14,524 13,564 18,539 27,726 30,424	0.0014 0.0017 0.0016 0.0022 0.0034 0.0039	0.9983 0.9984 0.9978 0.9966 0.9961	93.33 93.22 93.07 92.92 92.71 92.39
17.3 18.5 19.5 20.5 21.5	7,704,138 7,389,990 7,021,952 6,710,514 6,372,223	30,424 39,618 30,193 26,888 15,531	0.0054 0.0054 0.0043 0.0040 0.0024	0.9946 0.9957 0.9960 0.9976	92.39 92.02 91.53 91.14 90.77
22.5 23.5 24.5 25.5 26.5	6,187,015 5,985,038 5,707,926 5,378,714 5,046,912	17,450 30,583 79,087 72,091 37,477	0.0028 0.0051 0.0139 0.0134 0.0074	0.9972 0.9949 0.9861 0.9866 0.9926	90.55 90.30 89.83 88.59 87.40
27.5 28.5 29.5 30.5 31.5	4,745,106 4,452,146 4,156,297 3,915,490 3,688,988	47,157 59,451 31,772 56,029 24,040	0.0099 0.0134 0.0076 0.0143 0.0065	0.9901 0.9866 0.9924 0.9857 0.9935	86.75 85.89 84.74 84.10 82.89
32.5 33.5 34.5 35.5 36.5	3,465,427 3,258,022 3,075,956 2,846,071 2,688,530	36,944 24,907 41,292 23,234 20,883 11,355	0.0107 0.0076 0.0134 0.0082 0.0078 0.0046	0.9893 0.9924 0.9866 0.9918 0.9922 0.9954	82.35 81.47 80.85 79.77 79.12
37.5 38.5	2,468,477 2,289,005	11,355 26,777	0.0046	0.9954	78.50 78.14



# ACCOUNT 369 - SERVICES

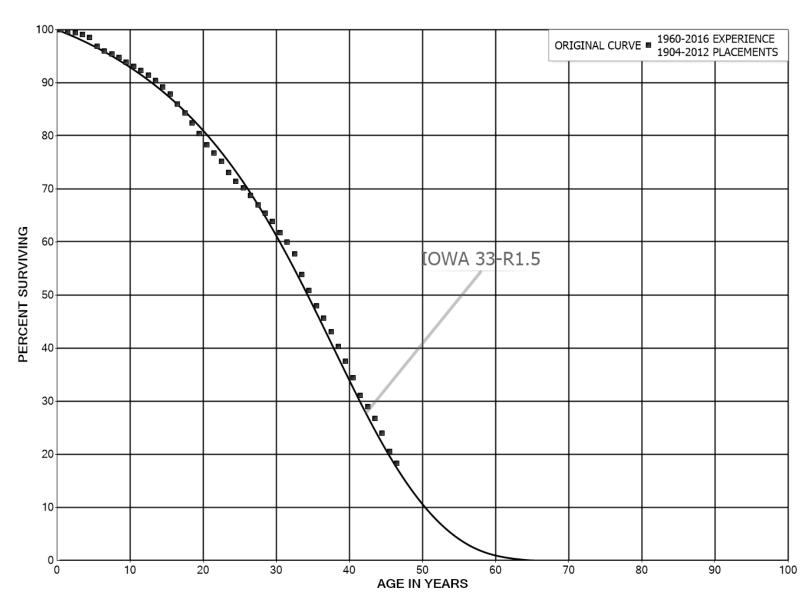
PLACEMENT E	BAND 1922-2016		EXPER	RIENCE BAN	D 1960-2016
AGE AT	EXPOSURES AT	RETIREMENTS			PCT SURV
BEGIN OF	BEGINNING OF	DURING AGE	RETMT	SURV	BEGIN OF
INTERVAL	AGE INTERVAL	INTERVAL	RATIO	RATIO	INTERVAL
39.5	2,107,555	25,866	0.0123	0.9877	77.23
40.5	1,926,304	10,534	0.0055	0.9945	76.28
41.5	1,773,365	12,210	0.0069	0.9931	75.86
42.5	1,608,104	97,213	0.0605	0.9395	75.34
43.5	1,241,727	68,314	0.0550	0.9450	70.78
44.5	973,463	5,931	0.0061	0.9939	66.89
45.5	736,873	7,117	0.0097	0.9903	66.48
46.5	493,569	6,761	0.0137	0.9863	65.84
47.5	327,614	9,264	0.0283	0.9717	64.94
48.5	224,286	4,596	0.0205	0.9795	63.10
49.5	166,553	1,579	0.0095	0.9905	61.81
50.5	135,838	779	0.0057	0.9943	61.22
51.5	111,516	392	0.0035	0.9965	60.87
52.5	90,880	439	0.0048	0.9952	60.66
53.5	75,686	370	0.0049	0.9951	60.36
54.5	66,167	170	0.0026	0.9974	60.07
55.5	62,156	246	0.0040	0.9960	59.92
56.5	60,623	446	0.0074	0.9926	59.68
57.5	72,488	831	0.0115	0.9885	59.24
58.5	58,488	825	0.0141	0.9859	58.56
59.5	57,663	590	0.0102	0.9898	57.73
60.5	56,944	295	0.0052	0.9948	57.14
61.5	56,315	184	0.0033	0.9967	56.85
62.5	56,012	117	0.0021	0.9979	56.66
63.5	55,895	580	0.0104	0.9896	56.54
64.5	55,315	1,515	0.0274	0.9726	55.96
65.5	53,800	25	0.0005	0.9995	54.42
66.5	53,776	26	0.0005	0.9995	54.40
67.5	53,750	130	0.0024	0.9976	54.37
68.5	53,620	737	0.0138	0.9862	54.24
69.5	52,813	625	0.0118	0.9882	53.49
70.5	52,188	2,925	0.0560	0.9440	52.86
71.5	49,263	4,647	0.0943	0.9057	49.90
72.5	44,616	9,896	0.2218	0.7782	45.19
73.5	34,720	2,166	0.0624	0.9376	35.17
74.5	32,554	5,025	0.1544	0.8456	32.97
75.5	27,529	4,198	0.1525	0.8475	27.88
76.5	23,331	3,302	0.1415	0.8585	23.63
77.5	20,029	4,037	0.2016	0.7984	20.29
78.5	15,992	3,159	0.1975	0.8025	16.20



# ACCOUNT 369 - SERVICES

PLACEMENT	BAND 1922-2016		EXPER	RIENCE BAN	D 1960-2016
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5 80.5 81.5 82.5 83.5	12,833 12,810 12,810 12,810	24 12,810	0.0018 0.0000 0.0000 1.0000	0.9982 1.0000 1.0000	13.00 12.97 12.97 12.97

# UGI UTILITIES, INC. - ELECTRIC DIVISION ACCOUNT 370.1 - METERS ORIGINAL AND SMOOTH SURVIVOR CURVES



# ACCOUNT 370.1 - METERS

PLACEMENT	BAND 1904-2012		EXPER	RIENCE BAN	D 1960-2016
AGE AT	EXPOSURES AT	RETIREMENTS			PCT SURV
BEGIN OF	BEGINNING OF	DURING AGE	RETMT	SURV	BEGIN OF
INTERVAL	AGE INTERVAL	INTERVAL	RATIO	RATIO	INTERVAL
0.0	8,171,606	89	0.0000	1.0000	100.00
0.5	7,829,150	26,871	0.0034	0.9966	100.00
1.5	7,627,594	17,864	0.0023	0.9977	99.66
2.5	7,358,888	22,435	0.0030	0.9970	99.42
3.5	7,089,165	46,186	0.0065	0.9935	99.12
4.5	6,956,824	119,350	0.0172	0.9828	98.47
5.5	6,843,232	57,892	0.0085	0.9915	96.78
6.5	4,502,508	27,445	0.0061	0.9939	95.97
7.5	4,522,202	29,665	0.0066	0.9934	95.38
8.5	4,395,643	40,425	0.0092	0.9908	94.75
9.5	4,475,432	38,609	0.0086	0.9914	93.88
10.5	4,367,570	35,698	0.0082	0.9918	93.07
11.5	4,316,311	43,410	0.0101	0.9899	92.31
12.5	4,255,877	47,477	0.0112	0.9888	91.38
13.5	4,193,531	55,566	0.0133	0.9867	90.36
14.5	4,031,097	60,161	0.0149	0.9851	89.17
15.5	3,946,714	85,957	0.0218	0.9782	87.84
16.5	3,651,487	68,661	0.0188	0.9812	85.92
17.5	3,463,301	77,391	0.0223	0.9777	84.31
18.5	3,224,197	77,471	0.0240	0.9760	82.42
19.5	3,088,566	81,614	0.0264	0.9736	80.44
20.5	2,927,857	59,110	0.0202	0.9798	78.32
21.5	2,756,050	57,697	0.0209	0.9791	76.74
22.5	2,581,190	71,259	0.0276	0.9724	75.13
23.5	2,423,002	54,904	0.0227	0.9773	73.06
24.5	2,239,832	39,048	0.0174	0.9826	71.40
25.5	2,119,645	44,746	0.0211	0.9789	70.16
26.5	1,992,671	49,534	0.0249	0.9751	68.67
27.5	1,880,873	42,655	0.0227	0.9773	66.97
28.5	1,783,668	44,873	0.0252	0.9748	65.45
29.5	1,682,356	55,221	0.0328	0.9672	63.80
30.5	1,580,414	44,767	0.0283	0.9717	61.71
31.5	1,492,427	56,092	0.0376	0.9624	59.96
32.5	1,425,164	94,890	0.0666	0.9334	57.71
33.5	1,315,964	74,106	0.0563	0.9437	53.86
34.5	1,204,844	69,375	0.0576	0.9424	50.83
35.5	1,187,328	56,992	0.0480	0.9520	47.90
36.5	1,123,870	63,876	0.0568	0.9432	45.60
37.5	1,044,732	67,468	0.0646	0.9354	43.01
38.5	925,935	61,928	0.0669	0.9331	40.24



# ACCOUNT 370.1 - METERS

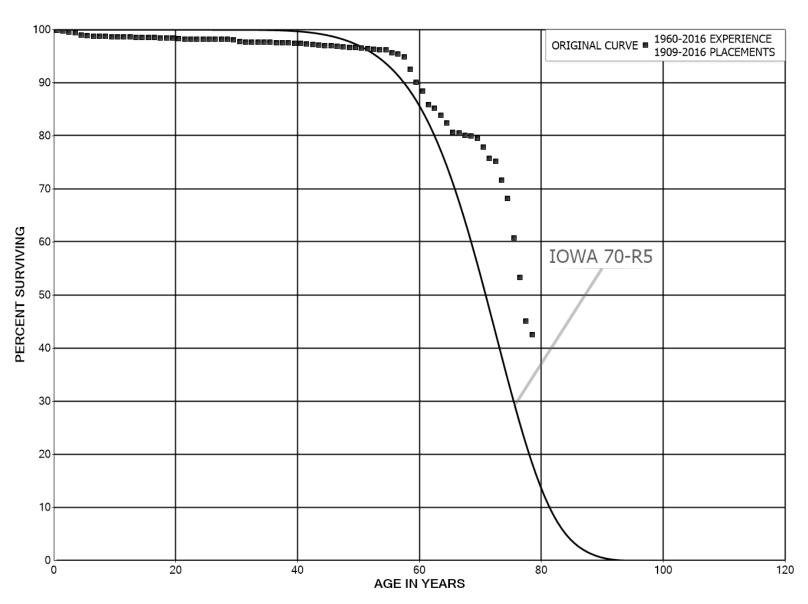
PLACEMENT	BAND 1904-2012		EXPER	RIENCE BAN	D 1960-2016
AGE AT	EXPOSURES AT	RETIREMENTS			PCT SURV
BEGIN OF	BEGINNING OF	DURING AGE	RETMT	SURV	BEGIN OF
INTERVAL	AGE INTERVAL	INTERVAL	RATIO	RATIO	INTERVAL
39.5	845,263	70,367	0.0832	0.9168	37.54
40.5	734,753	71,376	0.0971	0.9029	34.42
41.5	640,094	44,843	0.0701	0.9299	31.08
42.5	576,978	43,652	0.0757	0.9243	28.90
43.5	504,497	51,532	0.1021	0.8979	26.71
44.5	267,454	39,247	0.1467	0.8533	23.98
45.5	194,185	20,385	0.1050	0.8950	20.46
46.5	157,655	7,825	0.0496	0.9504	18.32
47.5	137,043	5,197	0.0379	0.9621	17.41
48.5	116,188	4,674	0.0402	0.9598	16.75
49.5	105,137	4,887	0.0465	0.9535	16.07
50.5	95,400	3,212	0.0337	0.9663	15.33
51.5	87,019	525	0.0060	0.9940	14.81
52.5	83,366	1,584	0.0190	0.9810	14.72
53.5	78,298	2,935	0.0375	0.9625	14.44
54.5	67,422	3,139	0.0466	0.9534	13.90
55.5	61,795	3,670	0.0594	0.9406	13.25
56.5	57,329	7,952	0.1387	0.8613	12.47
57.5	45,380	3,947	0.0870	0.9130	10.74
58.5	40,866	4,863	0.1190	0.8810	9.80
59.5	35,526	3,221	0.0907	0.9093	8.64
60.5	32,305	4,569	0.1414	0.8586	7.85
61.5	27,736	3,087	0.1113	0.8887	6.74
62.5	24,649	2,943	0.1194	0.8806	5.99
63.5	21,642	3,695	0.1707	0.8293	5.28
64.5	17,947	1,980	0.1103	0.8897	4.38
65.5	15,967	1,640	0.1027	0.8973	3.89
66.5	14,327	318	0.0222	0.9778	3.49
67.5	14,009	37	0.0027	0.9973	3.42
68.5	13,909		0.0000	1.0000	3.41
69.5	13,909		0.0000	1.0000	3.41
70.5	13,841		0.0000	1.0000	3.41
71.5	13,841	55	0.0040	0.9960	3.41
72.5	13,786		0.0000	1.0000	3.39
73.5	13,786	135	0.0098	0.9902	3.39
74.5	13,651	1,474	0.1080	0.8920	3.36
75.5	12,176	513	0.0421	0.9579	3.00
76.5	11,663	942	0.0808	0.9192	2.87
77.5	10,721	608	0.0567	0.9433	2.64
78.5	10,113	1,756	0.1736	0.8264	2.49



# ACCOUNT 370.1 - METERS

PLACEMENT BAND 1904-2012				RIENCE BAN	D 1960-2016
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5 80.5 81.5 82.5 83.5 84.5 85.5 86.5	8,357 8,040 7,469 5,655 2,311 2,080 2,080 2,080	317 572 1,814 3,343 232	0.0379 0.0711 0.2429 0.5912 0.1003 0.0000 0.0000 0.0000	0.9621 0.9289 0.7571 0.4088 0.8997 1.0000 1.0000 0.0051	2.06 1.98 1.84 1.39 0.57 0.51 0.51
88.5 89.5 90.5 91.5 92.5	11 11 11 11	11	0.9949 0.0000 0.0000 0.0000 1.0000	1.0000 1.0000 1.0000	0.00 0.00 0.00 0.00

# UGI UTILITIES, INC. - ELECTRIC DIVISION ACCOUNT 370.2 - METER INSTALLATIONS ORIGINAL AND SMOOTH SURVIVOR CURVES



# ACCOUNT 370.2 - METER INSTALLATIONS

PLACEMENT E	BAND 1909-2016		EXPER	RIENCE BAN	D 1960-2016
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5	1,755,961 1,751,246 1,652,100 1,611,967 1,575,476 1,543,133 1,531,349 1,514,276 1,489,238 1,451,843	2,370 2,611 4,024 1,287 7,488 800 1,442 591 626 569	0.0013 0.0015 0.0024 0.0008 0.0048 0.0005 0.0009 0.0004 0.0004	0.9987 0.9985 0.9976 0.9992 0.9952 0.9995 0.9996 0.9996	100.00 99.87 99.72 99.47 99.39 98.92 98.87 98.78 98.74
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	1,434,980 1,420,441 1,262,528 1,144,630 1,027,698 971,661 964,539 910,404 911,924 896,311	346 385 434 329 303 285 348 247 182 221	0.0002 0.0003 0.0003 0.0003 0.0003 0.0003 0.0004 0.0003 0.0002	0.9998 0.9997 0.9997 0.9997 0.9997 0.9996 0.9997 0.9998	98.66 98.63 98.61 98.57 98.55 98.52 98.49 98.45 98.43
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	863,313 837,670 804,204 774,766 748,907 715,897 688,032 656,591 623,518 590,771	1,158 195 143 105 75 121 52 54 85	0.0013 0.0002 0.0002 0.0001 0.0001 0.0002 0.0001 0.0001 0.0002	0.9987 0.9998 0.9999 0.9999 0.9998 0.9999 0.9999 0.9999	98.38 98.25 98.23 98.21 98.20 98.19 98.17 98.16 98.15 98.14
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	558,157 527,592 498,695 479,756 464,756 441,636 404,560 387,628 362,316 348,810	2,461 233 98 90 103 71 135 79 71 283	0.0044 0.0004 0.0002 0.0002 0.0002 0.0002 0.0003 0.0002 0.0002	0.9956 0.9998 0.9998 0.9998 0.9998 0.9997 0.9998 0.9998	98.12 97.68 97.64 97.62 97.58 97.57 97.53 97.51 97.49



# ACCOUNT 370.2 - METER INSTALLATIONS

PLACEMENT	BAND 1909-2016		EXPER	RIENCE BAN	D 1960-2016
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5	333,653 323,909 312,662 298,935 282,604 269,864 256,414 244,934 232,293	256 24 615 332 171 158 335 222 114	0.0008 0.0001 0.0020 0.0011 0.0006 0.0006 0.0013 0.0009	0.9992 0.9999 0.9980 0.9989 0.9994 0.9994 0.9991 0.9991	97.42 97.34 97.33 97.14 97.03 96.98 96.92 96.79
48.5 49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	222,254 211,273 202,846 193,405 187,293 180,425 175,522 168,334 162,679 155,657 141,316	141 201 304 205 110 70 1,032 449 832 3,924 3,672	0.0006 0.0010 0.0015 0.0011 0.0006 0.0004 0.0059 0.0027 0.0051 0.0252 0.0260	0.9994 0.9985 0.9989 0.9994 0.9996 0.9941 0.9973 0.9949 0.9748	96.66 96.60 96.50 96.36 96.26 96.20 96.16 95.60 95.34 94.86 92.46
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5 68.5	131,142 121,615 111,091 104,422 96,226 88,142 78,993 72,538 65,094 57,131	2,473 3,494 862 1,568 1,673 1,912 177 335 150 249	0.0189 0.0287 0.0078 0.0150 0.0174 0.0217 0.0022 0.0046 0.0023 0.0044	0.9811 0.9713 0.9922 0.9850 0.9826 0.9783 0.9978 0.9954 0.9977	90.06 88.36 85.82 85.16 83.88 82.42 80.63 80.45 80.08 79.90
69.5 70.5 71.5 72.5 73.5 74.5 75.5 76.5 77.5	51,867 48,819 46,587 45,561 42,789 40,108 34,438 28,597 22,517 19,646	1,088 1,327 338 2,196 2,052 4,372 4,209 4,397 1,306 1,385	0.0210 0.0272 0.0073 0.0482 0.0479 0.1090 0.1222 0.1538 0.0580 0.0705	0.9790 0.9728 0.9927 0.9518 0.9521 0.8910 0.8778 0.8462 0.9420 0.9295	79.55 77.88 75.76 75.21 71.59 68.16 60.73 53.30 45.11 42.49



