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INDIANA UTILITY
REGULATORY COMMISSION

Petitioner's Exhibit No. 10 Cause No. 45447 Vectren South Page 1 of 18

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY d/b/a VECTREN ENERGY DELIVERY OF INDIANA, INC. A CENTERPOINT ENERGY COMPANY (VECTREN SOUTH)

IURC CAUSE NO. 45447

DIRECT TESTIMONY

OF

JOHN J. SPANOS

PRESIDENT

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

ON

DEPRECIATION STUDY ON BEHALF OF VECTREN SOUTH

SPONSORING PETITIONER'S EXHIBIT NO. 10,
ATTACHMENT JJS-1

Glossary of Acronyms

CenterPoint	CenterPoint Energy, Inc.
Company	Southern Indiana Gas and Electric Company d/b/a
	Vectren Energy Delivery of Indiana, Inc.
Gannett Fleming	Gannett Fleming Valuation and Rate Consultants, LLC
IURC or Commission	Indiana Utility Regulatory Commission
Petitioner	Southern Indiana Gas and Electric Company d/b/a
	Vectren Energy Delivery of Indiana, Inc.
Vectren	Vectren Corporation
Vectren North	Indiana Gas Company, Inc. d/b/a Vectren Energy
	Delivery of Indiana, Inc.
Vectren Ohio	Vectren Energy Delivery of Ohio, Inc.
Vectren South	Southern Indiana Gas and Electric Company d/b/a
	Vectren Energy Delivery of Indiana, Inc.

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DIRECT TESTIMONY OF JOHN J. SPANOS

1	I.	INTRODUCTION
2		
3	Q.	Please state your name and business address.
4	A.	My name is John J. Spanos. My business address is 207 Senate Avenue, Camp Hill,
5		Pennsylvania, 17011.
6		
7	Q.	Are you associated with any firm?
8	A.	Yes. I am associated with the firm of Gannett Fleming Valuation and Rate
9		Consultants, LLC (Gannett Fleming).
10		
11	Q.	How long have you been associated with Gannett Fleming?
12	A.	I have been associated with the firm since college graduation in June 1986.
13		
14	Q.	What is your position with the firm?
15	A.	I am President.
16		
17	Q.	On whose behalf are you testifying in this case?
18	A.	I am testifying on behalf of Southern Indiana Gas and Electric Company d/b/a Vectren
19		Energy Delivery of Indiana, Inc., a CenterPoint Energy Company ("Vectren South-
20		Gas" or "Company").
21		
22	Q.	Please state your qualifications.
23	A.	I have over 34 years of depreciation experience which includes giving expert testimony
24		in over 340 cases before 41 regulatory commissions, including this Commission.

1 These cases have included depreciation studies in the electric, gas, water, wastewater 2 and pipeline industries. In addition to cases where I have submitted testimony, I have 3 supervised over 700 other depreciation or valuation assignments. Please refer to 4 Appendix A for my qualifications statement, which includes further information with 5 respect to my work history, case experience, and leadership in the Society of 6 Depreciation Professionals. 7 8 Q. What is your educational background? A. I have Bachelor of Science degrees in Industrial Management and Mathematics from 10 Carnegie-Mellon University and a Master of Business Administration from York College. 12 13 Q. What is the purpose of your testimony in this proceeding? 14 A. My testimony will support and explain the depreciation study conducted under my 15 direction and supervision for Vectren South-Gas. 16 17 18 II. DISCUSSION 20 Q. Please define the concept of depreciation. Α. Depreciation refers to the loss in service value not restored by current maintenance. 22 incurred in connection with the consumption or prospective retirement of utility plant in 23 the course of service from causes which are known to be in current operation, against 24 which the Company is not protected by insurance. Among the causes to be given

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1		consideration are wear and tear, decay, action of the elements, obsolescence,
2		changes in the art, changes in demand and the requirements of public authorities.
3		
4	Q.	Please identify Petitioner's Exhibit No. 10, Attachment JJS-1.
5	A.	Petitioner's Exhibit No. 10, Attachment JJS-1 is a report entitled, "2019 Depreciation
6		Study - Calculated Annual Depreciation Accruals Related to Gas and Common Plant
7		as of December 31, 2019." This report sets forth the results of my depreciation study
8		for Vectren South-Gas.
9		
10	Q.	Is Petitioner's Exhibit No. 10, Attachment JJS-1 a true and accurate copy of your
11		depreciation study?
12	A.	Yes.
13		
14	Q.	Does Petitioner's Exhibit No. 10, Attachment JJS-1accurately portray the results
15		of your depreciation study as of December 31, 2019?
16	A.	Yes.
17		
18	Q.	In preparing the depreciation study, did you follow generally accepted practices
19		in the field of depreciation and valuation?
20	A.	Yes.
21		
22	Q.	What was the purpose of your depreciation study?
23	A.	The purpose of the depreciation study was to estimate the annual depreciation
24		accruals related to gas and common plant in service for ratemaking purposes and
25		determine appropriate average service lives and net salvage percents for each plant

account.

A.

Q. Please describe the contents of your report.

The Depreciation Study is presented in nine parts. Part I, Introduction, presents the scope and basis for the Depreciation Study. Part II, Estimation of Survivor Curves, includes descriptions of the methodology of estimating survivor curves. Parts III and IV set forth the analysis for determining service life and net salvage estimates. Part V, Calculation of Annual and Accrued Depreciation, includes the concepts of depreciation and amortization using the remaining life. Part VI, Results of Study, presents a description of the results of my analysis and a summary of the depreciation calculations. Parts VII, VIII and IX include graphs and tables that relate to the service life and net salvage analyses, and the detailed depreciation calculations by account.

The Depreciation Study also includes several tables and tabulations of data and calculations. Table 1 on pages VI-4 and VI-5 of the Depreciation Study presents the estimated survivor curve, the net salvage percent, the original cost as of December 31, 2019, the book depreciation reserve, and the calculated annual depreciation accrual and rate for each account or subaccount. The section beginning on page VII-2 presents the results of the retirement rate analyses prepared as the historical bases for the service life estimates. The section beginning on page VIII-2 presents the results of the net salvage analysis. The section beginning on page IX-2 presents the depreciation calculations related to surviving original cost as of December 31, 2019.

Q. Please explain how you performed your depreciation study.

I used the straight line remaining life method of depreciation, with the equal life group procedure for all plant assets except some general plant accounts. The annual depreciation is based on a method of depreciation accounting that seeks to distribute the unrecovered cost of fixed capital assets over the estimated remaining useful life of each unit, or group of assets, in a systematic and rational manner.

A.

For General Plant Accounts 691.1, 691.2, 693.0, 694.0, 695.0, 697.0 and 698.0; and 591.1, 591.2, 593.0, 594.0, 597.0 and 598.0 for Common Plant, I used the straight line remaining life method of amortization. The annual amortization is based on amortization accounting that distributes the unrecovered cost of fixed capital assets over the remaining amortization period selected for each account and vintage.

A.

Q. How did you determine the recommended annual depreciation accrual rates?

I did this in two phases. In the first phase, I estimated the service life and net salvage characteristics for each depreciable group, that is, each plant account or subaccount identified as having similar characteristics. In the second phase, I calculated the composite remaining lives and annual depreciation accrual rates based on the service life and net salvage estimates determined in the first phase.

A.

Q. Please describe the first phase of the depreciation study, in which you estimated the service life and net salvage characteristics for each depreciable group.

The service life and net salvage study consisted of compiling historic data from records related to Vectren South-Gas' plant; analyzing these data to obtain historic trends of survivor and net salvage characteristics; obtaining supplementary information from Vectren South-Gas' management, and operating personnel concerning practices and

1 plans as they relate to plant operations; and interpreting the above data and the 2 estimates used by other gas utilities to form judgments regarding average service life 3 and net salvage characteristics. 4 5 Q. What historic data did you analyze for the purpose of estimating service life 6 characteristics? 7 A. I analyzed the Company's accounting entries that record plant transactions during the 8 period 1982 through 2019. The transactions included additions, retirements, transfers, 9 sales, and the related balances. The Company records also included surviving dollar 10 value by year installed for each plant account as of December 31, 2019. 11 12 Q. What method did you use to analyze this service life data? 13 A. I used the retirement rate method. This is the most appropriate method when aged 14 retirement data are available, because this method determines the average rates of 15 retirement actually experienced by the Company during the period of time covered by 16 the study. 17 18 Q. Please describe how you used the retirement rate method to analyze Vectren 19 South-Gas' service life data. 20 A. I applied the retirement rate method to each different group of property in the study. 21 For each property group, I used the retirement rate method to form a life table which, 22 when plotted, shows an original survivor curve for that property group. Each original 23 survivor curve represents the average survivor pattern experienced by the several 24 vintage groups during the experience band studied. The survivor patterns do not

necessarily describe the life characteristics of the property group; therefore,

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interpretation of the original survivor curves is required in order to use them as valid considerations in estimating service life. The lowa-type survivor curves were used to perform these interpretations.

A.

Q. What is an "lowa-type survivor curve" and how did you use such curves to estimate the service life characteristics for each property group?

lowa type curves are a widely used group of generalized survivor curves that contain the range of survivor characteristics usually experienced by utilities and other industrial companies. The lowa curves were developed at the lowa State College Engineering Experiment Station through an extensive process of observing and classifying the ages at which various types of property used by utilities and other industrial companies had been retired.

lowa type curves are used to smooth and extrapolate original survivor curves determined by the retirement rate method. The lowa curves and truncated lowa curves were used in this study to describe the forecasted rates of retirement based on the observed rates of retirement and the outlook for future retirements.

The estimated survivor curve designations for each depreciable property group indicate the average service life, the family within the lowa system to which the property group belongs, and the relative height of the mode. For example, the lowa 30-R2.5 indicates an average service life of thirty years; a right-moded, or R, type curve (the mode occurs after average life for right-moded curves); and a moderate height, 2.5, for the mode (possible modes for R type curves range from 1 to 5).

1	Q.	Are the factors considered in your estimates of service life and net salvage
2		percents presented in Petitioner's Exhibit No. 10, Attachment JJS-1?
3	A.	Yes. A discussion of the factors considered in the estimation of service lives and net
4		salvage percents are presented in Part III and Part IV of Petitioner's Exhibit No. 10,
5		Attachment JJS-1.
6		
7	Q.	Did you physically observe Vectren South-Gas' plant and equipment as part of
8		your depreciation study?
9	A.	Yes. I made a field review of Vectren South-Gas' property during August 2020 to
10		observe representative portions of plant. Field reviews are conducted to become
11		familiar with Company operations and obtain an understanding of the function of the
12		plant and information with respect to the reasons for past retirements and the expected
13		future causes of retirements. This knowledge was incorporated in the interpretation
14		and extrapolation of the statistical analyses.
15		
16	Q.	Would you please explain the concept of "net salvage"?
17	A.	Net salvage is a component of the service value of capital assets that is recovered
18		through depreciation rates. The service value of an asset is its original cost less its
19		net salvage. Net salvage is the salvage value received for the asset upon retirement
20		less the cost to retire the asset. When the cost to retire exceeds the salvage value,
21		the result is negative net salvage.
22		
23		Inasmuch as depreciation expense is the loss in service value of an asset during a
24		defined period, (e.g. one year) it must include a ratable portion of both the original
25		cost and the net salvage. That is, the net salvage related to an asset should be

incorporated in the cost of service during the same period as its original cost so that customers receiving service from the asset pay rates that include a portion of both elements of the asset's service value, the original cost and the net salvage value.

For example, the full recovery of the service value of a \$5,000 regulator will include not only the \$5,000 of original cost, but also, on average, \$1,600 to remove the breaker at the end of its life and \$100 in salvage value. In this example, the net salvage component is negative \$1,500 (\$100 - \$1,600), and the net salvage percent is negative 30% ((\$100 - \$1,600)/\$5,000).

A.

Q. Please describe how you estimated net salvage percentages.

The net salvage percentages estimated in the Depreciation Study were based on informed judgment that incorporated factors such as the statistical analyses of historical net salvage data; information provided to me by the Company's operating personnel, general knowledge and experience of industry practices; and trends in the industry in general. The statistical net salvage analyses incorporates the Company's actual historical data for the period 2001 through 2019, and considers the cost of removal and gross salvage ratios to the associated retirements during the 19-year period. Trends of these data are also measured based on three-year moving averages and the most recent five-year indications.

Q. Please describe the second phase of the process that you used in the depreciation study in which you calculated composite remaining lives and annual depreciation accrual rates.

A. After I estimated the service life and net salvage characteristics for each depreciable 2 property group, I calculated the annual depreciation accrual rates for each depreciable 3 group based on the straight line remaining life method, using remaining lives weighted consistent with the equal life group procedure. The calculation of annual depreciation accrual rates were developed as of December 31, 2019.

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Q. Please describe the straight line remaining life method of depreciation.

The straight line remaining life method of depreciation allocates the original cost of the property, less accumulated depreciation, less future net salvage, in equal amounts to each year of remaining service life.

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Q. Please describe the equal life group procedure for calculating remaining life accrual rates.

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.

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The equal life group procedure allocates the capital cost of a group property to annual

expense in accordance with the consumption of the service value of the group. The more timely return of plant investment accomplished by fully accruing each item's cost during its service life not only reduces the risk of incomplete capital recovery, but also results in less investment-related cost over the life span of a depreciable group. Under the equal life group procedure, the future book accruals (original cost less book reserve) for each vintage are divided by the composite remaining life for the surviving original cost of that vintage. The vintage composite remaining life is derived by summing the original cost less the calculated reserve for each equal life group and dividing by the sum of the whole life annual accruals.

A.

Q. Please describe amortization accounting.

Amortization accounting is used for accounts with a large number of units, but small asset values. In amortization accounting, units of property are capitalized in the same manner as they are in depreciation accounting. However, depreciation accounting is difficult for these assets because periodic inventories are required to properly reflect plant in service. Consequently, retirements are recorded when a vintage is fully amortized rather than as the units are removed from service. That is, there is no dispersion of retirement. All units are retired when the age of the vintage reaches the amortization period. Each plant account or group of assets is assigned a fixed period which represents an anticipated life during which the asset will render service. For example, in amortization accounting, assets that have a 20-year amortization period will be fully recovered after 20 years of service and taken off the Company books, but not necessarily removed from service. In contrast, assets that are taken out of service before 20 years remain on the books until the amortization period for that vintage has expired.

Q. For which plant accounts is amortization accounting being implemented?

A. Amortization accounting is only appropriate for certain General and Common Plant accounts. These accounts are 691.1, 691.2, 693.0, 694.0, 695.0, 697.0 and 698.0 for general plant and 591.1, 591.2, 593.0, 594.0, 597.0 and 598.0 for common plant which represents approximately four percent of depreciable plant.

A.

Q. Please use an example to illustrate the development of the annual depreciation accrual rate for a particular group of property in your depreciation study.

I will use Account 680.0, Services, as an example because it is one of the largest depreciable groups.

The retirement rate method was used to analyze the survivor characteristics of this property group. Aged plant accounting data were compiled from 1982 through 2019 and analyzed in periods that best represent the overall service life of this property. The life tables for the 1982-2019 and 2000-2019 experience bands are presented in the depreciation study on pages VII-58 through VII-63. Each life table displays the retirement and surviving ratios of the aged plant data exposed to retirement by age interval. For example, page VII-58 of Petitioner's Exhibit No. 10, Attachment JJS-1, shows \$35,412 retired during age interval 0.5-1.5 with \$115,935,879 exposed to retirement at the beginning of the interval. Consequently, the retirement ratio is 0.0003 (\$35,412/\$115,935,879) and the survivor ratio is 0.9997 (1-0.0003). The life tables, or original survivor curves, are plotted along with the estimated smooth survivor curve, the 40-S0.5, on page VII-57 of Petitioner's Exhibit No. 10, Attachment JJS-1.

The net salvage percent is presented on pages VIII-16 and VIII-17. The percentage is based on the result of annual gross salvage minus the cost to remove plant assets as compared to the original cost of plant retired during the period 2002 through 2019. The 18-year period experienced \$9,241,598 (\$0 - \$9,241,598) in net salvage for \$13,661,619 plant retired. The result is negative net salvage of 68 percent (\$9,241,598/\$13,661.619). Recent trends have shown indications of negative 9 percent, however, it was determined that based on industry ranges, historical indications and Company expectations, that negative 65 percent was the most appropriate estimate.

My calculation of the annual depreciation related to original cost of gas utility plant at December 31, 2019 for Account 680.0 is presented on pages IX-27 and IX-28 of Petitioner's Exhibit No. 10, Attachment JJS-1. The calculation is based on the 40-S0.5 survivor curve, 65% negative net salvage, the attained age, and the allocated book reserve. The tabulation sets forth the installation year, the original cost, calculated accrued depreciation, allocated book reserve, future accruals, remaining life and annual accrual. These totals are brought forward to Table 1 on page VI-4.

A.

Q. Have you developed rates for future assets?

Yes. Depreciation rates for new classes of assets or accounts that the existing assets are fully depreciated and new installations will need to have a depreciation rate in place are set forth in Petitioner's Exhibit No. 10, Attachment JJS-1, page VI-5. For Gas Plant Account 650.5, 671.0, 693.0 and Common Plant Account 592.1, the depreciation rate is for new assets added to each account after December 31, 2019. The rates are based on the life and net salvage parameters of the asset class. For

1		new meter components to be placed in a new subaccount, Account 681.1, the
2		depreciation rate is based on the 15-S1.5 survivor curve and negative 5 percent net
3		salvage.
4		
5		
6	III.	CONCLUSION
7		
8	Q.	Was Petitioner's Exhibit No. 10, Attachment JJS-1 prepared under your direction
9		and control?
10	A.	Yes.
11		
12	Q.	In your opinion, are the depreciation and amortization rates set forth in
13		Petitioner's Exhibit No. 10, Attachment JJS-1 the appropriate rates for the
14		commission to adopt in this proceeding for Vectren South-Gas?
15	A.	Yes. These rates appropriately reflect the rates at which the costs of Vectren South-
16		Gas' assets are being consumed over their useful lives. These rates are an
17		appropriate basis for setting gas rates in this matter and for the Company to use for
18		booking depreciation and amortization expense going forward.
19		
20	Q.	Have you prepared a comparison of the current approved depreciation rates and
21		the proposed rates reflected in Petitioner's Exhibit No. 10, Attachment JJS-1?
22	A.	The Company has prepared this comparison and included it in Petitioner's Exhibit No.
23		18, Schedule B-3.2. This schedule reflects the impact of the change to proposed
24		depreciation rates, as reflected within Petitioner's Exhibit No. 10, Attachment JJS-1,

Petitioner's Exhibit No. 10 Cause No. 45447 Vectren South Page 18 of 18

- 1 using the projected December 31, 2021 plant in-service balances as discussed and
- 2 sponsored by Petitioner's Witness Angie M. Bell.

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- 4 Q. Does this conclude your prefiled direct testimony?
- 5 A. Yes, it does.

VERIFICATION

I, John J. Spanos, affirm under the penalties of perjury that the forgoing representations of fact in my Direct Testimony are true to the best of my knowledge, information and belief.

John J. Spanos

Dated: October 30, 2020

Appendix A

JOHN SPANOS

DEPRECIATION EXPERIENCE

- Q. Please state your name.
- A. My name is John J. Spanos.
- Q. What is your educational background?
- A. I have Bachelor of Science degrees in Industrial Management and Mathematics from Carnegie-Mellon University and a Master of Business Administration from York College.
- Q. Do you belong to any professional societies?
- A. Yes. I am a member and past President of the Society of Depreciation Professionals and a member of the American Gas Association/Edison Electric Institute Industry Accounting Committee.
- Q. Do you hold any special certification as a depreciation expert?
- A. Yes. The Society of Depreciation Professionals has established national standards for depreciation professionals. The Society administers an examination to become certified in this field. I passed the certification exam in September 1997 and was recertified in August 2003, February 2008, January 2013 and February 2018.
- Q. Please outline your experience in the field of depreciation.
- A. In June 1986, I was employed by Gannett Fleming Valuation and Rate Consultants, Inc. as a Depreciation Analyst. During the period from June 1986 through December 1995, I helped prepare numerous depreciation and original cost studies for utility companies in various industries. I helped perform depreciation studies for the following telephone companies: United Telephone of Pennsylvania, United Telephone of New Jersey, and Anchorage Telephone Utility. I helped perform depreciation studies for the following companies in the railroad industry: Union Pacific Railroad, Burlington Northern Railroad,

and Wisconsin Central Transportation Corporation.

I helped perform depreciation studies for the following organizations in the electric utility industry: Chugach Electric Association, The Cincinnati Gas and Electric Company (CG&E), The Union Light, Heat and Power Company (ULH&P), Northwest Territories Power Corporation, and the City of Calgary - Electric System.

I helped perform depreciation studies for the following pipeline companies: TransCanada Pipelines Limited, Trans Mountain Pipe Line Company Ltd., Interprovincial Pipe Line Inc., Nova Gas Transmission Limited and Lakehead Pipeline Company.

I helped perform depreciation studies for the following gas utility companies: Columbia Gas of Pennsylvania, Columbia Gas of Maryland, The Peoples Natural Gas Company, T. W. Phillips Gas & Oil Company, CG&E, ULH&P, Lawrenceburg Gas Company and Penn Fuel Gas, Inc.

I helped perform depreciation studies for the following water utility companies: Indiana-American Water Company, Consumers Pennsylvania Water Company and The York Water Company; and depreciation and original cost studies for Philadelphia Suburban Water Company and Pennsylvania-American Water Company.

In each of the above studies, I assembled and analyzed historical and simulated data, performed field reviews, developed preliminary estimates of service life and net salvage, calculated annual depreciation, and prepared reports for submission to state public utility commissions or federal regulatory agencies. I performed these studies under the general direction of William M. Stout, P.E.

In January 1996, I was assigned to the position of Supervisor of Depreciation Studies. In July 1999, I was promoted to the position of Manager, Depreciation and Valuation Studies. In December 2000, I was promoted to the position as Vice-President of Gannett Fleming Valuation and Rate Consultants, Inc., in April 2012, I was promoted to

the position as Senior Vice President of the Valuation and Rate Division of Gannett Fleming Inc. (now doing business as Gannett Fleming Valuation and Rate Consultants, LLC) and in January of 2019, I was promoted to my present position of President of Gannett Fleming Valuation and Rate Consultants, LLC. In my current position I am responsible for conducting all depreciation, valuation and original cost studies, including the preparation of final exhibits and responses to data requests for submission to the appropriate regulatory bodies.

Since January 1996, I have conducted depreciation studies similar to those previously listed including assignments for Pennsylvania-American Water Company; Aqua Pennsylvania; Kentucky-American Water Company; Virginia-American Water Company; Indiana-American Water Company; Iowa-American Water Company; New Jersey-American Water Company; Hampton Water Works Company; Omaha Public Power District; Enbridge Pipe Line Company; Inc.; Columbia Gas of Virginia, Inc.; Virginia Natural Gas Company National Fuel Gas Distribution Corporation - New York and Pennsylvania Divisions; The City of Bethlehem - Bureau of Water; The City of Coatesville Authority; The City of Lancaster - Bureau of Water; Peoples Energy Corporation; The York Water Company; Public Service Company of Colorado; Enbridge Pipelines; Enbridge Gas Distribution, Inc.; Reliant Energy-HLP; Massachusetts-American Water Company; St. Louis County Water Company; Missouri-American Water Company; Chugach Electric Association; Alliant Energy; Oklahoma Gas & Electric Company; Nevada Power Company; Dominion Virginia Power; NUI-Virginia Gas Companies; Pacific Gas & Electric Company; PSI Energy; NUI - Elizabethtown Gas Company; Cinergy Corporation - CG&E; Cinergy Corporation - ULH&P; Columbia Gas of Kentucky; South Carolina Electric & Gas Company; Idaho Power Company; El Paso Electric Company; Aqua North Carolina; Aqua Ohio; Aqua Texas, Inc.; Aqua Illinois, Inc.;

Ameren Missouri; Central Hudson Gas & Electric; Centennial Pipeline Company; CenterPoint Energy-Arkansas; CenterPoint Energy – Oklahoma; CenterPoint Energy – Entex; CenterPoint Energy - Louisiana; NSTAR - Boston Edison Company; Westar Energy, Inc.; United Water Pennsylvania; PPL Electric Utilities; PPL Gas Utilities; Wisconsin Power & Light Company; TransAlaska Pipeline; Avista Corporation; Northwest Natural Gas; Allegheny Energy Supply, Inc.; Public Service Company of North Carolina; South Jersey Gas Company; Duquesne Light Company; MidAmerican Energy Company; Laclede Gas; Duke Energy Company; E.ON U.S. Services Inc.; Elkton Gas Services; Anchorage Water and Wastewater Utility; Kansas City Power and Light; Duke Energy North Carolina; Duke Energy South Carolina; Monongahela Power Company; Potomac Edison Company; Duke Energy Ohio Gas; Duke Energy Kentucky; Duke Energy Indiana; Duke Energy Progress; Northern Indiana Public Service Company; Tennessee-American Water Company; Columbia Gas of Maryland; Maryland-American Water Company; Bonneville Power Administration; NSTAR Electric and Gas Company; EPCOR Distribution, Inc.; B. C. Gas Utility, Ltd; Entergy Arkansas; Entergy Texas; Entergy Mississippi; Entergy Louisiana; Entergy Gulf States Louisiana; the Borough of Hanover; Louisville Gas and Electric Company; Kentucky Utilities Company; Madison Gas and Electric; Central Maine Power; PEPCO; PacifiCorp; Minnesota Energy Resource Group; Jersey Central Power & Light Company; Cheyenne Light, Fuel and Power Company; United Water Arkansas; Central Vermont Public Service Corporation; Green Mountain Power; Portland General Electric Company; Atlantic City Electric; Nicor Gas Company; Black Hills Power; Black Hills Colorado Gas; Black Hills Kansas Gas; Black Hills Service Company; Black Hills Utility Holdings; Public Service Company of Oklahoma; City of Dubois; Peoples Gas Light and Coke Company; North Shore Gas Company; Connecticut Light and Power; New York State Electric and Gas Corporation; Rochester Gas and

Electric Corporation; Greater Missouri Operations; Tennessee Valley Authority; Omaha Public Power District; Indianapolis Power & Light Company; Vermont Gas Systems, Inc.; Metropolitan Edison; Pennsylvania Electric; West Penn Power; Pennsylvania Power; PHI Service Company - Delmarva Power and Light; Atmos Energy Corporation; Citizens Energy Group; PSE&G Company; Berkshire Gas Company; Alabama Gas Corporation; Mid-Atlantic Interstate Transmission, LLC; SUEZ Water; WEC Energy Group; Rocky Mountain Natural Gas, LLC; Illinois-American Water Company; Northern Illinois Gas Company; Public Service of New Hampshire and Newtown Artesian Water Company.

My additional duties include determining final life and salvage estimates, conducting field reviews, presenting recommended depreciation rates to management for its consideration and supporting such rates before regulatory bodies.

- Q. Have you submitted testimony to any state utility commission on the subject of utility plant depreciation?
- A. Yes. I have submitted testimony to the Pennsylvania Public Utility Commission; the Commonwealth of Kentucky Public Service Commission; the Public Utilities Commission of Ohio; the Nevada Public Utility Commission; the Public Utilities Board of New Jersey; the Missouri Public Service Commission; the Massachusetts Department of Telecommunications and Energy; the Alberta Energy & Utility Board; the Idaho Public Utility Commission; the Louisiana Public Service Commission; the State Corporation Commission of Kansas; the Oklahoma Corporate Commission; the Public Service Commission of South Carolina; Railroad Commission of Texas Gas Services Division; the New York Public Service Commission; Illinois Commerce Commission; the Indiana Utility Regulatory Commission; the California Public Utilities Commission; the Federal Energy Regulatory Commission ("FERC"); the Arkansas Public Service Commission; Washington

Utilities and Transportation Commission; The Tennessee Regulatory Commission; the Regulatory Commission of Alaska; Minnesota Public Utility Commission; Utah Public Service Commission; District of Columbia Public Service Commission; the Mississippi Public Service Commission; Delaware Public Service Commission; Virginia State Corporation Commission; Colorado Public Utility Commission; Oregon Public Utility Commission; South Dakota Public Utilities Commission; Wisconsin Public Service Commission; Wyoming Public Service Commission; the Public Service Commission of West Virginia; Maine Public Utility Commission; Iowa Utility Board; Connecticut Public Utilities Regulatory Authority; New Mexico Public Regulation Commission; Commonwealth of Massachusetts Department of Public Utilities; Rhode Island Public Utilities Commission and the North Carolina Utilities Commission.

Q. Have you had any additional education relating to utility plant depreciation?

A. Yes. I have completed the following courses conducted by Depreciation Programs, Inc.:

"Techniques of Life Analysis," "Techniques of Salvage and Depreciation Analysis,"

"Forecasting Life and Salvage," "Modeling and Life Analysis Using Simulation," and

"Managing a Depreciation Study." I have also completed the "Introduction to Public

Utility Accounting" program conducted by the American Gas Association.

Q. Does this conclude your qualification statement?

A. Yes.

	<u>Year</u>	<u>Jurisdiction</u>	Docket No.	Client Utility	<u>Subject</u>
01.	1998	PA PUC	R-00984375	City of Bethlehem – Bureau of Water	Original Cost and Depreciation
02.	1998	PA PUC	R-00984567	City of Lancaster	Original Cost and Depreciation
03.	1999	PA PUC	R-00994605	The York Water Company	Depreciation
04.	2000	D.T.&E.	DTE 00-105	Massachusetts-American Water Company	Depreciation
05.	2001	PA PUC	R-00016114	City of Lancaster	Original Cost and Depreciation
06.	2001	PA PUC	R-00017236	The York Water Company	Depreciation
07.	2001	PA PUC	R-00016339	Pennsylvania-American Water Company	Depreciation
08.	2001	OH PUC	01-1228-GA-AIR	Cinergy Corp – Cincinnati Gas & Elect Company	Depreciation
09.	2001	KY PSC	2001-092	Cinergy Corp – Union Light, Heat & Power Co.	Depreciation
10.	2002	PA PUC	R-00016750	Philadelphia Suburban Water Company	Depreciation
11.	2002	KY PSC	2002-00145	Columbia Gas of Kentucky	Depreciation
12.	2002	NJ BPU	GF02040245	NUI Corporation/Elizabethtown Gas Company	Depreciation
13.	2002	ID PUC	IPC-E-03-7	Idaho Power Company	Depreciation
14.	2003	PA PUC	R-0027975	The York Water Company	Depreciation
15.	2003	IN URC	R-0027975	Cinergy Corp – PSI Energy, Inc.	Depreciation
16.	2003	PA PUC	R-00038304	Pennsylvania-American Water Company	Depreciation
17.	2003	MO PSC	WR-2003-0500	Missouri-American Water Company	Depreciation
18.	2003	FERC	ER03-1274-000	NSTAR-Boston Edison Company	Depreciation
19.	2003	NJ BPU	BPU 03080683	South Jersey Gas Company	Depreciation
20.	2003	NV PUC	03-10001	Nevada Power Company	Depreciation
21.	2003	LA PSC	U-27676	CenterPoint Energy – Arkla	Depreciation
22.	2003	PA PUC	R-00038805	Pennsylvania Suburban Water Company	Depreciation
23.	2004	AB En/Util Bd	1306821	EPCOR Distribution, Inc.	Depreciation
24.	2004	PA PUC	R-00038168	National Fuel Gas Distribution Corp (PA)	Depreciation
25.	2004	PA PUC	R-00049255	PPL Electric Utilities	Depreciation
26.	2004	PA PUC	R-00049165	The York Water Company	Depreciation
27.	2004	OK Corp Cm	PUC 200400187	CenterPoint Energy – Arkla	Depreciation
28.	2004	OH PUC	04-680-El-AIR	Cinergy Corp. – Cincinnati Gas and	Depreciation
				Electric Company	·
29.	2004	RR Com of TX	GUD#	CenterPoint Energy – Entex Gas Services Div.	Depreciation
30.	2004	NY PUC	04-G-1047	National Fuel Gas Distribution Gas (NY)	Depreciation
31.	2004	AR PSC	04-121-U	CenterPoint Energy – Arkla	Depreciation
32.	2005	IL CC	05-	North Shore Gas Company	Depreciation
33.					
55.	2005	IL CC	05-	Peoples Gas Light and Coke Company	Depreciation

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35.	2005	IL CC	05-0308	MidAmerican Energy Company	Depreciation
36.	2005	MO PSC	GF-2005	Laclede Gas Company	Depreciation
37.	2005	KS CC	05-WSEE-981-RTS	Westar Energy	Depreciation
38.	2005	RR Com of TX	GUD#	CenterPoint Energy – Entex Gas Services Div.	Depreciation
39.	2005	US District Court	Cause No. 1:99-CV-1693- LJM/VSS	Cinergy Corporation	Accounting
40.	2005	ОК СС	PUD 200500151	Oklahoma Gas and Electric Company	Depreciation
41.	2005	MA Dept Tele- com & Ergy	DTE 05-85	NSTAR	Depreciation
42.	2005	NY PUC	05-E-934/05-G-0935	Central Hudson Gas & Electric Company	Depreciation
43.	2005	AK Reg Com	U-04-102	Chugach Electric Association	Depreciation
44.	2005	CA PUC	A05-12-002	Pacific Gas & Electric	Depreciation
45.	2006	PA PUC	R-00051030	Aqua Pennsylvania, Inc.	Depreciation
46.	2006	PA PUC	R-00051178	T.W. Phillips Gas and Oil Company	Depreciation
47.	2006	NC Util Cm.		Pub. Service Company of North Carolina	Depreciation
48.	2006	PA PUC	R-00051167	City of Lancaster	Depreciation
49.	2006	PA PUC	R00061346	Duquesne Light Company	Depreciation
50.	2006	PA PUC	R-00061322	The York Water Company	Depreciation
51.	2006	PA PUC	R-00051298	PPL GAS Utilities	Depreciation
52.	2006	PUC of TX	32093	CenterPoint Energy – Houston Electric	Depreciation
53.	2006	KY PSC	2006-00172	Duke Energy Kentucky	Depreciation
54.	2006	SC PSC		SCANA	Accounting
55.	2006	AK Reg Com	U-06-6	Municipal Light and Power	Depreciation
56.	2006	DE PSC	06-284	Delmarva Power and Light	Depreciation
57.	2006	IN URC	IURC43081	Indiana American Water Company	Depreciation
58.	2006	AK Reg Com	U-06-134	Chugach Electric Association	Depreciation
59.	2006	MO PSC	WR-2007-0216	Missouri American Water Company	Depreciation
60.	2006	FERC	IS05-82-002, et al	TransAlaska Pipeline	Depreciation
61.	2006	PA PUC	R-00061493	National Fuel Gas Distribution Corp. (PA)	Depreciation
62.	2007	NC Util Com.	E-7 SUB 828	Duke Energy Carolinas, LLC	Depreciation
63.	2007	OH PSC	08-709-EL-AIR	Duke Energy Ohio Gas	Depreciation
64.	2007	PA PUC	R-00072155	PPL Electric Utilities Corporation	Depreciation
65.	2007	KY PSC	2007-00143	Kentucky American Water Company	Depreciation

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66.	2007	PA PUC	R-00072229	Pennsylvania American Water Company	Depreciation
67.	2007	KY PSC	2007-0008	NiSource – Columbia Gas of Kentucky	Depreciation
68.	2007	NY PSC	07-G-0141	National Fuel Gas Distribution Corp (NY)	Depreciation
69.	2008	AK PSC	U-08-004	Anchorage Water & Wastewater Utility	Depreciation
70.	2008	TN Reg Auth	08-00039	Tennessee-American Water Company	Depreciation
71.	2008	DE PSC	08-96	Artesian Water Company	Depreciation
72.	2008	PA PUC	R-2008-2023067	The York Water Company	Depreciation
73.	2008	KS CC	08-WSEE1-RTS	Westar Energy	Depreciation
74.	2008	IN URC	43526	Northern Indiana Public Service Company	Depreciation
75.	2008	IN URC	43501	Duke Energy Indiana	Depreciation
76.	2008	MD PSC	9159	NiSource – Columbia Gas of Maryland	Depreciation
77.	2008	KY PSC	2008-000251	Kentucky Utilities	Depreciation
78.	2008	KY PSC	2008-000252	Louisville Gas & Electric	Depreciation
79.	2008	PA PUC	2008-20322689	Pennsylvania American Water Co Wastewater	Depreciation
80.	2008	NY PSC	08-E887/08-00888	Central Hudson	Depreciation
81.	2008	WV TC	VE-080416/VG-8080417	Avista Corporation	Depreciation
82.	2008	IL CC	ICC-09-166	Peoples Gas, Light and Coke Company	Depreciation
83.	2009	IL CC	ICC-09-167	North Shore Gas Company	Depreciation
84.	2009	DC PSC	1076	Potomac Electric Power Company	Depreciation
85.	2009	KY PSC	2009-00141	NiSource – Columbia Gas of Kentucky	Depreciation
86.	2009	FERC	ER08-1056-002	Entergy Services	Depreciation
87.	2009	PA PUC	R-2009-2097323	Pennsylvania American Water Company	Depreciation
88.	2009	NC Util Cm	E-7, Sub 090	Duke Energy Carolinas, LLC	Depreciation
89.	2009	KY PSC	2009-00202	Duke Energy Kentucky	Depreciation
90.	2009	VA St. CC	PUE-2009-00059	Aqua Virginia, Inc.	Depreciation
91.	2009	PA PUC	2009-2132019	Aqua Pennsylvania, Inc.	Depreciation
92.	2009	MS PSC	09-	Entergy Mississippi	Depreciation
93.	2009	AK PSC	09-08-U	Entergy Arkansas	Depreciation
94.	2009	TX PUC	37744	Entergy Texas	Depreciation
95.	2009	TX PUC	37690	El Paso Electric Company	Depreciation
96.	2009	PA PUC	R-2009-2106908	The Borough of Hanover	Depreciation
97.	2009	KS CC	10-KCPE-415-RTS	Kansas City Power & Light	Depreciation
98.	2009	PA PUC	R-2009-	United Water Pennsylvania	Depreciation

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99.	2009	OH PUC		Aqua Ohio Water Company	Depreciation
100.	2009	WI PSC	3270-DU-103	Madison Gas & Electric Company	Depreciation
101.	2009	MO PSC	WR-2010	Missouri American Water Company	Depreciation
102.	2009	AK Reg Cm	U-09-097	Chugach Electric Association	Depreciation
103.	2010	IN URC	43969	Northern Indiana Public Service Company	Depreciation
104.	2010	WI PSC	6690-DU-104	Wisconsin Public Service Corp.	Depreciation
105.	2010	PA PUC	R-2010-2161694	PPL Electric Utilities Corp.	Depreciation
106.	2010	KY PSC	2010-00036	Kentucky American Water Company	Depreciation
107.	2010	PA PUC	R-2009-2149262	Columbia Gas of Pennsylvania	Depreciation
108.	2010	MO PSC	GR-2010-0171	Laclede Gas Company	Depreciation
109.	2010	SC PSC	2009-489-E	South Carolina Electric & Gas Company	Depreciation
110.	2010	NJ BD OF PU	ER09080664	Atlantic City Electric	Depreciation
111.	2010	VA St. CC	PUE-2010-00001	Virginia American Water Company	Depreciation
112.	2010	PA PUC	R-2010-2157140	The York Water Company	Depreciation
113.	2010	MO PSC	ER-2010-0356	Greater Missouri Operations Company	Depreciation
114.	2010	MO PSC	ER-2010-0355	Kansas City Power and Light	Depreciation
115.	2010	PA PUC	R-2010-2167797	T.W. Phillips Gas and Oil Company	Depreciation
116.	2010	PSC SC	2009-489-E	SCANA – Electric	Depreciation
117.	2010	PA PUC	R-2010-22010702	Peoples Natural Gas, LLC	Depreciation
118.	2010	AK PSC	10-067-U	Oklahoma Gas and Electric Company	Depreciation
119.	2010	IN URC		Northern Indiana Public Serv. Company - NIFL	Depreciation
120.	2010	IN URC		Northern Indiana Public Serv. Co Kokomo	Depreciation
121.	2010	PA PUC	R-2010-2166212	Pennsylvania American Water Co WW	Depreciation
122.	2010	NC Util Cn.	W-218,SUB310	Aqua North Carolina, Inc.	Depreciation
123.	2011	OH PUC	11-4161-WS-AIR	Ohio American Water Company	Depreciation
124.	2011	MS PSC	EC-123-0082-00	Entergy Mississippi	Depreciation
125.	2011	CO PUC	11AL-387E	Black Hills Colorado	Depreciation
126.	2011	PA PUC	R-2010-2215623	Columbia Gas of Pennsylvania	Depreciation
127.	2011	PA PUC	R-2010-2179103	City of Lancaster – Bureau of Water	Depreciation
128.	2011	IN URC	43114 IGCC 4S	Duke Energy Indiana	Depreciation
129.	2011	FERC	IS11-146-000	Enbridge Pipelines (Southern Lights)	Depreciation
130.	2011	IL CC	11-0217	MidAmerican Energy Corporation	Depreciation
131.	2011	OK CC	201100087	Oklahoma Gas & Electric Company	Depreciation
132.	2011	PA PUC	2011-2232243	Pennsylvania American Water Company	Depreciation

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133.	2011	FERC	RP11000	Carolina Gas Transmission	Depreciation
134.	2012	WA UTC	UE-120436/UG-120437	Avista Corporation	Depreciation
135.	2012	AK Reg Cm	U-12-009	Chugach Electric Association	Depreciation
136.	2012	MA PUC	DPU 12-25	Columbia Gas of Massachusetts	Depreciation
137.	2012	TX PUC	40094	El Paso Electric Company	Depreciation
138.	2012	ID PUC	IPC-E-12	Idaho Power Company	Depreciation
139.	2012	PA PUC	R-2012-2290597	PPL Electric Utilities	Depreciation
140.	2012	PA PUC	R-2012-2311725	Borough of Hanover – Bureau of Water	Depreciation
141.	2012	KY PSC	2012-00222	Louisville Gas and Electric Company	Depreciation
142.	2012	KY PSC	2012-00221	Kentucky Utilities Company	Depreciation
143.	2012	PA PUC	R-2012-2285985	Peoples Natural Gas Company	Depreciation
144.	2012	DC PSC	Case 1087	Potomac Electric Power Company	Depreciation
145.	2012	OH PSC	12-1682-EL-AIR	Duke Energy Ohio (Electric)	Depreciation
146.	2012	OH PSC	12-1685-GA-AIR	Duke Energy Ohio (Gas)	Depreciation
147.	2012	PA PUC	R-2012-2310366	City of Lancaster – Sewer Fund	Depreciation
148.	2012	PA PUC	R-2012-2321748	Columbia Gas of Pennsylvania	Depreciation
149.	2012	FERC	ER-12-2681-000	ITC Holdings	Depreciation
150.	2012	MO PSC	ER-2012-0174	Kansas City Power and Light	Depreciation
151.	2012	MO PSC	ER-2012-0175	KCPL Greater Missouri Operations Company	Depreciation
152.	2012	MO PSC	GO-2012-0363	Laclede Gas Company	Depreciation
153.	2012	MN PUC	G007,001/D-12-533	Integrys – MN Energy Resource Group	Depreciation
154.	2012	TX PUC		Aqua Texas	Depreciation
155.	2012	PA PUC	2012-2336379	York Water Company	Depreciation
156.	2013	NJ BPU	ER12121071	PHI Service Company – Atlantic City Electric	Depreciation
157.	2013	KY PSC	2013-00167	Columbia Gas of Kentucky	Depreciation
158.	2013	VA St CC	2013-00020	Virginia Electric and Power Company	Depreciation
159.	2013	IA Util Bd	2013-0004	MidAmerican Energy Corporation	Depreciation
160.	2013	PA PUC	2013-2355276	Pennsylvania American Water Company	Depreciation
161.	2013	NY PSC	13-E-0030, 13-G-0031, 13-S-0032	Consolidated Edison of New York	Depreciation
162.	2013	PA PUC	2013-2355886	Peoples TWP LLC	Depreciation
163.	2013	TN Reg Auth	12-0504	Tennessee American Water	Depreciation
164.	2013	ME PUC	2013-168	Central Maine Power Company	Depreciation
165.	2013	DC PSC	Case 1103	PHI Service Company – PEPCO	Depreciation

