NED W. ALLIS

DEPRECIATION EXPERIENCE

- Q. Please state your name.
- A. My name is Ned W. Allis.
- Q. What is your educational background?
- A. I have a Bachelor of Science degree in Mathematics from Lafayette College in Easton, PA.
- Q. Do you belong to any professional societies?
- A. Yes. I am a member and past President of the Society of Depreciation Professionals ("Society") and an associate member of the American Gas Association/Edison Electric Institute Industry Accounting Committee. I also serve on the faculty for training offered by the Society and am an instructor for the Society's "Introduction to Depreciation," "Life and Net Salvage Analysis," "Analyzing the Life of Real-World Property," "Analyzing Net Salvage in the Real World" and "Depreciation and Ratemaking Issues" courses.
- 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 2011 and was recertified in March 2017.
- Q. Please outline your experience in the field of depreciation.
- A. I joined Gannett Fleming in October 2006 as an analyst. My responsibilities included assembling data required for depreciation studies, conducting statistical analyses of

Page 2 of 5

service life and net salvage data, calculating annual and accrued depreciation, and

assisting in preparing reports and testimony setting forth and defending the results of the

studies. I also developed and maintained Gannett Fleming's proprietary depreciation

software. In March 2013, I was promoted to the position of Supervisor of Depreciation

Studies. In March 2017, I was promoted to Project Manager, Depreciation and Technical

Development. In January 2019, I was promoted to my current position of Vice President.

In my current position, I am responsible for conducting depreciation, valuation and

original cost studies, determining service life and salvage estimates, conducting field

reviews, presenting recommended depreciation rates to clients, and supporting such rates

before state and federal regulatory agencies. I am also responsible for Gannett Fleming's

proprietary depreciation software, training of depreciation staff, and the development of

solutions for technical issues related to depreciation. Since joining Gannett Fleming, I

have worked on more than one hundred depreciation assignments.

Q. Have you submitted testimony to any state utility commission on the subject of

utility plant depreciation?

A. Yes. I have submitted testimony on depreciation related topics to the Connecticut Public

Utilities Regulatory Authority, the New York Department of Public Service, the New

Jersey Board of Public Utilities, the Nevada Public Utilities Commission, the Florida

Public Service Commission, the District of Columbia Public Service Commission, the

California Public Utilities Commission, the Rhode Island Public Utilities Commission,

the Massachusetts Department of Public Utilities and the Maryland Public Service

Commission. I have also testified before the Federal Energy Regulatory Commission

("FERC").

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

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- A. Yes. I have completed the following courses conducted by the Society: "Depreciation Basics," "Life and Net Salvage Analysis" and "Preparing and Defending a Depreciation Study."
- Q. Does this conclude your qualification statement?
- A. Yes.

LIST OF CASES IN WHICH NED W. ALLIS SUBMITTED TESTIMONY

	Year	<u>Jurisdiction</u>	Docket No.	Client/Utility	<u>Subject</u>
01.	2013	NV	13-06004	Sierra Pacific Power Company	Depreciation
02.	2013	NY	13-E-0030, 13-G-0031 & 13-S-0032	Consolidated Edison Company of New York	Depreciation
03.	2013	DC	Case No. 1103	Pepco	Depreciation
04.	2014	NY	14-G-0494	Orange and Rockland - Gas	Depreciation
05.	2014	NY	14-E-0493	Orange and Rockland - Electric	Depreciation
06.	2014	NY	15-E-0050	Consolidated Edison Company of New York - Electric	Depreciation
07.	2015	FERC	ER15-2294-000	Pacific Gas & Electric Company TO17	Depreciation
08.	2015	NY	16-E-0060	Consolidated Edison Company of New York - Electric	Depreciation
09.	2015	NY	16-G-0061	Consolidated Edison Company of New York - Gas	Depreciation
10.	2016	FL	160021-EI	Florida Power & Light Company	Depreciation
11.	2016	NV	16-06008	Sierra Pacific Power Company - Electric	Depreciation
12.	2016	NV	16-06009	Sierra Pacific Power Company - Gas	Depreciation
13.	2016	NJ	ER 16050428	Rockland Electric Company	Depreciation
14.	2016	FERC	ER16-2320-000	Pacific Gas & Electric Company – Electric Transmission	Depreciation
15.	2016	DC	Case No. 1139	Pepco	Depreciation
16.	2017	NV	17-06004	Nevada Power Company	Depreciation
17.	2017	FERC	ER17-2154-000	Pacific Gas & Electric Company – Electric Transmission	Depreciation
18.	2017	CT	17-10-46	Connecticut Light & Power	Depreciation
19.	2017	CA	A.17-11-009	Pacific Gas & Electric – Gas Transmission and Storage	Depreciation
20.	2017	RI	4770	Narragansett Electric Company	Depreciation
21.	2017	DC	Case No. 1150	Pepco	Depreciation
22.	2018	CT	18-05-10	Yankee Gas Services Company	Depreciation
23.	2018	NY	18-E-0067	Orange and Rockland – Electric	Depreciation
24.	2018	NY	18-G-0068	Orange and Rockland – Gas	Depreciation
25.	2018	NJ	ER18080925	Atlantic City Electric Company	Depreciation
26.	2018	FERC	ER19-13-000	Pacific Gas & Electric Company – Electric Transmission	Depreciation
27.	2018	FERC	ER19-284-000	Florida Power & Light Company	Depreciation
28.	2018	CA	A. 18-12-009	Pacific Gas & Electric Company	Depreciation
29.	2018	NY	19-E-0065	Consolidated Edison Company of New York - Electric	Depreciation

	Year	<u>Jurisdiction</u>	Docket No.	Client/Utility	<u>Subject</u>
30.	2018	NY	19-G-0065	Consolidated Edison Company of New York - Gas	Depreciation
31.	2019	MA	18-150	Massachusetts Electric Company	PBR / Depreciation
32.	2019	MD	9610	Baltimore Gas & Electric Company	Depreciation
33.	2019	KS	19-ATMG-525-RTS	Atmos Energy	Depreciation
34.	2020	FERC	ER21-83-000	Pepco	Depreciation
35.	2020	MA	20-120	Boston Gas Company	Depreciation

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AQUARION WATER COMPANY OF NEW HAMPSHIRE

HAMPTON, NEW HAMPSHIRE

2019 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WATER PLANT AS OF DECEMBER 31, 2019

Prepared by:



Aquarion Water Company of New Hampshare Docket No. DW 20-184 Attachment NWA-2 Page 2 of 157

AQUARION WATER COMPANY OF NEW HAMPSHIRE Hampton, New Hampshire

2019 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION
ACCRUALS RELATED TO WATER PLANT
AS OF DECEMBER 31, 2019

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

Camp Hill, Pennsylvania



Excellence Delivered As Promised

December 9, 2020

Aquarion Water Company d/b/a Eversource Energy 600 Lindley Street Bridgeport, CT 06606

Attention Deb Szabo

Director, Rates & Regulations

Ladies and Gentlemen:

Pursuant to your request, we have conducted a depreciation study related to the water plant of Aquarion Water Company of New Hampshire 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.

Respectfully submitted,

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC.

NED W. ALLIS Vice President

NWA:mle

066813.000

Gannett Fleming Valuation and Rate Consultants, LLC

207 Senate Avenue • Camp Hill, PA 17011-2316 t: 717.763.7211 • f: 717.763.4590

www.**gfvrc**.com

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AQUARION WATER COMPANY OF NEW HAMPSHIRE

DEPRECIATION STUDY

EXECUTIVE SUMMARY

Pursuant to Aquarion Water Company of New Hampshire's ("Aquarion" or

"Company") request, Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett

Fleming") conducted a depreciation study related to the water plant of Aquarion 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 average

service life ("ASL") procedure and were applied on a remaining life basis.

calculations were based on attained ages and estimated service life and forecasted net

salvage characteristics for each depreciable group of assets.

For some accounts, the study recommends changes to the service life and net

salvage estimates from the last depreciation study, which was based on water plant as of

March 31, 2008. The most significant changes are a trend towards shorter average

service lives for some plant accounts, less negative net salvage estimates for many

accounts, and a change to amortization accounting for most general plant accounts. The

changes in service life and net salvage estimates are reflected in the proposed

depreciation rates set forth in this study.

Gannett Fleming recommends the calculated annual depreciation accrual rates set

forth herein apply specifically to water 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.

Sannett Fleming

December 31, 2019

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The study results set forth an annual depreciation expense of approximately \$1.06 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	PROPOSED <u>RATE</u>	ANNUAL ACCRUAL
SOURCE OF SUPPLY PLANT	\$ 5,643,939.33	3.67	\$ 207,003
PUMPING PLANT	2,332,037.91	4.28	99,703
WATER TREATMENT PLANT	289,721.83	5.97	17,291
TRANSMISSION AND DISTRIBUTION PLANT	37,814,553.88	1.81	682,880
GENERAL PLANT	2,289,699.17	3.35	76,718
RESERVE ADJUSTMENT FOR AMORTIZATION			(24,975)
TOTAL	\$48,369,952.12	2.19	<u>\$1,058,620</u>



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PART I. INTRODUCTION



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AQUARION WATER COMPANY OF NEW HAMPSHIRE
DEPRECIATION STUDY

PART I. INTRODUCTION

SCOPE

This report sets forth the results of the depreciation study for Aquarion Water

Company of New Hampshire ("Aquarion" or "Company"), to determine the annual

depreciation accrual rates and amounts for book purposes applicable to the original cost

of water 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 water 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 water industry,

including knowledge of service lives and net salvage estimates used for other water

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 methods used in the service life study. Part III, Service Life

Considerations, presents the results of the average service life analysis. Part IV, Net

Salvage Considerations, presents the results of 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

Tannett Fleming

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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

water 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 average service life procedure and the remaining life basis. For certain

General Plant accounts, the annual depreciation is based on amortization accounting.

A Gannett Fleming

December 31, 2019

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Both types of calculations were based on original cost, attained ages, and estimates of

service lives and net salvage.

The straight line method, average service life procedure is a commonly used

depreciation calculation procedure that has been widely accepted in jurisdictions

Gannett Fleming recommends its use in this study. throughout North America.

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-4 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 water utility

industry, and comparisons of the service life and net salvage estimates from Gannett

Fleming's studies of other water utilities. The use of survivor curves to reflect the

expected dispersion of retirement provides a consistent method of estimating

depreciation for water 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.

👸 Gannett Fleming

December 31, 2019

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PART II. ESTIMATION OF SURVIVOR CURVES



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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.

Annett Fleming

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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 of retirement 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.

Tannett Fleming

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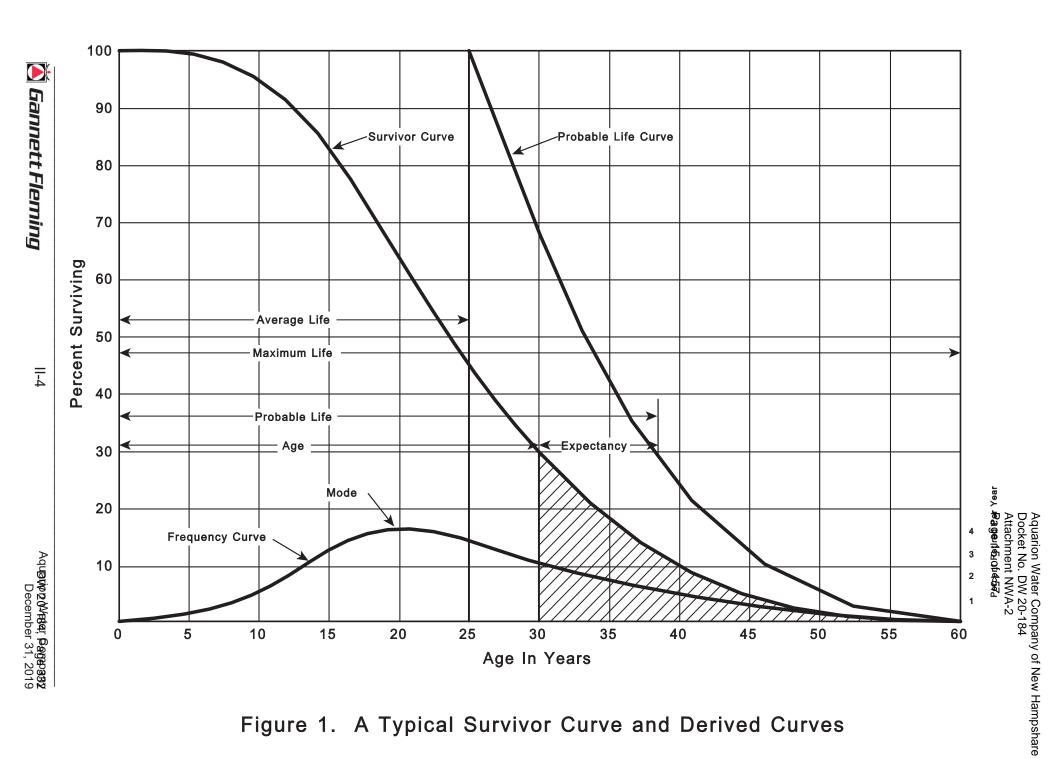


Figure 1. A Typical Survivor Curve and Derived Curves

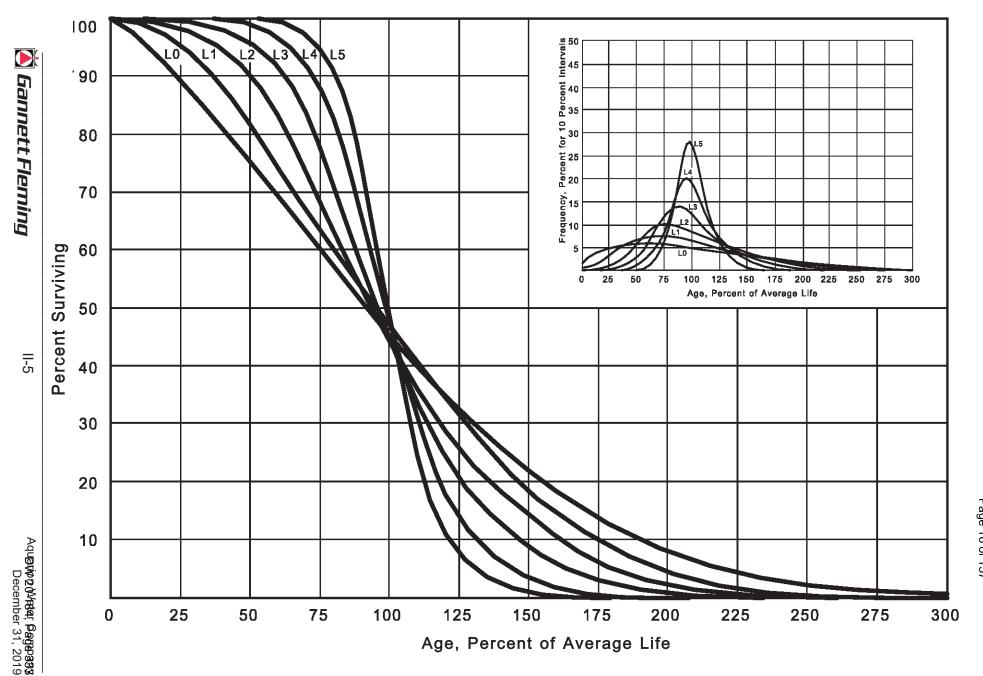


Figure 2. Left Modal or "L" lowa Type Survivor Curves

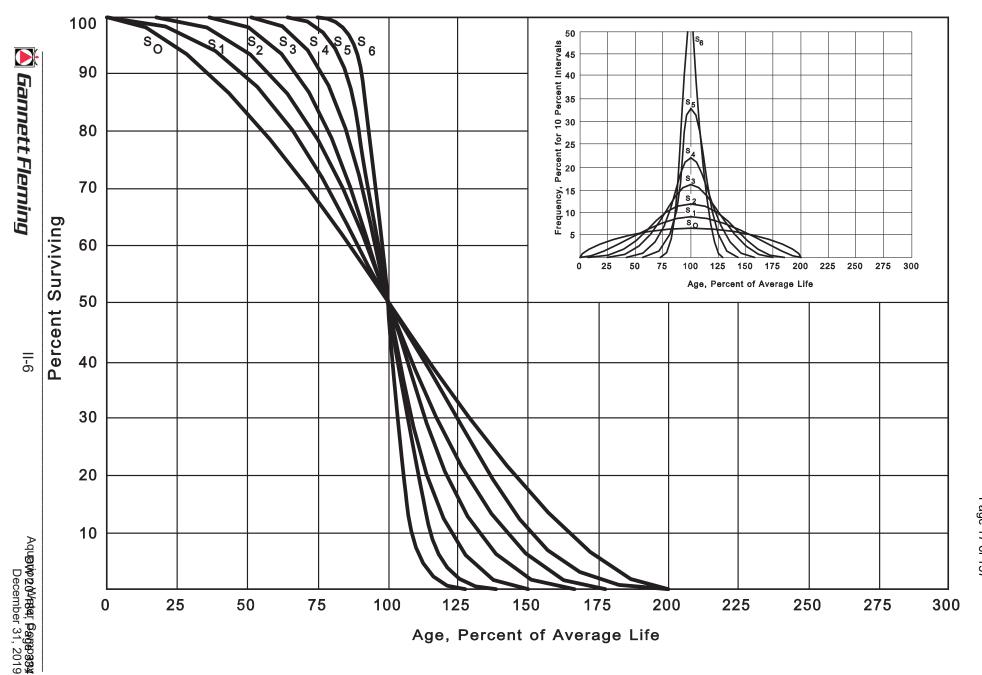


Figure 3. Symmetrical or "S" lowa Type Survivor Curves

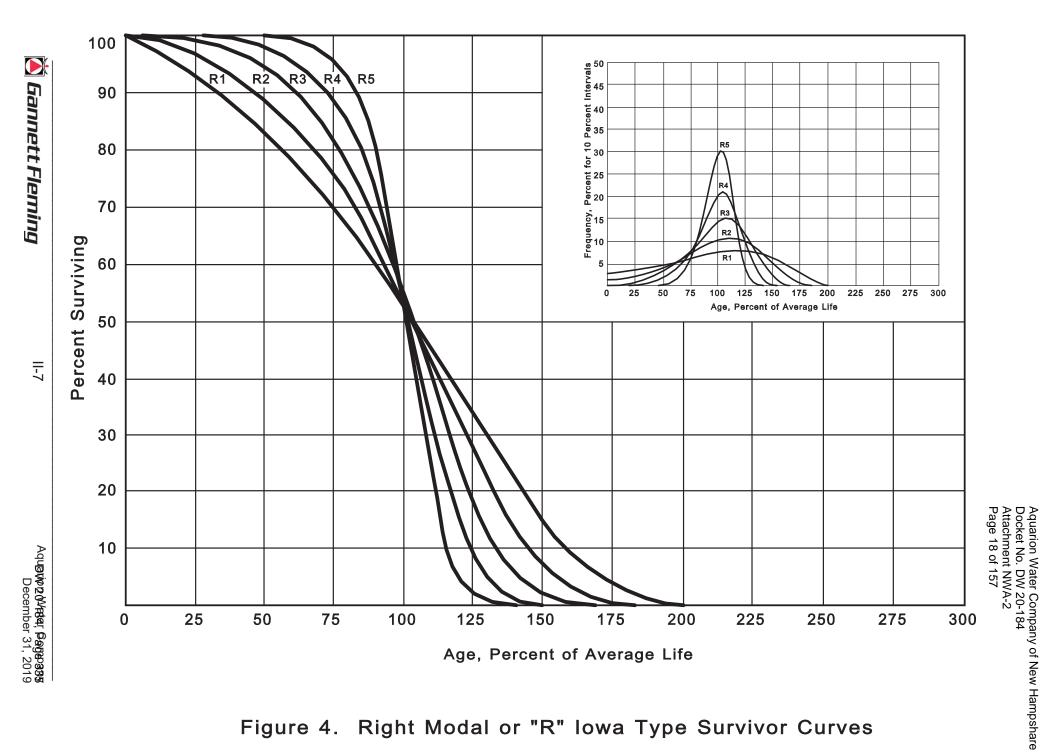


Figure 4. Right Modal or "R" lowa Type Survivor Curves

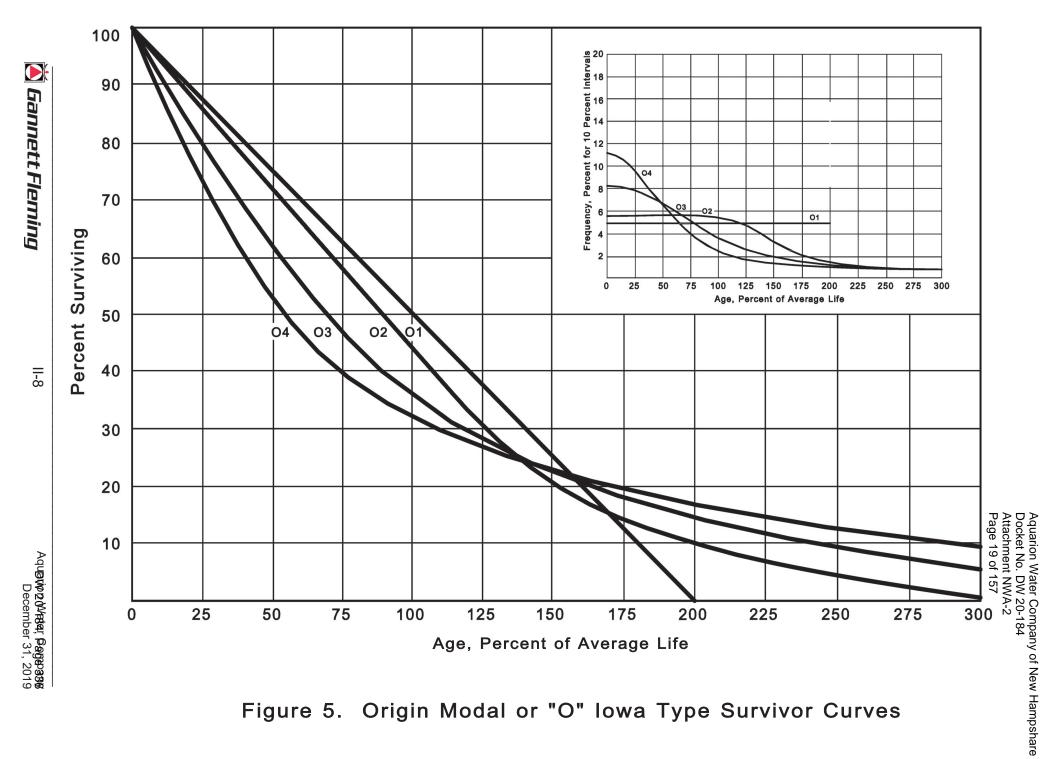


Figure 5. Origin Modal or "O" lowa Type Survivor Curves

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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. <u>Depreciation Systems</u>. 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, <u>Statistical Analyses of Industrial Property Retirement.</u> Iowa State College Engineering Experiment Station, Bulletin 125. 1935.

³Marston, Anson, Robley Winfrey, and Jean C. Hempstead, Supra Note 1.

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<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 4½-5½ 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 4½-

 $5\frac{1}{2}$ equals the sum of:

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

A Gannett Fleming

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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 21/2	= \$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

_	Retirements, Thousands of Dollars											
Year					Durin	g Year					Total During	Age
Placed	2010	2011	2012	2013	2014	<u>2015</u>	<u>2016</u>	2017	2018	2019	Age Interval	Interval
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2005	10	_ 11	12	13	14	16	23	24	25	26	26	13½-14½
2006	11	12	13	15	16	18	20	21	22	19	44	12½-13½
2007	11	12	13	14	16	17	19	21	22	18	64	11½-12½
2008	8	9	10	11	11	13	14	15	16	17	83	10½-11½
2009	9	10	11	12	13	14	16	17	19	20	93	9½-10½
2010	4	9	10	11	12	13	14	15	16	20	105	81/2-91/2
2011		5	11	12	13	14	15	16	18	20	113	7½-8½
2012			6	12	13	15	16	17	19	19	124	6½-7½
2013				6	13	15	16	17	19	19	131	5½-6½
2014					7	14	16	17	19	20	143	4½-5½
2015						8	18	20	22	23	146	3½-4½
2016							9	20	22	25	150	2½-3½
2017								11	23	25	151	1½-2½
2018									11	24	153	1/2-11/2
2019										13	80	0-1/2
Total	53	68	86	106	128	157	196	231	273	308	1,606	

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

Experience Band 2010-2019

Placement Band 2005-2019

_	Acquisitions, Transfers and Sales, Thousands of Dollars											
	During Year											
Year <u>Placed</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	Total During Age Interval	Age <u>Interval</u>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2005	-	-	-	_	-	_	60 ^a	-	_	-	-	13½-14½
2006	-	-	-	-	-	-	-	-	-	-	-	12½-13½
2007	-	-	-	-	-	-	-	-	-	-	-	11½-12½
2008	-	-	-	-	-	-	-	(5) ^b	-	-	60	10½-11½
2009	-	-	-	-	-	-	-	6 ^a	-	-	-	9½-10½
2010	-	-	-	-	-	-	-	-	-	-	(5)	81/2-91/2
2011		-	-	-	-	-	-	-	-	-	6	71/2-81/2
2012			-	-	-	-	-	-	-	-	-	61/2-71/2
2013				-	-	-	-	(12) ^b	-	-	-	51/2-61/2
2014					-	-	-	-	22 ^a	-	-	41/2-51/2
2015						-	-	(19) ^b	-	-	10	31/2-41/2
2016							-	-	-	-	-	21/2-31/2
2017								-	-	(102) ^c	(121)	11/2-21/2
2018									-	-	-	1/2-11/2
2019												0-1/2
Total							60	(30)	22	(102)	(50)	

^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

Experience Band 2010-2019

Placement Band 2005-2019

_	Exposures, Thousands of Dollars Annual Survivors at the Beginning of the Year										Total at	
Year			Beginning of	Age								
Placed	<u>2010</u>	<u>2011</u>	2012	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	Age Interval	<u>Interval</u>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2005	255	245	234	222	209	195	239	216	192	167	167	13½-14½
2006	279	268	256	243	228	212	194	174	153	131	323	12½-13½
2007	307	296	284	271	257	241	224	205	184	162	531	11½-12½
2008	338	330	321	311	300	289	276	262	242	226	823	10½-11½
2009	376	367	357	346	334	321	307	297	280	261	1,097	9½-10½
2010	420a	416	407	397	386	374	361	347	332	316	1,503	81/2-91/2
2011		460a	455	444	432	419	405	390	374	356	1,952	7½-8½
2012			510a	504	492	479	464	448	431	412	2,463	6½-7½
2013				580a	574	561	546	530	501	482	3,057	5½-6½
2014					660a	653	639	623	628	609	3,789	4½-5½
2015						750a	742	724	685	663	4,332	31/2-41/2
2016							850a	841	821	799	4,955	2½-3½
2017								960a	949	926	5,719	1½-2½
2018									1,080a	1,069	6,579	1/2-11/2
2019										1,220a	7,490	0-1/2
Total	<u>1,975</u>	2,382	<u>2,824</u>	<u>3,318</u>	3,872	<u>4,494</u>	5,247	6,017	6,852	<u>7,799</u>	44,780	

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

Retirement Ratio = $143,000 \div 3,789,000 = 0.0377$ Survivor Ratio = 1.000 - 0.0377 = 0.9623Percent surviving at age $5\frac{1}{2}$ = $(88.15) \times (0.9623) = 84.83$

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

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)

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

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

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

Column 4 = Column 3 Divided by Column 2.

Column 5 = 1.0000 Minus Column 4.

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



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The original survivor curve is plotted from the original life table (column 6, Schedule 4).

When the curve terminates at a percent surviving greater than zero, it is called a stub

survivor curve. Survivor curves developed from retirement rate studies generally are

stub curves.

Smoothing the Original Survivor Curve

The smoothing of the original survivor curve eliminates any irregularities and

serves as the basis for the preliminary extrapolation to zero percent surviving of the

original stub curve. Even if the original survivor curve is complete from 100% to zero

percent, it is desirable to eliminate any irregularities, as there is still an extrapolation for

the vintages which have not yet lived to the age at which the curve reaches zero percent.