#### ACCOUNT 370.2 - METER INSTALLATIONS

#### ORIGINAL LIFE TABLE, CONT.

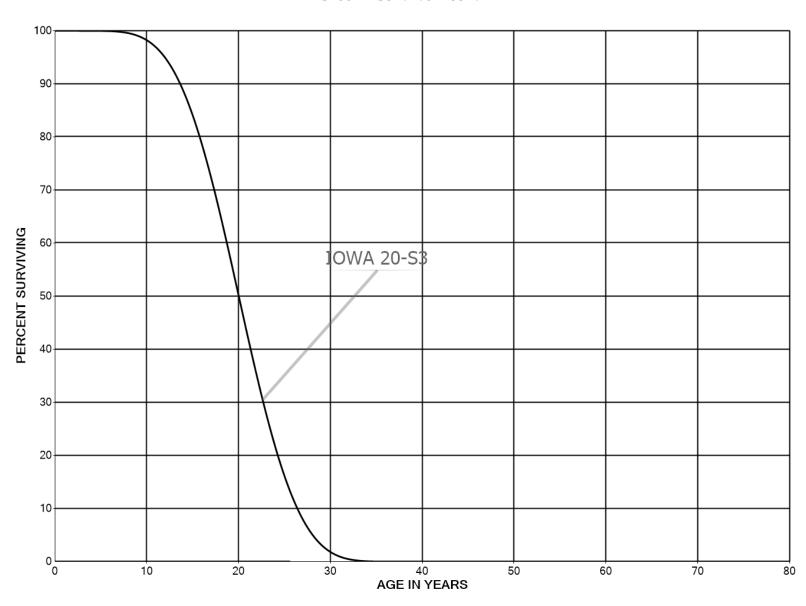
#### PLACEMENT BAND 1909-2016 EXPERIENCE BAND 1960-2016 AGE AT EXPOSURES AT RETIREMENTS PCT SURV BEGIN OF BEGINNING OF BEGIN OF DURING AGE RETMT SURV INTERVAL AGE INTERVAL INTERVAL INTERVAL RATIO RATIO 79.5 16,253 190 0.0117 0.9883 39.50 80.5 14,545 152 0.0105 0.9895 39.04 81.5 13,551 300 0.0222 0.9778 38.63 82.5 12,262 0.0483 0.9517 37.77 592 83.5 10,951 169 0.0155 0.9845 35.95 84.5 10,014 18 0.0018 0.9982 35.39 85.5 9,550 127 0.0133 0.9867 35.33 86.5 8,260 26 0.0032 0.9968 34.86 87.5 6,263 0.0009 0.9991 34.75 6 88.5 5,855 0.0060 0.9940 34.71 35 89.5 3,347 9 0.0028 0.9972 34.50 90.5 1,911 5 0.0025 0.9975 34.41 91.5 1,763 17 0.0094 0.9906 34.32



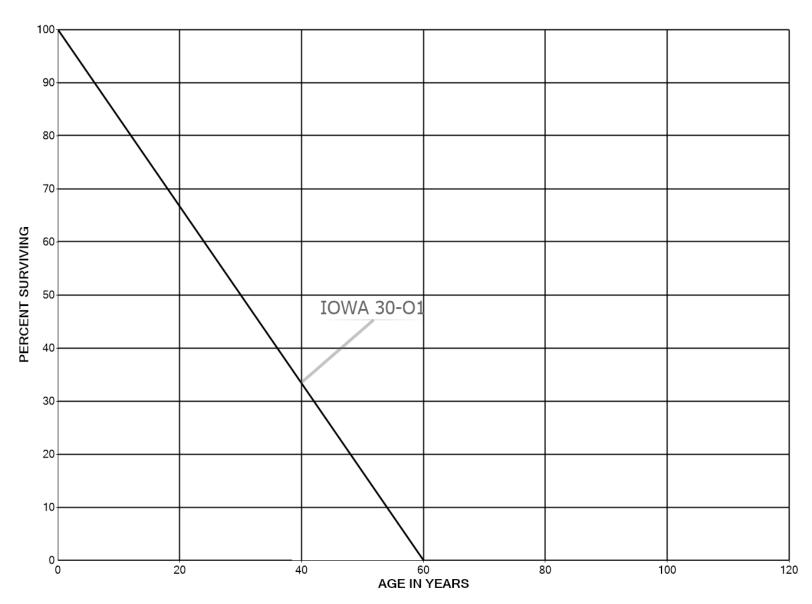
92.5

34.00

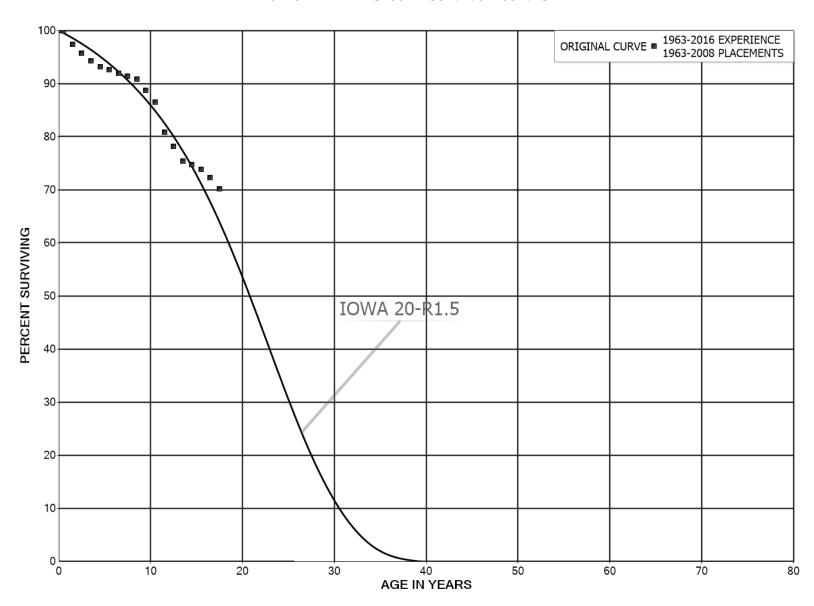
# UGI UTILITIES, INC. - ELECTRIC DIVISION ACCOUNT 370.3 - ELECTRONIC METERS SMOOTH SURVIVOR CURVE



# UGI UTILITIES, INC. - ELECTRIC DIVISION ACCOUNT 371 - INSTALLATIONS ON CUSTOMER PREMISES SMOOTH SURVIVOR CURVE



# UGI UTILITIES, INC. - ELECTRIC DIVISION ACCOUNT 371.5 - INSTALLATIONS ON CUSTOMER PREMISES - DUSK TO DAWN LIGHTS ORIGINAL AND SMOOTH SURVIVOR CURVES



# ACCOUNT 371.5 - INSTALLATIONS ON CUSTOMER PREMISES - DUSK TO DAWN LIGHTS

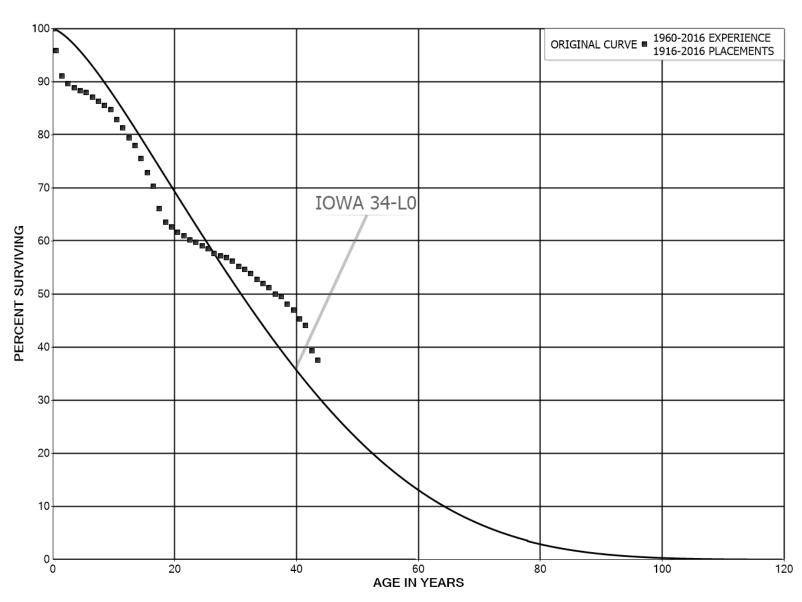
PLACEMENT E	BAND 1963-2008		EXPER	RIENCE BAN	D 1963-2016
AGE AT	EXPOSURES AT	RETIREMENTS			PCT SURV
BEGIN OF	BEGINNING OF	DURING AGE	RETMT	SURV	BEGIN OF
INTERVAL	AGE INTERVAL	INTERVAL	RATIO	RATIO	INTERVAL
0.0	501,373	211	0.0004	0.9996	100.00
0.5	500,911	12,586	0.0251	0.9749	99.96
1.5	488,325	8,746	0.0179	0.9821	97.45
2.5	479,579	7,062	0.0147	0.9853	95.70
3.5	472,517	5,341	0.0113	0.9887	94.29
4.5	467,176	3,080	0.0066	0.9934	93.23
5.5	464,096	3,059	0.0066	0.9934	92.61
6.5	464,161	3,227	0.0070	0.9930	92.00
7.5	460,934	2,532	0.0055	0.9945	91.36
8.5	443,666	10,251	0.0231	0.9769	90.86
9.5	433,415	10,948	0.0253	0.9747	88.76
10.5	422,467	27,739	0.0657	0.9343	86.52
11.5	394,728	13,244	0.0336	0.9664	80.84
12.5	381,484	13,075	0.0343	0.9657	78.13
13.5	368,735	3,701	0.0100	0.9900	75.45
14.5	365,034	4,112	0.0113	0.9887	74.69
15.5	360,922	7,458	0.0207	0.9793	73.85
16.5	322,546	9,482	0.0294	0.9706	72.32
17.5	251,181	3,557	0.0142	0.9858	70.20
18.5	185,845	2,660	0.0143	0.9857	69.20
19.5	129,521	1,158	0.0089	0.9911	68.21
20.5	90,400	900	0.0100	0.9900	67.60
21.5	79,836	818	0.0102	0.9898	66.93
22.5	70,399	297	0.0042	0.9958	66.24
23.5	67,786	1,307	0.0193	0.9807	65.96
24.5	61,619	493	0.0080	0.9920	64.69
25.5	58,553	646	0.0110	0.9890	64.17
26.5	53,579		0.0000	1.0000	63.47
27.5	52,086		0.0000	1.0000	63.47
28.5	49,784		0.0000	1.0000	63.47
29.5	47,859		0.0000	1.0000	63.47
30.5	46,869		0.0000	1.0000	63.47
31.5	44,527		0.0000	1.0000	63.47
32.5	42,377		0.0000	1.0000	63.47
33.5	40,146		0.0000	1.0000	63.47
34.5	38,584		0.0000	1.0000	63.47
35.5	35,667		0.0000	1.0000	63.47
36.5	30,805		0.0000	1.0000	63.47
37.5	24,820		0.0000	1.0000	63.47
38.5	20,590		0.0000	1.0000	63.47



# ACCOUNT 371.5 - INSTALLATIONS ON CUSTOMER PREMISES - DUSK TO DAWN LIGHTS ORIGINAL LIFE TABLE, CONT.

PLACEMENT 1	EXPERIENCE BAND 1963-2016				
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5	15,893 11,490 7,907 1,435		0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000	63.47 63.47 63.47 63.47 63.47

# UGI UTILITIES, INC. - ELECTRIC DIVISION ACCOUNT 373 - STREET LIGHTING AND SIGNAL SYSTEMS ORIGINAL AND SMOOTH SURVIVOR CURVES



# ACCOUNT 373 - STREET LIGHTING AND SIGNAL SYSTEMS

PLACEMENT E	BAND 1916-2016		EXPER	RIENCE BAN	D 1960-2016
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5	2,079,318 2,004,507 1,861,874 1,859,566 1,893,693 1,854,262 1,912,187 1,825,969 1,822,603 1,762,591	85,925 99,692 29,321 17,714 10,716 8,481 17,246 17,344 15,900 17,110	0.0413 0.0497 0.0157 0.0095 0.0057 0.0046 0.0090 0.0095 0.0087 0.0097	0.9587 0.9503 0.9843 0.9905 0.9943 0.9954 0.9910 0.9905 0.9913	100.00 95.87 91.10 89.67 88.81 88.31 87.90 87.11 86.28 85.53
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	1,780,945 1,766,677 1,693,247 1,614,855 1,535,319 1,497,330 1,406,107 1,250,304 1,182,435 1,118,132	38,429 33,182 39,240 30,895 47,082 53,888 49,439 74,381 45,853 15,377	0.0216 0.0188 0.0232 0.0191 0.0307 0.0360 0.0352 0.0595 0.0388 0.0138	0.9784 0.9812 0.9768 0.9809 0.9693 0.9640 0.9648 0.9405 0.9612 0.9862	84.70 82.87 81.32 79.43 77.91 75.52 72.81 70.25 66.07 63.50
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	1,107,644 1,076,581 1,054,944 996,666 886,111 885,088 840,768 803,631 774,801 724,601	17,872 11,994 12,845 8,440 8,577 8,886 12,456 6,415 4,526 8,092	0.0161 0.0111 0.0122 0.0085 0.0097 0.0100 0.0148 0.0080 0.0058 0.0112	0.9839 0.9889 0.9878 0.9915 0.9903 0.9900 0.9852 0.9920 0.9942 0.9888	62.63 61.62 60.93 60.19 59.68 59.11 58.51 57.64 57.18 56.85
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	712,977 707,177 689,026 664,590 613,289 585,264 579,637 575,854 554,786 519,726	12,694 8,151 8,881 14,642 8,382 9,296 13,880 5,271 15,475 12,077	0.0178 0.0115 0.0129 0.0220 0.0137 0.0159 0.0239 0.0092 0.0279 0.0232	0.9822 0.9885 0.9871 0.9780 0.9863 0.9841 0.9761 0.9908 0.9721 0.9768	56.22 55.21 54.58 53.87 52.69 51.97 51.14 49.92 49.46 48.08



# ACCOUNT 373 - STREET LIGHTING AND SIGNAL SYSTEMS

PLACEMENT :	BAND 1916-2016		EXPER	RIENCE BAN	D 1960-2016
AGE AT BEGIN OF	EXPOSURES AT BEGINNING OF	RETIREMENTS DURING AGE	RETMT	SURV	PCT SURV BEGIN OF
INTERVAL	AGE INTERVAL	INTERVAL	RATIO	RATIO	INTERVAL
39.5	495,525	18,030	0.0364	0.9636	46.96
40.5	465,452	12,582	0.0270	0.9730	45.26
41.5	401,095	42,821	0.1068	0.8932	44.03
42.5	349,836	16,285	0.0466	0.9534	39.33
43.5	309,635	8,050	0.0260	0.9740	37.50
44.5	304,501	2,938	0.0096	0.9904	36.53
45.5	286,331	1,880	0.0066	0.9934	36.17
46.5	274,619	224	0.0008	0.9992	35.94
47.5	264,674	186	0.0007	0.9993	35.91
48.5	246,988	10,338	0.0419	0.9581	35.88
49.5	197,416	89	0.0004	0.9996	34.38
50.5	152,300	1,116	0.0073	0.9927	34.36
51.5	103,219	113	0.0011	0.9989	34.11
52.5	98,116	896	0.0091	0.9909	34.07
53.5	89,427	1,380	0.0154	0.9846	33.76
54.5	87,059	115	0.0013	0.9987	33.24
55.5	85,058	1,589	0.0187	0.9813	33.20
56.5	81,503	3,215	0.0395	0.9605	32.58
57.5	66,259	597	0.0090	0.9910	31.29
58.5	62,698	107	0.0017	0.9983	31.01
59.5	60,918	1,013	0.0166	0.9834	30.96
60.5	42,752	74	0.0017	0.9983	30.44
61.5	40,692	2,272	0.0558	0.9442	30.39
62.5	34,371	197	0.0057	0.9943	28.69
63.5	30,908	1,374	0.0445	0.9555	28.53
64.5	25,636	960	0.0375	0.9625	27.26
65.5	22,759	260	0.0114	0.9886	26.24
66.5	19,856	289	0.0145	0.9855	25.94
67.5	18,268	95	0.0052	0.9948	25.56
68.5	16,373	422	0.0258	0.9742	25.43
69.5	15,840	163	0.0103	0.9897	24.78
70.5	15,625		0.0000	1.0000	24.52
71.5	15,598		0.0000	1.0000	24.52
72.5	15,598		0.0000	1.0000	24.52
73.5	15,598		0.0000	1.0000	24.52
74.5	15,460		0.0000	1.0000	24.52
75.5	15,365		0.0000	1.0000	24.52
76.5	14,966		0.0000	1.0000	24.52
77.5	14,786		0.0000	1.0000	24.52
78.5	14,474		0.0000	1.0000	24.52

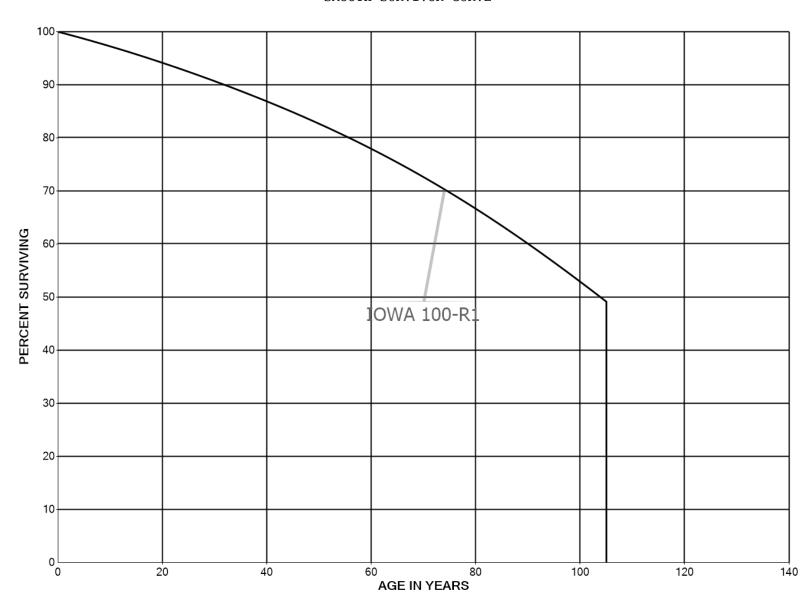


#### ACCOUNT 373 - STREET LIGHTING AND SIGNAL SYSTEMS

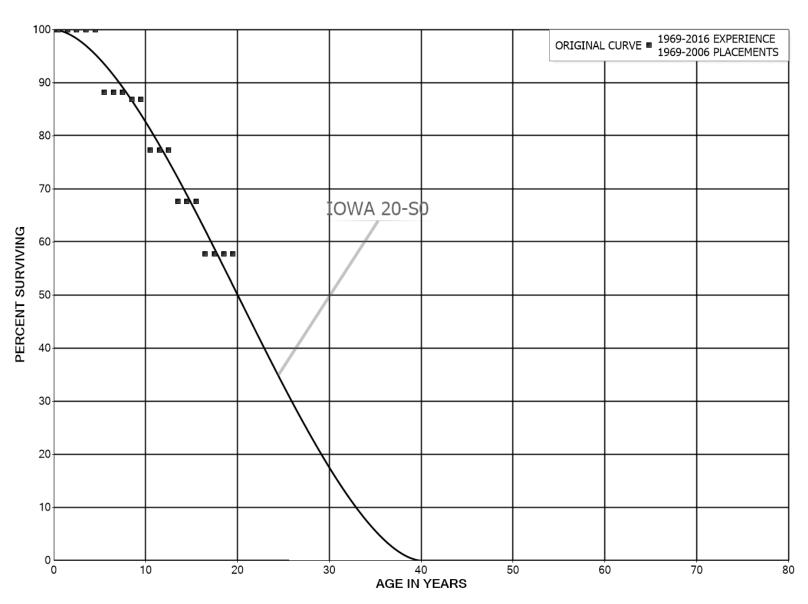
#### ORIGINAL LIFE TABLE, CONT.

