STATE OF NEW HAMPSHIRE

BEFORE THE

PUBLIC UTILITIES COMMISSION

AQUARION WATER COMPANY OF NEW HAMPSHIRE, INC. DOCKET NO. DW 20-184

DIRECT TESTIMONY OF

NED W. ALLIS

VICE PRESIDENT

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

ON BEHALF OF

AQUARION WATER COMPANY OF NEW HAMPSHIRE

December 18, 2020

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1	I.	INTRODUCTION
2	Q1.	Please state your name and address.
3	A1.	My name is Ned W. Allis. My business address is 207 Senate Avenue, Camp
4		Hill, Pennsylvania 17011.
5		
6	Q2.	Are you associated with any firm?
7	A2.	Yes. I am associated with the firm of Gannett Fleming Valuation and Rate
8		Consultants, LLC ("Gannett Fleming").
9		
10	Q3.	How long have you been associated with Gannett Fleming?
11	A3.	I have been associated with the firm since 2006.
12		
13	Q4.	What is your position with the firm?
14	A4.	I am Vice President.
15		
16	Q5.	On whose behalf are you testifying in this case?
17	A5.	I am testifying on behalf of Aquarion Water Company of New Hampshire
18		("Aquarion" or the "Company").
19		
20	Q6.	Please state your qualifications.
21	A6.	I have 14 years of experience within the field of depreciation, which includes
22		providing expert testimony in more than 30 cases before 13 regulatory
23		commissions. I have also worked on numerous depreciation studies for which I
24		did not submit testimony, including assisting other expert witnesses from Gannett
25		Fleming in additional U.S. jurisdictions and two Canadian provinces. Schedule
26		(NWA-1) to my testimony provides my qualifications, including leadership in the
27		Society of Depreciation Professionals (the "Society") and participation as a
28		faculty member for depreciation training conducted by the Society.
29		

1	II.	PURPOSE OF TESTIMONY
2	Q7.	What is the purpose of your testimony in this proceeding?
3	A7.	The purpose of my testimony is to present the depreciation study performed for
4		Aquarion attached hereto as Schedule (NWA-2). The Depreciation Study sets
5		forth the calculated annual depreciation accrual rates by account as of December
6		31, 2019 for all water plant.
7		
8	Q8.	Please summarize the impact in depreciation rates based on the Depreciation
9		Study.
10	A8.	The table below sets forth a comparison of the current depreciation rates and
11		resultant expense of the proposed depreciation rates by function as of December

12 31, 2019.

		Current]	Proposed
		Pro Forma		
Function	<u>Rates</u>	Expense	<u>Rates</u>	Expense
Source of Supply	3.63	\$204,941	3.67	\$207,003
Pumping	3.04	70,832	4.28	99,703
Water Treatment	3.35	9,701	5.97	17,291
Trans. and Dist.	1.52	575,807	1.81	682,880
General	5.24	120,077	3.35	76,718
General Reserve Adj.		-		(24,975)
Total	2.03	981,358	2.19	1,058,620

13 Q9. Please explain the major factors that caused the change in depreciation rates.

A9. The major factors that cause changes in depreciation rates are the estimated 14 service lives, estimated net salvage, and the recovery of the theoretical reserve 15 imbalances that result from the study. While the average service life estimates for 16 17 many accounts are the same as or longer than the current average service lives, for some accounts the data available for the study indicates shorter service lives. As 18 a result, the recommended service lives for some accounts are shorter than the 19 20 current estimates, although the recommended service lives reflect more gradual change to the service lives than indicated by the data. The impact of shorter 21 22 service lives is offset to some degree by less negative net salvage estimates for

	many accounts, a trend which is also supported by the historical data.
	In the Company's previous depreciation study, the whole life technique was used
	and the calculated difference between the book reserve and calculated (or
	"theoretical") reserve was amortized over a ten-year period. For the current
	study, the remaining life technique was used, which effectively recovers any such
	differences over the remaining lives of the Company's assets. The method of
	recovering any differences between the book and theoretical reserve will also
	impact the resultant depreciation expense, and the use of the remaining life
	technique in the depreciation study also impacts the recommended depreciation
	rates.
Q10.	Are the recommended depreciation accrual rates presented in your study
	reasonable and applicable to the plant in service as of December 31, 2019?
A10.	Yes, they are. Based on the Depreciation Study, I am recommending depreciation
	rates using the December 31, 2019 plant and reserve balances for approval.
III.	DEPRECIATION STUDY
Q11.	Please define the concept of depreciation.
A11.	Depreciation refers to 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 company is not protected by
	insurance. Among the causes to be given consideration are wear and tear, decay,
	insurance. This is causes to be given consideration are wear and tear, decay,
	action of the elements, obsolescence, changes in the art, changes in demand and
	action of the elements, obsolescence, changes in the art, changes in demand and
Q12.	action of the elements, obsolescence, changes in the art, changes in demand and
Q12. A12.	action of the elements, obsolescence, changes in the art, changes in demand and the requirements of public authorities.
-	action of the elements, obsolescence, changes in the art, changes in demand and the requirements of public authorities. Please identify the Depreciation Study you performed for Aquarion.
	A10. III. Q11.

1		was prepared and the analyses that underlie the study were conducted under my
2		direction and supervision.
3		
4	Q13.	Is Schedule (NWA-2) a true and accurate copy of your Depreciation Study?
5	A13.	Yes.
6		
7	Q14.	Does Schedule (NWA-2) accurately portray the results of your Depreciation
8		Study as of December 31, 2019?
9	A14.	Yes.
10		
11	Q16.	What was the purpose of the Depreciation Study?
12	A16.	The purpose of the Depreciation Study was to estimate the annual depreciation
13		accruals related to water plant in service for financial and ratemaking purposes
14		and determine appropriate average service lives and net salvage percentages for
15		each plant account.
16		
17	Q17.	Are the methods and procedures of the Depreciation Study consistent with
18		industry practices?
19	A17.	Yes, the methods and procedures of the study are generally in accordance with
20		industry standards. Both the existing rates and the proposed rates determined in
21		the Depreciation Study are based on the average service life procedure. However,
22		the proposed rates are determined based on the more common remaining life
23		method while existing rates are based on the whole life method.
24		
25	Q18.	What are the most common depreciation methods?
26	A18.	The calculation of depreciation requires the selection of a depreciation method,
27		which includes the selection of a procedure and technique (or basis) for
28		calculating depreciation rates. The recommended depreciation rates in the
29		Depreciation Study are based on the straight-line method, average service life -
30		broad group procedure and remaining life technique, which is the most commonly

used depreciation method for public utility depreciation. The straight-line method and average service life – broad group procedure was used in the previous depreciation study for Aquarion. However, the use of the remaining life technique is a change from the previous depreciation study for the Company, in which the whole life technique was used.

7 For the whole life technique, depreciation is calculated based on the basis of the full service life, or whole life, estimated for a group of assets. For example, if the 8 9 service life estimate for an asset that costs \$100 is 10 years, and no net salvage is expected, then the annual depreciation rate would be 10% (or (1-0%)/10). Issues 10 can arise with the whole life technique if service life estimates change or if the 11 real-world experience of the group does not perfectly match the service life and 12 net salvage estimates. Using the same example, if after five years of the asset's 13 life the accumulated depreciation was \$60, then applying a 10% whole life 14 15 depreciation rate for each of the remaining five years of the asset's life would result in a total recovery through depreciation of \$110 (the \$60 in accumulated 16 depreciation plus \$10 per year for five years). As a result, the whole life 17 technique would, without an adjustment, result in the recovery of the incorrect 18 amount of depreciation expense. Such situations can, and do, arise regularly 19 20 because depreciation is, by nature, a forecast of the future for thousands of individual assets. 21

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> The remaining life technique addresses the issue described in the previous paragraph by taking a prospective approach and allocating costs over the expected time the related assets will remain in service. Rather than calculating depreciation based on the whole service life, the remaining life technique allocates the amount remaining to be recovered (which is the original cost for the group less net salvage less accumulated depreciation) over its estimated remaining life. As a result, the remaining life technique ensures that the full service value (original cost less net salvage) will be recovered through depreciation expense – no more

> > - 5 -

or no less. In part for this reason, the remaining life technique is used in the vast majority of U.S. regulatory jurisdictions. Its use is recommended in the Depreciation Study.

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Q19. Why is the remaining life methodology superior to the whole life method?