In this study, the smoothing of the original curve with established type curves was used

to eliminate irregularities in the original curve.

The lowa type curves are used in this study to smooth those original stub curves

which are expressed as percents surviving at ages in years. Each original survivor curve

was compared to the lowa curves using visual and mathematical matching in order to

determine the better fitting smooth curves. In Figures 6, 7, and 8, the original curve

developed in Schedule 4 is compared with the L, S, and R lowa type curves which most

nearly fit the original survivor curve. In Figure 6, the L1 curve with an average life between

12 and 13 years appears to be the best fit. In Figure 7, the 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

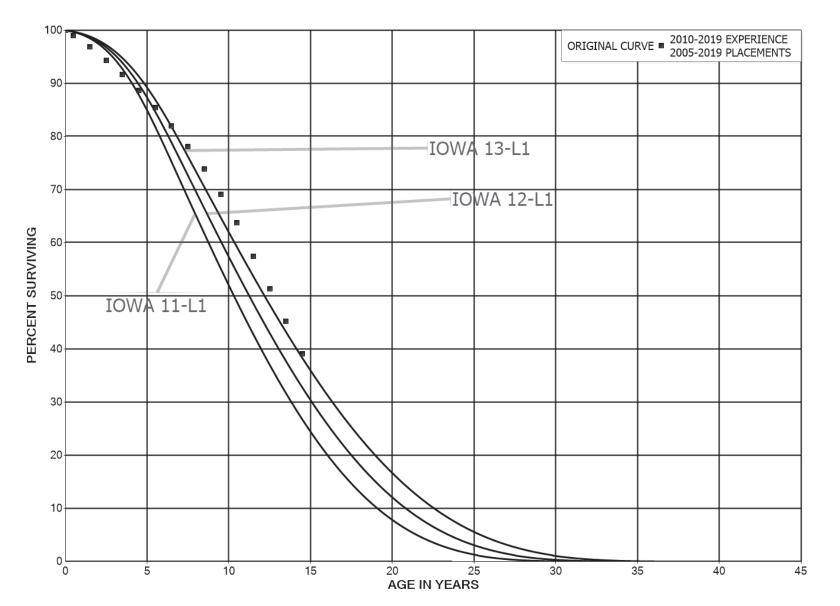
representative of the plotted survivor characteristics of the group.

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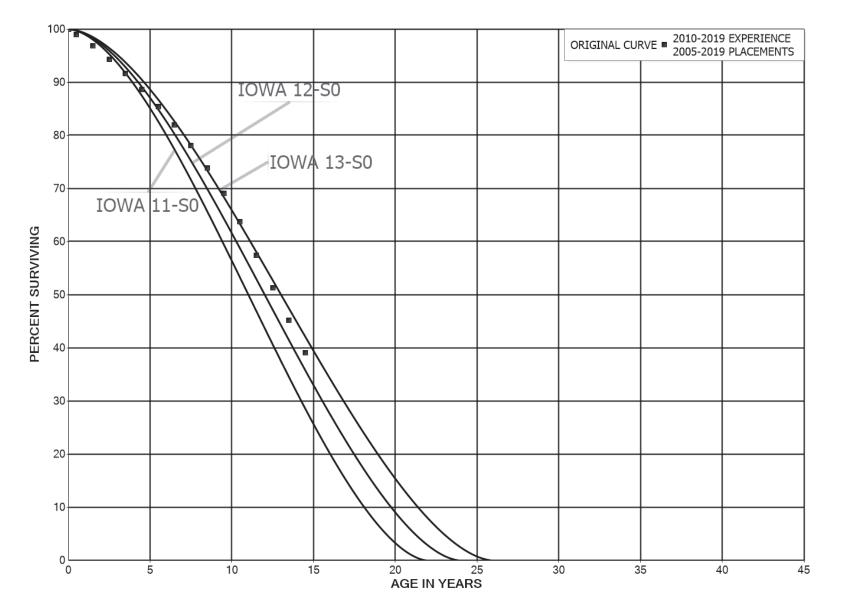
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FIGURE 6. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN L1 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES



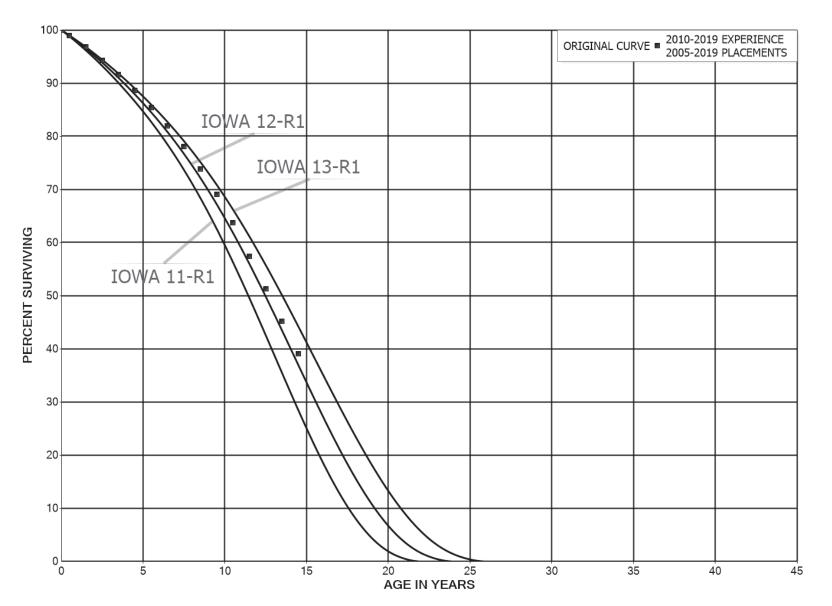
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FIGURE 7. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN SO IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES



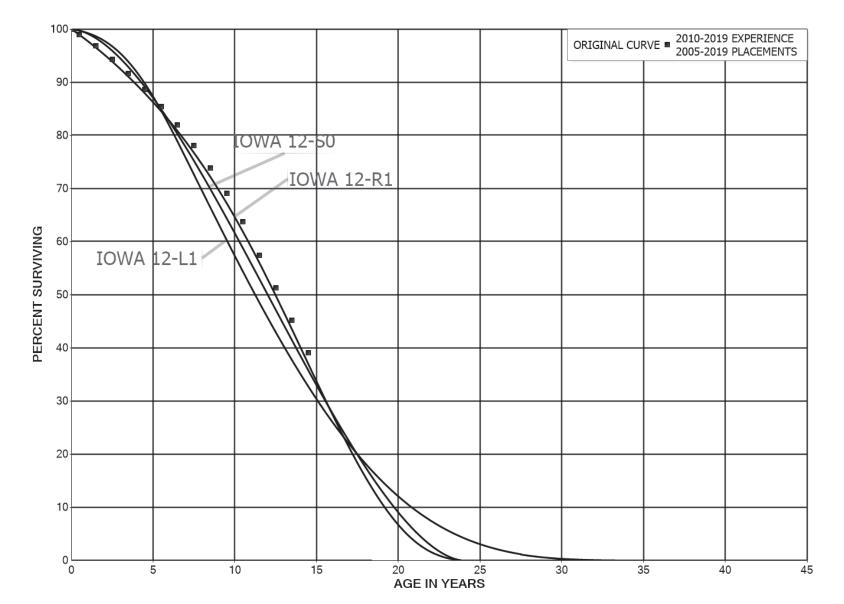
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FIGURE 8. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN R1 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES



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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



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PART III. SERVICE LIFE CONSIDERATIONS

FIELD TRIPS

In order to be familiar with the operation of the Company and

observe representative portions of the plant, field trips are normally conducted

for Gannett Fleming's depreciation studies. For this study, due to restrictions in place

as a result of COVID-19, a field trip was not feasible. However, meetings were held

with Company personnel, which included a review of the major assets that would

typically be observed during a field trip. 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 were obtained during these meetings. This

knowledge and information were incorporated in the interpretation and extrapolation of

the statistical analyses.

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 water 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 90

percent of depreciable plant. Generally, the information external to the statistical analysis

led to no significant departure from the indicated survivor curves for the accounts listed

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below. The statistical support for the service life estimates is presented in the section beginning on page VII-2.

SOURCE OF SUPPLY PLANT

- 311 Structures and Improvements
- 314 Wells and Springs

PUMPING PLANT

- 321 Structures and Improvements
- 325 Electric Pumping Equipment
- 328 Other Pumping Equipment

WATER TREATMENT PLANT

- 331 Structures and Improvements
- 332 Water Treatment Equipment

TRANMISSION AND DISTRIBUTION PLANT

- 341 Structures and Improvements
- 342 Distribution Reservoirs and Standpipes
- 343 Transmission and Distribution Mains
- 345 Services
- 348 Hydrants

GENERAL PLANT

- 390 Structures and Improvements
- 392 Transportation Equipment
- 396 Power Operated Equipment

Account 343, Transmission and Distribution Mains is the largest plant account and is 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 2008 through 2019. These data were coded in the course of the Company's normal recordkeeping according to plant account or property group, type of transaction, year in which the transaction took place, and year in which the electric plant was placed in service. Unaged data, for which the vintage year was not available, were also compiled for the years 1915 through 2007. The unaged data were statistically aged, which allowed for actuarial analysis to incorporate data from 1915 to 2019. The data were analyzed by



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the retirement rate method of life analysis. The survivor curve chart for the account

is presented on page VII-27 and the life tables for the experience bands with

transaction years from 1915 to 2019 and 2008 to 2019 are provided on the pages

that follow. Also shown is a placement band of 1961 to 2019, which excludes the

experience of many of the asbestos cement mains installed in the 1950s and early

1960s.

The survivor curve estimate from the previous depreciation study was the 100-

R3 survivor curve. The statistical analysis indicates a shorter estimate than the

estimate from the previous study. In the time since the last study, the Company has

increased the level of replacements of water mains as it has upgraded aging

infrastructure, which contributes to the shorter statistical indications from the data.

Many of the mains targeted for replacement have been asbestos cement mains that

were installed in the 1950s and early 1960s.

Typical average service life estimates for water mains range from 75 to 110

years. The best fitting survivor curves for the full range of data indicate service

lives of 75 years or less. However, the full range of historical data

incorporates the experience of asbestos cement mains, whereas other materials

may not be replaced at the same rate. As a result, older data points for the

overall band were given less consideration in the statistical analysis and more

recent placement bands were also considered. The lowa 85-R2.5 survivor curve

estimate is a reasonable interpretation of the earlier portion of the survivor curve for

the three bands of data shown on page VII-27, is a relatively gradual change

in the average service life when compared to the full original life table, reflects

the outlook of management, and is within the typical range of lives in the

industry for this account.

Similar analysis was performed for the remaining plant accounts. Each of the

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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

water companies.

The selected amortization periods for other General Plant accounts are

described in the section "Calculated Annual and Accrued Amortization" on page V-4 of

this report.



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PART IV. NET SALVAGE CONSIDERATIONS



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PART IV. NET SALVAGE CONSIDERATIONS

NET SALVAGE ANALYSIS

The estimates of net salvage by account were based in part on historical data

compiled for the years 2008 through 2019. Cost of removal and gross 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 "Part VIII, 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 2007 through 2019 contributed

significantly toward the net salvage estimates for 12 plant accounts, representing 94

percent of the depreciable plant.

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SOURCE OF SUPPLY PLANT

- 311 Structures and Improvements
- 314 Wells and Springs
- 316 Supply Mains

PUMPING PLANT

- 321 Structures and Improvements
- 325 Electric Pumping Equipment
- 328 Other Pumping Equipment

WATER TREATMENT PLANT

- 331 Structures and Improvements
- 332 Water Treatment Equipment

TRANSMISSION AND DISTRIBUTION PLANT

- 341 Structures and Improvements
- 342 Distribution Reservoirs and Standpipes
- 343 Transmission and Distribution Mains
- 345 Services
- 346 Meters
- 347 Meter Installations
- 348 Hydrants

GENERAL PLANT

- 390 Structures and Improvements
- 392 Transportation Equipment
- 396 Power Operated Equipment

The net salvage estimate for Account 343, Transmission and Distribution Mains will be used to illustrate the methods for estimating net salvage. The current net salvage estimate for Account 343 is negative 20 percent. The statistical analysis for this account is shown on page VIII-9 indicates that a less negative net salvage estimate is appropriate for this account. Many years experienced no net salvage, although there has been more net salvage since 2014. Overall, the experienced average net salvage is negative, but many of the moving averages and the overall average are negative five percent or less. A negative five percent net salvage estimate is recommended, which reflects that the Company has experienced negative net salvage and is expected to continue to



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experience net salvage as mains are replaced. This estimate is less negative than those

of most other water utilities, which often range from negative 10 percent to negative 50

percent.

The net salvage estimates for the remaining plant accounts were estimated using

the above-described process of incorporating historical indications, judgment, the current

estimates and reviewing the typical range of estimates used by other water companies.

The results of the net salvage for each plant account are presented in account sequence

beginning on page VIII-2 in Part VIII of this report.

Generally, the net salvage estimates for the accounts subject to general plant

amortization were zero percent, consistent with amortization accounting.

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PART V. CALCULATION OF ANNUAL AND ACCRUED DEPRECIATION



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PART V. CALCULATION OF ANNUAL AND ACCRUED DEPRECIATION

GROUP DEPRECIATION PROCEDURES

A group procedure for depreciation is appropriate when considering more than a

single item of property. Normally the items within a group do not have identical service

lives, but have lives that are dispersed over a range of time. There are two primary group

procedures, namely, average service life and equal life group. In the average service life

procedure, the rate of annual depreciation is based on the average life or average

remaining life of the group, and this rate is applied to the surviving balances of the group's

cost. A characteristic of this procedure is that the cost of plant retired prior to average life

is not fully recouped at the time of retirement, whereas the cost of plant retired subsequent

to average life is more than fully recouped. Over the entire life cycle, the portion of cost

not recouped prior to average life is balanced by the cost recouped subsequent to

average life.

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:

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

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Remaining Life Annual Accruals

For the purpose of calculating remaining life accruals as of December 31, 2019,

the depreciation reserve for each plant account is allocated among vintages in proportion

to the calculated accrued depreciation for the account. Explanations of remaining life

accruals and calculated accrued depreciation follow. The detailed calculations as of

December 31, 2019, are set forth in Part VIII, Results of Study of the report.

Average Service Life Procedure

In the average service life procedure, the remaining life annual accrual for each

vintage is determined by dividing future book accruals (original cost less book reserve)

by the average remaining life of the vintage. The average remaining life is a directly

weighted average derived from the estimated future survivor curve in accordance with the

average service life procedure.

The calculated accrued depreciation for each depreciable property group

represents that portion of the depreciable cost of the group which would not be allocated

to expense through future depreciation accruals if current forecasts of life characteristics

are used as the basis for such accruals. The accrued depreciation calculation consists

of applying an appropriate ratio to the surviving original cost of each vintage of each

account based upon the attained age and service life. The straight line accrued

depreciation ratios are calculated as follows for the average service life procedure:

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

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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 provide 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 water plant in service.

The accounts and their amortization periods are as follows:

		AMORTIZATION PERIOD,
<u>ACCT</u>	TITLE	YEARS
391.0,	Office Furniture and Equipment	20
391.1,	Computer Hardware	5
391.2,	Computer Software	5
394.0,	Tools, Shop and Garage Equipment	20
397.0,	Communication Equipment	10
398.0,	Miscellaneous Equipment	15

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



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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.



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PART VI. RESULTS OF STUDY



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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 net 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 average service life

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 water 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

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 water 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

VI-2

Sannett Fleming

December 31, 2019

Aquarion Water Company of New Hampshare Docket No. DW 20-184

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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 were 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 beginning on page

VIII-2 of the supporting documents of this report. 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.

👸 Gannett Fleming

December 31, 2019

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

WATER PLANT SOURCE OF SUPPLY PLANT SUPPLY MAINS 40-R1.5 0	CCRUAL	ANNUAL AC	CALCULATE	FUTURE	BOOK DEPRECIATION	ORIGINAL COST AS OF	NET SALVAGE	SURVIVOR		NARUC	QUARION
SOURCE OF SUPPLY PLANT SOURCE OF SUPPLY PLANT SOURCE PLANT SOURCE PLANT SOURCE PLANT SOURCE PLANT SOURCE PLANT SOURCE OF SUPPLY PLANT SOURCE PLANT SOUR										ACCOUNT	CCOUNT
SOURCE OF SUPPLY PLANT 14.468 2.25 28.1	(0)	(,,	(1)	(0)	(0)	(4)	(0)	(-)			
100 304.10 STRUCTURES AND IMPROVEMENTS 40-R1.5 0 642,550.27 236.615 405.935 14,468 2.25 28.1											
307.00 307.00 WELLS AND SPRINGS 30-S0.5 5 3,140.637.95 1,092.889 2,204.781 114.134 3.63 19.3 309.00 SUPPLY MAINS 60-S3 5 137.489.99 47,489 96.875 3.332 2.42 29.1 339.00 OTHER WATER SOURCE PLANT 2008 AND PRIOR 2009 AND SUBSEQUENT 20-SQ 0 1,644.016.80 932.939 711.078 71,107 4.33 10.0 2098 AND SUBSEQUENT 20-SQ 0 79.244.32 16.297 62.947 3.962 5.00 15.9 TOTAL OTHER WATER SOURCE PLANT 1,723.261.12 949.236 774.025 75.069 4.36 TOTAL SOURCE OF SUPPLY PLANT 5,643.939.33 2,326,229 3,481,616 207,003 3.67 TOTAL SOURCE OF SUPPLY PLANT 5,643.939.33 2,326,229 3,481,616 207,003 3.67 TOTAL SOURCE OF SUPPLY PLANT 5,643.939.33 2,326,229 3,481,616 207,003 3.67 TOTAL SOURCE OF SUPPLY PLANT 5,643.939.33 2,326,229 3,481,616 207,003 3.67 TOTAL SOURCE OF SUPPLY PLANT 25-R1 (5) 907,573.32 30,909 922.043 74,579 8.22 124 TOTAL PUMPING EQUIPMENT 25-R1 (5) 32,076.32 1,260 32,420 2,538 7.91 12.8 TOTAL PUMPING PLANT 25-R1 (5) 32,076.32 1,260 32,420 2,538 7.91 12.8 TOTAL PUMPING PLANT 25-R1 (5) 32,076.32 3,09.09 99,703 4.28 TOTAL PUMPING PLANT 25-R1 (5) 32,076.32 1,260 32,420 2,538 7.91 12.8 TOTAL PUMPING PLANT 25-R1 0 58,588.17 2,340 56,248 1,853 3.16 30.4 WATER TREATMENT PLANT 25-R1 0 231,133.66 15,419 215,715 15,438 6.68 14.0 TOTAL WATER TREATMENT PLANT 25-R1 0 231,133.66 15,419 215,715 15,438 6.68 14.0 TOTAL WATER TREATMENT PLANT 25-R1 0 231,133.66 15,419 215,715 15,438 6.68 14.0 TOTAL WATER TREATMENT PLANT 25-R1 0 231,133.66 15,419 215,715 15,438 6.68 14.0 TOTAL WATER TREATMENT PLANT 25-R1 0 231,133.66 15,419 215,715 15,438 6.68 14.0 TOTAL WATER TREATMENT PLANT 25-R1 0 231,133.66 15,419 215,715 15,438 6.68 14.0 TOTAL WATER TREATMENT PLANT 25-R1									SOURCE OF SUPPLY PLANT		
00 309.00 SUPPLY MAINS 60-S3 (5) 137,489.99 47,489 96,875 3,332 2.42 29.1 00 339.00 OTHER WATER SOURCE PLANT 2008 AND PRIOR 20-SQ 0 1,644,016.80 932,939 711,078 71,107 4.33 10.0 20-SQ 0 79,244.32 16,297 62,947 3,962 5.00 15.9 TOTAL OTHER WATER SOURCE PLANT TOTAL SOURCE OF SUPPLY PLANT TOTAL SOURCE OF SUPPLY PLANT PUMPING PLANT 00 304.20 STRUCTURES AND IMPROVEMENTS 40-R1.5 0 1,392,388.27 818,385 574,003 22,586 1.62 25.4 TOTAL PUMPING EQUIPMENT 25-R1 (5) 907,573.32 30,909 922,043 74,579 8.22 12.4 OTHER PUMPING EQUIPMENT 25-R1 (5) 32,076.32 1,260 32,420 2,538 7.91 12.8 TOTAL PUMPING PLANT 00 304.30 STRUCTURES AND IMPROVEMENTS 25-R1 (5) 32,076.32 1,260 32,420 2,538 7.91 12.8 TOTAL PUMPING PLANT 00 304.30 STRUCTURES AND IMPROVEMENTS 40-R1.5 0 58,588.17 2,30,076.92 1,260 32,420 2,538 7.91 12.8 VWATER TREATMENT PLANT 00 304.30 STRUCTURES AND IMPROVEMENTS 40-R1.5 0 58,588.17 2,340 56,248 1,853 3.16 30.4 WATER TREATMENT PLANT 10 289,721.83 17,759 271,963 17,91 5.97											311.00
00 339.00 OTHER WATER SOURCE PLANT 2008 AND PRIOR 2009 AND SUBSEQUENT 2008 AND PRIOR 2008 AND PRIOR 2008 AND PRIOR 2008 AND SUBSEQUENT											314.00 316.00
2008 AND PRIOR 2009 AND SUBSEQUENT 20-SQ 0 1,644,016.80 932,939 711,078 71,107 4.33 10.0 20-90 AND SUBSEQUENT 20-90 AND SUBSEQUENT 20-90 0 79,244.32 16,297 62,947 3,962 5.00 15.9 TOTAL OTHER WATER SOURCE PLANT 1,723,261.12 949,236 774,025 75,069 4.36 TOTAL SOURCE OF SUPPLY PLANT 5,643,939.33 2,326,229 3,481,616 207,003 3.67 PUMPING PLANT 25-81 (5) 907,573.32 30,909 922,043 74,579 8.22 12,4 0.311.20 OTHER PUMPING EQUIPMENT 25-81 (5) 907,573.32 30,909 922,043 74,579 8.22 12,4 0.311.20 OTHER PUMPING EQUIPMENT 25-81 (5) 32,076.32 1,260 32,420 2,538 7.91 12.8 TOTAL PUMPING EQUIPMENT 25-81 (5) 32,076.32 1,260 32,420 2,538 7.91 12.8 TOTAL PUMPING PLANT 25-81 (5) 2,332,037.91 850,554 1,528,466 99,703 4.28 TOTAL PUMPING PLANT 25-81 (5) 2,332,037.91 850,554 1,528,466 99,703 4.28 TOTAL PUMPING PLANT 25-81 (5) 2,332,037.91 850,554 1,528,466 99,703 4.28 TOTAL PUMPING PLANT 25-81 (5) 2,331,133.66 15,419 215,715 15,438 6.68 14.0 TOTAL WATER TREATMENT PLANT 25-81 (5) 231,133.66 15,419 215,715 15,438 6.68 14.0 TOTAL WATER TREATMENT PLANT 25-81 (5) 231,133.66 15,419 215,715 15,438 6.68 14.0 TOTAL WATER TREATMENT PLANT 25-81 (5) 289,721.83 17,759 271,963 17,291 5.97	2.42	3,332	3,332	90,075	47,409	137,469.99	(5)	00-33	SUPPLY MAINS	309.00	310.00
20-SQ 0 79,244.32 16,297 62,947 3,962 5.00 15.9 TOTAL OTHER WATER SOURCE PLANT TOTAL SOURCE OF SUPPLY PLANT PUMPING PLANT 00 304.20 STRUCTURES AND IMPROVEMENTS 40-R1.5 0 1,392,388.27 818,385 574,003 22,586 1.62 25.4 00 311.10 ELECTRIC PUMPING EQUIPMENT 25-R1 (5) 907,573.32 30,909 922,043 74,579 8.22 12.4 00 311.20 OTHER PUMPING EQUIPMENT 25-R1 (5) 32,076.32 1,260 32,420 2,538 7.91 12.8 TOTAL PUMPING PLANT WATER TREATMENT PLANT 00 304.30 STRUCTURES AND IMPROVEMENTS 40-R1.5 0 58,588.17 2,340 56,248 1.853 3.16 30.4 00 304.30 STRUCTURES AND IMPROVEMENTS 40-R1.5 0 58,588.17 2,340 56,248 1.853 3.16 30.4 00 304.30 STRUCTURES AND IMPROVEMENTS 40-R1.5 0 58,588.17 2,340 56,248 1.853 3.16 30.4 00 304.30 WATER TREATMENT EQUIPMENT 25-R1 0 231,133.66 15,419 215,715 15,438 6.88 14.0 TOTAL WATER TREATMENT PLANT 10 289,721.83 17,759 271,963 17,291 5.97	133	71 107	71 107	711 078	032 030	1 644 016 80	. 0	SOLIARE		339.00	317.00
TOTAL SOURCE OF SUPPLY PLANT PUMPING PLANT 00 304.20 STRUCTURES AND IMPROVEMENTS 40-R1.5 0 1.392,388.27 818,385 574,003 22,586 1.62 25.4 0.00 311.10 ELECTRIC PUMPING EQUIPMENT 25-R1 (5) 907,573.32 30,909 922,043 74,579 8.22 12.4 0.00 311.20 OTHER PUMPING EQUIPMENT 25-R1 (5) 32,076.32 1,260 32,420 2,538 7.91 12.8 TOTAL PUMPING PLANT 00 304.30 STRUCTURES AND IMPROVEMENTS 25-R1 (5) 907,573.32 30,909 922,043 74,579 8.22 12.4 0.00 32,076.32 1,260 32,076.32 1,260 32,420 2,538 7.91 12.8 WATER TREATMENT PLANT 00 304.30 STRUCTURES AND IMPROVEMENTS 40-R1.5 0 58,588.17 2,340 56,248 1,853 3.16 30.4 0.00 320.00 WATER TREATMENT EQUIPMENT 25-R1 0 231,133.66 15,419 215,715 15,438 6.68 14.0 TOTAL WATER TREATMENT PLANT 10 289,721.83 17,759 271,963 17,291 5.97											
TOTAL SOURCE OF SUPPLY PLANT PUMPING PLANT 00 304.20 STRUCTURES AND IMPROVEMENTS 40-R1.5 0 1.392,388.27 818,385 574,003 22,586 1.62 25.4 0.00 311.10 ELECTRIC PUMPING EQUIPMENT 25-R1 (5) 907,573.32 30,909 922,043 74,579 8.22 12.4 0.00 311.20 OTHER PUMPING EQUIPMENT 25-R1 (5) 32,076.32 1,260 32,420 2,538 7.91 12.8 TOTAL PUMPING PLANT 00 304.30 STRUCTURES AND IMPROVEMENTS 25-R1 (5) 907,573.32 30,909 922,043 74,579 8.22 12.4 0.00 32,076.32 1,260 32,076.32 1,260 32,420 2,538 7.91 12.8 WATER TREATMENT PLANT 00 304.30 STRUCTURES AND IMPROVEMENTS 40-R1.5 0 58,588.17 2,340 56,248 1,853 3.16 30.4 0.00 320.00 WATER TREATMENT EQUIPMENT 25-R1 0 231,133.66 15,419 215,715 15,438 6.68 14.0 TOTAL WATER TREATMENT PLANT 10 289,721.83 17,759 271,963 17,291 5.97	4.36	75,069	75,069	774,025	949,236	1,723,261.12			TOTAL OTHER WATER SOURCE PLANT		
PUMPING PLANT O0 304.20 STRUCTURES AND IMPROVEMENTS 40-R1.5 0 1,392,388.27 818,385 574,003 22,586 1.62 25.4	3.67	207.003	207.003	3.481.616	2 326 229	5 643 939 33			TOTAL SOURCE OF SUPPLY PLANT		
Name	0.01	201,000	201,000	0,101,010	_,0_0,0	0,010,000.00					
00 311.10 ELECTRIC PUMPING EQUIPMENT 25-R1 (5) 907,573.32 30,909 922,043 74,579 8.22 12.4											
00 304.30 STRUCTURES AND IMPROVEMENTS 25-R1 0 58,588.17 2,340 56,248 1,853 3.16 30.4 00 320.00 WATER TREATMENT PLANT 25-R1 0 231,133.66 15,419 215,715 15,438 6.68 14.0 TOTAL WATER TREATMENT PLANT 289,721.83 17,759 271,963 17,291 5.97											321.00 325.00
WATER TREATMENT PLANT 00 304.30 320.00 STRUCTURES AND IMPROVEMENTS STRUCTURES AND IMPROVEMENTS STRUCTURES AND IMPROVEMENT STRUCTURES											328.00
WATER TREATMENT PLANT 00 304.30 320.00 STRUCTURES AND IMPROVEMENTS STRUCTURES AND IMPROVEMENTS STRUCTURES AND IMPROVEMENT STRUCTURES	4.28	99,703	99,703	1,528,466	850,554	2,332,037.91			TOTAL PUMPING PLANT		
00 304.30 STRUCTURES AND IMPROVEMENTS 40-R1.5 0 58,588.17 2,340 56,248 1,853 3.16 30.4 00 320.00 WATER TREATMENT EQUIPMENT 25-R1 0 231,133.66 15,419 215,715 15,438 6.68 14.0 TOTAL WATER TREATMENT PLANT 289,721.83 17,759 271,963 17,291 5.97									WATER TREATMENT PLANT		
00 320.00 WATER TREATMENT EQUIPMENT 25-R1 0 231,133.66 15,419 215,715 15,438 6.68 14.0 TOTAL WATER TREATMENT PLANT 289,721.83 17,759 271,963 17,291 5.97				=====							
											331.00 332.00
TRANSMISSION AND DISTRIBUTION DI ANT	5.97	17,291	17,291	271,963	17,759	289,721.83			TOTAL WATER TREATMENT PLANT		
TRANSMISSION AND DISTRIBUTION FEATT									TRANSMISSION AND DISTRIBUTION PLANT		
00 304.40 STRUCTURES AND IMPROVEMENTS 40-R1.5 0 32,893.56 31,234 1,660 46 0.14 36.1	0 14	46	46	1 660	31 234	32 893 56	0	40-R1 5	STRUCTURES AND IMPROVEMENTS	304 40	341.00
00 330.00 DISTRIBUTION RESERVOIRS AND STANDPIPES 65-R2.5 (20) 2,708,343.96 1,124,468 2,125,545 46,235 1.71 46.0	1.71			2,125,545	1,124,468					330.00	342.00
											343.00
00 333.00 SERVICES 45-S2.5 (5) 5,731,678.62 2,284,927 3,733,336 129,474 2.26 28.8 00 334.00 METERS 15-L3 5 1,620,461.06 141,060 1,398,378 161,089 9.94 8.7 3											345.00 346.00
00 334.10 METER INSTALLATIONS 13-2.5 0 198,718.93 78,635 120,084 4.453 2.24 2.70 =											347.00
00 335.00 HYDRANTS 45-R3 0 709,986.40 378,689 331,297 12,038 1.70 205 5											348.00
00 339.00 OTHER TRANSMISSION AND DISTRIBUTION PLANT 30-S2 0 178,436.23 91,531 86,905 4,416 2.47 159 CD =	2.47	4,416	4,416	86,905	91,531	178,436.23	0	30-S2	OTHER TRANSMISSION AND DISTRIBUTION PLANT	339.00	349.00
TOTAL TRANSMISSION AND DISTRIBUTION PLANT 37,814,553.88 8,697,342 31,196,144 682,880 1.81	1.81	682,880	682,880	31,196,144	8,697,342	37,814,553.88			TOTAL TRANSMISSION AND DISTRIBUTION PLANT		
GENERAL PLANT									GENERAL PLANT		
333.00 SERVICES 45-S2.5 (5) 5,731,678.62 2,284,927 3,733,336 129,474 2.26 28.8 00 334.00 METERS 15-13 5 1,620,641.06 141,060 1,398,378 161,089 9.94 8.7 00 334.10 METER INSTALLATIONS 45-S2.5 0 198,718.93 78,635 120,084 4,453 2.24 270 00 335.00 HYDRANTS 45-S2.5 0 198,718.93 78,635 120,084 4,453 2.24 270 00 339.00 OTHER TRANSMISSION AND DISTRIBUTION PLANT 30-S2 0 178,436.23 91,531 86,905 4,416 2.47 1997 Service 1,531 1,105,144 1,105 1,105 1997 Service 1,531 1,105,144 1,105 1997 Service 1,531 1,105 1,105 1997 Service 1,531 1,105 1997 Service 1,531 1,105 1,105 1997 Service 1,531 1,531 1997 Ser	5.12	28,983	28,983	464,098	101,931	566,028.75	0	30-R0.5	STRUCTURES AND IMPROVEMENTS	304.50	390.00
00 340.10 OFFICE FURNITURE AND EQUIPMENT									OFFICE FURNITURE AND EQUIPMENT	340.10	391.00
FULLY ACCRUED 4,412.60 4,413 0 0 - - AMORTIZED 20-SQ 0 2,237.30 56 2,181 112 5.01 19.5	- F 01						0	20.80			
AMIORITZED 20-5Q 0							U	20-3Q			
TOTAL OFFICE FURNITURE AND EQUIPMENT 6,649.90 4,469 2,181 112 1.68	1.68	112	112	2,181	4,469	6,649.90			TOTAL OFFICE FURNITURE AND EQUIPMENT		
										340.20	391.10
FULLY ACCRUED 144,391.55 144,392 0 0 - - AMORTIZED 5-SQ 0 40,021.48 31,025 8,996 8,004 20.00 1.1	20.00						0	5-SQ			
TOTAL OFFICE FURNITURE AND EQUIPMENT - COMPUTER HARDWARE 184,413.03 175,417 8,996 8,004 4.34											
		0,007	5,55 .	0,000	,	.0.,0.00			The state of the s		