PLACEMENT	BAND 1916-2016		EXPER	RIENCE BAN	D 1960-2016
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5 80.5 81.5 82.5 83.5 84.5 85.5 86.5 87.5 88.5 90.5 91.5 92.5 93.5 94.5 95.5 96.5 97.5	13,795 7,565 7,015 6,623 6,471 6,405 6,334 4,249 4,249 3,844 3,174 2,775 2,690 1,716 1,716 1,314 1,077 299		0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	24.52 24.52
99.5					24.52

## UGI UTILITIES, INC. - ELECTRIC DIVISION ACCOUNT 390.1 - STRUCTURES AND IMPROVEMENTS SMOOTH SURVIVOR CURVE



#### UGI UTILITIES, INC. - ELECTRIC DIVISION ACCOUNT 396 - POWER OPERATED EQUIPMENT ORIGINAL AND SMOOTH SURVIVOR CURVES



#### ACCOUNT 396 - POWER OPERATED EQUIPMENT

#### ORIGINAL LIFE TABLE

PLACEMENT 1	BAND 1969-2006		EXPER	RIENCE BAN	D 1969-2016
AGE AT	EXPOSURES AT	RETIREMENTS			PCT SURV
BEGIN OF	BEGINNING OF	DURING AGE	RETMT	SURV	BEGIN OF
INTERVAL	AGE INTERVAL	INTERVAL	RATIO	RATIO	INTERVAL
0.0	236,503		0.0000	1.0000	100.00
0.5	236,503		0.0000	1.0000	100.00
1.5	236,503		0.0000	1.0000	100.00
2.5	236,503		0.0000	1.0000	100.00
3.5	277,286		0.0000	1.0000	100.00
4.5	277,286	32,890	0.1186	0.8814	100.00
5.5	244,396		0.0000	1.0000	88.14
6.5	244,396		0.0000	1.0000	88.14
7.5	244,396	3,500	0.0143	0.9857	88.14
8.5	240,896		0.0000	1.0000	86.88
9.5	240,896	26,583	0.1103	0.8897	86.88
10.5	211,208		0.0000	1.0000	77.29
11.5	211,208		0.0000	1.0000	77.29
12.5	211,208	26,505	0.1255	0.8745	77.29
13.5	211,285		0.0000	1.0000	67.59
14.5	190,942		0.0000	1.0000	67.59
15.5	176,401	25,746	0.1460	0.8540	67.59
16.5	150,655		0.0000	1.0000	57.73
17.5	150,655		0.0000	1.0000	57.73
18.5	150,655		0.0000	1.0000	57.73
19.5	150,655		0.0000	1.0000	57.73
20.5	150,655		0.0000	1.0000	57.73
21.5	150,655		0.0000	1.0000	57.73
22.5	150,655		0.0000	1.0000	57.73
23.5	150,655	20,778	0.1379	0.8621	57.73
24.5	72,112		0.0000	1.0000	49.76
25.5	72,112		0.0000	1.0000	49.76
26.5	72,112		0.0000	1.0000	49.76
27.5	57,834		0.0000	1.0000	49.76
28.5	56,539		0.0000	1.0000	49.76
29.5	56,539		0.0000	1.0000	49.76
30.5	56,539		0.0000	1.0000	49.76
31.5	56,539		0.0000	1.0000	49.76
32.5	56,539		0.0000	1.0000	49.76
33.5	56,539		0.0000	1.0000	49.76
34.5	56,539		0.0000	1.0000	49.76
35.5	56,539		0.0000	1.0000	49.76
36.5	56,539		0.0000	1.0000	49.76
37.5	3,709		0.0000	1.0000	49.76
38.5	1,364		0.0000	1.0000	49.76



#### ACCOUNT 396 - POWER OPERATED EQUIPMENT

#### ORIGINAL LIFE TABLE, CONT.

PLACEMENT I	BAND 1969-2006	EXPER	RIENCE BAN	D 1969-2016	
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5	1,364 1,364 1,364 1,364 1,364 389 324		0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	49.76 49.76 49.76 49.76 49.76 49.76 49.76

# PART VII. DETAILED DEPRECIATION CALCULATIONS



**UTILITY PLANT IN SERVICE** 



**ELECTRIC PLANT** 



#### ACCOUNT 361 STRUCTURES AND IMPROVEMENTS

### CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE IOWA VAGE PERCENT					
1975 1977	10,973.98 485.00	7,969 340	7,334 313	3,640 172	13.69 14.91	266 12
	11,458.98	8,309	7,647	3,812		278

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 13.7 2.43

#### ACCOUNT 362 STATION EQUIPMENT

### CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

	ORIGINAL	CALCULATED	ALLOC. BOOK	FUTURE BOOK	REM.	ANNUAL
YEAR	COST	ACCRUED	RESERVE	ACCRUALS	LIFE	ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIV	OR CURVE IOWA	40-S1				
	LVAGE PERCENT					
1121 211		·				
1958	8,534.93	7,340	1,655	6,880	5.60	1,229
1959	4,682.10	3,989	899	3,783	5.92	639
1960	2,559.47	2,161	487	2,072	6.23	333
1961	5,454.43	4,561	1,028	4,426	6.55	676
1962	27,930.06	23,126	5,215	22,715	6.88	3,302
1963	4,029.01	3,303	745	3,284	7.21	455
1964	7,472.26	6,064	1,367	6,105	7.54	810
1965	3,992.33	3,206	723	3,269	7.88	415
1966	2,626.95	2,087	471	2,156	8.22	262
1967	20,334.73	15,983	3,604	16,731	8.56	1,955
1968	2,676.83	2,080	469	2,208	8.92	248
1969	33,270.98	25,560	5,764	27,507	9.27	2,967
1970	1,538.73	1,168	263	1,276	9.63	133
1971	9,593.64	7,195	1,622	7,972	10.00	797
1972	21,376.58	15,835	3,571	17,806	10.37	1,717
1973	6,612.06	4,835	1,090	5,522	10.75	514
1974	2,487.13	1,795	405	2,082	11.13	187
1975	5,075.00	3,612	815	4,260	11.53	369
1976	920.28	646	146	774	11.92	65
1977	6,849.94	4,738	1,068	5,782	12.33	469
1978	469.72	320	72	398	12.74	31
1982	3,702.96	2,738	617	3,086	12.77	242
1984	2,492.28	1,792	404	2,088	13.37	156
1987	418.95	287	65	354	14.41	25
1991	19,815.06	12,474	2,813	17,002	16.04	1,060
1997	23,568.89	12,718	2,868	20,701	18.34	1,129
2008	8,499.99	2,606	588	7,912	23.75	333
2011	2,243.23	510	115	2,128	25.50	83
2015	60,371.76	6,635	1,496	58,876	28.35	2,077
2016	16,183.57	1,279	288	15,896	29.15	545
2017	1,208,500.19	57,525	12,972	1,195,528	30.04	39,798
2018	3,246,962.01	51,627	11,642	3,235,320	30.95	104,534
	4,771,246.05	289,795	65,347	4,705,899		167,555

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 28.1 3.51



#### ACCOUNT 364 POLES, TOWERS AND FIXTURES

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE IOWA VAGE PERCENT					
1919	2,822.89	2,761	2,792	31	1.22	25
1920	2,798.61	2,725	2,756	43	1.48	29
1921	37.77	37	37	1	1.75	1
1922	30.29	29	29	1	2.02	
1923	139.71	134	136	4	2.30	2
1924	90.35	86	87	3	2.57	1
1925	115.87	110	111	5	2.84	2
1926	1,167.26	1,102	1,114	53	3.11	17
1927	947.93	891	901	47	3.37	14
1928	1,133.57	1,060	1,072	62	3.62	17
1929	689.10	642	649	40	3.86	10
1930	2,855.25	2,647	2,677	178	4.08	44
1931	306.85	283	286	21	4.31	5
1932	3,013.97	2,770	2,801	213	4.53	47
1933	7,221.09	6,609	6,684	537	4.75	113
1934	5,471.01	4,986	5,042	429	4.96	86
1935	10,668.03	9,681	9,790	878	5.18	169
1936	12,955.91	11,707	11,839	1,117	5.40	207
1937	6,147.27	5,529	5,591	556	5.63	99
1938	3,173.91	2,842	2,874	300	5.85	51
1939	4,939.19	4,403	4,453	486	6.08	80
1940	7,581.32	6,727	6,803	778	6.31	123
1941	14,168.61	12,514	12,655	1,514	6.54	231
1942	9,896.91	8,699	8,797	1,100	6.78	162
1943	13,446.50	11,761	11,894	1,552	7.02	221
1944	12,304.57	10,709	10,830	1,475	7.26	203
1945 1946	14,567.38	12,611	12,753	1,814	7.52 7.77	241
1946	21,082.73 17,529.84	18,158 15,016	18,363 15,185	2,720 2,345		350 292
1947	24,898.51	21,208	21,447	3,452	8.03 8.30	416
1949	23,452.36	19,859	20,083	3,452	8.58	393
1950	16,718.64	14,074	14,233	2,486	8.86	281
1951	32,044.36	26,803	27,106	4,938	9.16	539
1952	23,594.83	19,605	19,826	3,769	9.47	398
1953	21,231.05	17,523	17,721	3,700	9.78	359
1954	25,235.16	20,679	20,912	4,323	10.11	428
1955	39,755.20	32,329	32,694	7,061	10.46	675
1956	28,069.92	22,651	22,907	5,163	10.40	478
1957	26,007.07	20,815	21,050	4,957	11.18	443
1958	44,071.72	34,966	35,361	8,711	11.57	753
1959	44,450.76	34,949	35,343	9,108	11.97	761
1960	35,806.13	27,884	28,199	7,607	12.39	614
1961	53,739.13	41,437	41,905	11,834	12.82	923
	,	-,,	-,	,		

#### ACCOUNT 364 POLES, TOWERS AND FIXTURES

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUTURE BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	OR CURVE IOWA					
NET SAL	LVAGE PERCENT	U				
1962	46,890.98	35,780	36,184	10,707	13.27	807
1963	62,441.88	47,132	47,664	14,778	13.73	1,076
1964	64,885.11	48,421	48,968	15,917	14.21	1,120
1965	102,135.55	75,325	76,175	25,961	14.70	1,766
1966	88,981.39	64,813	65,545	23,436	15.21	1,541
1967	62,842.87	45,180	45,690	17,153	15.74	1,090
1968	99,780.89	70,774	71,573	28,208	16.28	1,733
1969	133,760.18	93,560	94,616	39,144	16.83	2,326
1970	163,517.98	112,711	113,983	49,535	17.40	2,847
1971	216,428.77	146,940	148,599	67,830	17.98	3,773
1972	158,322.51	105,821	107,015	51,308	18.57	2,763
1973	236,767.72	155,675	157,432	79,336	19.18	4,136
1974	319,358.40	206,443	208,773	110,585	19.80	5,585
1975	249,289.77	158,299	160,086	89,204	20.44	4,364
1976	267,217.38	166,629	168,510	98,707	21.08	4,682
1977	289,011.60	176,814	178,810	110,202	21.74	5,069
1978	319,292.09	191,518	193,680	125,612	22.41	5,605
1979	381,943.92	224,461	226,994	154,950	23.09	6,711
1980	274,187.96	157,757	159,538	114,650	23.78	4,821
1981	270,064.14	152,008	153,724	116,340	24.48	4,752
1982	282,910.47	175,376	177,355	105,555	22.23	4,748
1983	323,478.69	196,125	198,339	125,140	22.89	5,467
1984	335,820.03	198,973	201,219	134,601	23.55	5,716
1985	305,432.94	176,723	178,718	126,715	24.22	5,232
1986	373,929.96	212,243	214,639	159,291	24.57	6,483
1987	445,806.98 468,287.88	246,576 252,126	249,359	196,448	25.25 25.93	7,780 8,227
1988 1989	692,751.05	362,724	254,972 366,818	213,316 325,933	25.93	12,249
1999	669,900.72	340,645	344,490	325,933	27.31	11,915
1991	728,861.99	361,516	365,596	363,266	27.51	13,119
1992	976,816.28	469,263	474,560	502,256	28.39	17,691
1993	750,300.71	350,315	354,269	396,032	28.97	13,670
1994	962,811.79	436,346	441,271	521,541	29.56	17,643
1995	1,310,521.20	572,829	579,294	731,227	30.26	24,165
1996	1,260,670.41	530,490	536,478	724,192	30.20	23,384
1997	957,363.00	389,072	393,463	563,900	31.41	17,953
1998	927,453.78	361,243	365,320	562,134	32.13	17,496
1999	779,595.53	290,321	293,598	485,998	32.86	14,790
2000	711,513.64	252,730	255,583	455,931	33.58	13,577
2001	966,317.49	328,065	331,768	634,549	34.05	18,636
2002	821,043.08	264,212	267,194	553,849	34.78	15,924
2003	982,792.00	298,572	301,942	680,850	35.52	19,168
2004	1,108,539.81	318,262	321,854	786,686	36.01	21,846

#### ACCOUNT 364 POLES, TOWERS AND FIXTURES

### CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	OR CURVE IOWA ALVAGE PERCENT					
2005	1,121,252.67	301,168	304,567	816,686	36.75	22,223
2006	1,077,429.73	269,357	272,397	805,033	37.50	21,468
2007	930,646.11	216,189	218,629	712,017	38.00	18,737
2008	1,092,748.49	232,974	235,604	857,144	38.76	22,114
2009	1,079,897.01	210,364	212,738	867,159	39.28	22,076
2010	1,037,014.68	182,515	184,575	852,440	39.81	21,413
2011	1,426,112.84	222,474	224,985	1,201,128	40.58	29,599
2012	908,462.97	124,005	125,405	783,058	41.12	19,043
2013	1,193,498.18	139,878	141,457	1,052,041	41.45	25,381
2014	1,596,935.55	154,583	156,328	1,440,608	42.01	34,292
2015	1,547,821.21	118,099	119,432	1,428,389	42.37	33,712
2016	1,742,365.80	96,701	97,792	1,644,574	42.55	38,650
2017	1,779,755.87	60,868	61,555	1,718,201	42.36	40,562
2018	2,591,604.25	31,099	31,450	2,560,154	41.00	62,443
	40,691,964.41	12,693,093	12,836,360	27,855,604		805,462

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 34.6 1.98



#### ACCOUNT 365 OVERHEAD CONDUCTORS AND DEVICES

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUTURE BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVO	R CURVE IOWA	55-R1				
	VAGE PERCENT					
1924	5,816.44	5,268	5,673	143	5.19	28
1925	16,188.26	14,572	15,692	496	5.49	90
1926	44,079.98	39,432	42,463	1,617	5.80	279
1927	16,675.92	14,826	15,966	710	6.10	116
1928	19,961.30	17,635	18,990	971	6.41	151
1929	15,056.71	13,217	14,233	824	6.72	123
1930	30,047.91	26,202	28,216	1,832	7.04	260
1931	13,890.89	12,032	12,957	934	7.36	127
1932	16,233.23	13,966	15,039	1,194	7.68	155
1933	23,219.74	19,838	21,363	1,857	8.01	232
1934	17,699.64	15,016	16,170	1,530	8.34	183
1935	8,185.63	6,894	7,424	762	8.68	88
1936	1,882.00	1,573	1,694	188	9.02	21
1937	5,040.71	4,183	4,505	536	9.36	57
1938	9,489.82	7,814	8,415	1,075	9.71	111
1939	18,408.93	15,038	16,194	2,215	10.07	220
1940	13,673.93	11,081	11,933	1,741	10.43	167
1941	10,523.20	8,459	9,109	1,414	10.79	131
1942	2,530.17	2,017	2,172	358	11.16	32
1943	5,342.17	4,222	4,547	795	11.53	69
1944	3,840.89	3,009	3,240	601	11.91	50
1945	9,143.32	7,100	7,646	1,497	12.29	122
1946	22,032.29	16,953	18,256	3,776	12.68	298
1947	31,709.38	24,174	26,032	5,677	13.07	434
1948	27,205.85	20,543	22,122	5,084	13.47	377
1949	45,575.62	34,082	36,702	8,874	13.87	640
1950	35,748.58	26,474	28,509	7,240	14.27	507
1951	33,893.44	24,841	26,750	7,143	14.69	486
1952	21,585.39	15,655	16,858	4,727	15.11	313
1953	21,569.32	15,479	16,669	4,900	15.53	316
1954	35,599.56	25,269	27,211	8,389	15.96	526
1955	56,892.85	39,939	43,009	13,884	16.39	847
1956	34,910.89	24,228	26,090	8,821	16.83	524
1957	51,595.33	35,385	38,105	13,490	17.28	781
1958	25,840.57	17,511	18,857	6,984	17.73	394
1959	33,773.43	22,604	24,341	9,432	18.19	519
1960	35,599.51	23,528	25,336	10,264	18.65	550
1961	56,676.27	36,973	39,815	16,861	19.12	882
1962	54,694.20	35,203	37,909	16,785	19.60	856
1963	81,028.18	51,446	55,400	25,628	20.08	1,276
1964	114,553.16	71,710	77,222	37,331	20.57	1,815
1965	95,613.13	59,002	63,537	32,076	21.06	1,523
1966	55,700.92	33,866	36,469	19,232	21.56	892

#### ACCOUNT 365 OVERHEAD CONDUCTORS AND DEVICES

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	OR CURVE IOWA LVAGE PERCENT					
1967	62,354.28	37,333	40,203	22,151	22.07	1,004
1968	103,629.05	61,084	65,779	37,850	22.58	1,676
1969	215,417.16	124,942	134,545	80,872	23.10	3,501
1970	182,071.48	103,881	111,866	70,205	23.62	2,972
1971	210,349.13	117,987	127,056	83,293	24.15	3,449
1972	127,967.37	70,522	75,942	52,025	24.69	2,107
1973	175,688.17	95,063	102,370	73,318	25.24	2,905
1974	269,139.35	142,937	153,923	115,216	25.79	4,467
1975	285,237.49	148,634	160,058	125,179	26.34	4,752
1976	221,483.06	113,118	121,813	99,670	26.91	3,704
1977	342,974.58	171,611	184,801	158,174	27.48	5,756
1978	253,948.51	124,435	133,999	119,950	28.05	4,276
1979	235,777.25	113,043	121,732	114,045	28.63	3,983
1980	171,783.48	80,520	86,709	85,074	29.22	2,911
1981	205,656.88	94,154	101,391	104,266	29.82	3,497
1982	212,635.64	124,094	133,632	79,004	25.86	3,055
1983	120,543.05	69,264	74,588	45,955	26.10	1,761
1984	97,786.83	54,927	59,149	38,638	26.73	1,445
1985	118,816.21	65,587	70,628	48,188	26.99	1,785
1986	166,301.92	89,570	96,455	69,847	27.63	2,528
1987	140,837.19	74,376	80,093	60,744	27.92	2,176
1988	252,500.47	130,618	140,658	111,842	28.23	3,962
1989	298,527.65	151,055	162,665	135,863	28.55	4,759
1990	324,901.83	159,722	171,999	152,903	29.22	5,233
1991	514,554.57	246,780	265,748	248,807	29.57	8,414
1992	642,028.62	299,956	323,011	319,018	29.93	10,659
1993	385,233.24	175,975	189,501	195,732	30.18	6,485
1994	533,362.21	236,493	254,670	278,692	30.75	9,063
1995	846,514.27	366,033	394,167	452,347	30.85	14,663
1996	823,906.63	344,805	371,308	452,599	31.26	14,479
1997	680,340.15	274,993	296,130	384,210	31.69	12,124
1998	690,338.21	268,887	289,554	400,784	32.13	12,474
1999	538,588.57	202,725	218,307	320,282	32.31	9,913
2000	431,817.26	155,800	167,775	264,042	32.78	8,055
2001	657,507.76	227,826	245,337	412,171	33.01	12,486
2002	453,158.09	150,267	161,817	291,341	33.25	8,762
2003	624,042.18	197,322	212,489	411,553	33.52	12,278
2004	604,945.25	181,605	195,564	409,381	33.81	12,108
2005	1,051,423.36	299,445	322,461	728,962	33.90	21,503
2006	726,798.76	194,419	209,363	517,436	34.23	15,116
2007	1,235,744.44	309,801	333,613	902,131	34.37	26,248
2008	1,278,244.37	299,365	322,375	955,869	34.34	27,835
2009	1,176,591.14	254,850	274,438	902,153	34.36	26,256

#### ACCOUNT 365 OVERHEAD CONDUCTORS AND DEVICES

### CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	OR CURVE IOWA					
2010	854,749.66	169,240	182,248	672,502	34.42	19,538
2011	827,735.87	148,330	159,731	668,005	34.34	19,453
2012	1,294,035.22	206,916	222,820	1,071,215	34.15	31,368
2013	1,821,166.99	254,417	273,972	1,547,195	33.87	45,680
2014	1,758,829.35	208,245	224,251	1,534,578	33.52	45,781
2015	2,081,559.49	200,246	215,638	1,865,921	32.87	56,767
2016	2,344,382.42	170,671	183,789	2,160,593	31.86	67,815
2017	1,748,479.61	82,878	89,248	1,659,232	30.15	55,033
2018	2,444,150.95	46,194	49,745	2,394,406	25.96	92,234
	35,145,285.33	9,611,220	10,349,964	24,795,321		797,822