6 A19. A simple example will explain why the remaining life methodology is superior. 7 Assume that there is a single asset with a cost of \$100, an estimated service life of 10 years and no net salvage. The depreciation rate would be 10.0% and the 8 9 annual depreciation expense would be \$10. After five years, a new depreciation study is performed and the service life is determined to be 15 years. Using the 10 11 whole life method, the depreciation rate would be changed to 6.67% and the annual depreciation expense would be \$6.67. If the whole life technique were 12 used, then over the full 15-year service life, a total of \$116.70 would be recovered 13 through depreciation expense (\$10 per year for the first five years and \$6.67 per 14 15 year for the final ten years). However, this means that too much depreciation expense is recovered over the service life, as more than the \$100 cost of the asset 16 is recovered through depreciation expense. 17

18

When using the remaining life technique, the depreciation expense would be the 19 20 same \$10 per year for the first five years. However, in contrast to the whole life technique, when the updated depreciation study is performed after year five and 21 the 15-year life is determined, the depreciation rate is calculated to incorporate the 22 amount of depreciation recovered to date. That is, the remaining life technique 23 recognizes that \$50 of the \$100 has been recovered allocates the remaining \$50 24 (i.e., \$100 - \$50) in future depreciation expense over the 10 year remaining life, 25 for a depreciation rate of 5% and an annual depreciation expense of \$5. Over the 26 15-year service life of the asset, \$100 is recovered through depreciation expense 27 (\$10 per year for the first five years and \$5 per year for the last ten years). Thus, 28 the remaining life technique corrects the issue that arises from the use of the 29 30 whole life technique, for which too much depreciation expense would be

1		recovered.
2		
3	Q20.	Please describe the contents of Schedule (NWA-2).
4	A20.	My report is presented in nine parts. Part I, Introduction, describes the scope and
5		basis for the Depreciation Study. Part II, Estimation of Survivor Curves, includes
6		descriptions of the methodology of estimating survivor curves. Parts III and IV
7		set forth the analysis for determining life and net salvage estimates. Part V,
8		Calculation of Annual and Accrued Depreciation, includes the concepts of
9		depreciation and amortization using the remaining life method. Part VI, Results
10		of Study, presents a description of the results and a summary of the depreciation
11		calculations. Parts VII, VIII and IX include graphs and tables that relate to the
12		service life and net salvage analyses, and the detailed depreciation calculations.
13		
14		The table on pages VI-4 and VI-5 of Schedule (NWA-2) presents the estimated
15		survivor curve, the net salvage percent, the original cost as of December 31, 2019,
16		the book depreciation reserve, and the calculated annual depreciation accrual and
17		rate for the account or subaccount. The section beginning on page VII-2 presents
18		the results of the retirement rate analyses prepared as the historical bases for the
19		service life estimates. The section beginning on page VIII-2 presents the results
20		of the net salvage analysis. The section beginning on page IX-2 presents the
21		depreciation calculations related to surviving original cost as of December 31,
22		2019.
23		
24	Q21.	Please explain how you performed your Depreciation Study.
25	A21.	I used the straight line remaining life method of depreciation, with the average

A21. I used the straight line remaining life method of depreciation, with the average service life procedure. The annual depreciation is based on a method of depreciation accounting that seeks to distribute the unrecovered cost of fixed capital assets over the estimated remaining useful life of the unit, or group of assets, in a systematic and rational manner.

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1	Q22.	How did you determine the recommended annual depreciation accrual rates?
2	A22.	I did this in two phases. In the first phase, I estimated the service life and net
3		salvage characteristics for the depreciable group, that is, the plant account or
4		subaccount identified as having similar characteristics. In the second phase, I
5		calculated the composite remaining lives and annual depreciation accrual rates
6		based on the service life and net salvage estimates determined in the first phase.
7		
8	Q23.	Please describe the first phase of the Depreciation Study, in which you
9		estimated the service life and net salvage characteristics for the depreciable
10		group.
11	A23.	The service life and net salvage analyses consisted of compiling historic data from
12		records related to Aquarion's plant; analyzing these data to obtain historic trends
13		of survivor and net salvage characteristics; obtaining supplementary information
14		from Aquarion management personnel and operating personnel concerning
15		practices and plans as they relate to plant operations; and interpreting the above
16		data based on my experience and in reference to estimates used by other water
17		utilities to form judgments of average service life and net salvage characteristics.
18		
19	Q24.	What historical data did you rely on to estimate service life characteristics?
20	A24.	I analyzed accounting entries for the Company relating to plant additions,
21		transfers, and retirements recorded through 2019. The records of the Company
22		also included transactional data and surviving dollar value by year installed for
23		each plant account as of December 31, 2019. For the current study, aged data -
24		i.e., data that incorporates the actual age of retirements - was available from
25		2008 through 2019. Because many of the assets studied have historically had
26		lives that, on average, spanned many decades, the aged data was supplemented
27		with statistically aged data through 2007 based on the unaged data analyzed in
28		previous studies. This allowed for a longer period of data to be included in the
29		study. Actuarial analyses were performed on both the full period of data available
30		- i.e., both aged and statistically aged - as well as for the period for which only

1		aged data was available.
2		
3	Q25.	What method did you use to analyze this service life data?
4	A25.	I used the retirement rate method for all accounts. This is the most appropriate
5		method when aged retirement data are available, because this method determines
6		the average rates of retirement actually experienced by the Company during the
7		period of time covered by the study.
8		
9	Q26.	Please explain how you used the retirement rate method to analyze
10		Aquarion's service life data.
11	A26.	I applied the retirement rate method to each group of property in the Depreciation
12		Study. For each property group, I used the retirement rate method to form a life
13		table, which, when plotted, shows an original survivor curve for that property
14		group. The original survivor curve represents the average survivor pattern
15		experienced by multiple vintage groups during the experienced band studied. The
16		survivor patterns alone do not necessarily describe the life characteristics of the
17		property group; therefore, interpretation of the original survivor curves is required
18		in order to use them as valid considerations in estimating service life. The Iowa-
19		type Survivor Curves were used to perform these interpretations.
20		
21	Q27.	What is an "Iowa-type Survivor Curve" and how did you use such curves to
22		estimate the service life characteristics for the property group?
23	A27.	Iowa-type Survivor Curves are a widely used group of generalized survivor
24		curves that contain the range of survivor characteristics usually experienced by
25		utilities and other industrial companies. The Iowa curves were developed at the
26		Iowa State College Engineering Experiment Station through an extensive process
27		of observing and classifying the ages at which various types of property used by
28		utilities and other industrial companies have been retired.
29		
30		Iowa-type curves are used to smooth and extrapolate original survivor curves

1		determined by the retirement rate method. The Depreciation Study used Iowa
2		curves and truncated original curves to describe the forecasted rates of retirement
3		based on the observed rates of retirement and the outlook for future retirements.
4		
5		The estimated survivor curve designations for the depreciable property group
6		indicate the average service life, the family within the Iowa system to which the
7		property group belongs, and the relative height of the mode. For example, the
8		Iowa 45-R3 indicates an average service life of 45 years; a right-moded, or R type
9		curve (the mode occurs after average life for right-moded curves); and a medium
10		height, 3, for the mode (possible modes for R type curves range from 0.5 to 5).
11		
12	Q28.	Did you physically observe Aquarion's plant and equipment as part of the
13		Depreciation Study?
14	A28.	No. My typical practice is to perform physical site visits for depreciation studies.
15		However, due to restrictions in place related to the COVID-19 pandemic, I have
16		not been able to perform a physical site visit for this study. In lieu of a physical
17		site visit, the Company provided virtual site visits of certain facilities. The
18		Company also provided photos of major facilities. In addition, I conducted
19		meetings with the Company's operating and engineering personnel to develop an
20		understanding of the Company's assets and future plans.
21		
22	Q29.	How did your experience in development of other depreciation studies affect
23		your work in this case for Aquarion?
24	A29.	Since I customarily conduct field reviews for my depreciation studies, I have had
25		the opportunity to visit similar facilities and meet with management and
26		operations personnel at many other companies. The knowledge I have
27		accumulated from those visits and meetings provides me with useful information
28		to draw upon to confirm or challenge my numerical analyses concerning asset
29		condition and remaining life estimates.
30		

1	Q30.	Are the factors considered in your estimates of service life and net salvage
2		percents presented in Schedule (NWA-2)?
3	A30.	Yes. Discussions of the factors considered in the estimation of service lives and
4		net salvage percents are presented in Parts III and IV of the study.
5		
6	Q31.	Please describe the concept of "net salvage".
7	A31.	Net salvage is a component of the service value of capital assets that is recovered
8		through depreciation rates. The service value of an asset is its original cost less its
9		net salvage. Net salvage is the gross salvage value received for the asset upon
10		retirement less the cost to retire the asset. When the cost to retire the asset
11		exceeds the gross salvage value, the result is negative net salvage.
12		
13		Because depreciation expense is the loss in service value of an asset during a
14		defined period (e.g., one year), it must include a ratable portion of both the
15		original cost of the asset and the net salvage. That is, the net salvage related to an
16		asset should be incorporated in the cost of service during the same period as its
17		original cost, so customers receiving service from the asset pay rates that include
18		a portion of both elements of the asset's service value, the original cost and the
19		net salvage value. For example, the full service value of a \$5,000 water main may
20		also include \$1,300 of cost of removal and \$50 gross salvage, for a total service
21		value of \$6,250.
22	Q32.	Please describe how you estimated net salvage percentages.
23	A32.	I estimated the net salvage percentages by incorporating the Company's actual
24		historical data through 2019 and considered industry experience of net salvage
25		estimates for other water companies. The net salvage percentages in the
26		Depreciation Study are based on a combination of statistical analyses and
27		informed judgment. The statistical analyses consider the cost of removal and

gross salvage ratios to the associated retirements during the 10-year period for
which data were available for Aquarion. Trends of these data are also measured
based on three-year moving averages and the most recent five-year indications.