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

AQUARION	NARUC		SURVIVOR	NET SALVAGE	ORIGINAL COST AS OF	BOOK DEPRECIATION	FUTURE	CALCUL ANNUAL AG	CRUAL	COMPOSITE REMAINING
ACCOUNT	ACCOUNT	ACCOUNT (1)	CURVE (2)	PERCENT (3)	DECEMBER 31, 2019 (4)	RESERVE (5)	ACCRUALS (6)	AMOUNT (7)	RATE (8)	LIFE(9)
		(4)	(-/	(-)	()	(-)	(-)	(-)	(-)	(-)
391.20	340.30	OFFICE FURNITURE AND EQUIPMENT - COMPUTER SOFTWARE								
		FULLY ACCRUED AMORTIZED	5-SQ	0	368,220.13 51.074.98	368,220 40,490	0 10.585	0 10.214	20.00	- 1.0
				-						
		TOTAL OFFICE FURNITURE AND EQUIPMENT - COMPUTER SOFTWARE			419,295.11	408,710	10,585	10,214	2.44	
392.00 393.00	341.00 342.00	TRANSPORTATION EQUIPMENT STORES EQUIPMENT	10-L2.5 FULLY A	5	644,403.27 330.88	557,492 331	54,691 0	6,406 0	0.99	8.5
			FULL I A	CCRUED	330.00	331	Ü	U	-	-
394.00	343.00	TOOLS, SHOP AND GARAGE EQUIPMENT FULLY ACCRUED			38,702.85	38,703	0	0		_
		AMORTIZED	20-SQ	0	49,146.51	31,755	17,392	2,456	5.00	7.1
		TOTAL TOOLS, SHOP AND GARAGE EQUIPMENT			87,849.36	70,458	17,392	2,456	2.80	
396.00	345.00	POWER OPERATED EQUIPMENT	15-L2	0	109,715.27	97,089	12,626	1,995	1.82	6.3
397.00	346.00	COMMUNICATION EQUIPMENT	10-SQ	0	51,552.91	26,498	25,055	5,155	10.00	4.9
398.00	347.00	MISCELLANEOUS EQUIPMENT								
		FULLY ACCRUED AMORTIZED	15-SQ	0	18,577.41 200,883.28	18,577 83,531	0 117,352	0 13,393	6.67	- 8.8
		TOTAL MISCELLANEOUS EQUIPMENT			219,460.69	102,108	117,352	13,393	6.10	
		TOTAL GENERAL PLANT			2,289,699.17	1,544,503	712,976	76,718	3.35	
		RESERVE ADJUSTMENT FOR AMORTIZATION								
303.00	303.00	MISCELLANEOUS INTANGIBLE PLANT				(15,221)		3,044		
391.00	340.10	OFFICE FURNITURE AND EQUIPMENT				9,342		(1,868)		
391.10 391.20	340.20 340.30	OFFICE FURNITURE AND EQUIPMENT - COMPUTER HARDWARE OFFICE FURNITURE AND EQUIPMENT - COMPUTER SOFTWARE				85,929 22,177		(17,186) (4,435)		
393.00	342.00	STORES EQUIPMENT				4,479		(896)		
394.00	343.00	TOOLS, SHOP AND GARAGE EQUIPMENT				(14,041)		2,808		
395.00	344.00	LABORATORY EQUIPMENT				(508)		102		
397.00 398.00	346.00 347.00	COMMUNICATIONS EQUIPMENT MISCELLANEOUS EQUIPMENT				41,759 (9,040)		(8,352) 1,808		
396.00	347.00	TOTAL RESERVE ADJUSTMENT FOR AMORTIZATION				124,876		(24,975)		Aquarion Wa Docket No. I Attachment I Page 51 of 1
										aric chr e 5
		TOTAL DEPRECIABLE PLANT			48,369,952.12	13,561,263	37,191,165	1,058,620	2.19	nen 1 o
		NONDEPRECIABLE PLANT AND ACCOUNTS NOT STUDIED								Water lo. DW ant NW of 157
301.00	301.00	ORGANIZATION ***			17,700.00	9,085				, ≤ ≤ <u>ĕ</u>
310.00	303.10	LAND AND LAND RIGHTS			635,643.46					P 20 C
340.00	303.40	LAND AND LAND RIGHTS			314,551.16					0m
		TOTAL NONDEPRECIABLE PLANT AND ACCOUNTS NOT STUDIED			967,894.62	9,085				Vater Company (. DW 20-184 t NWA-2
		TOTAL WATER PLANT			49,337,846.74	13,570,348				y 0
	,	* REMAINING COSTS TO BE FULLY DEPRECIATED OVER A TWENTY YEAR ** ADDITIONS TO ACCOUNT WILL HAVE AN AMORTIZATION PERIOD OF 20 Y ** AS AGREED UPON IN DOCKET NO. 12-085 AND CONSISTENT WITH THE S	EARS AND WILL	BE DEPRECIA	ATED AT A RATE OF 5%	UNE 2, 2009, COSTS	IN ACCOUNT 301.00	, ORGANIZATION,	SHOULD BE AM	
		TWENTY YEARS WITH A RATE OF 5%								Hampshare
										ps
										hai
										6

^{*} REMAINING COSTS TO BE FULLY DEPRECIATED OVER A TWENTY YEAR PERIOD AS PER THE ORDER FROM CASE DW 08-098
** ADDITIONS TO ACCOUNT WILL HAVE AN AMORTIZATION PERIOD OF 20 YEARS AND WILL BE DEPRECIATED AT A RATE OF 5%
*** AS AGREED UPON IN DOCKET NO. 12-085 AND CONSISTENT WITH THE STATE OF NEW HAMPSHIRE AUDIT REPORT ISSUED ON JUNE 2, 2009, COSTS IN ACCOUNT 301.00, ORGANIZATION, SHOULD BE AMORTIZED OVER TWENTY YEARS WITH A RATE OF 5%

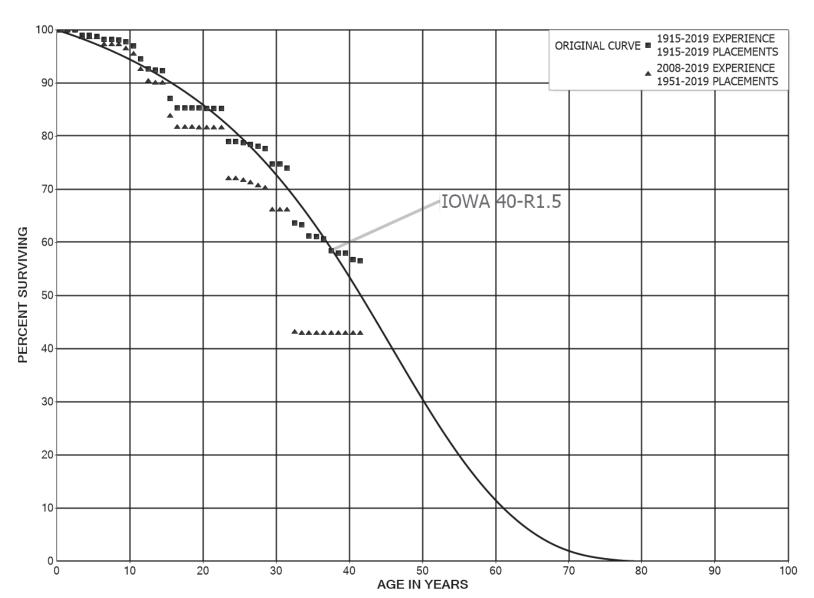
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PART VII. SERVICE LIFE STATISTICS



AQUARION WATER COMPANY OF NEW HAMPSHIRE ACCOUNTS 311.00, 321.00, 331.00 AND 341.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNTS 304.10, 304.20, 304.30 AND 304.40)

ORIGINAL AND SMOOTH SURVIVOR CURVES



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ACCOUNTS 311.00, 321.00, 331.00 AND 341.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNTS 304.10, 304.20, 304.30 AND 304.40)

ORIGINAL LIFE TABLE

PLACEMENT H	BAND 1915-2019		EXPER	RIENCE BAN	D 1915-2019
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	2,536,012 2,527,714 2,527,714 2,527,502 2,502,148 2,495,497 2,490,158 2,475,000 2,475,000 2,416,349	213 25,354 820 5,339 15,158 942 9,412	0.0000 0.0000 0.0001 0.0100 0.0003 0.0021 0.0061 0.0000 0.0004 0.0039	1.0000 1.0000 0.9999 0.9900 0.9997 0.9979 0.9939 1.0000 0.9996	100.00 100.00 100.00 99.99 98.99 98.74 98.14 98.14 98.11
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	2,236,897 2,119,330 2,051,262 1,953,841 1,922,259 1,871,245 1,735,102 1,206,866 1,205,201 1,205,200	17,009 53,187 42,332 4,721 679 106,649 35,655 4 1 795	0.0076 0.0251 0.0206 0.0024 0.0004 0.0570 0.0205 0.0000 0.0000	0.9924 0.9749 0.9794 0.9976 0.9996 0.9430 0.9795 1.0000 1.0000 0.9993	97.72 96.98 94.55 92.60 92.37 92.34 87.08 85.29 85.29
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	1,203,598 1,144,534 610,193 342,885 315,053 312,120 311,270 300,130 280,508 279,209	60 1 52 25,064 25 849 1,433 1,438 1,300	0.0000 0.0000 0.0001 0.0731 0.0001 0.0027 0.0046 0.0048 0.0046	1.0000 1.0000 0.9999 0.9269 0.9999 0.9973 0.9954 0.9952 0.9954	85.23 85.23 85.22 78.99 78.98 78.77 78.41 78.03 77.67
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	268,277 124,344 122,941 102,273 101,861 98,389 98,165 97,443 92,592 91,938	83 1,403 17,173 412 3,471 224 722 3,544 654 47	0.0003 0.0113 0.1397 0.0040 0.0341 0.0023 0.0074 0.0364 0.0071 0.0005	0.9997 0.9887 0.8603 0.9960 0.9659 0.9977 0.9926 0.9636 0.9929 0.9995	74.77 74.75 73.91 63.58 63.33 61.17 61.03 60.58 58.38 57.96



ACCOUNTS 311.00, 321.00, 331.00 AND 341.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNTS 304.10, 304.20, 304.30 AND 304.40)

ORIGINAL LIFE TABLE, CONT.

PLACEMENT I	BAND 1915-2019		EXPER	RIENCE BAN	D 1915-2019
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	91,891 89,939 62,615 62,340 59,346 58,559 58,405 52,407 51,535 50,182	872	0.0212 0.0034 0.0044 0.0480 0.0043 0.0026 0.1027 0.0166 0.0263 0.0207	0.9788 0.9966 0.9956 0.9520 0.9957 0.9974 0.8973 0.9834 0.9737	57.93 56.70 56.51 56.26 53.56 53.33 53.19 47.73 46.93 45.70
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	49,142 47,088 47,057 26,372 25,688 25,022 13,983 8,095 7,853 7,776	2,054 31 993 684 666 557 187 242 77 1,179		0.9582 0.9993 0.9789 0.9741 0.9741 0.9778 0.9866 0.9701 0.9902 0.8484	44.75 42.88 42.86 41.95 40.86 39.80 38.92 38.40 37.25 36.89
59.5 60.5	6,598 6,592	6 80	0.0009 0.0121	0.9991 0.9879	31.30 31.27



61.5

30.89

ACCOUNTS 311.00, 321.00, 331.00 AND 341.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNTS 304.10, 304.20, 304.30 AND 304.40)

ORIGINAL LIFE TABLE

PLACEMENT E	BAND 1951-2019		EXPEF	RIENCE BAN	D 2008-2019
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	379,340 434,687 461,548 524,099 599,108 1,146,833 1,152,753 1,137,595 1,232,984 1,262,673	194 7,672 15,158 942 9,412	0.0000 0.0000 0.0004 0.0146 0.0000 0.0000 0.0131 0.0000 0.0008 0.0075	1.0000 1.0000 0.9996 0.9854 1.0000 1.0000 0.9869 1.0000 0.9992 0.9925	100.00 100.00 100.00 99.96 98.49 98.49 97.20 97.20 97.13
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	1,617,560 1,772,402 1,707,781 1,615,717 1,584,135 1,542,830 1,424,872 897,427 896,287 1,064,558	17,009 53,187 42,332 4,721 678 106,649 35,655	0.0105 0.0300 0.0248 0.0029 0.0004 0.0691 0.0250 0.0000 0.0000	0.9895 0.9700 0.9752 0.9971 0.9996 0.9309 0.9750 1.0000 1.0000 0.9993	96.40 95.39 92.53 90.23 89.97 89.93 83.71 81.62 81.62 81.62
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5	1,062,959 1,007,450 473,110 206,505 180,646 179,109 180,881 197,273 177,718 176,603	24,421 650 1,332 1,370 1,115 10,321	0.0000 0.0000 0.0000 0.1183 0.0000 0.0036 0.0074 0.0069 0.0063 0.0584	1.0000 1.0000 1.0000 0.8817 1.0000 0.9964 0.9926 0.9931 0.9937 0.9416	81.56 81.56 81.56 81.56 71.91 71.91 71.65 71.12 70.63 70.19
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5	192,779 49,043 49,043 28,971 28,857 28,857 28,857 28,857 27,550	17,110 114	0.0000 0.0000 0.3489 0.0039 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 0.6511 0.9961 1.0000 1.0000 1.0000 1.0000 1.0000	66.09 66.09 43.03 42.86 42.86 42.86 42.86 42.86 42.86



ACCOUNTS 311.00, 321.00, 331.00 AND 341.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNTS 304.10, 304.20, 304.30 AND 304.40)

ORIGINAL LIFE TABLE, CONT.

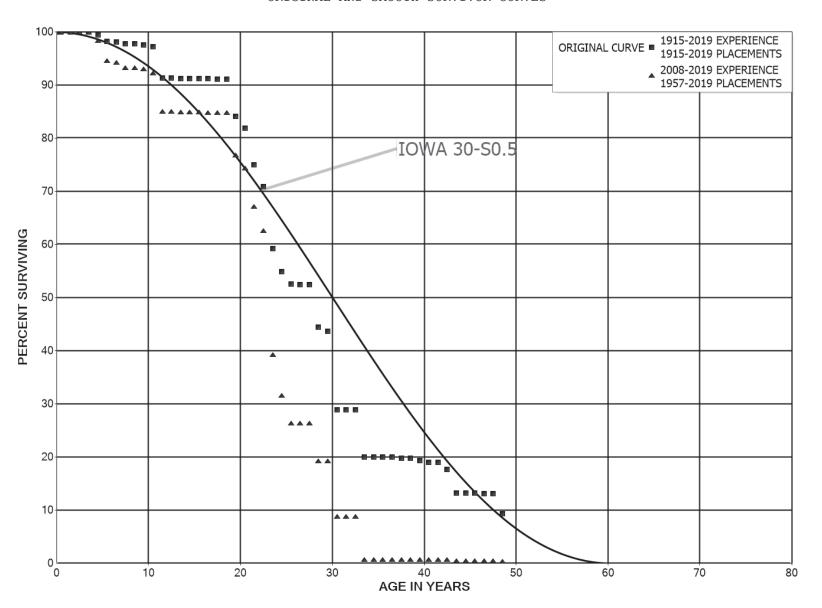
PLACEMENT :	BAND 1951-2019		EXPER	RIENCE BAN	D 2008-2019
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 47.5 48.5	27,750 48,982 22,076 21,876 32,044 37,101 37,101 37,890 38,255 37,029	200 314 110 1,226 789	0.0000 0.0000 0.0091 0.0144 0.0034 0.0000 0.0000 0.0000 0.0320 0.0213	1.0000 1.0000 0.9909 0.9856 0.9966 1.0000 1.0000 0.9680 0.9787	42.86 42.86 42.47 41.86 41.72 41.72 41.72 41.72 40.38
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5	42,936 42,793 42,793 23,446 23,225 23,225 12,212 6,867 6,867	365 185 221 530	0.0085 0.0000 0.0043 0.0094 0.0000 0.0228 0.0000 0.0000	0.9915 1.0000 0.9957 0.9906 1.0000 0.9772 1.0000 1.0000	39.52 39.18 39.18 39.02 38.65 38.65 37.77 37.77
58.5 59.5 60.5	6,867 6,512 6,512	355	0.0517 0.0000 0.0000	0.9483 1.0000 1.0000	37.77 35.81 35.81



61.5

35.81

AQUARION WATER COMPANY OF NEW HAMPSHIRE ACCOUNT 314.00 WELLS AND SPRINGS (NARUC ACCOUNT 307.00) ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 314.00 WELLS AND SPRINGS (NARUC ACCOUNT 307.00)

ORIGINAL LIFE TABLE

PLACEMENT E	BAND 1915-2019		EXPER	RIENCE BAN	D 1915-2019
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	4,197,956 3,692,160 3,660,173 3,631,488 3,631,364 3,529,552 3,485,607 3,464,902 3,314,564 3,181,132	43 64 2,674 124 17,517 43,946 3,696 13,307 1,616 3,925	0.0000 0.0000 0.0007 0.0000 0.0048 0.0125 0.0011 0.0038 0.0005 0.0012	1.0000 1.0000 0.9993 1.0000 0.9952 0.9875 0.9989 0.9962 0.9995 0.9988	100.00 100.00 100.00 99.92 99.92 99.44 98.20 98.10 97.72 97.67
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	3,086,797 3,033,518 2,468,217 2,344,442 2,342,765 2,340,138 2,339,753 2,212,666 2,147,352 2,146,572	11,730 184,092 19 1,677 1 385 2,038 1,169 780 164,945	0.0038 0.0607 0.0000 0.0007 0.0000 0.0002 0.0009 0.0005 0.0004 0.0768	0.9962 0.9393 1.0000 0.9993 1.0000 0.9998 0.9991 0.9995 0.9996	97.55 97.18 91.28 91.22 91.22 91.20 91.12 91.07 91.04
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	1,981,627 1,929,407 1,329,463 418,203 341,299 307,798 281,741 280,660 280,660 237,740	52,220 162,199 73,341 68,910 24,742 12,957 1,081 42,920 3,793	0.0264 0.0841 0.0552 0.1648 0.0725 0.0421 0.0038 0.0000 0.1529 0.0160	0.9736 0.9159 0.9448 0.8352 0.9275 0.9579 0.9962 1.0000 0.8471 0.9840	84.05 81.83 74.95 70.82 59.15 54.86 52.55 52.35 44.34
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	233,946 120,042 105,652 105,652 71,854 71,243 70,908 70,907 70,113 70,109	79,224 150 32,340 0 336 1 794 4 1,426	0.3386 0.0012 0.0000 0.3061 0.0000 0.0047 0.0000 0.0112 0.0001 0.0203	0.6614 0.9988 1.0000 0.6939 1.0000 0.9953 1.0000 0.9888 0.9999 0.9797	43.64 28.86 28.82 28.82 20.00 20.00 19.91 19.91 19.68 19.68



ACCOUNT 314.00 WELLS AND SPRINGS (NARUC ACCOUNT 307.00)

ORIGINAL LIFE TABLE, CONT.

PLACEMENT E	BAND 1915-2019		EXPER	RIENCE BAN	D 1915-2019
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	68,683 67,644 67,644 62,819 47,108 47,107 47,070 44,430 44,419	1,039 4,825 15,712 1 37 521 11 12,998	0.0000 0.0008 0.0111 0.0003 0.2926	0.9849 1.0000 0.9287 0.7499 1.0000 0.9992 0.9889 0.9997	19.28 18.99 18.99 17.64 13.22 13.22 13.21 13.07
48.5 49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	31,421 31,335 31,096 31,096 19,761 19,489 18,254 13,717 9,790 9,526 9,526	272 1,235 52 3,927 264	0.0027 0.0076 0.0000 0.0000 0.0138 0.0634 0.0029 0.2863 0.0269 0.0000 0.0000	0.9973 0.9924 1.0000 1.0000 0.9862 0.9366 0.9971 0.7137 0.9731 1.0000 1.0000	9.24 9.22 9.15 9.15 9.02 8.45 8.42 6.01 5.85 5.85
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5	9,526 9,526 9,526 5,915 5,915 5,376 3,943 2,908	538 1,433 1,035 2,908	0.0000 0.0000 0.0000 0.0000 0.0910 0.2665 0.2624 1.0000	1.0000 1.0000 1.0000 1.0000 0.9090 0.7335 0.7376	5.85 5.85 5.85 5.85 5.85 5.32 3.90 2.88



67.5

ACCOUNT 314.00 WELLS AND SPRINGS (NARUC ACCOUNT 307.00)

ORIGINAL LIFE TABLE

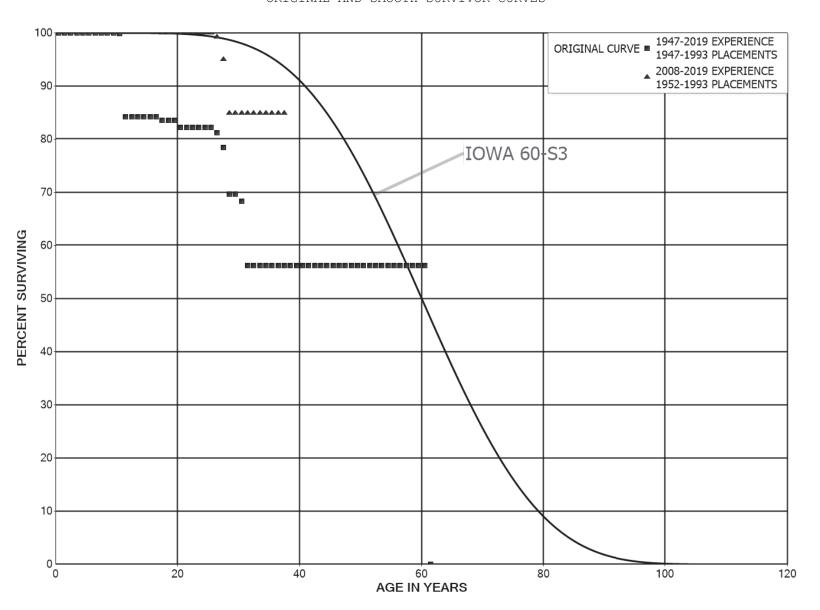
PLACEMENT E	BAND 1957-2019		EXPEF	RIENCE BAN	D 2008-2019
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5	1,523,375 1,141,376 1,109,453 1,086,702 1,088,788 1,123,766 1,144,370 1,124,151 976,092 1,027,281	2,575 17,506 43,595 3,210 11,895 850 2,086	0.0000 0.0000 0.0023 0.0000 0.0161 0.0388 0.0028 0.0106 0.0009 0.0020	1.0000 1.0000 0.9977 1.0000 0.9839 0.9612 0.9972 0.9894 0.9991 0.9980	100.00 100.00 100.00 99.77 99.77 98.16 94.36 94.09 93.10 93.01
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	1,534,187 2,319,633 1,762,563 1,647,567 1,658,993 1,656,367 1,656,367 1,532,142 1,520,182 1,716,814	11,730 183,855 1,674 2,027	0.0076 0.0793 0.0000 0.0010 0.0000 0.0000 0.0012 0.0000 0.0000 0.0946	0.9924 0.9207 1.0000 0.9990 1.0000 1.0000 0.9988 1.0000 1.0000	92.83 92.12 84.81 84.81 84.73 84.73 84.73 84.62 84.62
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	1,641,801 1,658,099 1,080,861 183,133 106,657 76,897 93,380 93,380 155,372 112,981	52,184 161,951 73,228 68,482 21,000 12,808	0.0318 0.0977 0.0678 0.3739 0.1969 0.1666 0.0000 0.0000 0.2728 0.0000	0.9682 0.9023 0.9322 0.6261 0.8031 0.8334 1.0000 1.0000 0.7272 1.0000	76.62 74.18 66.94 62.40 39.07 31.37 26.15 26.15 26.15
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	112,981 48,397 34,157 34,157 611 2,119 2,119 2,119 2,119 2,119	61,992 32,088	0.5487 0.0000 0.0000 0.9394 0.0000 0.0000 0.0000 0.0000	0.4513 1.0000 1.0000 0.0606 1.0000 1.0000 1.0000 1.0000	19.01 8.58 8.58 8.58 0.52 0.52 0.52 0.52 0.52

ACCOUNT 314.00 WELLS AND SPRINGS (NARUC ACCOUNT 307.00)

ORIGINAL LIFE TABLE, CONT.