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 31.1 2.27

#### ACCOUNT 366 UNDERGROUND CONDUIT

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE IOWA VAGE PERCENT					
1955	204.59	161	205			
1957	834.10	642	826	8	14.98	1
1966	149.44	103	133	16	20.26	1
1967	1,969.27	1,336	1,720	249	20.91	12
1968	4,721.88	3,155	4,061	661	21.57	31
1969	433.53	285	367	67	22.25	3
1970	2,789.19	1,805	2,323	466	22.93	20
1971	3,431.69	2,184	2,811	621	23.63	26
1972	6,689.61	4,186	5,388	1,302	24.33	54
1973	8,876.97	5,456	7,023	1,854	25.05	74
1974	11,706.11	7,063	9,092	2,614	25.78	101
1975	8,944.73	5,297	6,819	2,126	26.51	80
1976	13,552.20	7,869	10,129	3,423	27.26	126
1977	16,707.73	9,508	12,239	4,469	28.01	160
1978	23,880.81	13,311	17,135	6,746	28.77	234
1979	41,777.03	22,791	29,338	12,439	29.54	421
1980	6,998.53	3,734	4,807	2,192	30.32	72
1981	10,911.42	5,689	7,323	3,588	31.11	115
1982	10,847.65	6,055	7,794	3,054	28.69	106
1983	14,092.90	7,700	9,912	4,181	29.26	143
1984	5,572.71	2,977	3,832	1,741	29.85	58
1985	15,228.79	7,949	10,232	4,997	30.45	164
1986	47,277.48	23,937	30,813	16,464	31.45	523
1987	28,966.40	14,304	18,413	10,553	32.04	329
1988	75,348.27	36,243	46,654	28,694	32.64	879
1989	111,611.96	52,234	67,238	44,374	33.25	1,335
1990	142,489.29	64,405	82,906	59,583	34.25	1,740
1991	52,745.25	23,139	29,786	22,959	34.86	659
1992	98,649.04	41,946	53,995	44,654	35.48	1,259
1993	35,774.49	14,707	18,932	16,842	36.35	463
1994	117,655.75	46,992	60,491	57,165	36.85	1,551
1995	149,082.05	57,456	73,960	75,122	37.48	2,004
1996	90,662.47	33,454	43,064	47,598	38.48	1,237
1997	231,750.10	82,225	105,845	125,905	39.10	3,220
1998	150,627.53	50,942	65,575	85,053	40.11	2,120
1999	190,926.50	61,803	79,556	111,370	40.74	2,734
2000	159,352.51	49,240	63,384	95,969	41.38	2,319
2001	226,312.62	66,129	85,125	141,188	42.38	3,331
2002	320,629.70	88,879	114,410	206,220	43.02	4,794
2003	160,853.00 172,298.86	42,143	54,249	106,604	43.67	2,441
2004		42,213 98,477	54,339 126,765	117,960	44.67	2,641
2005 2006	429,095.59 312,438.17	66,393	126,765 85,465	302,331 226,973	45.32 46.32	6,671 4,900
2000	314,730.1/	00,333	05,405	440,913	70.34	4,500

#### ACCOUNT 366 UNDERGROUND CONDUIT

### CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE IOWA VAGE PERCENT					
2007	95,437.87	18,763	24,153	71,285	46.98	1,517
2008	692,511.91	125,068	160,994	531,518	47.64	11,157
2009	66,853.25	10,924	14,062	52,791	48.64	1,085
2010	173,657.87	25,528	32,861	140,797	49.31	2,855
2011	38,229.99	4,962	6,387	31,843	50.30	633
2012	98,798.96	11,174	14,384	84,415	50.97	1,656
2013	152,649.34	14,685	18,903	133,746	51.65	2,589
2014	138,780.35	10,991	14,148	124,632	52.32	2,382
2015	90,044.07	5,583	7,187	82,857	52.99	1,564
2016	422,299.74	18,792	24,190	398,110	53.68	7,416
2017	347,127.44	9,303	11,976	335,151	54.37	6,164
2018	484,811.20	4,412	5,679	479,132	54.45	8,799
	6,316,069.90	1,436,702	1,849,398	4,466,672		96,969

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 46.1 1.54

#### ACCOUNT 367 UNDERGROUND CONDUCTORS AND DEVICES

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE IOWA VAGE PERCENT					
1957	2,200.98	2,005	1,772	429	3.57	120
1966	97.95	83	73	25	6.27	4
1967	9,429.87	7,876	6,960	2,470	6.59	375
1968	4,812.06	3,978	3,516	1,296	6.93	187
1969	5,475.07	4,480	3,959	1,516	7.27	209
1970	8,800.29	7,122	6,294	2,506	7.63	328
1971	8,899.09	7,119	6,291	2,608	8.00	326
1972	35,323.97	27,924	24,678	10,646	8.38	1,270
1973	30,006.91	23,428	20,705	9,302	8.77	1,061
1974	62,219.33	47,940	42,367	19,852	9.18	2,163
1975	89,391.54	67,938	60,041	29,351	9.60	3,057
1976	40,288.73	30,186	26,677	13,612	10.03	1,357
1977	76,439.71	56,413	49,855	26,585	10.48	2,537
1978	46,730.04	33,938	29,993	16,737	10.95	1,528
1979	55,701.00	39,784	35,159	20,542	11.43	1,797
1980	28,825.42	20,235	17,883	10,942	11.92	918
1981	33,665.59	23,204	20,507	13,159	12.43	1,059
1982	25,241.05	19,123	16,900	8,341	11.60	719
1983	54,332.89	40,413	35,715	18,618	12.14	1,534
1984	24,026.03	17,611	15,564	8,462	12.48	678
1985	31,198.42	22,407	19,802	11,396	13.05	873
1986	71,363.54	50,404	44,545	26,819	13.41	2,000
1987	54,407.80	37,574	33,206	21,202	14.00	1,514
1988	115,102.89	77,994	68,928	46,175	14.39	3,209
1989	163,962.89	108,379	95,781	68,182	15.00	4,545
1990	123,936.45	80,174	70,854	53,082	15.42	3,442
1991	200,438.23	126,176	111,509	88,929	16.04	5,544
1992	115,052.62	70,665	62,451	52,602	16.49	3,190
1993	139,991.03	83,827	74,083	65,908	17.00	3,877
1994	136,691.30	79,705	70,440	66,251	17.52	3,781
1995	213,582.40	120,973	106,911	106,671	17.99	5,929
1996	307,607.14	168,200	148,648	158,959	18.65	8,523
1997	341,265.98	180,496	159,514	181,752	19.15	9,491
1998	266,686.26	136,117	120,294	146,392	19.66	7,446
1999	192,428.93	94,560	83,568	108,861	20.18	5,394
2000	201,268.74	94,959	83,921	117,348	20.71	5,666
2001	424,899.26	191,120	168,903	255,996	21.41	11,957
2002	158,092.93	67,822	59,938	98,155	21.96	4,470
2003	40,232.33	16,399	14,493	25,739	22.52	1,143
2004	100,968.05	38,943	34,416	66,552	23.09	2,882
2005	294,180.79	107,229	94,764	199,417	23.54	8,471
2006	203,481.80	69,428	61,357	142,125	24.13	5,890
2007	138,331.26	43,906	38,802	99,529	24.73	4,025

#### ACCOUNT 367 UNDERGROUND CONDUCTORS AND DEVICES

### CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE IOWA VAGE PERCENT					
2008	577,531.29	169,794	150,057	427,474	25.21	16,957
2009	105,708.77	28,520	25,205	80,504	25.71	3,131
2010	249,018.41	60,960	53,874	195,144	26.22	7,443
2011	205,459.95	44,996	39,765	165,695	26.75	6,194
2012	97,514.44	18,820	16,632	80,882	27.17	2,977
2013	518,925.83	86,194	76,175	442,751	27.61	16,036
2014	516,839.36	71,634	63,307	453,532	27.97	16,215
2015	140,030.20	15,487	13,687	126,343	28.15	4,488
2016	183,667.64	14,914	13,180	170,488	28.27	6,031
2017	694,655.64	35,289	31,187	663,469	28.00	23,695
2018	1,013,251.90	18,846	16,655	996,597	26.45	37,679
	8,979,681.99	3,113,711	2,751,761	6,227,921		275,335

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 22.6 3.07

#### ACCOUNT 368.1 TRANSFORMERS

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE IOWA /AGE PERCENT					
1924	2,344.76	2,345	2,345			
1925	427.40	427	427			
1941	1,598.61	1,511	1,599			
1948	7,955.31	7,149	7,955			
1949	11,698.38	10,431	11,698			
1952	471.62	411	472			
1953	622.88	538	623			
1954	5,988.12	5,126	5,988			
1955	20,232.36	17,174	20,213	19	6.50	3
1956	2,295.88	1,932	2,274	22	6.82	3
1957	11,354.25	9,469	11,145	209	7.14	29
1958	49,796.60	41,146	48,427	1,370	7.47	183
1959	24,400.18	19,980	23,516	884	7.79	113
1960	17,519.12	14,207	16,721	798	8.13	98
1961	15,487.45	12,437	14,638	849	8.47	100
1962	7,079.02	5,629	6,625	454	8.81	52
1963	6,492.57	5,111	6,015	478	9.15	52
1964	22,462.98	17,500	20,597	1,866	9.50	196
1965	15,555.69	11,989	14,111	1,445	9.86	147
1966	39,716.88	30,277	35,635	4,082	10.22	399
1967	65,561.93	49,430	58,177	7,385	10.58	698
1968	88,145.74	65,699	77,326	10,820	10.95	988
1969	99,479.55	73,268	86,234	13,246	11.33	1,169
1970	131,101.59 100,969.30	95,399 72,581	112,281 85,425	18,821	11.71 12.09	1,607
1971 1972	117,867.14			15,544	12.09	1,286
1972	209,884.58	83,630 147,018	98,430 173,035	19,437 36,850	12.49	1,556 2,861
1974	188,218.02	130,045	153,059	35,159	13.29	2,646
1975	207,373.37	141,304	166,310	41,063	13.70	2,997
1976	152,802.56	102,627	120,789	32,014	14.12	2,267
1977	168,196.73	111,284	130,783	37,220	14.55	2,558
1978	163,269.95	106,392	125,220	38,050	14.98	2,540
1979	158,002.28	101,343	119,277	38,725	15.42	2,511
1980	184,016.59	116,102	136,648	47,369		2,985
1981	112,622.02	69,852	82,213	30,409	16.33	1,862
1982	218,917.42	155,541	183,067	35,850	14.77	2,427
1983	164,512.74	115,406	135,829	28,684	15.00	1,912
1984	164,400.60	113,732	133,859	30,542	15.26	2,001
1985	229,580.71	155,725	183,283	46,298	15.77	2,936
1986	162,643.62	108,581	127,796	34,848	16.06	2,170
1987	242,385.42	159,053	187,200	55,185	16.37	3,371
1988	235,827.38	151,236	178,000	57,827	16.92	3,418
1989	303,524.37	190,886	224,666	78,858	17.26	4,569
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#### ACCOUNT 368.1 TRANSFORMERS

### CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

	ORIGINAL	CALCULATED	ALLOC. BOOK	FUTURE BOOK	REM.	ANNUAL
YEAR	COST	ACCRUED	RESERVE	ACCRUALS	LIFE	ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
QTTD1/T1	OR CURVE IOWA	43_Q1				
	ALVAGE PERCENT					
NET DE	ADVAGE IERCENI	O				
1990	320,509.13	197,370	232,298	88,211	17.62	5,006
1991	305,203.01	183,793	216,318	88,885	18.00	4,938
1992	380,091.00	223,494	263,045	117,046	18.39	6,365
1993	213,123.62	122,759	144,483	68,641	18.68	3,675
1994	269,661.91	151,280	178,051	91,611	19.17	4,779
1995	345,376.13	188,299	221,622	123,754	19.60	6,314
1996	346,572.99	183,268	215,700	130,873	20.05	6,527
1997	328,610.26	168,840	198,719	129,891	20.34	6,386
1998	393,270.36	195,101	229,627	163,643	20.82	7,860
1999	415,993.18	198,762	233,936	182,057	21.31	8,543
2000	416,820.10	191,237	225,080	191,740	21.82	8,787
2001	277,209.09	122,249	143,883	133,326	22.18	6,011
2002	339,286.22	142,772	168,038	171,248	22.71	7,541
2003	178,589.04	71,418	84,057	94,532	23.26	4,064
2004	274,088.52	103,715	122,069	152,020	23.82	6,382
2005	271,203.63	97,037	114,209	156,995	24.23	6,479
2006	112,402.22	37,655	44,319	68,083	24.81	2,744
2007	439,883.72	137,068	161,324	278,560	25.40	10,967
2008	502,972.76	144,705	170,313	332,660	26.00	12,795
2009	419,019.03	110,286	129,803	289,216	26.60	10,873
2010	111,790.33	26,606	31,314	80,476	27.21	2,958
2011	319,569.17	67,813	79,814	239,755	27.84	8,612
2012	416,662.62	77,458	91,165	325,498	28.47	11,433
2013	312,011.11	49,423	58,169	253,842	29.22	8,687
2014	191,322.15	24,968	29,387	161,935	29.98	5,401
2015	325,725.65	33,289	39,180	286,546	30.75	9,319
2016	237,144.88	17,430	20,514	216,631	31.51	6,875
2017	419,681.86	18,550	21,833	397,849	32.40	12,279
2018	864,047.31	12,788	15,051	848,996	33.28	25,511
	13,880,644.67	6,130,356	7,213,446	6,667,199		282,821

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 23.6 2.04



#### ACCOUNT 368.2 TRANSFORMER INSTALLATIONS

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	CURVE IOWA					
NET SALV	AGE PERCENT	U				
1952	265.01	265	265			
1960	74.87	71	75			
1961	2,569.79	2,418	2,570			
1962	772.51	720	773			
1963	520.92	481	521			
1964	1,057.01	968	1,057			
1965	553.62	503	554			
1966	1,976.82	1,778	1,977			
1967	4,684.73	4,175	4,685			
1968	2,054.07	1,813	2,054			
1969	3,477.99	3,041	3,478			
1970	3,318.71	2,873	3,306	13	4.70	3
1971	7,950.60	6,815	7,842	109	5.00	22
1972	19,079.47	16,179	18,618	461	5.32	87
1973	39,355.90	33,014	37,991	1,365	5.64	242
1974	48,310.52	40,070	46,111	2,200	5.97	369
1975	75,092.53	61,554	70,834	4,259	6.31	675
1976	52,402.77	42,431	48,828	3,575	6.66	537
1977	19,341.60	15,457	17,787	1,555	7.03	221
1978	15,126.91	11,924	13,722	1,405	7.41	190
1979	82,048.76	63,740	73,350	8,699	7.81	1,114
1980	58,062.46	44,410	51,106	6,956	8.23	845
1981	55,415.56	41,720	48,010	7,406	8.65	856
1982	67,283.48	54,634	62,871	4,412	8.39	526
1983	63,420.42	50,749	58,400	5,020	8.80	570
1984	61,995.37	49,051	56,446	5,549	9.04	614
1985	105,560.81	82,126	94,508	11,053	9.49	1,165
1986	130,993.68	100,118	115,213	15,781	9.95	1,586
1987	111,435.82	83,577	96,178	15,258	10.42	1,464
1988	140,580.64	103,341	118,922	21,659	10.90	1,987
1989	169,731.98	122,139	140,554	29,178	11.40	2,559
1990	168,731.63	119,158	137,123	31,609	11.75	2,690
1991	222,395.51	153,319	176,435	45,961	12.28	3,743
1992	344,134.08	231,258	266,125	78,009	12.81	6,090
1993	233,310.66	153,332	176,450	56,861	13.24	4,295
1994	327,061.29	209,941	241,594	85,467	13.67	6,252
1995	412,564.44	256,945	295,684	116,880	14.23	8,214
1996	337,439.09	204,218	235,008	102,431	14.68	6,978
1997	392,507.45	229,538	264,145	128,362	15.26	8,412
1998	304,128.09	171,467	197,319	106,809	15.86	6,734
1999	272,377.54	148,173	170,513	101,865	16.34	6,234
2000	218,667.04	114,079	131,278	87,389	16.96	5,153
2001	249,589.00	124,919	143,753	105,836	17.47	6,058



#### ACCOUNT 368.2 TRANSFORMER INSTALLATIONS

### CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	CURVE IOWA AGE PERCENT					
2002	272,946.58	130,605	150,296	122,651	17.98	6,822
2003	454,770.29	206,557	237,699	217,071	18.63	11,652
2004	311,930.27	134,317	154,568	157,362	19.17	8,209
2005	281,410.37	114,365	131,608	149,802	19.72	7,596
2006	311,531.16	118,756	136,661	174,870	20.29	8,619
2007	402,631.01	143,538	165,179	237,452	20.76	11,438
2008	240,308.95	79,230	91,175	149,134	21.35	6,985
2009	227,180.35	68,836	79,214	147,966	21.85	6,772
2010	170,229.48	46,745	53,793	116,436	22.46	5,184
2011	100,432.70	24,787	28,524	71,909	22.89	3,142
2012	204,027.97	44,294	50,972	153,056	23.44	6,530
2013	291,043.84	54,600	62,832	228,212	23.82	9,581
2014	172,522.44	27,017	31,090	141,432	24.24	5,835
2015	233,041.78	29,037	33,415	199,627	24.59	8,118
2016	276,246.29	25,359	29,182	247,064	24.75	9,982
2017	305,002.67	17,507	20,147	284,856	24.61	11,575
2018	684,381.01	14,372	16,539	667,842	23.31	28,650
9	9,767,058.31	4,438,424	5,106,927	4,660,131		243,175

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 19.2 2.49

#### ACCOUNT 369 SERVICES

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUTURE BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	CURVE IOWA					
1947	69.31	61	69			
1954	117.73	98	118			
1955	331.28	275	331			
1956	128.25	106	128			
1958	216.16	175	212	4	9.56	
1959	637.70	511	619	19	9.93	2
1960	1,280.55	1,017	1,231	50	10.30	5
1961	475.99	374	453	23	10.69	2
1962	5,337.79	4,154	5,029	309	11.09	28
1963	13,871.59	10,681	12,932	940	11.50	82
1964	21,194.09	16,141	19,543	1,651	11.92	139
1965	23,171.01	17,448	21,125	2,046	12.35	166
1966	27,593.11	20,535	24,863	2,730	12.79	213
1967	55,753.03	40,978	49,614	6,139	13.25	463
1968	86,147.22	62,526	75,703	10,444	13.71	762
1969	163,497.03	117,097	141,774	21,723	14.19	1,531
1970	233,900.37	165,227	200,047	33,853	14.68	2,306
1971	230,157.10	160,281	194,059	36,098	15.18	2,378
1972	199,195.53	136,648	165,446	33,750	15.70	2,150
1973	268,915.55	181,626	219,902	49,014	16.23	3,020
1974	151,892.02	100,978	122,258	29,634	16.76	1,768
1975	142,058.99	92,878	112,451	29,608	17.31	1,710
1976	154,881.01	99,496	120,464	34,417	17.88	1,925
1977	154,782.22	97,668	118,251	36,531	18.45	1,980
1978	168,406.04	104,311	126,294	42,112	19.03	2,213
1979	198,710.98	120,697	146,133	52,578	19.63	2,678
1980	147,088.31	87,576	106,032	41,056	20.23	2,029
1981	189,999.16	110,770	134,114	55,885	20.85	2,680
1982	164,295.75	107,794	130,511	33,785	19.00	1,778
1983	178,168.22	114,936	139,158	39,010	19.39	2,012
1984	202,884.27	128,547	155,637	47,247	19.81	2,385
1985	174,822.74	108,110	130,893	43,930	20.52	2,141
1986	212,186.50	128,649	155,761	56,426	20.94	2,695
1987	239,864.08	142,431	172,447	67,417	21.38	3,153
1988	250,926.09	144,985	175,540	75,386	22.10	3,411
1989	267,444.16	150,972	182,788	84,656	22.56	3,752
1990	276,082.56	152,094	184,147	91,936	23.03	3,992
1991	261,987.43	139,927	169,416	92,571	23.77	3,894
1992	253,254.26	131,642	159,385	93,869	24.25	3,871
1993	188,556.50	95,692	115,858	72,698	24.62	2,953
1994	171,850.86	84,619	102,452	69,399	25.25	2,748
1995	317,580.76	151,486	183,411	134,170	25.76	5,208
1996	289,522.46	133,528	161,668	127,854	26.28	4,865