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166.	2013	WY PSC	2003-ER-13	Cheyenne Light, Fuel and Power Company	Depreciation
167.	2013	FERC	ER13-2428-0000	Kentucky Utilities	Depreciation
168.	2013	FERC	ER130000	MidAmerican Energy Company	Depreciation
169.	2013	FERC	ER13-2410-0000	PPL Utilities	Depreciation
170.	2013	PA PUC	R-2013-2372129	Duquesne Light Company	Depreciation
171.	2013	NJ BPU	ER12111052	Jersey Central Power and Light Company	Depreciation
172.	2013	PA PUC	R-2013-2390244	Bethlehem, City of – Bureau of Water	Depreciation
173.	2013	OK CC	UM 1679	Oklahoma, Public Service Company of	Depreciation
174.	2013	IL CC	13-0500	Nicor Gas Company	Depreciation
175.	2013	WY PSC	20000-427-EA-13	PacifiCorp	Depreciation
176.	2013	UT PSC	13-035-02	PacifiCorp	Depreciation
177.	2013	OR PUC	UM 1647	PacifiCorp	Depreciation
178.	2013	PA PUC	2013-2350509	Dubois, City of	Depreciation
179.	2014	IL CC	14-0224	North Shore Gas Company	Depreciation
180.	2014	FERC	ER140000	Duquesne Light Company	Depreciation
181.	2014	SD PUC	EL14-026	Black Hills Power Company	Depreciation
182.	2014	WY PSC	20002-91-ER-14	Black Hills Power Company	Depreciation
183.	2014	PA PUC	2014-2428304	Borough of Hanover – Municipal Water Works	Depreciation
184.	2014	PA PUC	2014-2406274	Columbia Gas of Pennsylvania	Depreciation
185.	2014	IL CC	14-0225	Peoples Gas Light and Coke Company	Depreciation
186.	2014	MO PSC	ER-2014-0258	Ameren Missouri	Depreciation
187.	2014	KS CC	14-BHCG-502-RTS	Black Hills Service Company	Depreciation
188.	2014	KS CC	14-BHCG-502-RTS	Black Hills Utility Holdings	Depreciation
189.	2014	KS CC	14-BHCG-502-RTS	Black Hills Kansas Gas	Depreciation
190.	2014	PA PUC	2014-2418872	Lancaster, City of – Bureau of Water	Depreciation
191.	2014	WV PSC	14-0701-E-D	First Energy – MonPower/PotomacEdison	Depreciation
192	2014	VA St CC	PUC-2014-00045	Aqua Virginia	Depreciation
193.	2014	VA St CC	PUE-2013	Virginia American Water Company	Depreciation
194.	2014	OK CC	PUD201400229	Oklahoma Gas and Electric Company	Depreciation
195.	2014	OR PUC	UM1679	Portland General Electric	Depreciation
196.	2014	IN URC	Cause No. 44576	Indianapolis Power & Light	Depreciation
197.	2014	MA DPU	DPU. 14-150	NSTAR Gas	Depreciation
198.	2014	CT PURA	14-05-06	Connecticut Light and Power	Depreciation
199.	2014	MO PSC	ER-2014-0370	Kansas City Power & Light	Depreciation

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200.	2014	KY PSC	2014-00371	Kentucky Utilities Company	Depreciation
201.	2014	KY PSC	2014-00372	Louisville Gas and Electric Company	Depreciation
202.	2015	PA PUC	R-2015-2462723	United Water Pennsylvania Inc.	Depreciation
203.	2015	PA PUC	R-2015-2468056	NiSource - Columbia Gas of Pennsylvania	Depreciation
204.	2015	NY PSC	15-E-0283/15-G-0284	New York State Electric and Gas Corporation	Depreciation
205.	2015	NY PSC	15-E-0285/15-G-0286	Rochester Gas and Electric Corporation	Depreciation
206.	2015	MO PSC	WR-2015-0301/SR-2015-0302	Missouri American Water Company	Depreciation
207.	2015	OK CC	PUD 201500208	Oklahoma, Public Service Company of	Depreciation
208.	2015	WV PSC	15-0676-W-42T	West Virginia American Water Company	Depreciation
209.	2015	PA PUC	2015-2469275	PPL Electric Utilities	Depreciation
210.	2015	IN URC	Cause No. 44688	Northern Indiana Public Service Company	Depreciation
211.	2015	OH PSC	14-1929-EL-RDR	First Energy-Ohio Edison/Cleveland Electric/	Depreciation
				Toledo Edison	
212.	2015	NM PRC	15-00127-UT	El Paso Electric	Depreciation
213.	2015	TX PUC	PUC-44941; SOAH 473-15-5257	El Paso Electric	Depreciation
214.	2015	WI PSC	3270-DU-104	Madison Gas and Electric Company	Depreciation
215.	2015	OK CC	PUD 201500273	Oklahoma Gas and Electric	Depreciation
216.	2015	KY PSC	Doc. No. 2015-00418	Kentucky American Water Company	Depreciation
217.	2015	NC UC	Doc. No. G-5, Sub 565	Public Service Company of North Carolina	Depreciation
218.	2016	WA UTC	Docket UE-17	Puget Sound Energy	Depreciation
219.	2016	NY PSC	Case No. 16-W-0130	SUEZ Water New York, Inc.	Depreciation
220.	2016	MO PSC	ER-2016-0156	KCPL – Greater Missouri	Depreciation
221.	2016	WI PSC		Wisconsin Public Service Commission	Depreciation
222.	2016	KY PSC	Case No. 2016-00026	Kentucky Utilities Company	Depreciation
223.	2016	KY PSC	Case No. 2016-00027	Louisville Gas and Electric Company	Depreciation
224.	2016	OH PUC	Case No. 16-0907-WW-AIR	Aqua Ohio	Depreciation
225.	2016	MD PSC	Case 9417	NiSource - Columbia Gas of Maryland	Depreciation
226.	2016	KY PSC	2016-00162	Columbia Gas of Kentucky	Depreciation
227.	2016	DE PSC	16-0649	Delmarva Power and Light Company – Electric	Depreciation
228.	2016	DE PSC	16-0650	Delmarva Power and Light Company – Gas	Depreciation
229.	2016	NY PSC	Case 16-G-0257	National Fuel Gas Distribution Corp – NY Div	Depreciation
230.	2016	PA PUC	R-2016-2537349	Metropolitan Edison Company	Depreciation
231.	2016	PA PUC	R-2016-2537352	Pennsylvania Electric Company	Depreciation
232.	2016	PA PUC	R-2016-2537355	Pennsylvania Power Company	Depreciation

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233.	2016	PA PUC	R-2016-2537359	West Penn Power Company	Depreciation
234.	2016	PA PUC	R-2016-2529660	NiSource - Columbia Gas of PA	Depreciation
235.	2016	KY PSC	Case No. 2016-00063	Kentucky Utilities / Louisville Gas & Electric Co	Depreciation
236.	2016	MO PSC	ER-2016-0285	KCPL Missouri	Depreciation
237.	2016	AR PSC	16-052-U	Oklahoma Gas & Electric Co	Depreciation
238.	2016	PSCW	6680-DU-104	Wisconsin Power and Light	Depreciation
239.	2016	ID PUC	IPC-E-16-23	Idaho Power Company	Depreciation
240.	2016	OR PUC	UM1801	Idaho Power Company	Depreciation
241.	2016	ILL CC	16-	MidAmerican Energy Company	Depreciation
242.	2016	KY PSC	Case No. 2016-00370	Kentucky Utilities Company	Depreciation
243.	2016	KY PSC	Case No. 2016-00371	Louisville Gas and Electric Company	Depreciation
244.	2016	IN URC		Indianapolis Power & Light	Depreciation
245.	2016	AL RC	U-16-081	Chugach Electric Association	Depreciation
246.	2017	MA DPU	D.P.U. 17-05	NSTAR Electric Company and Western	Depreciation
				Massachusetts Electric Company	
247.	2017	TX PUC	PUC-26831, SOAH 973-17-2686	El Paso Electric Company	Depreciation
248.	2017	WA UTC	UE-17033 and UG-170034	Puget Sound Energy	Depreciation
249.	2017	OH PUC	Case No. 17-0032-EL-AIR	Duke Energy Ohio	Depreciation
250.	2017	VA SCC	Case No. PUE-2016-00413	Virginia Natural Gas, Inc.	Depreciation
251.	2017	OK CC	Case No. PUD201700151	Public Service Company of Oklahoma	Depreciation
252.	2017	MD PSC	Case No. 9447	Columbia Gas of Maryland	Depreciation
253.	2017	NC UC	Docket No. E-2, Sub 1142	Duke Energy Progress	Depreciation
254.	2017	VA SCC	Case No. PUR-2017-00090	Dominion Virginia Electric and Power Company	Depreciation
255.	2017	FERC	ER17-1162	MidAmerican Energy Company	Depreciation
256.	2017	PA PUC	R-2017-2595853	Pennsylvania American Water Company	Depreciation
257.	2017	OR PUC	UM1809	Portland General Electric	Depreciation
258.	2017	FERC	ER17-217-000	Jersey Central Power & Light	Depreciation
259.	2017	FERC	ER17-211-000	Mid-Atlantic Interstate Transmission, LLC	Depreciation
260.	2017	MN PUC	Docket No. G007/D-17-442	Minnesota Energy Resources Corporation	Depreciation
261.	2017	IL CC	Docket No. 17-0124	Northern Illinois Gas Company	Depreciation
262.	2017	OR PUC	UM1808	Northwest Natural Gas Company	Depreciation
263.	2017	NY PSC	Case No. 17-W-0528	SUEZ Water Owego-Nichols	Depreciation
264.	2017	MO PSC	GR-2017-0215	Laclede Gas Company	Depreciation
265.	2017	MO PSC	GR-2017-0216	Missouri Gas Energy	Depreciation

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266.	2017	ILL CC	Docket No. 17-0337	Illinois-American Water Company	Depreciation
267.	2017	FERC	Docket No. ER18-22-000	PPL Electric Utilities Corporation	Depreciation
268.	2017	IN URC	Cause No. 44988	Northern Indiana Public Service Company	Depreciation
269.	2017	NJ BPU	BPU Docket No. WR17090985	New Jersey American Water Company, Inc.	Depreciation
270.	2017	RI PUC	Docket No. 4800	SUEZ Water Rhode Island	Depreciation
271.	2017	OK CC	Cause No. PUD 201700496	Oklahoma Gas and Electric Company	Depreciation
272.	2017	NJ BPU	ER18010029 & GR18010030	Public Service Electric and Gas Company	Depreciation
273.	2017	NC Util Com.	Docket No. E-7, SUB 1146	Duke Energy Carolinas, LLC	Depreciation
274.	2017	KY PSC	Case No. 2017-00321	Duke Energy Kentucky, Inc.	Depreciation
275.	2017	MA DPU	D.P.U. 18-40	Berkshire Gas Company	Depreciation
276.	2018	IN IURC	Cause No. 44992	Indiana-American Water Company, Inc.	Depreciation
277.	2018	IN IURC	Cause No. 45029	Indianapolis Power and Light	Depreciation
278.	2018	NC Util Com.	Docket No. W-218, Sub 497	Aqua North Carolina, Inc.	Depreciation
279.	2018	PA PUC	Docket No. R-2018-2647577	NiSource - Columbia Gas of Pennsylvania, Inc.	Depreciation
280.	2018	OR PUC	Docket UM 1933	Avista Corporation	Depreciation
281.	2018	WA UTC	Docket No. UE-108167	Avista Corporation	Depreciation
282.	2018	ID PUC	AVU-E-18-03, AVU-G-18-02	Avista Corporation	Depreciation
283.	2018	IN URC	Cause No. 45039	Citizens Energy Group	Depreciation
284.	2018	FERC	Docket No. ER18-	Duke Energy Progress	Depreciation
285.	2018	PA PUC	Docket No. R-2018-3000124	Duquesne Light Company	Depreciation
286.	2018	MD PSC	Case No. 948	NiSource - Columbia Gas of Maryland	Depreciation
287.	2018	MA DPU	D.P.U. 18-45	NiSource - Columbia Gas of Massachusetts	Depreciation
288.	2018	OH PUC	Case No. 18-0299-GA-ALT	Vectren Energy Delivery of Ohio	Depreciation
289.	2018	PA PUC	Docket No. R-2018-3000834	SUEZ Water Pennsylvania Inc.	Depreciation
290.	2018	MD PSC	Case No. 9847	Maryland-American Water Company	Depreciation
291.	2018	PA PUC	Docket No. R-2018-3000019	The York Water Company	Depreciation
292.	2018	FERC	ER-18-2231-000	Duke Energy Carolinas, LLC	Depreciation
293.	2018	KY PSC	Case No. 2018-00261	Duke Energy Kentucky, Inc.	Depreciation
294.	2018	NJ BPU	BPU Docket No. WR18050593	SUEZ Water New Jersey	Depreciation
295.	2018	WA UTC	Docket No. UE-180778	PacifiCorp	Depreciation
296.	2018	UT PSC	Docket No. 18-035-36	PacifiCorp	Depreciation
297.	2018	OR PUC	Docket No. UM-1968	PacifiCorp	Depreciation
298.	2018	ID PUC	Case No. PAC-E-18-08	PacifiCorp	Depreciation
299.	2018	WY PSC	20000-539-EA-18	PacifiCorp	Depreciation
300.	2018	PA PUC	Docket No. R-2018-3003068	Aqua Pennsylvania, Inc.	Depreciation

	<u>Year</u>	<u>Jurisdiction</u>	<u>Docket No.</u>	Client Utility	<u>Subject</u>
301.	2018	IL CC	Docket No. 18-1467	Aqua Illinois, Inc.	Depreciation
302.	2018	KY PSC	Case No. 2018-00294	Louisville Gas & Electric Company	Depreciation
303.	2018	KY PSC	Case No. 2018-00295	Kentucky Utilities Company	Depreciation
304.	2018	IN URC	Cause No. 45159	Northern Indiana Public Service Company	Depreciation
305.	2018	VA SCC	Case No. PUR-2019-00175	Virginia American Water Company	Depreciation
306.	2019	PA PUC	Docket No. R-2018-3006818	Peoples Natural Gas Company, LLC	Depreciation
307.	2019	OK CC	Cause No. PUD201800140	Oklahoma Gas and Electric Company	Depreciation
308.	2019	MD PSC	Case No. 9490	FirstEnergy – Potomac Edison	Depreciation
309.	2019	SC PSC	Docket No. 2018-318-E	Duke Energy Progress	Depreciation
310.	2019	SC PSC	Docket No. 2018-319-E	Duke Energy Carolinas	Depreciation
311.	2019	DE PSC	DE 19-057	Public Service of New Hampshire	Depreciation
312.3	2019	NY PSC	Case No. 19-W-0168 & 19-W-0269	SUEZ Water New York	Depreciation
313.	2019	PA PUC	Docket No. R-2019-3006904	Newtown Artesian Water Company	Depreciation
314.	2019	MO PSC	ER-2019-0335	Ameren Missouri	Depreciation
315.	2019	MO PSC	EC-2019-0200	KCP&L Greater Missouri Operations Company	Depreciation
316.	2019	MN DOC	G011/D-19-377	Minnesota Energy Resource Corp.	Depreciation
317.	2019	NY PSC	Case 19-E-0378 & 19-G-0379	New York State Electric and Gas Corporation	Depreciation
318.	2019	NY PSC	Case 19-E-0380 & 19-G-0381	Rochester Gas and Electric Corporation	Depreciation
319.	2019	WA UTC	Docket UE-190529 / UG-190530	Puget Sound Energy	Depreciation
320.	2019	PA PUC	Docket No. R-2019-3010955	City of Lancaster	Depreciation
321.0	2019	IURC	Cause No. 45253	Duke Energy Indiana	Depreciation
322.	2019	KY PSC	Case No. 2019-00271	Duke Energy Kentucky, Inc.	Depreciation
323.	2019	OH PUC	Case No. 18-1720-GA-AIR	Northeast Ohio Natural Gas Corp	Depreciation
324.	2019	NC Util. Com.	Docket No. E-2, Sub 1219	Duke Energy Carolinas	Depreciation
325.	2019	FERC	Docket No. ER20-277-000	Jersey Central Power & Light Company	Depreciation
326.	2019	MA DPU	D.P.U. 19-120	NSTAR Gas Company	Depreciation
327.	2019	SC PSC	Docket No. 2019-290-WS	Blue Granite Water Company	Depreciation
328.	2019	NC Util. Com.	Docket No. E-2, Sub 1219	Duke Energy Progress	Depreciation
329.	2019	MD PSC	Case No. 9609	NiSource Columbia Gas of Maryland, Inc.	Depreciation
330.	2020	NJ BPU	Docket No. ER20020146	Jersey Central Power & Light Company	Depreciation
331.	2020	PA PUC	Docket No. R-2020-3018835	NiSource - Columbia Gas of Pennsylvania, Inc.	Depreciation
332.	2020	PA PUC	Docket No. R-2020-3019369	Pennsylvania-American Water Company	Depreciation
333.	2020	PA PUC	Docket No. R-2020-3019371	Pennsylvania-American Water Company	Depreciation
334.	2020	MO PSC	GO-2018-0309, GO-2018-0310	Spire Missouri, Inc.	Depreciation
335.	2020	NM PRC	Case No. 20-00104-UT	El Paso Electric Company	Depreciation
336.	2020	MD PSC	Case No. 9644	Columbia Gas of Maryland, Inc.	Depreciation
337.	2020	MO PSC	GO-2018-0309, GO-2018-0310	Spire Missouri, Inc.	Depreciation
338.	2020	VA St CC	Case No. PUR-2020-00095	Virginia Natural Gas Company	Depreciation

LIST OF CASES IN WHICH JOHN J. SPANOS SUBMITTED TESTIMONY, cont.

	<u>Year</u>	<u>Jurisdiction</u>	Docket No.	Client Utility	<u>Subject</u>
339.	2020	SC PSC	Docket No. 2020-125-E	Dominion Energy South Carolina, Inc.	Depreciation
340.	2020	WV PSC	Case No. 20G-D	Hope Gas, Inc. d/b/a Dominion Energy West Virginia	Depreciation
341.	2020	VA St CC	Case No. PUR-2020-00106	Aqua Virginia, Inc.	Depreciation
342.	2020	PA PUC	Docket No. R-2020-3020256	City of Bethlehem – Bureau of Water	Depreciation
343.	2020	NE PSC	Docket No. NG-109	Black Hills Nebraska	Depreciation
344.	2020	NY PSC	Case No. 20-E-0428 & 20-G-0429	Central Hudson Gas & Electric Corporation	Depreciation
345.	2020	FERC	ER20-598	Duke Energy Indiana	Depreciation
346.	2020	FERC	ER20-855	Northern Indiana Public Service Company	Depreciation
347.	2020	OR PSC	UE 374	Pacificorp	Depreciation
3483	2020	MD PSC	Case No. 9490 Phase II	Potomac Edison – Maryland	Depreciation



2019 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS AND COMMON PLANT AS OF DECEMBER 31, 2019

Prepared by:



Excellence Delivered As Promised

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY d/b/a VECTREN ENERGY DELIVERY OF INDIANA, INC. Evansville, Indiana

2019 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION

ACCRUALS RELATED TO GAS AND COMMON PLANT

AS OF DECEMBER 31, 2019



Excellence Delivered As Promised

October 23, 2020

Southern Indiana Gas and Electric Company d/b/a Vectren Energy Delivery of Indiana, Inc. One Vectren Square Evansville, IN 47708

Attention: Jason Stephenson

Vice President and Associated General Counsel - Regulatory Legal

Ladies and Gentlemen:

Pursuant to your request, we have conducted a depreciation study related to the gas and common plant of Southern Indiana Gas and Electric Company d/b/a Vectren Energy Delivery of Indiana, Inc., a CenterPoint Energy Company ("Vectren South- Gas") as of December 31, 2019. The attached report presents a description of the methods used in the estimation of depreciation, the summary of annual depreciation accrual rates, the statistical support for the life and net salvage estimates and the detailed tabulations of annual depreciation.

We gratefully acknowledge the assistance of Vectren South-Gas personnel in the conduct of this study.

Respectfully submitted,

GANNETT FLEMING VALUATION AND RATE CONSULTANTS. LLC

John J. Spanos

JOHN J. SPANOS

President

JJS:mle

066011

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SOUTHERN INDIANA GAS AND ELECTRIC COMPANY d/b/a VECTREN ENERGY DELIVERY OF INDIANA, INC.

DEPRECIATION STUDY

EXECUTIVE SUMMARY

Pursuant to Southern Indiana Gas and Electric Company's ("Vectren South-Gas" or "Company") request, Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett Fleming") conducted a depreciation study related to the gas and common plant as of December 31, 2019. The purpose of this study was to determine the annual depreciation accrual rates and amounts for book and ratemaking purposes.

The depreciation rates are based on the straight line method using the equal life group ("ELG") procedure and were applied on a remaining life basis. The calculations were based on attained ages and estimated average service life and forecasted net salvage characteristics for each depreciable group of assets.

Vectren South-Gas's accounting policy has not changed since the last depreciation study was prepared. However, there have been significant changes in the type of assets being placed in service. These changes have caused the proposed service life and net salvage percentages to reflect an updated recovery rate over the remaining life. The service lives for many plant accounts have become slightly longer.

Gannett Fleming recommends the calculated annual depreciation accrual rates set forth herein apply specifically to gas and common plant in service as of December 31, 2019 as summarized by Table 1 of the study. Supporting analysis and calculations are provided within the study.

The study results set forth an annual depreciation expense of \$17.5 million when applied to depreciable plant balances as of December 31, 2019. The results are summarized at the functional level as follows:

SUMMARY OF ORIGINAL COST, ACCRUAL RATES AND AMOUNTS

FUNCTION	ORIGINAL COST AS OF DECEMBER 31, 2019	PROPOSED RATE	PROPOSED EXPENSE		
Gas Plant					
Natural Gas Production Plant	\$ 54,244.57	5.47	\$ 2,965		
Underground Storage Plant	15,676,317.03	2.49	389,865		
Transmission Plant	117,386,514.78	1.66	1,945,141		
Distribution Plant	357,635,528.71	3.73	13,326,810		
General Plant	15,244,149.14	4.05	616,689		
Total Gas Plant	\$505,942,509.66	3.22	\$16,278,505		
Common Plant					
General Plant	\$ 65,593,080.82	1.90	<u>\$ 1,247,501</u>		
Total Common Plant	\$ 65,593,080.82	1.90	\$ 1,247,501		
Total Depreciable Plant	<u>\$571,535,590.48</u>	3.07	<u>\$17,528,971</u>		

PART I. INTRODUCTION

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY d/b/a VECTREN ENERGY DELIVERY OF INDIANA, INC. DEPRECIATION STUDY

PART I. INTRODUCTION

SCOPE

This report sets forth the results of the depreciation study for Southern Indiana Gas and Electric Company ("Vectren South-Gas") to determine the annual depreciation accrual rates and amounts for book purposes applicable to the original cost of gas and common plant as of December 31, 2019. The rates and amounts are based on the straight line remaining life method of depreciation. This report also describes the concepts, methods and judgments which underlie the recommended annual depreciation accrual rates related to gas and common plant in service as of December 31, 2019.

The service life and net salvage estimates resulting from the study were based on informed judgment which incorporated analyses of historical plant retirement data as recorded through 2019, a review of Company practice and outlook as they relate to plant operation and retirement, and consideration of current practice in the gas industry, including knowledge of service lives and net salvage estimates used for other gas companies.

PLAN OF REPORT

Part I, Introduction, contains statements with respect to the plan of the report and the basis of the study. Part II, Estimation of Survivor Curves, presents descriptions of the considerations and the methods used in the service life and net salvage studies. Part III, Service Life Considerations, presents the factors and judgment utilized in the average service life analysis. Part IV, Net Salvage Considerations, presents the judgment utilized for the net salvage study. Part V, Calculation of Annual and Accrued Depreciation, describes the procedures used in the calculation of group depreciation. Part VI, Results



of Study, presents summaries by depreciable group of annual depreciation accrual rates and amounts, as well as composite remaining lives. Part VII, Service Life Statistics presents the statistical analysis of service life estimates; Part VIII, Net Salvage Statistics sets forth the statistical indications of net salvage percents, and Part IX, Detailed Depreciation Calculations presents the detailed tabulations of annual depreciation.

BASIS OF THE STUDY

Depreciation

Depreciation, in public utility regulation, is the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of utility 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 causes to be given consideration are wear and tear, deterioration, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand, and the requirements of public authorities.

Depreciation, as used in accounting, is a method of distributing fixed capital costs, less net salvage, 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 gas 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.

For most accounts, the annual depreciation was calculated by the straight line method using the equal life group procedure and the remaining life basis. For certain General Plant accounts, the annual depreciation is based on amortization accounting.



Both types of calculations were based on original cost, attained ages, and estimates of service lives and net salvage.

The straight line method, equal life group procedure is a commonly used depreciation calculation procedure that has been widely accepted in Indiana. Amortization accounting is used for certain General Plant accounts because of the disproportionate plant accounting effort required when compared to the minimal original cost of the large number of items in these accounts. An explanation of the calculation of annual and accrued amortization is presented beginning on page V-8 of the report.

Service Life and Net Salvage Estimates

The service life and net salvage estimates used in the depreciation and amortization calculations were based on informed judgment which incorporated a review of management's plans, policies and outlook, a general knowledge of the gas utility industry, and comparisons of the service life and net salvage estimates from our studies of other gas utilities. The use of survivor curves to reflect the expected dispersion of retirement provides a consistent method of estimating depreciation for gas plant. Iowa type survivor curves were used to depict the estimated survivor curves for the plant accounts not subject to amortization accounting.

The procedure for estimating service lives consisted of compiling historical data for the plant accounts or depreciable groups, analyzing this history through the use of widely accepted techniques, and forecasting the survivor characteristics for each depreciable group on the basis of interpretations of the historical data analyses and the probable future. The combination of the historical experience and the estimated future yielded estimated survivor curves from which the average service lives were derived.

PART II. ESTIMATION OF SURVIVOR CURVES



II-1

PART II. ESTIMATION OF SURVIVOR CURVES

The calculation of annual depreciation based on the straight line method requires the estimation of survivor curves and the selection of group depreciation procedures. The estimation of survivor curves is discussed below and the development of net salvage is discussed in later sections of this report.

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



This study has incorporated the use of lowa curves developed from a retirement rate analysis of historical retirement history. A discussion of the concepts of survivor curves and of the development of survivor curves using the retirement rate method is presented below.

Iowa Type Curves

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 O) represents the location of the mode of the associated frequency curve with respect to the average service life. The numbers 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 Experiment Station's Bulletin 125.

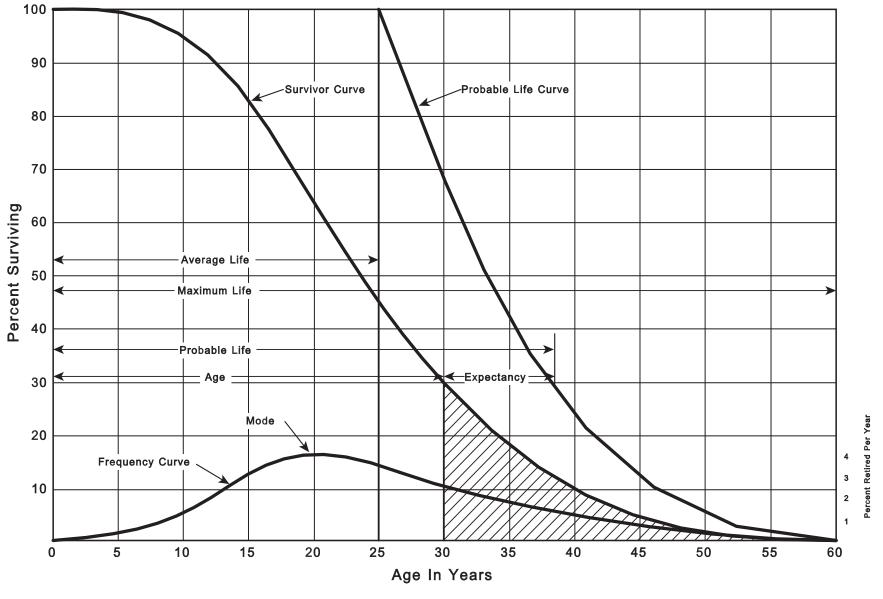


Figure 1. A Typical Survivor Curve and Derived Curves

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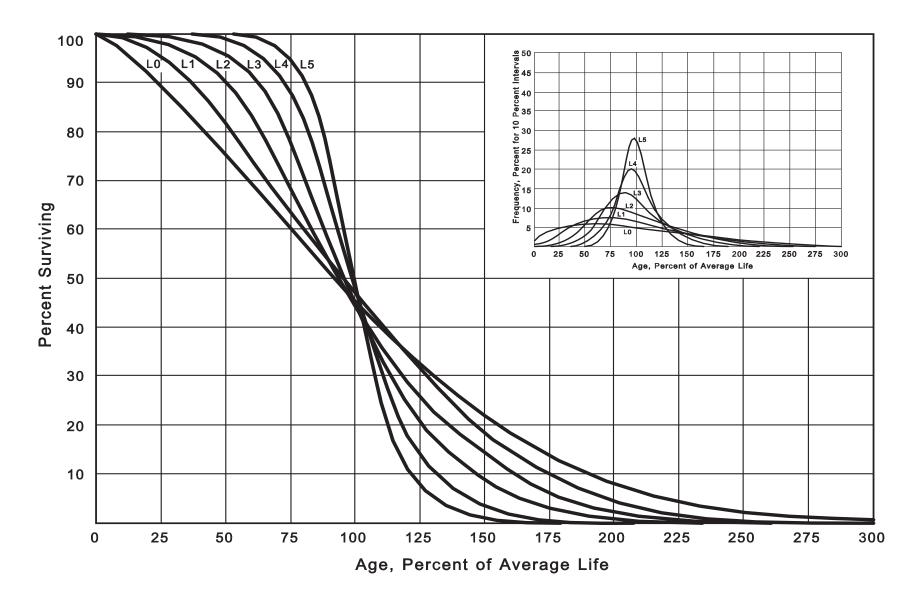


Figure 2. Left Modal or "L" lowa Type Survivor Curves

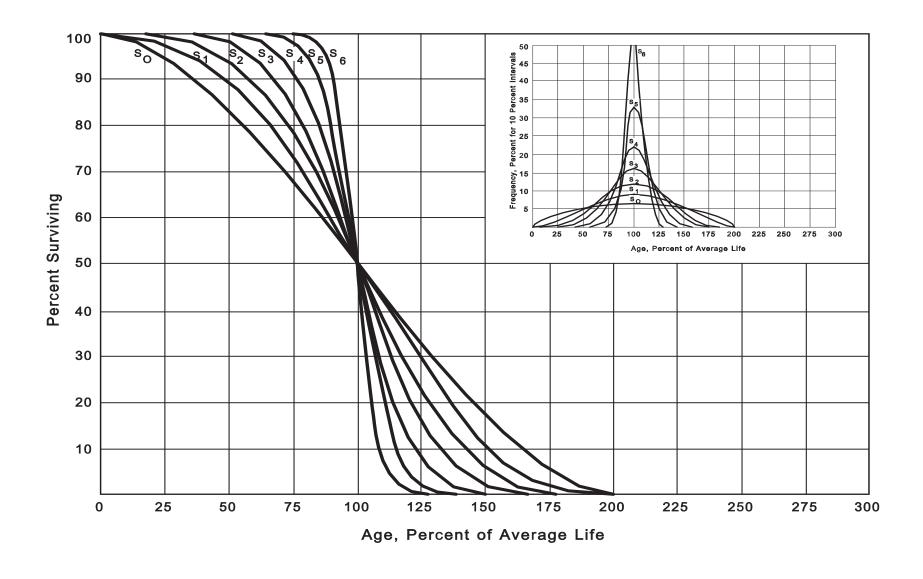


Figure 3. Symmetrical or "S" lowa Type Survivor Curves

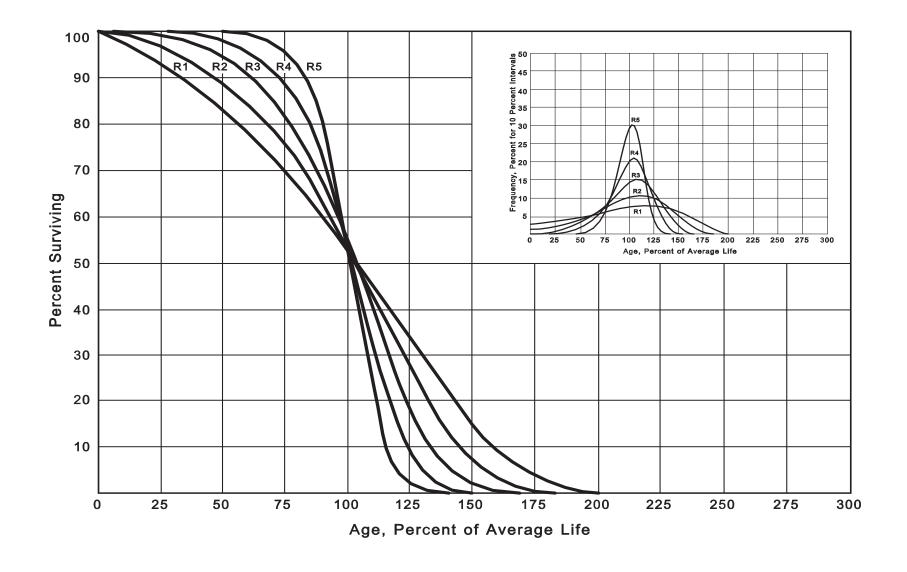


Figure 4. Right Modal or "R" Iowa Type Survivor Curves

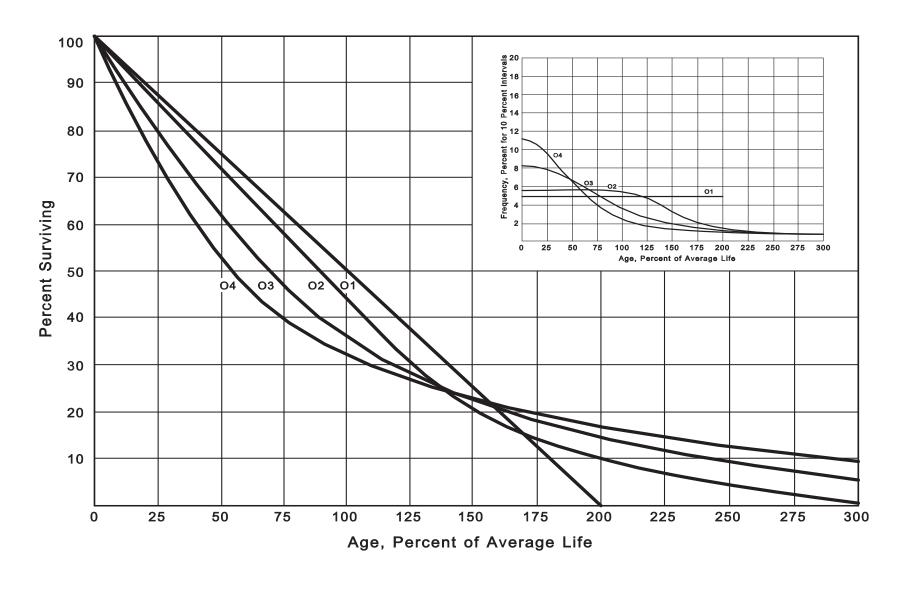


Figure 5. Origin Modal or "O" lowa Type Survivor Curves

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.

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 property groups for which aged accounting experience is available 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 experience band, 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 placement band. 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.

⁴Wolf, Frank K. and W. Chester Fitch. Depreciation Systems. Iowa State University Press. 1994.



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¹Marston, Anson, Robley Winfrey and Jean C. Hempstead. Engineering Valuation and Depreciation, 2nd Edition. New York, McGraw-Hill Book Company. 1953.

²Winfrey, Robley, Supra Note 1.

³Marston, Anson, Robley Winfrey, and Jean C. Hempstead, Supra Note 2.

<u>Schedules of Annual Transactions in Plant Records</u>

The property group used to illustrate the retirement rate method is observed for the experience band 2010-2019 during which there were placements during the years 2005-2019. In order to illustrate the summation of the aged data by age interval, the data 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 2005 were retired in 2010. 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 stair step line drawn on the table beginning with the 2010 retirements of 2005 installations and ending with the 2019 retirements of the 2014 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 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-14. The surviving plant at the beginning of each year from 2010 through 2019 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 2015 are calculated in the following manner:

Exposures at age 0	= amount of addition	= \$750,000
Exposures at age ½	= \$750,000 - \$ 8,000	= \$742,000
Exposures at age 1½	= \$742,000 - \$18,000	= \$724,000
Exposures at age 2½	= \$724,000 - \$20,000 - \$19,000	= \$685,000
Exposures at age 3½	= \$685,000 - \$22,000	= \$663,000

SCHEDULE 1. RETIREMENTS FOR EACH YEAR 2010-2019 SUMMARIZED BY AGE INTERVAL Experience Band 2010-2019 Placement Band 2005-2019		Age	Interval	(13)	131/2-141/2	121/2-131/2	111/2-121/2	101/2-111/2	91/2-101/2	81/2-91/2	71/2-81/2	61/2-71/2	51/2-61/2	41/2-51/2	31/2-41/2	21/2-31/2	11/2-21/2	1/2-11/2	0-1/2		
	Placement Band		Total During	Age Interval	(12)	26	44	64	83	93	105	113	124	131	143	146	150	151	153	80	1,606
			2019	(11)	26	19	18	17	20	20	20	19	19	20	23	22	22	24	13	308	
				2018	(10)	25	22	22	16	19	16	18	19	19	19	22	22	23	7		273
				2017	(6)	24	21	21	15	17	15	16	17	17	17	20	20	7			231
		Retirements, Thousands of Dollars		2016	(8)	23	20	19	14	16	14	15	16	16	16	18	<u></u>				196
			During Year	2015	(7)	16	18	17	13	14	13	14	15	15	14	∞					157
			Durin	2014	(9)	14	16	16	7	13	12	13	13	13	7						128
		Retirer		2013	(2)	13	15	4	7	12	_	12	12	9							106
	61			2012	(4)	12	13	13	10	7	10	_	9								98
	d 2010-20			2011	(3)	1	12	12	တ	10	တ	2									68
	ience Ban			2010		10	11	7	∞	6	4										53
	Exper		Year	Placed	(1)	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total

SCHEDULE 2. OTHER TRANSACTIONS FOR EACH YEAR 2010-2019 SUMMARIZED BY AGE INTERVAL

Experience Band 2010-2019

Placement Band 2005-2019

	0	Interval	(13)	131/2-141/2	121/2-131/2	111/2-121/2	101/2-111/2	91/2-101/2	81/2-91/2	71/2-81/2	61/2-71/2	51/2-61/2	41/2-51/2	31/2-41/2	21/2-31/2	11/2-21/2	1/2-11/2	0-1/2		
		Age Interval	(12)		ı	1	09	1	(5)	9	1	1	ı	10	ı	(121)	,		(20)	
		2019	(11)			,										$(102)^{c}$			(102)	
		2018	(10)	,	,	,	,						22^{a}						22	
f Dollars		2017	(6)	,	,	,	(2) _p	6 ^a				$(12)^{b}$		(19) ^b		•			(30)	
Acquisitions, Transfers and Sales, Thousands of Dollars		2016	(8)	60 ^a		,	,												09	
Sales, Tho) Year	2015	(7)	ı		,													ı	
sters and	During Year	2014	(9)	,	,	,	,												'	
ons, Trans		2013	(2)	ı		,													ı	
Acquisiti		2012	(4)	,	,	,	,												'	
		2011	(3)	,	,	,	,												'	
		2010	(2)	ı	,	,	,													
•	>	Placed	(1)	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Total	

^a Transfer Affecting Exposures at Beginning of Year

Parentheses Denote Credit Amount.

^b Transfer Affecting Exposures at End of Year

^c Sale with Continued Use

SCHEDULE 3. PLANT EXPOSED TO RETIREMENT JANUARY 1 OF EACH YEAR 2010-2019 SUMMARIZED BY AGE INTERVAL

|--|

^aAdditions during the year

For the entire experience band 2010-2019, 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, 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-16, 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 4½ = 88.15 Exposures at age 4½ = 3.789,000Retirements from age $4\frac{1}{2}$ to $5\frac{1}{2}$ = 143.000 Retirement Ratio = $143,000 \div 3,789,000 = 0.0377$ Survivor Ratio 1.000 -= 0.0377 = 0.9623Percent surviving at age 5½ = $(88.15) \times (0.9623) =$ 84.83

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.



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

Experience Band 2010-2019

Placement Band 2005-2019

(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
Interval	Age Interval	Interval	Ratio	Ratio	_ Age Interval
(1)	(2)	(3)	(4)	(5)	(6)
0.0	7.400	00	0.0407	0.0000	400.00
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	167	26	0.1557	0.8443	42.24
		<u></u>			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 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 Table 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 S0 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 S0.

In Figure 9, the three fittings, 12-L1, 12-S0 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.