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2	Q33.	Please describe the second phase of the process that you used in the
3		Depreciation Study in which you calculated composite remaining lives and
4		annual depreciation accrual rates.
5	A33.	After I estimated the service life and net salvage characteristics for the
6		depreciable property group, I calculated the annual depreciation accrual rates for
7		the group based on the straight line remaining life method, using remaining lives
8		weighted consistent with the average service life procedure. The calculation of
9		annual depreciation accrual rates was developed as of December 31, 2019.
10		
11	Q34.	Please describe the straight line remaining life method of depreciation.
12	A34.	The straight line remaining life method of depreciation allocates the original cost
13		of the property, less accumulated depreciation, less future net salvage, in equal
14		amounts to the year of remaining service life. This method recovers the variance
15		between the actual book reserve and the theoretical book reserve over the
16		remaining life of each asset class.
17		
18	Q35.	Please describe the average service life procedure for calculating remaining
19		life accrual rates.
20	A35.	The average service life procedure defines the group or account for which the
21		remaining life annual accrual is determined. For this procedure, the annual
22		accrual rate is determined for the entire group or account based on its average
23		remaining life and the rate is then applied to the surviving balance of the group's
24		cost. The average remaining life of the group is calculated by first dividing the
25		future book accruals (original cost less allocated book reserve less future net
26		salvage) by the average remaining life for the vintage. The average remaining life
27		for the vintage is derived from the area under the survivor curve between the
28		attained age of the vintage and the maximum age. The sum of the future book
29		accruals is then divided by the sum of the annual accruals to determine the
30		average remaining life of the entire group for use in calculating the annual

- depreciation accrual rate.
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Q36. Please describe amortization accounting in contrast to depreciation accounting.

Amortization accounting is used for accounts with a large number of units, but 5 A36. small asset values. In amortization accounting, units of property are capitalized in 6 7 the same manner as they are in depreciation accounting. However, depreciation 8 accounting is difficult for these types of assets because depreciation accounting 9 requires periodic inventories to properly reflect plant in service. Consequently, 10 amortization accounting is used for these types of assets, such that retirements are recorded when a vintage is fully amortized rather than as the units are removed 11 from service. That is, there is no dispersion of retirements in amortization 12 accounting. All units are retired when the age of the vintage reaches the 13 amortization period. The plant account or group of assets is assigned a fixed 14 15 period that represents an anticipated life during which the asset will provide service. For example, in amortization accounting, assets that have a 15-year 16 amortization period will be fully recovered after 15 years of service and taken off 17 the company's books at that time, but not necessarily removed from service. In 18 contrast, assets that are taken out of service before 15 years remain on the books 19 20 until the amortization period for that vintage has expired.

21

22 Q37. Is amortization accounting being utilized for certain plant accounts?

A37. Yes. However, amortization accounting is only appropriate for certain General
 Plant accounts. The General Plant accounts are 391.00, 391.10, 391.20, 393.00,
 394.00, 397.00 and 398.00. These accounts represent approximately two percent
 of Aquarion's depreciable plant.

27

Q38. Have you made additional recommendations for these amortization accounts?

30 A38. Yes. In order to achieve a more stable accrual rate for these accounts in the

future, I have recommended a five-year amortization to adjust the reserve for these amortization accounts. This approach will achieve consistent amortization rates for existing assets as well as future assets.

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Q39. Please provide an example to illustrate the development of the annual depreciation accrual rate for a particular group of property in your Depreciation Study.

8 A39. I will use Account 345.00, Services, as an example because it is one of the largest 9 depreciable groups. The retirement rate method was used to analyze the survivor 10 characteristics of this property group. Aged plant accounting data were compiled from 2008 through 2019 and statistically aged data were compiled from 1914 11 through 2007. The life tables for the 1914-2019 experience band and 2008-2019 12 experience bands are presented on pages VII-35 through VII-38 of Schedule 13 (NWA-2). The life tables display the retirement and surviving ratios of the aged 14 15 plant data exposed to retirement by age interval. For example, page VII-32 shows \$961 retired during age interval 0.5-1.5 with \$5,925,842 exposed to retirement at 16 the beginning of the interval. Consequently, the retirement ratio is 0.0002 17 (\$961/\$5,925,842) and the survivor ratio is 0.9998 (1-0.0002). The percent 18 surviving at age 0.5 of 99.99 percent is multiplied by the survivor ratio of 0.9998 19 20 to derive the percent surviving at age 1.5 of 99.98 percent. This process continues for the remaining age intervals for which plant was exposed to retirement during 21 the period 1914-2019. The resultant life tables, or original survivor curves, are 22 plotted along with the estimated smooth survivor curve, the 45-S2.5 on page VII-23 34. 24

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The experienced net salvage percentages are presented on page VIII-10 of Schedule (NWA-2). The percentages are based on the result of annual gross salvage minus the cost to remove plant assets as compared to the original cost of plant retired during the period 2008 through 2019. The twelve-year period experienced negative \$9,244 (\$0 - \$9,244) in net salvage for \$140,545 plant

- 14 -

1		retired. The result is net salvage of negative 7 percent (\$9,244/\$140,545). The
2		most recent five-year average is negative 10 percent. Therefore, based on the
3		statistics for this account, the three-year rolling averages, the trend in recent years,
4		as well as the estimates of other water companies, the recommended net salvage
5		for services is negative 5 percent.
6		
7		The calculation of the annual depreciation related to original cost of Account
8		345.00, Services as of December 31, 2019, is presented on pages IX-15 and IX-16
9		of Schedule (NWA-2). The calculation is based on the 45-S2.5 survivor curve,
10		the negative net salvage of 5 percent, the attained age, and the allocated book
11		reserve. The tabulation sets forth the installation year, the original cost,
12		calculated accrued depreciation, allocated book reserve, future accruals,
13		remaining life and annual accrual. These totals are brought forward to the table
14		on page VI-4.
15		
16	Q40.	Please compare the proposed depreciation expense to the current pro forma
17		depreciation expense as of December 31, 2018.
18	A41.	Schedule (NWA-3) sets forth the proposed versus current depreciation expense as
19		of December 31, 2019 for the Company. The overall change reflected in the
20		Aquarion Depreciation Study is an increase of \$77,262 annually.
21		
22	Q42.	Have you established any special amortizations within the study?
23	A42.	Yes. I have established a 5-year amortization for certain General Plant accounts
24		in order to stabilize the current and future rates for these assets as well as ensure
25		full recovery of the service value of the assets by the time the assets are taken out
26		of service. The 5-year amortization is negative \$24,975 annually for Aquarion.
27		
28	Q43.	In your opinion, are the depreciation rates set forth in Schedule (NWA-2) the
29		appropriate rates for the Commission to adopt in this proceeding for
30		Aquarion?
31	A43.	Yes. These rates appropriately reflect the rates at which the value of Aquarion's

1		assets are being consumed over their useful lives. These rates are an appropriate			
2		basis for setting water rates in this matter and for the Company to use for booking			
3	depreciation and amortization expense going forward.				
4					
5	Q44.	Does this conclude your direct testimony?			
6	A44.	Yes.			

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

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?

 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	Jurisdiction	Docket No.	<u>Client/Utility</u>	Subject
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	Рерсо	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	Рерсо	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	Jurisdiction	Docket No.	Client/Utility	Subject
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	Рерсо	Depreciation
35.	2020	MA	20-120	Boston Gas Company	Depreciation

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:



Excellence Delivered As Promised

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

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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. The 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.