PLACEMENT E	BAND 1957-2019	EXPEF	RIENCE BAN	D 2008-2019	
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	2,119 26,837 26,837 26,837 17,938 17,938 30,031 27,912 27,912 16,065	13,384	0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 0.5013 1.0000 1.0000 1.0000 0.5667 1.0000	0.52 0.52 0.52 0.52 0.26 0.26 0.26 0.26 0.26
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	16,065 22,639 22,639 11,304 11,058 11,058 6,574 3,875 3,612 3,612	246 2,699 264	0.0000 0.0000 0.4105	1.0000 1.0000 1.0000 0.9783 1.0000 1.0000 0.5895 0.9320 1.0000	0.15 0.15 0.15 0.15 0.14 0.14 0.14 0.09 0.08
59.5 60.5 61.5 62.5	3,612 3,612 3,612		0.0000 0.0000 0.0000	1.0000 1.0000 1.0000	0.08 0.08 0.08 0.08

AQUARION WATER COMPANY OF NEW HAMPSHIRE ACCOUNT 316.00 SUPPLY MAINS (NARUC ACCOUNT 309.00) ORIGINAL AND SMOOTH SURVIVOR CURVES



Aquarion Water Company of New Hampshare Docket No. DW 20-184
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ACCOUNT 316.00 SUPPLY MAINS (NARUC ACCOUNT 309.00)

ORIGINAL LIFE TABLE

PLACEMENT E	BAND 1947-1993		EXPER	RIENCE BAN	D 1947-2019
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	241,343 241,342 241,316 241,284 241,281 241,122 241,122 241,122 241,122 241,119	1 26 32 3 160 0 3 16 16	0.0000 0.0001 0.0001 0.0000 0.0007 0.0000 0.0000 0.0000 0.0001	1.0000 0.9999 0.9999 1.0000 0.9993 1.0000 1.0000 1.0000 0.9999 0.9999	100.00 100.00 99.99 99.98 99.97 99.91 99.91 99.91 99.91
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	241,088 241,058 203,061 203,061 203,061 203,061 203,061 203,061 201,426 201,426	30 37,997 1,634	0.0001 0.1576 0.0000 0.0000 0.0000 0.0000 0.0000 0.0080 0.0000	0.9999 0.8424 1.0000 1.0000 1.0000 1.0000 0.9920 1.0000 1.0000	99.89 99.88 84.14 84.14 84.14 84.14 84.14 84.14 83.46 83.46
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	201,426 198,425 198,425 198,425 198,390 198,345 198,345 195,974 189,276 167,944	3,002 34 46 2,371 6,698 21,333	0.0149 0.0000 0.0000 0.0002 0.0002 0.0000 0.0120 0.0342 0.1127 0.0000	0.9851 1.0000 1.0000 0.9998 0.9998 1.0000 0.9880 0.9658 0.8873 1.0000	83.46 82.22 82.22 82.22 82.20 82.18 82.18 81.20 78.43 69.59
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	165,389 42,412 34,935 34,935 34,935 34,935 34,935 34,935 23,367 23,367	3,156 7,476	0.0191 0.1763 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	0.9809 0.8237 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	69.59 68.26 56.23 56.23 56.23 56.23 56.23 56.23 56.23

ACCOUNT 316.00 SUPPLY MAINS (NARUC ACCOUNT 309.00)

ORIGINAL LIFE TABLE, CONT.

PLACEMENT I	BAND 1947-1993		EXPERIENCE BAND 1947-2019			
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF 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	23,367 23,367 23,367 23,367 23,367 23,367 23,367 23,367 23,367		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	56.23 56.23 56.23 56.23 56.23 56.23 56.23 56.23 56.23	
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5	23,367 23,367 23,367 19,821 19,821 19,821 19,821 19,821 19,821		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	56.23 56.23 56.23 56.23 56.23 56.23 56.23 56.23 56.23	
59.5 60.5	19,821 19,821	19,821	0.0000	1.0000	56.23 56.23	



61.5

ACCOUNT 316.00 SUPPLY MAINS (NARUC ACCOUNT 309.00)

ORIGINAL LIFE TABLE

PLACEMENT BAND 1952-1993			EXPERIENCE BAND 2008-2019		
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					
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	1,634 1,634 1,634 2,555 123,753	1,634	0.0000 0.0000 1.0000 0.0000	1.0000	100.00
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	123,753 123,753 123,753 123,753 123,753 130,352 157,934 156,556 149,957 133,944	1,378 6,599 16,012	0.0000 0.0000 0.0000 0.0000 0.0000 0.0087 0.0422 0.1068 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 0.9913 0.9578 0.8932 1.0000	100.00 100.00 100.00 100.00 100.00 100.00 100.00 99.13 94.95 84.81
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	131,390 11,569 11,569 11,569 11,569 11,569 11,569		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	84.81 84.81 84.81 84.81 84.81 84.81 84.81 84.81

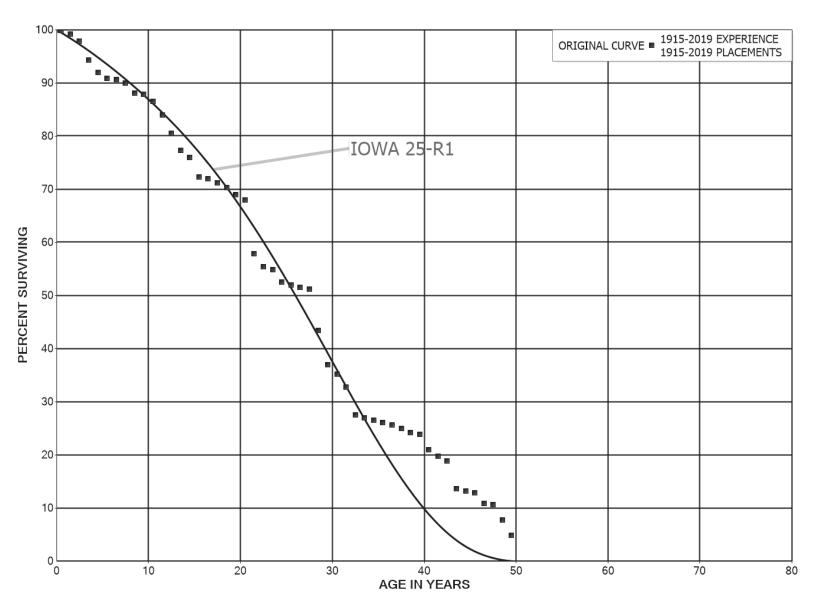
ACCOUNT 316.00 SUPPLY MAINS (NARUC ACCOUNT 309.00)

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1952-1993			EXPERIENCE BAND 2008-2019			
	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO		
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 47.5 48.5	3,546 3,546 3,546 3,546 3,546 3,546 3,546 3,546		0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000			
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	3,546 3,546 3,546 19,821 19,821 19,821 19,821		0.0000 0.0000 0.0000 0.0000 0.0000 0.0000			
59.5 60.5 61.5	19,821 19,821	19,821	0.0000			



AQUARION WATER COMPANY OF NEW HAMPSHIRE ACCOUNTS 325.00 AND 328.00 PUMPING EQUIPMENT (NARUC ACCOUNTS 311.10 AND 311.20) ORIGINAL AND SMOOTH SURVIVOR CURVES



Aquarion Water Company of New Hampshare Docket No. DW 20-184
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ACCOUNTS 325.00 AND 328.00 PUMPING EQUIPMENT (NARUC ACCOUNTS 311.10 AND 311.20)

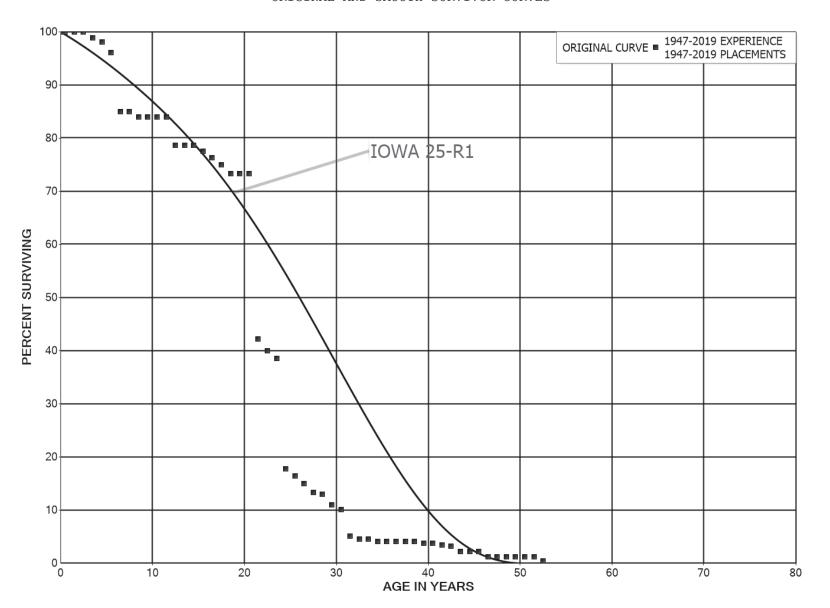
PLACEMENT E	BAND 1915-2019		EXPEF	RIENCE BAN	D 1915-2019
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	1,860,362	2,157	0.0012	0.9988	100.00
0.5	1,779,427	12,047	0.0068	0.9932	99.88
1.5	1,717,149	23,860	0.0139	0.9861	99.21
2.5	1,676,659	61,450	0.0367	0.9633	97.83
3.5	1,591,747	39,175	0.0246	0.9754	94.24
4.5	1,529,126	18,847	0.0123	0.9877	91.92
5.5	1,475,453	3,653	0.0025	0.9975	90.79
6.5	1,343,321	8,447	0.0063	0.9937	90.57
7.5	1,269,150	26,472	0.0209	0.9791	90.00
8.5	1,200,101	4,621	0.0039	0.9961	88.12
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	1,185,105 1,133,446 1,098,415 1,051,745 1,008,392 967,624 906,751 831,621 822,227 811,735	17,876 32,848 44,402 43,353 16,328 47,620 3,706 9,395 10,492 15,247	0.0151 0.0290 0.0404 0.0412 0.0162 0.0492 0.0041 0.0113 0.0128 0.0188	0.9849 0.9710 0.9596 0.9588 0.9838 0.9508 0.9959 0.9887 0.9872	87.78 86.46 83.95 80.56 77.24 75.99 72.25 71.95 71.14 70.23
19.5	743,231	11,018	0.0148	0.9852	68.91
20.5	732,213	108,639	0.1484	0.8516	67.89
21.5	612,006	25,130	0.0411	0.9589	57.82
22.5	586,877	6,015	0.0102	0.9898	55.44
23.5	563,045	24,565	0.0436	0.9564	54.87
24.5	537,482	5,138	0.0096	0.9904	52.48
25.5	510,544	4,688	0.0092	0.9908	51.98
26.5	505,855	3,682	0.0073	0.9927	51.50
27.5	502,173	76,254	0.1518	0.8482	51.13
28.5	417,580	62,229	0.1490	0.8510	43.36
29.5	355,351	16,445	0.0463	0.9537	36.90
30.5	175,074	12,075	0.0690	0.9310	35.19
31.5	162,999	25,975	0.1594	0.8406	32.77
32.5	125,223	2,461	0.0197	0.9803	27.54
33.5	122,763	2,058	0.0168	0.9832	27.00
34.5	120,705	1,964	0.0163	0.9837	26.55
35.5	118,741	2,104	0.0177	0.9823	26.12
36.5	95,725	2,609	0.0273	0.9727	25.66
37.5	93,116	2,761	0.0296	0.9704	24.96
38.5	90,355	1,384	0.0153	0.9847	24.22

ACCOUNTS 325.00 AND 328.00 PUMPING EQUIPMENT (NARUC ACCOUNTS 311.10 AND 311.20)

PLACEMENT :	BAND 1915-2019		EXPER	RIENCE BAN	D 1915-2019
AGE AT	EXPOSURES AT	RETIREMENTS			PCT SURV
BEGIN OF	BEGINNING OF	DURING AGE	RETMT	SURV	BEGIN OF
INTERVAL	AGE INTERVAL	INTERVAL	RATIO	RATIO	INTERVAL
39.5	88,971	10,890	0.1224	0.8776	23.85
40.5	78,081	4,378	0.0561	0.9439	20.93
41.5	66,254	3,244	0.0490	0.9510	19.75
42.5	63,011	17,305	0.2746	0.7254	18.79
43.5	45,705	1,657	0.0363	0.9637	13.63
44.5	44,049	861	0.0195	0.9805	13.13
45.5	43,188	6,825	0.1580	0.8420	12.88
46.5	36,363	861	0.0237	0.9763	10.84
47.5	35,502	9,418	0.2653	0.7347	10.58
48.5	26,084	9,994	0.3832	0.6168	7.78
49.5	16,090	16	0.0010	0.9990	4.80
50.5	16,074	326	0.0203	0.9797	4.79
51.5	15,748	295	0.0187	0.9813	4.70
52.5	15,453	10,175	0.6584	0.3416	4.61
53.5	5 , 279		0.0000	1.0000	1.57
54.5	5 , 279	112	0.0212	0.9788	1.57
55.5	5 , 167		0.0000	1.0000	1.54
56.5	5 , 167	5 , 167	1.0000		1.54
57.5					



AQUARION WATER COMPANY OF NEW HAMPSHIRE ACCOUNT 332.00 WATER TREATMENT EQUIPMENT (NARUC ACCOUNT 320.00) ORIGINAL AND SMOOTH SURVIVOR CURVES



Aquarion Water Company of New Hampshare Docket No. DW 20-184
Attachment NWA-2
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ACCOUNT 332.00 WATER TREATMENT EQUIPMENT (NARUC ACCOUNT 320.00)

PLACEMENT E	BAND 1947-2019		EXPEF	RIENCE BAN	D 1947-2019
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	395,260 377,516 372,646 360,305 348,859 334,850 325,325 286,039 286,039 282,609	4,155 2,641 6,887 37,744 3,430	0.0000 0.0000 0.0000 0.0115 0.0076 0.0206 0.1160 0.0000 0.0120 0.0000	1.0000 1.0000 1.0000 0.9885 0.9924 0.9794 0.8840 1.0000	100.00 100.00 100.00 100.00 98.85 98.10 96.08 84.93 84.93 83.92
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	274,467 271,903 271,903 239,915 239,914 239,911 228,769 224,953 221,290 215,555	0 1 17,021 1 3 3,402 3,816 3,663 5,159 17	0.0000 0.0000 0.0626 0.0000 0.0000 0.0142 0.0167 0.0163 0.0233 0.0001	1.0000 1.0000 0.9374 1.0000 1.0000 0.9858 0.9833 0.9837 0.9767 0.9999	83.92 83.92 83.92 78.66 78.66 78.66 77.54 76.25 75.01 73.26
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	199,486 78,169 44,957 42,602 41,105 18,934 17,527 13,965 12,421 12,050	18 33,213 2,355 1,497 22,170 1,407 1,561 1,544 371 1,777	0.0001 0.4249 0.0524 0.0351 0.5394 0.0743 0.0891 0.1105 0.0299 0.1475	0.9999 0.5751 0.9476 0.9649 0.4606 0.9257 0.9109 0.8895 0.9701 0.8525	73.26 73.25 42.13 39.92 38.52 17.74 16.42 14.96 13.31 12.91
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	10,273 9,437 4,726 4,229 4,229 3,781 3,778 3,778 3,778	835 4,711 497 448 3	0.0813 0.4992 0.1053 0.0000 0.1059 0.0008 0.0000 0.0000 0.0000	0.9187 0.5008 0.8947 1.0000 0.8941 0.9992 1.0000 1.0000 0.9303	11.01 10.11 5.06 4.53 4.53 4.05 4.05 4.05 4.05 4.05

ACCOUNT 332.00 WATER TREATMENT EQUIPMENT (NARUC ACCOUNT 320.00)

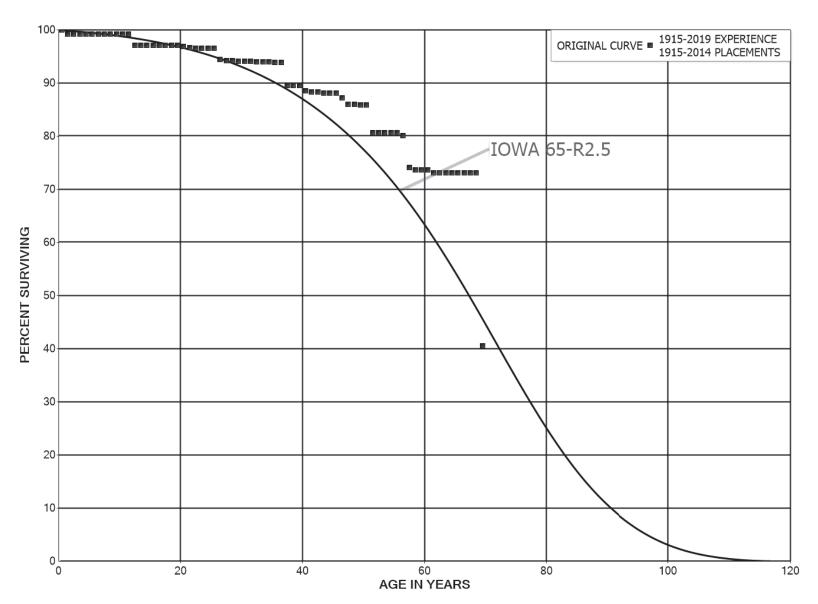
ORIGINAL LIFE TABLE, CONT.

PLACEMENT E	BAND 1947-2019		EXPER	RIENCE BAN	D 1947-2019
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	3,515	38	0.0108	0.9892	3.77
40.5	3 , 476	331	0.0953	0.9047	3.72
41.5	3 , 145	207	0.0657	0.9343	3.37
42.5	2,939	863	0.2938	0.7062	3.15
43.5	2,075		0.0000	1.0000	2.22
44.5	2,075		0.0000	1.0000	2.22
45.5	2,075	958	0.4614	0.5386	2.22
46.5	1,118		0.0000	1.0000	1.20
47.5	1,118		0.0000	1.0000	1.20
48.5	1,118		0.0000	1.0000	1.20
49.5	1,118		0.0000	1.0000	1.20
50.5	1,118		0.0000	1.0000	1.20
51.5	1,118	760	0.6802	0.3198	1.20
52.5	357	357	1.0000		0.38



53.5

AQUARION WATER COMPANY OF NEW HAMPSHIRE ACCOUNT 342.00 DISTRIBUTION RESERVOIRS AND STANDPIPES (NARUC ACCOUNT 330.00) ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 342.00 DISTRIBUTION RESERVOIRS AND STANDPIPES (NARUC ACCOUNT 330.00)

PLACEMENT E	BAND 1915-2014		EXPEF	RIENCE BAN	D 1915-2019
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	2,860,887 2,860,887 2,837,539 2,837,539 2,837,539 2,837,539 2,755,813 2,755,813 2,753,530 2,745,825 2,745,563	23,348	0.0000 0.0082 0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0000	1.0000 0.9918 1.0000 1.0000 1.0000 1.0000 1.0000 0.9999 1.0000	100.00 100.00 99.18 99.18 99.18 99.18 99.18 99.18 99.18
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	2,745,563 2,745,563 1,264,226 1,237,189 1,237,129 1,237,128 1,237,125 1,223,109 1,223,109 1,223,105	27,038 59 1 3 3 0 4	0.0000 0.0000 0.0214 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 0.9786 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	99.17 99.17 99.17 97.05 97.05 97.05 97.05 97.05 97.05
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	1,223,105 1,220,095 1,217,565 1,216,148 1,216,148 1,216,144 1,216,144 1,189,639 1,187,116 1,183,299	3,010 2,530 1,417 3 26,505 2,123 7 1,819	0.0025 0.0021 0.0012 0.0000 0.0000 0.0000 0.0218 0.0018 0.0000 0.0015	0.9975 0.9979 0.9988 1.0000 1.0000 0.9782 0.9982 1.0000 0.9985	97.05 96.81 96.61 96.50 96.50 96.50 94.39 94.22 94.22
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	1,181,480 1,180,751 1,180,746 1,176,514 1,176,403 1,176,373 1,174,476 200,347 189,496 189,496	134 5 1,532 111 29 1,897 1 9,063	0.0001 0.0000 0.0013 0.0001 0.0000 0.0016 0.0000 0.0452 0.0000 0.0010	0.9999 1.0000 0.9987 0.9999 1.0000 0.9984 1.0000 0.9548 1.0000 0.9990	94.08 94.07 94.07 93.95 93.94 93.93 93.78 93.78 89.54



ACCOUNT 342.00 DISTRIBUTION RESERVOIRS AND STANDPIPES (NARUC ACCOUNT 330.00)

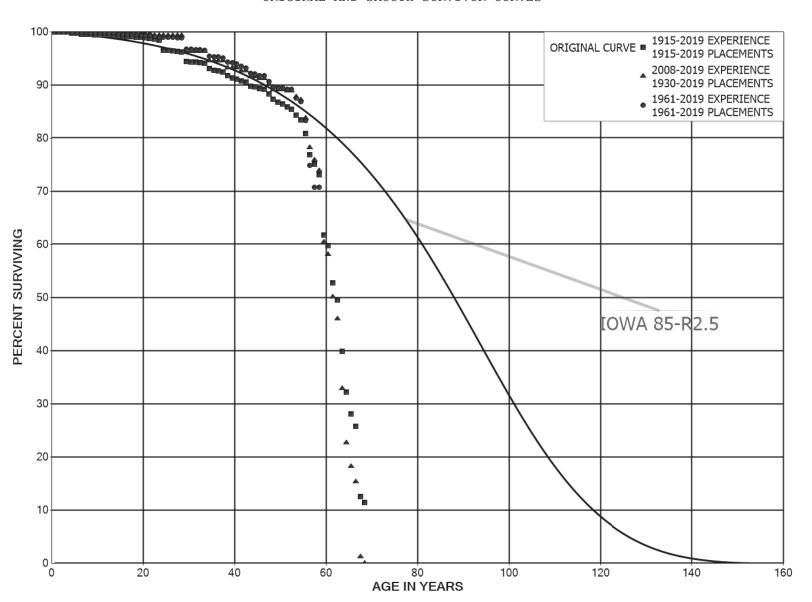
PLACEMENT E	BAND 1915-2014		EXPEF	RIENCE BAN	D 1915-2019
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 47.5 48.5	189,309 187,365 186,776 186,775 186,396 186,396 186,396 184,438 181,849	1,944 589 1 379 1,958 2,590 24 107	0.0103 0.0031 0.0000 0.0020 0.0000 0.0105 0.0140 0.0001 0.0006	0.9897 0.9969 1.0000 0.9980 1.0000 1.0000 0.9895 0.9860 0.9999	89.45 88.53 88.26 88.25 88.08 88.08 88.08 87.15 85.93 85.92
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	181,717 179,695 168,783 110,275 110,275 110,244 110,244 109,506 101,323 99,426	10,912 31 738 8,183 738	0.0000 0.0607 0.0000 0.0000 0.0003 0.0000 0.0067 0.0747 0.0073 0.0000	1.0000 0.9393 1.0000 1.0000 0.9997 1.0000 0.9933 0.9253 0.9927 1.0000	85.86 85.86 80.65 80.65 80.65 80.63 80.63 80.09 74.10 73.56
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5	99,426 99,426 98,687 98,687 98,687 98,687 22,518 22,518	738	0.0000 0.0074 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 0.9926 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.5555	73.56 73.56 73.02 73.02 73.02 73.02 73.02 73.02 73.02 73.02
69.5 70.5 71.5 72.5 73.5 74.5 75.5 76.5 77.5	12,508 12,508 12,508 12,508 12,508 12,508 12,508 12,508 12,508 12,508		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	40.56 40.56 40.56 40.56 40.56 40.56 40.56 40.56 40.56

ACCOUNT 342.00 DISTRIBUTION RESERVOIRS AND STANDPIPES (NARUC ACCOUNT 330.00)

PLACEMENT	BAND 1915-2014		EXPER	RIENCE BAN	D 1915-2019
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 85.5 86.5 87.5 88.5	12,508 12,508 12,508 12,508 12,508 12,508 12,508 12,508 12,508 12,508 12,508		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	40.56 40.56 40.56 40.56 40.56 40.56 40.56 40.56 40.56 40.56
90.5 91.5 92.5 93.5	12,508 12,508 12,508	12,508	0.0000 0.0000 1.0000	1.0000	40.56 40.56 40.56



AQUARION WATER COMPANY OF NEW HAMPSHIRE ACCOUNT 343.00 TRANSMISSION AND DISTRIBUTION MAINS (NARUC ACCOUNT 331.00) ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 343.00 TRANSMISSION AND DISTRIBUTION MAINS (NARUC ACCOUNT 331.00)

ORIGINAL LIFE TABLE

PLACEMENT E	BAND 1915-2019		EXPER	RIENCE BAN	D 1915-2019
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	27,865,554 25,132,837 22,097,686 21,198,231 19,822,916 18,778,132 17,927,637 17,129,349 16,364,002 15,665,014	1,494 5,558 2,336 9,249 39,294 8,505 23,343 6,681 4,707 6,346	0.0001 0.0002 0.0001 0.0004 0.0020 0.0005 0.0013 0.0004 0.0003 0.0004	0.9999 0.9998 0.9999 0.9996 0.9980 0.9995 0.9996 0.9997 0.9996	100.00 99.99 99.97 99.96 99.92 99.72 99.68 99.55 99.51
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	14,956,019 14,743,390 13,534,882 13,049,483 12,984,379 11,322,676 10,652,674 10,097,385 9,828,668 8,829,266	3,072 3,657 3,639 5,008 23,584 3,715 3,113 4,389 7,509 5,108	0.0002 0.0002 0.0003 0.0004 0.0018 0.0003 0.0003 0.0004 0.0008 0.0006	0.9998 0.9998 0.9997 0.9996 0.9982 0.9997 0.9997 0.9996 0.9992	99.44 99.42 99.39 99.37 99.33 99.15 99.11 99.09 99.04 98.97
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	8,004,240 7,739,537 7,177,338 6,815,202 6,755,033 6,427,129 6,126,283 5,992,849 5,853,243 5,762,760	4,201 6,629 15,075 12,822 125,508 4,941 5,868 5,367 5,366 108,655	0.0005 0.0009 0.0021 0.0019 0.0186 0.0008 0.0010 0.0009 0.0009	0.9995 0.9991 0.9979 0.9981 0.9814 0.9992 0.9990 0.9991 0.9991	98.91 98.86 98.77 98.57 98.38 96.55 96.48 96.39 96.30 96.21
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	5,521,532 5,093,970 4,457,404 3,932,266 3,580,872 3,247,009 3,005,835 2,698,405 2,510,868 2,466,475	3,680 4,860 4,038 3,973 38,409 10,800 4,481 5,715 18,939 10,343	0.0007 0.0010 0.0009 0.0010 0.0107 0.0033 0.0015 0.0021 0.0075 0.0042	0.9993 0.9990 0.9991 0.9990 0.9893 0.9967 0.9985 0.9979 0.9925 0.9958	94.40 94.33 94.24 94.16 94.06 93.05 92.75 92.61 92.41 91.71

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ACCOUNT 343.00 TRANSMISSION AND DISTRIBUTION MAINS (NARUC ACCOUNT 331.00)

ORIGINAL LIFE TABLE, CONT.