#### ACCOUNT 369 SERVICES

### CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	OR CURVE IOWA ALVAGE PERCENT					
1997	337,191.87	150,050	181,672	155,520	26.81	5,801
1998	292,763.58	125,420	151,851	140,913	27.35	5,152
1999	326,527.68	133,713	161,892	164,636	28.12	5,855
2000	179,514.03	70,405	85,242	94,272	28.67	3,288
2001	196,854.47	73,722	89,258	107,596	29.23	3,681
2002	238,512.77	85,388	103,383	135,130	29.59	4,567
2003	221,358.66	75,129	90,962	130,397	30.16	4,324
2004	284,097.68	91,025	110,208	173,890	30.75	5,655
2005	419,803.62	126,361	152,991	266,813	31.35	8,511
2006	148,028.22	41,818	50,631	97,397	31.75	3,068
2007	594,500.93	155,878	188,728	405,773	32.36	12,539
2008	487,427.42	118,250	143,171	344,256	32.79	10,499
2009	340,274.58	75,337	91,214	249,061	33.42	7,452
2010	355,372.36	71,288	86,311	269,061	33.87	7,944
2011	244,850.98	44,073	53,361	191,490	34.17	5,604
2012	386,921.35	61,134	74,018	312,903	34.65	9,030
2013	467,324.36	63,463	76,837	390,487	34.99	11,160
2014	428,519.62	48,594	58,835	369,685	35.18	10,508
2015	396,922.85	35,723	43,252	353,671	35.41	9,988
2016	479,223.23	31,725	38,411	440,812	35.24	12,509
2017	396,183.44	16,323	19,763	376,420	34.87	10,795
2018	812,783.12	12,192	14,761	798,022	32.72	24,389
	14,124,192.58	5,372,756	6,505,019	7,619,174		261,407

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 29.1 1.85

#### ACCOUNT 370.1 METERS

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUTURE BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVO	R CURVE IOWA	33-R1.5				
NET SAL	VAGE PERCENT	0				
1946	62.18	62	62			
1948	60.78	61	61			
1957	465.94	442	466			
1958	553.76	520	554			
1959	3,633.66	3,384	3,634			
1960	693.72	641	694			
1961	2,416.76	2,216	2,417			
1962	6,356.38	5,786	6,326	30	2.96	10
1963	3,346.45	3,023	3,305	41	3.19	13
1964	2,479.56	2,222	2,429	51	3.43	15
1965	4,805.68	4,270	4,668	138	3.68	38
1966	4,449.01	3,918	4,283	166	3.94	42
1967	6,226.72	5,434	5,941	286	4.20	68
1968	13,788.36	11,921	13,033	755	4.47	169
1969	12,260.17	10,495	11,474	786	4.75	165
1970	16,133.28	13,669	14,944	1,189	5.04	236
1971	33,096.30	27,751	30,339	2,757	5.33	517
1972	181,635.43	150,647	164,698	16,937	5.63	3,008
1973	32,180.14	26,388	28,849	3,331	5.94	561
1974	19,241.40	15,597	17,052	2,189	6.25	350
1975	25,958.15	20,782	22,720	3,238	6.58	492
1976	41,525.51	32,830	35,892	5,634	6.91	815
1977	35,731.67	27,881	30,481	5,251	7.25	724
1978	61,110.74	47,018	51,403	9,708	7.61	1,276
1979	35,241.02	26,719	29,211	6,030	7.98	756
1980	45,845.15	34,231	37,424	8,421	8.36	1,007
1981	30,291.64	22,260	24,336	5,956	8.75	681
1982	44,478.89	36,117	39,486	4,993	8.39	595
1983	30,149.19	24,231	26,491	3,658	8.61	425
1984	31,838.37	25,191	27,541	4,297	9.04	475
1985	44,822.28	34,872	38,124	6,698	9.49	706
1986	59,910.26	45,987	50,276	9,634	9.76	987
1987	69,884.95	52,630	57,539	12,346	10.24	1,206
1988	58,876.56	43,633	47,703	11,174	10.57	1,057
1989	68,618.40	49,776	54,418	14,200	11.07	1,283
1990	91,756.96	65,322	71,414	20,343	11.43	1,780
1991	88,822.50	61,723	67,480	21,342	11.96	1,784
1992	128,620.65	87,449	95,605	33,016	12.36	2,671
1993	94,993.11	63,151	69,041	25,952	12.79	2,029
1994	117,189.25	76,079	83,175	34,014	13.24	2,569
1995	113,648.12	71,848	78,549	35,099	13.67	2,568
1996	82,225.93	50,503	55,213	27,013	14.13	1,912
1997	72,625.72	43,256	47,290	25,336	14.60	1,735

#### ACCOUNT 370.1 METERS

### CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR	CURVE IOWA	33-R1.5	. ,	, ,	. ,	, ,
1998	172,646.15	99,444	108,719	63,927	15.09	4,236
1999	114,482.84	63,630	69,565	44,918	15.59	2,881
2000	204,134.21	109,130	119,308	84,826	16.10	5,269
2001	18,573.40	9,556	10,447	8,126	16.51	492
2002	141,327.42	69,491	75,973	65,354	17.06	3,831
2003	73,369.48	34,454	37,668	35,701	17.50	2,040
2004	108,133.69	48,293	52,797	55,337	17.97	3,079
2005	8,325.65	3,518	3,846	4,480	18.45	243
2006	18,087.91	7,190	7,861	10,227	18.95	540
2017	104,882.48	7,006	7,659	97,223	20.97	4,636
	2,782,013.93	1,783,648	1,949,884	832,130		61,972

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 13.4 2.23

#### ACCOUNT 370.2 METER INSTALLATIONS

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUTURE BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVO	R CURVE IOWA	70-R5				
NET SAL	VAGE PERCENT	0				
1924	1,692.35	1,682	1,692			
1925	140.17	139	140			
1926	1,391.77	1,374	1,392			
1927	2,417.49	2,379	2,417			
1928	394.29	387	394			
1929	1,933.34	1,889	1,933			
1930	1,143.78	1,114	1,144			
1931	438.91	426	439			
1932	756.57	731	757			
1933	709.80	684	710			
1934	977.28	939	977			
1935	832.98	798	833			
1936	1,503.29	1,436	1,503			
1937	1,990.29	1,895	1,990			
1938	1,553.07	1,474	1,553			
1939	1,671.01	1,580	1,671			
1940	1,621.94	1,528	1,622			
1941	1,290.02	1,210	1,290			
1942	626.22	585	626			
1943	573.35	533	573			
1944	685.35	634	685	_		_
1945	901.57	829	896	6	5.62	1
1946	1,952.08	1,785	1,928	24	6.00	4
1947	4,518.74	4,105	4,434	85	6.41	13
1948	7,790.86	7,030	7,594	197	6.84	29
1949	7,173.34	6,426	6,942	231	7.29	32
1950	6,263.53	5,568	6,015	249	7.77	32
1951	7,222.31	6,368	6,879	343	8.28	41
1952	6,398.86	5,593	6,042	357	8.81	41
1953	6,617.71	5,732	6,192	426	9.37	45
1954	5,798.93	4,975	5,374	425	9.95	43
1955	7,020.78	5,962	6,440	581	10.56	55
1956	7,046.50	5,919	6,394	652	11.20	58
1957	6,496.29	5,396	5,829	667	11.86	56
1958	10,408.39	8,544	9,229	1,179	12.54	94
1959	6,187.06	5,016	5,418	769	13.25	58
1960	5,203.42	4,164	4,498	705	13.98	50
1961	6,152.92	4,857	5,247	906	14.74	61
1962	4,830.48	3,760	4,062	768	15.51	50
1963	6,755.95	5,182	5,598	1,158	16.31	71
1964	5,905.47	4,461	4,819	1,086	17.12	63
1965	9,135.24	6,793	7,338	1,797	17.95	100
1966	8,225.32	6,016	6,499	1,726	18.80	92

#### ACCOUNT 370.2 METER INSTALLATIONS

(1) (2) (3) (4) (5) (6) (7  SURVIVOR CURVE IOWA 70-R5  NET SALVAGE PERCENT 0  1967 11,000.81 7,911 8,546 2,455 19.66 1968 10,091.49 7,132 7,704 2,387 20.53 1969 12,574.18 8,726 9,426 3,148 21.42 1970 11,918.99 8,120 8,771 3,148 22.31	125 116 147 141 162 162 219 171
NET SALVAGE PERCENT 0  1967	116 147 141 162 162 219 171
1967     11,000.81     7,911     8,546     2,455     19.66       1968     10,091.49     7,132     7,704     2,387     20.53       1969     12,574.18     8,726     9,426     3,148     21.42	116 147 141 162 162 219 171
1968       10,091.49       7,132       7,704       2,387       20.53         1969       12,574.18       8,726       9,426       3,148       21.42	116 147 141 162 162 219 171
1968       10,091.49       7,132       7,704       2,387       20.53         1969       12,574.18       8,726       9,426       3,148       21.42	116 147 141 162 162 219 171
1969 12,574.18 8,726 9,426 3,148 21.42	147 141 162 162 219 171
	141 162 162 219 171
	162 162 219 171
1971 13,530.11 9,040 9,765 3,765 23.23	162 219 171
1972 13,371.10 8,760 9,463 3,908 24.14	219 171
1973 17,928.52 11,505 12,428 5,501 25.08	171
1974 13,827.10 8,689 9,386 4,441 26.01	
1975 11,535.05 7,092 7,661 3,874 26.96	144
1976 10,164.74 6,110 6,600 3,565 27.92	128
1977 17,973.20 10,558 11,405 6,568 28.88	227
1978 16,047.66 9,204 9,942 6,106 29.85	205
1979 28,716.62 16,069 17,358 11,359 30.83	368
1980 21,372.32 11,660 12,596 8,776 31.81	276
1981 45,518.48 24,196 26,137 19,381 32.79	591
1982 27,304.31 14,449 15,608 11,696 32.25	363
1983 18,859.62 9,705 10,484 8,376 33.25	252
1984 23,990.96 11,995 12,957 11,034 34.25	322
1985 32,483.36 15,767 17,032 15,451 35.25	438
1986 32,248.75 15,183 16,401 15,848 36.25	437
1987 34,888.93 15,916 17,193 17,696 37.25	475
1988 33,863.71 14,954 16,154 17,710 38.25	463
1989 34,393.64 14,686 15,864 18,530 39.25	472
1990 31,762.75 13,099 14,150 17,613 40.25	438
1991 29,703.79 11,816 12,764 16,940 41.25	411
1992 34,237.09 13,120 14,173 20,064 42.25	475
1993 27,602.21 10,227 11,048 16,554 43.12	384
1994 31,665.96 11,327 12,236 19,430 43.99	442
1995 35,531.90 12,191 13,169 22,363 44.99	497
1996 27,275.92 8,960 9,679 17,597 45.99	383
1997 35,354.15 11,098 11,988 23,366 46.99	497
1998 18,212.36 5,451 5,888 12,324 47.99	257
2000 55,729.01 15,052 16,260 39,469 49.99	790
2001 9,052.63 2,313 2,499 6,554 50.99	129
2002 57,999.50 13,972 15,093 42,906 51.99	825
2003 120,585.50 27,288 29,477 91,108 52.99 1	1,719
2004 123,372.42 26,118 28,214 95,158 53.99 1	1,763
2005 164,762.80 32,475 35,080 129,683 54.99 2	2,358
2006 21,266.55 3,881 4,192 17,075 55.99	305
2007 22,560.24 3,788 4,092 18,468 56.99	324
2008 43,906.69 6,731 7,271 36,636 57.99	632
2009 30,704.57 4,259 4,601 26,104 58.99	443
2010 20,815.15 2,583 2,790 18,025 59.99	300

#### ACCOUNT 370.2 METER INSTALLATIONS

### CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE IOWA /AGE PERCENT					
2011	12,947.73	1,418	1,532	11,416	60.99	187
2012	32,713.14	3,104	3,353	29,360	61.99	474
2013	41,556.18	3,337	3,605	37,951	62.99	602
2014	45,114.46	2,964	3,202	41,912	63.99	655
2015	115,391.56	5,897	6,370	109,022	64.99	1,678
2016	20,247.24	739	798	19,449	65.99	295
2017	21,506.81	471	509	20,998	66.99	313
2018	10,000.00	73	79	9,921	67.99	146
	1,897,530.98	659,077	711,001	1,186,530		25,215

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 47.1 1.33

#### ACCOUNT 370.3 ELECTRONIC METERS

### CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	OR CURVE IOWA LVAGE PERCENT					
1995	269.58	243	270			
1996	106,183.00	94,131	106,183			
1997	101,891.27	88,941	101,891			
1998	29,001.50	24,790	29,002			
1999	189,211.09	158,294	189,143	68	3.81	18
2000	79,019.58	64,464	77,027	1,993	4.18	477
2001	144,470.69	114,536	136,857	7,614	4.57	1,666
2002	75,950.12	58,269	69,625	6,325	5.01	1,262
2003	96,734.06	71,525	85,464	11,270	5.46	2,064
2004	198,739.65	140,628	168,034	30,706	5.99	5,126
2005	296,181.18	199,123	237,928	58,253	6.58	8,853
2006	207,615.33	131,587	157,231	50,384	7.22	6,978
2007	2,305,534.02	1,365,337	1,631,415	674,119	7.92	85,116
2008	304,366.63	166,489	198,935	105,432	8.69	12,133
2010	88,983.91	40,167	47,995	40,989	10.33	3,968
2011	231,468.19	92,541	110,575	120,893	11.26	10,737
2012	101,600.67	35,337	42,224	59,377	12.19	4,871
2013	64,307.47	18,958	22,652	41,655	13.16	3,165
2014	85,443.10	20,609	24,625	60,818	14.16	4,295
2015	44,174.72	8,287	9,902	34,273	15.16	2,261
2016	129,037.28	17,291	20,661	108,376	16.16	6,706
2018	40,000.00	1,072	1,281	38,719	18.16	2,132
	4,920,183.04	2,912,619	3,468,920	1,451,263		161,828

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 9.0 3.29



#### ACCOUNT 371 INSTALLATIONS ON CUSTOMERS PREMISES

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	CURVE IOWA AGE PERCENT					
1926	639.76	640	640			
1929	5,301.85	5,302	5,302			
1940	197.22	197	197			
1941	263.00	263	263			
1945	32.51	33	33			
1946	282.38	282	282			
1948	1,446.24	1,446	1,446			
1949	252.92	253	253			
1950	17.08	17	17			
1951	452.20	452	452			
1952	126.73	127	127			
1954	1,716.75	1,717	1,717			
1955	5,498.85	5,499	5,499			
1956	70.60	71	71			
1957	1,453.52	1,454	1,454			
1958	8,441.65	8,442	8,442			
1959	4,089.79	4,038	4,037	53	0.38	53
1960	1,502.28	1,459	1,459	43	0.87	43
1961	2,691.69	2,568	2,568	124	1.38	90
1962	2,247.98	2,107	2,107	141	1.88	75
1963	5,653.38	5,207	5,206	447	2.37	189
1964	8,009.19	7,240	7,239	770	2.88	267
1965	3,692.70	3,277	3,276	417	3.38	123
1966	9,144.96	7,965	7,964	1,181	3.87	305
1967	13,826.11	11,807	11,805	2,021	4.38	461
1968	14,155.40	11,853	11,851	2,304	4.88	472 329
1969 1970	9,874.72 14,077.75	8,107 11,319	8,106	1,769	5.37	
1970	5,806.35	4,572	11,317 4,571	2,761 1,235	5.88 6.38	470 194
1971	9,149.01	7,054	7,053	2,096	6.87	305
1973	8,762.52	6,607	6,606	2,157	7.38	292
1974	13,148.66	9,695	9,693	3,456	7.38	439
1975	4,349.29	3,136	3,135	1,214	8.37	145
1976	3,167.23	2,230	2,230	937	8.88	106
1977	8,550.67	5,877	5,876	2,675	9.38	285
1978	2,728.59	1,831	1,831	898	9.87	91
1979	1,611.61	1,054	1,051	558	10.38	54
1980	11,888.84	7,577	7,576	4,313	10.88	396
1981	16,091.90	9,993	9,991	6,101	11.37	537
1982	18,825.75	14,468	14,465	4,361	10.92	399
1983	16,361.02	12,400	12,398	3,963	11.26	352
1984	21,933.53	16,376	16,373	5,561	11.62	479
1985	18,730.02	13,763	13,761	4,969	12.00	414
	•	•	•	,		



#### ACCOUNT 371 INSTALLATIONS ON CUSTOMERS PREMISES

### CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR	ORIGINAL	CALCULATED	ALLOC. BOOK	FUTURE BOOK	REM. LIFE	ANNUAL
(1)	COST (2)	ACCRUED (3)	RESERVE (4)	ACCRUALS (5)	(6)	ACCRUAL (7)
			(1)	(3)	(0)	( / /
	OR CURVE IOWA					
NET SA	LVAGE PERCENT	0				
1986	9,892.66	7,146	7,145	2,748	12.39	222
1987	16,433.36	11,658	11,656	4,777	12.80	373
1988	23,894.79	16,626	16,623	7,272	13.23	550
1989	33,112.12	22,662	22,658	10,454	13.49	775
1990	34,945.77	23,396	23,392	11,554	13.95	828
1991	24,522.70	16,104	16,101	8,422	14.24	591
1992	35,655.90	22,930	22,926	12,730	14.57	874
1993	11,557.94	7,302	7,301	4,257	14.79	288
1994	42,231.26	26,074	26,069	16,162	15.18	1,065
1995	59,784.13	36,110	36,104	23,680	15.41	1,537
1996	12,240.27	7,216	7,215	5,025	15.67	321
1997	31,304.65	17,969	17,966	13,339	15.96	836
1998	28,328.08	15,796	15,793	12,535	16.26	771
1999	15,580.00	8,446	8,444	7,136	16.47	433
2000	34,352.12	18,049	18,046	16,306	16.71	976
2001	43,210.24	21,929	21,925	21,285	16.98	1,254
2002	72,233.26	35,394	35,388	36,845	17.17	2,146
2003	28,932.89	13,633	13,631	15,302	17.39	880
2004	23,342.69	10,560	10,558	12,785	17.55	728
2005	12,247.87	5,308	5,307	6,941	17.65	393
2006	121,724.01	50,211	50,202	71,522	17.80	4,018
2007	70,687.37	27,724	27,719	42,968	17.82	2,411
2008	57,874.73	21,391	21,387	36,488	17.91	2,037
2009	37,620.80	13,047	13,045	24,576	17.90	1,373
2010	20,099.57	6,492	6,491	13,609	17.82	764
2011	90,908.30	27,000	26,995	63,913	17.75	3,601
2012	27,331.04	7,390	7,389	19,942	17.54	1,137
2013	74,694.92	18,031	18,028	56,667	17.28	3,279
2014	57,287.81	12,042	12,040	45,248	16.91	2,676
2015	229,472.63	40,479	40,471	189,002	16.34	11,567
2016	175,190.59	24,316	24,311	150,880	15.52	9,722
2017	78,404.62	7,495	7,493	70,912	14.20	4,994
2018	22,468.88	955	955	21,514	11.26	1,911
	1,933,832.17	820,656	820,517	1,113,315		72,696