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

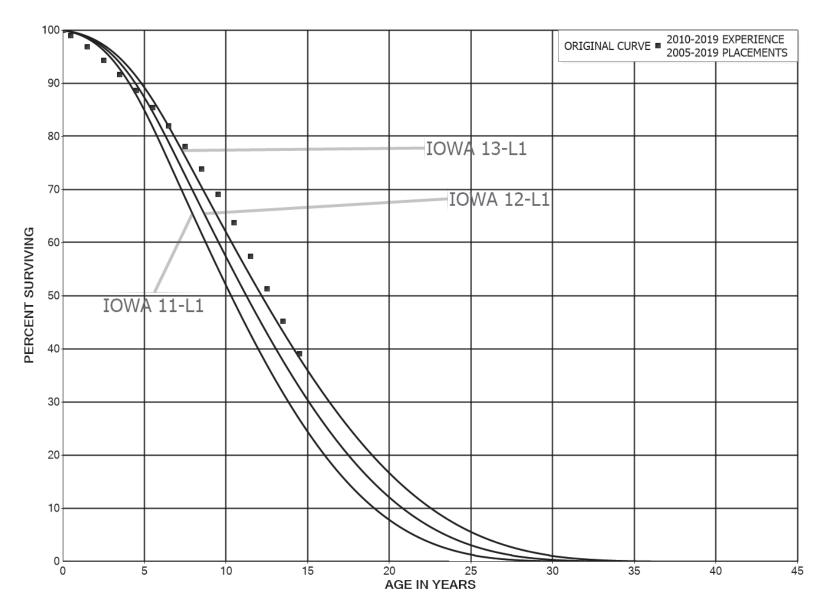


FIGURE 7. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN SO IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES

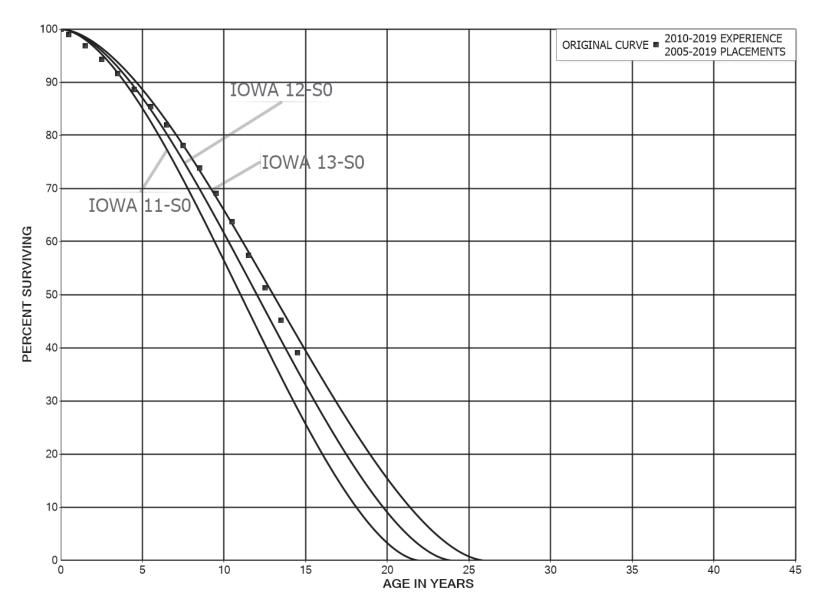
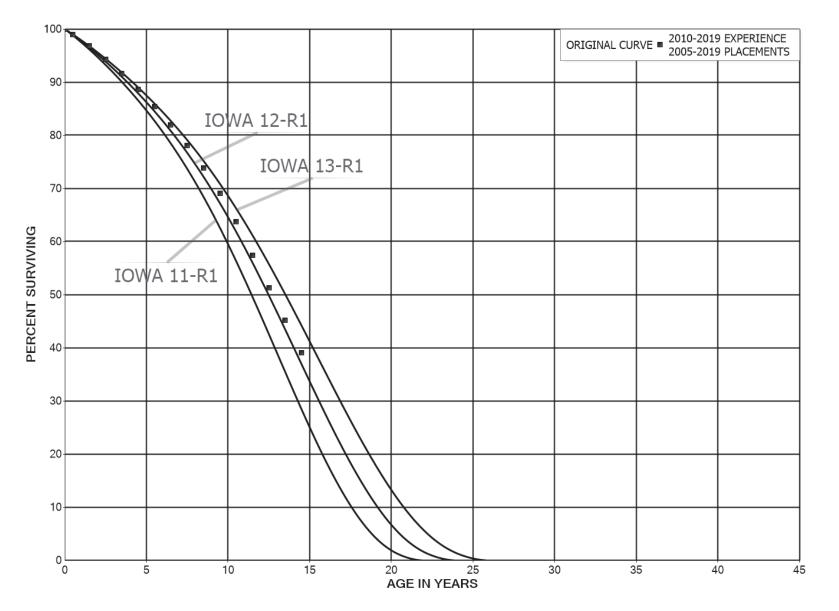
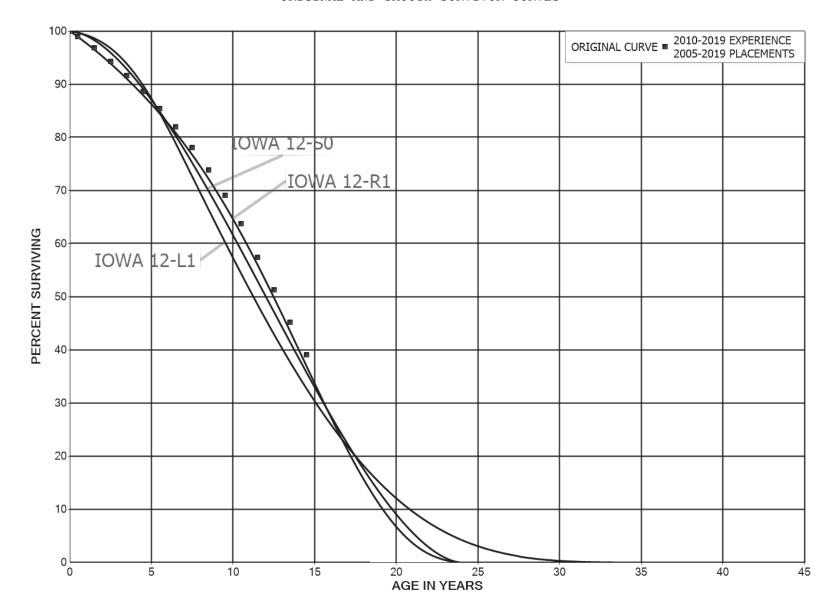


FIGURE 8. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN R1 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES



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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



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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, a field trip was conducted for the study. 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 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 field trip.

August 17, 2020

Wagner Service Center
Elsas Regulator Station
Lafayette and Sycamore Street Regulator Station
Long Road Measuring and Regulating Station
Old Boonville Highway Measuring and Regulating Station
Oak Grove Regulator Station
Highway 261 Regulator Station
Newburgh East Regulator Station
Alcoa Tie Over East Station
Boonville Service Center

Midway Storage Facility

Oliver Gas Storage Facility

SERVICE LIFE ANALYSIS

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

For many of the plant accounts and subaccounts for which survivor curves were estimated, the statistical analyses using the retirement rate method resulted in good to



excellent indications of the survivor patterns experienced. These accounts represent 93 percent of depreciable plant. Generally, the information external to the statistics led to no significant departure from the indicated survivor curves for the accounts listed below. The statistical support for the service life estimates is presented in the section beginning on page VII-2.

Account No.	Account Description
UNDERGROUND	STORAGE PLANT
654.00	Compressor Station Equipment
TRANSMISSION F	PI ANT
667.00	Mains
669.00	Measuring and Regulating Station Equipment
DISTRIBUTION PL	_ANT
675.00	Structures and Improvements
676.00	Mains
678.00	Measuring and Regulating Station Equipment - General
680.00	Services
681.00	Meters
682.00	Meter Installations
687.00	Other Equipment
GENERAL PLANT	
692.10	Transportation Equipment – Automobiles
692.20	Transportation Equipment – Light Trucks
692.30	Transportation Equipment – Trailers
692.40	Transportation Equipment – Heavy Trucks
696.00	Power Operated Equipment
COMMON PLANT	
590.00	Structures and Improvements
592.10	Transportation Equipment – Automobiles
592.20	Transportation Equipment – Light Trucks
592.30	Transportation Equipment – Trailers
592.40	Transportation Equipment – Heavy Trucks
596.00	Power Operated Equipment

Two of the largest mass accounts, 676 and 680, are used to illustrate the manner in which the study was conducted for the accounts in the preceding list. Aged plant accounting data have been compiled for the years through December 2019. These data



have been coded according to account or property group, type of transaction, year in which the transaction took place and year in which the utility plant was placed in service. The retirements, other plant transactions and plant additions were analyzed by the retirement rate method.

The survivor curve estimate for Account 676 Mains, is the 56-S2.5 and is based on the statistical indication for the periods 1982 through 2019 and 2000 through 2019. The 56-S2.5 is a very good fit of the significant portion of the original survivor curve as set forth on page VII-48 and consistent with management outlook for a continuation of the historical experience, and within the typical service life range of 55 to 70 years for mains.

The survivor curve estimate for combined Accounts 680, Services, is the 40-S0.5 and is based on the statistical indication for the periods 1982 through 2019 and 2000 through 2019. The 40-S0.5 is a good fit of the significant portion of the original survivor curve as set forth on page VII-57 and consistent with management outlook for a continuation of historical experience, and is within typical service life range of 40 to 55 years for services.

Generally, the survivor curve estimates for the remaining accounts were based on judgments which considered the statistical analyses, the nature of the plant and equipment, the previous estimate for this company and a general knowledge of service lives for similar equipment in other gas companies.

Similar studies were performed for the remaining plant accounts. Each of the judgments represented a consideration of statistical analyses of aged plant activity, management's outlook for the future, and the typical range of lives used by other gas companies.



The selected amortization periods for other General Plant accounts are described in the section "Calculated Annual and Accrued Amortization."



PART IV. NET SALVAGE CONSIDERATIONS

PART IV. NET SALVAGE CONSIDERATIONS

SALVAGE ANALYSIS

The estimates of net salvage by account were based in part on historical data compiled for the years 2001 through 2019. Cost of removal and salvage were expressed as percents of the original cost of plant retired, both on annual and three-year moving average bases. The most recent five-year average also was calculated for consideration. The net salvage estimates by account are expressed as a percent of the original cost of plant retired.

Net Salvage Considerations

The estimates of future net salvage are expressed as percentages of surviving plant in service, i.e., all future retirements. In cases in which removal costs are expected to exceed salvage receipts, a negative net salvage percentage is estimated. The net salvage estimates were based on judgment which incorporated analyses of historical cost of removal and salvage data, expectations with respect to future removal requirements and markets for retired equipment and materials.

The analyses of historical cost of removal and salvage data are presented in the section titled "Net Salvage Statistics" for the plant accounts for which the net salvage estimate relied partially on those analyses.

Statistical analyses of historical data for the period 2001 through 2019 contributed significantly toward the net salvage estimates for 23 plant accounts, representing 72 percent of the depreciable plant, as follows:

Account No.	Account Description
UNDERGROUN	ID STORAGE PLANT
651.20	Compressor Station Structures
651.30	Measuring and Regulating Station Structures
651.40	Other Structures
652.00	Wells
654.00	Compressor Station Equipment

DISTRIBUTION 675.00 676.00 680.00 681.00 682.00 683.00	Structures and Improvements Mains Services Meters
GENERAL PLA	ANT
690.00	Structures and Improvements
692.10	Transportation Equipment – Automobiles
692.20	Transportation Equipment – Light Trucks
692.30	Transportation Equipment – Trailers
692.40	Transportation Equipment – Heavy Trucks
696.00	Power Operated Equipment
COMMON PLA	ANT
590.00	Structures and Improvements
592.10	Transportation Equipment – Automobiles
592.20	Transportation Equipment – Light Trucks
592.30	Transportation Equipment – Trailers
592.40	Transportation Equipment – Heavy Trucks
596.00	Power Operated Equipment

The analysis for Account 381.0, Meters, is used to illustrate the manner in which the study was conducted for the groups in the preceding list. Net salvage data for the period 2001 through 2019 were analyzed for this account. The data include cost of removal, gross salvage and net salvage amounts and each of these amounts is expressed as a percent of the original cost of regular retirements. Three-year moving averages for the 2001-2003 through 2017-2019 periods were computed to smooth the annual amounts.

Cost of removal fluctuated a lot in the early years but has been relatively consistent since 2008. Cost of removal for the 19-year period averaged 22 percent. Cost of removal for the most recent five years has averaged slightly less at 14 percent.

Gross salvage has been zero for the entire 19-year period. The zero percent gross salvage is indicative of the future.



The net salvage percent based on the overall period 2001 through 2019 is 22 percent negative net salvage and based on the most recent five-year period is 14 percent negative net salvage. The range of estimates made by other gas companies for Meters is generally between 0 to negative 25 percent. The net salvage estimate for meters is negative 20 percent, is within the range of other estimates, reflects the consistent level of negative net salvage, however, emphasizes the expectations that future costs should be reduced.

The net salvage percents for the remaining accounts were based on judgment incorporating estimates of previous studies of this and other gas utilities.

Generally, the net salvage estimates for the general plant accounts were zero percent, consistent with amortization accounting.

PART V. CALCULATION OF ANNUAL AND ACCRUED DEPRECIATION

PART V. CALCULATION OF ANNUAL AND ACCRUED DEPRECIATION

After the survivor curve and salvage are estimated, the annual depreciation accrual rate can be calculated. In the average service life procedure, the annual accrual rate is computed by the following equation:

Annual Accrual Rate,
$$Percent = \frac{(100\% - Net Salvage, Percent)}{Average Service Life}$$

The calculated accrued depreciation for each depreciable property group represents that portion of the depreciable cost of the group which will not be allocated to expense through future depreciation accruals, if current forecasts of life characteristics are used as a basis for straight line depreciation accounting.

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 the estimated survivor curve. The accrued depreciation ratios are calculated as follows:

$$Ratio = (1 - \frac{Average \ Remaining \ Life \ Expectancy}{Average \ Service \ Life}) \ (1 - Net \ Salvage, Percent).$$

The application of these procedures is described for a single unit of property and a group of property units. Salvage is omitted from the depreciation for ease of application.



Single Unit of Property

The calculation of straight line depreciation for a single unit of property is straightforward. For example, if a \$1,000 unit of property attains an age of four years and has a life expectancy of six years, the annual accrual over the total life is:

$$\frac{\$1,000}{(4+6)}$$
 = \\$100 per year.

The accrued depreciation is:

$$$1,000\left(1-\frac{6}{10}\right)=$400.$$

Group Depreciation Procedures

When more than a single item of property is under consideration, a group procedure for depreciation is appropriate, because normally all of 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.

Average Service Life Procedure

In the average service life procedure, the rate of annual depreciation is based on the average service life of the group, and this rate is applied to the surviving balances of the group's cost. The accrued depreciation is based on the average service life of the group and the average remaining life of each vintage within the group derived from the area under the survivor curve between the attained age of the vintage and the maximum age.

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 excess cost recouped subsequent to average life. The recovery of cost is complete at the end of the life cycle, but the distribution of capital cost to annual expense does not match the consumption of service value of plant.

Equal Life Group Procedure

In the equal life group procedure, also known as the unit summation 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. The calculated depreciation for the property group is the summation of the calculated depreciation based on the service life of each equal life unit.

This procedure eliminates the need to base annual depreciation expense on average lives, inasmuch as each group has a single life. The full cost of short-lived items is accrued during their lives, leaving no deferral of accruals required to be added to the annual cost associated with long-lived items. The depreciation expense for the property group is the summation of the depreciation expense based on the service life of each equal life group.

The table on the following page presents an illustration of the calculation of equal life group depreciation using the lowa 13-L3 survivor curve, net salvage of 0 percent and a December 31, 2019 calculation date.

DETAILED COMPUTATION OF ANNUAL AND ACCRUED FACTORS USING THE EQUAL LIFE GROUP PROCEDURE

INPUT PARAMETERS:

CALCULATION DATE.. 12-31-2019
SURVIVOR CURVE.... 13-L3

		F	ETIREMENTS	GROUP		SUMMATION	AVERAGE		
AGE IN	TERVAL		DURING	ANNUAL	YEAR	OF ANNUAL	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)
0.000	1.000	0.500	0.00000	0.00000000000	2019	8.71155436455	100.000000	0.0871	0.0436
1.000	2.000	1.500	0.01719	0.01146000000	2018	8.70582436455	99.991404	0.0871	0.1307
2.000	3.000	2.500	0.14929	0.05971600000	2017	8.67023636455	99.908165	0.0868	0.2170
3.000	4.000	3.500	0.44954	0.12844000000	2016	8.57615836455	99.608749	0.0861	0.3014
4.000	5.000	4.500	0.90526	0.20116888889	2015	8.41135392010	98.931349	0.0850	0.3825
5.000	6.000	5.500	1.54011	0.28002000000	2014	8.17075947566	97.708668	0.0836	0.4598
6.000	7.000	6.500	2.54576	0.39165538462	2013	7.83492178335	95.665732	0.0819	0.5324
7.000	8.000	7.500	4.19693	0.55959066667	2012	7.35929875770	92.294387	0.0797	0.5978
8.000	9.000	8.500	6.46036	0.76004235294	2011	6.69948224790	86.965744	0.0770	0.6545
9.000	10.000	9.500	8.78528	0.92476631579	2010	5.85707791353	79.342924	0.0738	0.7011
10.000	11.000	10.500	10.38225	0.98878571429	2009	4.90030189849	69.759155	0.0702	0.7371
11.000	12.000	11.500	10.75688	0.93538086957	2008	3.93821860656	59.189590	0.0665	0.7648
12.000	13.000	12.500	9.99695	0.79975600000	2007	3.07065017178	48.812676	0.0629	0.7863
13.000	14.000	13.500	8.57801	0.63540814815	2006	2.35306809770	39.525196	0.0595	0.8033
14.000	15.000	14.500	7.04790	0.48606206897	2005	1.79233298914	31.712243	0.0565	0.8193
15.000	16.000	15.500	5.72832	0.36956903226	2004	1.36451743853	25.324132	0.0539	0.8355
16.000	17.000	16.500	4.70975	0.28543939394	2003	1.03701322543	20.105094	0.0516	0.8514
17.000	18.000	17.500	3.94038	0.22516457143	2002	0.78171124274	15.780028	0.0495	0.8663
18.000	19.000	18.500	3.31756	0.17932756757	2001	0.57946517324	12.151061	0.0477	0.8825
19.000	20.000	19.500	2.76662	0.14187794872	2000	0.41886241510	9.108973	0.0460	0.8970
20.000	21.000	20.500	2.25424	0.10996292683	1999	0.29294197732	6.598541	0.0444	0.9102
21.000	22.000	21.500	1.77661	0.08263302326	1998	0.19664400228	4.583114	0.0429	0.9224
22.000	23.000	22.500	1.34023	0.05956577778	1997	0.12554460176	3.024695	0.0415	0.9338
23.000	24.000	23.500	0.95793	0.04076297872	1996	0.07538022351	1.875616	0.0402	0.9447
24.000	25.000	24.500	0.64175	0.02619387755	1995	0.04190179537	1.075775	0.0390	0.9555
25.000	26.000	25.500	0.39464	0.01547607843	1994	0.02106681738	0.557580	0.0378	0.9639
26.000	27.000	26.500	0.21565	0.00813773585	1993	0.00925991024	0.252434	0.0367	0.9726
27.000	28.000	27.500	0.10020	0.00364363636	1992	0.00336922414	0.094507	0.0357	0.9818
28.000	29.000	28.500	0.03585	0.00125789474	1991	0.00091845859	0.026485	0.0347	0.9890
29.000	30.000	29.500	0.00795	0.00026949153	1990	0.00015476545	0.004588	0.0337	0.9942
30.000	30.940	30.470	0.00061	0.00002001969	1989	0.00000940925	0.000287	0.0328	1.0000
TOTAL			100.00000						

In the table, each equal life group is defined by the age interval shown in columns 1 and 2. These are the ages at which the first and last retirement of each group occurs, and the group's equal life, shown in column 3, is the midpoint of the interval. For purposes of the calculation, the computer is programmed to divide each vintage into equal life groups arranged so that the midpoint of each one-year age interval coincides with the calculation date, e.g., December 31 in this case. This enables the calculation of annual accruals for a twelve-month period centered on the date of calculation.

The retirement during the age interval, shown in column 4, is the size of each equal life group and is derived from the lowa 13-L3 survivor curve. It is the difference between the percents surviving at the beginning and end of the age interval.

Each equal life group's annual accrual, shown in column 5, equals the group's size (column 4) divided by its life (column 3) and multiplied by the quantity one minus the net salvage percent with the exception of 2019 installations. For 2019 installations, the group annual accrual is equal to the retirements during the interval multiplied by one minus the net salvage percent.

Columns 6 through 10 show the derivation of the annual factor and accrued factor for each vintage based on the information developed in the first five columns. The year installed is shown in column 6. For all vintages other than 2019, 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 8.70582436455 for 2018 equals one-half of 0.01146000000 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 has reached the year during which it is expected to be retired.

The summation of annual accruals (column 7) for installations during 2019 are calculated on the basis of an in-service date at the midpoint of the year, i.e., June 30. Inasmuch as the overall calculation is centered on December 31, 2019, the first figure in column 7, for vintage 2019, equals all of the group annual accrual for the first equal life group plus the accruals for all of the subsequent equal life groups.

The average percent surviving, derived from the Iowa 13-L3 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 factor, shown in column 10, equals the annual factor multiplied by the age of the group at December 31, 2019.



REMAINING LIFE ANNUAL ACCRUAL RATES

The annual depreciation accrual rates are calculated as of December 31, 2019, and based on the straight line remaining life method using the equal life group procedure. For the purpose of calculating the composite remaining life accrual rates as of December 31, 2019, the book reserve for each plant account is allocated among vintages in proportion to the calculated accrued depreciation for the account as of December 31, 2019. 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 =
$$\frac{\sum (\frac{Book\ Cost}{Life}\ x\ Remaining\ Life)}{\sum \frac{Book\ Cost}{Life}}.$$

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 composite remaining life calculations were made using computer software that utilizes detailed Equal Life Group calculations of whole life future accruals and annual accruals in order to derive the vintage composite remaining lives. The annual accrual rate for each account is equal to the sum of the remaining life annual accruals divided by the total original cost. The composite remaining life is calculated by dividing the sum of the future book accruals by the sum of the remaining life annual accruals.

CALCULATION OF ANNUAL AND ACCRUED AMORTIZATION

Amortization 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 period and service lives used by other utilities, and the service life estimates previously used for the asset under depreciation accounting.

Amortization accounting is proposed for a number of accounts that represent numerous units of property but a very small portion of depreciable gas plant in service. The accounts and their amortization periods are as follows:



		AMORTIZATION PERIOD,
<u>ACCOUNT</u>	<u>TITLE</u>	<u>YEARS</u>
GENERAL P	<u>PLANT</u>	
691,	Office Furniture and Equipment	
	Electronic Equipment	10
	Furniture and Fixtures	20
693,	Stores Equipment	25
694,	Tools, Shop and Garage Equipment	25
695,	Laboratory Equipment	20
697,	Communication Equipment	15
698,	Miscellaneous Equipment	20
COMMON F	PLANT	
591,	Office Furniture and Equipment	
	Electronic Equipment	10
	Furniture and Fixtures	20
593,	Stores Equipment	25
594,	Tools, Shop and Garage Equipment	25
597,	Communication Equipment	15
598,	Miscellaneous Equipment	20

For the purpose of calculating annual amortization amounts as of December 31, 2019, 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.

PART VI. RESULTS OF STUDY

PART VI. RESULTS OF STUDY

QUALIFICATION OF RESULTS

The calculated annual and accrued depreciation are the principal results of the study. Continued surveillance and periodic revisions are normally required to maintain continued use of appropriate annual depreciation accrual rates. An assumption that accrual rates can remain unchanged over a long period of time implies a disregard for the inherent variability in service lives and salvage and for the change of the composition of property in service. The annual accrual rates were calculated in accordance with the straight line remaining life method of depreciation using the equal life group procedure based on estimates which reflect considerations of current historical evidence and expected future conditions.

The annual depreciation accrual rates are applicable specifically to the gas plant in service as of December 31, 2019. For most plant accounts, the application of such rates to future balances, that reflect additions subsequent to December 31, 2019, is reasonable for a period of three to five years.

DESCRIPTION OF DETAILED TABULATIONS

Table 1 is a summary of the results of the study as applied to the original cost of gas and common plant at December 31, 2019 presented on pages VI-4 and VI-5 of this report.

The service life estimates were based on judgment that incorporated statistical analysis of retirement data, discussions with management and consideration of estimates made for other gas utilities. The results of the statistical analysis of service life are presented in the section beginning on page VII-2 within the supporting documents of this report.



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. 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 curve type designation. The numeral used is the average life derived from the entire curve from 100 percent to zero percent surviving. The titles of the chart 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 where plotted. The experience band indicates the range of years for which 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 analyses of salvage data are presented in the section titled, "Net Salvage Statistics". The tabulations present annual cost of removal and salvage data, three-year moving averages and the most recent five-year average. Data are shown in dollars and as percentages of original costs retired.

The tables of the calculated annual depreciation applicable to depreciable assets as of December 31, 2019 are presented in account sequence starting on page IX-2 of the supporting documents. The tables indicate the estimated survivor curve and net salvage percent for the account and set forth, for each installation year, the original cost, the calculated accrued depreciation, the allocated book reserve, future accruals, the remaining life, and the calculated annual accrual amount.

TABLE 1. SUMMARY OF ES' CALCULATED ANNUAL DE	TIMATED SURVIVOR CL EPRECIATION ACCRUAI	JRVES, ORIGINAL (LS RELATED TO G	TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, ORIGINAL COST, NET SALVAGE PERCENT, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS AND COMMON PLANT AS OF DECEMBER 31, 2019	NT, BOOK RESERVE AND OF DECEMBER 31, 2019		
RECIABLE GROUP	SURVIVOR CURVE (2)	NET SALVAGE PERCENT (3)	ORIGINAL COST AS OF DECEMBER 31, 2019 (4)	BOOK RESERVE (5)	FUTURE ACCRUALS (6)	
AS PRODUCTION PLANT	ı					
NOI	50-R3 40-S2	(2)	29,160.99 15,141.23	14,895 4,642	15,724	
	55-S2.5	(10)	9,942.35	4,576	6,361	
АИТ			54,244.57	24,113	33,341	
DUND STORAGE PLANT	ĺ					
F WAY	70-R4	00	1,087,081.01	558,440	528,641	
	50-51	9 (2)	192,046.20	122,279	79,521	

COMPOSITE REMAINING LIFE (9)=(6)/(7)	13.1 8.3 16.0	11.2	31.0 36.4 36.4 32.5 50.8 30.4 30.9 29.7 24.3	31.2	52.5	23.0 60.0 16.5 27.9	54.9		62.9 32.7 40.5 31.9 23.2 17.6 22.3 17.3 17.3	29.4		32.0 6.2 13.0 10.0 10.0 10.1 16.4 18.4
UAL RATE (8)	4.13 9.00 4.00	5.47	1.57 1.14 2.00 2.70 1.00 1.21 3.72 1.87	2.49	1.25	2.26 0.44 2.26	1.66		1.54 0.78 2.54 3.04 5.59 4.71 4.02 1.13 3.15 2.35	3.73		2.25 2.06 2.95 5.20 0.37 6.47 2.14
CALCULATED ANNUAL ACCRUAL AMOUNT (7)	1,204 1,363 398	2,965	17,058 2,187 2,278 2,278 6,588 3,250 11,288 221,463 2,1403	389,865	30,260	2,776 1,614,842 121 294,142 0	1,945,141		4,494 937 5,057,508 253,169 6,491,812 1,271,014 2,377,769 5,474 6,23 6,23 6,23 8,391	13,326,810		44,614 9,198 2,1914 45,888 3,468 13,979 35,403 59,886 889
FUTURE ACCRUALS (6)	15,724 11,256 6,361	33,341	528,641 79,521 73,973 166,454 1,673,576 342,633 6,845,020 636,198	12,163,135	1,589,083	96,923,913 2,001 8,213,487	106,861,073		282,730 30,628 204,637,618 8,069,655 150,467,168 22,365,817 5,302,761 121,944 10,783 10,184 10,184	391,611,246		1,428,228 57,201 38,012 375,028 375,028 140,022 356,618 1,103,339 14,069
BOOK RESERVE (5)	14,895 4,642 4,576	24,113	558 440 483 848 122.279 45,582 90.083 1,783.092 682.925 228,008 562.478 423,552	5,045,287	832,623	30,147,295 25,707 6,109,162 5,283	37,254,455		8.875 89.401 64.172.812 2.770.019 35.269.838 9,967.918 771.055 711.057 110.573 9,554	113,609,540		553,527 389,592 00,668 463,009 848,053 65,372 1,217,237 1,414,843 398,357
ORIGINAL COST AS OF DECEMBER 31, 2019 (4)	29,160.99 15,141.23 9,942.35	54,244.57	1,087,081,01 483,848,26 192,190,55 113,882,06 14,320,37 3,282,065,12 932,335,92 5,848,366,31 1,141,556,47 1,141,556,47	15,676,317.03	2,421,705.75	101,656,966.22 27,708.14 13,020,590.68 5,283.27	117,386,514.78		291,605,89 120,028,70 199,118,836,97 8,338,211,10 116,085,629,32 2,5961,445,49 5,736,997,60 5,736,997,60 121,396,21 266,398,30 111,380,38	357,635,528.71		1,981,755,51 446,792,95 98,680,08 882,144,36 929,117,58 216,240,01 1,656,661,90 1,656,661,90 2,518,181,70 412,426,05
NET SALVAGE PERCENT (3)	(5) (5) (10)		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		o ((5) (25) 0 (10)			0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			000000000000000000000000000000000000000
SURVIVOR CURVE (2)	50-R3 40-S2 55-S2.5		70-R4 50-SQ 50-S1 50-S1 50-R3 40-S2.5 55-R4 55-S0.5 35-R5 45-SU.5 46-SU.5		70-R4	745-80 775-82.5 45-R2.5 45-R1.5 30-R3			70-R4 50-R2 50-R2 50-R2 40-80.5 30-R2.5 40-R3 40-R3 45-R2.5 35-R2.5			45-R3 10-SQ 20-SQ 11-L3 11-L3 13-L3 15-SQ 25-SQ 25-SQ 26-SQ 20-SQ
DEPRECIABLE GROUP (1)	NATURAL GAS PRODUCTION PLANT 630.00 PRODUCING GAS WELLS - CONSTRUCTION 631.00 PRODUCING GAS WELLS - EQUIPMENT 632.00 FIELD LINES	TOTAL NATURAL GAS PRODUCTION PLANT UNDERGROUND STORAGE PLANT	660.30 STORAGE LEASEHOLDS AND RIGHTS OF WAY 660.50 NONRECOVERABLE NATURAL GAS 661.30 MEASURESOR STATION STRUCTURES 661.30 MEASURING AND REGULATING STATION STRUCTURES 661.40 OTHER STRUCTURES 663.00 LINES 663.00 COMPRESSOR STATION EQUIPMENT 665.00 MEASURING AND REGULATING EQUIPMENT 666.00 PURIFICATION EQUIPMENT	TOTAL UNDERGROUND STORAGE PLANT		900-200 MEASURING AND REGULATING STATION STRUCTURES 686:00 MEASURING AND REGULATING STATION EQUIPMENT 67:00 OTHER EQUIPMENT	TOTAL TRANSMISSION PLANT	DISTRIBUTION PLANT	674.20 LAND RIGHTS 675.00 STRUCTURES AND IMPROVEMENTS 676.00 MAINS 678.00 MAINS 680.00 SERVICES 681.00 METERS 682.00 METER INSTALLATIONS 683.00 HOUSE REGULATORS 684.00 HOUSE REGULATORS 685.00 INDUSTRAL MASAURING AND REGULATING STATION EQUIPMENT 685.00 OTHER EQUIPMENT	TOTAL DISTRIBUTION PLANT	GENERAL PLANT	690.00 STRUCTURES AND IMPROVEMENTS 691.10 ELECTRONIC EQUIPMENT 691.20 FURNITIVER AND FYTURES 692.10 TRANSPORTATION EQUIPMENT - LIGHT TRUCKS 692.20 TRANSPORTATION EQUIPMENT - LIGHT TRUCKS 692.20 TRANSPORTATION EQUIPMENT - TRAILERS 692.40 TRANSPORTATION EQUIPMENT - HEAVY TRUCKS 693.00 STORES EQUIPMENT - HEAVY TRUCKS 693.00 STORES EQUIPMENT 695.00 LABORATORY EQUIPMENT
	63 63 63		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		99	66 66 66 67			60 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, ORIGINAL COST, NET SALVAGE PERCENT, BOOK RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS AND COMMON PLANT AS OF DECEMBER 31, 2019

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	NET SALVAGE PERCENT (3)	ORIGINAL COST AS OF DECEMBER 31, 2019 (4)	BOOK RESERVE (5)	FUTURE ACCRUALS (6)	CALCULATED ANNUAL ACCRUAL AMOUNT (7)	ED RUAL RATE (8)	COMPOSITE REMAINING LIFE (9)=(6)(7)
POWER OPERATED EQUIPMENT COMMUNICATION EQUIPMENT MISCELLANEOUS EQUIPMENT	23-S2 15-SQ 20-SQ	000	1,954,513.56 3,809,007.68 334,995.03	401,346 455,148 177,820	1,553,168 3,353,860 157,175	141,590 249,691 9,129	7.24 6.56 2.73	11.0 13.4 17.2
TOTAL GENERAL PLANT			15,244,149.14	6,448,616	8,611,329	616,689	4.05	14.0
TOTAL DEPRECIABLE GAS PLANT			505,942,509.66	162,357,897	519,246,783	16,278,505	3.22	31.9
NONDEPRECIABLE AND ACCOUNTS NOT STUDIED ORGANIZATION ORGANIZATION LAND AND LAND RIGHTS AND AND LAND RIGHTS MAINS BS/CI SERVICES BS/CI SERVICES BS/CI REGULATORY ASSETS NON-UTILITY			10,053 66 453 88 7,545,151 25 744,203 97 330,394,63	(445) 920,892 575,311 0 118,387,226 1,396,186				
TOTAL NONDEPRECIABLE AND ACCOUNTS NOT STUDIED			8,630,257.39	121,219,170				
TOTAL GAS PLANT			514,627,011.62	283,601,180	519,280,124	16,281,470	3.16	31.9
COMMON PLANT								
STRUCTURES AND IMPROVEMENTS ELECTRONIC EQUIPMENT FURNITURE AND FIXTURES TRANSPORTATION EQUIPMENT - AUTOMOBILES TRANSPORTATION EQUIPMENT - LIGHT TRAUCKS TRANSPORTATION EQUIPMENT - TRAULERS TRANSPORTATION EQUIPMENT - TRAULERS TRANSPORTATION EQUIPMENT - HAVIT TRAUCKS	60-R2 10-SQ 20-SQ 11-L3 13-L3 20-S2 15-S2.5	a a a a o o ô	43,608,501.14 5,556,461.39 6,826,140.98 1,238,997.71 1,556,938.74 67,471.30 86,619.40	22,120,998 5,531,067 820,993 1,177,048 1,375,263 14,008 56,997	23,667,928 25,395 6,005,148 0 103,829 50,038 25,291	670,330 2,673 388,500 0 11,211 3,826 5,099	1.54 0.05 5.69 - 0.72 5.68 5.89	35.3 9.55 15.5 9.3 13.1 5.0
STORES EQUIPMENT TOOLS, SHOP AND GARAGE EQUIPMENT POWER OPERATED EQUIPMENT COMMUNICATION EQUIPMENT MISCELLANEOUS EQUIPMENT	25-80 25-80 23-82 15-80 20-80	00000	830,653.85 769,786.24 755,274,63 4,052,712.42 243,577.02	538,480 566,819 175,023 3,411,187 160,475	292,174 202,967 280,252 641,525 83,102	32,542 8,877 40,536 79,587 4,320	3.92 1.15 5.37 1.96 1.77	9.0 22.9 14.3 8.1
TOTAL DEPRECIABLE COMMON PLANT			65,593,080.82	35,948,358	31,677,649	1,247,501	1.90	25.4
NONDEPRECIABLE AND ACCOUNTS NOT STUDIED MANCELLANEOUS INTANGBLE PLANT MANCELLANEOUS INTANGBLE PLANT AUTOMOBILES - NONDEPRECIABLE THALLERS - NONDEPRECIABLE MISCELLANEOUS EQUIPMENT - NONDEPRECIABLE MISCELLANEOUS EQUIPMENT - NONDEPRECIABLE TOTAL NONDEPRECIABLE AND ACCOUNTS NOT STUDIED			2.620,516.80 2.886.014.14 265.641.31 5,772,172.25	480,484 (82,718) 70,635 12,681 172,253 653,335				
TOTAL COMMON PLANT			71,365,253.07	36,601,693	31,677,649	1,247,501	1.75	25.4
TOTAL PLANT			585,992,264.69	320,202,873	550,957,773	17,528,971	2.99	31.4

^{*} NEW ADDITIONS AS OF JANUARY 1, 2020 IN THESE ACCOUNTS WILL USE THE FOLLOWING ANNUAL ACCRUAL RATES.

RATE	2.00	3.90	4.00	9.78
ACCOUNT	650.50	671.00	693.00	592.10

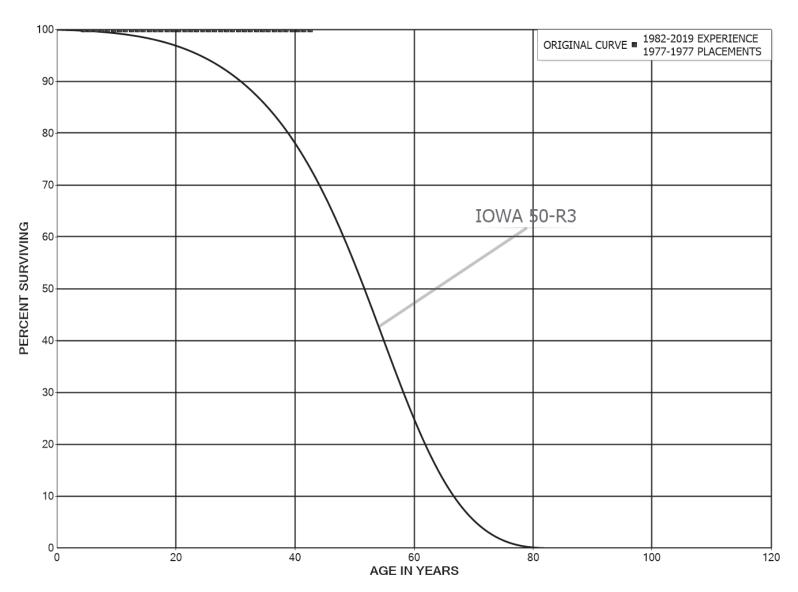
** NEW ADDITIONS PLACED INTO SERVICE AFTER JANUARY 1, 2020 WILL HAVE THE FOLLOWING RATE WHICH IS BASED ON A 15-S1.5 SURVIVOR CURVE AND NEGATIVE 5 PERCENT NET SALVAGE.

ACCOUNT 681.10



PART VII. SERVICE LIFE STATISTICS

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 630 PRODUCING GAS WELLS - CONSTRUCTION ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 630 PRODUCING GAS WELLS - CONSTRUCTION

ORIGINAL LIFE TABLE

PLACEMENT E	BAND 1977-1977		EXPEF	RIENCE BAN	D 1982-2019
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 8.5	29,161 29,161 29,161 29,161 29,161		0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000	100.00 100.00 100.00 100.00 100.00
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	29,161 29,161 29,161 29,161 29,161 29,161 29,161 29,161 29,161		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5	29,161 29,161 29,161 29,161 29,161 29,161 29,161 29,161 29,161		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5	29,161 29,161 29,161 29,161 29,161 29,161 29,161 29,161 29,161		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00

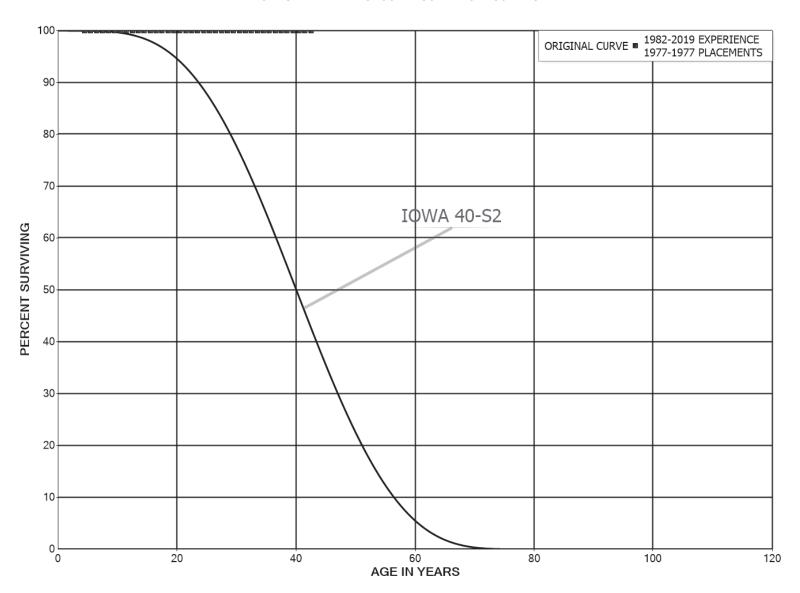
ACCOUNT 630 PRODUCING GAS WELLS - CONSTRUCTION

ORIGINAL LIFE TABLE, CONT.