PLACEMENT	BAND 1915-2019		EXPER	RIENCE BAN	D 1915-2019
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	2,390,091	5,757 10,536 4,384 15,203 3,003 5,541 3,183 14,482 17,946 9,487	0.0024	0.9976	91.33
40.5	2,286,639		0.0046	0.9954	91.11
41.5	1,979,385		0.0022	0.9978	90.69
42.5	1,846,181		0.0082	0.9918	90.49
43.5	1,796,951		0.0017	0.9983	89.74
44.5	1,737,799		0.0032	0.9968	89.59
45.5	1,679,233		0.0019	0.9981	89.31
46.5	1,608,991		0.0090	0.9910	89.14
47.5	1,539,060		0.0117	0.9883	88.34
48.5	1,463,507		0.0065	0.9935	87.31
49.5	1,435,463	6,215	0.0043	0.9957	86.74
50.5	1,336,468	7,432	0.0056	0.9944	86.36
51.5	1,203,199	6,161	0.0051	0.9949	85.88
52.5	1,143,088	15,365	0.0134	0.9866	85.44
53.5	988,324	10,391	0.0105	0.9895	84.30
54.5	885,198	27,268	0.0308	0.9692	83.41
55.5	738,959	36,222	0.0490	0.9510	80.84
56.5	658,612	15,640	0.0237	0.9763	76.88
57.5	606,444	16,135	0.0266	0.9734	75.05
58.5	553,613	86,071	0.1555	0.8445	73.06
59.5	440,261	13,938	0.0317	0.9683	61.70
60.5	392,375	45,964	0.1171	0.8829	59.74
61.5	304,541	18,464	0.0606	0.9394	52.75
62.5	271,913	53,425	0.1965	0.8035	49.55
63.5	218,488	41,761	0.1911	0.8089	39.81
64.5	174,945	22,459	0.1284	0.8716	32.20
65.5	151,956	12,859	0.0846	0.9154	28.07
66.5	138,212	70,774	0.5121	0.4879	25.69
67.5	65,476	5,813	0.0888	0.9112	12.54
68.5	59,663	2,464	0.0413	0.9587	11.42
69.5 70.5 71.5 72.5 73.5 74.5 75.5 76.5 77.5	57,199 56,927 48,355 47,999 47,660 47,182 47,182 47,182 47,182 9,197	272 8,572 356 339 478 37,985 9,197	0.0048 0.1506 0.0074 0.0071 0.0100 0.0000 0.0000 0.0000 0.8051 1.0000	0.9952 0.8494 0.9926 0.9929 0.9900 1.0000 1.0000 0.1949	10.95 10.90 9.26 9.19 9.13 9.03 9.03 9.03 9.03

79.5

ACCOUNT 343.00 TRANSMISSION AND DISTRIBUTION MAINS (NARUC ACCOUNT 331.00)

PLACEMENT I	BAND 1930-2019		EXPEF	RIENCE BAN	D 2008-2019
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	14,226,715 11,977,251 9,004,409 9,745,410 9,038,691 8,585,377 8,007,715 8,224,662 8,285,914 7,872,347	3,345 6,939	0.0000 0.0003 0.0000 0.0007 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 0.9997 1.0000 0.9993 1.0000 1.0000 1.0000 1.0000 1.0000	100.00 100.00 99.97 99.97 99.90 99.90 99.90 99.90
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	7,725,267 7,862,771 6,705,267 6,425,903 6,661,713 5,130,949 4,598,902 4,140,683 4,010,086 3,442,076	20,211	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 0.9970 1.0000 1.0000 1.0000	99.90 99.90 99.90 99.90 99.60 99.60 99.60 99.60
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	3,253,864 3,514,462 3,306,313 3,245,865 3,427,734 3,561,145 3,447,062 3,449,761 3,381,563 3,394,141	8,840 1,158	0.0000 0.0000 0.0027 0.0004 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 0.9973 0.9996 1.0000 1.0000 1.0000 1.0000 0.9694	99.60 99.60 99.33 99.30 99.30 99.30 99.30 99.30
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	3,454,438 3,159,374 2,561,695 2,096,871 1,802,474 1,541,222 1,372,540 1,140,471 988,825 1,052,651	32,857 14,235	0.0000 0.0000 0.0000 0.0000 0.0182 0.0000 0.0000 0.0000 0.0144 0.0000	1.0000 1.0000 1.0000 0.9818 1.0000 1.0000 1.0000 0.9856 1.0000	96.26 96.26 96.26 96.26 94.50 94.50 94.50 94.50 93.14

ACCOUNT 343.00 TRANSMISSION AND DISTRIBUTION MAINS (NARUC ACCOUNT 331.00)

PLACEMENT E	BAND 1930-2019		EXPEF	RIENCE BAN	D 2008-2019
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	1,112,446 1,081,375 917,812 884,303 968,155 956,568 957,794 937,920 916,590 887,891	6,243 127 10,735 3,085 11,620 9,589 228	0.0000 0.0058 0.0001 0.0121 0.0000 0.0032 0.0000 0.0124 0.0105 0.0003	1.0000 0.9942 0.9999 0.9879 1.0000 0.9968 1.0000 0.9876 0.9895 0.9997	93.14 93.14 92.61 92.59 91.47 91.17 91.17 90.04 89.10
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	921,633 885,960 827,471 829,563 719,835 634,290 510,199 439,701 509,653 459,185	2,703 9,643 5,031 25,199 33,822 13,054 13,772 83,438	0.0000 0.0031 0.0000 0.0116 0.0070 0.0397 0.0663 0.0297 0.0270 0.1817	1.0000 0.9969 1.0000 0.9884 0.9930 0.9603 0.9337 0.9703 0.9730 0.8183	89.08 89.08 88.81 88.81 87.77 87.16 83.70 78.15 75.83 73.78
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5 68.5	348,466 301,059 217,560 185,698 132,597 89,413 71,647 59,451 2,594	13,459 41,628 17,700 53,101 41,402 17,235 11,311 54,894 2,594	0.0386 0.1383 0.0814 0.2860 0.3122 0.1928 0.1579 0.9234 1.0000	0.9614 0.8617 0.9186 0.7140 0.6878 0.8072 0.8421 0.0766	60.37 58.04 50.02 45.95 32.81 22.56 18.22 15.34 1.18
69.5 70.5 71.5 72.5 73.5 74.5 75.5 76.5 77.5 78.5	47,182 9,197	37,985 9 , 197	0.8051 1.0000		

ACCOUNT 343.00 TRANSMISSION AND DISTRIBUTION MAINS (NARUC ACCOUNT 331.00)

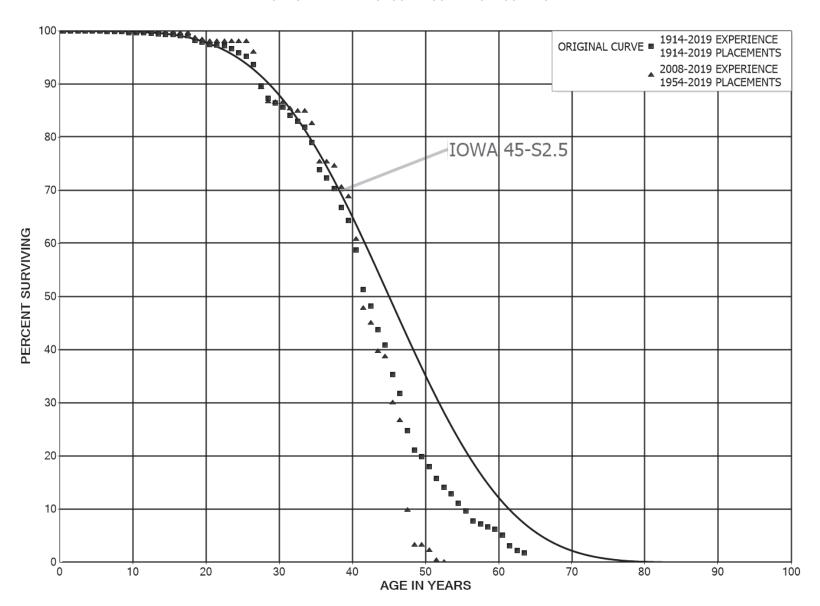
PLACEMENT E	BAND 1961-2019		EXPEF	RIENCE BAN	D 1961-2019
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5	26,895,650 24,163,439 21,129,040 20,230,304 18,855,738 17,848,428 17,004,446 16,227,078 15,466,270 14,769,843	987 4,807 1,617 8,500 1,820 1,992 2,423 2,141 2,147 2,004	0.0000 0.0002 0.0001 0.0004 0.0001 0.0001 0.0001 0.0001 0.0001	1.0000 0.9998 0.9999 0.9999 0.9999 0.9999 0.9999 0.9999	100.00 100.00 99.98 99.97 99.93 99.92 99.91 99.89 99.88
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	14,065,190 13,853,451 12,646,508 12,162,293 12,100,114 10,439,904 9,771,481 9,217,265 8,949,886 7,953,946	2,182 2,092 2,456 2,083 22,091 2,136 2,040 3,051 4,048 3,813	0.0002 0.0002 0.0002 0.0002 0.0018 0.0002 0.0002 0.0003 0.0005	0.9998 0.9998 0.9998 0.9998 0.9998 0.9998 0.9997 0.9995 0.9995	99.85 99.84 99.82 99.80 99.78 99.60 99.58 99.56 99.53
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	7,130,214 6,867,003 6,307,749 5,948,514 5,896,301 5,690,110 5,391,678 5,261,402 5,124,506 5,036,080	2,709 3,684 12,174 4,865 3,795 2,527 2,709 2,657 3,309 106,176	0.0004 0.0005 0.0019 0.0008 0.0006 0.0004 0.0005 0.0005 0.0006	0.9996 0.9995 0.9981 0.9992 0.9994 0.9996 0.9995 0.9995 0.9994	99.44 99.40 99.34 99.15 99.07 99.01 98.96 98.91 98.86 98.80
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	4,797,331 4,372,165 3,738,525 3,215,630 2,866,780 2,536,776 2,304,239 1,999,858 1,814,626 1,773,005	1,284 1,933 1,796 1,428 34,551 2,163 1,432 3,409 16,168 2,193	0.0003 0.0004 0.0005 0.0004 0.0121 0.0009 0.0006 0.0017 0.0089 0.0012	0.9997 0.9996 0.9995 0.9996 0.9879 0.9991 0.9994 0.9983 0.9911 0.9988	96.72 96.69 96.65 96.60 96.56 95.40 95.31 95.25 95.09 94.25

ACCOUNT 343.00 TRANSMISSION AND DISTRIBUTION MAINS (NARUC ACCOUNT 331.00)

PLACEMENT I	BAND 1961-2019		EXPER	RIENCE BAN	D 1961-2019
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	1,704,771 1,603,862 1,298,649 1,166,510 1,119,894 1,062,468 1,004,979 937,920 870,852 803,655	3,214 8,494 3,320 12,588 1,278 4,465 11,620 9,589 228	0.0019 0.0053 0.0026 0.0108 0.0011 0.0042 0.0000 0.0124 0.0110 0.0003	0.9981 0.9947 0.9974 0.9892 0.9989 0.9958 1.0000 0.9876 0.9890 0.9997	94.13 93.95 93.45 93.21 92.21 92.10 91.72 91.72 90.58 89.58
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	784,870 692,090 563,551 509,601 360,559 265,187 135,242 77,469 36,696	2,703 9,643 2,637 10,974 13,648 4,246	0.0000 0.0039 0.0000 0.0189 0.0073 0.0414 0.1009 0.0548 0.0000	1.0000 0.9961 1.0000 0.9811 0.9927 0.9586 0.8991 0.9452 1.0000	89.56 89.56 89.21 89.21 87.52 86.88 83.28 74.88 70.78



AQUARION WATER COMPANY OF NEW HAMPSHIRE ACCOUNT 345.00 SERVICES (NARUC ACCOUNT 333.00) ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 345.00 SERVICES (NARUC ACCOUNT 333.00)

PLACEMENT E	BAND 1914-2019		EXPEF	RIENCE BAN	D 1914-2019
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	6,019,045 5,925,842 5,804,129 5,803,145 5,618,805 5,617,675 5,257,542 5,145,902 5,047,246 4,902,960	411 961 983 1,064 1,131 1,282 1,481 1,620 1,786 7,395	0.0001 0.0002 0.0002 0.0002 0.0002 0.0002 0.0003 0.0003 0.0004 0.0015	0.9999 0.9998 0.9998 0.9998 0.9998 0.9997 0.9997 0.9996 0.9985	100.00 99.99 99.98 99.96 99.94 99.92 99.90 99.87 99.84 99.80
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	4,759,229 4,757,180 4,740,754 4,413,603 3,990,985 3,762,433 3,635,496 3,561,747 3,487,128 3,272,954	2,050 2,174 2,361 5,618 2,474 2,606 6,298 2,449 30,241 12,306	0.0004 0.0005 0.0005 0.0013 0.0006 0.0007 0.0017 0.0007 0.0087 0.0038	0.9996 0.9995 0.9995 0.9987 0.9994 0.9993 0.9983 0.9993 0.9993	99.65 99.61 99.56 99.52 99.39 99.33 99.26 99.09 99.02 98.16
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	2,959,829 2,691,891 2,459,334 426,379 414,684 405,044 363,547 348,959 334,018 323,528	11,107 2,845 3,008 2,625 3,289 2,571 6,221 14,941 8,449 3,399	0.0038 0.0011 0.0012 0.0062 0.0079 0.0063 0.0171 0.0428 0.0253 0.0105	0.9962 0.9989 0.9988 0.9938 0.9921 0.9937 0.9829 0.9572 0.9747 0.9895	97.79 97.42 97.32 97.20 96.60 95.84 95.23 93.60 89.59 87.33
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	310,461 297,028 281,768 251,002 220,520 186,852 168,383 154,451 141,681 128,908	2,756 5,425 3,887 3,415 7,596 12,120 3,443 4,347 7,256 4,711	0.0089 0.0183 0.0138 0.0136 0.0344 0.0649 0.0204 0.0281 0.0512 0.0365	0.9911 0.9817 0.9862 0.9864 0.9656 0.9351 0.9796 0.9719 0.9488 0.9635	86.41 85.64 84.08 82.92 81.79 78.97 73.85 72.34 70.30 66.70



ACCOUNT 345.00 SERVICES (NARUC ACCOUNT 333.00)

PLACEMENT I	BAND 1914-2019		EXPEF	RIENCE BAN	D 1914-2019
AGE AT BEGIN OF 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	115,490 88,267 72,516 67,684 60,651 56,669 43,778 39,328	11,180 4,396 6,291 3,983 7,721 4,450 8,668	0.0657 0.1362 0.1016 0.2204	0.9141 0.8733 0.9394 0.9071 0.9343 0.8638 0.8984 0.7796	64.27 58.75 51.30 48.19 43.72 40.84 35.28 31.69
47.5 48.5	30,660 26,144	4,516 1,551		0.8527 0.9407	24.71 21.07
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5 59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5 68.5	24,593 22,227 19,460 17,449 15,949 13,693 11,932 9,541 8,865 8,243 7,598 6,310 3,779 2,755 2,183 1,817 1,580 1,413 1,169 552	2,366 2,768 2,011 1,500 2,255 1,761 2,391 676 622 645 1,288 2,531 1,024 572 365 237 167 243 617 224	0.1245 0.1033 0.0859 0.1414 0.1286 0.2004 0.0709 0.0701 0.0783 0.1696 0.4011 0.2709 0.2078 0.1674 0.1305	0.9038 0.8755 0.8967 0.9141 0.8586 0.8714 0.7996 0.9291 0.9299 0.9217 0.8304 0.5989 0.7291 0.7922 0.8326 0.8695 0.8695 0.84723 0.5938	19.82 17.91 15.68 14.06 12.85 11.04 9.62 7.69 7.14 6.64 6.12 5.08 3.05 2.22 1.76 1.46 1.27 1.14 0.94 0.45
69.5 70.5 71.5 72.5 73.5 74.5 75.5	328 40 15 8 7 6 5	288 25 7 2 1 1	0.8767 0.6211 0.4595 0.2077 0.1326 0.1916 1.0000	0.1233 0.3789 0.5405 0.7923 0.8674 0.8084	0.26 0.03 0.01 0.01 0.01 0.00 0.00

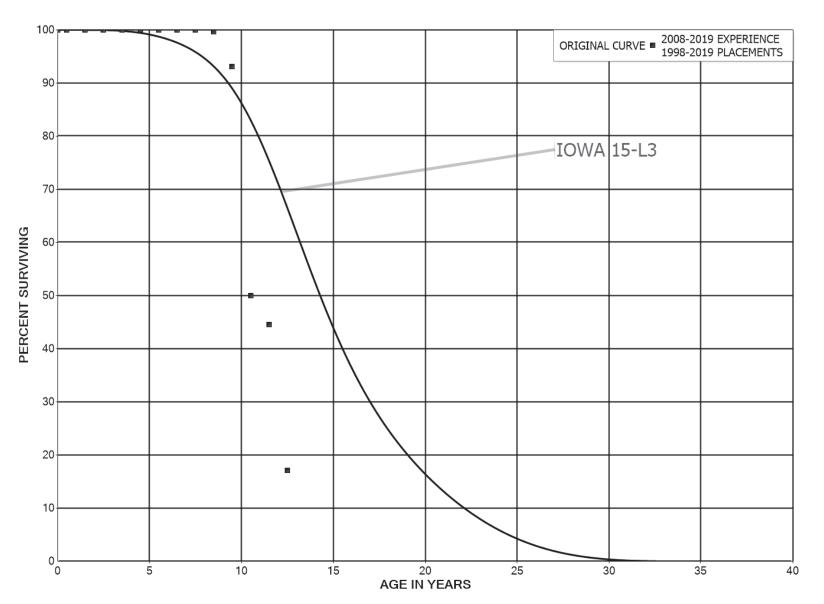
ACCOUNT 345.00 SERVICES (NARUC ACCOUNT 333.00)

PLACEMENT 1	BAND 1954-2019		EXPE	RIENCE BAN	D 2008-2019
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	1,255,954 1,487,952 1,784,200 2,010,279 1,951,332 2,018,784 1,737,561 1,811,335 2,015,118 2,129,450	5,457	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 0.9974	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	2,217,368 4,301,218 4,296,037 3,977,598 3,596,316 3,378,605 3,254,275 3,184,994 3,122,399 2,921,999	3,207 3,870 92 27,954 10,109	0.0000 0.0000 0.0000 0.0008 0.0000 0.0012 0.0000 0.0090 0.0035	1.0000 1.0000 1.0000 0.9992 1.0000 1.0000 0.9988 1.0000 0.9910	99.74 99.74 99.74 99.66 99.66 99.66 99.54 99.54 98.65
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	2,625,606 2,390,662 2,188,018 185,903 186,784 197,637 174,962 172,838 170,625 182,372	3,680 11,896 5,115 267	0.0033 0.0000 0.0000 0.0000 0.0000 0.0000 0.0210 0.0688 0.0300 0.0015	0.9967 1.0000 1.0000 1.0000 1.0000 0.9790 0.9312 0.9700 0.9985	98.31 97.98 97.98 97.98 97.98 97.98 97.98 95.92 89.32 86.64
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	181,426 173,822 167,922 146,683 126,094 98,395 91,053 86,425 77,025 67,353	2,548 766 3,577 8,488 977 4,156 1,660	0.0000 0.0147 0.0046 0.0000 0.0284 0.0863 0.0000 0.0113 0.0540 0.0247	1.0000 0.9853 0.9954 1.0000 0.9716 0.9137 1.0000 0.9887 0.9460 0.9753	86.52 86.52 85.25 84.86 84.86 82.45 75.34 75.34 74.49

ACCOUNT 345.00 SERVICES (NARUC ACCOUNT 333.00)

PLACEMENT :	BAND 1954-2019		EXPER	RIENCE BAN	D 2008-2019
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT 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	57,584 38,001 25,329 23,405 21,279 21,054 11,205 9,941 3,779 1,826	1,488 2,792 558 4,678 1,264	0.1166 0.2132 0.0588 0.1193 0.0262 0.2222 0.1128 0.6330 0.6701 0.0000	0.8834 0.7868 0.9412 0.8807 0.9738 0.7778 0.8872 0.3670 0.3299 1.0000	68.73 60.72 47.77 44.97 39.60 38.56 29.99 26.61 9.77 3.22
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5	2,039 1,392 213 1,592 1,592 1,592	647 1,179 213	0.8468 1.0000 0.0000 0.0000	0.6827 0.1532	3.22 2.20 0.34

AQUARION WATER COMPANY OF NEW HAMPSHIRE ACCOUNT 346.00 METERS (NARUC ACCOUNT 334.00) ORIGINAL AND SMOOTH SURVIVOR CURVES

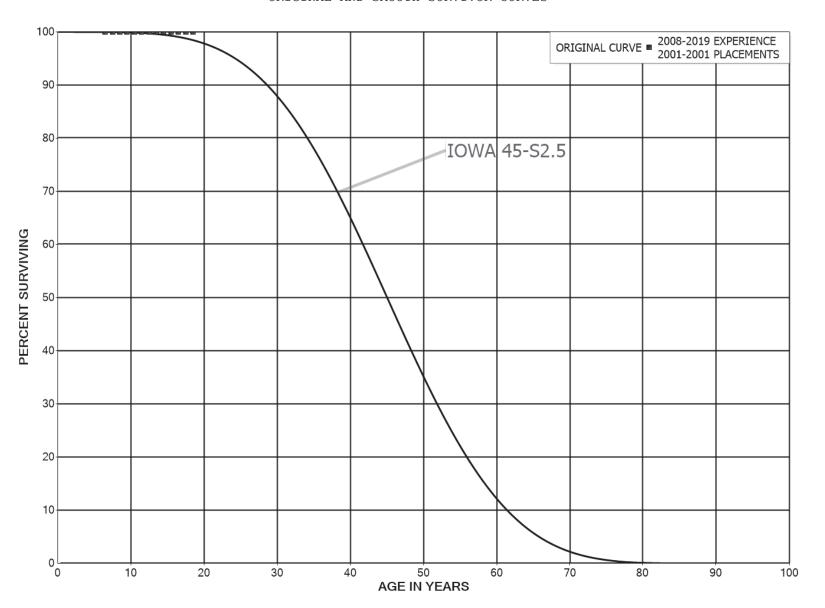


ACCOUNT 346.00 METERS (NARUC ACCOUNT 334.00)

PLACEMENT 1	BAND 1998-2019		EXPE	RIENCE BAN	D 2008-2019
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	1,433,412 1,738,397 1,625,249 1,724,472 1,496,941 1,506,426 1,322,870 1,294,361 1,039,973 1,083,454	4,032 71,118	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0039 0.0656	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9961 0.9344	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 99.61
9.5 10.5 11.5 12.5	1,028,152 551,236 488,288	476,600 59,603 300,796	0.4636 0.1081 0.6160	0.5364 0.8919 0.3840	93.07 49.93 44.53 17.10



AQUARION WATER COMPANY OF NEW HAMPSHIRE ACCOUNT 347.00 METER INSTALLATIONS (NARUC ACCOUNT 334.00) ORIGINAL AND SMOOTH SURVIVOR CURVES

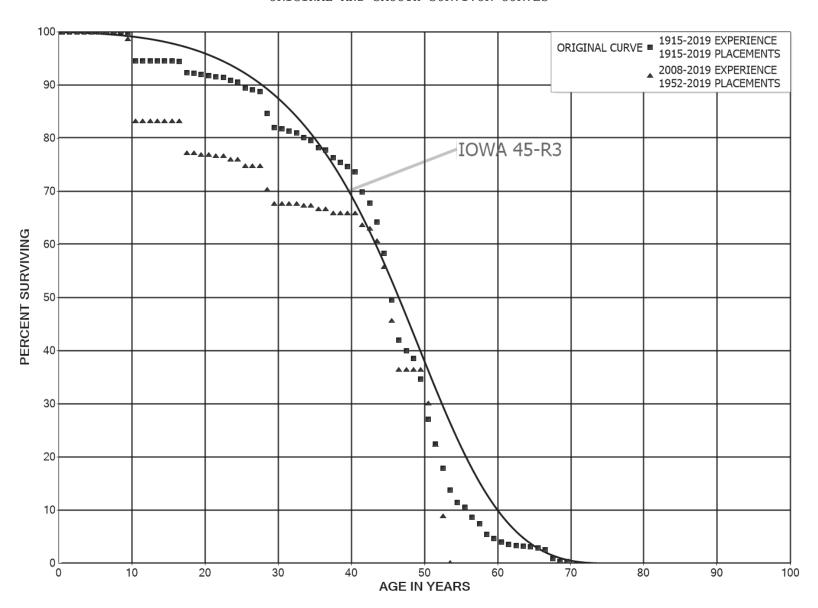


ACCOUNT 347.00 METER INSTALLATIONS (NARUC ACCOUNT 334.00)

PLACEMENT BAND 2001-2001				RIENCE BAN	D 2008-2019
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	198,719 198,719 198,719		0.0000 0.0000 0.0000	1.0000 1.0000 1.0000	100.00 100.00 100.00
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	198,719 198,719 198,719 198,719 198,719 198,719 198,719 198,719 198,719		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	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00



AQUARION WATER COMPANY OF NEW HAMPSHIRE ACCOUNT 348.00 HYDRANTS (NARUC ACCOUNT 335.00) ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 348.00 HYDRANTS (NARUC ACCOUNT 335.00)

PLACEMENT E	BAND 1915-2019		EXPEF	RIENCE BAN	D 1915-2019
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	857,863 848,510 845,396 845,396 838,097 838,097 811,812 790,583 774,601 743,676	0 0 0 2 4 8 4,015	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 0.9946	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	676,537 643,050 643,012 574,917 551,672 542,422 535,598 530,563 516,271 512,395	33,487 38 64 104 118 158 241 11,936 587 1,541	0.0495 0.0001 0.0001 0.0002 0.0002 0.0003 0.0005 0.0225 0.0011 0.0030	0.9505 0.9999 0.9999 0.9998 0.9997 0.9995 0.9775 0.9989 0.9970	99.46 94.54 94.53 94.52 94.50 94.48 94.46 94.41 92.29 92.18
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	483,224 454,456 445,950 434,320 425,120 412,590 398,371 375,377 361,769 341,073	690 1,319 706 2,697 1,168 5,023 1,637 1,708 16,431	0.0014 0.0029 0.0016 0.0062 0.0027 0.0122 0.0041 0.0045 0.0454	0.9986 0.9971 0.9984 0.9938 0.9973 0.9878 0.9959 0.9955 0.9546 0.9684	91.91 91.78 91.51 91.36 90.80 90.55 89.45 89.08 88.67 84.64
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5	325,215 299,033 256,490 229,099 204,065 191,714 179,592 150,694 133,165 113,694	981 1,419 1,406 2,264 1,553 3,069 1,222 2,718 1,448 1,253	0.0030 0.0047 0.0055 0.0099 0.0076 0.0160 0.0068 0.0180 0.0109 0.0110	0.9970 0.9953 0.9945 0.9901 0.9924 0.9840 0.9932 0.9820 0.9891 0.9890	81.97 81.73 81.34 80.89 80.09 79.48 78.21 77.68 76.28 75.45