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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:

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			<u>(24,975)</u>
TOTAL	<u>\$48,369,952.12</u>	2.19	<u>\$1,058,620</u>

SUMMARY OF ORIGINAL COST, ACCRUAL RATES AND AMOUNTS

PART I. INTRODUCTION

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

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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.

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

PART II. ESTIMATION OF SURVIVOR CURVES

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. For example, in Figure 1, the remaining life at age 30 is equal to the crosshatched area under the survivor curve divided by 29.5 percent surviving at age 30. The probable life at any age is developed by adding the age and remaining life. If the probable life of the property is calculated for each year of age, the probable life curve shown in the chart can be developed. The frequency curve presents the number of units retired in each age interval. It is derived by obtaining the differences between the amount of property surviving at the beginning and at the end of each interval.

This study has incorporated the use of Iowa 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.

lowa 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 origin moded curves, presented in Figure 5, are those in which the greatest frequency of retirement occurs to 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.

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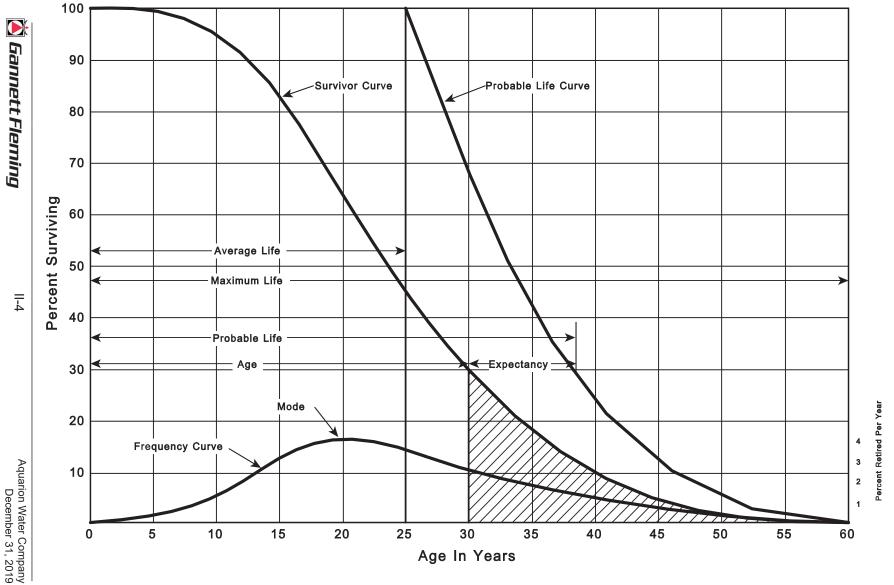


Figure 1. A Typical Survivor Curve and Derived Curves

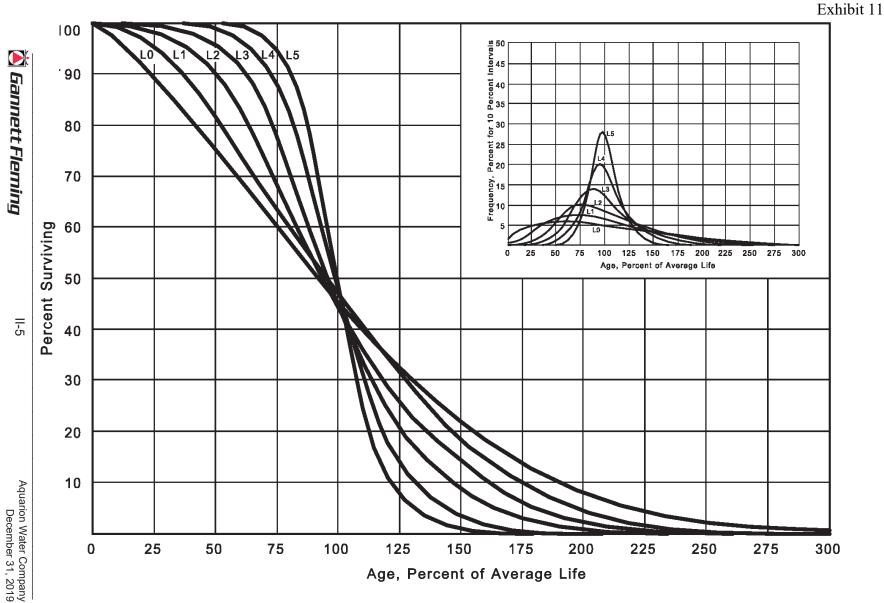


Figure 2. Left Modal or "L" Iowa Type Survivor Curves

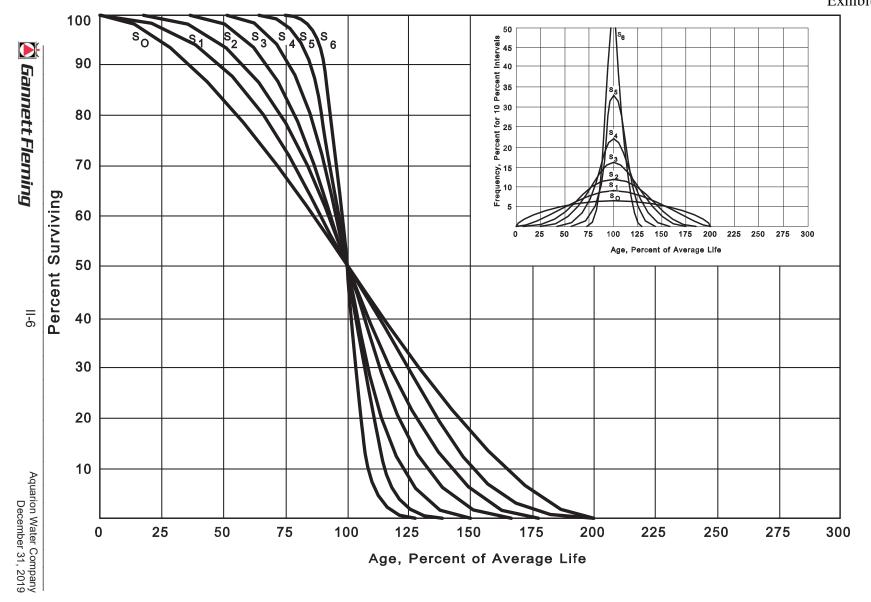


Figure 3. Symmetrical or "S" lowa Type Survivor Curves

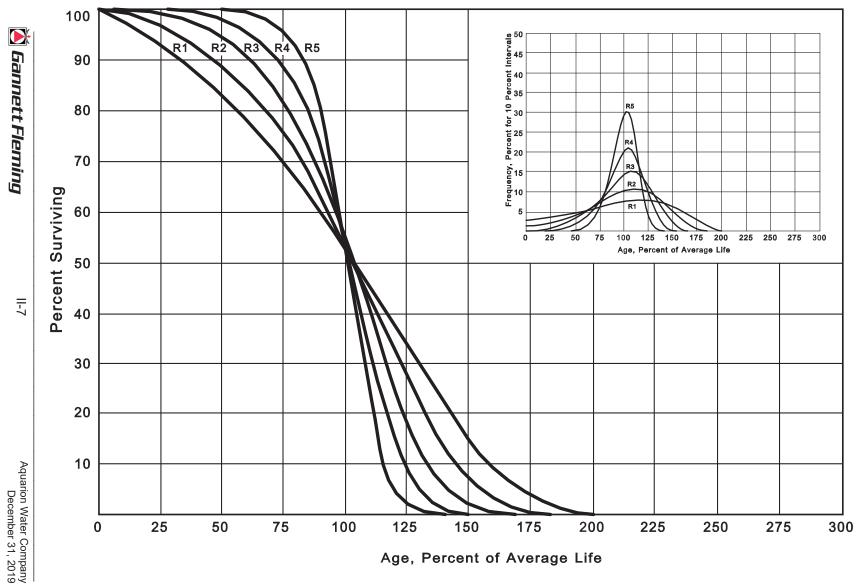


Figure 4. Right Modal or "R" lowa Type Survivor Curves

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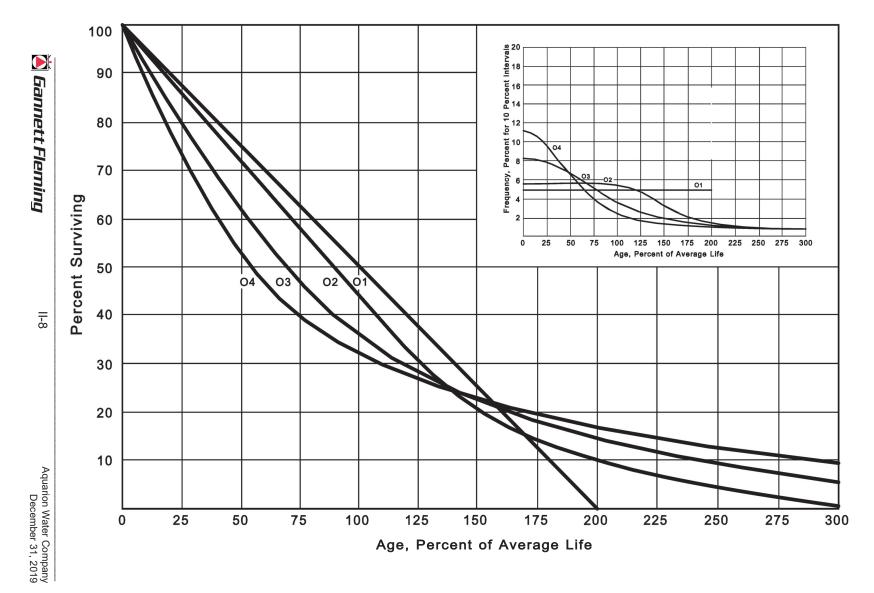