PLACEMENT I	BAND 1977-1977		EXPE	RIENCE BAN	D 1982-2019
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	29,161 29,161 29,161		0.0000 0.0000 0.0000	1.0000 1.0000 1.0000	100.00 100.00 100.00 100.00



SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 631 PRODUCING GAS WELLS - EQUIPMENT ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 631 PRODUCING GAS WELLS - EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT E	BAND 1977-1977		EXPEF	RIENCE BAN	D 1982-2019
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 8.5	15,141 15,141 15,141 15,141 15,141		0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000	100.00 100.00 100.00 100.00 100.00
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	15,141 15,141 15,141 15,141 15,141 15,141 15,141 15,141 15,141 15,141		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5	15,141 15,141 15,141 15,141 15,141 15,141 15,141 15,141 15,141		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5	15,141 15,141 15,141 15,141 15,141 15,141 15,141 15,141 15,141 15,141		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00

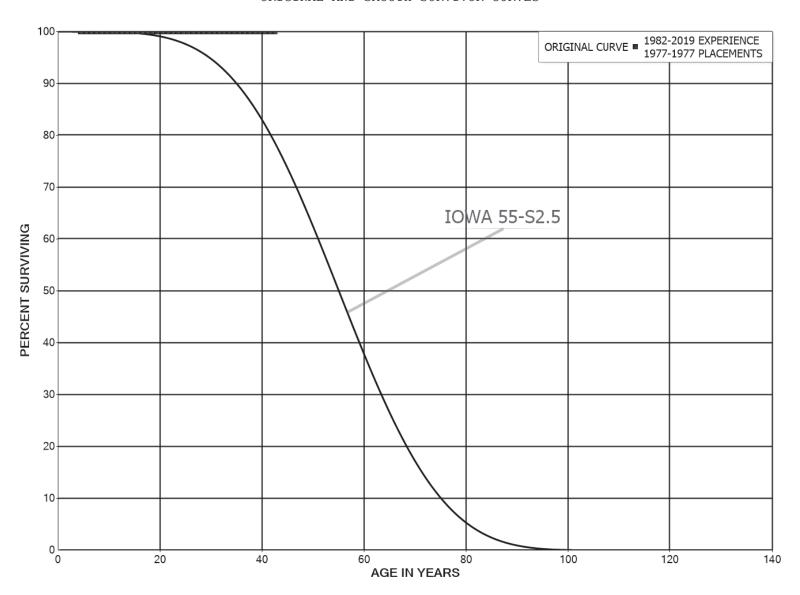
ACCOUNT 631 PRODUCING GAS WELLS - EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT	BAND 1977-1977		EXPEF	RIENCE BAN	D 1982-2019
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	15,141 15,141 15,141		0.0000 0.0000 0.0000	1.0000 1.0000 1.0000	100.00 100.00 100.00 100.00



SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 632 FIELD LINES ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 632 FIELD LINES

ORIGINAL LIFE TABLE

PLACEMENT E	BAND 1977-1977		EXPEF	RIENCE BAN	D 1982-2019
AGE AT BEGIN OF 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 8.5	9,942 9,942 9,942 9,942 9,942		0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000	100.00 100.00 100.00 100.00 100.00
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	9,942 9,942 9,942 9,942 9,942 9,942 9,942 9,942 9,942 9,942		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	9,942 9,942 9,942 9,942 9,942 9,942 9,942 9,942 9,942		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5	9,942 9,942 9,942 9,942 9,942 9,942 9,942 9,942 9,942		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00

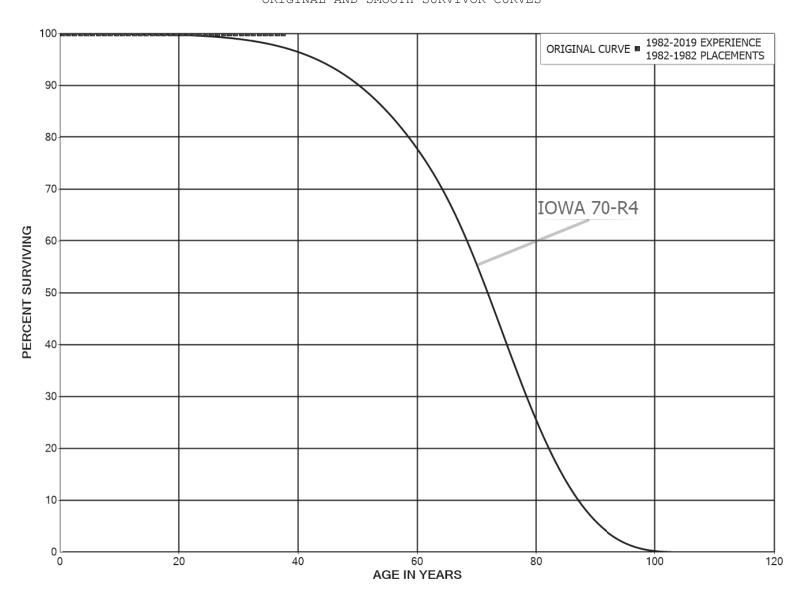
ACCOUNT 632 FIELD LINES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1977-1977			EXPER	RIENCE BAN	D 1982-2019
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	9,942 9,942 9,942		0.0000 0.0000 0.0000	1.0000 1.0000 1.0000	100.00 100.00 100.00 100.00



SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 650.3 STORAGE LEASEHOLDS AND RIGHTS OF WAY ORIGINAL AND SMOOTH SURVIVOR CURVES



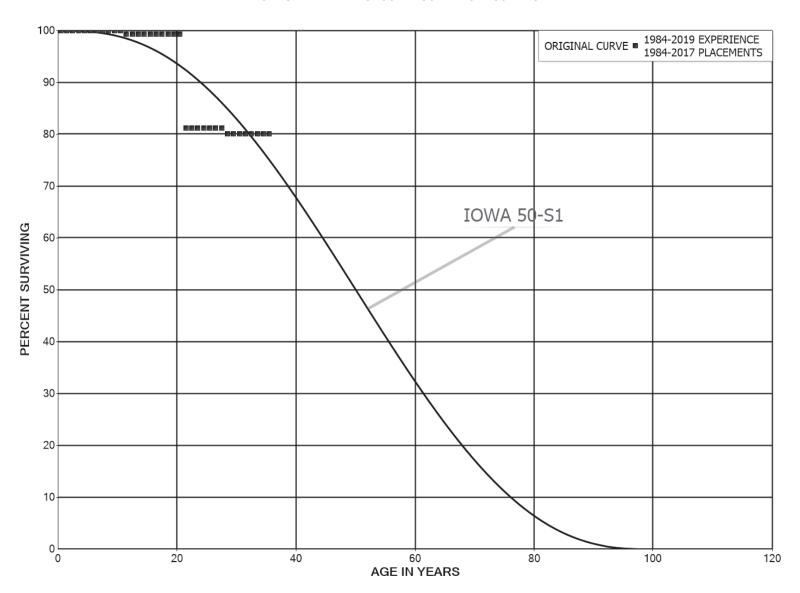
Petitioner's Exhibit No. 10 Attachment JJS-1 Vectren South Page 66 of 241

ACCOUNT 650.3 STORAGE LEASEHOLDS AND RIGHTS OF WAY

ORIGINAL LIFE TABLE

PLACEMENT :	BAND 1982-1982		EXPEF	RIENCE BAN	D 1982-2019
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	1,087,081 1,087,081 1,087,081 1,087,081 1,087,081 1,087,081 1,087,081 1,087,081 1,087,081		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	1,087,081 1,087,081 1,087,081 1,087,081 1,087,081 1,087,081 1,087,081 1,087,081 1,087,081		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	1,087,081 1,087,081 1,087,081 1,087,081 1,087,081 1,087,081 1,087,081 1,087,081 1,087,081		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5	1,087,081 1,087,081 1,087,081 1,087,081 1,087,081 1,087,081 1,087,081		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 651.2 COMPRESSOR STATION STRUCTURES ORIGINAL AND SMOOTH SURVIVOR CURVES

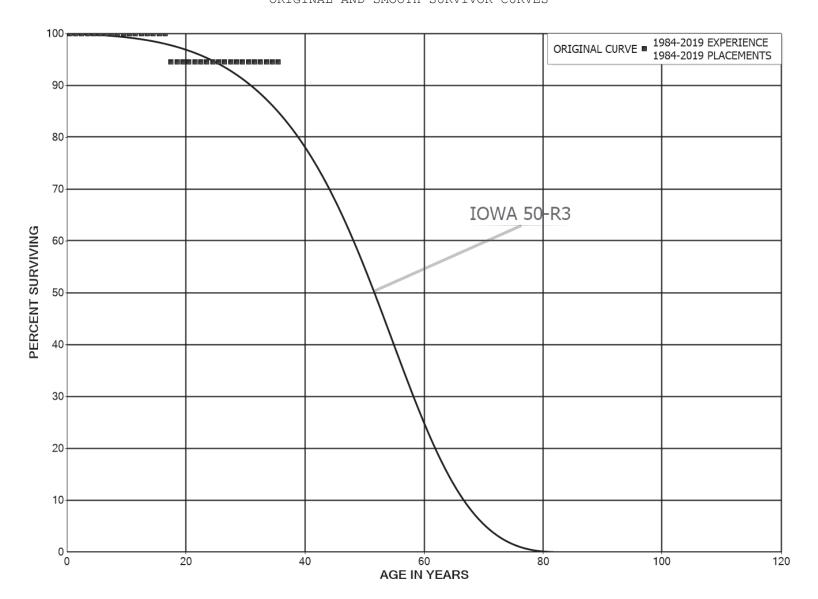


ACCOUNT 651.2 COMPRESSOR STATION STRUCTURES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1984-2017			EXPERIENCE BAND 1984-2019		
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	218,471 218,471 218,471 151,629 150,099 150,099 132,060 132,060 132,060		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	132,060 132,060 131,160 131,160 131,160 131,160 131,160 131,160 131,160	900	0.0000 0.0068 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 0.9932 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	100.00 100.00 99.32 99.32 99.32 99.32 99.32 99.32 99.32 99.32
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	131,160 131,160 107,134 107,134 107,134 104,182 104,182 102,192 102,192 100,838	24,026 1,354	0.0000 0.1832 0.0000 0.0000 0.0000 0.0000 0.0000 0.0133 0.0000	1.0000 0.8168 1.0000 1.0000 1.0000 1.0000 1.0000 0.9867 1.0000	99.32 99.32 81.13 81.13 81.13 81.13 81.13 81.13 81.13
29.5 30.5 31.5 32.5 33.5 34.5 35.5	100,838 100,838 100,838 100,838 100,838		0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000	80.05 80.05 80.05 80.05 80.05 80.05

ACCOUNT 651.3 MEASURING AND REGULATING STATION STRUCTURES ORIGINAL AND SMOOTH SURVIVOR CURVES

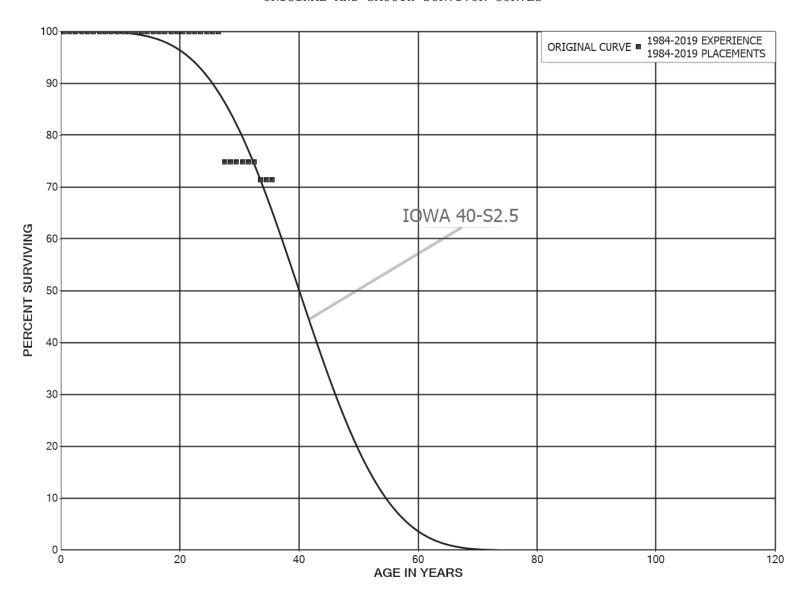


ACCOUNT 651.3 MEASURING AND REGULATING STATION STRUCTURES

ORIGINAL LIFE TABLE

PLACEMENT H	BAND 1984-2019		EXPE	RIENCE BAN	D 1984-2019
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 8.5	118,685 94,082 94,082 94,082 94,082 94,082 94,082 94,082 94,082 94,082		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	94,082 94,082 94,082 94,082 87,586 87,586 87,586 87,586 8,090 8,090	4,823	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0551 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9449 1.0000	100.00 100.00 100.00 100.00 100.00 100.00 100.00 94.49 94.49
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	8,090 8,090 8,090 8,090 8,090 8,090 7,151 7,151		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	94.49 94.49 94.49 94.49 94.49 94.49 94.49 94.49 94.49
29.5 30.5 31.5 32.5 33.5 34.5 35.5	7,151 7,151 7,151 7,151 7,151 7,151		0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000	94.49 94.49 94.49 94.49 94.49 94.49

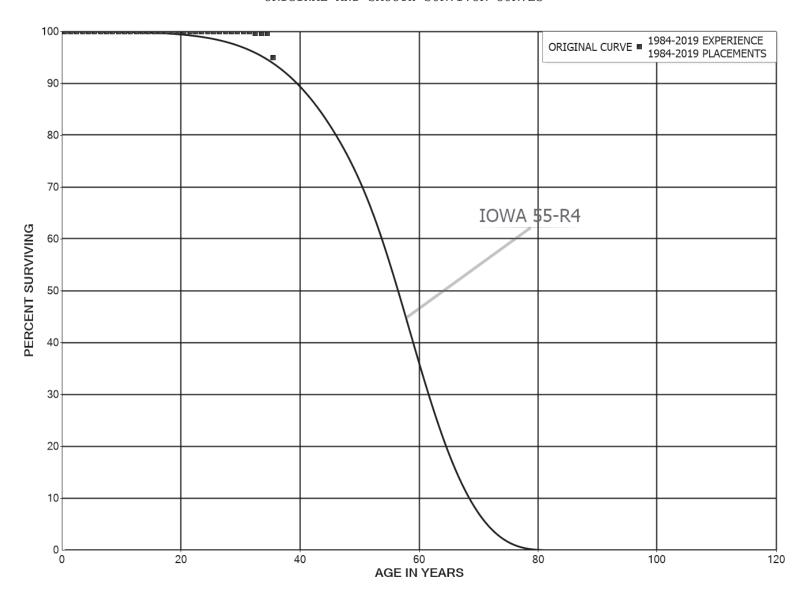
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 651.4 OTHER STRUCTURES ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 651.4 OTHER STRUCTURES

PLACEMENT H	BAND 1984-2019		EXPER	RIENCE BAN	D 1984-2019
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 8.5	268,733 213,964 209,371 194,419 143,655 143,655 143,655 144,855 141,892		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	141,892 141,892 141,892 138,381 125,458 125,458 125,458 125,458 117,643		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	117,643 117,643 117,643 117,643 117,643 108,899 108,899 85,423 63,944	21,479	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.2514 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.7486 1.0000	100.00 100.00 100.00 100.00 100.00 100.00 100.00 74.86 74.86
29.5 30.5 31.5 32.5 33.5 34.5 35.5	63,944 63,944 63,944 63,944 61,010	2 , 934	0.0000 0.0000 0.0000 0.0459 0.0000	1.0000 1.0000 1.0000 0.9541 1.0000	74.86 74.86 74.86 74.86 71.42 71.42 71.42

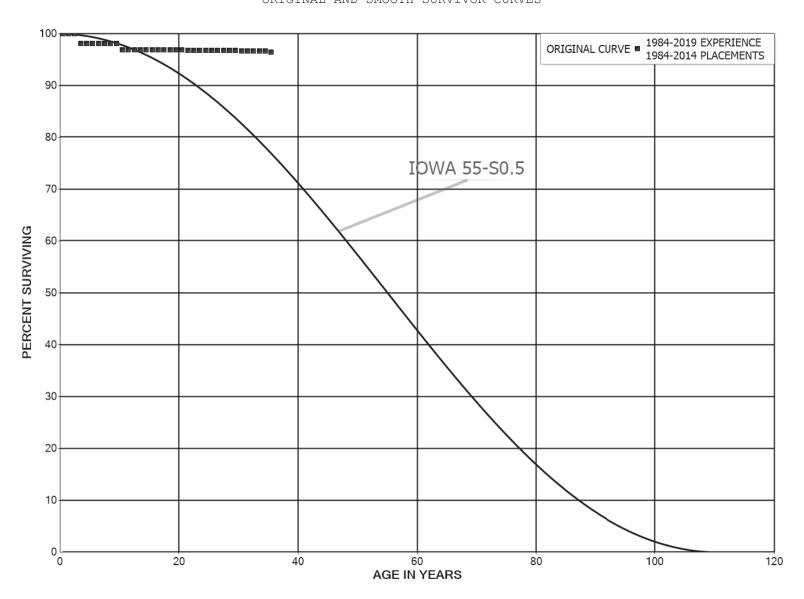
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 652 WELLS ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 652 WELLS

PLACEMENT I	BAND 1984-2019		EXPE	RIENCE BAN	D 1984-2019
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	3,344,823 2,129,511 1,633,421 1,633,421 1,588,378 1,575,250 1,575,250 1,575,250 1,575,250 1,575,250		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	1,575,250 1,575,250 1,575,250 1,575,250 1,575,250 1,575,250 1,575,250 1,575,250 1,575,250 1,575,250 1,539,902 1,519,199		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	1,519,199 1,519,199 1,519,199 1,519,199 1,519,199 1,519,199 1,349,051 1,190,048 1,032,530		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
29.5 30.5 31.5 32.5 33.5 34.5 35.5	1,032,530 1,032,530 1,032,530 1,028,475 1,028,475	4,055 48,702	0.0000 0.0000 0.0039 0.0000 0.0000	1.0000 1.0000 0.9961 1.0000 1.0000	100.00 100.00 100.00 99.61 99.61 99.61 94.89

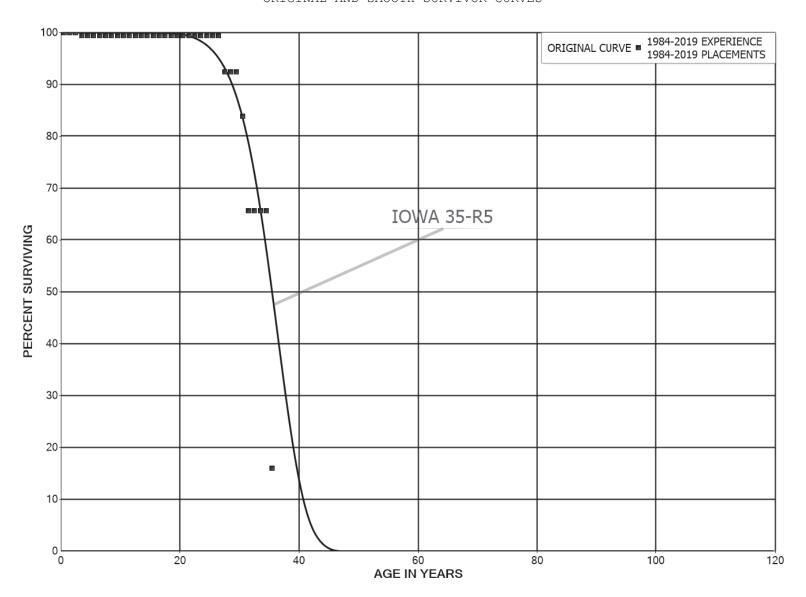
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 653 LINES ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 653 LINES

PLACEMENT E	BAND 1984-2014		EXPE	RIENCE BAN	D 1984-2019
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	942,736 963,509 963,509 963,509 944,589 944,589 828,030 828,030 828,030	18,920	0.0000 0.0000 0.0000 0.0196 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 0.9804 1.0000 1.0000 1.0000 1.0000 1.0000	100.00 100.00 100.00 100.00 98.04 98.04 98.04 98.04 98.04
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	824,338 814,500 814,500 814,500 793,727 787,614 787,614 787,614 605,053 605,053	9,838	0.0119 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	0.9881 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	98.04 96.87 96.87 96.87 96.87 96.87 96.87 96.87 96.87
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	605,053 605,053 603,888 603,888 465,052 465,052 465,052 443,645 411,480 372,032	1,165	0.0000 0.0019 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 0.9981 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	96.87 96.68 96.68 96.68 96.68 96.68 96.68 96.68
29.5 30.5 31.5 32.5 33.5 34.5 35.5	372,032 371,680 371,680 371,680 371,680	352 908	0.0009 0.0000 0.0000 0.0000 0.0000	0.9991 1.0000 1.0000 1.0000 1.0000 0.9976	96.68 96.59 96.59 96.59 96.59 96.35

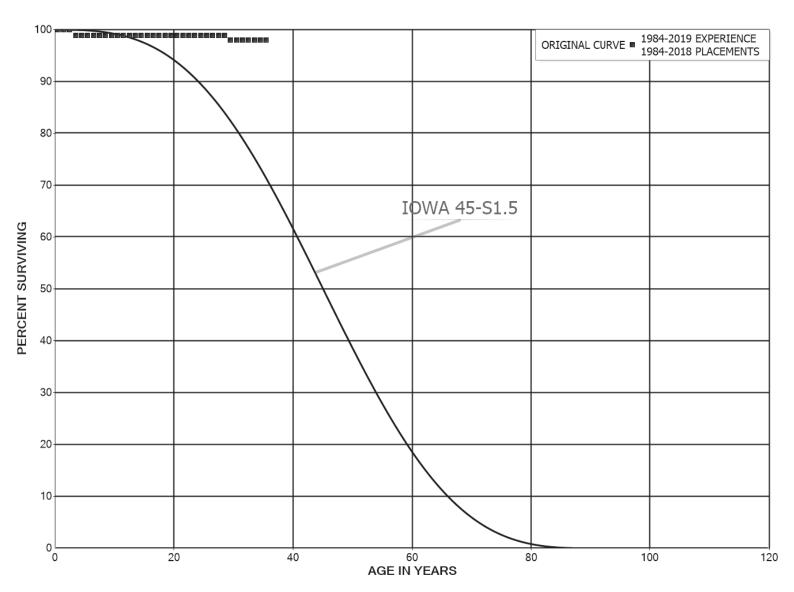
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 654 COMPRESSOR STATION EQUIPMENT ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 654 COMPRESSOR STATION EQUIPMENT

PLACEMENT I	BAND 1984-2019		EXPE	RIENCE BAN	D 1984-2019
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 8.5	6,246,336 2,323,088 2,323,088 2,323,088 2,309,023 1,408,677 393,827 393,827 393,827 393,827	14,065	0.0000 0.0000 0.0000 0.0061 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 0.9939 1.0000 1.0000 1.0000 1.0000	100.00 100.00 100.00 100.00 99.39 99.39 99.39 99.39 99.39
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	338,846 338,846 338,846 338,846 337,968 337,968 337,968 337,968 337,968		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	99.39 99.39 99.39 99.39 99.39 99.39 99.39 99.39
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	337,968 337,968 337,968 337,968 337,968 337,968 337,968 337,968 313,982 313,982	23,986	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0710 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9290 1.0000 1.0000	99.39 99.39 99.39 99.39 99.39 99.39 99.39 92.34
29.5 30.5 31.5 32.5 33.5 34.5 35.5	313,982 285,029 222,969 222,969 222,969 222,969	28,954 62,060 168,916	0.0922 0.2177 0.0000 0.0000 0.0000 0.7576	0.9078 0.7823 1.0000 1.0000 1.0000 0.2424	92.34 83.83 65.57 65.57 65.57 15.90

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 655 MEASURING AND REGULATING EQUIPMENT ORIGINAL AND SMOOTH SURVIVOR CURVES

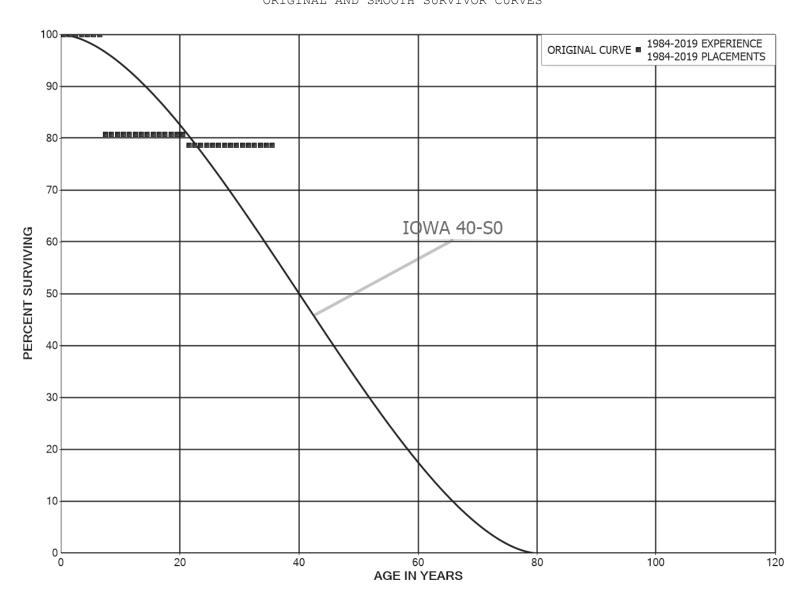


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ACCOUNT 655 MEASURING AND REGULATING EQUIPMENT

PLACEMENT H	BAND 1984-2018		EXPER	RIENCE BAN	D 1984-2019
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 8.5	1,160,097 1,160,097 1,145,886 1,108,959 664,548 664,548 664,548 664,003 661,150	12,934	0.0000 0.0000 0.0000 0.0117 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 0.9883 1.0000 1.0000 1.0000 1.0000	100.00 100.00 100.00 100.00 98.83 98.83 98.83 98.83 98.83 98.83
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	661,150 606,888 606,888 606,888 606,888 606,888 606,888 338,235 338,235		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	98.83 98.83 98.83 98.83 98.83 98.83 98.83 98.83 98.83
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5 29.5 30.5 31.5 32.5 33.5	338,235 338,235 338,235 338,235 338,235 338,235 338,235 294,712 294,712 294,712 291,712 164,373 164,373 55,223 55,223	2,714	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	98.83 98.83 98.83 98.83 98.83 98.83 98.83 98.83 97.92 97.92 97.92 97.92 97.92 97.92 97.92

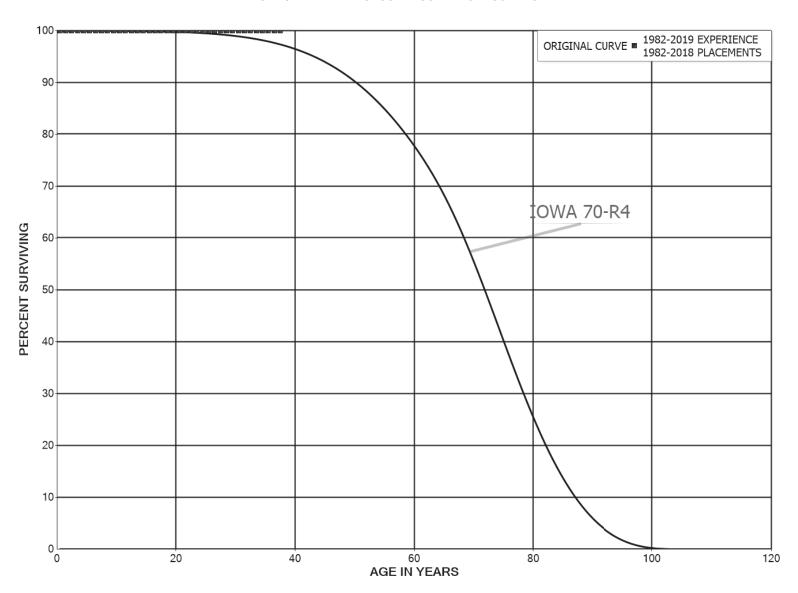
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 656 PURIFICATION EQUIPMENT ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 656 PURIFICATION EQUIPMENT

PLACEMENT H	BAND 1984-2019		EXPE	RIENCE BAN	D 1984-2019
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 8.5	2,319,667 971,037 971,037 370,687 370,687 370,687 370,687 299,295 293,374	71,392	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.1926 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.8074 1.0000 1.0000	100.00 100.00 100.00 100.00 100.00 100.00 100.00 80.74 80.74
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	293,374 293,374 293,374 293,374 293,374 293,374 293,374 293,374 293,374		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	80.74 80.74 80.74 80.74 80.74 80.74 80.74 80.74 80.74
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	293,374 293,374 285,771 285,771 285,771 285,771 285,771 240,001 229,578 68,733	7,603	0.0000 0.0259 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 0.9741 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	80.74 80.74 78.65 78.65 78.65 78.65 78.65 78.65 78.65
29.5 30.5 31.5 32.5 33.5 34.5 35.5	68,733 68,733 68,733 68,733 68,733		0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000	78.65 78.65 78.65 78.65 78.65 78.65

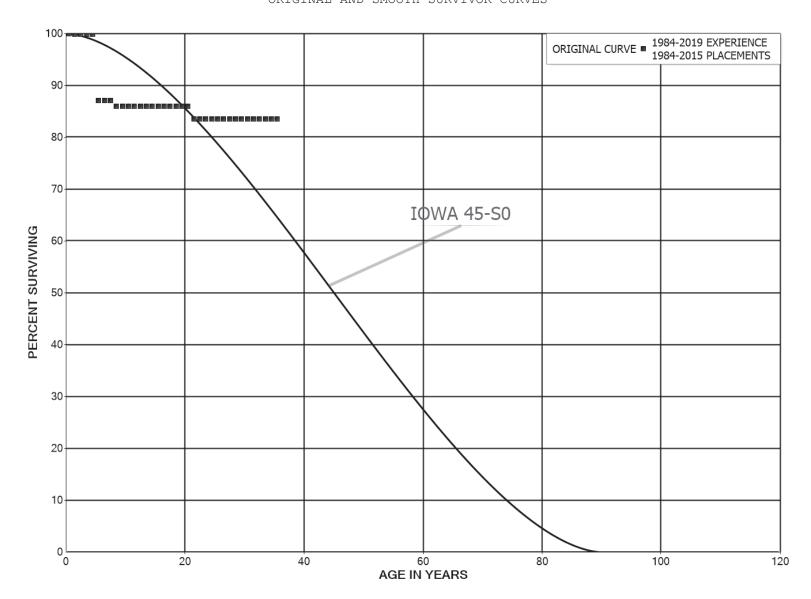
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 665.2 RIGHTS OF WAY ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 665.2 RIGHTS OF WAY

PLACEMENT H	BAND 1982-2018		EXPEF	RIENCE BAN	D 1982-2019
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 8.5	2,421,706 2,421,706 2,188,169 1,983,065 1,983,065 1,983,065 1,983,065 1,983,065 1,983,065		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	1,228,388 1,228,388 1,059,100 1,059,100 935,391 935,391 935,391 935,391 644,576 644,576		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	644,576 644,576 644,576 644,576 644,576 644,576 644,576 644,576 644,576		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5	644,576 644,576 644,576 644,576 644,576 644,576 644,576		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00

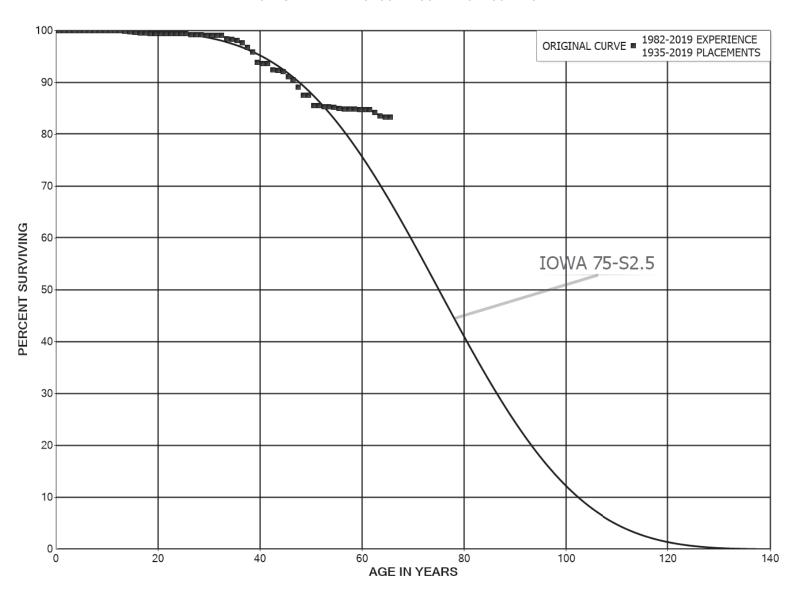
ACCOUNT 666.2 MEASURING AND REGULATING STATION STRUCTURES ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 666.2 MEASURING AND REGULATING STATION STRUCTURES

PLACEMENT H	BAND 1984-2015		EXPE	RIENCE BAN	D 1984-2019
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	302,221 302,221 301,841 301,841 301,841 299,786 261,186 255,424 237,298 234,427	38,600 2,871	0.0000 0.0013 0.0000 0.0000 0.0000 0.1288 0.0000 0.0000 0.0121 0.0000	1.0000 0.9987 1.0000 1.0000 0.8712 1.0000 1.0000 0.9879 1.0000	100.00 100.00 99.87 99.87 99.87 99.87 87.01 87.01 87.01 85.96
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	234,427 223,698 223,698 223,698 223,698 229,233 209,233 209,233 209,233 209,233		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	85.96 85.96 85.96 85.96 85.96 85.96 85.96 85.96 85.96
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	209,233 209,233 203,124 203,124 203,124 173,211 55,606 55,606 31,001	6,109	0.0000 0.0292 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 0.9708 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	85.96 85.96 83.45 83.45 83.45 83.45 83.45 83.45 83.45
29.5 30.5 31.5 32.5 33.5 34.5 35.5	31,001 31,001 18,182 18,182 18,182 18,182		0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000	83.45 83.45 83.45 83.45 83.45 83.45

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 667 MAINS ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 667 MAINS

PLACEMENT I	BAND 1935-2019		EXPER	RIENCE BAN	D 1982-2019
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	97,727,565 94,295,715 84,322,980 70,830,494 62,320,996 57,286,771 44,831,681 44,816,587 43,160,064 42,941,388	2,254 26,492	0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0006 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 0.9999 0.9994 1.0000	100.00 100.00 100.00 100.00 100.00 100.00 100.00 99.99 99.94
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	32,715,983 25,003,342 21,489,868 21,809,007 19,879,729 20,438,489 20,225,999 20,181,043 19,990,633 20,746,114	3,298 17,492 14,764 31,757 20,843 1,872 10,179 3,744	0.0000 0.0000 0.0002 0.0008 0.0007 0.0016 0.0010 0.0001 0.0005 0.0002	1.0000 1.0000 0.9998 0.9992 0.9993 0.9984 0.9990 0.9999 0.9995 0.9998	99.94 99.94 99.92 99.84 99.77 99.61 99.51 99.50 99.45
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	19,910,178 18,884,239 17,222,660 12,740,840 11,628,541 9,217,237 9,183,750 8,938,373 8,792,332 8,559,246	26 26,808 2,364	0.0000 0.0000 0.0000 0.0000 0.0000 0.0029 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 0.9971 1.0000 1.0000 0.9997	99.43 99.43 99.43 99.43 99.43 99.43 99.14 99.14
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	7,921,490 6,506,941 7,152,131 5,818,126 5,542,421 5,135,299 5,085,023 4,881,739 4,593,310 4,547,110	310 2,754 2,190 36,070 8,244 8,365 23,487 44,915 46,200 90,881	0.0000 0.0004 0.0003 0.0062 0.0015 0.0016 0.0046 0.0092 0.0101 0.0200	1.0000 0.9996 0.9997 0.9938 0.9985 0.9984 0.9954 0.9908 0.9899 0.9800	99.11 99.11 99.07 99.04 98.42 98.28 98.12 97.66 96.76 95.79

ACCOUNT 667 MAINS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT H	BAND 1935-2019		EXPE	RIENCE BAN	D 1982-2019
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	4,456,229 4,103,925 4,103,475 4,051,736 4,043,945 3,749,356 3,708,359 3,697,314 3,639,702 3,376,458	13,094 449 51,739 7,791 6,685 40,997 24,243 57,613 63,767 27	0.0029 0.0001 0.0126 0.0019 0.0017 0.0109 0.0065 0.0156 0.0175 0.0000	0.9971 0.9999 0.9874 0.9981 0.9983 0.9891 0.9935 0.9844 0.9825 1.0000	93.88 93.60 93.59 92.41 92.23 92.08 91.07 90.48 89.07 87.51
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	3,376,431 2,949,912 2,949,686 2,347,658 2,347,658 2,344,948 2,340,351 1,597,564 1,596,751	77,028 226 8,766 2,710 4,597 2,905 813	0.0228 0.0001 0.0030 0.0000 0.0012 0.0020 0.0012 0.0005 0.0000 0.0011	0.9772 0.9999 0.9970 1.0000 0.9988 0.9980 0.9988 0.9995 1.0000 0.9989	87.51 85.51 85.50 85.25 85.25 85.15 84.98 84.88 84.84
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5	1,595,056 1,595,056 946,380 940,374 932,515 929,943 536,459 535,732 535,732 535,701	6,006 7,859 2,571 224 728	0.0000 0.0000 0.0063 0.0084 0.0028 0.0002 0.0014 0.0000 0.0001	1.0000 1.0000 0.9937 0.9916 0.9972 0.9998 0.9986 1.0000 0.9999	84.75 84.75 84.75 84.21 83.50 83.27 83.25 83.14 83.14
69.5 70.5 71.5 72.5 73.5 74.5 75.5 76.5 77.5 78.5	1,654 1,654 1,654 1,654 1,654 1,654 1,654 1,654		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	83.14 83.14 83.14 83.14 83.14 83.14 83.14 83.14 83.14

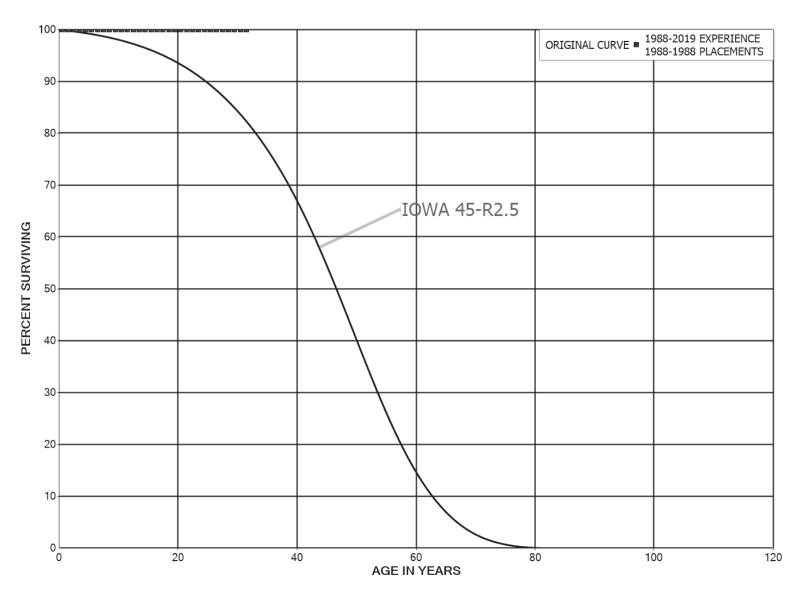
ACCOUNT 667 MAINS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1935-2019 EXPERIENCE BAND 1982-20					ID 1982-2019
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	1,654 1,654		0.0000	1.0000	83.14 83.14
81.5 82.5	1,654 1,654		0.0000	1.0000	83.14 83.14
83.5 84.5	1,654		0.0000	1.0000	83.14 83.14



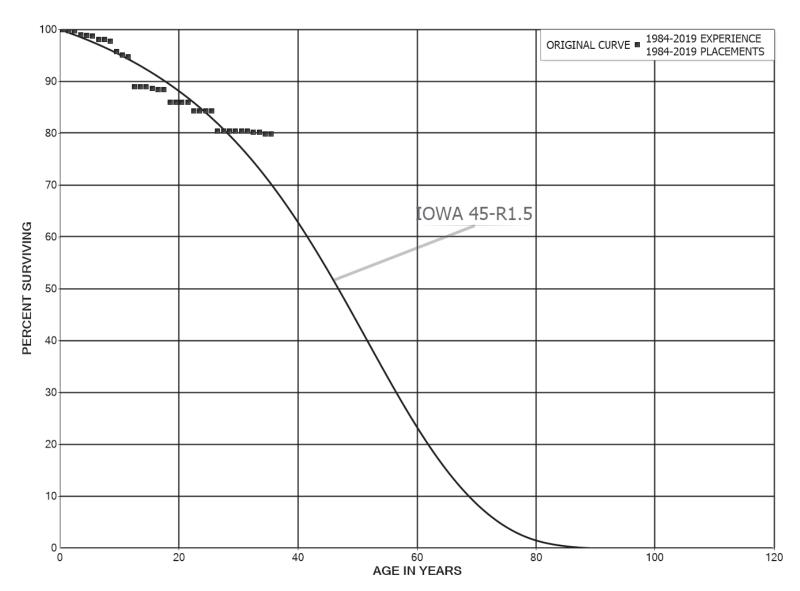
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 668 COMPRESSOR STATION EQUIPMENT ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 668 COMPRESSOR STATION EQUIPMENT

PLACEMENT E	BAND 1988-1988		EXPE	RIENCE BAN	D 1988-2019
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	27,708 27,708 27,708 27,708 27,708 27,708 27,708 27,708 27,708 27,708		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	27,708 27,708 27,708 27,708 27,708 27,708 27,708 27,708 27,708 27,708		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	27,708 27,708 27,708 27,708 27,708 27,708 27,708 27,708 27,708 27,708		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
29.5 30.5 31.5	27,708 27,708		0.0000	1.0000	100.00 100.00 100.00

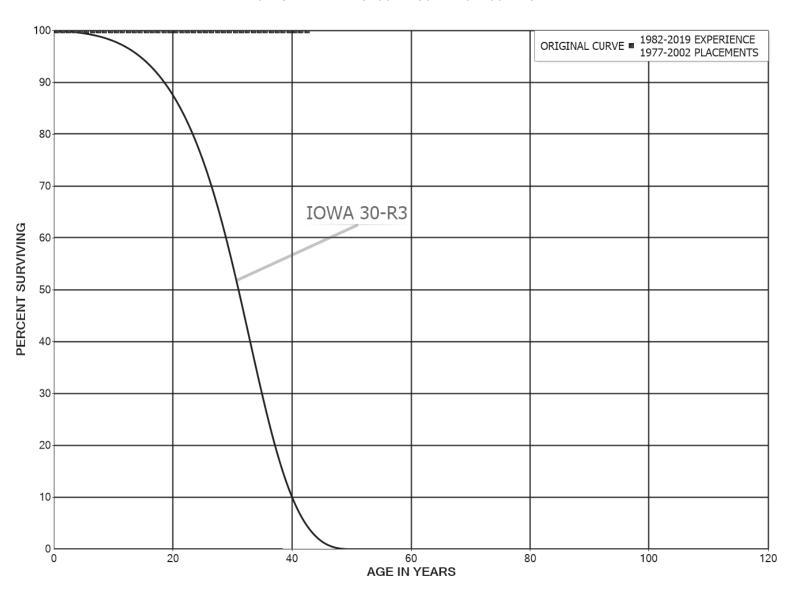
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 669 MEASURING AND REGULATING STATION EQUIPMENT ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 669 MEASURING AND REGULATING STATION EQUIPMENT

PLACEMENT I	BAND 1984-2019		EXPER	RIENCE BAN	D 1984-2019
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	13,872,621 13,425,066 9,069,146 8,926,769 8,823,512 8,805,893 8,478,542 7,247,658 7,111,611 6,626,369	32,407 67,236 17,619 12,212 49,900 2,578 21,425 141,633	0.0000 0.0024 0.0000 0.0075 0.0020 0.0014 0.0059 0.0004 0.0030 0.0214	1.0000 0.9976 1.0000 0.9925 0.9980 0.9986 0.9941 0.9996 0.9970	100.00 100.00 99.76 99.76 99.01 98.81 98.67 98.09 98.06 97.76
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	6,075,127 4,379,697 4,362,707 4,099,065 4,099,065 3,733,456 3,499,170 3,163,836 3,163,836 2,942,137	36,883 16,990 263,642 15,245 8,322 87,351	0.0061 0.0039 0.0604 0.0000 0.0000 0.0041 0.0024 0.0000 0.0276 0.0000	0.9939 0.9961 0.9396 1.0000 1.0000 0.9959 0.9976 1.0000 0.9724 1.0000	95.67 95.09 94.72 89.00 89.00 89.00 88.63 88.42 88.42 85.98
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	2,872,620 2,046,752 1,250,617 1,200,333 1,151,607 1,134,648 1,129,064 752,258 597,937 594,235	23,969 52,102 213	0.0000 0.0000 0.0192 0.0000 0.0000 0.0000 0.0461 0.0003 0.0000	1.0000 1.0000 0.9808 1.0000 1.0000 0.9539 0.9997 1.0000 1.0000	85.98 85.98 84.33 84.33 84.33 84.33 80.44 80.42
29.5 30.5 31.5 32.5 33.5 34.5 35.5	592,147 503,757 434,014 183,803 183,803 182,968	1,469 835	0.0000 0.0000 0.0034 0.0000 0.0045 0.0000	1.0000 1.0000 0.9966 1.0000 0.9955 1.0000	80.42 80.42 80.42 80.15 80.15 79.78

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 671 OTHER EQUIPMENT ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 671 OTHER EQUIPMENT

PLACEMENT E	BAND 1977-2002		EXPEF	RIENCE BAN	D 1982-2019
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	772 772 772 772 772 5,283 5,283 5,283 5,283		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	5,283 5,283 5,283 5,283 5,283 5,283 5,283 4,511 4,511		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5	4,511 4,511 4,511 4,511 4,511 4,511 4,511 4,511 4,511		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5	4,511 4,511 4,511 4,511 4,511 4,511 4,511 4,511 4,511		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00