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 15.3 3.76



#### ACCOUNT 371.5 INSTALLATIONS ON CUSTOMERS PREMISES - DUSK TO DAWN LIGHTS

### CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

	ORIGINAL	CALCULATED	ALLOC. BOOK	FUTURE BOOK	REM.	ANNUAL
YEAR	COST	ACCRUED	RESERVE	ACCRUALS	LIFE	ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVO	R CURVE IOWA	20-R1.5				
NET SAL	VAGE PERCENT	0				
1973	1,435.43	1,435	1,435			
1974	6,471.13	6,471	6,471			
1975	3,583.76	3,584	3,584			
1976	4,402.59	4,403	4,403			
1977	4,697.22	4,697	4,697			
1978	4,229.73	4,230	4,230			
1979	5,985.23	5,892	5,985			
1980	4,861.55	4,704	4,862			
1981	2,917.37	2,774	2,917			
1982	1,561.73	1,512	1,562			
1983	2,231.26	2,147	2,231			
1984	2,149.66	2,047	2,150			
1985	2,342.27	2,220	2,342			
1986	990.28	929	990			
1987	1,925.20	1,793	1,925			
1988	2,301.67	2,117	2,302			
1989	1,493.31	1,358	1,493			
1990	4,328.13	3,901	4,328			
1991	2,572.95	2,286	2,573			
1992	4,859.73	4,261	4,860			
1993	2,315.34	2,003	2,310	5	3.95	1
1994	8,619.58	7,349	8,477	143	4.24	34
1995	9,663.67	8,108	9,353	311	4.51	69
1996	37,963.03	31,263	36,062	1,901	4.82	394
1997	53,663.03	43,150	49,774	3,889	5.24	742
1998	61,778.99	48,509	55,956	5,823	5.61	1,038
1999	61,882.53	47,427	54,708	7,175	5.94	1,208
2000	30,918.71	22,994	26,524	4,395	6.38	689
2008	14,410.22	7,354	8,483	5,927	10.08	588
2017	1,101.12	114	131	970	12.99	75
	347,656.42	281,032	317,118	30,538		4,838

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 6.3 1.39



#### ACCOUNT 373 STREET LIGHTING AND SIGNAL SYSTEMS

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUTURE BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVOR	CURVE IOWA	34-L0				
NET SALV	AGE PERCENT	0				
1010	600 11	F.6.2	F 7 7	112	6.26	1.0
1919 1920	690.11 78.93	563 64	577 66	113 13	6.40	18 2
1921	197.95	160	164	34	6.54	5
1923	547.91	438	449	99	6.84	14
1924	49.04	39	40	9	6.99	1
1925	238.98	189	194	45	7.14	6
1927	425.32	332	340	85	7.44	11
1928	265.04	206	211	54	7.59	7
1930	1,426.08	1,095	1,122	304	7.90	38
1931	49.51	38	39	11	8.06	1
1932	46.58	35	36	11	8.22	1
1933	110.01	83	85	25	8.38	3
1934	286.95	215	220	67	8.54	8
1935	407.95	303	310	98	8.71	11
1936	4,685.17	3,463	3,548	1,137	8.87	128
1937	516.44	379	388	128	9.04	14
1938	240.46	175	179	61	9.21	7
1939	140.03	101	103	37	9.38	4
1940	312.57	225	230	83	9.55	9
1941	75.92	54	55	21	9.73	2
1942	110.15	78	80	30	9.90	3
1945	21.96	15	15	7	10.44	1
1946	42.08	29	30	12	10.62	1
1947	92.06	63	65	27	10.81	2
1948	1,500.41	1,015	1,040	460	10.99	42
1949	1,089.31	731	749	340	11.18	30
1950	2,227.95	1,483	1,519	709	11.37	62
1951	1,464.09	966	990	474	11.57	41
1952	2,639.54	1,727	1,769	871	11.76	74
1953	3,633.93	2,356	2,414	1,220	11.96	102
1954	2,069.73	1,329	1,361	709	12.16	58
1955	2,874.99	1,830	1,875	1,000	12.36	81
1956	14,409.85	9,082	9,304	5,106	12.57	406
1957	2,197.18	1,372	1,405	792	12.77	62
1958	1,286.54	795	814	473	12.98	36
1959	9,297.70	5,691	5,830	3,468	13.19	263
1960	1,016.43	616	631	385	13.41	29
1961	2,731.72	1,637	1,677	1,055	13.62	77
1962	2,340.42	1,388	1,422	918	13.84	66
1963	6,698.15	3,926	4,022	2,676	14.07	190
1964	5,428.17	3,147	3,224	2,204	14.29	154
1965	39,142.78	22,426	22,974	16,169	14.52	1,114
1966	44,280.85	25,071	25,683	18,598	14.75	1,261

#### ACCOUNT 373 STREET LIGHTING AND SIGNAL SYSTEMS

SURVIVOR CURVE IOWA 34-LO NET SALVAGE PERCENT 0  1967	YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
1967 32,878.60 18,393 18,842 14,037 14,98 937 1968 17,911.43 9,893 10,135 7,776 15,22 511 1969 8,832.90 4,816 4,934 3,899 15,46 252 1970 8,755.71 4,713 4,828 3,928 15,70 250 1971 7,197.16 3,821 3,914 3,283 15,95 206 1972 2,901.16 1,520 1,557 1,344 16,19 83 1973 20,105.56 10,378 10,631 9,475 16,45 576 1974 9,075.74 4,618 4,731 4,345 16,70 260 1975 45,608.40 22,858 23,416 22,192 16,96 1,308 1976 15,540.52 7,670 7,857 7,684 17,22 446 1977 11,303.67 5,489 5,623 5,681 17,49 325 1978 18,153.87 8,671 8,883 9,271 17,76 522 1979 14,552.24 6,835 7,002 7,550 18.03 419 1980 14,675.05 6,772 6,937 7,738 18.31 423 1981 28,568.02 12,948 13,264 15,304 18,59 823 1982 57,446.59 40,190 41,171 16,276 15,56 1,046 1984 28,562.45 19,565 20,043 8,519 15,75 541 1985 16,412.86 11,079 11,349 5,064 16,01 316 1986 7,146.63 4,771 4,887 2,260 16,06 141 1987 15,178.96 9,960 10,203 4,976 16,37 304 1990 28,840.51 18,089 18,531 10,701 16,62 644 1991 20,003.14 12,318 12,619 7,384 17,00 434 1992 28,840.51 18,089 18,531 10,701 16,62 644 1991 20,003.14 12,318 12,619 7,384 17,00 434 1992 28,840.51 18,089 18,531 10,310 16,79 614 1991 20,003.14 12,318 12,619 7,384 17,00 434 1992 19,651.69 11,917 12,208 7,444 17,00 434 1997 9,269.65 5,58 5,182 4,170 17,34 18,59 1998 5,464.77 2,924 2,995 2,470 17,82 139 1999 5,538.98 2,884 2,954 2,585 17,96 144 2000 27,875.30 14,130 14,475 13,400 17,04 2001 64,751.28 31,845 32,623 32,128 18.09 1,776 2002 23,254.42 11,051 11,321 11,933 18.22 655 2003 70,352.20 32,278 33,066 37,286 18,36 2,227 2008 33,994.52 12,350 12,652 21,343 18.40 1,160 2009 9,280.23 3,165 3,242 6,038 18.36 229							
1968         17,911.43         9,893         10,135         7,776         15.22         511           1969         8,832.90         4,816         4,934         3,899         15.46         252           1970         8,755.71         4,713         4,828         3,928         15.70         250           1971         7,197.16         3,821         3,914         3,283         15.95         206           1972         2,901.16         1,520         1,557         1,344         16.19         83           1973         20,105.56         10,378         10,631         9,475         16.45         576           1974         9,075.74         4,618         4,731         4,345         16.70         260           1975         45,608.40         22,858         23,416         22,192         16.96         1,308           1976         15,540.52         7,670         7,857         7,684         17.22         446           1977         11,303.67         5,489         5,623         5,681         17.49         325           1978         18,153.87         8,671         8,833         9,271         17.76         522           1979         14,552.2	NEI SALV	AGE TERCENT	O				
1969	1967	32,878.60	18,393	18,842	14,037	14.98	937
1970         8,755.71         4,713         4,828         3,928         15.70         250           1971         7,197.16         3,821         3,914         3,283         15.95         206           1972         2,901.16         1,520         1,557         1,344         16.19         83           1973         20,105.56         10,378         10,631         9,475         16.45         576           1974         9,075.74         4,618         4,731         4,345         16.70         260           1976         15,540.52         7,670         7,857         7,684         17.22         446           1977         11,303.67         5,489         5,623         5,681         17.49         325           1978         18,153.87         8,671         8,883         9,271         17.76         522           1979         14,552.24         6,835         7,002         7,550         18.03         419           1980         14,675.05         6,772         6,937         7,738         18.31         423           1981         28,568.02         12,948         13,264         15,304         18.59         823           1982         57,446.59<	1968		9,893				
1971         7,197.16         3,821         3,914         3,283         15.95         206           1972         2,901.16         1,520         1,557         1,344         16.19         83           1973         20,105.56         10,378         10,631         9,475         16.45         576           1974         9,075.74         4,618         4,731         4,345         16.70         260           1975         45,608.40         22,858         23,416         22,192         16.96         1,308           1976         15,540.52         7,670         7,857         7,684         17.22         446           1977         11,303.67         5,489         5,623         5,681         17.49         325           1978         14,552.24         6,835         7,002         7,550         18.03         419           1980         14,675.05         6,772         6,937         7,738         18.31         423           1981         28,568.02         12,948         13,264         15,304         18.59         823           1982         57,446.59         40,190         41,171         16,276         15.56         1,046           1983 <td< td=""><td>1969</td><td>8,832.90</td><td>4,816</td><td>4,934</td><td>3,899</td><td>15.46</td><td>252</td></td<>	1969	8,832.90	4,816	4,934	3,899	15.46	252
1972         2,901.16         1,520         1,557         1,344         16.19         83           1973         20,105.56         10,378         10,631         9,475         16.45         576           1974         9,075.74         4,618         4,731         4,345         16.70         260           1975         45,608.40         22,888         23,416         22,192         16.96         1,308           1976         15,540.52         7,670         7,857         7,684         17.22         446           1977         11,303.67         5,489         5,623         5,681         17.49         325           1978         18,153.87         8,671         8,883         9,271         17.76         522           1979         14,552.24         6,835         7,002         7,550         18.03         419           1980         14,675.05         6,772         6,937         7,738         18.31         423           1981         28,568.02         12,948         13,264         15,304         18.59         823           1982         57,446.59         40,190         41,171         16,275         15.56         1,046           1983 <t< td=""><td></td><td></td><td></td><td></td><td>3,928</td><td>15.70</td><td>250</td></t<>					3,928	15.70	250
1973         20,105,56         10,378         10,631         9,475         16,45         576           1974         9,075,74         4,618         4,731         4,345         16,70         260           1975         45,608,40         22,858         23,416         22,192         16,96         1,308           1976         15,540,52         7,670         7,857         7,684         17,22         446           1977         11,303,67         5,489         5,623         5,681         17,49         325           1978         18,153,87         8,671         8,883         9,271         17,76         522           1979         14,552,24         6,835         7,002         7,550         18,03         419           1980         14,675,05         6,772         6,937         7,738         18,31         423           1981         28,568,02         12,948         13,264         15,304         18.59         823           1982         57,446,59         40,190         41,171         16,276         15,56         1,046           1983         44,257.57         30,578         31,325         12,933         15,77         820           1984				3,914	3,283	15.95	
1974         9,075.74         4,618         4,731         4,345         16.70         260           1975         45,608.40         22,858         23,416         22,192         16.96         1,308           1976         15,540.52         7,670         7,857         7,684         17.22         446           1977         11,303.67         5,489         5,623         5,681         17.49         325           1978         18,153.87         8,671         8,883         9,271         17.76         522           1979         14,552.24         6,835         7,002         7,550         18.03         419           1980         14,675.05         6,772         6,937         7,738         18.31         423           1981         28,568.02         12,948         13,264         15,304         18.59         823           1982         57,446.59         40,190         41,171         16,276         15.56         1,046           1983         44,257.57         30,578         31,325         12,933         15.75         541           1985         16,412.86         11,079         11,349         5,064         16.01         316           1986		2,901.16			1,344	16.19	
1975         45,608.40         22,858         23,416         22,192         16.96         1,308           1976         15,540.52         7,670         7,857         7,684         17.22         446           1977         11,303.67         5,489         5,623         5,681         17.49         325           1978         18,153.87         8,671         8,883         9,271         17.76         522           1979         14,552.24         6,835         7,002         7,550         18.03         419           1980         14,675.05         6,772         6,937         7,738         18.31         423           1981         28,568.02         12,948         13,264         15,304         18.59         823           1982         57,446.59         40,190         41,171         16,276         15.56         1,046           1983         44,257.57         30,578         31,325         12,933         15.77         820           1984         28,562.45         19,565         20,043         8,519         15.75         541           1985         16,412.86         11,079         11,349         5,064         16.06         141           1987						16.45	
1976         15,540.52         7,670         7,857         7,684         17.22         446           1977         11,303.67         5,489         5,623         5,681         17.49         325           1978         18,153.87         8,671         8,883         9,271         17.76         522           1979         14,552.24         6,835         7,002         7,550         18.03         419           1980         14,675.05         6,772         6,937         7,738         18.31         423           1981         28,568.02         12,948         13,264         15,304         18.59         823           1982         57,446.59         40,190         41,171         16,276         15.56         1,046           1983         44,257.57         30,578         31,325         12,933         15.77         820           1984         28,562.45         19,565         20,043         8,519         15.75         541           1985         16,412.86         11,079         11,349         5,064         16.01         316           1986         7,146.63         4,771         4,887         2,260         16.06         141           1987							
1977       11,303.67       5,489       5,623       5,681       17.49       325         1978       18,153.87       8,671       8,883       9,271       17.76       522         1979       14,552.24       6,835       7,002       7,550       18.03       419         1980       14,675.05       6,772       6,937       7,738       18.31       423         1981       28,568.02       12,948       13,264       15,304       18.59       823         1982       57,446.59       40,190       41,171       16,276       15.56       1,046         1983       44,257.57       30,578       31,325       12,933       15.77       820         1984       28,562.45       19,565       20,043       8,519       15.75       541         1985       16,412.86       11,079       11,349       5,064       16.01       316         1987       15,178.96       9,960       10,203       4,976       16.37       304         1988       40,706.19       26,353       26,996       13,710       16.48       832         1989       30,854.36       19,673       20,153       10,701       16.62       644							
1978       18,153.87       8,671       8,883       9,271       17.76       522         1979       14,552.24       6,835       7,002       7,550       18.03       419         1980       14,675.05       6,772       6,937       7,738       18.31       423         1981       28,568.02       12,948       13,264       15,304       18.59       823         1982       57,446.59       40,190       41,171       16,276       15.56       1,046         1983       44,257.57       30,578       31,325       12,933       15.77       820         1984       28,562.45       19,565       20,043       8,519       15.75       541         1985       16,412.86       11,079       11,349       5,064       16.01       316         1987       7,146.63       4,771       4,887       2,260       16.06       141         1987       15,178.96       9,960       10,203       4,976       16.37       304         1988       40,706.19       26,353       26,996       13,710       16.48       832         1989       30,854.36       19,673       20,153       10,701       16.62       644							
1979       14,552.24       6,835       7,002       7,550       18.03       419         1980       14,675.05       6,772       6,937       7,738       18.31       423         1981       28,568.02       12,948       13,264       15,304       18.59       823         1982       57,446.59       40,190       41,171       16,276       15.56       1,046         1983       44,257.57       30,578       31,325       12,933       15.77       820         1984       28,562.45       19,565       20,043       8,519       15.75       541         1985       16,412.86       11,079       11,349       5,064       16.01       316         1986       7,146.63       4,771       4,887       2,260       16.06       141         1987       15,178.96       9,960       10,203       4,976       16.37       304         1988       40,706.19       26,353       26,996       13,710       16.48       832         1989       30,854.36       19,673       20,153       10,701       16.62       644         1990       28,840.51       18,089       18,531       10,701       16.62       644 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
1980       14,675.05       6,772       6,937       7,738       18.31       423         1981       28,568.02       12,948       13,264       15,304       18.59       823         1982       57,446.59       40,190       41,171       16,276       15.56       1,046         1983       44,257.57       30,578       31,325       12,933       15.77       820         1984       28,562.45       19,565       20,043       8,519       15.75       541         1985       16,412.86       11,079       11,349       5,064       16.01       316         1986       7,146.63       4,771       4,887       2,260       16.06       141         1987       15,178.96       9,960       10,203       4,976       16.37       304         1988       40,706.19       26,353       26,996       13,710       16.48       832         1989       30,854.36       19,673       20,153       10,701       16.62       644         1990       28,840.51       18,089       18,531       10,701       16.62       644         1991       20,003.14       12,318       12,619       7,384       17.00       434							
1981       28,568.02       12,948       13,264       15,304       18.59       823         1982       57,446.59       40,190       41,171       16,276       15.56       1,046         1983       44,257.57       30,578       31,325       12,933       15.77       820         1984       28,562.45       19,565       20,043       8,519       15.75       541         1985       16,412.86       11,079       11,349       5,064       16.01       316         1986       7,146.63       4,771       4,887       2,260       16.06       141         1987       15,178.96       9,960       10,203       4,976       16.37       304         1988       40,706.19       26,353       26,996       13,710       16.48       832         1989       30,854.36       19,673       20,153       10,701       16.62       644         1990       28,840.51       18,089       18,531       10,310       16.79       614         1991       20,003.14       12,318       12,619       7,384       17.00       434         1992       19,651.69       11,917       12,208       7,444       17.04       437					7,550		
1982       57,446.59       40,190       41,171       16,276       15.56       1,046         1983       44,257.57       30,578       31,325       12,933       15.77       820         1984       28,562.45       19,565       20,043       8,519       15.75       541         1985       16,412.86       11,079       11,349       5,064       16.01       316         1986       7,146.63       4,771       4,887       2,260       16.06       141         1987       15,178.96       9,960       10,203       4,976       16.37       304         1988       40,706.19       26,353       26,996       13,710       16.48       832         1989       30,854.36       19,673       20,153       10,701       16.62       644         1990       28,840.51       18,089       18,531       10,310       16.79       614         1991       20,003.14       12,318       12,619       7,384       17.00       434         1992       19,651.69       11,917       12,208       7,444       17.04       437         1993       116,059.33       69,206       70,896       45,163       17.18       2,629		•					
1983       44,257.57       30,578       31,325       12,933       15.77       820         1984       28,562.45       19,565       20,043       8,519       15.75       541         1985       16,412.86       11,079       11,349       5,064       16.01       316         1986       7,146.63       4,771       4,887       2,260       16.06       141         1987       15,178.96       9,960       10,203       4,976       16.37       304         1988       40,706.19       26,353       26,996       13,710       16.48       832         1989       30,854.36       19,673       20,153       10,701       16.62       644         1990       28,840.51       18,089       18,531       10,310       16.79       614         1991       20,003.14       12,318       12,619       7,384       17.00       434         1992       19,651.69       11,917       12,208       7,444       17.04       437         1993       116,059.33       69,206       70,896       45,163       17.18       2,629         1994       35,414.63       20,739       21,245       14,170       17.34       817							
1984         28,562.45         19,565         20,043         8,519         15.75         541           1985         16,412.86         11,079         11,349         5,064         16.01         316           1986         7,146.63         4,771         4,887         2,260         16.06         141           1987         15,178.96         9,960         10,203         4,976         16.37         304           1988         40,706.19         26,353         26,996         13,710         16.48         832           1989         30,854.36         19,673         20,153         10,701         16.62         644           1990         28,840.51         18,089         18,531         10,310         16.79         614           1991         20,003.14         12,318         12,619         7,384         17.00         434           1992         19,651.69         11,917         12,208         7,444         17.04         437           1993         116,059,33         69,206         70,896         45,163         17.18         2,629           1994         35,414.63         20,739         21,245         14,170         17.34         817           1995 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
1985         16,412.86         11,079         11,349         5,064         16.01         316           1986         7,146.63         4,771         4,887         2,260         16.06         141           1987         15,178.96         9,960         10,203         4,976         16.37         304           1988         40,706.19         26,353         26,996         13,710         16.48         832           1989         30,854.36         19,673         20,153         10,701         16.62         644           1990         28,840.51         18,089         18,531         10,310         16.79         614           1991         20,003.14         12,318         12,619         7,384         17.00         434           1992         19,651.69         11,917         12,208         7,444         17.04         437           1993         116,059.33         69,206         70,896         45,163         17.18         2,629           1994         35,414.63         20,739         21,245         14,170         17.34         817           1995         24,801.19         14,221         14,568         10,233         17.48         585           1996<							
1986       7,146.63       4,771       4,887       2,260       16.06       141         1987       15,178.96       9,960       10,203       4,976       16.37       304         1988       40,706.19       26,353       26,996       13,710       16.48       832         1989       30,854.36       19,673       20,153       10,701       16.62       644         1990       28,840.51       18,089       18,531       10,310       16.79       614         1991       20,003.14       12,318       12,619       7,384       17.00       434         1992       19,651.69       11,917       12,208       7,444       17.04       437         1993       116,059,33       69,206       70,896       45,163       17.18       2,629         1994       35,414.63       20,739       21,245       14,170       17.34       817         1995       24,801.19       14,221       14,568       10,233       17.48       585         1996       9,844.17       5,537       5,672       4,172       17.50       238         1997       9,226.96       5,058       5,182       4,045       17.72       228 <tr< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr<>							
1987       15,178.96       9,960       10,203       4,976       16.37       304         1988       40,706.19       26,353       26,996       13,710       16.48       832         1989       30,854.36       19,673       20,153       10,701       16.62       644         1990       28,840.51       18,089       18,531       10,310       16.79       614         1991       20,003.14       12,318       12,619       7,384       17.00       434         1992       19,651.69       11,917       12,208       7,444       17.04       437         1993       116,059.33       69,206       70,896       45,163       17.18       2,629         1994       35,414.63       20,739       21,245       14,170       17.34       817         1995       24,801.19       14,221       14,568       10,233       17.48       585         1996       9,844.17       5,537       5,672       4,172       17.50       238         1997       9,226.96       5,058       5,182       4,045       17.72       228         1998       5,464.77       2,924       2,995       2,470       17.82       139 <tr< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr<>							
1988       40,706.19       26,353       26,996       13,710       16.48       832         1989       30,854.36       19,673       20,153       10,701       16.62       644         1990       28,840.51       18,089       18,531       10,310       16.79       614         1991       20,003.14       12,318       12,619       7,384       17.00       434         1992       19,651.69       11,917       12,208       7,444       17.04       437         1993       116,059.33       69,206       70,896       45,163       17.18       2,629         1994       35,414.63       20,739       21,245       14,170       17.34       817         1995       24,801.19       14,221       14,568       10,233       17.48       585         1996       9,844.17       5,537       5,672       4,172       17.50       238         1997       9,226.96       5,058       5,182       4,045       17.72       228         1998       5,464.77       2,924       2,995       2,470       17.82       139         1999       5,538.98       2,884       2,954       2,585       17.96       144							
1989       30,854.36       19,673       20,153       10,701       16.62       644         1990       28,840.51       18,089       18,531       10,310       16.79       614         1991       20,003.14       12,318       12,619       7,384       17.00       434         1992       19,661.69       11,917       12,208       7,444       17.04       437         1993       116,059.33       69,206       70,896       45,163       17.18       2,629         1994       35,414.63       20,739       21,245       14,170       17.34       817         1995       24,801.19       14,221       14,568       10,233       17.48       585         1996       9,844.17       5,537       5,672       4,172       17.50       238         1997       9,226.96       5,058       5,182       4,045       17.72       228         1998       5,464.77       2,924       2,995       2,470       17.82       139         1999       5,538.98       2,884       2,954       2,585       17.96       144         2000       27,875.30       14,130       14,475       13,400       18.00       744							
1990       28,840.51       18,089       18,531       10,310       16.79       614         1991       20,003.14       12,318       12,619       7,384       17.00       434         1992       19,651.69       11,917       12,208       7,444       17.04       437         1993       116,059.33       69,206       70,896       45,163       17.18       2,629         1994       35,414.63       20,739       21,245       14,170       17.34       817         1995       24,801.19       14,221       14,568       10,233       17.48       585         1996       9,844.17       5,537       5,672       4,172       17.50       238         1997       9,226.96       5,058       5,182       4,045       17.72       228         1998       5,464.77       2,924       2,995       2,470       17.82       139         1999       5,538.98       2,884       2,954       2,585       17.96       144         2000       27,875.30       14,130       14,475       13,400       18.00       744         2001       64,751.28       31,845       32,623       32,128       18.09       1,776 <tr< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr<>							
1991       20,003.14       12,318       12,619       7,384       17.00       434         1992       19,651.69       11,917       12,208       7,444       17.04       437         1993       116,059.33       69,206       70,896       45,163       17.18       2,629         1994       35,414.63       20,739       21,245       14,170       17.34       817         1995       24,801.19       14,221       14,568       10,233       17.48       585         1996       9,844.17       5,537       5,672       4,172       17.50       238         1997       9,226.96       5,058       5,182       4,045       17.72       228         1998       5,464.77       2,924       2,995       2,470       17.82       139         1999       5,538.98       2,884       2,954       2,585       17.96       144         2000       27,875.30       14,130       14,475       13,400       18.00       744         2001       64,751.28       31,845       32,623       32,128       18.09       1,776         2002       23,254.42       11,051       11,321       11,933       18.22       655 <tr< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr<>							
1992       19,651.69       11,917       12,208       7,444       17.04       437         1993       116,059.33       69,206       70,896       45,163       17.18       2,629         1994       35,414.63       20,739       21,245       14,170       17.34       817         1995       24,801.19       14,221       14,568       10,233       17.48       585         1996       9,844.17       5,537       5,672       4,172       17.50       238         1997       9,226.96       5,058       5,182       4,045       17.72       228         1998       5,464.77       2,924       2,995       2,470       17.82       139         1999       5,538.98       2,884       2,954       2,585       17.96       144         2000       27,875.30       14,130       14,475       13,400       18.00       744         2001       64,751.28       31,845       32,623       32,128       18.09       1,776         2002       23,254.42       11,051       11,321       11,933       18.22       655         2003       70,352.20       32,278       33,066       37,286       18.28       2,040							
1993       116,059.33       69,206       70,896       45,163       17.18       2,629         1994       35,414.63       20,739       21,245       14,170       17.34       817         1995       24,801.19       14,221       14,568       10,233       17.48       585         1996       9,844.17       5,537       5,672       4,172       17.50       238         1997       9,226.96       5,058       5,182       4,045       17.72       228         1998       5,464.77       2,924       2,995       2,470       17.82       139         1999       5,538.98       2,884       2,954       2,585       17.96       144         2000       27,875.30       14,130       14,475       13,400       18.00       744         2001       64,751.28       31,845       32,623       32,128       18.09       1,776         2002       23,254.42       11,051       11,321       11,933       18.22       655         2003       70,352.20       32,278       33,066       37,286       18.28       2,040         2004       62,507.96       27,641       28,316       34,192       18.29       1,869							
1994       35,414.63       20,739       21,245       14,170       17.34       817         1995       24,801.19       14,221       14,568       10,233       17.48       585         1996       9,844.17       5,537       5,672       4,172       17.50       238         1997       9,226.96       5,058       5,182       4,045       17.72       228         1998       5,464.77       2,924       2,995       2,470       17.82       139         1999       5,538.98       2,884       2,954       2,585       17.96       144         2000       27,875.30       14,130       14,475       13,400       18.00       744         2001       64,751.28       31,845       32,623       32,128       18.09       1,776         2002       23,254.42       11,051       11,321       11,933       18.22       655         2003       70,352.20       32,278       33,066       37,286       18.28       2,040         2004       62,507.96       27,641       28,316       34,192       18.29       1,869         2005       72,230.26       30,618       31,366       40,864       18.35       2,227							
1995       24,801.19       14,221       14,568       10,233       17.48       585         1996       9,844.17       5,537       5,672       4,172       17.50       238         1997       9,226.96       5,058       5,182       4,045       17.72       228         1998       5,464.77       2,924       2,995       2,470       17.82       139         1999       5,538.98       2,884       2,954       2,585       17.96       144         2000       27,875.30       14,130       14,475       13,400       18.00       744         2001       64,751.28       31,845       32,623       32,128       18.09       1,776         2002       23,254.42       11,051       11,321       11,933       18.22       655         2003       70,352.20       32,278       33,066       37,286       18.28       2,040         2004       62,507.96       27,641       28,316       34,192       18.29       1,869         2005       72,230.26       30,618       31,366       40,864       18.35       2,227         2008       33,994.52       12,350       12,652       21,343       18.40       1,160							
1996       9,844.17       5,537       5,672       4,172       17.50       238         1997       9,226.96       5,058       5,182       4,045       17.72       228         1998       5,464.77       2,924       2,995       2,470       17.82       139         1999       5,538.98       2,884       2,954       2,585       17.96       144         2000       27,875.30       14,130       14,475       13,400       18.00       744         2001       64,751.28       31,845       32,623       32,128       18.09       1,776         2002       23,254.42       11,051       11,321       11,933       18.22       655         2003       70,352.20       32,278       33,066       37,286       18.28       2,040         2004       62,507.96       27,641       28,316       34,192       18.29       1,869         2005       72,230.26       30,618       31,366       40,864       18.35       2,227         2008       33,994.52       12,350       12,652       21,343       18.40       1,160         2009       9,280.23       3,165       3,242       6,038       18.36       329							
1997       9,226.96       5,058       5,182       4,045       17.72       228         1998       5,464.77       2,924       2,995       2,470       17.82       139         1999       5,538.98       2,884       2,954       2,585       17.96       144         2000       27,875.30       14,130       14,475       13,400       18.00       744         2001       64,751.28       31,845       32,623       32,128       18.09       1,776         2002       23,254.42       11,051       11,321       11,933       18.22       655         2003       70,352.20       32,278       33,066       37,286       18.28       2,040         2004       62,507.96       27,641       28,316       34,192       18.29       1,869         2005       72,230.26       30,618       31,366       40,864       18.35       2,227         2008       33,994.52       12,350       12,652       21,343       18.40       1,160         2009       9,280.23       3,165       3,242       6,038       18.36       329         2010       28,356.32       8,989       9,208       19,148       18.31       1,046			•				
1998       5,464.77       2,924       2,995       2,470       17.82       139         1999       5,538.98       2,884       2,954       2,585       17.96       144         2000       27,875.30       14,130       14,475       13,400       18.00       744         2001       64,751.28       31,845       32,623       32,128       18.09       1,776         2002       23,254.42       11,051       11,321       11,933       18.22       655         2003       70,352.20       32,278       33,066       37,286       18.28       2,040         2004       62,507.96       27,641       28,316       34,192       18.29       1,869         2005       72,230.26       30,618       31,366       40,864       18.35       2,227         2008       33,994.52       12,350       12,652       21,343       18.40       1,160         2009       9,280.23       3,165       3,242       6,038       18.36       329         2010       28,356.32       8,989       9,208       19,148       18.31       1,046							
1999       5,538.98       2,884       2,954       2,585       17.96       144         2000       27,875.30       14,130       14,475       13,400       18.00       744         2001       64,751.28       31,845       32,623       32,128       18.09       1,776         2002       23,254.42       11,051       11,321       11,933       18.22       655         2003       70,352.20       32,278       33,066       37,286       18.28       2,040         2004       62,507.96       27,641       28,316       34,192       18.29       1,869         2005       72,230.26       30,618       31,366       40,864       18.35       2,227         2008       33,994.52       12,350       12,652       21,343       18.40       1,160         2009       9,280.23       3,165       3,242       6,038       18.36       329         2010       28,356.32       8,989       9,208       19,148       18.31       1,046							
2000       27,875.30       14,130       14,475       13,400       18.00       744         2001       64,751.28       31,845       32,623       32,128       18.09       1,776         2002       23,254.42       11,051       11,321       11,933       18.22       655         2003       70,352.20       32,278       33,066       37,286       18.28       2,040         2004       62,507.96       27,641       28,316       34,192       18.29       1,869         2005       72,230.26       30,618       31,366       40,864       18.35       2,227         2008       33,994.52       12,350       12,652       21,343       18.40       1,160         2009       9,280.23       3,165       3,242       6,038       18.36       329         2010       28,356.32       8,989       9,208       19,148       18.31       1,046							
2001     64,751.28     31,845     32,623     32,128     18.09     1,776       2002     23,254.42     11,051     11,321     11,933     18.22     655       2003     70,352.20     32,278     33,066     37,286     18.28     2,040       2004     62,507.96     27,641     28,316     34,192     18.29     1,869       2005     72,230.26     30,618     31,366     40,864     18.35     2,227       2008     33,994.52     12,350     12,652     21,343     18.40     1,160       2009     9,280.23     3,165     3,242     6,038     18.36     329       2010     28,356.32     8,989     9,208     19,148     18.31     1,046							
2002       23,254.42       11,051       11,321       11,933       18.22       655         2003       70,352.20       32,278       33,066       37,286       18.28       2,040         2004       62,507.96       27,641       28,316       34,192       18.29       1,869         2005       72,230.26       30,618       31,366       40,864       18.35       2,227         2008       33,994.52       12,350       12,652       21,343       18.40       1,160         2009       9,280.23       3,165       3,242       6,038       18.36       329         2010       28,356.32       8,989       9,208       19,148       18.31       1,046							
2003       70,352.20       32,278       33,066       37,286       18.28       2,040         2004       62,507.96       27,641       28,316       34,192       18.29       1,869         2005       72,230.26       30,618       31,366       40,864       18.35       2,227         2008       33,994.52       12,350       12,652       21,343       18.40       1,160         2009       9,280.23       3,165       3,242       6,038       18.36       329         2010       28,356.32       8,989       9,208       19,148       18.31       1,046							
2004     62,507.96     27,641     28,316     34,192     18.29     1,869       2005     72,230.26     30,618     31,366     40,864     18.35     2,227       2008     33,994.52     12,350     12,652     21,343     18.40     1,160       2009     9,280.23     3,165     3,242     6,038     18.36     329       2010     28,356.32     8,989     9,208     19,148     18.31     1,046							
2005     72,230.26     30,618     31,366     40,864     18.35     2,227       2008     33,994.52     12,350     12,652     21,343     18.40     1,160       2009     9,280.23     3,165     3,242     6,038     18.36     329       2010     28,356.32     8,989     9,208     19,148     18.31     1,046							
2008       33,994.52       12,350       12,652       21,343       18.40       1,160         2009       9,280.23       3,165       3,242       6,038       18.36       329         2010       28,356.32       8,989       9,208       19,148       18.31       1,046							
2009       9,280.23       3,165       3,242       6,038       18.36       329         2010       28,356.32       8,989       9,208       19,148       18.31       1,046							
2010 28,356.32 8,989 9,208 19,148 18.31 1,046							
ZUII 2,538.U4 /39 /5/ 1,/81 18.2/ 97							
	ZUII	∠,538.04	/39	/5/	1,/81	⊥0.2/	9 /