Figure 5. Origin Modal or "O" Iowa Type Survivor Curves

These curve types have also been presented in subsequent Experiment Station bulletins and in the text, "Engineering Valuation and Depreciation."¹ 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,"² "Engineering Valuation and Depreciation,"³ and "Depreciation Systems."⁴

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

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.

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

Schedules of Annual Transactions in Plant Records

The property group used to illustrate the retirement rate method is observed for the experience band 2010-2019 during which there were placements during the years 2005-2019. In order to illustrate the summation of the aged data by age interval, the data were compiled in the manner presented in Schedules 1 and 2 on pages II-12 and II-13. In Schedule 1, the year of installation (year placed) and the year of retirement are shown. The age interval during which a retirement occurred is determined from this information. In the example which follows, \$10,000 of the dollars invested in 2005 were retired in 2010. The \$10,000 retirement occurred during the age interval between 4½ and 5½ years on the basis that approximately one-half of the amount of property was installed prior to and subsequent to July 1 of each year. That is, on the average, property installed during a year is placed in service at the midpoint of the year for the purpose of the analysis. All retirements also are stated as occurring at the midpoint of a one-year age interval of time, except the first age interval which encompasses only one-half year.

The total retirements occurring in each age interval in a band are determined by summing the amounts for each transaction year-installation year combination for that age interval. For example, the total of \$143,000 retired for age interval $4\frac{1}{2}$ -5 $\frac{1}{2}$ is the sum of the retirements entered on Schedule 1 immediately above the stair step line drawn on the table beginning with the 2010 retirements of 2005 installations and ending with the 2019 retirements of the 2014 installations. Thus, the total amount of 143 for age interval $4\frac{1}{2}$ -5 $\frac{1}{2}$ equals the sum of:

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

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

Schedule of Plant Exposed to Retirement

The development of the amount of plant exposed to retirement at the beginning of each age interval is illustrated in Schedule 3 on page II-14. The surviving plant at the beginning of each year from 2010 through 2019 is recorded by year in the portion of the table headed "Annual Survivors at the Beginning of the Year." The last amount entered in each column is the amount of new plant added to the group during the year. The amounts entered in Schedule 3 for each successive year following the beginning balance or addition are obtained by adding or subtracting the net entries shown on Schedules 1 and 2. For the purpose of determining the plant exposed to retirement, transfers-in are considered as being <u>exposed</u> to retirement in this group <u>at the beginning of the year</u> in which they occurred, and the sales and transfers-out are considered to be removed from the 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 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 and the sales and transfers-out are the amounts of plant from each placement year considered to be exposed to retirement at the beginning of each and the sales and the sales are the amounts of plant from each placement year considered to be exposed to retirement at the beginning of each and the sales and the sales for the installation year 2015 are calculated in the following manner:

Exposures at age 0 = am	ount of addition	= \$750,000
Exposures at age $\frac{1}{2}$ = \$75	50,000 - \$ 8,000	= \$742,000
Exposures at age 11/2 = \$74	42,000 - \$18,000	= \$724,000
Exposures at age $2\frac{1}{2} = $	24,000 - \$20,000 - \$19,000	= \$685,000
Exposures at age $3\frac{1}{2}$ = \$68	85,000 - \$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	During Year										Total During	Age
Placed	<u>2010 2011 2012 2013 2014 2015 2016 2017 2018 2019</u>								<u>Age Interval</u>	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	121⁄2-131⁄2
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	101⁄2-111⁄2
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	71⁄2-81⁄2
2012			6	12	13	15	16	17	19	19	124	61/2-71/2
2013				6	13	15	16	17	19	19	131	51⁄2-61⁄2
2014					7	14	16	17	19	20	143	41⁄2-51⁄2
2015						8	18	20	22	23	146	31⁄2-41⁄2
2016							9	20	22	25	150	21/2-31/2
2017								11	23	25	151	11⁄2-21⁄2
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	g Year						
Year <u>Placed</u> (1)	<u>2010</u> (2)	<u>2011</u> (3)	<u>2012</u> (4)	<u>2013</u> (5)	<u>2014</u> (6)	<u>2015</u> (7)	<u>2016</u> (8)	<u>2017</u> (9)	<u>2018</u> (10)	<u>2019</u> (11)	Total During <u>Age Interval</u> (12)	Age <u>Interval</u> (13)
(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	(-)	()	()	()	(
2005	-	-	-	-	-	-	60 ^a	-	-	-	-	131⁄2-141⁄2
2006	-	-	-	-	-	-	-	-	-	-	-	12½-13½
2007	-	-	-	-	-	-	-	-	-	-	-	11½-12½
2008	-	-	-	-	-	-	-	(5) ^b	-	-	60	101⁄2-111⁄2
2009	-	-	-	-	-	-	-	6 ^a	-	-	-	91⁄2-101⁄2
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

^b Transfer Affecting Exposures at End of Year

^c Sale with Continued Use

Parentheses Denote Credit Amount.

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											A
Year	Annual Survivors at the Beginning of the Year											Age
Placed									<u>Age Interval</u>	Interval		
(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	131⁄2-141⁄2
2006	279	268	256	243	228	212	194	174	153	131	323	121⁄2-131⁄2
2007	307	296	284	271	257	241	224	205	184	162	531	111/2-121/2
2008	338	330	321	311	300	289	276	262	242	226	823	101⁄2-111⁄2
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	71⁄2-81⁄2
2012			510ª	504	492	479	464	448	431	412	2,463	61⁄2-71⁄2
2013				580ª	574	561	546	530	501	482	3,057	51⁄2-61⁄2
2014					660ª	653	639	623	628	609	3,789	41⁄2-51⁄2
2015						750ª	742	724	685	663	4,332	31/2-41/2
2016							850ª	841	821	799	4,955	21/2-31/2
2017								960ª	949	926	5,719	11/2-21/2
2018									1,080ª	1,069	6,579	1/2-11/2
2019										1,220ª	7,490	0-1⁄2
Total	1,975	2,382	2,824	3,318	3,872	4,494	5,247	6,017	6,852	7,799	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:

255 + 268 + 284 + 311 + 334 + 374 + 405 + 448 + 501 + 609.

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 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 $5\frac{1}{2}$ are

as follows:

Percent surviving at age 4½	=	88.15				
Exposures at age 4 ¹ / ₂	=	3,789,000				
Retirements from age $4\frac{1}{2}$ to $5\frac{1}{2}$	=	143,000				
Retirement Ratio	=	143,000	÷3	3,789,000	=	0.0377
Survivor Ratio	=	1.000	-	0.0377	=	0.9623
Percent surviving at age 5 ¹ ⁄ ₂	=	(88.15)	х	(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

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

(Exposure and Retirement Amounts are in Thousands of Dollars)

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

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

Column 4 = Column 3 Divided by Column 2.

Column 5 = 1.0000 Minus Column 4.

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

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

Smoothing the Original Survivor Curve

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

The lowa type curves are used in this study to smooth those original stub curves which are expressed as percents surviving at ages in years. Each original survivor curve was compared to the lowa curves using visual and mathematical matching in order to determine the better fitting smooth curves. In Figures 6, 7, and 8, the original curve developed in 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 thet the L1 or the S0.

In Figure 9, the three fittings, 12-L1, 12-S0 and 12-R1 are drawn for comparison purposes. It is probable that the 12-R1 lowa curve would be selected as the most representative of the plotted survivor characteristics of the group.