ACCOUNT 348.00 HYDRANTS (NARUC ACCOUNT 335.00)

PLACEMENT E	BAND 1915-2019		EXPER	RIENCE BAN	TD 1915-2019
AGE AT	EXPOSURES AT	RETIREMENTS			PCT SURV
BEGIN OF	BEGINNING OF	DURING AGE	RETMT	SURV	BEGIN OF
INTERVAL	AGE INTERVAL	INTERVAL	RATIO	RATIO	INTERVAL
39.5	95,927	1,301		0.9864	74.62
40.5	72,656	3,718	0.0512	0.9488	73.60
41.5	57,787	1,703		0.9705	69.84
42.5	53,130	=, ===	0.0539	0.9461	67.78
43.5	49,041	4,430		0.9097	
44.5	37,522	5,693		0.8483	
45.5	30,374	4,597		0.8486	
46.5 47.5	20,511	1,002 579		0.9512 0.9632	42.00
48.5	15,751 14,093	1,400		0.9032	
49.5	10,941	2,380		0.7825	34.65
50.5	6,866	1,189		0.8268	27.11
51.5	5,240	1,000	0.2067	0.7933	22.42
52.5	4,157	960	0.2310	0.7690	17.78
53.5	3,197	522	0.1634	0.8366	
54.5 55.5	2,674	220 435	0.0821 0.1772	0.9179 0.8228	
56.5	2,455 2,020	298	0.1772	0.8523	
57.5	1,722	469	0.2724	0.7276	7.37
58.5	1,253	172	0.1371	0.8629	
59.5	1,081	169	0.1560	0.8440	4.62
60.5	912	85	0.1300	0.9069	3.90
61.5	827	64	0.0768	0.9232	3.54
62.5	764	22	0.0286	0.9714	3.27
63.5	742	38	0.0510	0.9490	3.17
64.5	704	29	0.0411	0.9589	3.01
65.5	675	94	0.1392	0.8608	2.89
66.5	581	389	0.6690	0.3310	2.49
67.5	192	119	0.6179	0.3821	0.82
68.5	74	14	0.1892	0.8108	0.31
69.5	60	24		0.6039	0.26
70.5	36			0.5889	
71.5	21	15	0.6958	0.3042	0.09
72.5	6		0.0000	1.0000	0.03
73.5	6	4	0.6465	0.3535	0.03
74.5	2	_	0.0000	1.0000	0.01
75.5	2	2	1.0000		0.01
76.5					

ACCOUNT 348.00 HYDRANTS (NARUC ACCOUNT 335.00)

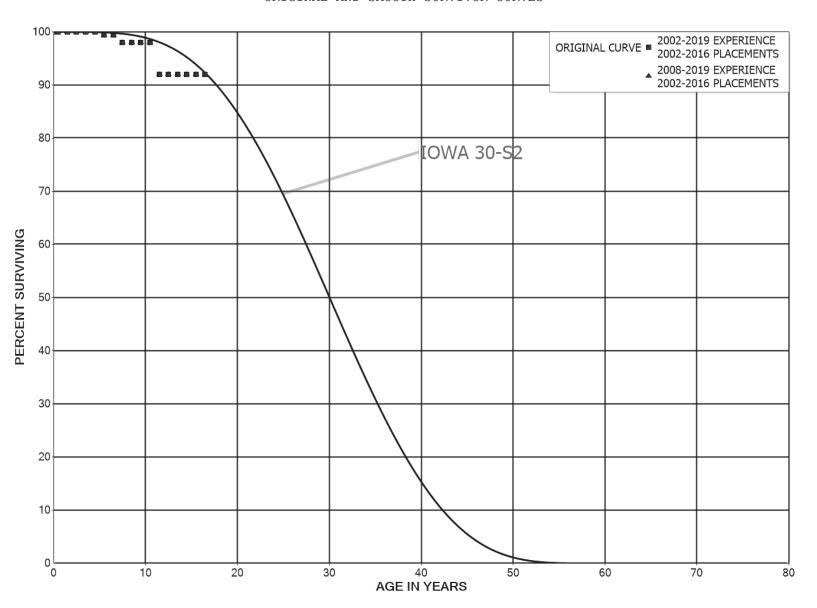
PLACEMENT E	BAND 1952-2019		EXPEF	RIENCE BAN	D 2008-2019
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5	177,296 235,974 256,001 265,132 264,500 269,293 282,826 264,888 276,541 273,702	0 4,000	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0146	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9854	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	213,765 191,227 197,730 141,062 127,116 139,342 154,215 156,169 149,911 171,823	33,461 11,264 857	0.1565 0.0000 0.0000 0.0000 0.0000 0.0000 0.0721 0.0000 0.0050	0.8435 1.0000 1.0000 1.0000 1.0000 1.0000 0.9279 1.0000 0.9950	98.54 83.11 83.11 83.11 83.11 83.11 83.11 77.12 77.12
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	184,461 182,368 197,304 200,571 201,497 217,811 234,948 241,032 247,038 249,826	648 1,624 3,394 14,916 9,416	0.0000 0.0036 0.0000 0.0081 0.0000 0.0156 0.0000 0.0000 0.0604 0.0377	1.0000 0.9964 1.0000 0.9919 1.0000 0.9844 1.0000 1.0000 0.9396 0.9623	76.73 76.73 76.46 76.46 75.84 75.84 74.66 74.66 74.66 70.15
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	247,389 225,141 185,245 166,708 144,474 140,115 133,777 107,179 95,355 82,287	919 1,393 1,173	0.0000 0.0000 0.0000 0.0055 0.0000 0.0099 0.0000 0.0109 0.0000	1.0000 1.0000 1.0000 0.9945 1.0000 0.9901 1.0000 0.9891 1.0000	67.51 67.51 67.51 67.51 67.14 67.14 66.47 66.47 65.74

ACCOUNT 348.00 HYDRANTS (NARUC ACCOUNT 335.00)

PLACEMENT E	BAND 1952-2019		EXPEF	RIENCE BAN	D 2008-2019
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	68,357 50,368 41,713 38,295 35,651 25,711 19,563 10,353 6,594 5,515	464 1,416 2,851	0.0000 0.0337 0.0111 0.0370 0.0800 0.1825 0.2017 0.0000 0.0000	1.0000 0.9663 0.9889 0.9630 0.9200 0.8175 0.7983 1.0000 1.0000	65.74 65.74 63.53 62.82 60.50 55.66 45.50 36.32 36.32 36.32
49.5 50.5 51.5 52.5 53.5 54.5	3,764 1,408 606 240	661 365 367 240	0.1755 0.2593 0.6047 1.0000	0.8245 0.7407 0.3953	36.32 29.95 22.18 8.77
55.5 56.5 57.5 58.5	223 223 223 223		0.0000 0.0000 0.0000 0.0000		
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5	223 223 223 223 223 223 223 223	223	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 1.0000		



AQUARION WATER COMPANY OF NEW HAMPSHIRE ACCOUNT 349.00 OTHER TRANSMISSION AND DISTRIBUTION PLANT (NARUC ACCOUNT 339.00) ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 349.00 OTHER TRANSMISSION AND DISTRIBUTION PLANT (NARUC ACCOUNT 339.00)

PLACEMENT 1	BAND 2002-2016		EXPE	RIENCE BAN	D 2002-2019
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	188,649 188,649 188,649 188,649 184,139 179,989 174,353 173,332 151,553 114,700	1,154 2,516	0.0000 0.0000 0.0000 0.0000 0.0000 0.0064 0.0000 0.0145 0.0000	1.0000 1.0000 1.0000 1.0000 0.9936 1.0000 0.9855 1.0000	100.00 100.00 100.00 100.00 100.00 100.00 99.36 99.36 97.92 97.92
9.5 10.5 11.5 12.5 13.5 14.5 15.5	108,392 108,392 98,108 64,987 43,864 31,881 31,881	6 , 543	0.0000 0.0604 0.0000 0.0000 0.0000 0.0000	1.0000 0.9396 1.0000 1.0000 1.0000 1.0000	97.92 97.92 92.01 92.01 92.01 92.01 92.01

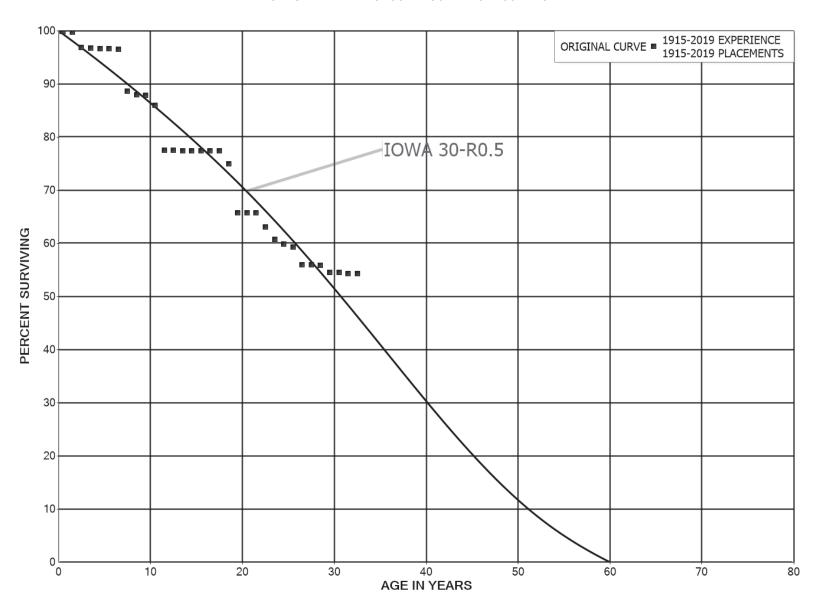


ACCOUNT 349.00 OTHER TRANSMISSION AND DISTRIBUTION PLANT (NARUC ACCOUNT 339.00)

PLACEMENT 1	BAND 2002-2016		EXPERIENCE BAND 2008-2019			
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	80,329 115,965 137,088 149,071 144,561 173,446 174,353 173,332 151,553 114,700	1,154 2,516	0.0000 0.0000 0.0000 0.0000 0.0007 0.0000 0.0145 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 0.9933 1.0000 0.9855 1.0000	100.00 100.00 100.00 100.00 100.00 100.00 99.33 99.33 97.89	
9.5 10.5 11.5 12.5 13.5 14.5 15.5	108,392 108,392 98,108 64,987 43,864 31,881 31,881	6,543	0.0000 0.0604 0.0000 0.0000 0.0000 0.0000	1.0000 0.9396 1.0000 1.0000 1.0000 1.0000	97.89 97.89 91.98 91.98 91.98 91.98 91.98	



AQUARION WATER COMPANY OF NEW HAMPSHIRE ACCOUNT 390.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNT 304.50) ORIGINAL AND SMOOTH SURVIVOR CURVES



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ACCOUNT 390.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNT 304.50)

PLACEMENT E	BAND 1915-2019		EXPERIENCE BAND 1915-2019			
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	823,251 819,172 787,750 758,810 752,548 712,959 661,205 660,610 597,499 555,574	1,423 913 22,795 850 874 336 595 53,668 5,036	0.0017 0.0011 0.0289 0.0011 0.0012 0.0005 0.0009 0.0812 0.0084 0.0001	0.9983 0.9989 0.9711 0.9989 0.9988 0.9995 0.9991 0.9188 0.9916 0.9999	100.00 99.83 99.72 96.83 96.72 96.61 96.56 96.48 88.64 87.89	
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	555,498 539,954 486,941 486,831 486,409 486,278 486,262 486,041 348,997 337,887	12,246 53,012 111 421 131 16 221 52 11,111 41,203	0.0220 0.0982 0.0002 0.0009 0.0003 0.0000 0.0005 0.0001 0.0318 0.1219	0.9780 0.9018 0.9998 0.9991 0.9997 1.0000 0.9995 0.9999 0.9682 0.8781	87.88 85.94 77.51 77.49 77.42 77.40 77.36 77.35 74.89	
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	289,820 289,736 289,654 277,870 263,716 259,864 257,333 242,924 242,923 242,387	84 83 11,784 10,154 3,852 2,531 14,409 1 536 5,732	0.0003 0.0003 0.0407 0.0365 0.0146 0.0097 0.0560 0.0000 0.0022 0.0236	0.9997 0.9997 0.9593 0.9635 0.9854 0.9903 0.9440 1.0000 0.9978 0.9764	65.76 65.74 65.72 63.05 60.74 59.86 59.27 55.95 55.83	
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	236,655 208,594 184,913 44,687 24,364 24,144 24,069 14,838 14,832 14,831	6 945 25 7 220 75 0 6	0.0000 0.0045 0.0001 0.0002 0.0090 0.0031 0.0000 0.0004 0.0001 0.0000	1.0000 0.9955 0.9999 0.9998 0.9910 0.9969 1.0000 0.9996 0.9999	54.51 54.51 54.26 54.25 54.25 53.76 53.59 53.59 53.56 53.56	

ACCOUNT 390.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNT 304.50)

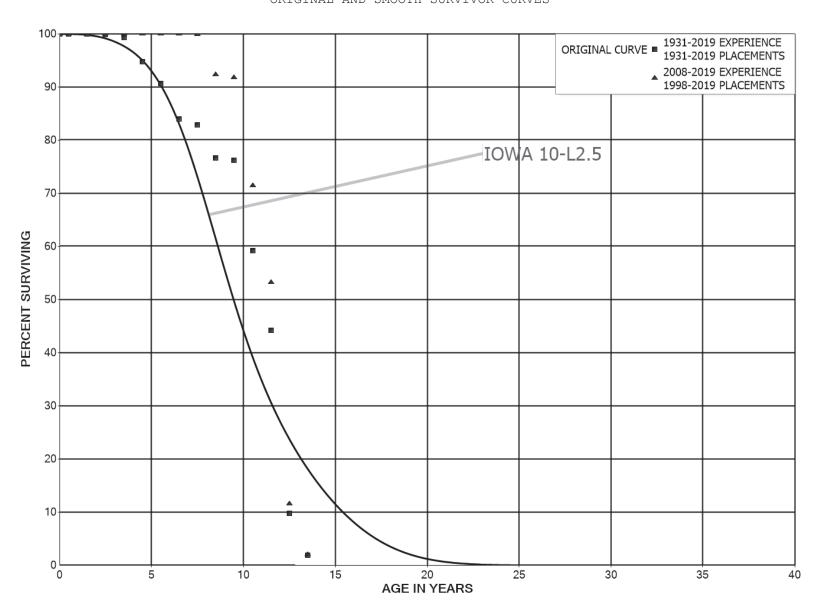
ORIGINAL LIFE TABLE, CONT.

PLACEMENT E	BAND 1915-2019		EXPERIENCE BAND 1915-2			
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	13,450 13,450 13,450 13,268 13,268 13,268 13,268 13,268 13,268 13,268	181 1,500	0.0000 0.0000 0.0135 0.0000 0.0000 0.0000 0.0000 0.0000 0.1131 0.0000	1.0000 1.0000 0.9865 1.0000 1.0000 1.0000 1.0000 0.8869 1.0000	53.56 53.56 53.56 52.84 52.84 52.84 52.84 52.84 52.84 46.86	
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5	11,768 11,768 4,734 4,734 4,734 4,608 4,438		0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	46.86 46.86 46.86 46.86 46.86 46.86 46.86	



VII-53

AQUARION WATER COMPANY OF NEW HAMPSHIRE ACCOUNT 392.00 TRANSPORTATION EQUIPMENT (NARUC ACCOUNT 341.00) ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 392.00 TRANSPORTATION EQUIPMENT (NARUC ACCOUNT 341.00)

ORIGINAL LIFE TABLE

PLACEMENT H	BAND 1931-2019		EXPEF	RIENCE BAN	D 1931-2019
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	1,064,156 1,062,545 913,457 835,858 831,260 679,418 649,717 559,779 508,722 381,403	149 670 529 4,598 38,046 29,700 47,563 7,551 38,061 2,681	0.0001 0.0006 0.0006 0.0055 0.0458 0.0437 0.0732 0.0135 0.0748 0.0070	0.9999 0.9994 0.9994 0.9542 0.9563 0.9268 0.9865 0.9252 0.9930	100.00 99.99 99.92 99.87 99.32 94.77 90.63 83.99 82.86 76.66
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	284,354 193,019 144,032 30,558 5,797 5,797 5,797 591 591	63,402 48,987 112,461 24,762	0.2230 0.2538 0.7808 0.8103 0.0000 0.0000 0.0000 0.0000 0.0000	0.7770 0.7462 0.2192 0.1897 1.0000 1.0000 1.0000 1.0000 1.0000	76.12 59.15 44.14 9.67 1.84 1.84 1.84 1.84
19.5 20.5 21.5 22.5 23.5 24.5	591 591 591 14 14	578 14	0.0000 0.0000 0.9772 0.0000 0.0000	1.0000 1.0000 0.0228 1.0000 1.0000	1.84 1.84 1.84 0.04 0.04



25.5

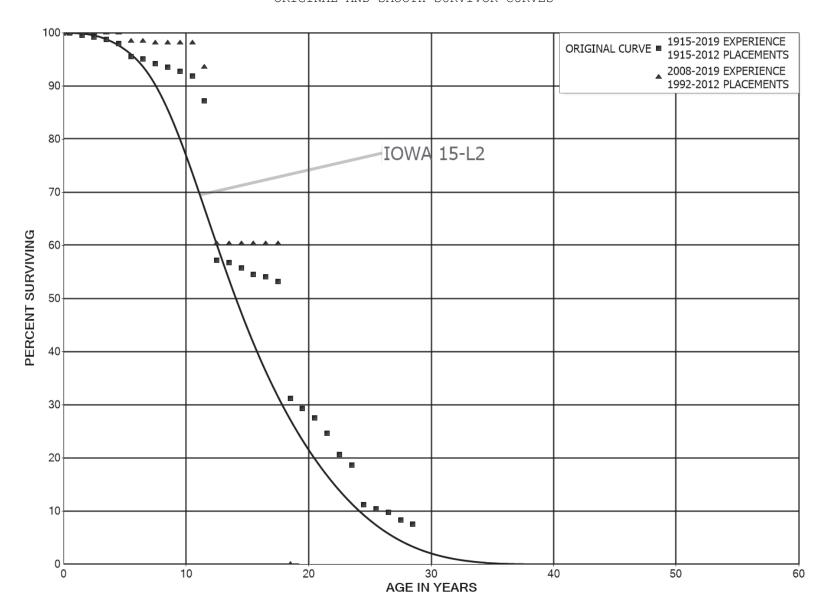
ACCOUNT 392.00 TRANSPORTATION EQUIPMENT (NARUC ACCOUNT 341.00)

ORIGINAL LIFE TABLE

PLACEMENT	BAND 1998-2019		EXPEF	RIENCE BAN	D 2008-2019
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	638,186 660,149 511,731 519,498 519,498 482,777 482,777 440,403 472,471 365,055	967 35,399 2,170		1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.9978 0.9251 0.9941	100.00 100.00 100.00 100.00 100.00 100.00 100.00 99.78 92.30
9.5 10.5 11.5 12.5 13.5 14.5 15.5	283,203 192,428 143,441 29,967 5,205 5,205 5,205	62,843 48,987 112,461 24,762	0.2219 0.2546 0.7840 0.8263 0.0000 0.0000	0.7781 0.7454 0.2160 0.1737 1.0000 1.0000	91.76 71.40 53.22 11.49 2.00 2.00 2.00 2.00



AQUARION WATER COMPANY OF NEW HAMPSHIRE ACCOUNT 396.00 POWER OPERATED EQUIPMENT (NARUC ACCOUNT 345.00) ORIGINAL AND SMOOTH SURVIVOR CURVES



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ACCOUNT 396.00 POWER OPERATED EQUIPMENT (NARUC ACCOUNT 345.00)

ORIGINAL LIFE TABLE

PLACEMENT E	BAND 1915-2012		EXPEF	RIENCE BAN	D 1915-2019
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	209,848 209,698 208,748 208,170 207,276 205,470 200,339 199,576 195,570 182,375	151 949 578 895 1,806 5,131 763 1,911 1,350 1,498	0.0007 0.0045 0.0028 0.0043 0.0087 0.0250 0.0038 0.0096 0.0069 0.0069	0.9993 0.9955 0.9972 0.9957 0.9913 0.9750 0.9962 0.9904 0.9931 0.9918	100.00 99.93 99.48 99.20 98.77 97.91 95.47 95.10 94.19 93.54
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	180,877 179,058 170,034 107,955 106,981 95,618 75,939 10,290 10,112 5,920	1,819 9,024 58,480 973 1,907 2,125 483 179 4,192 361	0.0101 0.0504 0.3439 0.0090 0.0178 0.0222 0.0064 0.0174 0.4145 0.0610	0.9899 0.9496 0.6561 0.9910 0.9822 0.9778 0.9936 0.9826 0.5855 0.9390	92.78 91.84 87.21 57.22 56.70 55.69 54.45 54.11 53.17 31.13
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5	5,559 5,221 4,682 3,915 3,545 2,116 1,982 1,839 1,583 1,426	338 540 766 371 1,429 135 142 256 157 207	0.0608 0.1033 0.1637 0.0946 0.4030 0.0636 0.0718 0.1393 0.0993 0.1451	0.9392 0.8967 0.8363 0.9054 0.5970 0.9364 0.9282 0.8607 0.9007 0.8549	29.23 27.45 24.62 20.59 18.64 11.13 10.42 9.67 8.32 7.50
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	1,219 791 695 513 195 161 94 26 3	428 97 182 318 34 67 68 23	0.3507 0.1222 0.2621 0.6195 0.1765 0.4144 0.7226 0.8843 1.0000	0.6493 0.8778 0.7379 0.3805 0.8235 0.5856 0.2774 0.1157	6.41 4.16 3.65 2.70 1.03 0.84 0.49 0.14 0.02

ACCOUNT 396.00 POWER OPERATED EQUIPMENT (NARUC ACCOUNT 345.00)

ORIGINAL LIFE TABLE

PLACEMENT	BAND 1992-2012		EXPERIENCE BAND 2008-201		
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	13,939 17,539 17,539 30,153 47,707 165,782 163,084 163,084 160,531 155,938	2,699 458	0.0000 0.0000 0.0000 0.0000 0.0000 0.0163 0.0000 0.0028 0.0000	1.0000 1.0000 1.0000 1.0000 0.9837 1.0000 0.9972 1.0000	100.00 100.00 100.00 100.00 100.00 100.00 98.37 98.37 98.10 98.10
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	155,938 155,938 148,686 92,176 92,176 82,719 69,017 3,852 3,852	7,252 52,910 3,852	0.0000 0.0465 0.3559 0.0000 0.0000 0.0000 0.0000 1.0000	1.0000 0.9535 0.6441 1.0000 1.0000 1.0000 1.0000	98.10 98.10 93.53 60.25 60.25 60.25 60.25 60.25



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PART VIII. NET SALVAGE STATISTICS



ACCOUNTS 311.00, 321.00, 331.00 AND 341.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNTS 304.10, 304.20, 304.30 AND 304.40)

		COST OF		GROSS		NET	
VEAD	REGULAR	REMOVAL	DOM	SALVAG		SALVAGE	DCIII
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2010	23,049		0		0		0
2011	717		0		0		0
2012	29,574		0		0		0
2013	31,283		0		0		0
2014	4,324		0		0		0
2015	227 , 965		0		0		0
2016	13,276	1,270	10		0	1,270-	10-
2017							
2018	4,099		0		0		0
2019	21,843		0		0		0
TOTAL	356,130	1,270	0		0	1,270-	0
THREE-YE	AR MOVING AVERAG	ES					
10-12	17,780		0		0		0
11-13	20,525		0		0		0
12-14	21,727		0		0		0
13-15	87,857		0		0		0
14-16	81,855	423	1		0	423-	1-
15-17	80,414	423	1		0	423-	1-
16-18	5,792	423	7		0	423-	7-
17-19	8,647		0		0		0
FIVE-YEA	R AVERAGE						
15-19	53,437	254	0		0	254-	0
	•						



ACCOUNT 314.00 WELLS AND SPRINGS (NARUC ACCOUNT 307.00)

	REGULAR	COST OF REMOVAL		GROSS SALVAGE	NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT PCT	AMOUNT	PCT
2010	741,744		0	0		0
2011	3,210		0	0		0
2012	246		0	0		0
2013	17,382		0	0		0
2014	2,290	30,328		0	30,328-	
2015	36,482	24,476	67	0	24,476-	67-
2016	6,562		0	0		0
2017	159,631		0	0		0
2018	10,304		0	0		0
2019	20,444		0	0		0
TOTAL	998 , 295	54,803	5	0	54,803-	5-
THREE-YE	AR MOVING AVERAGE	S				
10-12	248,400		0	0		0
11-13	6,946		0	0		0
12-14	6,639	10,109	152	0	10,109-	152-
13-15	18,718	18,268	98	0	18,268-	98-
14-16	15,111	18,268	121	0	18,268-	121-
15-17	67,558	8,159	12	0	8,159-	12-
16-18	58,832		0	0		0
17-19	63,460		0	0		0
FTVE-YEAI	R AVERAGE					
		4 005	1.0	^	4 005	1.0
15-19	46,685	4,895	10	0	4,895-	10-



ACCOUNT 316.00 SUPPLY MAINS (NARUC ACCOUNT 309.00)

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PC	GROSS SALVAGE I AMOUNT	PCT	NET SALVAGE AMOUNT PCT	J
2010 2011 2012	24,246		0	0	0	
2013 2014	19,821		0	0	0	
2015 2016 2017 2018 2019	1,378		0	0	0	
TOTAL	45,445		0	0	0	
THREE-YE	AR MOVING AVERAGE:	S				
10-12 11-13 12-14 13-15 14-16 15-17 16-18 17-19	8,082 6,607 6,607 7,066 459 459		0 0 0 0 0	0 0 0 0 0	0 0 0 0 0	
FIVE-YEAD	R AVERAGE					
15-19	276		0	0	0	



ACCOUNT 317.00 OTHER WATER SOURCE PLANT (NARUC ACCOUNT 339.00)

	REGULAR	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2015 2016 2017 2018 2019	10,006		0		0		0
TOTAL	10,006		0		0		0
THREE-YE	AR MOVING AVERAGE	S					
15-17 16-18 17-19	3,335		0		0		0
FIVE-YEAR	R AVERAGE						
15-19	2,001		0		0		0



ACCOUNTS 325.00 AND 328.00 PUMPING EQUIPMENT (NARUC ACCOUNTS 311.10 AND 311.20)

		COST OF		GROSS		NET	
YEAR	REGULAR RETIREMENTS	REMOVAL AMOUNT	PCT	SALVAGE	PCT	SALVAGE	PCT
		AMOUNI	PCI	AMOUNT	PCI	AMOUNT	PCI
2008	9,157		0		0		0
2009	21,153		0		0		0
2010	425 , 876		0		0		0
2011	14,286		0		0		0
2012	38,308		0		0		0
2013	67 , 400		0		0		0
2014	26,093		0		0		0
2015	24 , 577		0		0		0
2016	45,306	4,359	10		0	4,359-	10-
2017							
2018	36,988	8,850	24		0	8,850-	24-
2019	51,800		0		0		0
TOTAL	760,944	13,209	2		0	13,209-	2-
THREE-YE	AR MOVING AVERAG	ES					
08-10	152,062		0		0		0
09-11	153,772		0		0		0
10-12	159,490		0		0		0
11-13	39,998		0		0		0
12-14	43,934		0		0		0
13-15	39 , 357		0		0		0
14-16	31,992	1,453	5		0	1,453-	5-
15-17	23,294	1,453	6		0	1,453-	6-
16-18	27,431	4,403	16		0	4,403-	16-
17-19	29,596	2,950	10		0	2,950-	10-
FIVE-YEA	R AVERAGE						
15-19	31,734	2,642	8		0	2,642-	8-