#### ACCOUNT 373 STREET LIGHTING AND SIGNAL SYSTEMS

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE IOWA VAGE PERCENT	-				
2012	26,857.65	7,069	7,242	19,616	18.19	1,078
2013	2,300.83	538	551	1,750	18.03	97
2014	8,703.35	1,751	1,794	6,909	17.87	387
2015	31,735.13	5,265	5,394	26,341	17.60	1,497
2016	55,914.81	7,101	7,274	48,641	17.19	2,830
2017	24,262.51	2,014	2,063	22,200	16.58	1,339
2018	127,080.41	4,016	4,114	122,966	15.35	8,011
	1,600,853.17	749,947	768,258	832,595		49,877

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 16.7 3.12

#### ACCOUNT 390.1 STRUCTURES AND IMPROVEMENTS

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
INTERI PROBAB	FORT WAREHOUSE M SURVIVOR CURV LE RETIREMENT Y LVAGE PERCENT	EAR 6-2032				
1927	41,564.72	35,265	41,565			
1930	2,328.61	1,967	2,329			
1933	113.59	96	114			
1938	7,165.64	5,978	7,166			
1949	217.87	178	218			
1950	20,323.38	16,544	20,323			
1951	120.00	97	120			
1964	216.76	169	217			
1966	434.07	336	434			
1967	5,811.38	4,487	5,811			
1972	3,446.06	2,602	3,446			
1974	1,004.63	751	1,005			
1975	1,263.13	939	1,263			
1978	2,476.76	1,809	2,477			
1979	17,025.00	12,357	17,025			
1980	177,705.09	128,147	176,881	824	13.30	62
1981	624.19	447	617	7	13.31	1
1982	2,589.66	1,896	2,590			
1983	288.18	209	288			
1984	9,938.45	7,183	9,915	23	13.14	2
1985	20,517.47	14,668	20,248	270	13.26	20
1986	1,426.45	1,012	1,397	29	13.20	2
1987	5,748.63	4,042	5,580	169	13.20	13
1989	6,883.34	4,732	6,532	351	13.30	26
1990	29,189.02	19,872	27,431	1,758	13.24	133
1991	53,558.93	36,051	49,765	3,794	13.23	287
1992	1,682.78	1,118	1,543	139	13.28	10
1993	11,025.36	7,246	10,002	1,023	13.24	77
1994	51,976.41	33,743	46,579	5,398	13.24	408
1995	26,858.78	17,168	23,699	3,160	13.26	238
1998	3,257.06	1,976	2,728	529	13.28	40
2005	22,104.06	11,160	15,405	6,699	13.24	506
2006	73,525.00	35,660	49,225	24,300	13.27	1,831
2011	22,834.53	8,271	11,417	11,417	13.20	865
2014	9,393.33	2,397	3,309	6,085	13.14	463
2015	309,928.38	65,395	90,271	219,658	13.08	16,793
2016	130,028.86	20,935	28,899	101,130	13.03	7,761
	1,074,595.56	506,903	687,831	386,765		29,538



#### ACCOUNT 390.1 STRUCTURES AND IMPROVEMENTS

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
INTERIM PROBABLE	H STOREROOM (B SURVIVOR CURV RETIREMENT Y VAGE PERCENT	E SQUARE EAR 6-2023				
1917	7,127.10	6,808	7,127			
1951	556.54	520	557			
1976	902.76	812	903			
1984	1,008.80	886	1,009			
2008	5,516.25	3,798	5,516			
	15,111.45	12,824	15,111			
IDETOWN FULLY AC	CCRUED VAGE PERCENT	0				
1979	930.87	931	931			
1983	13,610.31	13,610	13,610			
	14,541.18	14,541	14,541			
INTERIM PROBABLE	E SERVICE CEN SURVIVOR CURV RETIREMENT Y VAGE PERCENT	E IOWA 100- EAR 6-2025				
1971	4,029.19	3,488	4,029			
1975	21,022.88					
1985	36,364.35		36,364			
1986	4,788.36		4,788			
1987	9,974.00	8,229	9,974			
	76,178.78	64,028	76,179			



#### ACCOUNT 390.1 STRUCTURES AND IMPROVEMENTS

	ORIGINAL	CALCULATED	ALLOC. BOOK	FUTURE BOOK	REM.	ANNUAL
YEAR	COST	ACCRUED	RESERVE	ACCRUALS	LIFE	ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
PROBAB	YARD M SURVIVOR CURVI LE RETIREMENT YI LVAGE PERCENT	EAR 12-204				
2014	19,894.79	2,964	19,895			
	19,894.79	2,964	19,895			
	1,200,321.76	601,260	813,557	386,765		29,538
C	COMPOSITE REMAIN	ING LIFE AND	ANNUAL ACCRUA	L RATE, PERCEN	г 13.1	2.46

#### ACCOUNT 391 OFFICE FURNITURE AND EQUIPMENT - FURNITURE

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE 20-SO VAGE PERCENT	~				
2001	537.42	470	467	70	2.50	28
2002	2,579.60	2,128	2,112	468	3.50	134
2007	13,833.00	7,954	7,896	5,937	8.50	698
2015	15,627.39	2,735	2,715	12,912	16.50	783
2018	122,100.00	3,052	3,029	119,071	19.50	6,106
	154,677.41	16,339	16,219	138,458		7,749

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 17.9 5.01

#### ACCOUNT 391.1 OFFICE FURNITURE AND EQUIPMENT - EQUIPMENT

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE 5-SQU VAGE PERCENT					
2015	3,808.24	2,666	2,755	1,053	1.50	702
2016	13,397.02	6,699	6,923	6,474	2.50	2,590
2017	7,008.68	2,103	2,173	4,836	3.50	1,382
2018	81,400.00	8,140	8,412	72,988	4.50	16,220
	105,613.94	19,608	20,263	85,351		20,894

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 4.1 19.78

#### ACCOUNT 391.92 OFFICE FURNITURE AND EQUIPMENT - OUTAGE MANAGEMENT SOFTWARE

YEAR	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE 5-SQU ALVAGE PERCENT					
2018	750,000.00	75,000	10,627	739,373	4.50	164,305
	750,000.00	75,000	10,627	739,373		164,305
	COMPOSITE REMAIN	ING LIFE AND	ANNUAL ACCRUAL	RATE, PERCENT	7 4.5	21.91