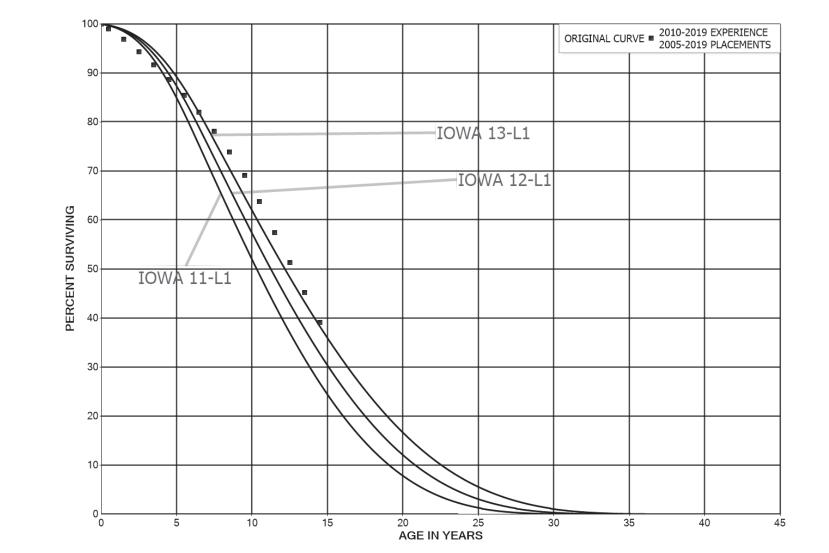


FIGURE 6. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN L1 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES

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Exhibit 11

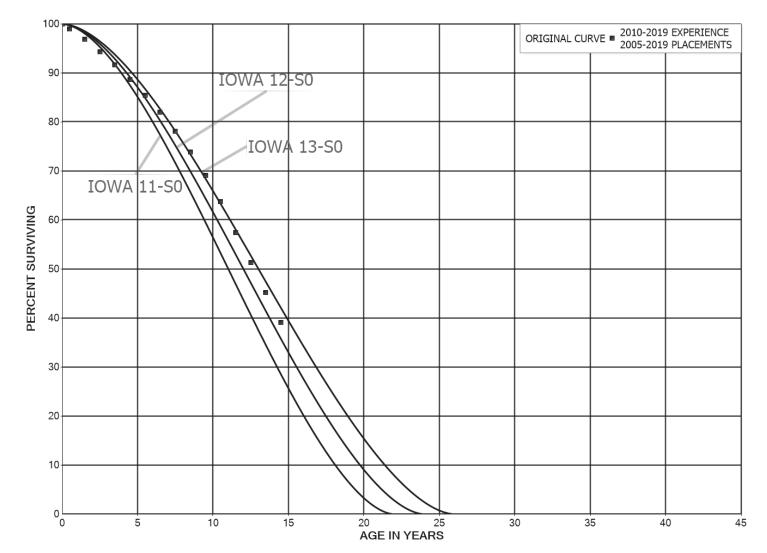


FIGURE 7. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN SO IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES

Exhibit 11

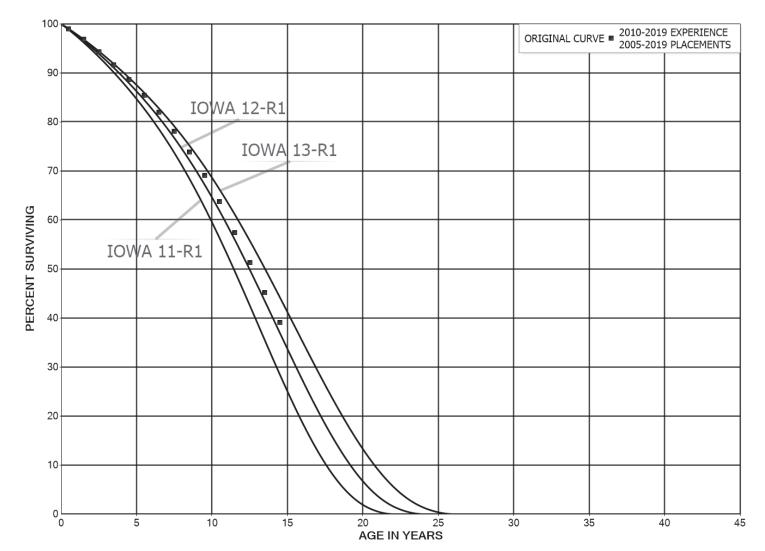


FIGURE 8. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN R1 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES

Gannett Fleming

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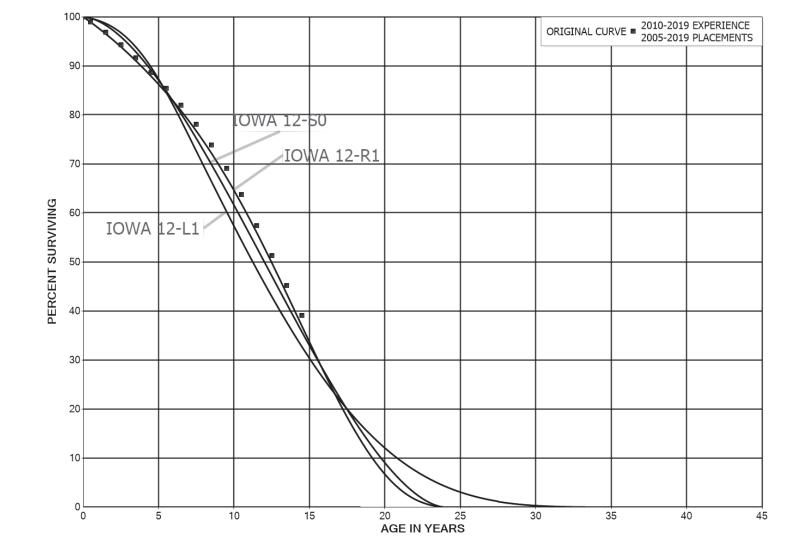


FIGURE 9. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN L1, S0 AND R1 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES

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PART III. SERVICE LIFE CONSIDERATIONS

PART III. SERVICE LIFE CONSIDERATIONS

FIELD TRIPS

In order to be familiar with the operation of the Company and observe representative portions of the plant, 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

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 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

111-4

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

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.

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

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

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:

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

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:

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

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:

<u>ACCT</u>	TITLE	AMORTIZATION PERIOD, <u>YEARS</u>
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

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

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

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.