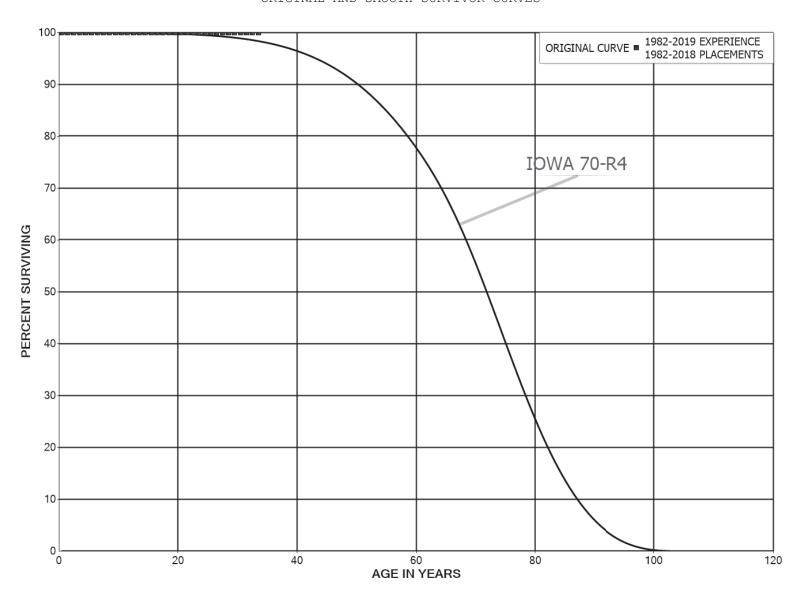
ACCOUNT 671 OTHER EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1977-2002				RIENCE BAN	D 1982-2019
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	4,511 4,511 4,511		0.0000 0.0000 0.0000	1.0000 1.0000 1.0000	100.00 100.00 100.00 100.00



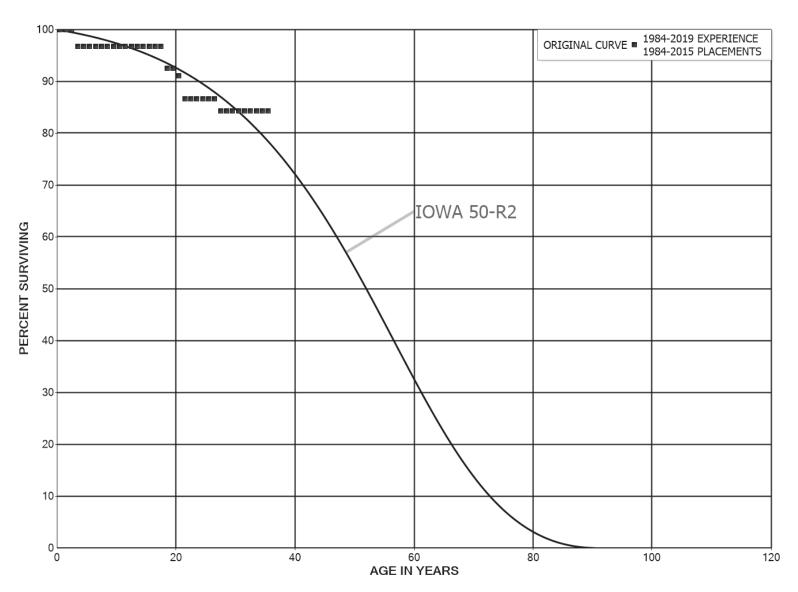
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 674.2 LAND RIGHTS ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 674.2 LAND RIGHTS

PLACEMENT E	BAND 1982-2018		EXPE	RIENCE BAN	D 1982-2019
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	394,688 394,688 146,361 146,361 146,361 146,361 146,361 136,228 136,228		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	97,992 89,702 87,169 85,801 78,127 71,015 71,015 71,015 71,015 71,015		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	71,015 71,015 71,015 71,015 71,015 71,015 71,015 71,015 70,964 70,964	51	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0007 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9993 1.0000	100.00 100.00 100.00 100.00 100.00 100.00 100.00 99.93 99.93
29.5 30.5 31.5 32.5 33.5	70,964 70,964 70,964 70,964		0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000	99.93 99.93 99.93 99.93 99.93

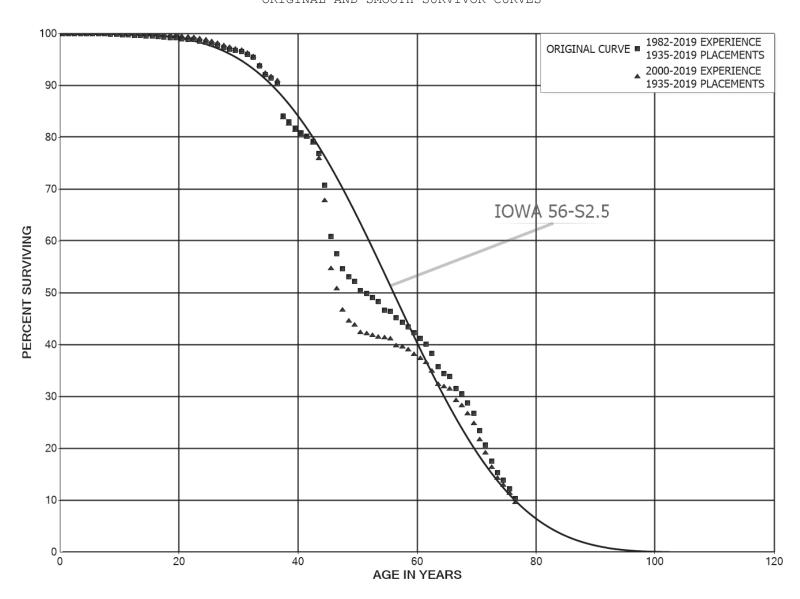
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 675 STRUCTURES AND IMPROVEMENTS ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 675 STRUCTURES AND IMPROVEMENTS

PLACEMENT E	BAND 1984-2015		EXPE	RIENCE BAN	D 1984-2019
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	130,245 130,245 130,245 130,245 126,050 101,201 101,201 101,201 101,201 101,201	4,196	0.0000 0.0000 0.0000 0.0322 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 0.9678 1.0000 1.0000 1.0000 1.0000	100.00 100.00 100.00 100.00 96.78 96.78 96.78 96.78 96.78
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	101,201 101,201 101,201 101,201 101,201 101,201 95,430 95,430 46,877 44,815	2,061	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0440 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9560 1.0000	96.78 96.78 96.78 96.78 96.78 96.78 96.78 96.78 96.78
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	44,815 44,117 41,968 41,968 41,312 40,718 40,718 40,718 39,606 39,606	698 2,149 1,112	0.0156 0.0487 0.0000 0.0000 0.0000 0.0000 0.0273 0.0000 0.0000	0.9844 0.9513 1.0000 1.0000 1.0000 1.0000 0.9727 1.0000 1.0000	92.52 91.08 86.64 86.64 86.64 86.64 86.64 86.64 84.28
29.5 30.5 31.5 32.5 33.5 34.5 35.5	34,356 34,356 29,309 28,455 28,455 28,455		0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000	84.28 84.28 84.28 84.28 84.28 84.28

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 676 MAINS ORIGINAL AND SMOOTH SURVIVOR CURVES



Petitioner's Exhibit No. 10 Attachment JJS-1 Vectren South Page 103 of 241

ACCOUNT 676 MAINS

PLACEMENT I	BAND 1935-2019		EXPER	RIENCE BAN	D 1982-2019
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	196,085,306 179,463,960 161,035,898 145,242,761 130,462,622 117,709,645 100,506,577 94,278,473 89,684,467 83,357,847	691 2,511 6,909 13,379 26,269 24,784 26,589 58,131 37,415	0.0000 0.0000 0.0000 0.0000 0.0001 0.0002 0.0002 0.0003 0.0006 0.0004	1.0000 1.0000 1.0000 1.0000 0.9999 0.9998 0.9998 0.9997 0.9994 0.9996	100.00 100.00 100.00 100.00 99.99 99.98 99.96 99.94 99.91 99.84
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	79,941,941 76,526,110 71,967,341 70,448,587 68,184,493 64,702,418 62,119,143 59,586,132 57,023,653 56,023,473	70,348 24,094 38,951 39,860 32,810 35,154 57,512 40,859 51,269 15,920	0.0009 0.0003 0.0005 0.0006 0.0005 0.0005 0.0009 0.0007 0.0009	0.9991 0.9997 0.9995 0.9994 0.9995 0.9991 0.9993 0.9991 0.9997	99.80 99.71 99.68 99.63 99.57 99.52 99.47 99.37 99.31
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	54,069,040 49,284,674 47,381,447 45,497,362 43,790,458 39,665,859 37,283,950 35,223,784 33,034,792 30,189,765	140,951 32,846 35,204 114,614 122,709 103,567 114,480 155,239 102,631 94,334	0.0026 0.0007 0.0007 0.0025 0.0028 0.0026 0.0031 0.0044 0.0031	0.9974 0.9993 0.9993 0.9975 0.9972 0.9974 0.9969 0.9969 0.9969	99.19 98.93 98.86 98.79 98.54 98.27 98.01 97.71 97.28 96.98
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	28,045,353 25,303,221 17,010,947 15,387,207 13,444,808 11,896,141 10,900,090 10,497,320 8,696,898 8,578,828	57,727 133,112 105,249 265,861 230,880 89,197 140,861 714,304 118,071 125,502	0.0021 0.0053 0.0062 0.0173 0.0172 0.0075 0.0129 0.0680 0.0136 0.0146	0.9979 0.9947 0.9938 0.9827 0.9828 0.9925 0.9871 0.9320 0.9864 0.9854	96.67 96.47 95.97 95.37 93.72 92.12 91.42 90.24 84.10 82.96

ACCOUNT 676 MAINS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT E	BAND 1935-2019		EXPEF	RIENCE BAN	D 1982-2019
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	9,078,937 8,560,181 8,500,696 8,388,573 8,140,152 7,141,523 6,141,855 6,670,910 6,336,916 5,907,160	107,160 59,486 112,122 248,421 649,288 999,667 329,720 333,995 187,712 99,525	0.0118 0.0069 0.0132 0.0296 0.0798 0.1400 0.0537 0.0501 0.0296 0.0168	0.9882 0.9931 0.9868 0.9704 0.9202 0.8600 0.9463 0.9499 0.9704 0.9832	81.75 80.78 80.22 79.16 76.82 70.69 60.80 57.53 54.65 53.03
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5	5,807,635 5,120,453 5,063,349 4,133,325 4,067,126 3,930,593 3,906,686 2,749,352 2,696,165 2,643,305	189,334 57,105 84,928 66,199 136,533 23,907 103,379 53,187 52,860 68,899	0.0326 0.0112 0.0168 0.0160 0.0336 0.0061 0.0265 0.0193 0.0196 0.0261	0.9674 0.9888 0.9832 0.9840 0.9664 0.9939 0.9735 0.9807 0.9804 0.9739	52.14 50.44 49.88 49.04 48.25 46.63 46.35 45.12 44.25 43.38
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5	2,574,406 2,507,874 2,080,857 1,985,412 1,851,398 1,786,634 1,537,572 1,430,044 1,383,029 1,302,878	66,532 63,950 95,444 134,015 64,763 28,953 107,527 47,016 80,151 91,967	0.0258 0.0255 0.0459 0.0675 0.0350 0.0162 0.0699 0.0329 0.0580 0.0706	0.9742 0.9745 0.9541 0.9325 0.9650 0.9838 0.9301 0.9671 0.9420 0.9294	42.25 41.16 40.11 38.27 35.69 34.44 33.88 31.51 30.48 28.71
69.5 70.5 71.5 72.5 73.5 74.5 75.5 76.5 77.5	912,003 798,962 703,671 583,009 508,452 447,820 393,258 332,500 279,807 270,253	113,041 95,291 103,997 74,557 48,508 54,562 60,758 40,933 9,554 4,809	0.1239 0.1193 0.1478 0.1279 0.0954 0.1218 0.1545 0.1231 0.0341 0.0178	0.8761 0.8807 0.8522 0.8721 0.9046 0.8782 0.8455 0.8769 0.9659 0.9822	26.68 23.38 20.59 17.55 15.30 13.84 12.16 10.28 9.01 8.70

ACCOUNT 676 MAINS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1935-2019 EXPERIENCE BAND 1982-201					D 1982-2019
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	265,444 265,444 265,444 265,444 265,444		0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000	8.55 8.55 8.55 8.55 8.55



ACCOUNT 676 MAINS

PLACEMENT H	BAND 1935-2019		EXPEF	RIENCE BAN	D 2000-2019
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 8.5	149,262,334 137,303,153 120,756,279 105,674,653 93,435,608 84,699,697 69,786,980 64,493,628 62,295,793 58,768,901	2,199 6,909 13,136 19,423 5,154 12,856 5,250 917	0.0000 0.0000 0.0000 0.0001 0.0001 0.0002 0.0001 0.0002 0.0001	1.0000 1.0000 1.0000 0.9999 0.9999 0.9998 0.9999 0.9999 1.0000	100.00 100.00 100.00 100.00 99.99 99.98 99.95 99.95 99.95
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	57,447,449 55,703,109 60,278,019 58,877,100 58,324,842 55,242,201 53,881,835 52,454,923 51,245,866 48,497,274	40,196 9,802 8,476 20,225 19,807 8,423 13,867 6,825 39,941 11,109	0.0007 0.0002 0.0001 0.0003 0.0003 0.0002 0.0003 0.0001 0.0008 0.0002	0.9993 0.9998 0.9999 0.9997 0.9997 0.9998 0.9999 0.9999	99.92 99.85 99.83 99.82 99.78 99.75 99.73 99.71 99.69 99.62
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	46,547,651 42,655,140 40,758,525 38,874,439 36,290,724 33,202,949 30,826,362 28,766,849 26,253,912 24,476,265	103,569 26,235 35,204 94,238 96,156 98,244 113,827 135,183 87,313 87,430	0.0022 0.0006 0.0009 0.0024 0.0026 0.0030 0.0037 0.0047 0.0033	0.9978 0.9994 0.9991 0.9976 0.9974 0.9970 0.9963 0.9953 0.9967 0.9964	99.59 99.37 99.31 99.22 98.98 98.72 98.43 98.07 97.61 97.28
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	22,338,757 21,066,993 11,993,711 11,708,147 9,831,660 8,117,759 7,152,733 7,976,615 6,262,333 6,175,437	54,785 108,453 85,604 199,950 171,869 58,172 58,424 628,165 86,895 89,382	0.0025 0.0051 0.0071 0.0171 0.0175 0.0072 0.0082 0.0788 0.0139 0.0145	0.9975 0.9949 0.9929 0.9829 0.9825 0.9928 0.9918 0.9212 0.9861 0.9855	96.93 96.70 96.20 95.51 93.88 92.24 91.58 90.83 83.68 82.52

ACCOUNT 676 MAINS

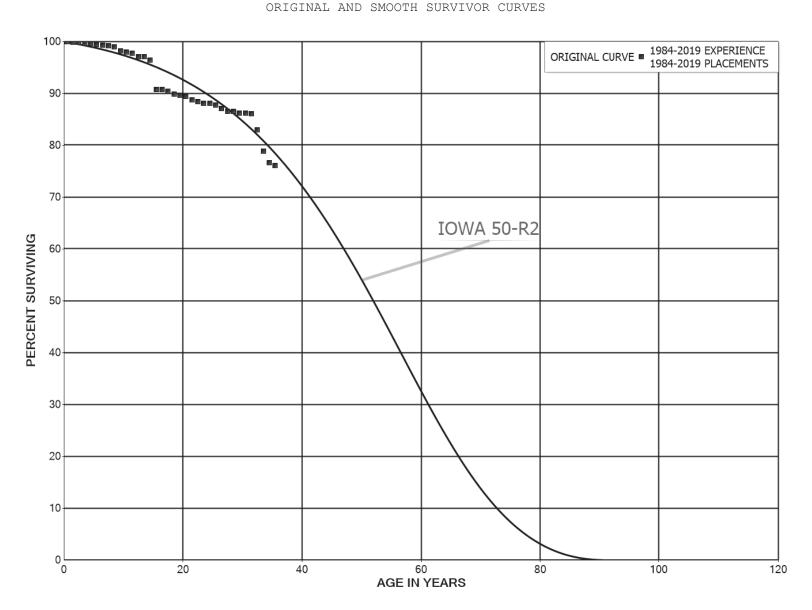
PLACEMENT E	BAND 1935-2019		EXPEF	RIENCE BAN	D 2000-2019
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 47.5 48.5	6,086,055 5,611,741 6,204,041 6,111,418 5,885,918 4,907,950 4,284,990 3,978,442 3,656,632 3,249,664	62,719 35,139 92,623 225,500 628,626 954,509 306,547 321,810 164,924 53,105	0.0103 0.0063 0.0149 0.0369 0.1068 0.1945 0.0715 0.0809 0.0451 0.0163	0.9897 0.9937 0.9851 0.9631 0.8932 0.8055 0.9285 0.9191 0.9549 0.9837	81.32 80.48 79.98 78.79 75.88 67.77 54.59 50.69 46.59 44.49
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5	3,763,556 3,139,694 3,125,762 2,459,231 2,442,604 2,688,246 2,674,065 1,530,715 2,048,895 2,019,153	126,015 13,931 31,366 16,627 6,840 14,180 89,395 8,758 29,742 40,633	0.0335 0.0044 0.0100 0.0068 0.0028 0.0053 0.0334 0.0057 0.0145 0.0201	0.9665 0.9956 0.9900 0.9932 0.9972 0.9947 0.9666 0.9943 0.9855 0.9799	43.76 42.29 42.11 41.68 41.40 41.29 41.07 39.70 39.47 38.90
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5	1,978,519 1,937,027 1,531,529 1,463,471 1,353,556 1,786,634 1,537,572 1,430,044 1,383,029 1,302,878	41,492 42,432 68,058 109,915 16,220 28,953 107,527 47,016 80,151 91,967	0.0210 0.0219 0.0444 0.0751 0.0120 0.0162 0.0699 0.0329 0.0580 0.0706	0.9790 0.9781 0.9556 0.9249 0.9880 0.9838 0.9301 0.9671 0.9420 0.9294	38.11 37.31 36.50 34.87 32.26 31.87 31.35 29.16 28.20 26.57
69.5 70.5 71.5 72.5 73.5 74.5 75.5 76.5 77.5	912,003 798,962 703,671 583,009 508,452 447,820 393,258 332,500 279,807 270,253	113,041 95,291 103,997 74,557 48,508 54,562 60,758 40,933 9,554 4,809	0.1239 0.1193 0.1478 0.1279 0.0954 0.1218 0.1545 0.1231 0.0341 0.0178	0.8761 0.8807 0.8522 0.8721 0.9046 0.8782 0.8455 0.8769 0.9659 0.9822	24.69 21.63 19.05 16.24 14.16 12.81 11.25 9.51 8.34 8.05

ACCOUNT 676 MAINS

PLACEMENT BAND 1935-2019 EXPERIENCE BAND 2000-2					D 2000-2019
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	265,444 265,444 265,444 265,444		0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000	7.91 7.91 7.91 7.91 7.91



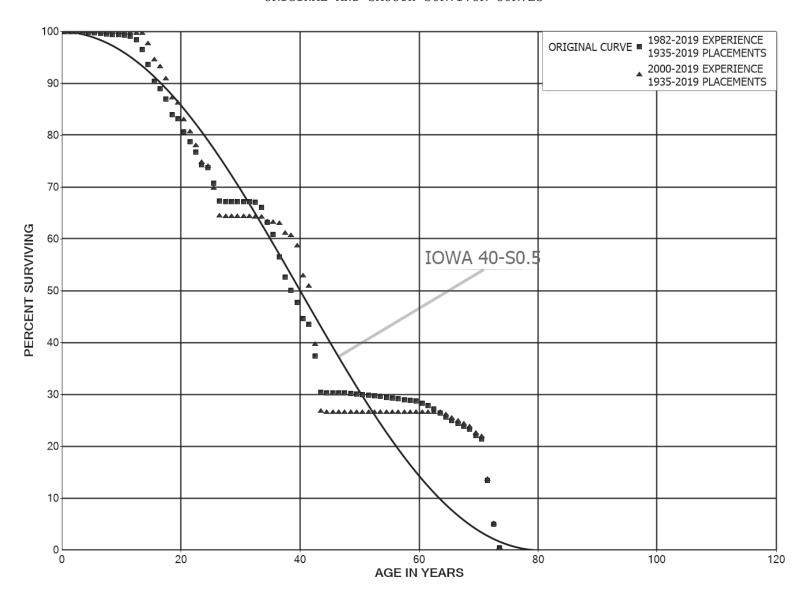
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 678 MEASURING AND REGULATING STATION EQUIPMENT - GENERAL



ACCOUNT 678 MEASURING AND REGULATING STATION EQUIPMENT - GENERAL

PLACEMENT H	BAND 1984-2019		EXPER	RIENCE BAN	D 1984-2019
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	8,752,052 8,652,155 7,651,337 7,526,383 6,108,723 6,036,289 5,910,919 5,182,816 4,951,281 4,868,940	10,989 16,041 12,965 9,232 6,312 12,519 36,318	0.0000 0.0013 0.0000 0.0021 0.0000 0.0021 0.0016 0.0012 0.0025 0.0075	1.0000 0.9987 1.0000 0.9979 1.0000 0.9979 0.9984 0.9988 0.9975 0.9925	100.00 100.00 99.87 99.87 99.66 99.66 99.45 99.29 99.17 98.92
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	4,654,948 4,487,119 4,476,858 4,413,401 2,592,435 2,415,221 2,221,078 2,091,951 1,860,791 1,677,463	10,882 10,261 28,811 1,389 18,241 140,950 1,522 6,958 12,299 2,578	0.0023 0.0023 0.0064 0.0003 0.0070 0.0584 0.0007 0.0033 0.0066 0.0015	0.9977 0.9977 0.9936 0.9997 0.9930 0.9416 0.9993 0.9967 0.9934 0.9985	98.18 97.95 97.73 97.10 97.07 96.39 90.76 90.70 90.40 89.80
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	1,567,107 1,430,886 1,253,195 1,174,604 1,165,864 1,155,664 1,063,127 1,004,455 845,300 826,584 444,506 431,198	4,584 11,648 4,041 4,034 4,459 8,399 6,047 2,875	0.0029 0.0081 0.0032 0.0034 0.0000 0.0039 0.0079 0.0060 0.0000 0.0035	0.9971 0.9919 0.9968 0.9966 1.0000 0.9961 0.9921 0.9940 1.0000 0.9965	89.66 89.40 88.67 88.39 88.08 87.74 87.05 86.52 86.52
31.5 32.5 33.5 34.5 35.5	271,485 231,108 219,576 187,348	9,719 11,484 6,340 1,134	0.0358 0.0497 0.0289 0.0061	0.9642 0.9503 0.9711 0.9939	86.06 82.98 78.86 76.58 76.12

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 680 SERVICES ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 680 SERVICES

PLACEMENT I	BAND 1935-2019		EXPER	RIENCE BAN	D 1982-2019
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	125,380,884 115,935,879 106,155,541 96,986,687 88,344,153 79,587,914 71,765,055 68,338,388 65,248,057 63,156,411	24,077 35,412 41,648 56,484 42,911 85,125 87,260 43,085 47,564 23,725	0.0002 0.0003 0.0004 0.0006 0.0005 0.0011 0.0012 0.0006 0.0007 0.0004	0.9998 0.9997 0.9996 0.9994 0.9995 0.9988 0.9988 0.9994 0.9993	100.00 99.98 99.95 99.91 99.85 99.80 99.70 99.58 99.51
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	60,549,494 58,096,619 54,214,855 52,092,776 48,573,656 45,386,053 41,986,164 38,577,990 35,931,390 33,152,801	60,061 155,832 347,615 990,590 1,490,932 1,524,430 661,812 866,000 1,265,928 305,221	0.0010 0.0027 0.0064 0.0190 0.0307 0.0336 0.0158 0.0224 0.0352 0.0092	0.9990 0.9973 0.9936 0.9810 0.9693 0.9664 0.9842 0.9776 0.9648 0.9908	99.40 99.31 99.04 98.40 96.53 93.57 90.43 89.00 87.00 83.94
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	30,414,965 26,809,654 23,574,642 20,707,352 18,599,804 15,920,904 12,572,478 11,120,361 11,578,052 11,557,118	935,160 636,743 599,841 662,504 138,176 648,132 612,289 7,104 1,502 4,308	0.0307 0.0238 0.0254 0.0320 0.0074 0.0407 0.0487 0.0006 0.0001	0.9693 0.9762 0.9746 0.9680 0.9926 0.9593 0.9513 0.9994 0.9999	83.17 80.61 78.69 76.69 74.24 73.69 70.69 67.24 67.20 67.19
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	11,511,971 11,414,712 8,280,634 8,193,669 7,858,926 7,996,783 7,619,180 7,606,989 6,686,699 6,369,891	4,087 3,446 124,103 342,236 301,039 545,187 526,695 316,808 298,749	0.0000 0.0004 0.0004 0.0151 0.0435 0.0376 0.0716 0.0692 0.0474 0.0469	1.0000 0.9996 0.9996 0.9849 0.9565 0.9624 0.9284 0.9308 0.9526 0.9531	67.17 67.17 67.14 67.12 66.10 63.22 60.84 56.49 52.58 50.09

ACCOUNT 680 SERVICES

PLACEMENT E	BAND 1935-2019		EXPER	RIENCE BAN	D 1982-2019
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	6,879,310 5,924,112 5,780,211 4,973,312 4,039,209 3,603,095 3,603,095 4,161,291 4,161,291 3,848,207	457,607 143,900 806,899 934,103 13,893	0.0665 0.0243 0.1396 0.1878 0.0034 0.0000 0.0000 0.0000 0.00048 0.0028	0.9335 0.9757 0.8604 0.8122 0.9966 1.0000 1.0000 0.9952 0.9972	47.74 44.56 43.48 37.41 30.38 30.28 30.28 30.28 30.28 30.28
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5	3,837,563 3,597,977 3,581,683 3,186,929 3,175,236 3,153,124 3,133,445 2,638,656 2,621,780 2,608,422	12,105 16,293 8,604 11,693 22,112 19,679 13,205 16,877 13,357 9,604	0.0032 0.0045 0.0024 0.0037 0.0070 0.0062 0.0042 0.0064 0.0051 0.0037	0.9968 0.9955 0.9976 0.9963 0.9930 0.9938 0.9958 0.9949 0.9963	30.05 29.95 29.82 29.75 29.64 29.43 29.25 29.13 28.94 28.79
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5	2,598,818 2,567,500 2,418,691 2,360,016 2,296,139 2,225,682 2,103,946 2,060,551 2,016,095 1,966,288	31,318 46,506 58,674 63,877 70,456 59,714 43,395 44,456 49,808 105,300	0.0121 0.0181 0.0243 0.0271 0.0307 0.0268 0.0206 0.0216 0.0247 0.0536	0.9879 0.9819 0.9757 0.9729 0.9693 0.9732 0.9794 0.9784 0.9753 0.9464	28.69 28.34 27.83 27.15 26.42 25.61 24.92 24.40 23.88 23.29
69.5 70.5 71.5 72.5 73.5 74.5 75.5 76.5 77.5	1,776,763 1,728,697 1,076,714 399,568 31,564 28,901 28,901 28,901 26,317 26,317	48,065 651,984 673,027 368,004	0.0271 0.3772 0.6251 0.9210 0.0000 0.0000 0.0000 0.0000 0.0000	0.9729 0.6228 0.3749 0.0790 1.0000 1.0000 1.0000 1.0000 1.0000	22.04 21.45 13.36 5.01 0.40 0.40 0.40 0.40 0.40

ACCOUNT 680 SERVICES

PLACEMENT BAND 1935-2019 EXPERIENCE BAND 1982					D 1982-2019
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	26,317 26,317 26,317 26,317 26,317		0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000	0.40 0.40 0.40 0.40 0.40



ACCOUNT 680 SERVICES

PLACEMENT I	BAND 1935-2019		EXPER	RIENCE BAN	D 2000-2019
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	92,832,988 86,132,951 78,990,322 71,018,374 64,572,635 58,397,729 53,364,764 50,707,769 49,066,453 48,226,599	13,755 50,738 46,696 3,089 4,437 2,886	0.0000 0.0000 0.0000 0.0000 0.0002 0.0009 0.0009 0.0001 0.0001	1.0000 1.0000 1.0000 1.0000 0.9998 0.9991 0.9999 0.9999	100.00 100.00 100.00 100.00 100.00 99.98 99.89 99.80 99.80 99.79
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	47,023,762 44,589,075 45,986,764 44,484,368 42,803,864 39,603,216 36,906,219 33,737,449 31,487,545 27,619,593	4,028 931 50,346 13,904 855,806 1,253,747 519,931 862,897 1,264,223 303,936	0.0001 0.0000 0.0011 0.0003 0.0200 0.0317 0.0141 0.0256 0.0401 0.0110	0.9999 1.0000 0.9989 0.9997 0.9800 0.9683 0.9859 0.9744 0.9599 0.9890	99.78 99.77 99.77 99.66 99.63 97.64 94.55 93.22 90.83 87.19
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	24,883,042 21,902,559 18,667,547 15,800,257 13,079,781 11,367,593 8,019,167 6,567,050 6,504,308 7,579,659	933,867 636,743 599,841 662,504 138,176 648,132 612,289 7,104 1,502 4,308	0.0375 0.0291 0.0321 0.0419 0.0106 0.0570 0.0764 0.0011 0.0002 0.0006	0.9625 0.9709 0.9679 0.9581 0.9894 0.9430 0.9236 0.9989 0.9998	86.23 82.99 80.58 77.99 74.72 73.93 69.71 64.39 64.32 64.31
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	7,534,513 8,223,414 4,362,050 5,241,952 5,030,451 4,908,432 4,828,023 5,414,383 4,864,132 4,829,484	4,087 3,446 862 71,629 3,845 22,951 156,656 34,648 164,908	0.0000 0.0005 0.0008 0.0002 0.0142 0.0008 0.0048 0.0289 0.0071 0.0341	1.0000 0.9995 0.9992 0.9998 0.9858 0.9992 0.9952 0.9711 0.9929 0.9659	64.27 64.27 64.24 64.19 64.18 63.26 63.21 62.91 61.09 60.66

ACCOUNT 680 SERVICES

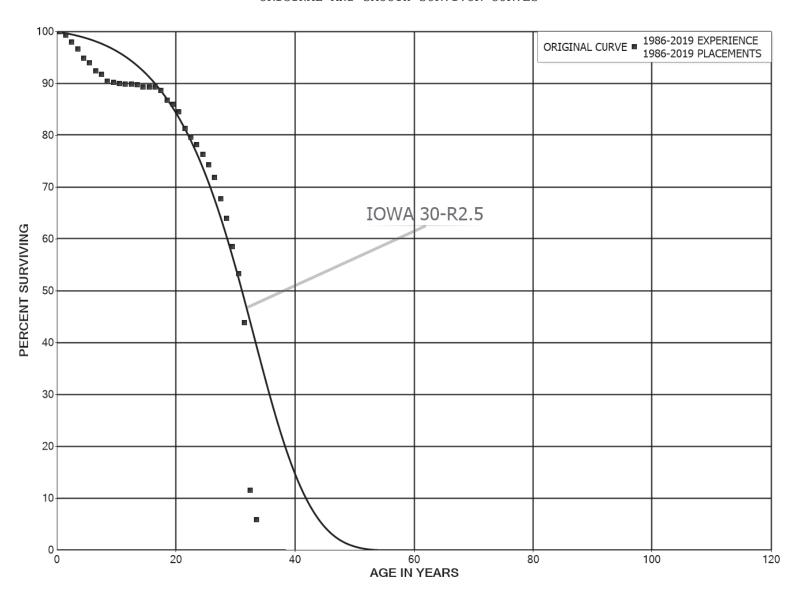
PLACEMENT 1	BAND 1935-2019		EXPER	RIENCE BAN	D 2000-2019
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 47.5 48.5	4,664,576 3,709,377 3,667,780 2,860,881 1,926,778 1,490,664 1,552,686 1,552,686 1,552,686	457,607 143,900 806,899 934,103 13,893	0.0981 0.0388 0.2200 0.3265 0.0072 0.0000 0.0000 0.0000	0.9019 0.9612 0.7800 0.6735 0.9928 1.0000 1.0000 1.0000	58.59 52.84 50.79 39.62 26.68 26.49 26.49 26.49 26.49 26.49
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	1,343,765 1,116,283 1,116,283 1,260,617 1,260,617 1,888,150 1,888,150 1,406,566 2,214,734 2,214,734		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	26.49 26.49 26.49 26.49 26.49 26.49 26.49 26.49 26.49
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5	2,214,734 2,214,734 2,112,431 2,112,431 2,112,431 2,225,682 2,103,946 2,060,551 2,016,095 1,966,288	31,604 59,714 43,395 44,456 49,808 105,300	0.0000 0.0000 0.0000 0.0000 0.0150 0.0268 0.0206 0.0216 0.0247 0.0536	1.0000 1.0000 1.0000 1.0000 0.9850 0.9732 0.9794 0.9784 0.9753 0.9464	26.49 26.49 26.49 26.49 26.09 25.39 24.87 24.33 23.73
69.5 70.5 71.5 72.5 73.5 74.5 75.5 76.5 77.5	1,776,763 1,728,697 1,076,714 399,568 31,564 28,901 28,901 28,901 26,317 26,317	48,065 651,984 673,027 368,004	0.0271 0.3772 0.6251 0.9210 0.0000 0.0000 0.0000 0.0000 0.0000	0.9729 0.6228 0.3749 0.0790 1.0000 1.0000 1.0000 1.0000 1.0000	22.46 21.85 13.61 5.10 0.40 0.40 0.40 0.40 0.40 0.40

ACCOUNT 680 SERVICES

PLACEMENT BAND 1935-2019 EXPE				RIENCE BAN	D 2000-2019
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	26,317 26,317 26,317 26,317 26,317		0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000	0.40 0.40 0.40 0.40 0.40



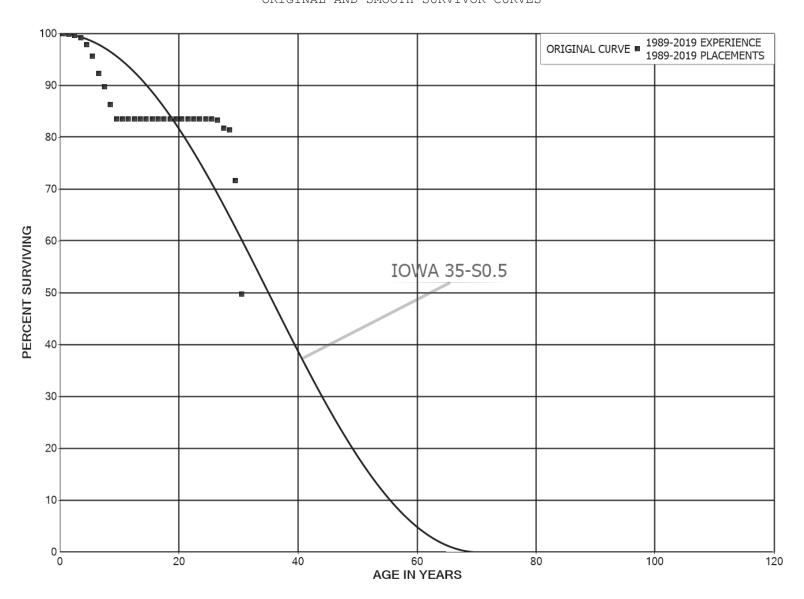
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 681 METERS ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 681 METERS

PLACEMENT 1	BAND 1986-2019		EXPER	RIENCE BAN	D 1986-2019
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 8.5	33,290,418 31,986,910 24,550,000 22,860,294 21,513,669 19,940,572 18,835,285 17,639,783 16,794,858 15,869,972	220,928 339,707 300,424 392,894 190,547 306,758 136,014 245,788 46,296	0.0000 0.0069 0.0138 0.0131 0.0183 0.0096 0.0163 0.0077 0.0146 0.0029	1.0000 0.9931 0.9862 0.9869 0.9817 0.9904 0.9837 0.9923 0.9854 0.9971	100.00 100.00 99.31 97.94 96.65 94.88 93.98 92.45 91.73 90.39
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	15,266,631 14,615,078 13,909,853 13,148,146 12,653,397 12,193,058 11,846,251 11,092,879 11,005,798 10,484,427	36,533 12,694 19,378 51,674 6,151 87,080 231,662 98,046	0.0024 0.0009 0.0000 0.0015 0.0041 0.0000 0.0005 0.0079 0.0210 0.0094	0.9976 0.9991 1.0000 0.9985 0.9959 1.0000 0.9995 0.9921 0.9790 0.9906	90.13 89.91 89.83 89.83 89.70 89.33 89.33 89.29 88.59 86.72
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	9,854,750 9,222,174 8,878,505 8,407,970 7,780,567 7,147,949 6,403,209 5,540,270 4,640,999 3,774,903	165,603 343,668 181,703 152,391 187,854 194,380 212,566 316,789 258,032 319,113	0.0168 0.0373 0.0205 0.0181 0.0241 0.0272 0.0332 0.0572 0.0556 0.0845	0.9832 0.9627 0.9795 0.9819 0.9759 0.9728 0.9668 0.9428 0.9444 0.9155	85.91 84.47 81.32 79.66 78.21 76.32 74.25 71.78 67.68 63.92
29.5 30.5 31.5 32.5 33.5	2,770,717 1,869,966 895,899 72,103	248,244 331,778 661,158 35,624	0.0896 0.1774 0.7380 0.4941	0.9104 0.8226 0.2620 0.5059	58.51 53.27 43.82 11.48 5.81

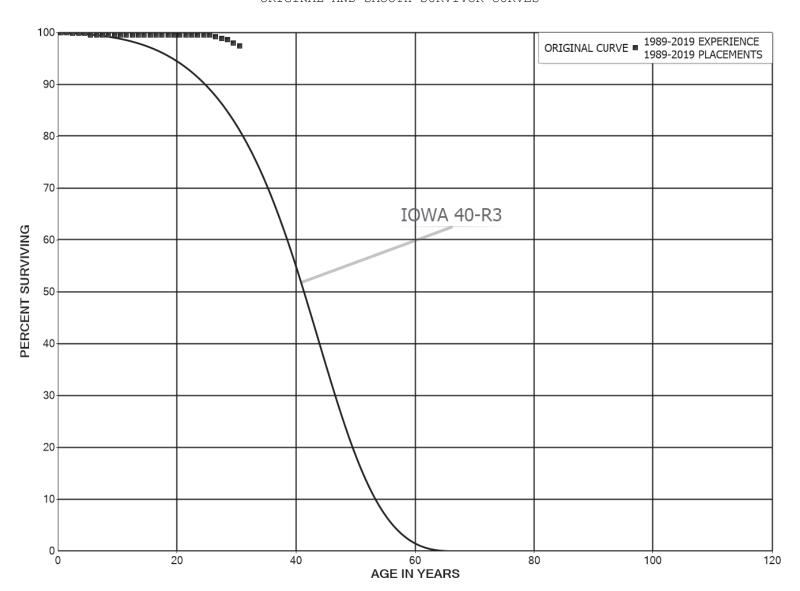
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 682 METER INSTALLATIONS ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 682 METER INSTALLATIONS

PLACEMENT H	BAND 1989-2019		EXPE	RIENCE BAN	D 1989-2019
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 8.5	5,940,220 5,314,721 2,559,835 2,074,569 625,230 601,977 539,722 502,321 488,301 469,396	1,989 4,614 7,624 7,837 8,332 14,218 18,345 14,020 18,785 15,190	0.0003 0.0009 0.0030 0.0038 0.0133 0.0236 0.0340 0.0279 0.0385 0.0324	0.9997 0.9991 0.9970 0.9962 0.9867 0.9764 0.9660 0.9721 0.9615 0.9676	100.00 99.97 99.88 99.58 99.21 97.88 95.57 92.32 89.75 86.29
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	454,206 454,155 454,155 449,266 448,989 448,989 448,989 448,989 448,989		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	83.50 83.50 83.50 83.50 83.50 83.50 83.50 83.50 83.50
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	448,989 448,989 448,989 448,989 403,661 369,350 346,980 297,918 264,820 236,963	796 5,699 1,133 28,495	0.0000 0.0000 0.0000 0.0000 0.0000 0.0023 0.0191 0.0043 0.1203	1.0000 1.0000 1.0000 1.0000 1.0000 0.9977 0.9809 0.9957 0.8797	83.50 83.50 83.50 83.50 83.50 83.50 83.50 83.31 81.72 81.37
29.5 30.5	184,247	56 , 175	0.3049	0.6951	71.58 49.76

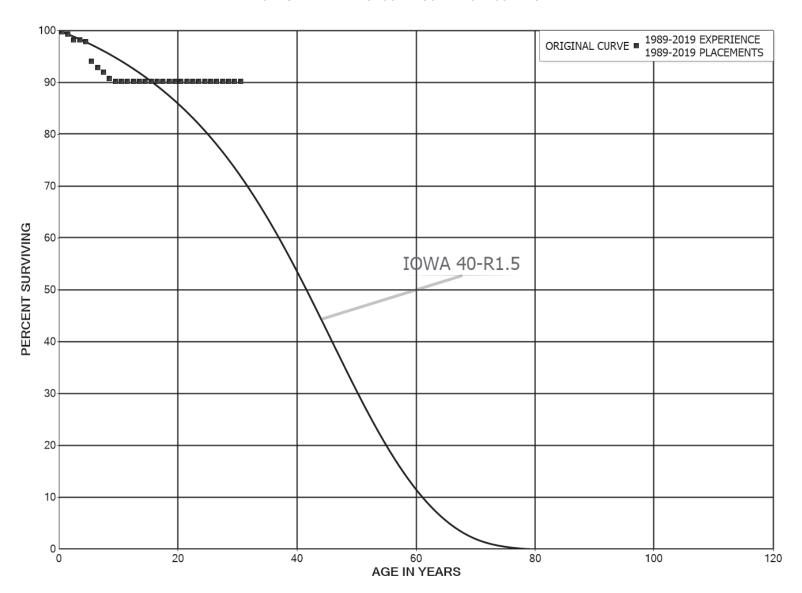
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 683 HOUSE REGULATORS ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 683 HOUSE REGULATORS

PLACEMENT E	BAND 1989-2019		EXPE	RIENCE BAN	D 1989-2019
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	501,751 467,434 427,465 424,256 421,566 419,255 417,864 417,864 417,864 416,804	35 435 100 139 1,391	0.0001 0.0009 0.0002 0.0000 0.0003 0.0003 0.0000 0.0000 0.0000	0.9999 0.9991 0.9998 1.0000 0.9997 0.9967 1.0000 1.0000	100.00 99.99 99.90 99.88 99.88 99.51 99.51 99.51
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	416,804 416,792 416,792 416,792 416,792 416,792 416,792 416,792 416,792 416,792	13	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	99.51 99.51 99.51 99.51 99.51 99.51 99.51 99.51
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	416,779 416,779 416,779 416,779 392,944 322,703 289,980 249,283 217,233 200,427	1,130 657 539 1,248	0.0000 0.0000 0.0000 0.0000 0.0000 0.0039 0.0026 0.0025 0.0062	1.0000 1.0000 1.0000 1.0000 1.0000 0.9961 0.9974 0.9975 0.9938	99.51 99.51 99.51 99.51 99.51 99.51 99.12 98.86 98.62
29.5 30.5	182,892	1,143	0.0062	0.9938	98.00 97.39