#### ACCOUNT 393 STORES EQUIPMENT

YEAR (1)	***************************************	ALCULATED . ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE 10-SQUA ALVAGE PERCENT 0	RE				
2015	3,216.82	1,126	839	2,378	6.50	366
	3,216.82	1,126	839	2,378		366
	COMPOSITE REMAINING	LIFE AND A	ANNUAL ACCRUAL	RATE, PERCENT	6.5	11.38

#### ACCOUNT 394 TOOLS, SHOP AND GARAGE EQUIPMENT

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE 20-SO NAGE PERCENT	~				
1999	17,552.31	17,114	17,192	360	0.50	360
2001	26,725.50	23,385	23,492	3,234	2.50	1,294
2002	1,033.08	852	856	177	3.50	51
2003	78,913.16	61,158	61,437	17,476	4.50	3,884
2004	32,594.97	23,631	23,739	8,856	5.50	1,610
2005	67,810.09	45,772	45,980	21,830	6.50	3,358
2006	26,827.51	16,767	16,843	9,985	7.50	1,331
2007	75,903.01	43,644	43,843	32,060	8.50	3,772
2008	9,798.31	5,144	5,167	4,631	9.50	487
2009	52,062.46	24,730	24,843	27,219	10.50	2,592
2010	39,487.40	16,782	16,858	22,629	11.50	1,968
2011	76,427.62	28,660	28,791	47,637	12.50	3,811
2012	11,816.07	3,840	3,857	7,959	13.50	590
2013	69,050.65	18,989	19,076	49,975	14.50	3,447
2014	22,312.31	5,020	5,043	17,269	15.50	1,114
2015	64,165.13	11,229	11,280	52,885	16.50	3,205
2016	79,889.66	9,986	10,031	69,859	17.50	3,992
2017	64,511.43	4,838	4,860	59,651	18.50	3,224
2018	136,050.00	3,401	3,417	132,633	19.50	6,802
	952,930.67	364,942	366,605	586,326		46,892

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 12.5 4.92

#### ACCOUNT 395 LABORATORY EQUIPMENT

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE 10-SO VAGE PERCENT	QUARE 0				
2009	10,623.12	10,092	10,126	497	0.50	497
2011	55,958.90	41,969	42,110	13,849	2.50	5,540
2012	17,678.43	11,491	11,530	6,148	3.50	1,757
2013	23,858.97	13,122	13,166	10,693	4.50	2,376
2014	36,231.68	16,304	16,359	19,873	5.50	3,613
2015	8,105.79	2,837	2,847	5,259	6.50	809
2016	16,836.39	4,209	4,223	12,613	7.50	1,682
	169,293.28	100,024	100,361	68,932		16,274

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 4.2 9.61

#### ACCOUNT 396 POWER OPERATED EQUIPMENT

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	CURVE IOWA AGE PERCENT					
1971	974.33	974	974			
1978	2,344.99	2,345	2,345			
1979	52,830.00	52,090	52,830			
1989	14,277.76	12,613	14,278			
1992	57,765.09	48,673	57,765			
2001	14,541.30	10,026	12,994	1,547	7.88	196
2006	3,105.80	1,767	2,290	816	9.48	86
	145,839.27	128,488	143,476	2,363		282

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 8.4 0.19

#### ACCOUNT 397 COMMUNICATION EQUIPMENT

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE 10-S VAGE PERCENT	~				
2009	346,775.10	329,436	325,094	21,681	0.50	21,681
2010	337,961.27	287,267	283,481	54,480	1.50	36,320
2011	15,409.85	11,557	11,405	4,005	2.50	1,602
2012	21,949.99	14,267	14,079	7,871	3.50	2,249
2013	92,135.10	50,674	50,006	42,129	4.50	9,362
2014	53,343.52	24,005	23,688	29,656	5.50	5,392
2016	80,296.23	20,074	19,809	60,487	7.50	8,065
2017	10,272.76	1,541	1,521	8,752	8.50	1,030
2018	142,450.00	7,122	7,028	135,422	9.50	14,255
	1,100,593.82	745,943	736,111	364,483		99,956

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 3.6 9.08

#### ACCOUNT 398 MISCELLANEOUS EQUIPMENT

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	C CURVE 10-S AGE PERCENT	~				
2009	37,987.00	36,088	35,507	2,480	0.50	2,480
2010	19,983.08	16,986	16,713	3,270	1.50	2,180
2015	8,850.87	3,098	3,048	5,803	6.50	893
2016	12,037.79	3,009	2,961	9,077	7.50	1,210
	78,858.74	59,181	58,229	20,630		6,763

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 3.1 8.58

**COMMON PLANT** 



#### ACCOUNT 390.2 STRUCTURES AND IMPROVEMENTS - LEASED PROPERTY

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
PROBABLE	SURVIVOR CURV E RETIREMENT Y /AGE PERCENT	EAR 3-2019				
2009	156,908.12	149,063	129,766	27,142	0.50	27,142
2010	2,987.32	2,821	2,456	531	0.50	531
2016	3,425.90	2,855	2,485	941	0.50	941
	163,321.34	154,739	134,707	28,614		28,614

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 1.0 17.52

#### ACCOUNT 391 OFFICE FURNITURE AND EQUIPMENT - FURNITURE

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	CURVE 20-SQ AGE PERCENT	~				
2001	25,355.20	22,186	13,374	11,981	2.50	4,792
2003	7,182.75	5,567	3,356	3,827	4.50	850
2004	11,896.38	8,625	5,199	6,697	5.50	1,218
2005	39,965.68	26,977	16,262	23,704	6.50	3,647
2006	2,468.81	1,543	930	1,539	7.50	205
2007	878.14	505	304	574	8.50	68
2008	572.40	301	181	391	9.50	41
2009	4,753.12	2,258	1,361	3,392	10.50	323
2010	747,318.56	317,610	191,459	555,860	11.50	48,336
	840,391.04	385,572	232,426	607,965		59,480

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 10.2 7.08

#### ACCOUNT 391.1 OFFICE FURNITURE AND EQUIPMENT - EQUIPMENT

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	CURVE 5-SQ	-				
NET SALV	AGE PERCENT	0				
2014	15,124.84	13,612	4,290	10,835	0.50	10,835
2015	13,739.84	9,618	3,031	10,709	1.50	7,139
2016	18,241.85	9,121	2,874	15,368	2.50	6,147
2017	13,395.06	4,019	1,267	12,128	3.50	3,465
	60,501.59	36,370	11,462	49,040		27,586

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 1.8 45.60

**Sannett Fleming** 

#### ACCOUNT 392 TRANSPORTATION EQUIPMENT - CARS

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	C CURVE IOWA VAGE PERCENT					
2004 2008 2014	26,875.84 22,536.44 22,224.80	25,527 19,805 14,113	26,876 22,536 16,558	5,667	2.59	2,188
	71,637.08	59,445	65,970	5,667		2,188

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 2.6 3.05

**INFORMATION SERVICES** 



#### ACCOUNT 391 OFFICE FURNITURE AND EQUIPMENT - FURNITURE

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	CURVE 20-Se	~				
NET SALV	AGE PERCENT	0				
1999	6,158.53	6,005	5,912	247	0.50	247
2001	3,769.21	3,298	3,247	522	2.50	209
2002	6,694.08	5,523	5,437	1,257	3.50	359
2003	22,684.22	17,580	17,307	5,377	4.50	1,195
2004	5,698.56	4,131	4,067	1,632	5.50	297
2007	1,760.05	1,012	996	764	8.50	90
	46,764.65	37,549	36,966	9,799		2,397

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 4.1 5.13

#### ACCOUNT 391.1 OFFICE FURNITURE AND EQUIPMENT - EQUIPMENT

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIV	OR CURVE 5-SQ	UARE				
NET SA	LVAGE PERCENT	0				
2014	1,020,522.82	918,471	883,155	137,368	0.50	137,368
2015	1,237,638.55	866,347	833,036	404,603	1.50	269,735
2016	2,446,998.62	1,223,499	1,176,455	1,270,544	2.50	508,218
2017	3,734,172.19	1,120,252	1,077,178	2,656,994	3.50	759,141
2018	950,000.00	95,000	91,347	858,653	4.50	190,812
	9,389,332.18	4,223,569	4,061,171	5,328,161		1,865,274

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 2.9 19.87

#### ACCOUNT 391.3 OFFICE FURNITURE AND EQUIPMENT - SOFTWARE - 10 YRS

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	OR CURVE 10-SO LVAGE PERCENT	~				
2009	507,896.08	482,501	507,896			
2010	324,586.33	275,898	293,973	30,613	1.50	20,409
2011	24,265.04	18,199	19,391	4,874	2.50	1,950
2012	2,890,937.57	1,879,109	2,002,214	888,724	3.50	253,921
2013	431,236.80	237,180	252,718	178,519	4.50	39,671
2014	988,604.39	444,872	474,017	514,587	5.50	93,561
2015	1,151,853.19	403,149	429,560	722,293	6.50	111,122
2016	1,179,510.15	294,878	314,197	865,313	7.50	115,375
2017	791,011.98	118,652	126,425	664,587	8.50	78,187
	8,289,901.53	4,154,438	4,420,391	3,869,511		714,196

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 5.4 8.62

#### ACCOUNT 391.4 OFFICE FURNITURE AND EQUIPMENT - SOFTWARE - 15 YRS

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	OR CURVE 15-S LVAGE PERCENT	~				
2005	867,789.26	781,010	703,670	164,119	1.50	109,413
2006	1,660,897.57	1,384,076	1,247,018	413,880	2.50	165,552
2007	3,042,652.35	2,332,710	2,101,713	940,939	3.50	268,840
2008	2,908,998.47	2,036,299	1,834,654	1,074,344	4.50	238,743
2011	457,198.79	228,599	205,962	251,237	7.50	33,498
2012	533,950.04	231,377	208,465	325,485	8.50	38,292
2013	527,925.94	193,575	174,406	353,520	9.50	37,213
2014	495,556.48	148,667	133,945	361,611	10.50	34,439
2016	1,416,752.10	236,130	212,747	1,204,005	12.50	96,320
2017	68,116,208.08	6,811,621	6,137,101	61,979,107	13.50	4,591,045
2018	10,800,786.00	359,990	324,342	10,476,444	14.50	722,513
	90,828,715.08	14,744,054	13,284,023	77,544,692		6,335,868

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 12.2 6.98

**READING SERVICE CENTER – INFORMATION SERVICES** 



# UGI UTILITIES, INC. - INFORMATION SERVICES READING SERVICE CENTER

#### ACCOUNT 390.1 STRUCTURES AND IMPROVEMENTS

	ORIGINAL	CALCULATED	ALLOC. BOOK	FUTURE BOOK	REM.	ANNUAL
YEAR	COST	ACCRUED	RESERVE	ACCRUALS	LIFE	ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
TNTERTM	SURVIVOR CURV	E ТОWA 100-	·R1			
	E RETIREMENT Y					
	VAGE PERCENT					
1974	574,897.52	446,189	471,164	103,734	11.40	9,099
1975	7,158.54	5,530	5,840	1,319	11.40	116
1976	1,629.59	1,253	1,323	307	11.41	27
1977	2,106.01	1,611	1,701	405	11.41	35
1978	554.20	421	445	109	11.42	10
1979	6,707.24	5,073	5,357	1,350	11.42	118
1980	28,233.56	21,226	22,414	5,820	11.43	509
1981	44,870.26	33,529	35,406	9,464	11.43	828
1982	427.88	326	344	84	11.37	7
1983	1,273.20	961	1,015	258	11.48	22
1984	1,922.47	1,442	1,523	399	11.41	35
1985	15,545.14	11,578	12,226	3,319	11.39	291
1986	1,122.78	829	875	248	11.42	22
1987	100.24	73	77	23	11.49	2
1989	40,014.11	28,794	30,406	9,608	11.40	843
1990	23,330.17	16,609	17,539	5,791	11.43	507
1992	95,013.29	66,338	70,051	24,962	11.35	2,199
1993	1,839.65	1,270	1,341	499	11.39	44
1994	27,141.96	18,486	19,521	7,621	11.47	664
1995	4,582.00	3,080	3,252	1,330	11.47	116
1996	248.50	165	174	74	11.40	6
1998	683.50	439	464	220	11.45	19
2000	72,144.40	44,578	47,073	25,071	11.44	2,192
2001	73,338.56	44,406	46,892	26,447	11.40	2,320
2002	5,526.75	3,265	3,448	2,079	11.43	182
2003	201.42	116	122	79	11.38	7
2004	1,508.64	844	891	618	11.41	54
2005	4,812.03	2,605	2,751	2,061	11.44	180
2006	458.13	239	252	206	11.42	18
2007	379,291.04	190,177	200,822	178,469	11.44	15,600
2008	444,898.44	213,462	225,411	219,487	11.38	19,287
2009	14,014.85	6,364	6,720	7,295	11.42	639
2010	2,629.36	1,124	1,187	1,442	11.38	127
2011	3,560.30	1,415	1,494	2,066	11.37	182
2012	294.73	107	113	182	11.36	16
2014	5,428.44	1,544	1,630	3,798	11.32	336

### UGI UTILITIES, INC. - INFORMATION SERVICES READING SERVICE CENTER

#### ACCOUNT 390.1 STRUCTURES AND IMPROVEMENTS

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AT SEPTEMBER 30, 2018

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
PROBABL	SURVIVOR CURVE E RETIREMENT YE VAGE PERCENT	EAR 6-2030				
2015 2016 2017	44,230.06 33,847.95 5,122.43	10,465 6,160 608	11,051 6,505 642	33,179 27,343 4,480	11.29 11.24 11.14	2,939 2,433 402
	1,970,709.34	1,192,701	1,259,462	711,247		62,433

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 11.4 3.17

# PART VIII. EXPERIENCED AND ESTIMATED NET SALVAGE



**ELECTRIC PLANT** 



ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
ACCI	KEIIKEMENIS	KEMOVAL	SALVAGE	SALVAGE
2014 TRA	ANSACTION YEAR			
364.00	134,248.00	205,410.00		205,410.00-
365.00	91,658.00	63,043.00		63,043.00-
366.00		2,781.00		2,781.00-
367.00	68,353.00	9,392.00		9,392.00-
368.10	829.00	708.00		708.00-
368.20	34,107.00	13,090.00		13,090.00-
369.00	11,789.00	63,878.00		63,878.00-
370.10	21,741.00			
370.20	2,207.00	3,442.00		3,442.00-
370.30	6,637.00			
371.00	510.00-	23,317.00		23,317.00-
373.00	63,917.00	7,986.00		7,986.00-
391.00	12,134.00			
391.10	180,984.00			
394.00	13,931.00			
397.00	14,371.00			
	656,396.00	393,047.00		393,047.00-
2015 TRA	ANSACTION YEAR			
362.00	24,707.00	2,021.00	2,000.00	21.00-
364.00	150,263.00	327,581.00		327,581.00-
365.00	105,269.00	81,961.00		81,961.00-
366.00		3,074.00		3,074.00-
367.00	71,557.00	8,629.00		8,629.00-
368.10	1,764.00	2,387.00		2,387.00-
368.20	27,846.00	19,592.00		19,592.00-
369.00	7,148.00	67,963.00		67,963.00-
370.10	20,478.00			
370.20	1,906.00	3,378.00		3,378.00-
370.30	8,479.00			
371.00	43,588.00	10,296.00		10,296.00-
373.00	42,074.00	22,892.00		22,892.00-
390.10		93,483.00		93,483.00-
391.00	2,866.00			
394.00	26,886.00			
397.00	219,700.00			
	754,531.00	643,257.00	2,000.00	641,257.00-

a com	REGULAR	COST OF	GROSS	NET
ACCT	RETIREMENTS	REMOVAL	SALVAGE	SALVAGE
2016 TRA	ANSACTION YEAR			
362.00		34.00-		34.00
364.00	176,018.00	351,318.00		351,318.00-
365.00	104,239.00	75,887.00		75,887.00-
366.00		884.00		884.00-
367.00	40,299.00	3,188.00		3,188.00-
368.20	25,735.00	20,208.00		20,208.00-
369.00	16,790.00	64,224.00		64,224.00-
370.10	21,549.00	,		•
370.20	864.00	3,071.00		3,071.00-
370.30	7,738.00	.,		.,
371.00	54,634.00	19,949.00		19,949.00-
373.00	62,121.00	15,458.00		15,458.00-
390.10	,	1,488.00		1,488.00-
390.20	243,472.00	_,		_,
391.00	71,038.00			
391.10	9,330.00			
392.20	11,645.00			
392.40	32,354.00			
394.00	3,417.00			
397.00	16,880.00			
337.00	20,000.00			
	898,123.00	555,641.00		555,641.00-
2017 TRA	ANSACTION YEAR			
362.00	277,443.00			
364.00	210,178.00	315,585.00		315,585.00-
365.00	94,370.00	91,147.00		91,147.00-
366.00		13,832.00		13,832.00-
367.00	211,313.00	12,707.00		12,707.00-
368.10	317,793.00	7,007.00		7,007.00-
368.20	28,036.00	16,645.00		16,645.00-
369.00	18,978.00	59,124.00		59,124.00-
370.10	15,066.00	,		,
370.20	6,451.00	2,789.00		2,789.00-
370.30	3,571.00	=7:000		=,
371.00	50,228.00	13,648.00		13,648.00-
373.00	101,485.00	16,397.00		16,397.00-
390.20	9,396.00	.,		.,
391.00	1,048.00			
391.92	174,247.00			
394.00	20,132.00			
395.00	2,807.00			
396.00	22,028.00			
397.00	74,838.00			
	•			
	1,639,408.00	548,881.00		548,881.00-



	REGULAR	COST OF	GROSS	NET
ACCT	RETIREMENTS	REMOVAL	SALVAGE	SALVAGE
2018 TRA	ANSACTION YEAR			
362.00	218,662.00	43,732.00	21,866.00	21,866.00-
364.00	259,005.00	453,100.00		453,100.00-
365.00	113,036.00	92,807.00	16,955.00	75,852.00-
366.00	48,490.00	9,698.00		9,698.00-
367.00	193,165.00	19,254.00		19,254.00-
368.10	185,687.00	6,456.00	18,569.00	12,113.00
368.20	71,163.00	41,218.00		41,218.00-
369.00	25,721.00	45,012.00	2,572.00	42,440.00-
370.10	20,000.00			
370.20	522.00	718.00		718.00-
370.30	12,000.00			
371.00	5,590.00	2,494.00		2,494.00-
373.00	94,235.00	22,463.00		22,463.00-
390.20	53,383.00			
391.92	607,693.00			
393.00	12,439.00			
397.00	229,963.00			
398.00	18,794.00			
	2,169,548.00	736,952.00	59,962.00	676,990.00-
TOTAL	6,118,006.00	2,877,778.00	61,962.00	2,815,816.00-



**COMMON PLANT** 



ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2014 TRA	NSACTION YEAR			
391.00 391.10	4,540.00 12,429.00			
	16,969.00			
2015 TRANSACTION YEAR				
390.20 391.00 391.10	1,448,677.00 812,862.00 93,647.00 2,355,186.00			
2016 TRA	INSACTION YEAR			
391.00 391.10	22,767.00 653,875.00 676,642.00			
2017 TRA	NSACTION YEAR			
391.00 391.10	23,206.00 6,436.00			
	29,642.00			
2018 TRA	NSACTION YEAR			
391.10	126,305.00			
	126,305.00			
TOTAL	3,204,744.00			



**INFORMATION SERVICES** 



ACCT	REGULAR RETIREMENTS	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE
2014 TRA	ANSACTION YEAR			
391.00 391.10	4,810.00 781,032.00			
	785,842.00			
2015 TRA	ANSACTION YEAR			
391.00 391.10	36,527.00 925,747.00			
	962,274.00			
2016 TRA	ANSACTION YEAR			
	13,272.00 1,428,497.00			
	1,441,769.00			
2017 TRANSACTION YEAR				
	965,687.00 6,386,475.00			
	7,352,162.00			
2018 TRA	ANSACTION YEAR			
391.00 391.10 391.30	24,630.00 611,365.00 10,591,769.00			
	11,227,764.00			
TOTAL	21,769,811.00			