AQUARION WATER COMPANY OF NEW HAMPSHIRE

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	CALCULA ANNUAL AC		COMPOSITE REMAINING
ACCOUNT	ACCOUNT	ACCOUNT(1)	CURVE (2)	PERCENT (3)	DECEMBER 31, 2019 (4)	RESERVE (5)	ACCRUALS (6)	AMOUNT (7)	RATE (8)	LIFE (9)
		WATER PLANT								
		SOURCE OF SUPPLY PLANT								
311.00	304.10	STRUCTURES AND IMPROVEMENTS	40-R1.5	0	642,550.27	236,615	405,935	14,468	2.25	28.1
314.00 316.00	307.00 309.00	WELLS AND SPRINGS SUPPLY MAINS	30-S0.5 60-S3	(5) (5)	3,140,637.95 137,489.99	1,092,889 47,489	2,204,781 96,875	114,134 3,332	3.63 2.42	19.3 29.1
317.00	339.00	OTHER WATER SOURCE PLANT								
		2008 AND PRIOR 2009 AND SUBSEQUENT	SQUARE 20-SQ	* 0 0	1,644,016.80 79,244.32	932,939 16,297	711,078 62,947	71,107 3,962	4.33 5.00	10.0 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								
321.00	304.20	STRUCTURES AND IMPROVEMENTS	40-R1.5	0	1,392,388.27	818,385	574,003	22,586	1.62	25.4
325.00 328.00	311.10 311.20	ELECTRIC PUMPING EQUIPMENT OTHER PUMPING EQUIPMENT	25-R1 25-R1	(5) (5)	907,573.32 32,076.32	30,909 1,260	922,043 32,420	74,579 2,538	8.22 7.91	12.4 12.8
		TOTAL PUMPING PLANT			2,332,037.91	850,554	1,528,466	99,703	4.28	
		WATER TREATMENT PLANT								
331.00 332.00	304.30 320.00	STRUCTURES AND IMPROVEMENTS WATER TREATMENT EQUIPMENT	40-R1.5 25-R1	0	58,588.17 231,133.66	2,340 15,419	56,248 215,715	1,853 15,438	3.16 6.68	30.4 14.0
332.00	320.00		23-61	0	289,721.83	17,759	271,963	17,291	5.97	14.0
		TRANSMISSION AND DISTRIBUTION PLANT			209,721.03	17,755	271,903	17,231	5.97	
044.00	004.40	STRUCTURES AND IMPROVEMENTS	40 D4 C	0	00 000 50	04.004	4 000	10	0.44	00.4
341.00 342.00	304.40 330.00	DISTRIBUTION RESERVOIRS AND STANDPIPES	40-R1.5 65-R2.5	0 (20)	32,893.56 2,708,343.96	31,234 1,124,468	1,660 2,125,545	46 46,235	0.14 1.71	36.1 46.0
343.00 345.00	331.00 333.00	TRANSMISSION AND DISTRIBUTION MAINS SERVICES	85-R2.5 45-S2.5	(5) (5)	26,634,035.12 5,731,678.62	4,566,798 2,284,927	23,398,939 3,733,336	325,129 129,474	1.22 2.26	72.0 28.8
346.00	334.00	METERS	45-32.5 15-L3	5	1,620,461.06	141,060	1,398,378	161,089	9.94	8.7
347.00	334.10	METER INSTALLATIONS	45-S2.5	0	198,718.93	78,635	120,084	4,453	2.24	27.0
348.00 349.00	335.00 339.00	HYDRANTS OTHER TRANSMISSION AND DISTRIBUTION PLANT	45-R3 30-S2	0 0	709,986.40 178,436.23	378,689 91,531	331,297 86,905	12,038 4,416	1.70 2.47	27.5 19.7
		TOTAL TRANSMISSION AND DISTRIBUTION PLANT			37,814,553.88	8,697,342	31,196,144	682,880	1.81	
		GENERAL PLANT								
390.00	304.50	STRUCTURES AND IMPROVEMENTS	30-R0.5	0	566,028.75	101,931	464,098	28,983	5.12	16.0
391.00	340.10	OFFICE FURNITURE AND EQUIPMENT								
		FULLY ACCRUED AMORTIZED	20-SQ	0	4,412.60 2,237.30	4,413 56	0 2,181	0 112	5.01	19.5
		TOTAL OFFICE FURNITURE AND EQUIPMENT			6,649.90	4,469	2,181	112	1.68	
391.10	340.20	OFFICE FURNITURE AND EQUIPMENT - COMPUTER HARDWARE			144.391.55	144.392	0	0		
		FULLY ACCRUED AMORTIZED	5-SQ	0	40,021.48	31,025	8,996	8,004	20.00	- 1.1
		TOTAL OFFICE FURNITURE AND EQUIPMENT - COMPUTER HARDWARE			184,413.03	175,417	8,996	8,004	4.34	



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AQUARION WATER COMPANY OF NEW HAMPSHIRE

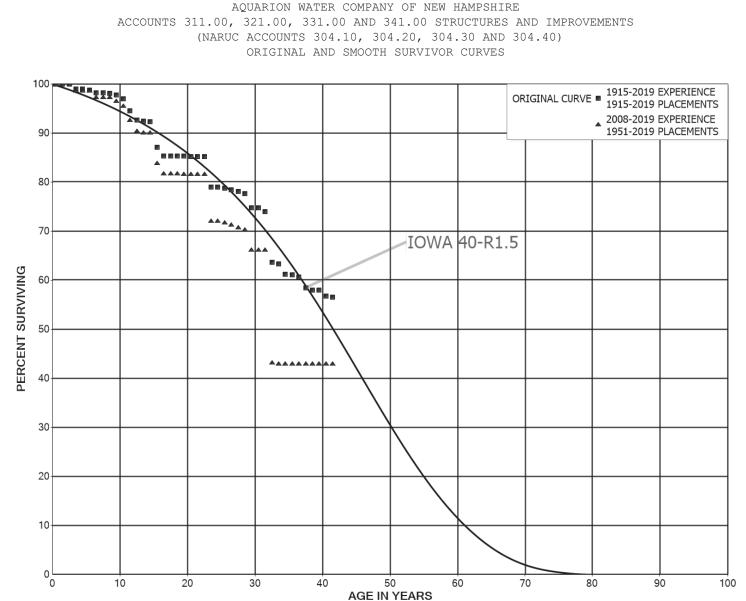
TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WATER PLANT AS OF DECEMBER 31, 2019

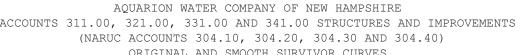
AQUARION	NARUC		SURVIVOR	NET SALVAGE	ORIGINAL COST AS OF	BOOK DEPRECIATION	FUTURE	CALCULA ANNUAL AC	CRUAL	COMPOSITE
ACCOUNT	ACCOUNT	ACCOUNT(1)	CURVE (2)	PERCENT (3)	DECEMBER 31, 2019 (4)	RESERVE (5)	ACCRUALS (6)	AMOUNT (7)	(8)	LIFE (9)
391.20	340.30	OFFICE FURNITURE AND EQUIPMENT - COMPUTER SOFTWARE FULLY ACCRUED			368,220.13	368,220	0	0	-	-
		AMORTIZED	5-SQ	0	51,074.98	40,490	10,585	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	341.00	TRANSPORTATION EQUIPMENT	10-L2.5	5	644,403.27	557,492	54,691	6,406	0.99	8.5
393.00	342.00	STORES EQUIPMENT	FULLY A	CCRUED	330.88	331	0	0	- '	-
394.00	343.00	TOOLS, SHOP AND GARAGE EQUIPMENT			00 700 05	00 700	0	2		
		FULLY ACCRUED AMORTIZED	20-SQ	0	38,702.85 49,146.51	38,703 31,755	0 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
			10-00	0						0.0
		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		(4,433)		
394.00	343.00	TOOLS, SHOP AND GARAGE EQUIPMENT				(14,041)		2,808		
395.00	344.00	LABORATORY EQUIPMENT				(508)		102		
397.00	346.00	COMMUNICATIONS EQUIPMENT				41,759		(8,352)		
398.00	347.00	MISCELLANEOUS EQUIPMENT				(9,040)		1,808		
		TOTAL RESERVE ADJUSTMENT FOR AMORTIZATION				124,876		(24,975)		
		TOTAL DEPRECIABLE PLANT			48,369,952.12	13,561,263	37,191,165	1,058,620	2.19	
		NONDEPRECIABLE PLANT AND ACCOUNTS NOT STUDIED								
301.00	301.00	ORGANIZATION ***			17,700.00	9,085				
310.00 340.00	303.10 303.40	LAND AND LAND RIGHTS LAND AND LAND RIGHTS			635,643.46 314,551.16					
		TOTAL NONDEPRECIABLE PLANT AND ACCOUNTS NOT STUDIED			967,894.62	9,085				
		TOTAL WATER PLANT			· · · · · · · · · · · · · · · · · · ·	13,570,348				
		IVIAL WATER PLANT			49,337,846.74	13,570,348				

* 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%

PART VII. SERVICE LIFE STATISTICS





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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 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
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 0.0001 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 0.9961	100.00 100.00 99.99 98.99 98.96 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 18.5	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 0.0007	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 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 10,412	0.0000 0.0001 0.0731 0.0001 0.0027 0.0046 0.0048 0.0046 0.0373	1.0000 1.0000 0.9999 0.9269 0.9999 0.9973 0.9954 0.9952 0.9954 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)

PLACEMENT H	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
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	1,952 307 275 2,995 254 153 5,998 872 1,354 1,039	0.0212 0.0034 0.0044 0.0480 0.0043 0.0026 0.1027 0.0166 0.0263 0.0207	0.9788 0.9966 0.9520 0.9520 0.9957 0.9974 0.8973 0.9834 0.9737 0.9793	57.93 56.70 56.51 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	0.0418 0.0007 0.0211 0.0259 0.0259 0.0222 0.0134 0.0299 0.0098 0.1516	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 61.5	6,598 6,592	6 80	0.0009 0.0121	0.9991 0.9879	31.30 31.27 30.89