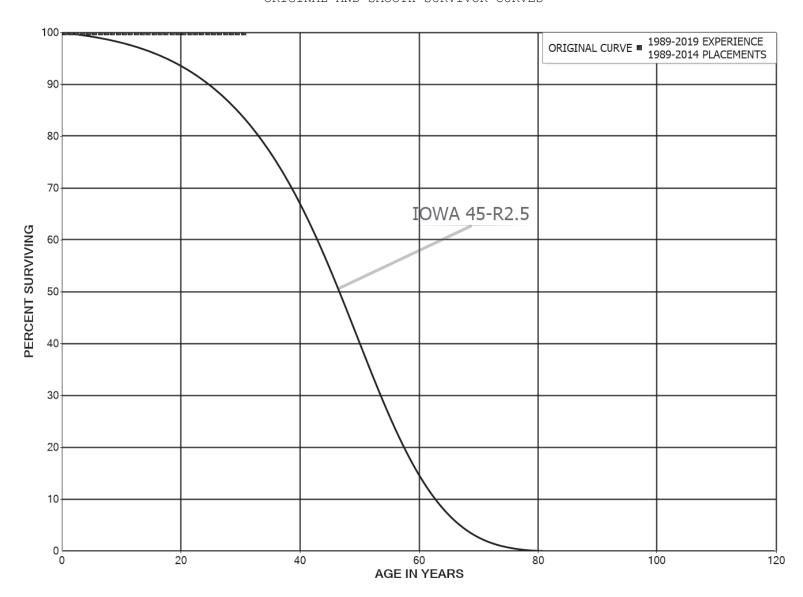
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 684 HOUSE REGULATOR INSTALLATIONS ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 684 HOUSE REGULATOR INSTALLATIONS

PLACEMENT E	BAND 1989-2019		EXPE	RIENCE BAN	D 1989-2019
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	134,520 134,033 133,389 131,946 131,541 126,379 124,853 123,681 121,947	390 644 1,443 405 5,162 1,526 1,172 1,734 688	0.0029 0.0048 0.0108 0.0000 0.0031 0.0392 0.0121 0.0094 0.0140 0.0056	0.9971 0.9952 0.9892 1.0000 0.9969 0.9608 0.9879 0.9906 0.9860 0.9944	100.00 99.71 99.23 98.16 98.16 97.86 94.02 92.88 92.01 90.72
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	121,259 121,259 121,259 121,259 121,259 121,259 121,259 121,259 121,259 121,259		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	90.21 90.21 90.21 90.21 90.21 90.21 90.21 90.21 90.21 90.21
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	121,259 121,259 121,259 121,259 115,055 106,383 90,770 78,058 69,898 64,473		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	90.21 90.21 90.21 90.21 90.21 90.21 90.21 90.21 90.21 90.21 90.21

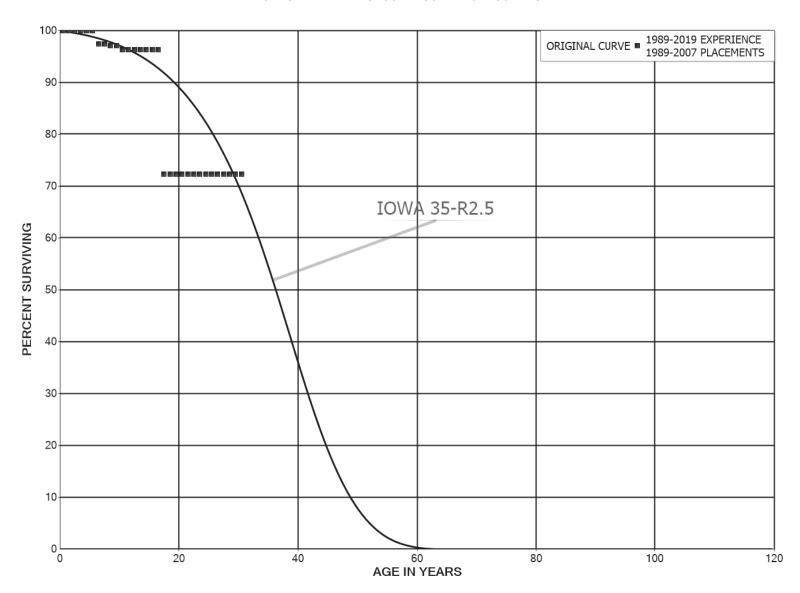
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 685 INDUSTRIAL MEASURING AND REGULATING STATION EQUIPMENT ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 685 INDUSTRIAL MEASURING AND REGULATING STATION EQUIPMENT

PLACEMENT E	BAND 1989-2014		EXPER	RIENCE BAN	D 1989-2019
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	266,398 266,398 266,398 266,398 266,398 266,398 37,456 37,456 37,456		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	6,456 6,456 6,456 6,456 6,456 5,496 1,982 1,982 1,982		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	1,982 1,982 1,982 1,982 1,982 1,982 1,982 1,982 1,982 1,982		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00

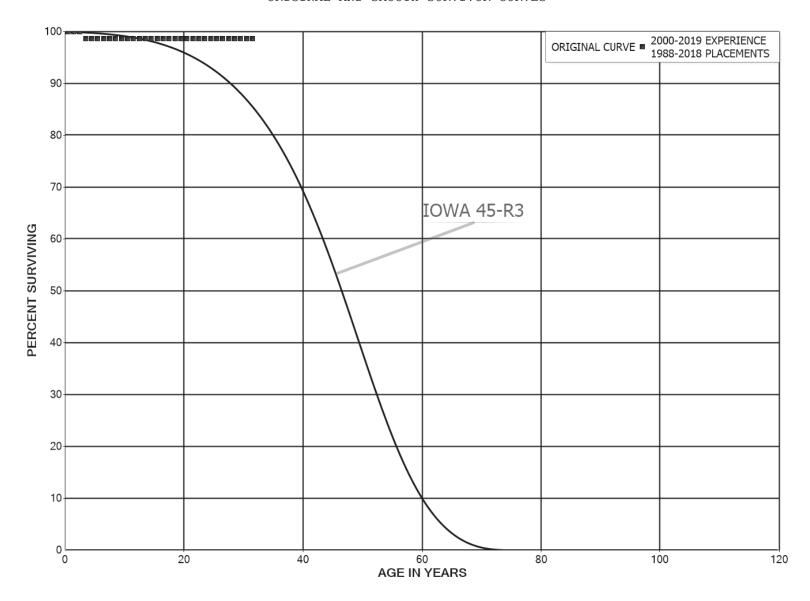
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 687 OTHER EQUIPMENT ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 687 OTHER EQUIPMENT

PLACEMENT E	BAND 1989-2007		EXPE	RIENCE BAN	D 1989-2019
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	118,591 118,591 118,591 118,591 118,591 118,591 118,591 115,503 115,503	3,088 393	0.0000 0.0000 0.0000 0.0000 0.0000 0.0260 0.0000 0.0034 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 0.9740 1.0000 0.9966 1.0000	100.00 100.00 100.00 100.00 100.00 100.00 97.40 97.40 97.06
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	115,110 114,239 114,239 29,126 29,126 29,126 11,433 11,433 8,575 8,575	871 2,858	0.0076 0.0000 0.0000 0.0000 0.0000 0.0000 0.2500 0.0000	0.9924 1.0000 1.0000 1.0000 1.0000 1.0000 0.7500 1.0000 1.0000	97.06 96.33 96.33 96.33 96.33 96.33 96.33 72.25
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	8,575 8,575 8,575 8,575 8,575 8,575 8,575 8,575 8,575 8,575		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	72.25 72.25 72.25 72.25 72.25 72.25 72.25 72.25 72.25 72.25 72.25

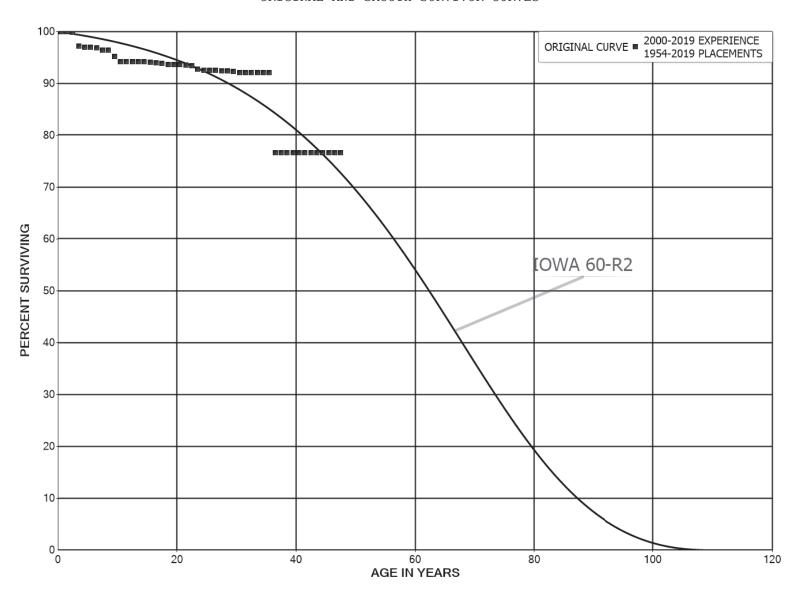
SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 690 STRUCTURES AND IMPROVEMENTS ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 690 STRUCTURES AND IMPROVEMENTS

PLACEMENT I	BAND 1988-2018		EXPE	RIENCE BAN	D 2000-2019
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	1,978,724 1,978,724 1,953,118 1,902,127 1,875,391 1,317,077 1,317,077 1,317,077 1,317,077	26,736	0.0000 0.0000 0.0000 0.0141 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 0.9859 1.0000 1.0000 1.0000 1.0000	100.00 100.00 100.00 100.00 98.59 98.59 98.59 98.59 98.59 98.59
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	1,138,924 167,888 197,655 137,827 30,885 30,885 29,767 29,767		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	98.59 98.59 98.59 98.59 98.59 98.59 98.59 98.59 98.59
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	29,767 29,767 29,767 29,767 29,767 29,767 29,767 29,767		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	98.59 98.59 98.59 98.59 98.59 98.59 98.59 98.59 98.59
29.5 30.5 31.5	29,767 29,767		0.0000	1.0000	98.59 98.59 98.59

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNT 590 STRUCTURES AND IMPROVEMENTS ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 590 STRUCTURES AND IMPROVEMENTS

PLACEMENT E	BAND 1954-2019		EXPER	RIENCE BAN	D 2000-2019
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	14,599,433 10,367,189 8,253,249 7,506,394 6,735,010 10,878,403 12,164,943 11,733,882 24,937,385 25,764,954	10,179 199,985 17,179 22,813 43,266 9,520 315,895	0.0000 0.0000 0.0012 0.0266 0.0026 0.0000 0.0019 0.0037 0.0004 0.0123	1.0000 1.0000 0.9988 0.9734 0.9974 1.0000 0.9981 0.9963 0.9996 0.9877	100.00 100.00 100.00 99.88 97.22 96.97 96.97 96.79 96.79
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	30,814,347 30,160,676 30,461,553 31,289,862 30,607,588 30,713,240 30,660,823 30,529,602 30,463,281 30,414,747	318,355 13,886 52,416 7,591 58,979 48,535 11,669	0.0103 0.0005 0.0000 0.0000 0.0000 0.0017 0.0002 0.0019 0.0016 0.0004	0.9897 0.9995 1.0000 1.0000 0.9983 0.9998 0.9981 0.9984 0.9996	95.21 94.23 94.18 94.18 94.18 94.18 94.02 94.00 93.82 93.67
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	30,468,325 30,460,954 30,500,108 30,478,821 30,176,964 25,520,988 24,039,289 24,039,289 10,897,185 8,507,528	7,371 31,560 21,288 222,366 85,131 40,275	0.0002 0.0010 0.0007 0.0073 0.0028 0.0000 0.0000 0.0017 0.0000 0.0002	0.9998 0.9990 0.9993 0.9927 0.9972 1.0000 1.0000 0.9983 1.0000 0.9998	93.63 93.61 93.51 93.45 92.77 92.50 92.50 92.50 92.35
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	2,796,628 2,790,172 1,465,962 637,590 452,549 341,087 341,087 269,433 249,297 249,297	6,456 57,465	0.0023 0.0000 0.0000 0.0000 0.0000 0.1685 0.0000 0.0000	0.9977 1.0000 1.0000 1.0000 1.0000 0.8315 1.0000 1.0000	92.33 92.12 92.12 92.12 92.12 92.12 92.12 76.60 76.60

ACCOUNT 590 STRUCTURES AND IMPROVEMENTS

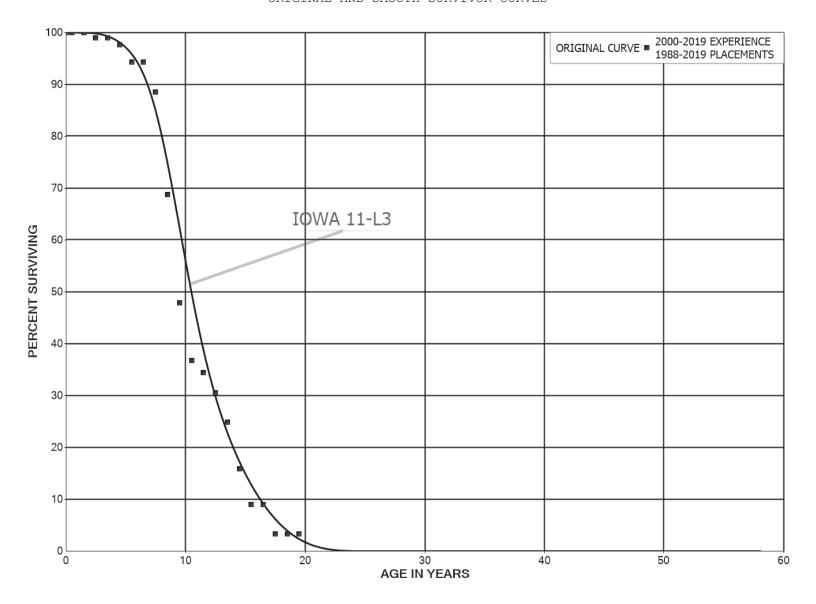
ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1954-2019 EXPERIENCE BAND 2000-2019 AGE AT EXPOSURES AT RETIREMENTS PCT SURV BEGIN OF BEGIN OF BEGINNING OF DURING AGE RETMT SURV INTERVAL AGE INTERVAL INTERVAL RATIO RATIO INTERVAL 39.5 184,049 0.0000 76.60 1.0000 40.5 76.60 184,049 0.0000 1.0000 41.5 176,756 0.0000 1.0000 76.60 42.5 301,185 0.0000 1.0000 76.60 43.5 310,595 0.0000 1.0000 76.60 44.5 310,595 0.0000 1.0000 76.60 45.5 330,507 0.0000 1.0000 76.60 46.5 330,507 0.0000 1.0000 76.60 47.5 76.60 159,166 0.0000 1.0000 48.5 159,166 0.0000 1.0000 76.60 49.5 159,166 0.0000 1.0000 76.60 50.5 159,166 0.0000 1.0000 76.60 159,166 51.5 1.0000 76.60 0.0000 52.5 159,166 76.60 0.0000 1.0000 53.5 159,166 0.0000 1.0000 76.60 54.5 159,166 1.0000 76.60 0.0000 0.0000 1.0000 76.60 55.5 159,166 56.5 159,166 0.0000 1.0000 76.60 57.5 159,166 0.0000 1.0000 76.60 58.5 159,166 0.0000 76.60 1.0000 59.5 0.0296 159,166 4,705 0.9704 76.60 60.5 0.0000 74.33 154,461 1.0000 61.5 154,461 0.0000 1.0000 74.33 62.5 30,032 0.0000 1.0000 74.33 63.5 25,327 0.0000 74.33 1.0000 74.33 64.5 25,327 0.0000 1.0000

65.5

74.33

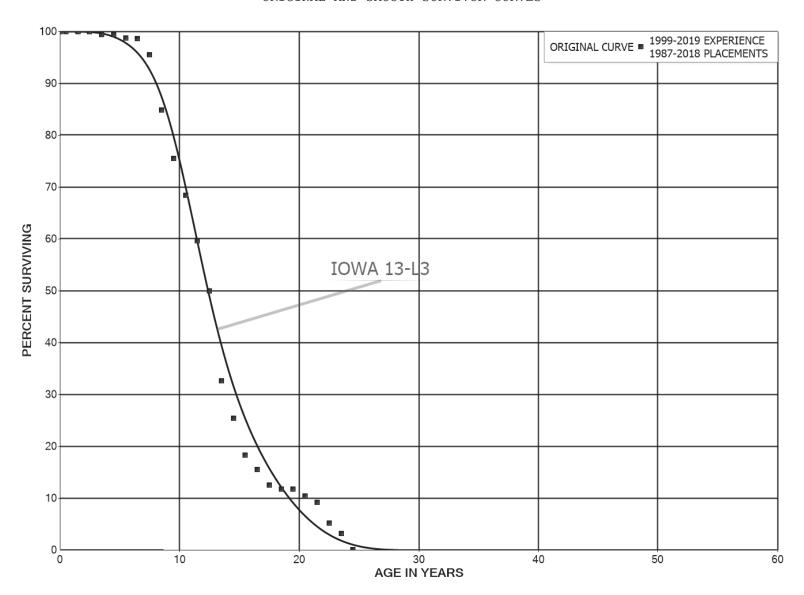
ACCOUNTS 592.1 AND 692.1 TRANSPORTATION EQUIPMENT - AUTOMOBILES ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNTS 592.1 AND 692.1 TRANSPORTATION EQUIPMENT - AUTOMOBILES

PLACEMENT	BAND 1988-2019		EXPE	RIENCE BAN	D 2000-2019
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 8.5	2,661,795 2,739,289 2,074,425 1,625,548 1,551,622 1,381,537 1,067,527 977,440 574,901 458,442	22,874 19,999 47,509 59,496 128,679 139,157	0.0000 0.0000 0.0110 0.0000 0.0129 0.0344 0.0000 0.0609 0.2238 0.3035	1.0000 1.0000 0.9890 1.0000 0.9871 0.9656 1.0000 0.9391 0.7762 0.6965	100.00 100.00 100.00 98.90 98.90 97.62 94.27 94.27 88.53 68.71
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	319,286 244,798 231,956 183,722 135,182 85,897 48,825 48,825 17,859 17,859	74,488 15,323 26,418 33,945 49,285 37,072	0.2333 0.0626 0.1139 0.1848 0.3646 0.4316 0.0000 0.6342 0.0000 0.0000	0.7667 0.9374 0.8861 0.8152 0.6354 0.5684 1.0000 0.3658 1.0000	47.86 36.69 34.39 30.48 24.85 15.79 8.97 8.97 3.28 3.28
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	17,859 17,859 17,859 17,859 17,859 17,859 17,859 17,859 17,859		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	3.28 3.28 3.28 3.28 3.28 3.28 3.28 3.28
29.5 30.5 31.5	17,859 17,859	17,859	0.0000	1.0000	3.28 3.28

ACCOUNTS 592.2 AND 692.2 TRANSPORTATION EQUIPMENT - LIGHT TRUCKS ORIGINAL AND SMOOTH SURVIVOR CURVES

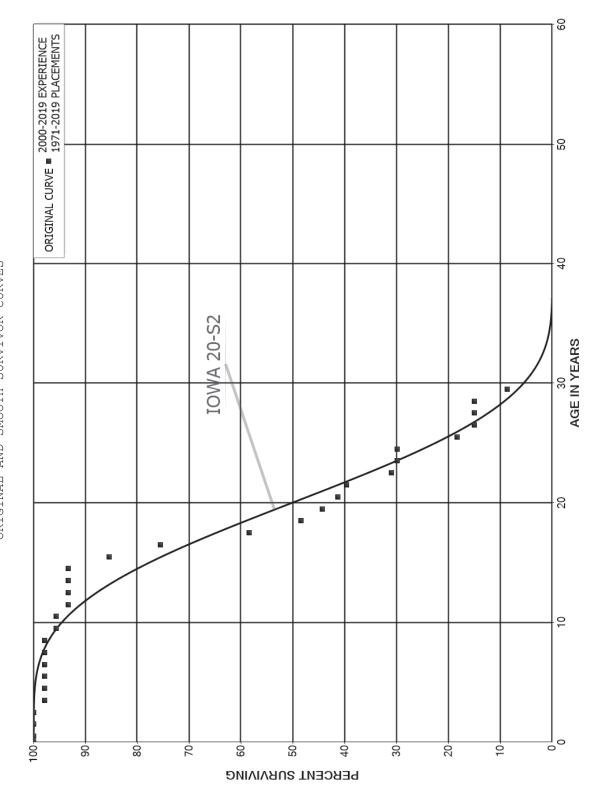


ACCOUNTS 592.2 AND 692.2 TRANSPORTATION EQUIPMENT - LIGHT TRUCKS

PLACEMENT E	BAND 1987-2018		EXPER	RIENCE BAN	D 1999-2019
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	4,360,289 4,468,855 4,415,101 4,118,427 4,188,253 4,342,418 4,070,478 3,324,442 3,291,034	26,045 27,313 3,209 106,989 369,087	0.0000 0.0000 0.0000 0.0063 0.0000 0.0063 0.0008 0.0322 0.1121	1.0000 1.0000 1.0000 0.9937 1.0000 0.9937 0.9992 0.9678 0.8879	100.00 100.00 100.00 100.00 99.37 99.37 98.74 98.66 95.49
8.5 9.5 10.5	2,871,535 2,515,549 2,141,675	313,512 239,148 273,547	0.1092 0.0951 0.1277	0.8908 0.9049 0.8723	84.78 75.52 68.34
11.5 12.5 13.5 14.5 15.5 16.5 17.5	1,695,707 1,362,181 751,918 586,968 389,605 331,553 267,700 249,550	275,955 472,551 164,950 166,194 58,052 63,853 18,150	0.1277 0.1627 0.3469 0.2194 0.2831 0.1490 0.1926 0.0678 0.0000	0.8373 0.6531 0.7806 0.7169 0.8510 0.8074 0.9322 1.0000	59.61 49.91 32.60 25.45 18.24 15.52 12.53 11.68
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	249,550 221,889 195,398 110,740 67,645 1,733 1,733 1,733 1,733 1,733	27,661 26,491 84,658 43,095 65,912	0.1108 0.1194 0.4333 0.3892 0.9744 0.0000 0.0000 0.0000 1.0000	0.8892 0.8806 0.5667 0.6108 0.0256 1.0000 1.0000	11.68 10.39 9.15 5.18 3.17 0.08 0.08 0.08 0.08



SOUTHERN INDIANA GAS AND ELECTRIC COMPANY
VECTREN SOUTH - GAS
ACCOUNTS 592.3 AND 692.3 TRANSPORATION EQUIPMENT - TRAILERS
ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNTS 592.3 AND 692.3 TRANSPORATION EQUIPMENT - TRAILERS

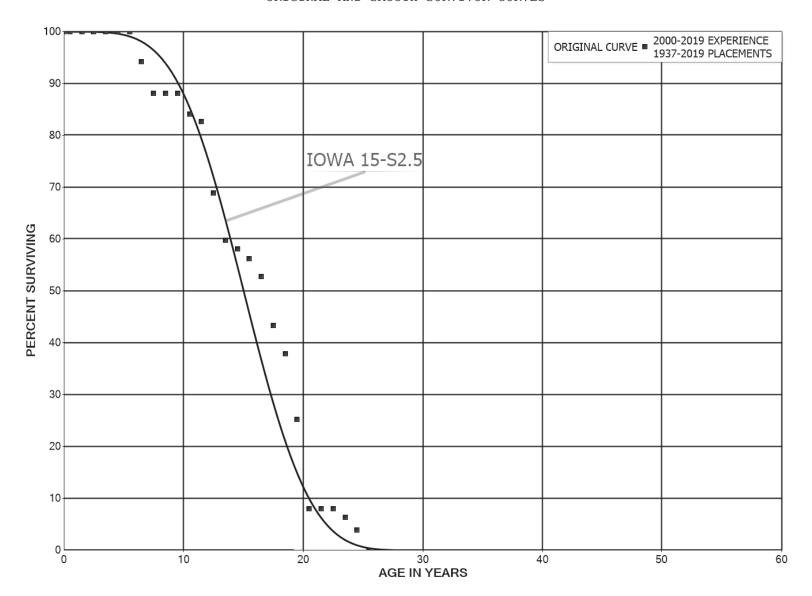
PLACEMENT E	BAND 1971-2019		EXPER	RIENCE BAN	D 2000-2019
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5 8.5	298,753 260,152 283,262 242,275 248,507 248,507 249,371 228,954 228,954	5,250 4,475	0.0000 0.0000 0.0000 0.0217 0.0000 0.0000 0.0000 0.0000 0.0000 0.0230	1.0000 1.0000 1.0000 0.9783 1.0000 1.0000 1.0000 1.0000 0.9770	100.00 100.00 100.00 100.00 97.83 97.83 97.83 97.83 97.83
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	139,227 139,227 110,011 110,011 102,735 102,735 99,731 77,091 62,826 58,256	8,667 11,604 17,476 10,721 4,988	0.0000 0.0242 0.0000 0.0000 0.0000 0.0844 0.1164 0.2267 0.1706 0.0856	1.0000 0.9758 1.0000 1.0000 0.9156 0.8836 0.7733 0.8294 0.9144	95.58 95.58 93.27 93.27 93.27 93.27 85.40 75.46 58.36 48.40
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	53,269 49,670 42,913 33,502 29,507 29,507 18,137 14,836 14,836	3,599 1,930 9,411 1,265 11,371 3,300	0.0676 0.0389 0.2193 0.0378 0.0000 0.3854 0.1820 0.0000 0.0000 0.4241	0.9324 0.9611 0.7807 0.9622 1.0000 0.6146 0.8180 1.0000 1.0000	44.26 41.27 39.66 30.96 29.80 29.80 18.31 14.98 14.98
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	8,605 8,605 8,605 8,605 8,605 8,605 6,540 6,540 3,329 105	2,065 3,224	0.0000 0.0000 0.0000 0.0000 0.0000 0.2400 0.0000 0.9685 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 0.7600 1.0000 1.0000 0.0315 1.0000	8.63 8.63 8.63 8.63 8.63 6.56 6.56 0.21

ACCOUNTS 592.3 AND 692.3 TRANSPORATION EQUIPMENT - TRAILERS

PLACEMENT BAND 1971-2019 EXPERIENCE BAND 2000-201					D 2000-2019
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	105		0.0000	1.0000	0.21
40.5	105		0.0000	1.0000	0.21
41.5	105		0.0000	1.0000	0.21
42.5	105		0.0000	1.0000	0.21
43.5	105		0.0000	1.0000	0.21
44.5	105		0.0000	1.0000	0.21
45.5	105		0.0000	1.0000	0.21
46.5	105		0.0000	1.0000	0.21
47.5	105	105	1.0000		0.21
48.5					



ACCOUNTS 592.4 AND 692.4 TRANSPORATION EQUIPMENT - HEAVY TRUCKS ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNTS 592.4 AND 692.4 TRANSPORATION EQUIPMENT - HEAVY TRUCKS

ORIGINAL LIFE TABLE

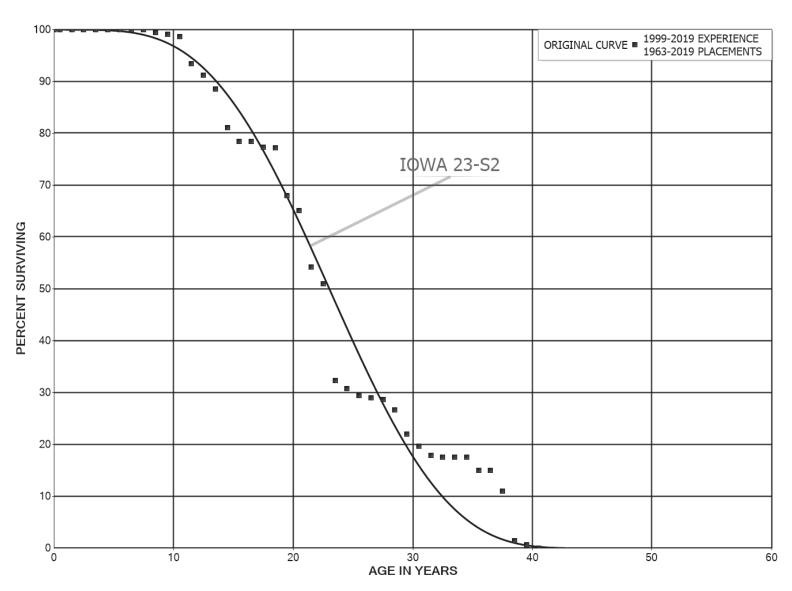
PLACEMENT E	BAND 1937-2019		EXPER	RIENCE BAN	D 2000-2019
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5	2,531,131 2,362,943 2,395,087 2,576,235 2,576,235 2,578,547 2,204,645 2,282,525 2,288,333 2,480,781	128,330 148,145	0.0000 0.0000 0.0000 0.0000 0.0000 0.0582 0.0649 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 0.9418 0.9351 1.0000	100.00 100.00 100.00 100.00 100.00 100.00 94.18 88.07 88.07
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	2,501,399 2,097,441 2,046,607 1,751,994 1,445,232 1,402,939 1,135,897 1,064,943 875,137 708,598	112,595 36,122 342,042 230,987 42,293 43,867 70,954 189,807 110,605 237,830	0.0450 0.0172 0.1671 0.1318 0.0293 0.0313 0.0625 0.1782 0.1264 0.3356	0.9550 0.9828 0.8329 0.8682 0.9707 0.9687 0.9375 0.8218 0.8736 0.6644	88.07 84.10 82.65 68.84 59.76 58.02 56.20 52.69 43.30 37.83
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	414,639 130,742 98,597 98,597 78,685 47,428	283,898 19,912 31,257 47,428	0.6847 0.0000 0.0000 0.2020 0.3972 1.0000	0.3153 1.0000 1.0000 0.7980 0.6028	25.13 7.92 7.92 7.92 6.32 3.81
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5					

ACCOUNTS 592.4 AND 692.4 TRANSPORATION EQUIPMENT - HEAVY TRUCKS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT E	BAND 1937-2019		EXPER	IENCE BAN	D 2000-2019
	EXPOSURES AT BEGINNING OF AGE INTERVAL	DURING AGE	RETMT RATIO		
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 47.5 48.5					
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5					
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5	52,824 52,824 52,824 52,824 52,824 52,824 52,824		0.0000 0.0000 0.0000 0.0000 0.0000 0.0000		
69.5 70.5 71.5 72.5 73.5 74.5 75.5 76.5 77.5	52,824 52,824 52,824 52,824 52,824 52,824 52,824 52,824 52,824	52,824	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 1.0000		

SOUTHERN INDIANA GAS AND ELECTRIC COMPANY VECTREN SOUTH - GAS ACCOUNTS 596 AND 696 POWER OPERATED EQUIPMENT ORIGINAL AND SMOOTH SURVIVOR CURVES



Petitioner's Exhibit No. 10 Attachment JJS-1 Vectren South Page 146 of 241

ACCOUNTS 596 AND 696 POWER OPERATED EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT E	BAND 1963-2019		EXPER	RIENCE BAN	D 1999-2019
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	3,128,953 2,943,716 2,585,841 2,740,706 2,603,448 2,614,493 2,466,512 2,302,714 2,255,050 2,027,532	14,433 6,500	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0064 0.0032	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9936 0.9968	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 99.36
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	2,005,782 1,810,577 1,590,567 1,438,710 1,397,170 1,297,381 1,254,588 1,290,743 1,338,641 1,311,782	9,496 94,982 38,500 41,540 116,789 42,793 19,077 1,033 158,096	0.0047 0.0525 0.0242 0.0289 0.0836 0.0330 0.0000 0.0148 0.0008 0.1205	0.9953 0.9475 0.9758 0.9711 0.9164 0.9670 1.0000 0.9852 0.9992 0.8795	99.04 98.57 93.40 91.14 88.51 81.11 78.44 77.28 77.22
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	665,159 636,818 530,225 425,988 270,080 257,148 246,103 241,785 239,046 199,181	28,340 106,593 31,634 155,907 12,932 11,045 4,317 2,739 16,716 34,175	0.0426 0.1674 0.0597 0.3660 0.0479 0.0430 0.0175 0.0113 0.0699 0.1716	0.9574 0.8326 0.9403 0.6340 0.9521 0.9570 0.9825 0.9887 0.9301 0.8284	67.91 65.02 54.13 50.90 32.27 30.73 29.41 28.89 28.57 26.57
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	165,006 147,124 133,742 115,717 115,717 115,717 103,837 103,837 76,322 9,347	17,882 13,382 2,436 17,000 27,515 66,975 5,120	0.1084 0.0910 0.0182 0.0000 0.0000 0.1469 0.0000 0.2650 0.8775 0.5478	0.8916 0.9090 0.9818 1.0000 1.0000 0.8531 1.0000 0.7350 0.1225 0.4522	22.01 19.62 17.84 17.51 17.51 17.51 14.94 14.94 10.98 1.34

ACCOUNTS 596 AND 696 POWER OPERATED EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT	BAND 1963-2019		EXPER:	IENCE BAN	D 1999-2019
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	4,227	4,227	1.0000		0.61



PART VIII. NET SALVAGE STATISTICS

ACCOUNT 651.2 COMPRESSOR STATION STRUCTURES

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGI AMOUNT	E PCT	NET SALVAGE AMOUNT	PCT
2005 2006 2007 2008 2009	24,026		0		0		0
2010 2011 2012 2013	1,354	16,665	0		0	16,665-	0
2014 2015 2016 2017 2018 2019							
TOTAL	25,380	16,665	66		0	16,665-	66-
THREE-YE	AR MOVING AVERAGE	ES					
05-07 06-08 07-09	8,009		0		0		0
08-10 09-11		5,555 5,555				5,555- 5,555-	
10-12	451	5,555	0		0	5,555-	0
11-13 12-14 13-15 14-16 15-17 16-18 17-19	451 451		0		0		0
11 10							

FIVE-YEAR AVERAGE

15-19



ACCOUNTS 651.3 AND 651.4 STRUCTURES

	REGULAR	COST OF REMOVAL		GROSS SALVAGE	NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT PCT	AMOUNT	PCT
2017	2,934		0	0		0
2018		1,810			1,810-	
2019	26,302		0	0		0
TOTAL	29,236	1,810	6	0	1,810-	6-
THREE-YE.	AR MOVING AVERAGES					
17-19	9,745	603	6	0	603-	6-



ACCOUNT 652 WELLS

	REGULAR	COST OF REMOVAL		GROSS SALVAGE	NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT PCT	AMOUNT	PCT
2016 2017	4,055		0	0		0
2018		953			953-	
2019	48,702		0	0		0
TOTAL	52,758	953	2	0	953-	2-
THREE-YE	AR MOVING AVERAGES					
16-18	1,352	318	23	0	318-	23-
17-19	16,234	318	2	0	318-	2-



ACCOUNT 653 LINES

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT	PCT
2003	9,838		0	0		0
2004						
2005		30,049			30,049-	
2006						
2007						
2008						
2009						
2010						
2011						
2012						
2013						
2014	1,517		0	0		0
2015						
2016						
2017						
2018	0.00	01.5	0.0		01.5	0.0
2019	908	817	90	0	817-	90-
TOTAL	12,263	30,866	252	0	30,866-	252-
THREE-YE	AR MOVING AVERAG	ES				
03-05	3,279	10,016	305	0	10,016-	305-
04-06		10,016			10,016-	
05-07		10,016			10,016-	
06-08						
07-09						
08-10						
09-11						
10-12						
11-13						
12-14	506		0	0		0
13-15	506		0	0		0
14-16	506		0	0		0
15-17						
16-18						
17-19	303	272	90	0	272-	90-
FIVE-YEA	R AVERAGE					
		1.60	0.0	_	1.60	0.0
15-19	182	163	90	0	163-	90-

ACCOUNT 654 COMPRESSOR STATION EQUIPMENT

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
2011	23,986		0		0		0
2012							
2013							
2014	28,954		0		0		0
2015	62,060		0		0		0
2016							
2017							
2018							
2019	168,916	71,692	42		0	71,692-	42-
TOTAL	283,915	71,692	25		0	71,692-	25-
THREE-YEA	AR MOVING AVERAGE	S					
11-13	7 , 995		0		0		0
12-14	9,651		0		0		0
13-15	30,338		0		0		0
14-16	30,338		0		0		0
15-17	20,687		0		0		0
16-18							
17-19	56,305	23 , 897	42		0	23,897-	42-
FIVE-YEAR	R AVERAGE						
15-19	46,195	14,338	31		0	14,338-	31-

ACCOUNT 655 MEASURING AND REGULATING EQUIPMENT

	REGULAR	COST OF REMOVAL		GROSS SALVAG	E	NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2013	2,714		0		0		0
2014							
2015							
2016							
2017							
2018		168				168-	
2019							
TOTAL	2,714	168	6		0	168-	6-
THREE-YE	AR MOVING AVERAGE	ES					
13-15	905		0		0		0
14-16							
15-17							
16-18		56				56-	
17-19		56				56-	
FIVE-YEA	R AVERAGE						
15-19		34				34-	



ACCOUNT 656 PURIFICATION EQUIPMENT

SUMMARY OF BOOK SALVAGE

	REGULAR	COST OF		GROSS SALVAGI		NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2014 2015 2016 2017 2018 2019	7,603		0		0		0
TOTAL	7,603		0		0		0
THREE-YE.	AR MOVING AVERAGES						
14-16 15-17 16-18 17-19	2,534		0		0		0

FIVE-YEAR AVERAGE

15-19

ACCOUNT 667 MAINS

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT	PCT
2003	34,275		0	0		0
2003	9,254		0	0		0
2005	3,807	38,007		0	38,007-	
2006	4,907	2,092	43	0	2,092-	
2007	-,	_,			_,	
2008	11,385		0	0		0
2009	2,168		0	0		0
2010	60,457	776,832		0	776,832-	
2011	813	,	0	0	•	0
2012	8,671		0	0		0
2013	35,324	7,093	20	0	7,093-	20-
2014	24,499	14,008	57	0	14,008-	57 -
2015	12,849	5,939	46	0	5,939-	46-
2016	21,291	1,175	6	0	1,175-	6-
2017	32,172		0	0		0
2018	19,211	31,049	162	0	31,049-	162-
2019	2,437	84,805		0	84,805-	
TOTAL	283,521	961,001	339	0	961,001-	339-
THREE-YE	AR MOVING AVERAG	ES				
03-05	15,779	12,669	80	0	12,669-	80-
04-06	5,990	13,366		0	13,366-	
05-07	2,905	13,366		0	13,366-	
06-08	5,431	697	13	0	697-	13-
07-09	4,518		0	0		0
08-10	24,670	258,944		0	258,944-	
09-11	21,146	258,944		0	258,944-	
10-12	23,314	258,944		0	258,944-	
11-13	14,936	2,364	16	0	2,364-	16-
12-14	22,831	7,034	31	0	7,034-	31-
13-15	24,224	9,013	37	0	9,013-	37-
14-16	19,546	7,041	36	0	7,041-	36-
15-17	22,104	2,372	11	0	2,372-	11-
16-18	24,225	10,742	44	0	10,742-	44-
17-19	17,940	38,618	215	0	38,618-	215-
₽T(/₽_V₽^:	R AVERAGE					
15-19	17,592	24,594	140	0	24,594-	140-

ACCOUNT 669 MEASURING AND REGULATING STATION EQUIPMENT

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT	PCT
2003	15,534		0	0		0
2004						
2005		259			259-	
2006	14,008		0	0		0
2007						
2008						
2009						
2010	51,354	14,625	28	0	14,625-	28-
2011						
2012						
2013	52,102	17,153	33	0	17,153-	33-
2014						
2015	213		0	0		0
2016	1,469	99,300		0	99,300-	
2017		10,495			10,495-	
2018	93,666		0	0		0
2019						
TOTAL	228,346	141,832	62	0	141,832-	62-
THREE-YE	AR MOVING AVERAG	ES				
03-05	5 , 178	86	2	0	86-	2-
04-06	4,669	86	2	0		
05-07	4,669	86	2	0	86-	2-
06-08	4,669		0	0		0
07-09	-,					
08-10	17,118	4,875	28	0	4,875-	28-
09-11	17,118	4,875	28	0		
10-12	17,118	4,875	28	0	4,875-	
11-13	17,367	5,718	33	0	5,718-	
12-14	17 , 367	5,718	33	0	5,718-	
13-15	17,438	5,718		0		
14-16	561	33,100		0	33,100-	
15-17	561	36,598		0		
16-18	31,712	36,598	115	0		115-
17-19	31,222	3,498	11	0	3,498-	11-
	R AVERAGE					
15-19	19,070	21,959	115	0	21,959-	115-

ACCOUNT 675 STRUCTURES AND IMPROVEMENTS

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT	PCT
2004	698		0	0		0
2005	2,149		0	0		0
2006		1			1-	
2007						
2008						
2009						
2010						
2011						
2012						
2013						
2014						
2015	1,112		0	0		0
2016						
2017						
2018		1			1-	
2019						
TOTAL	3,960	2	0	0	2-	0
THREE-YE	AR MOVING AVERAG	ES				
04-06	949		0	0		0
05-07	716		0	0		0
06-08						
07-09						
08-10						
09-11						
10-12						
11-13						
12-14						
13-15	371		0	0		0
14-16	371		0	0		0
15-17	371		0	0		0
16-18						
17-19						
FIVE-YEA	R AVERAGE					
15-19	222		0	0		0
10-19	222		U	U		U

ACCOUNT 676 MAINS

	REGULAR	COST OF REMOVAL		GROSS SALVAGE	NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT PCT	AMOUNT	PCT
2001	309,850		0	0		0
2002	261,495		0	0		0
2003	103,663		0	0		0
2004	561,061		0	0		0
2005	160,247	74,686	47	0	74,686-	47-
2006	91,109	14,572	16	0	14,572-	16-
2007	76 , 045		0	0		0
2008	574 , 764		0	0		0
2009	318,506	8 , 879	3	0	•	3-
2010	123 , 535	614,056	497	0	•	497-
2011	335 , 361	7,081	2	0	•	2-
2012	378 , 270	19,732	5	0	19,732-	5 -
2013	266 , 809	98,231	37	0	,	
2014	616 , 967	33,721	5	0	33,721-	5-
2015	388,334	51,889	13	0	- /	
2016	562,340	283,959	50	0	283,959-	50-
2017	703,508	13,030	2	0	13,030-	2-
2018	481,095	744,040	155	0	744,040-	155-
2019	621,197	718,886	116	0	718,886-	116-
TOTAL	6,934,155	2,682,766	39	0	2,682,766-	39-
THREE-YE	AR MOVING AVERAG	ES				
01-03	225,002		0	0		0
02-04	308,740		0	0		0
03-05	274,990	24,895	9	0	24,895-	9-
04-06	270,806	29,753	11	0	29,753-	11-
05-07	109,134	29 , 753	27	0	29,753-	27-
06-08	247,306	4,857	2	0	4,857-	2-
07-09	323,105	2,960	1	0	2,960-	1-
08-10	338,935	207,645	61	0	207,645-	61-
09-11	259,134	210,006	81	0	210,006-	81-
10-12	279 , 055	213,623	77	0	213,623-	77-
11-13	326,813	41,682	13	0	41,682-	13-
12-14	420,682	50 , 562	12	0	50,562-	12-
13-15	424,037	61,281	14	0	61,281-	14-
14-16	522,547	123,190	24	0	123,190-	24-
15-17	551 , 394	116,293	21	0	116,293-	21-