ACCOUNT 332.00 WATER TREATMENT EQUIPMENT (NARUC ACCOUNT 320.00)

	REGULAR	COST 01 REMOVA		GROSS SALVAG	F	NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2008	2,528		0		0		0
2009	4,957		0		0		0
2010	112,232		0		0		0
2011							
2012							
2013	6,880		0		0		0
2014	1,922		0		0		0
2015	24,847		0		0		0
2016							
2017							
2018	2,061		0		0		0
2019	4,020		0		0		0
TOTAL	159 , 447		0		0		0
THREE-YE	AR MOVING AVERAG	ES					
08-10	39,906		0		0		0
09-11	39,063		0		0		0
10-12	37,411		0		0		0
11-13	2,293		0		0		0
12-14	2,934		0		0		0
13-15	11,216		0		0		0
14-16	8,923		0		0		0
15-17	8,282		0		0		0
16-18	687		0		0		0
17-19	2,027		0		0		0
FIVE-YEA	R AVERAGE						
15-19	6,186		0		0		0



ACCOUNT 342.00 DISTRIBUTION RESERVOIRS AND STANDPIPES (NARUC ACCOUNT 330.00)

	REGULAR	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2008	37,038	109,705	296		0	109,705-	296-
2009							
2010	37,846		0		0		0
2011							
2012	1,702		0		0		0
2013	26,190		0		0		0
2014	07.000		0		0		0
2015	27 , 038		0		0		0
2016 2017							
2017							
2018							
2015							
TOTAL	129,814	109,705	85		0	109,705-	85-
THREE-YEA	AR MOVING AVERAGES						
08-10	24,961	36 , 568	146		0	36,568-	146-
09-11	12,615		0		0		0
10-12	13,183		0		0		0
11-13	9,297		0		0		0
12-14	9,297		0		0		0
13-15	17,743		0		0		0
14-16	9,013		0		0		0
15-17	9,013		0		0		0
16-18							
17-19							
FIVE-YEAF	R AVERAGE						
			0		0		0
15-19	5,408		0		0		0



ACCOUNT 343.00 TRANSMISSION AND DISTRIBUTION MAINS (NARUC ACCOUNT 331.00)

		COST OF		GROSS	NET	
YEAR	REGULAR RETIREMENTS	REMOVAL AMOUNT	PCT	SALVAGE AMOUNT PCT	SALVAGE AMOUNT	PCT
2008	37,985		0	0		0
2009	96,091		0	0		0
2010	123,220		0	0		0
2010	12,575		0	0		0
2012	20,972		0	0		0
2013	48,917		0	0		0
2014	16,832	2,355	14	0	2,355-	
2015	14,550	3,813	26	0	3,813-	
2016	10,146	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0	0	.,	0
2017	114,692		0	0		0
2018	92,627	4,314	5	0	4,314-	5-
2019	131,622		0	0		0
TOTAL	720,229	10,483	1	0	10,483-	1-
THREE-YE	AR MOVING AVERAG	ES				
08-10	85 , 765		0	0		0
09-11	77,295		0	0		0
10-12	52 , 256		0	0		0
11-13	27,488		0	0		0
12-14	28,907	785	3	0	785-	3-
13-15	26,766	2,056	8	0	2,056-	8 –
14-16	13,843	2,056	15	0	2,056-	15-
15-17	46,463	1,271	3	0	1,271-	3-
16-18	72 , 488	1,438	2	0	1,438-	
17-19	112,980	1,438	1	0	1,438-	1-
FTVF-VFA	R AVERAGE					
		4 65 5	•			•
15-19	72 , 727	1,626	2	0	1,626-	2-



ACCOUNT 345.00 SERVICES (NARUC ACCOUNT 333.00)

		COST OF		GROSS	NET	
YEAR	REGULAR RETIREMENTS	REMOVAL AMOUNT	PCT	SALVAGE AMOUNT PCT	SALVAGE AMOUNT	PCT
2008 2009	1,821 2,551		0	0		0
			0	0		
2010	13,660		0			0
2011 2012	5,457 5,908		0	0		0
			0			0
2013	9 , 575		0	0		0
2014	10,161		0			0
2015	28,930		0	0		0
2016	39,670	490	0 6	0	490-	6-
2017	8,671		6	U		0-
2018	1 / 1 / 1	8,753	0		8,753-	0
2019	14,141		0	0		0
TOTAL	140,545	9,244	7	0	9,244-	7-
THREE-YE	AR MOVING AVERAG	ES				
08-10	6,011		0	0		0
09-11	7,223		0	0		0
10-12	8,342		0	0		0
11-13	6,980		0	0		0
12-14	8,548		0	0		0
13-15	16,222		0	0		0
14-16	26,254		0	0		0
15-17	25 , 757	163	1	0	163-	1-
16-18	16,114	3,081	19	0	3,081-	19-
17-19	7,604	3,081	41	0	3,081-	41-
FIVE-YEA	R AVERAGE					
15-19	18,282	1,849	10	0	1,849-	10-

ACCOUNT 346.00 METERS (NARUC ACCOUNT 334.00)

		COST O	F	GROSS		NET	
	REGULAR	REMOVA:	L	SALVAGE		SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2008	129,217		0	4,361	3	4,361	3
2009	205 , 877		0	9,848	5	9,848	5
2010	71,118		0	6 , 588	9	6,588	9
2011	33,561		0		0		0
2012	9,544		0	24,195	254	24,195	254
2013	9,485		0	4,814	51	4,814	51
2014	2,402		0		0		0
2015	90,546		0	4,275	5	4,275	5
2016	8,807		0		0		0
2017	50,483		0	3 , 672	7	3,672	7
2018							
2019	301,109		0	6,982	2	6,982	2
TOTAL	912,149		0	64,733	7	64,733	7
THREE-YE	AR MOVING AVERAG	ES					
08-10	135,404		0	6,932	5	6,932	5
09-11	103,519		0	5,478		5,478	5
10-12	38,074		0	10,261		10,261	
11-13	17,530		0	9,670		9,670	55
12-14	7,144		0	9,670	135	9,670	135
13-15	34,144		0	3,030	9	3,030	9
14-16	33,918		0	1,425	4	1,425	4
15-17	49,945		0	2,649	5	2,649	5
16-18	19,763		0	1,224	6	1,224	6
17-19	117,197		0	3,551	3	3,551	3
F.TAE-AFY	R AVERAGE						
15-19	90,189		0	2,986	3	2,986	3

ACCOUNT 348.00 HYDRANTS (NARUC ACCOUNT 335.00)

		COST O		GROSS		NET	
77.7.7.	REGULAR	REMOVA:		SALVAG		SALVAGE	ъош
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2008	2,481		0		0		0
2009	8,783		0		0		0
2010	30,907		0		0		0
2011	8,664		0		0		0
2012	40,214		0		0		0
2013	3,192		0		0		0
2014							
2015	1,742		0		0		0
2016	2,148		0		0		0
2017							
2018							
2019	1,855		0		0		0
TOTAL	99,986		0		0		0
THREE-YE	AR MOVING AVERAG	ES					
08-10	14,057		0		0		0
09-11	16,118		0		0		0
10-12	26,595		0		0		0
11-13	17,357		0		0		0
12-14	14,469		0		0		0
13-15	1,645		0		0		0
14-16	1,297		0		0		0
15-17	1,297		0		0		0
16-18	716		0		0		0
17-19	618		0		0		0
DT17D 17D 3							
FIVE-XEA	AR AVERAGE						
15-19	1,149		0		0		0



ACCOUNT 349.00 OTHER TRANSMISSION AND DISTRIBUTION PLANT (NARUC ACCOUNT 339.00)

SUMMARY OF BOOK SALVAGE

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
2008 2009 2010 2011 2012	1,154		0		0		0
2012 2013 2014 2015 2016 2017 2018 2019	6,543 2,516		0		0		0
TOTAL	10,213		0		0		0
THREE-YEAR	R MOVING AVERAGES						
08-10 09-11 10-12	385		0		0		0
11-13	2,181		0		0		0
12-14	3,020		0		0		0
13-15 14-16 15-17 16-18 17-19	3,020 839		0		0		0

FIVE-YEAR AVERAGE

15-19



ACCOUNT 390.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNT 304.50)

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT PC	Т	NET SALVAGE AMOUNT	PCT
2010	82,887		0		0		0
2010	02,007		U		U		U
2012	52,314		0		0		0
2013	8,738		0		0		0
2014	22,574		0		0		0
2015	65 , 327		0		0		0
2016							
2017							
2018		250				250-	
2019							
TOTAL	231,840	250	0		0	250-	0
THREE-YEA	AR MOVING AVERAGE	ES					
10-12	45,067		0		0		0
11-13	20,351		0		0		0
12-14	27 , 875		0		0		0
13-15	32,213		0		0		0
14-16	29,300		0		0		0
15-17	21,776		0		0		0
16-18		83				83-	
17-19		83				83-	
FIVE-YEAR	R AVERAGE						
15-19	13,065	50	0		0	50-	0



ACCOUNT 392.00 TRANSPORTATION EQUIPMENT (NARUC ACCOUNT 341.00)

		COST OF		GROSS		NET	
YEAR	REGULAR RETIREMENTS	REMOVAI AMOUNT	PCT	SALVAGE AMOUNT	PCT	SALVAGE AMOUNT	PCT
2009	31,926		0		0		0
2010	18,289		0		0		0
2011	35,399		0		0		0
2012	61,388		0	4,000	7	4,000	7
2013				5,500		5,500	
2014	34,301		0	2,900	8	2,900	8
2015	27,313		0		0		0
2016							
2017	31,797		0		0		0
2018	24,762		0		0		0
2019	22,413		0		0		0
TOTAL	287,588		0	12,400	4	12,400	4
THREE-YE	AR MOVING AVERAGE	S					
09-11	28,538		0		0		0
10-12	38,359		0	1,333	3	1,333	3
11-13	32,262		0	3,167	10	3,167	10
12-14	31,896		0	4,133	13	4,133	13
13-15	20,538		0	2,800	14	2,800	14
14-16	20,538		0	967	5	967	5
15-17	19,703		0		0		0
16-18	18,853		0		0		0
17-19	26,324		0		0		0
	R AVERAGE						
15-19	21,257		0		0		0



ACCOUNT 396.00 POWER OPERATED EQUIPMENT (NARUC ACCOUNT 345.00)

	DECIIIAD	COST OF		GROSS SALVAGE	1	NET SALVAGE	
YEAR	REGULAR RETIREMENTS	REMOVAI AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2010	13,803		0		0		0
2011 2012	458		0		0		0
2013							
2014							
2015	52,910		0		0		0
2016 2017							
2017							
2019							
TOTAL	67,171		0		0		0
THREE-YE	AR MOVING AVERAGE	ES					
10-12	4,754		0		0		0
11-13	153		0		0		0
12-14	153		0		0		0
13-15 14-16	17,637 17,637		0		0		0
15-17	17,637		0		0		0
16-18	,						
17-19							
FIVE-YEA	R AVERAGE						
15-19	10,582		0		0		0



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PART IX. DETAILED DEPRECIATION CALCULATIONS



ACCOUNT 311.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNT 304.10)

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	40-R1.5				
NET SALV	AGE PERCENT	0				
2003	492,581.07	157,872	194,012	298,569	27.18	10,985
2004	21,812.11	6 , 593	8,102	13,710	27.91	491
2005	42,379.22	12,025	14,778	27,601	28.65	963
2006	9,731.06	2,581	3,172	6 , 559	29.39	223
2007	15,300.97	3 , 772	4,635	10,666	30.14	354
2011	56,708.93	9,655	11,866	44,843	33.19	1,351
2019	4,036.91	41	50	3,987	39.59	101
	642,550.27	192,539	236,615	405,935		14,468

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 28.1 2.25

ACCOUNT 314.00 WELLS AND SPRINGS (NARUC ACCOUNT 307.00)

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)	(3)	(0)	(/)
	OR CURVE IOWA					
NET SAI	LVAGE PERCENT	- 5				
1957	3,611.69	3 , 792	3,792			
1964	4,484.29	4,461	4,217	492	1.58	311
1967	11,334.92	10,874	10,280	1,622	2.59	626
1973	2,119.00	1,883	1,780	445	4.61	97
1985	610.65	450	425	216	8.95	24
1986	1,458.00	1,054	996	535	9.34	57
1988	14,240.26	9,893	9,353	5 , 599	10.15	552
1989	34,680.00	23,584	22,296	14,118	10.57	1,336
1994	13,100.00	7,895	7,464	6,291	12.78	492
1995	8,760.00	5,136	4,855	4,343	13.25	328
1996	7,994.00	4,552	4,303	4,091	13.73	298
1997	837,918.37	462,782	437,499	442,315	14.22	31,105
1998	437,744.53	233,953	221,171	238,461	14.73	16,189
2002	64,144.57	29,455	27,846	39,506	16.88	2,340
2003	125,048.28	54,927	51,926	79,375	17.45	4,549
2005	2,625.74	1,043	986	1,771	18.65	95
2007	123,755.83	43,618	41,235	88,709	19.93	4,451
2008	381,209.68	125,553	118,694	281 , 576	20.59	13,675
2009	41,548.40	12,681	11,988	31,638	21.28	1,487
2010	90,410.61	25,347	23,962	70,969	21.99	3,227
2011	131,815.14	33 , 587	31,752	106,654	22.72	4,694
2012	137,031.33	31,319	29,608	114,275	23.47	4,869
2013	17,009.11	3,423	3,236	14,624	24.25	603
2015	84,294.66	12,126	11,464	77,045	25.89	2,976
2017	26,011.54	2,149	2,032	25 , 280	27.64	915
2018	31,923.03	1,620	1,531	31,988	28.55	1,120
2019	505,754.32	8,672	8,198	522,844	29.51	17,718
	3,140,637.95	1,155,829	1,092,889	2,204,781		114,134

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 19.3 3.63



ACCOUNT 316.00 SUPPLY MAINS (NARUC ACCOUNT 309.00)

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					
1967	3,545.61	2,786	1,792	1,931	15.10	128
1982	11,568.71	7,205	4,636	7,511	24.41	308
1989	119,821.03	62 , 529	40,229	85 , 583	30.18	2,836
1990	2,554.64	1,293	832	1,850	31.07	60
	137,489.99	73,813	47,489	96,875		3,332

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 29.1 2.42

ACCOUNT 317.00 OTHER WATER SOURCE PLANT (NARUC ACCOUNT 339.00)

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

YEAR (1)		CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
INTER PROBA	AND PRIOR IM SURVIVOR CURVE BLE RETIREMENT YEZ ALVAGE PERCENT (AR 12-202	9			
1990 2003 2004 2005 2006 2007 2008	10,512.38 737,861.86 317,260.67 5,000.00 8,107.68 416,574.47 148,699.74	7,851 459,422 192,844 2,959 4,658 231,432 79,537	7,484 437,939 183,827 2,821 4,440 220,610 75,818	3,028 299,922 133,434 2,179 3,667 195,964 72,882	10.00 10.00 10.00 10.00 10.00 10.00	303 29,992 13,343 218 367 19,596 7,288
SURVI	1,644,016.80 AND SUBSEQUENT VOR CURVE 20-SQUALVAGE PERCENT		932,939	711,078		71,107
2010 2016	8,098.82 71,145.50	3,847 12,450	3,847 12,450	4,252 58,696		405 3,557
	79,244.32	16,297	16,297	62 , 947		3,962
	1,723,261.12	995,000	949,236	774,025		75 , 069
	COMPOSITE REMAINI	NG LIFE AND	ANNUAL ACCRUAL	RATE, PERCEN	т 10.3	3 4.36



ACCOUNT 321.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNT 304.20)

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					
1958	6,511.56	5,655	6,512			
1963	5,700.86	4,747	5,701			
1964	10,482.28	8,648	10,482			
1967	19,692.21	15 , 778	19,692			
1975	533.60	388	534			
1978	27,016.40	18 , 797	27,016			
1982	1,307.16	847	1,245	62	14.07	4
1987	3,495.00	2,031	2,985	510	16.75	30
1989	143,849.82	79 , 477	116,812	27,038	17.90	1,511
1990	520.00	280	412	108	18.50	6
1992	18,184.43	9,220	13,551	4,633	19.72	235
1993	9,707.00	4,769	7,009	2,698	20.35	133
1995	2,908.00	1,334	1,961	947	21.65	44
1996	2,769.00	1,225	1,800	969	22.31	43
1997	267,255.36	113,717	167,137	100,118	22.98	4,357
1998	534,340.08	218,278	320,816	213,524	23.66	9,025
1999	59,003.85	23,085	33,929	25 , 075	24.35	1,030
2000	430.00	161	237	193	25.04	8
2005	7,185.39	2,039	2,997	4,188	28.65	146
2006	2,719.00	721	1,060	1,659	29.39	56
2009	97,581.50	20,370	29 , 939	67 , 642	31.65	2,137
2010	166,935.35	31,634	46,493	120,442	32.42	3,715
2019	4,260.42	44	65	4,195	39.59	106
	1,392,388.27	563,245	818,385	574,003		22,586

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 25.4 1.62

ACCOUNT 325.00 ELECTRIC PUMPING EQUIPMENT (NARUC ACCOUNT 311.10)

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					
1978	7,448.39	6,954	621	7,200	2.77	2,599
1983	20,912.08	18,084	1,616	20,342	4.41	4,613
1987	11,800.00	9,466	846	11,544	5.90	1,957
1989	163,832.58	125,922	11,250	160,774	6.70	23 , 996
1991	8,338.40	6,108	546	8,209	7.56	1,086
1994	21,800.75	14,705	1,314	21,577	8.94	2,414
1995	998.17	653	58	990	9.43	105
1998	11,568.00	6,817	609	11,537	10.97	1,052
2000	53,256.07	28,944	2,586	53 , 333	12.06	4,422
2003	71,423.20	33 , 567	2,999	71,995	13.81	5,213
2004	13,253.51	5,889	526	13,390	14.42	929
2005	24,440.17	10,224	914	24,748	15.04	1,645
2007	2,267.43	827	74	2,307	16.32	141
2008	2,183.81	737	66	2,227	16.97	131
2009	33,781.72	10,457	934	34,537	17.63	1,959
2010	8,961.19	2,522	225	9,184	18.30	502
2011	42,577.25	10,765	962	43,744	18.98	2,305
2012	52 , 879.28	11,860	1,060	54,463	19.66	2,770
2013	128,478.53	25 , 092	2,242	132,660	20.35	6,519
2014	34,825.58	5 , 792	517	36,050	21.04	1,713
2015	23,446.11	3,210	287	24,331	21.74	1,119
2016	23,462.05	2,513	224	24,411	22.45	1,087
2017	16,629.72	1,278	114	17,347	23.17	749
2018	50,230.99	2,342	210	52 , 533	23.89	2,199
2019	78,778.34	1,224	109	82,608	24.63	3,354
	907,573.32	345,952	30,909	922,043		74,579

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 12.4 8.22

ACCOUNT 328.00 OTHER PUMPING EQUIPMENT (NARUC ACCOUNT 311.20)

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					
1996 2010	17,816.53 1,414.32	11 , 277 398	976 34	17,731 1,451	9.93 18.30	1,786 79
2012	12,845.47	2,881	250	13,238	19.66	673
	32,076.32	14,556	1,260	32,420		2,538

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 12.8 7.91

ACCOUNT 331.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNT 304.30)

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					
2000	377.00	141	23	354	25.04	14
2004	1,987.25	601	100	1,887	27.91	68
2007	39,762.67	9,801	1,629	38,134	30.14	1,265
2008	14,881.15	3 , 389	564	14,317	30.89	463
2015	1,580.10	145	24	1,556	36.34	43
	58,588.17	14,077	2,340	56,248		1,853

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 30.4 3.16



ACCOUNT 332.00 WATER TREATMENT EQUIPMENT (NARUC ACCOUNT 320.00)

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					
1993	2,001.00	1,323	224	1,777	8.47	210
1999	121,299.11	65,453	11,079	110,220	11.51	9,576
2000	16,052.00	8,309	1,406	14,646	12.06	1,214
2001	575.00	285	48	527	12.63	42
2004	7,739.65	3,275	554	7,186	14.42	498
2007	14,966.44	5,196	880	14,086	16.32	863
2009	2,564.21	756	128	2,436	17.63	138
2010	8,141.88	2,182	369	7,773	18.30	425
2013	1,541.24	287	49	1,492	20.35	73
2014	2,637.74	418	71	2,567	21.04	122
2015	11,368.93	1,483	251	11,118	21.74	511
2016	7,290.79	744	126	7,165	22.45	319
2017	12,341.75	903	153	12,189	23.17	526
2018	4,869.99	216	37	4,833	23.89	202
2019	17,743.93	263	44	17,700	24.63	719
	231,133.66	91,093	15,419	215,715		15,438

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 14.0 6.68

ACCOUNT 341.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNT 304.40)

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					
2002	1,660.78	562	1,661			
2004	5,694.44	1,721	5,694			
2005	770.00	218	770			
2006	14,410.88	3 , 822	14,411			
2007	26.12	6	26			
2009	2,975.82	621	2,976			
2010	3,105.16	588	3,105			
2015	4,250.36	389	2,591	1,659	36.34	46
	32,893.56	7,927	31,234	1,660		46

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 36.1 0.14

ACCOUNT 342.00 DISTRIBUTION RESERVOIRS AND STANDPIPES (NARUC ACCOUNT 330.00)

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					
1953	76,169.39	70,507	79,436	11,967	14.86	805
1961	1,160.00	989	1,114	278	18.80	15
1967	58,507.88	46,144	51,988	18,221	22.28	818
1969	2,022.00	1,548	1,744	682	23.53	29
1982	1,787.99	1,070	1,206	940	32.59	29
1983	974,128.53	569 , 374	641,481	527,473	33.34	15,821
1987	2,700.00	1,424	1,604	1,636	36.44	45
1989	595.00	296	333	381	38.02	10
1991	3,810.00	1,784	2,010	2,562	39.64	65
1992	400.00	181	204	276	40.46	7
2003	14,012.50	3 , 919	4,415	12,400	49.85	249
2008	1,481,336.37	291 , 794	328,749	1,448,855	54.33	26,668
2012	7,704.89	997	1,123	8,123	57.99	140
2013	2,283.11	257	290	2,450	58.91	42
2014	81,726.30	7,785	8,771	89,301	59.84	1,492
	2,708,343.96	998,069	1,124,468	2,125,545		46,235

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 46.0 1.71

ACCOUNT 343.00 TRANSMISSION AND DISTRIBUTION MAINS (NARUC ACCOUNT 331.00)

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					
1952	1,961.68	1,336	1,405	655	29.85	22
1953	885.30	596	627	303	30.48	10
1954	530.58	353	371	186	31.11	6
1955	1,782.12	1,172	1,232	639	31.76	20
1957	14,162.73	9 , 085	9,554	5,317	33.07	161
1958	41,870.93	26,513	27 , 880	16,084	33.74	477
1959	33,947.72	21,215	22,309	13,336	34.41	388
1960	27,281.74	16,820	17,687	10,959	35.09	312
1961	36,696.22	22,312	23,463	15,068	35.78	421
1962	36,527.16	21,893	23,022	15,332	36.48	420
1963	44,125.01	26,066	27,410	18,921	37.18	509
1964	118,971.11	69 , 235	72 , 806	52,114	37.89	1,375
1965	92,735.12	53,153	55 , 894	41,478	38.60	1,075
1966	139,398.26 53,950.18	78 , 660	82,717	63,651	39.32	1,619
1967 1968	125,836.22	29 , 956 68 , 738	31,501 72,283	25,147 59,845	40.05 40.78	628 1,468
1969	92,779.93	49,833	52,403	45,016	41.52	1,084
1970	18,557.74	9,796	10,301	9,185	42.27	217
1971	57,607.24	29,874	31,415	29,073	43.02	676
1972	55,448.57	28,234	29,690	28,531	43.78	652
1973	67,058.83	33,516	35,244	35,168	44.54	790
1974	53,024.32	25,997	27,338	28,338	45.31	625
1975	56,148.71	26 , 995	28,387	30,569	46.08	663
1976	34,026.96	16,032	16,859	18,869	46.86	403
1977	128,819.01	59,435	62,500	72,760	47.65	1,527
1978	296,719.12	134,006	140,917	170,638	48.44	3,523
1979	97,694.88	43,168	45,394	57,186	49.23	1,162
1980	66,041.40	28,529	30,000	39,343	50.03	786
1981	25,453.62	10,741	11,295	15,431	50.84	304
1982	181,822.63	74 , 905	78 , 768	112,146	51.65	2,171
1983	302,949.35	121 , 739	128,017	190,080	52.47	3,623
1984	230,373.71	90,240	94,894	146,998	53.29	2,758
1985	295,453.28	112,739	118,553	191,673	54.11	3,542
1986	347,421.19	128,965	135,616	229,176	54.95	4,171
1987	521,099.69	188,090	197,790	349,365	55.78	6,263
1988	631,706.42	221,460	232,881	430,411	56.62	7,602
1989	423,882.30	144,151	151,585	293,491	57.47	5,107
1990	132,573.67	43,710	45,964	93,238	58.31	1,599
1991	85,116.65	27 , 159	28 , 560	60,812	59.17	1,028
1992	134,239.46	41,406	43,541	97,410	60.03	1,623
1993	127,566.23	37,993	39,952	93,993	60.89	1,544



ACCOUNT 343.00 TRANSMISSION AND DISTRIBUTION MAINS (NARUC ACCOUNT 331.00)

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					
1994	295,905.74	84,986	89,369	221,332	61.75	3,584
1995	202,395.49	55 , 953	58 , 839	153 , 676	62.62	2,454
1996	47,347.53	12 , 575	13,224	36,491	63.50	575
1997	347,061.10	88,403	92 , 962	271,452	64.38	4,216
1998	555,569.94	135,477	142,464	440,884	65.26	6 , 756
1999	260,502.00	60 , 657	63 , 785	209,742	66.15	3,171
2000	819,918.31	181,903	191,284	669,630	67.04	9,989
2001	991,892.00	209,151	219 , 937	821 , 550	67.93	12,094
2002	264,328.47	52 , 800	55 , 523	222,022	68.83	3,226
2003	552,175.40	104,158	109,530	470,254	69.73	6,744
2004	666,287.24	118,275	124,375	575 , 227	70.63	8,144
2005	1,638,118.59	272,366	286,412	1,433,613	71.54	20,039
2006	60,096.07	9,317	9,797	53,304	72.45	736
2007	481,759.81	69 , 271	72,843	433,005	73.36	5,902
2008	1,204,851.36	159 , 554	167,783	1,097,311	74.28	14,773
2009	209,556.90	25 , 394	26,704	193,331	75.19	2,571
2010	702,649.39	77 , 076	81,051	656 , 731	76.12	8,628
2011	694,280.75	68 , 270	71,791	657,204	77.04	8,531
2012	758,666.09	65 , 887	69,285	727,314	77.97	9,328
2013	774,944.97	58 , 391	61,402	752 , 290	78.90	9,535
2014	841,990.19	53 , 770	56 , 543	827 , 547	79.83	10,366
2015	1,005,489.94	52 , 535	55,244	1,000,520	80.77	12,387
2016	1,366,066.15	55 , 682	58 , 554	1,375,815	81.70	16,840
2017	897,118.52	26,149	27,498	914,476	82.64	11,066
2018	3,029,592.36	53 , 156	55 , 897	3,125,175	83.58	37 , 391
2019	2,731,223.82	15,859	16,677	2,851,108	84.53	33,729
	26,634,035.12	4,342,831	4,566,798	23,398,939		325,129

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 72.0 1.22

ACCOUNT 345.00 SERVICES (NARUC ACCOUNT 333.00)