ACCOUNT 676 MAINS

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT P	СТ
THREE-YE	AR MOVING AVERAGES	5				
16-18	582,314	347,010	60	0	347,010-	60-
17-19	601,933	491,986	82	0	491,986-	82-
FIVE-YEA	R AVERAGE					
15-19	551,295	362,361	66	0	362,361-	66-



ACCOUNT 678 MEASURING AND REGULATING STATION EQUIPMENT - GENERAL

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT	PCT
2002	33,645		0	0		
2002	8,103		0	0		0
2003	7,420		0	0		0
2004	7,420	584	8	0	584-	8-
2005	16,981	524	3	0	524-	
2007	10,901	524	3	0	J24-	3-
2007	41		0	0		0
2009	5,027		0	0		0
2010	12,790	46,866	366	0	46,866-	-
2010	143	40,000	0	0	40,000	0
2011	143		O	0		O
2012	3,610	1,419	39	0	1,419-	39-
2013	827	11	1	0	11-	1-
2015	6 , 250		0	0		0
2016	17,427	103	1	0	103-	1-
2017	20,754	100	0	0	100	0
2018	11,895	10,280	86	0	10,280-	86-
2019	3,350	38,519	0.0	0	38,519-	
2013	0,000	00,013		ū	00/013	
TOTAL	155,544	98,307	63	0	98,307-	63-
THREE-YE.	AR MOVING AVERAG	ES				
02-04	16,389		0	0		0
03-05	7,601	195	3	0	195-	
04-06	10,560	369	3	0	369-	
05-07	8,087	369	5	0	369-	
06-08	5 , 674	175	3	0	175-	3-
07-09	1,689		0	0		0
08-10	5,953	15,622	262	0	15,622-	262-
09-11	5,987	15,622		0	15,622-	
10-12	4,311	15,622		0	15,622-	
11-13	1,251	473	38	0	473-	
12-14	1,479	477	32	0	477-	
13-15	3 , 563	477	13	0	477-	
14-16	8,168	38	0	0	38-	0
15-17	14,811	34	0	0	34-	0

ACCOUNT 678 MEASURING AND REGULATING STATION EQUIPMENT - GENERAL

	REGULAR	COST OF REMOVAL		GROSS SALVAGE	NET SALVAGE
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT PCT	AMOUNT PCT
THREE-YE	AR MOVING AVERAGES	}			
16-18	16,692	3,461	21	0	3,461- 21-
17-19	12,000	16,266	136	0	16,266- 136-
FIVE-YEA	R AVERAGE				
15-19	11,935	9,781	82	0	9,781- 82-



ACCOUNT 680 SERVICES

		COST OF		GROSS	NET	
	REGULAR	REMOVAL		SALVAGE	SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT PCT	AMOUNT	PCT
2002	1,498,756	121,705	8	0	121,705-	8 –
2003	469,428	124,684	27	0	124,684-	27-
2004	476,008	187,285	39	0	187,285-	39-
2005	509,299	487,199	96	0	487,199-	96-
2006	580,166	267,328	46	0	267,328-	46-
2007	530,414	413,305	78	0	413,305-	78-
2008	1,039,080	356 , 069	34	0	356,069-	34-
2009	847 , 477	480,250	57	0	480,250-	57 -
2010	631,280	687 , 089	109	0	687,089-	109-
2011	1,204,927	549 , 695	46	0	549,695-	46-
2012	679 , 993	585,903	86	0	585,903-	86-
2013	593 , 292	832,902	140	0	832,902-	140-
2014	948,152	539 , 596	57	0	539,596-	57 -
2015	1,061,891	561,303	53	0	561,303-	53-
2016	389,956	716,982	184	0	716,982-	184-
2017	581,619	576,043	99	0	576,043-	99-
2018	822,045	868,008	106	0	868,008-	106-
2019	797 , 837	886,252	111	0	886,252-	111-
TOTAL	13,661,619	9,241,598	68	0	9,241,598-	68-
THREE-YE	AR MOVING AVERAG	GES				
02-04	814,731	144,558	18	0	144,558-	18-
03-05	484,912	266,389	55	0		55-
04-06	521,824	313,937	60	0		60-
05-07	539,960	389 , 277	72	0		72-
06-08	716,553	345,567	48	0		48-
07-09	805,657	416,541	52	0	416,541-	52-
08-10	839,279	507,803	61	0	507,803-	61-
09-11	894,561	572,345	64	0		64-
10-12	838,733	607,562	72	0		72-
11-13	826,071	656,167	79	0	656,167-	79-
12-14	740,479	652,801	88	0		88-
13-15	867 , 778	644,600	74	0		74-
14-16	799 , 999	605,960	76	0	605,960-	76-
15-17	677,822	618,109	91	0		91-

ACCOUNT 680 SERVICES

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT PCI	NET SALVAGE AMOUNT PCT	
THREE-YE	AR MOVING AVERAGES					
16-18	597 , 873	720,344	120	C	720,344- 120-	-
17-19	733,833	776 , 768	106	C	776,768- 106-	-
FIVE-YEA	R AVERAGE					
15-19	730,669	721,718	99	C	721,718- 99-	-



ACCOUNT 681 METERS

	REGULAR	COST OF REMOVAL		GROSS SALVAGE	NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT PCT	AMOUNT	PCT
2002	6,151		0	0		0
2003	87,080		0	0		0
2004	231,662	136,971	59	0	136,971-	59 -
2005	135,524	224,983	166	0	224,983-	166-
2006	165,603	7,666	5	0	7,666-	5 -
2007	343,668	27,359	8	0	27,359-	8 –
2008	181,703	48,713	27	0	48,713-	27-
2009	257,870	55 , 723	22	0	55 , 723-	22-
2010	187,854	38,663	21	0	38,663-	21-
2011	194,380	40,657	21	0	40,657-	21-
2012	212,566	42,137	20	0	42,137-	20-
2013	222,622	40,827	18	0	40,827-	18-
2014	258,032	32,929	13	0	32,929-	13-
2015	246,960	28,204	11	0	28,204-	11-
2016	248,244	35,818	14	0	35,818-	14-
2017	305,317	63,929	21	0	63,929-	21-
2018	240,327	65 , 350	27	0	65,350-	27-
2019	649,237	41,063	6	0	41,063-	6-
TOTAL	4,174,800	930,990	22	0	930,990-	22-
THREE-YEA	AR MOVING AVERAGI	ES				
02-04	108,298	45,657	42	0	45,657-	42-
03-05	151,422	120,651	80	0	120,651-	80-
04-06	177,596	123,206	69	0	123,206-	69-
05-07	214,932	86,669	40	0	86,669-	40-
06-08	230,325	27,912	12	0	27,912-	12-
07-09	261,080	43,932	17	0	43,932-	17-
08-10	209,142	47,700	23	0	47,700-	23-
09-11	213,368	45,014	21	0	45,014-	21-
10-12	198,267	40,486	20	0	40,486-	20-
11-13	209,856	41,207	20	0	41,207-	20-
12-14	231,074	38,631	17	0	38,631-	17-
13-15	242,538	33 , 987	14	0	33,987-	14-
14-16	251 , 078	32,317	13	0	32,317-	13-
15-17	266,840	42,650	16	0	42,650-	16-

ACCOUNT 681 METERS

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT I	PCT
THREE-YE	AR MOVING AVERAGES	}				
16-18	264,629	55,032	21	0	55,032-	21-
17-19	398,294	56,781	14	0	56,781-	14-
FIVE-YEA	R AVERAGE					
15-19	338,017	46,873	14	0	46,873-	14-

ACCOUNT 682 METER INSTALLATIONS

	REGULAR	COST OF REMOVAL		GROSS SALVAGE	NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT PCT	AMOUNT	PCT
2014		1			1-	
2015	796	18	2	0	18-	2-
2016	1,770	107	6	0	107-	6-
2017	1,133	78	7	0	78-	7 –
2018	28,495	436	2	0	436-	2-
2019	60,105	3,119	5	0	3,119-	5-
TOTAL	92,298	3 , 759	4	0	3,759-	4-
THREE-YE.	AR MOVING AVERAG	ES				
14-16	855	42	5	0	42-	5-
15-17	1,233	68	5	0	68-	5-
16-18	10,466	207	2	0	207-	2-
17-19	29,911	1,211	4	0	1,211-	4 –
FIVE-YEA	R AVERAGE					
15-19	18,460	752	4	0	752-	4 –



ACCOUNT 683 HOUSE REGULATORS

	REGULAR	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT		CT	AMOUNT	PCT
2008	13		0		0		0
2009							
2010		1				1-	
2011							
2012							
2013							
2014		1				1-	
2015	1,130	21	2		0	21-	2-
2016	657	123	19		0	123-	19-
2017	539	79	15		0	79-	15-
2018	1,248	401	32		0	401-	32-
2019	1,143	35	3		0	35-	3-
TOTAL	4,729	660	14		0	660-	14-
THREE-YE	AR MOVING AVERAG	ES					
08-10	4		4		0		4 -
09-11							
10-12							
11-13							
12-14							
13-15	377	7	2		0	7-	2-
14-16	596	48	8		0	48-	8-
15-17	775	74	10		0	74-	10-
16-18	814	201	25		0	201-	25-
17-19	976	172	18		0	172-	18-
ETVE-VEA	R AVERAGE						
15-19	943	132	14		0	132-	14-

ACCOUNT 690 STRUCTURES AND IMPROVEMENTS

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
2009	26,736		0		0		0
2010							
2011							
2012							
2013							
2014							
2015							
2016							
2017							
2018							
2019							
TOTAL	26,736		0		0		0
THREE-YE	AR MOVING AVERAGES						
09-11	8,912		0		0		0
10-12							
11-13							
12-14							
13-15							
14-16							
15-17							
16-18							
17-19							

FIVE-YEAR AVERAGE

15-19

ACCOUNT 590 STRUCTURES AND IMPROVEMENTS

	REGULAR	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT		PCT	AMOUNT	PCT
2008	13,827		0		0		0
2009	52,416		0		0		0
2010	17,179		0		0		0
2011	300,633		0		0		0
2012							
2013	118,494		0		0		0
2014	204,485		0		0		0
2015	89 , 537		0		0		0
2016	112,212		0		0		0
2017	345 , 165		0		0		0
2018	331,181	98,980	30		0	98,980-	30-
2019	23,483		0		0		0
TOTAL	1,608,614	98,980	6		0	98,980-	6-
THREE-YE.	AR MOVING AVERAG	ES					
08-10	27 , 808		0		0		0
09-11	123,410		0		0		0
10-12	105,938		0		0		0
11-13	139,709		0		0		0
12-14	107,660		0		0		0
13-15	137,505		0		0		0
14-16	135,411		0		0		0
15-17	182,305		0		0		0
16-18	262,853	32,993	13		0	32,993-	13-
17-19	233,277	32,993	14		0	32,993-	14-
	R AVERAGE						
15-19	180,316	19,796	11		0	19,796-	11-

ACCOUNTS 592.1 AND 692.1 TRANSPORTATION EQUIPMENT - AUTOMOBILES

	REGULAR	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2002	99,957		0		0		0
2003	12,220		0		0		0
2004	72,912		0		0		0
2005	12,000		0	24,460	204	24,460	204
2006	150,553		0		0		0
2007	46,952		0		0		0
2008				5,096		5,096	
2009	59 , 782		0		0		0
2010				9,689		9,689	
2011							
2012	16,678		0		0		0
2013	58 , 933		0		0		0
2014	33,370		0		0		0
2015	26 , 550		0		0		0
2016	90,430		0		0		0
2017	131,651		0		0		0
2018	24,261		0	20,619	85	20,619	85
2019	147,029		0		0		0
TOTAL	983 , 278		0	59,865	6	59,865	6
THREE-YE	AR MOVING AVERAG	ES					
02-04	61,697		0		0		0
03-05	32,378		0	8,153	25	8,153	25
04-06	78,488		0	8,153	10	8,153	10
05-07	69 , 835		0	8,153	12	8,153	12
06-08	65 , 835		0	1,699	3	1,699	3
07-09	35 , 578		0	1,699	5	1,699	5
08-10	19,927		0	4,928	25	4,928	25
09-11	19,927		0	3,230	16	3,230	16
10-12	5 , 559		0	3,230	58	3,230	58
11-13	25,204		0		0		0
12-14	36,327		0		0		0
13-15	39,617		0		0		0
14-16	50,116		0		0		0
15-17	82 , 877		0		0		0

ACCOUNTS 592.1 AND 692.1 TRANSPORTATION EQUIPMENT - AUTOMOBILES

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
THREE-YE	AR MOVING AVERAGES	3					
16-18	82,114		0	6 , 873	8	6,873	8
17-19	100,981		0	6,873	7	6 , 873	7
FIVE-YEA	AR AVERAGE						
15-19	83,984		0	4,124	5	4,124	5



ACCOUNTS 592.2 AND 692.2 TRANSPORTATION EQUIPMENT - LIGHT TRUCKS

		COST OF		GROSS		NET	
	REGULAR	REMOVAL		SALVAGE		SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2001	16,248		0		0		0
2002	166,816		0		0		0
2003	102,457		0		0		0
2004	111,329		0		0		0
2005	19,328		0	55,580	288	55 , 580	288
2006	243,189	127	0		0	127-	0
2007	21,641		0		0		0
2008	2,265		0	6,250	276	6,250	276
2009	95 , 537		0		0		0
2010	2,500		0	32,723		32,723	
2011	69,926		0		0		0
2012	411,890		0	8,905	2	8,905	2
2013	305,863	1	0		0	1-	0
2014	229,141		0		0		0
2015	116,501		0		0		0
2016	35,713		0	3,268	9	3,268	9
2017	362,565		0		0		0
2018	105,271		0		0		0
2019	655 , 209		0		0		0
TOTAL	3,073,390	128	0	106,727	3	106,599	3
THREE-YE	AR MOVING AVERAG	ES					
01-03	95 , 174		0		0		0
02-04	126,867		0		0		0
03-05	77 , 705		0	18,527	24	18,527	24
04-06	124,615	42	0	18,527	15	18,485	15
05-07	94,719	42	0	18,527	20	18,485	20
06-08	89,031	42	0	2,083	2	2,041	2
07-09	39,814		0	2,083	5	2,083	5
08-10	33,434		0	12,991	39	12,991	39
09-11	55 , 988		0	10,908	19	10,908	19
10-12	161,439		0	13,876	9	13,876	9
11-13	262,560		0	2,968	1	2,968	1
12-14	315,631		0	2,968	1	2,968	1
13-15	217,169		0		0		0
14-16	127,119		0	1,089	1	1,089	1
15-17	171,593		0	1,089	1	1,089	1

ACCOUNTS 592.2 AND 692.2 TRANSPORTATION EQUIPMENT - LIGHT TRUCKS

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT		GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
	CAR MOVING AVERAGES						
16-18	167,850		0	1,089	1	1,089	1
17-19	374,348		0		0		0
FIVE-YEA	AR AVERAGE						
15-19	255,052		0	654	0	654	0



ACCOUNTS 592.3 AND 692.3 TRANSPORATION EQUIPMENT - TRAILERS

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
2003	7,402	0		0		0
2004	4,747	0		0		0
2005	,		7,496		7,496	
2006			,		,	
2007						
2008						
2009	1,930	0		0		0
2010			2,492		2,492	
2011						
2012	13,971	0		0		0
2013	11,809	0		0		0
2014	2,152	0		0		0
2015	14,109	0		0		0
2016	10,238	0		0		0
2017						
2018						
2019	42,189	0		0		0
TOTAL	108,546	0	9,988	9	9,988	9
THREE-YE	AR MOVING AVERAG	ES				
03-05	4,050	0	2,499	62	2,499	62
04-06	1,582	0	2,499	158	2,499	158
05-07			2,499		2,499	
06-08						
07-09	643	0		0		0
08-10	643	0	831	129	831	129
09-11	643	0	831	129	831	129
10-12	4,657	0	831	18	831	18
11-13	8,593	0		0		0
12-14	9,311	0		0		0
13-15	9,357	0		0		0
14-16	8,833	0		0		0
15-17	8,116	0		0		0
16-18	3,413	0		0		0
17-19	14,063	0		0		0
FIVE-YEA	R AVERAGE					
15-19	13,307	0		0		0

ACCOUNTS 592.4 AND 692.4 TRANSPORATION EQUIPMENT - HEAVY TRUCKS

		COST OF		GROSS		NET	
VII A D	REGULAR	REMOVAL	N.M.	SALVAGE	ъсш	SALVAGE	ъсш
YEAR	RETIREMENTS	AMOUNT PC	J'I'	AMOUNT	PCT	AMOUNT	PCT
2002	72,671		0		0		0
2003	177,618		0		0		0
2004	64,777		0		0		0
2005				9,995		9,995	
2006	75 , 852		0		0		0
2007	42,293		0		0		0
2008				1,534		1,534	
2009	23,342		0		0		0
2010				25,810		25,810	
2011	219,525		0		0		0
2012	304,939		0		0		0
2013	348,920		0		0		0
2014	273,801		0		0		0
2015	52 , 824		0		0		0
2016				2,127		2,127	
2017	90,423		0		0		0
2018	31,257		0		0		0
2019	350,652		0		0		0
TOTAL	2,128,895		0	39,466	2	39,466	2
THREE-YE	AR MOVING AVERAG	ES					
02-04	105,022		0		0		0
03-05	80,798		0	3,332	4	3,332	4
04-06	46,876		0	3,332	7	3,332	7
05-07	39,382		0	3,332	8	3,332	8
06-08	39,382		0	511	1	511	1
07-09	21,878		0	511	2	511	2
08-10	7,781		0	9,115	117	9,115	117
09-11	80,956		0	8,603	11	8,603	11
10-12	174,821		0	8,603	5	8,603	5
11-13	291,128		0		0		0
12-14	309,220		0		0		0
13-15	225,182		0		0		0
14-16	108,875		0	709	1	709	1
15-17	47,749		0	709	1	709	1

ACCOUNTS 592.4 AND 692.4 TRANSPORATION EQUIPMENT - HEAVY TRUCKS

		COST O	F	GROSS		NET	
	REGULAR	REMOVA	L	SALVAGE		SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
THREE-YE	AR MOVING AVERAGES						
16-18	40,560		0	709	2	709	2
17-19	157,444		0		0		0
FIVE-YEA	R AVERAGE						
15-19	105,031		0	425	0	425	0

ACCOUNTS 596 AND 696 POWER OPERATED EQUIPMENT

VEND	REGULAR	COST OF REMOVAL	рош	GROSS SALVAGE		NET SALVAGE	DOM
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2002	13,759		0		0		0
2003							
2004							
2005							
2006							
2007							
2008	20 021		0		0		0
2009	38,931		0		0		0
2010 2011							
2011	45,780		0		0		0
2012	135,866		0		0		0
2013	133,000		U		O		O
2014	11,850		0		0		0
2016	62,334		0		0		0
2017	71,988		0		0		0
2018	43,125		0		0		0
2019	678,540		0		0		0
TOTAL	1,102,174		0		0		0
THREE-YE	AR MOVING AVERAGE	ES					
02-04	4,586		0		0		0
03-05							
04-06							
05-07							
06-08							
07-09	12,977		0		0		0
08-10	12,977		0		0		0
09-11	12,977		0		0		0
10-12	15,260		0		0		0
11-13	60,549		0		0		0
12-14	60,549		0		0		0
13-15	49,239		0		0		0
14-16	24,728		0		0		0
15-17	48,724		0		0		0

ACCOUNTS 596 AND 696 POWER OPERATED EQUIPMENT

SUMMARY OF BOOK SALVAGE

	COST O	F	GROSS		NET	
REGULAR	REMOVA	L	SALVAG	E	SALVAGE	
RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
CAR MOVING AVERAGES	S					
59,149		0		0		0
264,551		0		0		0
AR AVERAGE						
173,567		0		0		0
	RETIREMENTS SAR MOVING AVERAGES 59,149 264,551 AR AVERAGE	REGULAR REMOVA RETIREMENTS AMOUNT CAR MOVING AVERAGES 59,149 264,551 AR AVERAGE	RETIREMENTS AMOUNT PCT CAR MOVING AVERAGES 59,149 0 264,551 0	REGULAR REMOVAL SALVAG RETIREMENTS AMOUNT PCT AMOUNT CAR MOVING AVERAGES 59,149 264,551 0 CAR AVERAGE	REGULAR REMOVAL SALVAGE RETIREMENTS AMOUNT PCT AMOUNT PCT CAR MOVING AVERAGES 59,149 0 0 264,551 0 0 AR AVERAGE	REGULAR REMOVAL SALVAGE SALVAGE RETIREMENTS AMOUNT PCT AMOUNT PCT AMOUNT CAR MOVING AVERAGES 59,149 0 0 264,551 0 0 CAR AVERAGE

PART IX. DETAILED DEPRECIATION CALCULATIONS



ACCOUNT 630 PRODUCING GAS WELLS - CONSTRUCTION

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA ALVAGE PERCENT					
1977	29,160.99	23,424	14,895	15,724	13.06	1,204
	29,160.99	23,424	14,895	15,724		1,204
	COMPOSITE REMAINI	NG LIFE AND	ANNUAL ACCRUAL	RATE, PERCENT	г 13.1	4.13



ACCOUNT 631 PRODUCING GAS WELLS - EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 4 ALVAGE PERCENT					
1977	15,141.23	13,310	4,642	11,256	8.26	1,363
	15,141.23	13,310	4,642	11,256		1,363
	COMPOSITE REMAININ	IG LIFE AND A	ANNUAL ACCRUAL	RATE, PERCENT	8.3	9.00



ACCOUNT 632 FIELD LINES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
9,942.35	7,949	4,576	6,361	15.98	398
9,942.35	7,949	4,576	6,361		398
	COST (2) CURVE IOWA AGE PERCENT 9,942.35	COST ACCRUED (2) (3) CURVE. IOWA 55-S2.5 AGE PERCENT10 9,942.35 7,949	COST ACCRUED RESERVE (2) (3) (4) CURVE. IOWA 55-S2.5 AGE PERCENT10 9,942.35 7,949 4,576	COST ACCRUED RESERVE ACCRUALS (2) (3) (4) (5) CURVE. IOWA 55-S2.5 AGE PERCENT10 9,942.35 7,949 4,576 6,361	COST ACCRUED RESERVE ACCRUALS LIFE (2) (3) (4) (5) (6) CURVE IOWA 55-S2.5 AGE PERCENT10 9,942.35 7,949 4,576 6,361 15.98

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 16.0 4.00

ACCOUNT 650.3 STORAGE LEASEHOLDS AND RIGHTS OF WAY

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA ALVAGE PERCENT					
1982	1,087,081.01	595 , 177	558,440	528,641	30.99	17,058
	1,087,081.01	595,177	558,440	528,641		17,058
	COMPOSITE REMAIN	ING LIFE AND	ANNUAL ACCRUAL	RATE, PERCENT	г 31.0	1.57



ACCOUNT 650.5 NONRECOVERABLE NATURAL GAS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE 50-S /AGE PERCENT	~				
1982	483,848.26	362,886	483,848			
	483,848.26	362,886	483,848			

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 0.0 0.00



ACCOUNT 651.2 COMPRESSOR STATION STRUCTURES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
NET SALV	VAGE PERCENT	-5				
1984	100,837.91	68,409	105,880			
1993	1,989.77	1,118	1,860	229	23.00	10
1995	2,951.48	1,564	2,603	496	24.04	21
2014	18,039.99	2,595	4,318	14,624	34.66	422
2016	1,529.92	142	236	1,370	36.18	38
2017	66,841.48	4,436	7,382	62,801	37.03	1,696
	192,190.55	78,264	122,279	79 , 521		2,187

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 36.4 1.14

ACCOUNT 651.3 MEASURING AND REGULATING STATION STRUCTURES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVO	R CURVE IOWA	50-R3				
NET SAL	VAGE PERCENT	- 5				
1984	7,150.84	5,091	6,244	1,264	16.86	75
1993	939.19	531	651	335	22.76	15
2002	74,673.31	29,230	35,851	42,556	29.45	1,445
2006	6,495.64	2,007	2,462	4,358	32.37	135
2019	24,603.08	305	374	25,459	41.87	608
	113,862.06	37,164	45,582	73 , 973		2,278

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 32.5 2.00

ACCOUNT 651.4 OTHER STRUCTURES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
1984	61,009.55	50,261	50,470	13,590	9.75	1,394
1993	23,476.46	16,136	16,203	8,447	13.98	604
1995	8,743.81	5 , 668	5,692	3,489	15.18	230
2002	7,815.52	3,820	3,836	4,370	20.09	218
2006	12,922.62	4,963	4,984	8,585	23.40	367
2007	3,510.69	1,253	1,258	2,428	24.26	100
2012	1,763.59	382	384	1,468	28.87	51
2016	50,763.89	5 , 149	5,170	48,132	32.73	1,471
2017	14,951.52	1,083	1,087	14,612	33.73	433
2018	4,593.68	200	201	4,622	34.73	133
2019	54,769.04	794	798	56,710	35.73	1,587
	244,320.37	89 , 709	90,083	166,454		6,588

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 25.3 2.70

ACCOUNT 652 WELLS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
1984	979,772.10	664,682	1,028,761			
1991	157,518.54	88,155	165,394			
1992	159,002.18	85 , 847	166,952			
1993	170,148.62	89,006	178,656			
2001	20,702.48	7,682	21,738			
2002	35,348.41	12,404	37,116			
2015	13,128.48	1,197	6,927	6,858	47.32	145
2016	45,042.88	3,197	18,501	28,794	48.31	596
2018	496,089.39	15,106	87,417	433,477	50.31	8,616
2019	1,215,312.04	12,378	71,630	1,204,448	51.05	23,593
	3,292,065.12	979,654	1,783,092	1,673,576		32,950

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 50.8 1.00

ACCOUNT 653 LINES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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	55-S0.5				
NET SALV	AGE PERCENT	-10				
1984	370,771.71	243,241	358,843	49,006	24.02	2,040
1991	39,448.75	22,382	33,019	10,375	26.75	388
1992	32,164.18	17,804	26,265	9,116	27.15	336
1993	21,407.69	11,543	17,029	6,519	27.56	237
1996	138,835.30	68,907	101,656	51,063	28.58	1,787
2002	182,560.93	72 , 395	106,801	94,016	31.04	3,029
2005	6,113.30	2,087	3 , 079	3,646	32.23	113
2006	20,773.46	6 , 695	9 , 877	12,974	32.58	398
2011	3,692.00	801	1,182	2,879	34.60	83
2014	116,558.60	17,065	25,174	103,040	35.82	2,877
	932,325.92	462,920	682,925	342,633		11,288

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 30.4 1.21

ACCOUNT 654 COMPRESSOR STATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
1984	54,053.32	59,636	36,053	28,811	3.11	9,264
2005	877.54	446	270	783	19.75	40
2010	54,981.21	18,302	11,065	54,912	24.75	2,219
2014	1,014,849.76	195,582	118,239	1,099,581	28.75	38,246
2015	900,346.33	141,967	85 , 827	994,589	29.75	33,432
2019	3,923,248.15	68 , 735	41,554	4,666,344	33.75	138,262
	5,948,356.31	484,668	293,008	6,845,020		221,463

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 30.9 3.72

ACCOUNT 655 MEASURING AND REGULATING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
1984	55,222.77	40,757	55,880	2,104	15.01	140
1987	109,149.83	76 , 730	105,200	9,407	16.04	586
1989	127,339.74	85 , 639	117,415	16,292	17.12	952
1990	285.22	188	258	41	17.45	2
1993	43,522.61	26,642	36 , 527	9,172	18.95	484
2002	268,653.13	119,463	163,789	118,297	23.82	4,966
2009	54,262.50	15 , 372	21,076	35 , 900	28.41	1,264
2013	544.72	98	134	438	31.52	14
2016	431,477.09	42,179	57 , 829	395 , 222	34.09	11,593
2017	36,927.33	2,590	3 , 551	35 , 223	34.95	1,008
2018	14,210.53	597	819	14,102	35.96	392
	1,141,595.47	410,255	562,478	636,198		21,401

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 29.7 1.87

ACCOUNT 656 PURIFICATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
1984	68,732.90	47,824	68 , 733			
1991	160,844.94	99,016	160,845			
1992	10,423.26	6 , 277	10,342	81	18.16	4
1993	45,769.92	26 , 926	44,365	1,405	18.55	76
2011	5,921.39	1,570	2,587	3,334	23.55	142
2017	600,349.92	55 , 712	91,795	508 , 555	24.45	20,800
2019	1,348,629.63	27,242	44,885	1,303,744	24.31	53,630
	2,240,671.96	264,567	423,552	1,817,119		74,652

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 24.3 3.33

ACCOUNT 665.2 RIGHTS OF WAY

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
1982	644,576.35	352,906	485,137	159,439	30.99	5,145
2002	290,814.78	76,833	105,622	185,193	48.73	3,800
2006	123,708.89	25,212	34,659	89,050	52.73	1,689
2008	169,287.75	29 , 388	40,399	128,889	54.73	2,355
2010	754,677.33	108,221	148,771	605 , 906	56.73	10,681
2017	205,103.97	7,794	10,714	194,390	63.29	3,071
2018	233,536.68	5 , 325	7,321	226,216	64.29	3,519
	2,421,705.75	605 , 679	832,623	1,589,083		30,260

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 52.5 1.25

ACCOUNT 666.2 MEASURING AND REGULATING STATION STRUCTURES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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	45-S0				
NET SALV	AGE PERCENT	- 5				
1984	18,181.71	12,401	12,628	6,463	19.15	337
1988	12,819.29	8,184	8,334	5,126	20.31	252
1992	24,604.83	14,493	14,759	11,076	21.52	515
1994	117,604.88	66,126	67,337	56,148	22.12	2,538
1995	29,913.53	16,389	16,689	14,720	22.45	656
2005	14,464.68	5,528	5,629	9,559	25.34	377
2009	10,729.26	3,217	3 , 276	7,990	26.26	304
2012	18,125.45	4,153	4,230	14,802	26.87	551
2013	5,762.37	1,172	1,193	4,857	27.06	179
2015	2,054.72	304	310	1,848	27.45	67
	254,260.72	131,967	134,385	132,589		5,776

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 23.0 2.27

ACCOUNT 667 MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA ALVAGE PERCENT					
1935	1,654.05	1,800	2,068			
1950	534,047.14	533,513	667,559			
1954	393,260.01	383,134	491,575			
1958	648 , 676.27	608 , 377	810,845			
1963	739,881.95	658 , 402	924 , 852			
1967	593,261.65	502 , 196	741 , 577			
1969	349,491.35	289 , 029	436,864			
1971	199,476.46	160,828	246,924	2,422	26.69	91
1975	287,904.22	216,216	331 , 963	27 , 917	29.57	944
1979	339,209.58	236 , 980	363,843	60,169	31.96	1,883
1982	243,513.57	159 , 806	245 , 355	59 , 037	33.93	1,740
1983	179,797.21	114,845	176 , 325	48,422	34.93	1,386
1984	41,911.95	26,226	40,266	12,124	35.42	342
1985	398,878.19	242,518	372 , 345	126,253	36.43	3,466
1986	239,634.55	142,493	218,774	80,769	36.92	2,188
1987	1,331,815.22	768 , 291	1,179,581	485,188	37.92	12,795
1988	179,926.65	101,299	155 , 528	69 , 380	38.43	1,805
1989	1,414,238.38	771,113	1,183,914	583 , 884	39.43	14,808
1990	635,392.14	335,011	514 , 353	279 , 887	40.43	6 , 923
1991	233,085.70	119,573	183 , 584	107,773	40.94	2,632
1992	644,656.79	319,105	489,932	315,889	41.94	7,532
1993	218,569.54	104,258	160,071	113,141	42.94	2,635
1994	33,460.92	15,467	23,747	18,079	43.46	416
1995	2,411,304.67	1,070,619	1,643,755	1,370,376	44.47	30,816
1996	1,774,907.18	756 , 110	1,160,879	1,057,755	45.46	23,268
1997	4,481,820.02	1,840,347	2,825,542	2,776,733	45.99	60 , 377
1998	1,661,579.42	651 , 962	1,000,978	1,075,996	46.99	22,898
1999	1,025,939.02	383 , 829	589 , 305	693,119	47.99	14,443
2000	832,191.47	296,156	454 , 698	585,541	48.99	11,952
2002	188,537.96	60,214	92,448	143,224	50.99	2,809
2003	24,113.05	7,312	11,226	18,915	51.52	367
2004	180,732.58	51,464	79,014	146,902	52.53	2,797
2005	38,850.91	10,354	15,897	32,667	53.52	610
2006	1,911,785.62	474,123	727,936	1,661,796	54.53	30,475
2007	63 , 983.75	14,700	22 , 569	57 , 411	55.52	1,034
2008	3,513,474.09	742,221	1,139,555	3,252,288	56.53	57 , 532
2009	7,978,545.90	1,539,859	2,364,194	7,608,988	57.52	132,284
2010	10,225,404.89	1,784,333	2,739,542	10,042,214	58.53	171,574
2011	218,676.54	34,168	52,459	220,887	59.52	3,711
2012	1,630,030.14	224,537	344,739	1,692,799	60.53	27,966
2013	327,233.46	39,104	60,038	349,004	61.52	5 , 673

ACCOUNT 667 MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA BALVAGE PERCENT					
2014	12,455,090.28	1,257,964	1,931,391	13,637,472	62.53	218,095
2015	, ,	416,582	639,591	5,653,189	63.52	88,999
2016	8,509,498.79	546 , 735	839,420	9,797,453	64.53	151 , 828
2017	13,882,713.72	638,605	980,470	16,372,922	65.52	249,892
2018	9,972,734.65	274,250	421,065	12,044,853	66.53	181,044
2019	3,431,850.43	31,745	48,739	4,241,074	67.52	62,812
	101,656,966.22	19,957,773	30,147,295	96,923,913		1,614,842
	COMPOSITE REMAIN	ING LIFE AND	ANNUAL ACCRUAL	RATE, PERCENT	60.0	1.59



ACCOUNT 668 COMPRESSOR STATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
1988	27,708.14	18,154	25 , 707	2,001	16.58	121
	27,708.14	18,154	25 , 707	2,001		121

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 16.5 0.44



ACCOUNT 669 MEASURING AND REGULATING STATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUTURE BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVI	OR CURVE IOWA	45-R1.5				
NET SA	ALVAGE PERCENT	-10				
1984	182,967.75	135,753	201,265			
1987	248,742.09	175 , 169	273,616			
1988	69,742.95	48,086	76,717			
1989	88,390.25	59 , 602	97 , 229			
1990	2,088.56	1,376	2,297			
1991	3,701.17	2,378	4,071			
1992	154,108.31	96,490	169,519			
1993	324,703.92	197,803	357 , 174			
1994	5,583.84	3,320	6,142			
1995	16,959.47	9,781	18,122	533	22.23	24
1996	48,725.99	27,207	50,409	3,190	22.80	140
1997	26,315.66	14,265	26,430	2,517	23.16	109
1998	796,134.69	416,156	771,053	104,695	23.75	4,408
1999	825,868.49	417,163	772 , 918	135,537	24.14	5 , 615
2000	69,516.88	33,700	62,439	14,030	24.75	567
2001	134,347.00	62 , 600	115 , 985	31,797	25.17	1,263
2003	327,012.50	139,497	258,460	101,254	26.05	3 , 887
2004	219,040.83	88 , 885	164,686	76 , 259	26.52	2,876
2005	365,608.99	140,518	260,351	141,819	27.00	5,253
2009	1,658,546.81	492,224	911,991	912,410	28.41	32,116
2010	409,609.31	111,741	207,033	243 , 537	28.81	8,453
2011	463,816.54	115,356	213,731	296,467	29.09	10,191
2012	133,468.99	29 , 950	55,491	91,325	29.26	3,121
2013	1,180,984.70	234,744	434,934	864,149	29.47	29,323
2014	315,139.54	54,355	100,709	245,944	29.59	8,312
2016	36,020.82	4,216	7,811	31,812	29.39	1,082
2017	142,376.63	12,451	23,069	133,545	28.95	4,613
2018	4,323,512.69	241,598	447,633	4,308,231	28.00	153,865
2019	447,555.31	9,649	17,877	474,434	25.07	18,924
	•	,	•	•		,
	13,020,590.68	3,376,033	6,109,162	8,213,487		294,142

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 27.9 2.26

ACCOUNT 671 OTHER EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
1977 2002	4,510.89 772.38	4,313 449	4,511 772			
	5,283.27	4,762	5,283			

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 0.0 0.00

ACCOUNT 674.2 LAND RIGHTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
2005	7,111.85	1,557	1,097	6,015	51.72	116
2006	7,674.49	1,564	1,102	6,572	52.73	125
2007	1,367.26	258	182	1,185	53.72	22
2008	2,533.81	440	310	2,224	54.73	41
2009	8,289.87	1,315	927	7,363	55.72	132
2011	6,168.19	797	562	5,606	57.29	98
2013	10,133.24	1,001	705	9,428	59.29	159
2018	248,327.18	5,662	3,990	244,337	64.29	3,801
	291,605.89	12,594	8,875	282,730		4,494

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 62.9 1.54

ACCOUNT 675 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
1984	28,454.97	18,484	28,455			
1987	853.83	519	854			
1988	5,046.84	3,005	5,047			
1990	5,250.00	2,974	5,250			
1995	594.28	293	594			
1996	655.73	313	656			
2002	48,553.85	18,183	38,447	10,107	29.23	346
2004	5,770.40	1,958	4,140	1,630	30.16	54
2015	24,848.80	2,818	5,958	18,891	35.18	537
	120,028.70	48,547	89,401	30,628		937

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 32.7 0.78

ACCOUNT 676 MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
1935	265,443.78	339,142	358 , 349			
1942	11,759.94	14,641	15,507	369	6.54	56
1945	12,123.65	14,999	15,886	481	6.80	71
1947	16,664.81	20,387	21,593	904	7.50	121
1950	298,908.35	361,802	383,196	20,330	8.02	2,535
1954	220,109.24	262,738	278,274	18,873	8.58	2,200
1958	363,066.79	422,011	446,966	43,174	9.93	4,348
1963	1,053,955.23	1,181,811	1,251,695	171,145	11.52	14,856
1967	845,095.83	916,354	970 , 540	170,339	12.86	13,246
1969	497,847.33	532 , 836	564,344	107,750	13.20	8,163
1971	242,043.83	253 , 565	268,559	58 , 200	14.00	4,157
1975	349,341.61	348,379	368 , 980	102,631	15.74	6 , 520
1979	411,595.40	387 , 068	409,956	145,698	17.64	8,260
1982	1,086,117.50	967 , 731	1,024,955	441,304	19.32	22,842
1983	687,147.01	599 , 261	634,697	292 , 951	20.00	14,648
1984	906,854.74	773,606	819,351	404,903	20.68	19,579
1985	1,542,031.12	1,292,762	1,369,206	712,536	21.06	33,834
1986	1,676,538.08	1,372,481	1,453,639	809 , 687	21.75	37 , 227
1987	1,518,491.00	1,212,553	1,284,254	765 , 709	22.45	34,107
1988	8,964,828.46	6,975,892	7,388,395	4,714,123	23.15	203,634
1989	2,684,405.05	2,044,631	2,165,535	1,458,412	23.56	61,902
1990	2,050,078.05	1,518,585	1,608,383	1,159,222	24.26	47,783
1991	2,742,395.61	1,973,291	2,089,977	1,612,257	24.97	64,568
1992	2,377,753.94	1,659,553	1,757,687	1,452,281	25.69	56,531
1993	1,945,686.60	1,315,440	1,393,225	1,233,452	26.41	46,704
1994	2,280,246.80	1,483,757	1,571,496	1,506,837	27.41	54,974
1995	4,001,890.02	2,514,888	2,663,600	2,738,952	28.13	97,368
1996	2,489,476.88	1,508,324	1,597,515	1,763,279	28.86	61,098
1997	1,848,881.47	1,078,268	1,142,029	1,353,961	29.58	45,773
1998	1,870,380.24	1,042,326	1,103,962	1,421,051	30.58	46,470
1999	4,643,415.65	2,479,863	2,626,504	3,642,107	31.32	116,287
2000	1,938,513.79	990,009	1,048,551	1,568,443	32.05	48,937
2001	2,708,650.33	1,312,382	1,389,987	2,266,691	33.05	68,584
2002	2,521,620.87	1,161,509	1,230,192	2,173,996	33.78	64 , 357
2003	2,475,499.30	1,075,431	1,139,024	2,202,900	34.78	63,338
2004	2,548,121.09	1,039,557	1,101,029	2,338,934	35.78	65 , 370
2005	4,794,804.42	1,839,623	1,948,405	4,524,581	36.52	123,893
2006	2,224,234.45	794,519	841,501	2,161,216	37.52	57 , 602
2007	2,947,228.97	974,796	1,032,438	2,946,321	38.52	76,488
2008	4,534,673.76	1,379,856	1,461,450	4,660,360	39.52	117,924
2009	4,397,543.72	1,227,706	1,300,304	4,636,380	40.26	115,161

ACCOUNT 676 MAINS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA ALVAGE PERCENT					
2010	3,378,491.52	853,812	904,300	3,656,664	41.26	88,625
2011	6,268,488.51	1,416,616	1,500,384	6,962,075	42.26	164,744
2012	4,567,418.06	911,337	965,227	5,200,787	43.26	120,222
2013	7,235,016.54	1,250,211	1,324,139	8,443,133	44.26	190,762
2014	17,176,799.64	2,513,653	2,662,292	20,526,388	45.26	453,522
2015	12,739,597.70	1,523,783	1,613,888	15,584,569	46.26	336,891
2016	14,773,231.14	1,376,126	1,457,500	18,486,362	47.26	391,163
2017	16,931,385.87	1,124,583	1,191,083	21,666,288	48.26	448,949
2018	18,427,370.97	736 , 358	779 , 901	24,097,050	49.26	489,181
2019	16,625,572.31	219,956	232,962	22,211,560	50.26	441,933
	199,118,836.97	60,590,768	64,172,812	204,637,618		5,057,508

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 40.5 2.54

ACCOUNT 678 MEASURING AND REGULATING STATION EQUIPMENT - GENERAL

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
1984	186,213.88	157,254	157,896	84,182	19.15	4,396
1985	25,888.76	21,364	21,451	12,204	19.85	615
1986	48.12	39	39	24	20.26	1
1987	30,657.91	24,224	24,323	15,532	20.97	741
1988	158,901.57	122,993	123,495	83,077	21.41	3,880
1989	13,308.14	10,079	10,120	7,181	21.85	329
1990	379,202.53	279,214	280,354	212,609	22.58	9,416
1991	18,716.04	13,453	13,508	10,823	23.05	470
1992	153,107.45	107,282	107,720	91,320	23.52	3,883
1993	50,273.27	34,292	34,432	30,923	24.01	1,288
1994	88,078.61	58,098	58,335	56,167	24.75	2,269
1995	10,199.96	6,529	6,556	6,704	25.25	266
1996	4,705.51	2,918	2,930	3,187	25.76	124
1997	74,550.07	44,697	44,879	52,036	26.28	1,980
1998	166,043.66	96,056	96,448	119,409	26.81	4,454
1999	131,635.88	73,311	73,610	97 , 517	27.35	3,566
2000	107,778.92	57 , 376	57 , 610	82 , 503	28.12	2,934
2001	171,029.31	87 , 201	87 , 557	134,781	28.67	4,701
2002	224,202.22	109,153	109,599	181,864	29.23	6,222
2003	127,605.06	59 , 387	59 , 629	106,258	29.59	3 , 591
2004	53,192.71	23,470	23,566	45,585	30.16	1,511
2005	158,972.66	66,215	66,485	140,179	30.75	4,559
2006	1,819,577.38	712,001	714,907	1,650,544	31.35	52,649
2007	34,646.78	12,724	12,776	32,265	31.75	1,016
2009	156,946.70	49,498	49,700	154,331	32.79	4,707
2010	177,674.25	51,138	51,347	179,630	33.42	5 , 375
2011	69,821.38	18,208	18,282	72,486	33.87	2,140
2012	225,223.41	52 , 702	52 , 917	239 , 873	34.17	7,020
2013	718,870.71	147,656	148,259	786 , 273	34.65	22,692
2014	112,405.54	19,844	19 , 925	126,202	34.99	3 , 607
2015	72,433.55	10,678	10,722	83,442	35.18	2,372
2016	1,401,618.63	163 , 989	164,658	1,657,446	35.41	46,807
2017	124,953.48	10,753	10,797	151,643	35.24	4,303
2018	989,830.09	53,015	53,231	1,233,548	34.87	35 , 376
2019	99,896.96	1,948	1,956	127,910	32.72	3,909
	8,338,211.10	2,758,759	2,770,019	8,069,655		253,169

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 31.9 3.04

ACCOUNT 680 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
1935	26,316.71	42,107	42,107			
1942	2,583.87	4,101	2,751	1,383	0.62	1,383
1945	2,663.78	4,160	2,791	1,471	1.83	804
1947	4,119.25	6 , 355	4,263	2,328	2.69	865
1950	84,225.24	128,319	86,085	48,675	3.49	13,947
1954	62,021.53	92 , 298	61,920	37,314	4.92	7,584
1958	102,303.56	148,987	99,950	63 , 736	6.07	10,500
1963	481,583.60	679 , 148	455,617	314,917	7.60	41,436
1967	386,149.51	528 , 747	354,718	263,121	8.85	29,731
1969	227,481.30	306 , 972	205,937	158,033	9.38	16,848
1971	293,146.00	389,016	260,977	208,057	9.98	20,847
1975	422,221.35	538,146	361,024	314,530	11.36	27,688
1979	497,591.57	606,186	406,669	389,478	12.69	30,692
1982	393,594.14	462,867	310,521	319,230	13.52	23,612
1983	94,537.20	109,315	73,336	77,924	14.01	5,562
1984	76,564.14	87 , 418	58,646	63 , 857	14.25	4,481
1985	50,390.17	56 , 743	38,067	42,557	14.52	2,931
1986	210,639.59	233,692	156 , 776	180,247	14.81	12,171
1987	83,518.63	90,761	60,888	72,742	15.35	4,739
1988	3,857,277.17	4,121,424	2,764,921	3,406,722	15.67	217,404
1989	97 , 259.78	102,053	68,464	87 , 152	16.01	5,444
1990	40,839.14	42,022	28,191	37 , 152	16.37	2,270
1991	19,431.28	19,671	13,197	17,893	16.55	1,081
1992	55 , 637.57	55 , 086	36 , 955	52 , 065	16.94	3,073
1993	839,827.91	811 , 878	544,661	799,064	17.36	46,029
1994	2,698,389.84	2,554,188	1,713,516	2,603,908	17.60	147,949
1995	2,540,724.38	2,340,719	1,570,308	2,494,851	18.05	138,219
1996	2,057,972.40	1,849,212	1,240,572	2,052,184	18.34	111,897
1997	2,267,448.65	1,975,401	1,325,228	2,302,690	18.82	122,353
1998	2,598,268.55	2,198,759	1,475,072	2,682,158	19.15	140,060
1999	2,670,152.34	2,189,525	1,468,877	2,803,367	19.50	143,762
2000	2,432,614.91	1,927,799	1,293,294	2,598,890	19.87	130,795
2001	2,603,729.78	1,988,416	1,333,960	2,832,008	20.26	139,783
2002	1,780,600.64	1,306,249	876,317	1,972,644	20.67	95,435
2003	2,746,361.97	1,928,605	1,293,834	3,100,345	21.09	147,005
2004	1,875,458.22	1,260,308	845,497	2,155,236	21.40	100,712
2005	2,663,538.89	1,699,551	1,140,170	3,121,492	21.86	142,795
2006	2,528,529.99	1,529,255	1,025,924	3,019,724	22.21	135,962
2007	2,560,625.40	1,459,352	979,029	3,117,972	22.59	138,024
2008	3,725,932.06	1,988,157	1,333,786	4,627,705	22.98	201,380
2009	3,489,099.91	1,729,477	1,160,246	4,422,314	23.40	188,988

ACCOUNT 680 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA ALVAGE PERCENT					
2010	2,583,191.96	1,177,936	790,237	3,342,870	23.83	140,280
2011	2,044,082.46	850 , 665	570 , 682	2,699,850	24.18	111,656
2012	3,047,246.21	1,136,989	762 , 767	4,112,827	24.66	166,781
2013	4,306,119.53	1,419,297	952 , 157	5,937,634	25.05	237,031
2014	7,737,733.97	2,198,754	1,475,068	10,905,306	25.46	428,331
2015	8,713,328.37	2,063,316	1,384,207	12,557,118	25.90	484,831
2016	8,586,050.32	1,615,551	1,083,818	12,653,863	26.26	481,868
2017	10,239,396.12	1,405,664	943,011	15,440,023	26.65	579 , 363
2018	9,755,480.82	821,021	550 , 795	15,057,974	26.99	557 , 909
2019	9,421,627.64	271,343	182,034	14,892,570	27.20	547,521
	116,085,629.32	52,552,981	35,269,838	150,467,168		6,491,812

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 23.2 5.59



ACCOUNT 681 METERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA ALVAGE PERCENT					
1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1999 2000 2001 2003 2004 2005 2006 2007 2008 2010 2011 2012 2013 2014 2015 2016	36,479.66 162,637.75 642,288.71 652,506.85 685,073.53 608,063.75 582,481.25 650,373.03 550,360.02 444,764.03 475,012.30 288,831.81 466,973.47 531,631.49 289,709.21 747,221.66 346,806.38 408,665.21 475,372.01 761,707.21 692,530.48 615,019.59 557,045.24 679,097.65 708,911.10 888,744.09 914,740.09 1,180,203.09 1,046,201.87 1,349,997.64	37,835 166,183 648,198 647,235 669,344 582,282 547,859 597,667 493,475 389,667 404,539 238,633 361,886 396,810 207,756 489,759 216,074 241,080 264,915 397,611 336,404 275,873 229,280 252,787 236,067 260,011 229,417 246,002 172,749	34,450 151,317 590,213 589,336 609,467 530,193 498,849 544,202 449,331 354,809 368,350 217,286 329,513 361,313 189,171 445,947 196,745 219,514 241,217 362,042 306,310 251,194 208,769 230,174 214,949 236,751 208,894 223,996 157,295	9,326 43,848 180,533 193,672 212,621 199,484 200,128 236,246 211,101 178,908 201,665 129,312 230,855 276,645 158,480 450,719 219,423 270,884 329,229 552,007 524,727 486,830 459,685 584,743 635,744 829,742 888,794 1,192,248 1,098,147	5.26 5.67 5.96 6.40 6.73 7.21 7.59 8.10 8.63 9.61 10.18 11.24 11.85 12.46 13.71 14.35 15.00 15.57 16.24 16.91 17.59 18.20 19.53 20.17 20.82 21.41 21.94 22.44	1,773 7,733 30,291 30,261 31,593 27,668 26,367 29,166 24,461 19,747 20,985 12,703 20,539 23,346 12,719 32,875 15,291 18,059 21,145 33,991 31,031 27,677 25,257 30,939 32,552 41,137 42,689 55,687 50,056
2017 2018 2019	7,215,982.00 1,306,013.32	162,324 535,137 34,322 10,969,181	147,803 487,266 31,252 9,987,918	1,472,194 8,171,912 1,535,964 22,365,817	22.44 22.77 22.33	65,606 358,889 68,785 1,271,014
	26,961,445.49	10,909,181	9,901,918	ZZ,303,81/		1, 2/1, 014

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 17.6 4.71

ACCOUNT 682 METER INSTALLATIONS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	DR CURVE IOWA LVAGE PERCENT					
1989 1990 1991 1992 1993 1994 1995 1996 2006 2007 2009 2011 2013 2014 2015 2016 2017	128,072.37 24,221.02 26,724.03 27,398.43 48,266.24 22,369.71 34,311.23 45,327.40 277.45 4,888.66 50.81 120.49 19,055.93 48,036.52 14,921.33 1,441,501.96 477,642.31	95,155 17,630 19,115 19,223 33,175 15,032 22,510 28,966 122 2,028 18 37 4,630 10,098 2,623 201,306 48,748	97,102 17,991 19,506 19,616 33,854 15,340 22,971 29,559 124 2,070 18 38 4,725 10,305 2,677 205,426 49,746	37,374 7,441 8,554 9,152 16,826 8,148 13,056 18,035 167 3,063 35 89 15,284 40,133 12,990 1,308,151 451,778	12.60 13.06 13.34 13.65 13.98 14.34 14.71 15.11 18.76 19.15 19.99 20.74 21.59 21.97 22.38 22.82 23.21	2,966 570 641 670 1,204 568 888 1,194 9 160 2 4 708 1,827 580 57,325 19,465
2017 2018 2019	2,750,272.07 623,509.64 5,736,967.60	172,690 13,487 706,593	176,224 13,763 721,055	2,711,562 640,923 5,302,761	23.56 23.83	115,092 26,896 230,769

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 23.0 4.02

ACCOUNT 683 HOUSE REGULATORS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
1989	181,749.03	142,686	191,505	8,419	12.24	688
1990	16,287.34	12,473	16,741	1,175	12.87	91
1991	16,267.53	12,138	16,291	1,603	13.52	119
1992	31,393.20	22 , 791	30 , 589	3,944	14.17	278
1993	39,567.49	27,912	37,462	6,062	14.82	409
1994	32,722.63	22,396	30,059	5,936	15.48	383
1995	70,241.22	46,761	62 , 760	14,505	15.98	908
1996	23,834.52	15,343	20,592	5,626	16.66	338
2009	11.93	4	5	8	26.26	
2011	1,059.66	273	366	800	27.73	29
2015	2,172.98	303	407	1,983	30.96	64
2016	2,690.11	294	395	2,564	31.71	81
2017	3,109.20	245	329	3,091	32.47	95
2018	28,979.13	1,383	1,856	30,021	33.10	907
2019	33,582.18	547	734	36,206	33.40	1,084
	483,668.15	305,549	410,091	121,944		5,474

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 22.3 1.13

ACCOUNT 684 HOUSE REGULATOR INSTALLATIONS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
1989	59,695.35	39,506	57,262	2,433	15.59	156
1990	4,777.63	3,101	4,495	283	15.95	18
1991	5,424.84	3,432	4,975	450	16.55	27
1992	8,159.83	5,049	7,318	842	16.94	50
1993	12,712.41	7,648	11,085	1,627	17.55	93
1994	15,612.87	9,157	13,273	2,340	17.98	130
1995	8,671.63	4,950	7,175	1,497	18.42	81
1996	6,204.27	3,441	4,987	1,217	18.87	64
2019	97.38	2	3	94	22.49	4
	121,356.21	76,286	110,573	10,783		623

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 17.3 0.51

ACCOUNT 685 INDUSTRIAL MEASURING AND REGULATING STATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
1989	1,981.93	1,333	281	1,800	17.12	105
2004	3 , 513.59	1,361	287	3,402	26.52	128
2005	960.37	351	74	934	27.17	34
2010	30,999.81	7,760	1,636	30,914	30.34	1,019
2014	228,942.60	34,520	7,276	233,114	32.81	7,105
	266,398.30	45,325	9,554	270,164		8,391

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 32.2 3.15

ACCOUNT 687 OTHER EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
1989	8,574.53	6,511	8,221	354	9.66	37
2004	17,692.88	8,089	10,214	7,479	18.40	406
2007	85,113.57	32,445	40,968	44,146	20.29	2,176
	111,380.98	47,045	59,403	51,978		2,619

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 19.8 2.35

ACCOUNT 690 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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	-				
1988	29,767.46	19,974	25,659	4,108	15.45	266
2003	1,117.27	435	559	558	25.87	22
2006	106,942.67	34,649	44,511	62,432	28.17	2,216
2007	59,827.60	18,020	23,149	36 , 679	29.00	1,265
2009	971,036.43	248,780	319,589	651,447	30.48	21,373
2010	178,153.46	41,474	53 , 279	124,874	31.31	3,988
2015	558,313.73	63,313	81,333	476,981	35.18	13,558
2017	50,990.68	3,253	4,179	46,812	36.71	1,275
2018	25,606.21	988	1,269	24,337	37.41	651
	1,981,755.51	430,886	553 , 527	1,428,228		44,614

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 32.0 2.25

ACCOUNT 691.1 ELECTRONIC EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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-SQ VAGE PERCENT					
1962	313.22	313	313			
1981	310.96	311	311			
1982	166.14	166	166			
1983	8,490.14	8,490	8,490			
1985	504.00	504	504			
1986	258.36	258	258			
1987	5,129.14	5 , 129	5 , 129			
1990	822.15	822	822			
1992	3,299.57	3,300	3,300			
1993	44,830.81	44,831	44,831			
1994	11,830.12	11,830	11,830			
1995	41,745.36	41,745	41,745			
1996	10,655.18	10,655	10,655			
1997	6,127.33	6,127	6,127			
2000	230,423.26	230,423	230,423			
2011	1,098.01	933	760	338	1.50	225
2013	3,622.91	2,355	1,919	1,704	3.50	487
2016	77,166.29	27,008	22,009	55 , 157	6.50	8,486
	446,792.95	395,200	389,592	57,201		9,198

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 6.2 2.06

ACCOUNT 691.2 FURNITURE AND FIXTURES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	CURVE 20-S AGE PERCENT	~				
1984	2,956.84	2,957	2,957			
1987	730.74	731	731			
1990	253.05	253	253			
1995	2,044.07	2,044	2,044			
1998	29,103.54	29,104	29,104			
2002	4,149.28	3,631	3,919	230	2.50	92
2009	28,696.31	15,066	16,263	12,433	9.50	1,309
2016	26,935.08	4,714	5 , 088	21,847	16.50	1,324
2018	3,811.17	286	309	3,502	18.50	189
	98,680.08	58,786	60,668	38,012		2,914

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 13.0 2.95

ACCOUNT 692.1 TRANSPORTATION EQUIPMENT - AUTOMOBILES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVO	R CURVE IOWA	11-L3				
NET SAL	VAGE PERCENT	+5				
0.01.0	00 100 10	10.000	04 000			
2013	22,129.18	12,803	21,023			
2014	133,316.32	67 , 429	126 , 651			
2015	203,131.76	86,144	170,703	22,272	5.58	3,991
2016	41,124.39	13,811	27,368	11,700	6.40	1,828
2017	28,081.01	6,824	13,522	13,155	7.27	1,809
2018	308,154.47	45,200	89,568	203,179	8.22	24,718
2019	146,207.23	7,153	14,174	124,723	9.21	13,542
	882,144.36	239,364	463,009	375,028		45,888

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 8.2 5.20

ACCOUNT 692.2 TRANSPORTATION EQUIPMENT - LIGHT TRUCKS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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	-				
2004	31,168.31	24,736	29,610			
2006	137,712.46	105,080	130,827			
2008	115,924.08	84,226	110,128			
2009	84,607.03	59 , 246	80 , 377			
2011	64,784.39	40,281	61,545			
2013	182,173.67	92,140	173,065			
2014	58,052.31	25 , 358	55,150			
2016	41,231.40	11,806	39,170			
2018	213,463.93	26,484	168,181	34,610	9.98	3,468
	929,117.58	469,357	848,053	34,609		3,468

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 10.0 0.37

ACCOUNT 692.3 TRANSPORATION EQUIPMENT - TRAILERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
1982	3,210.60	3,031	2,291	759	0.23	759
1996	2,730.00	2,255	1,704	890	3.53	252
1998	5,975.00	4,771	3,606	2,070	4.08	507
2003	11,036.28	7,733	5,845	4,639	5.87	790
2008	29,930.47	16 , 577	12,530	15,904	8.22	1,935
2010	57,061.87	27,245	20,594	33,615	9.40	3 , 576
2011	34,493.01	14,985	11,327	21,441	10.09	2,125
2013	15,166.85	5 , 178	3,914	10,495	11.58	906
2014	8,369.42	2,444	1,847	6,104	12.39	493
2017	8,330.75	1,122	848	7,066	15.14	467
2018	1,298.71	105	79	1,155	16.11	72
2019	38,601.05	1,041	787	35,884	17.11	2,097
	216,204.01	86,487	65,372	140,022		13,979

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 10.0 6.47

ACCOUNT 692.4 TRANSPORATION EQUIPMENT - HEAVY TRUCKS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
1998	32,144.22	28,558	30,537			
2000	56,129.12	48,662	53,323			
2001	55,933.45	47,674	53,137			
2004	245,316.78	196,136	233,051			
2006	88,889.77	66,695	84,445			
2008	93,076.42	63 , 753	88,423			
2009	264,299.33	170 , 587	251,084			
2010	63,118.93	37 , 939	59,963			
2014	449,865.46	169,496	281,323	146,049	8.37	17,449
2015	139,690.06	43,474	72,156	60,550	9.24	6 , 553
2019	168,188.36	5,880	9,760	150,019	13.09	11,461
	1,656,651.90	878,854	1,217,202	356,618		35,463

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 10.1 2.14

ACCOUNT 693 STORES EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	CURVE 25-S AGE PERCENT	~				
1995	3,678.73	3,605	3,679			
	3,678.73	3,605	3,679			

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 0.0 0.00



ACCOUNT 694 TOOLS, SHOP AND GARAGE EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

SURVIVOR CURVE 25-SQUARE NET SALVAGE PERCENT 0 1957	AL JAL
1957 1,816.44 1,816 1,816 1958 2,371.06 2,371 2,371 1959 1,814.29 1,814 1,814 1960 570.47 570 570 1961 6,568.93 6,569 6,569 1963 2,419.96 2,420 2,420 1966 2,261.12 2,261 2,261 1967 2,842.75 2,843 2,843 1968 2,442.40 2,442 2,442 1970 1,513.35 1,513 1,513 1971 2,649.58 2,650 2,650	
1958 2,371.06 2,371 2,371 1959 1,814.29 1,814 1,814 1960 570.47 570 570 1961 6,568.93 6,569 6,569 1963 2,419.96 2,420 2,420 1966 2,261.12 2,261 2,261 1967 2,842.75 2,843 2,843 1968 2,442.40 2,442 2,442 1970 1,513.35 1,513 1,513 1971 2,649.58 2,650 2,650	
1959 1,814.29 1,814 1,814 1960 570.47 570 570 1961 6,568.93 6,569 6,569 1963 2,419.96 2,420 2,420 1966 2,261.12 2,261 2,261 1967 2,842.75 2,843 2,843 1968 2,442.40 2,442 2,442 1970 1,513.35 1,513 1,513 1971 2,649.58 2,650 2,650	
1960 570.47 570 570 1961 6,568.93 6,569 6,569 1963 2,419.96 2,420 2,420 1966 2,261.12 2,261 2,261 1967 2,842.75 2,843 2,843 1968 2,442.40 2,442 2,442 1970 1,513.35 1,513 1,513 1971 2,649.58 2,650 2,650	
1961 6,568.93 6,569 6,569 1963 2,419.96 2,420 2,420 1966 2,261.12 2,261 2,261 1967 2,842.75 2,843 2,843 1968 2,442.40 2,442 2,442 1970 1,513.35 1,513 1,513 1971 2,649.58 2,650 2,650	
1963 2,419.96 2,420 2,420 1966 2,261.12 2,261 2,261 1967 2,842.75 2,843 2,843 1968 2,442.40 2,442 2,442 1970 1,513.35 1,513 1,513 1971 2,649.58 2,650 2,650	
1966 2,261.12 2,261 2,261 1967 2,842.75 2,843 2,843 1968 2,442.40 2,442 2,442 1970 1,513.35 1,513 1,513 1971 2,649.58 2,650 2,650	
1967 2,842.75 2,843 2,843 1968 2,442.40 2,442 2,442 1970 1,513.35 1,513 1,513 1971 2,649.58 2,650 2,650	
1968 2,442.40 2,442 2,442 1970 1,513.35 1,513 1,513 1971 2,649.58 2,650 2,650	
1970 1,513.35 1,513 1,513 1971 2,649.58 2,650 2,650	
1971 2,649.58 2,650 2,650	
1070 0 050 00 0 050 0 050	
1972 2,258.88 2,259 2,259	
1973 19,752.62 19,753 19,753	
1974 1,192.93 1,193 1,193 1075 2,507.14 2,507	
1975 2,587.14 2,587 2,587 1976 612.61 613 613	
1978	
1980 2,828.19 2,828 2,828	
1981 6,954.45 6,954 6,954	
1983 5,794.88 5,795 5,795	
1984 12,622.82 12,623 12,623	
1985 7,702.89 7,703 7,703	
1986 1,628.00 1,628 1,628	
1987 20,335.24 20,335 20,335	
1988 796.95 797 797	
1989 7,979.04 7,979 7,979	
1990 31,636.69 31,637 31,637	
1991 18,559.73 18,560 18,560	
1992 20,906.47 20,906 20,906	
1993 7,167.66 7,168 7,168	
1994 36,143.78 36,144 36,144	
1995 29,968.01 29,369 29,968	
1996 3,400.24 3,196 3,400	
1997 20,189.96 18,171 20,190	
1998 14,312.60 12,309 14,313	
1999 12,754.98 10,459 12,755	
2000 268,495.23 209,426 268,495	
2001 19,803.30 14,654 19,658 145 6.50	22
2002 33,874.64 23,712 31,810 2,065 7.50	275

ACCOUNT 694 TOOLS, SHOP AND GARAGE EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	OR CURVE 25-SQ LVAGE PERCENT					
2003	133,600.49	88,176	118,288	15,312	8.50	1,801
2004	37,182.52	23,053	30,926	6,257	9.50	659
2005	36,256.24	21,029	28,210	8,046	10.50	766
2006	88,431.40	47,753	64,061	24,370	11.50	2,119
2007	148,878.29	74,439	99,860	49,018	12.50	3,921
2008	62,676.91	28,831	38 , 677	24,000	13.50	1,778
2009	76 , 793.82	32,253	43,267	33 , 527	14.50	2,312
2010	66,737.01	25 , 360	34,020	32,717	15.50	2,111
2011	158,682.61	53 , 952	72,377	86,306	16.50	5,231
2012	128,040.38	38,412	51,530	76 , 510	17.50	4,372
2013	165,716.66	43,086	57 , 800	107,917	18.50	5,833
2014	107,607.62	23,674	31,759	75 , 849	19.50	3,890
2015	66,728.20	12,011	16,113	50,615	20.50	2,469
2016	112,845.67	15 , 798	21,193	91,653	21.50	4,263
2017	272,359.52	27,236	36,536	235,824	22.50	10,481
2018	53,341.88	3,201	4,294	49,048	23.50	2,087
2019	137,859.70	2,757	3,699	134,161	24.50	5,476
	2,518,181.70	1,143,961	1,414,843	1,103,339		59,866

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 18.4 2.38

ACCOUNT 695 LABORATORY EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
1984	3,474.51	3,475	3,475			
1985	5,143.12	5,143	5,143			
1987	37,877.14	37,877	37,877			
1988	2,132.78	2,133	2,133			
1989	7,170.61	7,171	7,171			
1990	8,483.38	8,483	8,483			
1991	4,497.59	4,498	4,498			
1992	84,567.72	84,568	84,568			
1994	35,220.65	35,221	35,221			
1995	26,623.41	26,623	26,623			
1996	90,400.80	90,401	90,401			
1997	2,262.01	2,262	2,262			
1999	31,916.87	31,917	31,917			
2000	2,125.87	2,073	2,126			
2003	3,083.06	2,544	3,083			
2014	31,592.26	8,688	29,222	2,370	14.50	163
2015	18,113.92	4,076	13,710	4,404	15.50	284
2016	17,740.35	3,105	10,444	7,296	16.50	442
	412,426.05	360,258	398,357	14,069		889

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 15.8 0.22

ACCOUNT 696 POWER OPERATED EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
1987	15,588.43	14,388	7,137	8,451	2.71	3,118
1991	23,149.50	20,520	10,179	12,970	3.65	3,553
1997	72,603.93	58 , 482	29,010	43,594	5.43	8,028
2000	492,754.38	368 , 974	183,030	309,724	6.54	47,358
2001	25,826.06	18 , 776	9,314	16,512	6.95	2,376
2007	30,619.73	17,110	8,487	22,133	9.87	2,242
2008	115,889.64	60,633	30 , 077	85,813	10.48	8,188
2009	129,100.24	62 , 769	31,137	97 , 963	11.10	8,825
2011	198,783.81	80,428	39,896	158,888	12.51	12,701
2013	61,231.17	19,300	9,574	51,657	14.12	3,658
2014	145,672.86	39,099	19,395	126,278	14.99	8,424
2016	120,254.19	20,708	10,272	109,982	16.83	6,535
2018	303,197.95	22,467	11,145	292,053	18.74	15,584
2019	219,841.67	5,430	2,693	217,149	19.74	11,000
- -	1,954,513.56	809,084	401,346	1,553,168		141,590

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 11.0 7.24

ACCOUNT 697 COMMUNICATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	DR CURVE 15-SO LVAGE PERCENT	~				
1989	2,549.95	2,550	2,550			
1992	330.54	331	331			
1993	2,352.97	2,353	2,353			
1996	3,584.98	3 , 585	3,585			
1997	4,051.75	4,052	4,052			
1998	4,407.68	4,408	4,408			
2000	122,820.18	122,820	122,820			
2011	3,018.47	1,710	1,428	1,590	6.50	245
2012	3,125.95	1,563	1,305	1,821	7.50	243
2013	117,265.79	50,815	42,427	74,839	8.50	8,805
2015	59,415.65	17,825	14,883	44,533	10.50	4,241
2017	258,002.60	43,001	35,903	222,100	12.50	17,768
2018	2,322,287.35	232,229	193,896	2,128,391	13.50	157 , 659
2019	905,793.82	30,190	25,207	880,587	14.50	60,730
	3,809,007.68	517,432	455,148	3,353,860		249,691

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 13.4 6.56

ACCOUNT 698 MISCELLANEOUS EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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-S VAGE PERCENT	-				
1984	19,727.25	19,727	19,727			
1994	3,424.67	3,425	3,425			
1995	1,346.99	1,347	1,347			
1997	16,674.27	16,674	16,674			
1998	25,677.53	25 , 678	25 , 678			
1999	6,868.05	6,868	6,868			
2000	63,028.63	61,453	63,029			
2002	435.76	381	436			
2008	1,891.17	1,087	1,488	403	8.50	47
2009	3,787.41	1,988	2,721	1,066	9.50	112
2013	25,355.72	8,241	11,281	14,075	13.50	1,043
2014	29,281.22	8,052	11,023	18,258	14.50	1,259
2016	5,482.16	959	1,313	4,169	16.50	253
2018	121,161.66	9,087	12,439	108,723	18.50	5 , 877
2019	10,852.54	271	371	10,482	19.50	538
	334,995.03	165,238	177 , 820	157,175		9,129

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 17.2 2.73

ACCOUNT 590 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
CIIDIITI	OR CURVE IOWA	60-D2				
	ALVAGE PERCENT					
NHI OI	THAT THROUNT	J				
1954	25,327.24	22,121	26,594			
1956	4,704.61	4,047	4,940			
1957	124,429.62	106,977	130,651			
1972	171,340.61	125,612	168,119	11,789	20.53	574
1974	5,415.16	3 , 855	5,160	526	21.61	24
1978	7,293.53	4,863	6 , 509	1,149	23.86	48
1980	65,247.25	42,216	56,502	12,008	24.60	488
1982	20,136.44	12,527	16,766	4,377	25.79	170
1983	14,188.95	8,647	11,573	3,325	26.39	126
1985	111,461.69	65,001	86,997	30,038	27.61	1,088
1986	185,041.05	106,084	141,982	52,311	27.85	1,878
1987	828,372.00	463,598	620,478	249,313	28.48	8,754
1988	1,324,210.20	722,741	967,314	423,107	29.10	14,540
1990	5,709,172.32	2,952,955	3,952,223	2,042,408	30.38	67 , 229
1991	2,389,657.86	1,208,402	1,617,320	891,821	30.67	29,078
1992	13,273,169.14	6,515,467	8,720,274	5,216,554	31.32	166,557
1994	1,487,114.62	688 , 921	922,049	639,421	32.30	19,796
1995	4,570,844.85	2,045,979	2,738,330	2,061,057	32.97	62 , 513
1996	79,490.62	34,321	45 , 935	37 , 530	33.65	1,115
1998	500.00	201	269	256	34.68	7
2002	27,478.16	9,290	12,434	16,418	36.85	446
2003	137,819.10	44,166	59,112	85 , 598	37.56	2,279
2005	5,810.39	1,672	2,238	3,863	38.41	101
2006	869,041.42	235,241	314,845	597,648	38.86	15,380
2007	30,063.45	7,576	10,140	21,427	39.58	541
2008	1,016,818.33	238,195	318,799	748,860	40.05	18,698
2009	335,315.60	72,458	96,977	255,104	40.52	6,296
2010	432,934.18	85,916	114,990	339,591	40.75	8,334
2011	1,683,249.22	301,874	404,027	1,363,385	41.25	33,052
2012	157,397.52	25,154	33,666	131,601	41.76	3,151
2013	540,314.14	75,965	101,671	465,659	42.04	11,077
2014	311,969.13	37,670	50,417	277,151	42.34	6,546
2015	490,367.73	49,326	66,018	448,868	42.45	10,574
2016	639,557.06	51,238	68 , 577	602 , 958	42.37	14,231
2017	736,749.89	43,321	57 , 980	715,607	42.14	16,982
2018	2,114,440.12	77,262	103,407	2,116,755	41.60	50,884
2019	3,682,057.94	49,100	65,715	3,800,445	38.87	97 , 773
	43,608,501.14	16,539,959	22,120,998	23,667,928		670,330

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 35.3 1.54



ACCOUNT 591.1 ELECTRONIC EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
(1	(2)	(3)	(4)	(3)	(0)	(/)
	OR CURVE 10-S					
NET SAI	LVAGE PERCENT	0				
1958	224.70	225	225			
1963	510.67	511	511			
1972	630.00	630	630			
1975	285.80	286	286			
1976	425.74	426	426			
1977	304.88	305	305			
1978	1,372.28	1,372	1,372			
1980	1,137.30	1,137	1,137			
1981	538.07	538	538			
1982	405.82	406	406			
1983	8,200.95	8,201	8,201			
1984	8,669.78	8,670	8,670			
1985	667.08	667	667			
1986	925.70	926	926			
1987	26,129.16	26,129	26,129			
1988	2,881.11	2,881	2,881			
1989	36,597.08	36 , 597	36,597			
1990	5,006.83	5,007	5,007			
1991	227,909.22	227,909	227,909			
1992	7,921.01	7,921	7,921			
1993	15,131.40	15 , 131	15,131			
1994	6,676.87	6 , 677	6 , 677			
1995	6,866.84	6 , 867	6,867			
1996	84,240.37	84,240	84,240			
1997	82,136.60	82 , 137	82 , 137			
1998	99,830.00	99,830	99,830			
1999	17,579.67	17 , 580	17 , 580			
2000	488,149.56	488,150	488,150			
2003	2,628,040.50	2,628,040	2,628,040			
2006	6,142.36	6,142	6,142			
2007	5,694.78	5 , 695	5 , 695			
2008	14,935.21	14,935	14,935			
2009	1,679.05	1,679	1,679			
2010	46,690.31	44,356	46,690			
2011	8,803.47	7,483	8,803			
2013	52,563.76	34,166	52,564			
2014	30,591.73	16,825	30,592			
2015	75,596.55	34,018	75 , 597			
2016	187,099.91	65 , 485	187,100			

ACCOUNT 591.1 ELECTRONIC EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	DR CURVE 10-SOLVAGE PERCENT					
2017 2018 2019	6,119.97 823,464.46 537,684.84	1,530 123,520 26,884	6,120 823,464 512,290	25,395	9.50	2,673
	5,556,461.39	4,142,114	5,531,067	25,395		2,673

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 9.5 0.05



ACCOUNT 591.2 FURNITURE AND FIXTURES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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 20-S	OUARE				
	LVAGE PERCENT	-				
1948	579.26	579	579			
1949	390.00	390	390			
1963	1,091.40	1,091	1,091			
1966	239.70	240	240			
1970	471.10	471	471			
1973	414.96	415	415			
1977	572.00	572	572			
1978	1,976.00	1,976	1,976			
1982	3,115.44	3,115	3,115			
1983	853.63	854	854			
1986	34,203.92	34,204	34,204			
1987	6,800.83	6,801	6,801			
1988	980.41	980	980			
1989	139,140.37	139,140	139,140			
1990	14,314.09	14,314	14,314			
1991	1,287.20	1,287	1,287			
1992	28,362.04	28,362	28,362			
1993	5,115.60	5,116	5 , 116			
1995	1,463.32	1,463	1,463			
1996	23,589.83	23,590	23,590			
1997	66,243.10	66,243	66,243			
1998	61,126.42	61,126	61,126			
1999	1,185.04	1,185	1,185			
2006	78 , 857.84	53 , 229	19,225	59 , 633	6.50	9,174
2007	72 , 671.22	45,420	16,405	56,266	7.50	7,502
2008	508 , 867.95	292 , 599	105,679	403,189	8.50	47,434
2009	162,337.38	85 , 227	30 , 782	131,555	9.50	13,848
2010	148,564.82	70 , 568	25 , 487	123,078	10.50	11,722
2011	197 , 989.59	84,146	30,391	167,599	11.50	14,574
2012	13,383.46	5,019	1,813	11,570	12.50	926
2013	241,057.38	78,344	28,296	212,761	13.50	15,760
2014	39,255.33	10,795	3,899	35 , 356	14.50	2,438
2015	160,215.90	36,049	13,020	147,196	15.50	9,497
2016	234,381.52	41,017	14,814	219,568	16.50	13,307
2017	1,829,497.55	228 , 687	82 , 596	1,746,902	17.50	99,823
2018	1,676,825.67	125,762	45,422	1,631,404	18.50	88,184
2019	1,068,719.71	26,718	9,650	1,059,070	19.50	54,311
	6,826,140.98	1,577,094	820,993	6,005,148		388,500

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 15.5 5.69



ACCOUNT 592.1 TRANSPORTATION EQUIPMENT - AUTOMOBILES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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	_				
2006	14,595.60	11,681	13,866			
2007	21,816.11	17,098	20,725			
2008	15,377.70	11,778	14,609			
2012	343,042.46	219,259	325,890			
2013	67,957.94	39,317	64,560			
2014	147,397.43	74,551	140,028			
2016	32,801.92	11,016	31,162			
2017	228,374.38	55 , 497	216,956			
2018	367,634.17	53,925	349,252			
	1,238,997.71	494,122	1,177,048			

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 0.0 0.00

ACCOUNT 592.2 TRANSPORTATION EQUIPMENT - LIGHT TRUCKS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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	-				
NET SALV	/AGE PERCENT	+5				
2007	57,570.15	42,999	54,692			
2008	77,313.17	56 , 173	73,448			
2009	66,366.22	46,473	63,048			
2010	42,473.84	28,289	40,350			
2011	30,012.24	18,661	28,512			
2013	612,272.78	309,675	581,659			
2014	196,927.96	86,020	187,082			
2016	54,472.20	15,597	51,749			
2017	363,733.19	74,984	269,812	75 , 735	9.02	8,396
2018	55,796.99	6,923	24,911	28,096	9.98	2,815
	1,556,938.74	685 , 794	1,375,263	103,829		11,211

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 9.3 0.72

ACCOUNT 592.3 TRANSPORTATION EQUIPMENT - TRAILERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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	20-S2				
NET SALV	AGE PERCENT	+5				
0006	D 000 61	4 510	2 525	2 106	D 16	4.4.5
2006	7 , 276.61	4,517	3 , 727	3 , 186	7.16	445
2010	6 , 517.85	3,112	2,567	3,625	9.40	386
2013	5,250.15	1,793	1,479	3 , 509	11.58	303
2014	6,611.94	1,931	1,593	4,688	12.39	378
2017	41,760.75	5,626	4,642	35,031	15.14	2,314
	67,417.30	16,979	14,008	50,038		3,826

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 13.1 5.68

ACCOUNT 592.4 TRANSPORTATION EQUIPMENT - HEAVY TRUCKS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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					
2009	86,619.40	55 , 907	56,997	25,291	4.96	5,099
	86,619.40	55 , 907	56,997	25,291		5,099
(COMPOSITE REMAIN	ING LIFE AND	ANNUAL ACCRUAL	RATE, PERCENT	1 5.0	5.89

ACCOUNT 593 STORES EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE 25-SO VAGE PERCENT	~				
1971	4,676.00	4,676	4,676			
1974	1,264.12	1,264	1,264			
1979	17,065.72	17,066	17,066			
1981	9,301.65	9,302	9,302			
1982	709.30	709	709			
1984	34,934.75	34 , 935	34,935			
1985	1,292.93	1,293	1,293			
1990	333,736.76	333,737	333,737			
1996	85,705.87	80,564	60,805	24,901	1.50	16,601
1997	10,464.56	9,418	7,108	3,357	2.50	1,343
2001	406.00	300	226	180	6.50	28
2005	2,108.70	1,223	923	1,186	10.50	113
2006	2,809.53	1,517	1,145	1,665	11.50	145
2007	6,604.29	3,302	2,492	4,112	12.50	329
2008	28,249.08	12,995	9,808	18,441	13.50	1,366
2009	37,768.72	15,863	11,972	25 , 797	14.50	1,779
2011	30,009.07	10,203	7,701	22,308	16.50	1,352
2013	46,630.39	12,124	9,151	37,479	18.50	2,026
2014	7,024.82	1,545	1,166	5 , 859	19.50	300
2015	167,273.09	30,109	22,724	144,549	20.50	7,051
2016	2,618.50	367	277	2,341	21.50	109
	830,653.85	582,512	538,480	292,174		32,542

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 9.0 3.92

ACCOUNT 594 TOOLS, SHOP AND GARAGE EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE 25-S	~				
NET SAL	VAGE PERCENT	0				
1983	125,896.65	125,897	125,897			
1985	130,669.94	130,670	130,670			
1987	1,493.31	1,493	1,493			
1989	229.95	230	230			
1991	10,485.41	10,485	10,485			
1992	13,147.35	13,147	13,147			
1993	4,013.10	4,013	4,013			
1994	8,398.54	8,399	8,399			
1995	13,579.93	13,308	13,580			
1996	31,479.00	29 , 590	31,479			
2000	5,271.43	4,112	5 , 271			
2003	40,677.46	26,847	40,677			
2006	40,727.03	21,993	40,727			
2007	8,136.53	4,068	8,137			
2008	52,147.19	23,988	52,147			
2010	24,290.24	9,230	23,052	1,238	15.50	80
2014	7,238.05	1,592	3 , 976	3,262	19.50	167
2016	85 , 579.51	11,981	29 , 923	55 , 657	21.50	2,589
2017	51,592.23	5 , 159	12,884	38,708	22.50	1,720
2018	49,041.82	2,943	7,350	41,692	23.50	1,774
2019	65,691.57	1,314	3,282	62,410	24.50	2,547
	769,786.24	450,459	566,819	202,967		8,877

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 22.9 1.15

ACCOUNT 596 POWER OPERATED EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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	82,737.54	46,234	35,474	47,264	9.87	4,789
2008	27,163.35	14,212	10,904	16,259	10.48	1,551
2009	69,991.00	34,030	26,110	43,881	11.10	3,953
2010	33,131.90	14,793	11,350	21,782	11.78	1,849
2011	48,476.85	19,614	15,049	33,428	12.51	2,672
2012	99,379.98	35 , 856	27,511	71,869	13.29	5,408
2013	105,305.69	33,192	25,467	79 , 839	14.12	5,654
2014	6,625.45	1,778	1,364	5 , 261	14.99	351
2016	61,211.06	10,541	8,088	53,123	16.83	3,156
2017	29,905.56	3,684	2,827	27 , 079	17.78	1,523
2018	191,346.25	14,179	10,879	180,467	18.74	9,630
	755,274.63	228,113	175,023	580,252		40,536

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 14.3 5.37

ACCOUNT 597 COMMUNICATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

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	~				
1956 1981 1984 1989 1991 1992 1993 1994 1995 1996 1997 1998 2001 2002 2003 2006 2008 2009 2010 2011 2012 2013 2016	5,617.86 37,904.40 139,843.42 10,540.75 31,014.96 2,535,771.54 13,162.65 5,447.40 69,616.05 1,512.24 285,718.53 24,847.28 569.74 3,984.48 23,112.34 2,994.31 37,705.83 12,600.40 153,634.45 63,073.80 215,102.10 22,141.42 201,322.74	5,618 37,904 139,843 10,541 31,015 2,535,772 13,163 5,447 69,616 1,512 285,719 24,847 570 3,984 23,112 2,695 28,908 8,820 97,301 35,742 107,551 9,595 46,975	5,618 37,904 139,843 10,541 31,015 2,535,772 13,163 5,447 69,616 1,512 285,719 24,847 570 3,984 23,112 1,652 17,718 5,406 59,637 21,907 65,920 5,881 28,792	1,342 19,988 7,194 93,997 41,167 149,182 16,260 172,531	1.50 3.50 4.50 5.50 6.50 7.50 8.50 11.50	895 5,711 1,599 17,090 6,333 19,891 1,913
2017	148,837.71 6,636.02	24,807 664	15,204 407	133,634 6,229	12.50 13.50	10,691
	4,052,712.42	3,551,721	3,411,187	641,525		79 , 587

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 8.1 1.96

ACCOUNT 598 MISCELLANEOUS EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2019

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR	R CURVE 20-S	QUARE				
NET SALV	AGE PERCENT	0				
2006	15,892.74	10,728	15,893			
2008	14,343.46	8,247	14,343			
2009	9,854.55	5,174	9,855			
2012	1,647.06	618	1,647			
2014	82,856.36	22 , 785	82 , 856			
2015	3,983.39	896	3,983			
2016	18,345.12	3,210	15,458	2,887	16.50	175
2017	3,383.39	423	2,037	1,346	17.50	77
2018	13,170.32	988	4,758	8,412	18.50	455
2019	80,100.63	2,003	9,645	70,456	19.50	3,613
	243,577.02	55 , 072	160,475	83,102		4,320

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 19.2 1.77