	ORIGINAL	CALCULATED	ALLOC. BOOK	FUTURE BOOK	REM.	ANNUAL
YEAR	COST	ACCRUED	RESERVE	ACCRUALS	LIFE	ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIV	OR CURVE IOWA	45-S2.5				
	LVAGE PERCENT					
1974	5,170.29	4,227	4,432	997	9.96	100
1976	741.85	593	622	157	10.73	15
1977	435.63	344	361	96	11.14	9
1978	4,570.74	3 , 565	3,738	1,061	11.57	92
1979	17,304.57	13,320	13,965	4,205	12.01	350
1980	8,707.24	6 , 607	6 , 927	2,216	12.48	178
1981	5,516.40	4,124	4,324	1,468	12.96	113
1982	8,423.14	6,199	6,499	2,345	13.46	174
1983	10,489.53	7 , 595	7,963	3,051	13.97	218
1984	6,349.80	4,517	4,736	1,931	14.51	133
1985	26,071.94	18,208	19,090	8,286	15.07	550
1986	27,066.95	18,530	19,428	8,992	15.66	574
1987	26,878.95	18,025	18,898	9 , 325	16.26	573
1988	9,834.68	6,453	6,766	3,560	16.88	211
1989	10,677.15	6,844	7,176	4,035	17.53	230
1990	9,667.99	6,046	6,339	3,812	18.20	209
1991	2,040.56	1,243	1,303	840	18.89	44
1993	8,367.71	4,815	5,048	3,738	20.34	184
1994	38,925.68	21,708	22 , 759	18,113	21.10	858
1995	6,350.65	3,426	3 , 592	3 , 076	21.88	141
1996	9,070.62	4,724	4,953	4,571	22.68	202
1997	2,029,946.94	1,018,361	1,067,687	1,063,757	23.50	45,266
1998	229,711.28	110,736	116,100	125,097	24.34	5,140
1999	256,832.00	118,656	124,403	145,271	25.20	5 , 765
2000	300,818.77	132,800	139,233	176,627	26.08	6 , 773
2001	183,933.00	77,381	81,129	112,001	26.97	4,153
2002	72,170.77	28,829	30,225	45 , 554	27.88	1,634
2003	67,451.28	25 , 497	26,732	44,092	28.80	1,531
2004	124,330.28	44,298	46,444	84,103	29.73	2,829
2005	226,078.55	75 , 540	79 , 199	158,183	30.68	5,156
2006	417,000.27	130,090	136,391	301,459	31.63	9,531
2007	324,789.83	93 , 974	98 , 526	242,503	32.60	7,439
2008	14,252.15	3,801	3,985	10,980	33.57	327
2010	136,336.37	30,125	31,584	111,569	35.53	3,140
2011	142,499.78	28,195	29,561	120,064	36.52	3,288
2012	97,035.59	16,958	17,779	84,108	37.51	2,242
2013	110,158.67	16,681	17,489	98,178	38.51	2,549
2014	358,850.85	46,052	48,283	328,510	39.50	8,317

ACCOUNT 345.00 SERVICES (NARUC ACCOUNT 333.00)

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					
2016 2018 2019	183,276.76 120,752.24 92,791.17	14,968 4,226 1,082	15,693 4,431 1,134	176,748 122,359 96,297	41.50 43.50 44.50	4,259 2,813 2,164
	5,731,678.62	2,179,363	2,284,927	3,733,336		129,474
	COMPOSITE REMAIN	ING LIFE AND	ANNUAL ACCRUAL	RATE, PERCENT	28.8	2.26



ACCOUNT 346.00 METERS (NARUC ACCOUNT 334.00)

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	187,491.79	118,270	29,484	148,633	5.04	29,491
2008	3,345.45	2,038	508	2,670	5.38	496
2009	315.43	183	46	254	5.84	43
2010	113,401.53	61,622	15,362	92,369	6.42	14,388
2011	158,363.08	79 , 134	19,727	130,718	7.11	18,385
2012	254,388.54	114,551	28,556	213,113	7.89	27,011
2013	133,187.54	52 , 804	13,164	113,364	8.74	12,971
2014	189,068.24	64,302	16,030	163,585	9.63	16,987
2016	234,095.47	51 , 595	12,862	209,529	11.52	18,188
2018	163,631.39	15 , 545	3 , 875	151 , 575	13.50	11,228
2019	183,172.60	5,800	1,446	172,568	14.50	11,901
	1,620,461.06	565,844	141,060	1,398,378		161,089

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 8.7 9.94



ACCOUNT 347.00 METER INSTALLATIONS (NARUC ACCOUNT 334.10)

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					
2001	198,718.93	79,621	78,635	120,084	26.97	4,453
	198,718.93	79,621	78,635	120,084		4,453
	COMPOSITE REMAINI	NG LIFE AND	ANNUAL ACCRUAL	RATE, PERCENT	27.0	2.24



ACCOUNT 348.00 HYDRANTS (NARUC ACCOUNT 335.00)

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	CURVE IOWA					
NEI SILLV	THE THICHNI	0				
1968	436.53	374	437			
1969	1,694.86	1,438	1,695			
1970	1,751.75	1,472	1,752			
1971	1,079.08	898	1,076	3	7.56	
1972	3,758.15	3,093	3,705	53	7.97	7
1973	5,265.12	4,282	5,130	135	8.40	16
1974	1,455.59	1,169	1,400	56	8.85	6
1975	7,089.09	5,621	6 , 734	355	9.32	38 8
1976 1977	1,228.02 2,953.24	960 2,276	1,150 2,727	78 226	9.81 10.32	22
1978	11,151.43	8,463	10,139	1,012	10.32	93
1979	21,970.31	16,400	19,647	2,323	11.41	204
1980	16,513.33	12,117	14,516	1,997	11.98	167
1981	18,023.33	12,989	15,561	2,462	12.57	196
1982	14,810.77	10,470	12,543	2,268	13.19	172
1983	27,676.35	19 , 177	22,974	4,702	13.82	340
1984	9,052.64	6,144	7,361	1,692	14.46	117
1985	10,797.55	7,167	8,586	2,212	15.13	146
1986	22,770.15	14,770	17,695	5 , 075	15.81	321
1987	25,985.66	16,452	19,710	6,276	16.51	380
1988	41,124.63	25 , 387	30,414	10,711	17.22	622
1989	25,200.97	15,154	18,154	7,047	17.94	393
1990	5,091.01	2,978	3,568	1,523	18.68	82
1991	4,265.65	2,423	2,903	1,363	19.44	70
1992	11,900.22	6 , 558	7 , 856	4,044	20.20	200
1993 1994	21,356.54 9,196.48	11,400 4,747	13,657 5,687	7,700 3,509	20.98 21.77	367 161
1995	11,362.17	5 , 663	6,784	4,578	22.57	203
1996	6,502.61	3,124	3,743	2,760	23.38	118
1997	10,923.90	5,047	6,046	4,878	24.21	201
1998	7,187.03	3,188	3,819	3,368	25.04	135
1999	28,078.00	11,924	14,285	13,793	25.89	533
2000	27,630.00	11,212	13,432	14,198	26.74	531
2001	3,289.00	1,271	1,523	1,766	27.61	64
2002	2,356.40	865	1,036	1,320	28.49	46
2003	4,793.20	1,665	1,995	2,798	29.37	95
2004	6,666.62	2,182	2,614	4,053	30.27	134
2005	9,130.89	2,806	3,362	5,769	31.17	185
2006	23,142.23	6,644	7,959	15,183	32.08	473
2007	68,030.22	18,142	21,734	46,296	33.00	1,403
2010	63,124.02	12,891	15,443	47 , 681	35.81	1,331

ACCOUNT 348.00 HYDRANTS (NARUC ACCOUNT 335.00)

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					
2011	30,917.01	5,668	6,790	24,127	36.75	657
2012	15,977.23	2,588	3,101	12,876	37.71	341
2013	21,226.87	2,986	3 , 577	17,650	38.67	456
2014	26,284.96	3,137	3 , 758	22,527	39.63	568
2016	7,298.40	556	666	6,632	41.57	160
2018	3,114.83	102	122	2,993	43.53	69
2019	9,352.36	102	123	9,229	44.51	207
	709,986.40	316,142	378,689	331,297		12,038

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 27.5 1.70

ACCOUNT 349.00 OTHER TRANSMISSION AND DISTRIBUTION PLANT (NARUC ACCOUNT 339.00)

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					
2003	31,881.00	16,026	22,849	9,032	14.92	605
2005	11,983.19	5,420	7,727	4,256	16.43	259
2006	21,122.91	8 , 991	12,819	8,304	17.23	482
2007	33,120.43	13,193	18,809	14,311	18.05	793
2008	3,741.14	1,383	1,972	1,769	18.91	94
2010	6 , 307.90	1,955	2,787	3 , 521	20.70	170
2011	36,853.29	10,282	14,659	22,194	21.63	1,026
2012	19,262.94	4,764	6,792	12,471	22.58	552
2013	1,021.25	220	314	707	23.54	30
2014	4,481.84	819	1,168	3,314	24.52	135
2015	4,150.53	621	885	3,266	25.51	128
2016	4,509.81	526	750	3,760	26.50	142
	178,436.23	64,200	91,531	86,905		4,416

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 19.7 2.47



ACCOUNT 390.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNT 304.50)

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 SAL	VAGE PERCENT	0				
1963	4,438.44	4,188	1,967	2,471	1.69	1,462
1964	169.50	157	74	96	2.15	45
1965	126.48	115	54	72	2.61	28
1968	7,033.97	6,122	2,875	4,159	3.89	1,069
1980	1,381.07	980	460	921	8.72	106
1983	9,230.23	6 , 157	2,892	6,338	9.99	634
1986	20,316.11	12,650	5 , 942	14,374	11.32	1,270
1987	140,200.19	85 , 148	39 , 992	100,208	11.78	8 , 507
1988	22,736.58	13,460	6,322	16,415	12.24	1,341
1989	28,055.42	16,169	7,594	20,461	12.71	1,610
1996	4,000.00	1,836	862	3,138	16.23	193
2000	6,863.00	2,651	1,245	5 , 618	18.41	305
2002	136,991.68	47,810	22,456	114,536	19.53	5 , 865
2009	3,298.85	702	330	2,969	23.62	126
2011	36,888.12	6 , 382	2,998	33 , 890	24.81	1,366
2012	9,444.17	1,445	679	8 , 765	25.41	345
2014	51,418.43	5 , 793	2,721	48,697	26.62	1,829
2015	38,715.30	3 , 575	1,679	37,036	27.23	1,360
2016	5,410.76	390	183	5 , 228	27.84	188
2017	6,145.16	318	149	5 , 996	28.45	211
2018	30,509.45	946	444	30,065	29.07	1,034
2019	2,655.84	27	13	2,643	29.69	89
	566,028.75	217,021	101,931	464,098		28,983

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 16.0 5.12

ACCOUNT 391.00 OFFICE FURNITURE AND EQUIPMENT (NARUC ACCOUNT 340.10)

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)
FULLY A	CCRUED					
1968 1985 1992 1993 1995	135.00 225.00 859.00 601.45 2,592.15 4,412.60	135 225 859 601 2,592 4,412	135 225 859 601 2,593			
	ED R CURVE 20-SQ VAGE PERCENT					
2019	2,237.30	56	56	2,181	19.50	112
	2,237.30	56	56	2,181		112
	6,649.90	4,468	4,469	2,181		112

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 19.5 1.68

ACCOUNT 391.10 OFFICE FURNITURE AND EQUIPMENT - COMPUTER HARDWARE (NARUC ACCOUNT 340.20)

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)
FULLY	ACCRUED					
2007	238.24	238	238			
2008	948.66	949	949			
2009	20,917.34	20,917	20,917			
2011	67 , 824.47	67 , 824	67 , 824			
2012	13,464.55	13,465	13,465			
2013	22,033.50	22,034	22,034			
2014	18,964.79	18,965	18,965			
	144,391.55	144,392	144,392			
	ZED VOR CURVE 5-SQI ALVAGE PERCENT					
2015	31,950.54	28 , 755	25 , 930	6,020	0.50	6,020
2016	8,070.94	5 , 650	5 , 095	2,976		1,984
	40,021.48	34,405	31,025	8,996		8,004
	184,413.03	178 , 797	175,417	8,996		8,004

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 1.1 4.34

ACCOUNT 391.20 OFFICE FURNITURE AND EQUIPMENT - COMPUTER SOFTWARE (NARUC ACCOUNT 340.30)

YEAR (1)			ALLOC. BOOK RESERVE (4)		REM. LIFE (6)	ANNUAL ACCRUAL (7)
FULLY	ACCRUED					
2010 2012 2013 2014	203,397.93 60,103.70	30,421 203,398 60,104 74,298 368,221	30,421 203,398 60,104 74,297 368,220			
	'IZED VOR CURVE 5-SQUA BALVAGE PERCENT (
2015 2016	·	43,297 2,077	38,637 1,853	9,472 1,113		9,472 742
	51,074.98	45,374	40,490	10,585		10,214
	419,295.11	413,595	408,710	10,585		10,214
	COMPOSITE REMAINI	NG LIFE AND	ANNUAL ACCRUAL	RATE, PERCENT	1.0	2.44

ACCOUNT 392.00 TRANSPORTATION EQUIPMENT (NARUC ACCOUNT 341.00)

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					
2003	5,205.25	3,941	4,945			
2007	1,012.50	679	962			
2009	27,932.79	17 , 620	26,536			
2010	94,368.35	57 , 914	89,650			
2011	89,257.00	52 , 827	84,794			
2012	43,506.15	24,468	41,331			
2013	42,374.57	22,020	40,256			
2015	113,796.20	44,864	108,106			
2017	77,070.32	17 , 792	73,217			
2018	148,418.69	20,868	87,406	53 , 592	8.52	6 , 290
2019	1,461.45	69	289	1,099	9.50	116
	644,403.27	263,062	557,492	54,691		6,406

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 8.5 0.99



ACCOUNT 393.00 STORES EQUIPMENT (NARUC ACCOUNT 342.00)

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

CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
331	331			
331	331			
	ACCRUED (3)	ACCRUED RESERVE (3) (4) 331 331	ACCRUED RESERVE ACCRUALS (3) (4) (5) 331 331	ACCRUED RESERVE ACCRUALS LIFE (3) (4) (5) (6)

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



ACCOUNT 394.00 TOOLS, SHOP AND GARAGE EQUIPMENT (NARUC ACCOUNT 343.00)

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)
FULLY A	ACCRUED					
1989 1990 1991 1993	185.00 881.51 561.56 37,074.78	185 882 562 37,075	185 882 562 37,075			
	ZED DR CURVE 20-S LVAGE PERCENT	~				
2003 2005 2009 2012 2014	21,939.90 7,390.00 8,264.31 7,807.82 3,744.48	18,100 5,358 4,339 2,928 1,030	18,100 5,358 4,339 2,928 1,030		3.50 5.50 9.50 12.50 14.50	1,097 369 413 390 187
	49,146.51	31,755	31,755	17,392		2,456
	87,849.36	70,459	70,458	17,392		2,456

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 7.1 2.80



ACCOUNT 396.00 POWER OPERATED EQUIPMENT (NARUC ACCOUNT 345.00)

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					
2003	65,165.24	41,358	60,458	4,707	5.48	859
2004	17,553.77	10,860	15 , 875	1,679	5.72	294
2005	9,456.93	5 , 699	8,331	1,126	5.96	189
2007	3,600.00	2,047	2,992	608	6.47	94
2011	11,845.00	5 , 551	8,114	3,731	7.97	468
2012	2,094.33	902	1,319	775	8.54	91
	109,715.27	66,417	97,089	12,626		1,995

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 6.3 1.82

ACCOUNT 397.00 COMMUNICATION EQUIPMENT (NARUC ACCOUNT 346.00)

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-S VAGE PERCENT	~				
2012 2015 2017	17,973.37 23,112.64 10,466.90	13,480 10,401 2,617	13,480 10,401 2,617	4,493 12,712 7,850	2.50 5.50 7.50	1,797 2,311 1,047
	51,552.91	26,498	26,498	25,055		5,155

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 4.9 10.00

ACCOUNT 398.00 MISCELLANEOUS EQUIPMENT (NARUC ACCOUNT 347.00)

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)
FULLY	ACCRUED					
2002 2003 2004	4,125.13 12,621.93 1,830.35	4,125 12,622 1,830 18,577	4,125 12,622 1,830 18,577			
	ZED OR CURVE 15-SO LVAGE PERCENT					
2010 2011 2012 2013 2014 2015 2016 2018 2019	8,233.52 45,975.44 5,214.90 92,979.03 12,506.02 8,319.92 4,501.02 6,920.38 16,233.05	5,215 26,053 2,607 40,291 4,586 2,496 1,050 692 541	5,215 26,053 2,607 40,291 4,586 2,496 1,050 692 541	3,019 19,922 2,608 52,688 7,920 5,824 3,451 6,228 15,692	6.50 7.50 8.50 9.50 10.50	549 3,065 348 6,199 834 555 300 461 1,082
	219,460.69	102,108	102,108	117,352		13,393

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 8.8 6.10

COMPARISON OF PROPOSED ANNUAL DEPRECIATION EXPENSE VS. CURRENT ANNUAL DEPRECIATION EXPENSE AS OF DECEMBER 31, 2019

				CURRENT				PROPOSED				
			ORIGINAL COST		NET	CALCULATE			NET	CALCULA		
AQUARION	NARUC		AS OF	SURVIVOR	SALVAGE	ANNUAL ACCR		SURVIVOR	SALVAGE	ANNUAL ACC		INCREASE/
ACCOUNT	ACCOUNT	ACCOUNT (1)	DECEMBER 31, 2019 (2)	CURVE (3)	PERCENT (4)	AMOUNT (5)=(6)*(2)	RATE (6)	CURVE (7)	PERCENT (8)	AMOUNT (9)	(10)	DECREASE (11)
		(1)	(2)	(3)	(4)	(3)-(6) (2)	(0)	(7)	(6)	(9)	(10)	(11)
		WATER PLANT										
		SOURCE OF SUPPLY PLANT	<u> </u>									
311.00	304.10	STRUCTURES AND IMPROVEMENTS	642,550.27	40-R5	(10)	17,670	2.75	40-R1.5	0	14,468	2.25	(3,202)
314.00	307.00	WELLS AND SPRINGS	3,140,637.95	30-R3	(5)	109,922	3.50	30-S0.5	(5)	114,134	3.63	4,212
316.00	309.00	SUPPLY MAINS	137,489.99	100-R3	(20)	1,650	1.20	60-S3	(5)	3,332	2.42	1,682
317.00	339.00	OTHER WATER SOURCE PLANT										
		2008 AND PRIOR	1,644,016.80	20-SQ	0	71,737	4.36	SQUARE	* 0	71,107	4.33	(630)
		2009 AND SUBSEQUENT	79,244.32	20-SQ	0	3,962	5.00	20-SQ	0	3,962	5.00	0
		TOTAL OTHER WATER SOURCE PLANT	1,723,261.12			75,699	4.39			75,069	4.36	(630)
		TOTAL SOURCE OF SUPPLY PLANT	5,643,939.33			204,941	3.63			207,003	3.67	2,062
		PUMPING PLANT	_									
224.00	204.20	CTDUCTUDES AND IMPROVEMENTS	4 202 200 27	40-R5	(40)	20.204	2.75	40-R1.5	0	22 506	1.60	(15,705)
321.00 325.00	304.20 311.10	STRUCTURES AND IMPROVEMENTS ELECTRIC PUMPING EQUIPMENT	1,392,388.27 907,573.32	35-R1	(10) (20)	38,291 31,130	3.43	40-R1.5 25-R1	(5)	22,586 74,579	1.62 8.22	43,449
328.00	311.20	OTHER PUMPING EQUIPMENT	32,076.32	25-R1	(10)	1,411	4.40	25-R1	(5)	2,538	7.91	1,127
		TOTAL PUMPING PLANT	2,332,037.91			70,832	3.04			99,703	4.28	28,871
		WATER TREATMENT PLANT										
004.00	004.00	OTDIJOTUDEO AND IMPROVEMENTO	50 500 47	40 DE	(40)	4.044	0.75	40 D4 E	0	4.050	0.40	040
331.00 332.00	304.30 320.00	STRUCTURES AND IMPROVEMENTS WATER TREATMENT EQUIPMENT	58,588.17 231,133.66	40-R5 30-R5	(10) (5)	1,611 8,090	2.75 3.50	40-R1.5 25-R1	0 0	1,853 15,438	3.16 6.68	242 7,348
		TOTAL WATER TREATMENT PLANT	289,721.83			9,701	3.35			17,291	5.97	7,590
		TRANSMISSION AND DISTRIBUTION PLANT	200,121100			5,. 5 .	0.00			,	0.01	7,000
		TRANSMISSION AND DISTRIBUTION FLANT	=									
341.00	304.40	STRUCTURES AND IMPROVEMENTS	32,893.56	40-R5	(10)	905	2.75	40-R1.5	0	46	0.14	(859)
342.00	330.00	DISTRIBUTION RESERVOIRS AND STANDPIPES	2,708,343.96	60-R5	(20)	54,167	2.00	65-R2.5	(20)	46,235	1.71	(7,932)
343.00 345.00	331.00 333.00	TRANSMISSION AND DISTRIBUTION MAINS SERVICES	26,634,035.12 5,731,678.62	100-R3 65-R3	(20) (20)	319,608 106,036	1.20 1.85	85-R2.5 45-S2.5	(5) (5)	325,129 129,474	1.22 2.26	5,521 23,438
346.00	334.00	METERS	1,620,461.06	25-R1	5	61,578	3.80	45-32.5 15-L3	5	161,089	9.94	99,511
347.00	334.10	METER INSTALLATIONS	198,718.93	25-R1	5	7,551	3.80	45-S2.5	0	4,453	2.24	(3,098)
348.00	335.00	HYDRANTS	709,986.40	50-S3	(20)	17,040	2.40	45-R3	0	12,038	1.70	(5,002)
349.00	339.00	OTHER TRANSMISSION AND DISTRIBUTION PLANT	178,436.23	20-SQ	0	8,922	5.00	30-S2	0	4,416	2.47	(4,506)
		TOTAL TRANSMISSION AND DISTRIBUTION PLANT	37,814,553.88			575,807	1.52			682,880	1.81	107,073
		GENERAL PLANT	_									
390.00	304.50	STRUCTURES AND IMPROVEMENTS	566,028.75	40-R1	(10)	15,566	2.75	30-R0.5	0	28,983	5.12	13,417
391.00	340.10	OFFICE FURNITURE AND EQUIPMENT										
		FULLY ACCRUED	4,412.60	13-R1	3	329	7.46			0	-	(329)
		AMORTIZED	2,237.30	13-R1	3	167	7.46	20-SQ	0	112	5.01	(55)
		TOTAL OFFICE FURNITURE AND EQUIPMENT	6,649.90			496	7.46			112	1.68	(384)
391.10	340.20	OFFICE FURNITURE AND EQUIPMENT - COMPUTER HARDWARE										
	0.0.20	FULLY ACCRUED	144,391.55	5-SQ	0	0 **	20.00			0	-	0
		AMORTIZED	40,021.48	5-SQ	0	**	20.00	5-SQ	0	8,004	20.00	8,004
		TOTAL OFFICE FURNITURE AND EQUIPMENT - COMPUTER HARDWARE	184,413.03			0	20.00			8,004	4.34	8,004

COMPARISON OF PROPOSED ANNUAL DEPRECIATION EXPENSE VS. CURRENT ANNUAL DEPRECIATION EXPENSE AS OF DECEMBER 31, 2019

			CURRENT			PROPOSED						
AQUARION	NARUC		ORIGINAL COST AS OF	SURVIVOR	NET SALVAGE	CALCULATE ANNUAL ACCR	RUAL	SURVIVOR	NET SALVAGE	CALCULA ANNUAL AC		INCREASE/
ACCOUNT	ACCOUNT	ACCOUNT	DECEMBER 31, 2019	CURVE	PERCENT	AMOUNT	RATE	CURVE	PERCENT	AMOUNT	RATE	DECREASE
		(1)	(2)	(3)	(4)	(5)=(6)*(2)	(6)	(7)	(8)	(9)	(10)	(11)
391.20	340.30	OFFICE FURNITURE AND EQUIPMENT - COMPUTER SOFTWARE FULLY ACCRUED AMORTIZED	368,220.13 51,074.98	5-SQ 5-SQ	0	0 ** 0 **	20.00 20.00	5-SQ	0	0 10,214	- 20.00	0 10,214
		TOTAL OFFICE FURNITURE AND EQUIPMENT - COMPUTER SOFTWARE	419,295.11			0	20.00			10,214	2.44	10,214
392.00 393.00	341.00 342.00	TRANSPORTATION EQUIPMENT STORES EQUIPMENT	644,403.27 330.88	8-S6 20-SQ	10 0	72,495 17	11.25 5.00	10-L2.5 FULLY A	5 CCRUED	6,406 0	0.99	(66,089) (17)
394.00	343.00	TOOLS, SHOP AND GARAGE EQUIPMENT FULLY ACCRUED AMORTIZED TOTAL TOOLS, SHOP AND GARAGE EQUIPMENT	38,702.85 49,146.51 87,849.36	20-SQ 20-SQ	0	1,935 2,457 4,392	5.00 5.00	20-SQ	0	0 2,456 2,456	- 5.00 2.80	(1,935) (1) (1,936)
396.00 397.00	345.00 346.00	POWER OPERATED EQUIPMENT COMMUNICATION EQUIPMENT	109,715.27 51,552.91	15-R3 10-SQ	0	7,318 5,155	6.67 10.00	15-L2 10-SQ	0 0	1,995 5,155	1.82 10.00	(5,323) 0
398.00	347.00	MISCELLANEOUS EQUIPMENT FULLY ACCRUED AMORTIZED	18,577.41 200,883.28	15-SQ 15-SQ	0 0	1,239 13,399	6.67 6.67	15-SQ	0	0 13,393	6.67	(1,239) (6)
		TOTAL MISCELLANEOUS EQUIPMENT	219,460.69			14,638				13,393		(1,245)
		TOTAL GENERAL PLANT	2,289,699.17			120,077	5.24			76,718	3.35	(43,359)
		RESERVE ADJUSTMENT FOR AMORTIZATION	_									
303.00 391.00 391.10 391.20 393.00 394.00 395.00 397.00 398.00	303.00 340.10 340.20 340.30 342.00 343.00 344.00 346.00 347.00	MISCELLANEOUS INTANGIBLE PLANT OFFICE FURNITURE AND EQUIPMENT OFFICE FURNITURE AND EQUIPMENT - COMPUTER HARDWARE OFFICE FURNITURE AND EQUIPMENT - COMPUTER SOFTWARE STORES EQUIPMENT TOOLS, SHOP AND GARAGE EQUIPMENT LABORATORY EQUIPMENT COMMUNICATIONS EQUIPMENT MISCELLANEOUS EQUIPMENT								3,044 (1,868) (17,186) (4,435) (896) 2,808 102 (8,352) 1,808		3,044 (1,868) (17,186) (4,435) (896) 2,808 102 (8,352) 1,808
		TOTAL RESERVE ADJUSTMENT FOR AMORTIZATION								(24,975)		(24,975)
		TOTAL DEPRECIABLE PLANT	48,369,952.12			981,358	2.03			1,058,620	2.19	77,262
301.00 310.00 340.00	301.00 303.10 303.40	NONDEPRECIABLE PLANT AND ACCOUNTS NOT STUDIED ORGANIZATION *** LAND AND LAND RIGHTS LAND AND LAND RIGHTS TOTAL NONDEPRECIABLE PLANT AND ACCOUNTS NOT STUDIED TOTAL WATER PLANT	17,700.00 635,643.46 314,551.16 967,894.62 49,337,846.74									
		- = = = = = = = = = = = = = = = = = = =	,,.									

^{*} REMAINING COSTS TO BE FULLY DEPRECIATED OVER A TWENTY YEAR PERIOD AS PER THE ORDER FROM CASE DW 08-098
** NO CURRENT DEPRECIATION BECAUSE ACCOUNT WAS FULLY ACCRUED
*** ADDITIONS TO ACCOUNT WILL HAVE AN AMORTIZATION PERIOD OF 20 YEARS AND WILL BE DEPRECIATED AT A RATE OF 5%