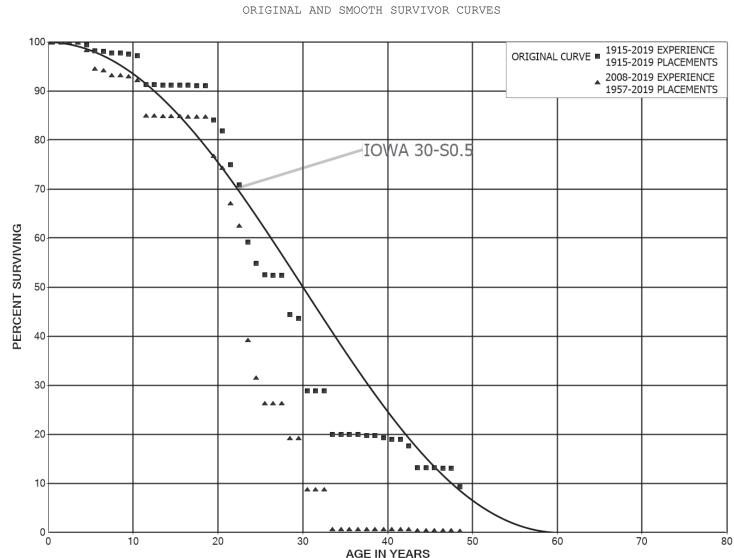
ACCOUNTS 311.00, 321.00, 331.00 AND 341.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNTS 304.10, 304.20, 304.30 AND 304.40)

ORIGINAL LIFE TABLE

PLACEMENT H	BAND 1951-2019		EXPEF	RIENCE BAN	ID 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	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 0.0004 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 99.96 98.49 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 18.5	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 0.0000	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 28.5	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 0.1183 0.0000 0.0036 0.0074 0.0069 0.0063 0.0584	1.0000 1.0000 0.8817 1.0000 0.9964 0.9926 0.9931 0.9937 0.9416	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 38.5	192,779 49,043 49,043 28,971 28,857 28,857 28,857 28,857 28,857 27,550 27,550	17,110 114	0.0000 0.0000 0.3489 0.0039 0.0000 0.0000 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 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)

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 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 0.0091 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 1.0000 0.9680 0.9787	42.86 42.86 42.47 41.86 41.72 41.72 41.72 41.72 41.72 41.72 41.72
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	42,936 42,793 42,793 23,446 23,225 23,225 12,212 6,867 6,867 6,867	365 185 221 530 355	0.0085 0.0000 0.0043 0.0094 0.0000 0.0228 0.0000 0.0000 0.0000 0.0000 0.0517	0.9915 1.0000 0.9957 0.9906 1.0000 0.9772 1.0000 1.0000 1.0000 0.9483	39.52 39.18 39.02 38.65 38.65 37.77 37.77 37.77 37.77 37.77
59.5 60.5 61.5	6,512 6,512		0.0000 0.0000	1.0000 1.0000	35.81 35.81 35.81



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

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🎽 Gannett Fleming

ACCOUNT 314.00 WELLS AND SPRINGS (NARUC ACCOUNT 307.00)

ORIGINAL LIFE TABLE

PLACEMENT 1	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 8.5	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 0.0007 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 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 0.9232	97.55 97.18 91.28 91.22 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 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 20.00 20.00 19.91 19.91 19.68 19.68

ACCOUNT 314.00 WELLS AND SPRINGS (NARUC ACCOUNT 307.00)

PLACEMENT E	PLACEMENT 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	
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 47.5 48.5	68,683 67,644 67,644 62,819 47,108 47,107 47,070 44,430 44,419 31,421	1,039 4,825 15,712 1 37 521 11 12,998 85	0.0000 0.0008 0.0111 0.0003	0.9849 1.0000 0.9287 0.7499 1.0000 0.9992 0.9889 0.9997 0.7074 0.9973	19.28 18.99 17.64 13.22 13.22 13.21 13.07 13.06 9.24	
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	31,335 31,096 31,096 19,761 19,489 18,254 13,717 9,790 9,526 9,526	240 272 1,235 52 3,927 264		0.9924 1.0000 1.0000 0.9862 0.9366 0.9971 0.7137 0.9731 1.0000 1.0000	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 67.5	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 0.0910 0.2665 0.2624 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	

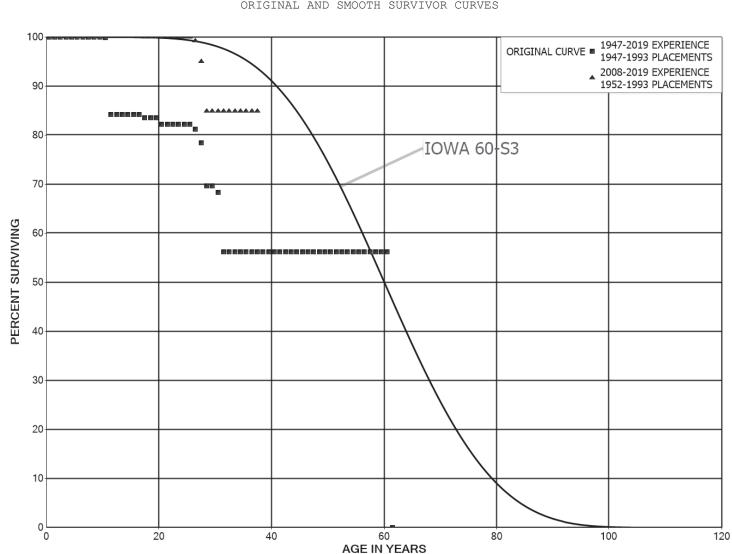
ACCOUNT 314.00 WELLS AND SPRINGS (NARUC ACCOUNT 307.00)

ORIGINAL LIFE TABLE

PLACEMENT H	BAND 1957-2019		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
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5 8.5	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 0.0023 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 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 18.5	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 2,027 162,481	0.0076 0.0793 0.0000 0.0010 0.0000 0.0000 0.0012 0.0000 0.0000 0.0000 0.0946	0.9924 0.9207 1.0000 0.9990 1.0000 1.0000 0.9988 1.0000 1.0000 0.9054	92.83 92.12 84.81 84.81 84.73 84.73 84.73 84.62 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 42,391	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 19.01
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 2,119	61,992 32,088	0.5487 0.0000 0.9394 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	0.4513 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	19.01 8.58 8.58 0.52 0.52 0.52 0.52 0.52 0.52 0.52

ACCOUNT 314.00 WELLS AND SPRINGS (NARUC ACCOUNT 307.00)

PLACEMENT H	PLACEMENT BAND 1957-2019 EXPERIENCE BAND 2008-2019						
AGE AT	EXPOSURES AT	RETIREMENTS			PCT SURV		
	BEGINNING OF	DURING AGE	RETMT	SURV			
	AGE INTERVAL	INTERVAL	RATIO	RATIO	INTERVAL		
39.5	2,119		0.0000	1.0000	0.52		
40.5	26,837		0.0000	1.0000	0.52		
41.5	26,837		0.0000	1.0000	0.52		
42.5	26,837	13,384	0.4987	0.5013	0.52		
43.5	17,938		0.0000	1.0000	0.26		
44.5	17,938		0.0000	1.0000	0.26		
45.5	30,031		0.0000	1.0000	0.26		
46.5	27,912		0.0000	1.0000	0.26		
47.5	27,912	12,093	0.4333	0.5667	0.26		
48.5	16,065		0.0000	1.0000	0.15		
49.5	16,065		0.0000	1.0000	0.15		
50.5	22,639		0.0000	1.0000	0.15		
51.5	22,639		0.0000	1.0000	0.15		
52.5	11,304	246	0.0217	0.9783	0.15		
53.5	11,058		0.0000	1.0000	0.14		
54.5	11,058		0.0000	1.0000	0.14		
55.5	6,574	2,699	0.4105	0.5895	0.14		
56.5	3,875	264	0.0680	0.9320	0.09		
57.5	3,612		0.0000	1.0000	0.08		
58.5	3,612		0.0000	1.0000	0.08		
59.5	3,612		0.0000	1.0000	0.08		
60.5	3,612		0.0000	1.0000	0.08		
61.5	3,612		0.0000	1.0000	0.08		
62.5					0.08		



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

🎽 Gannett Fleming

VII-12

Aquarion Water Company December 31, 2019

000086

ACCOUNT 316.00 SUPPLY MAINS (NARUC ACCOUNT 309.00)

ORIGINAL LIFE TABLE

PLACEMENT E	EXPERIENCE BAND 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 8.5	241,343 241,342 241,316 241,284 241,281 241,122 241,122 241,122 241,122 241,119 241,104	1 26 32 3 160 0 3 16 16	0.0000 0.0001 0.0000 0.0007 0.0000 0.0000 0.0000 0.0001 0.0001	1.0000 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 99.91 99.90
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	241,088 241,058 203,061 203,061 203,061 203,061 203,061 201,426 201,426	30 37,997 1,634	0.0001 0.1576 0.0000 0.0000 0.0000 0.0000 0.0000 0.0080 0.0000 0.0000	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 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 0.0002 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 82.20 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 0.0000	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 56.23 56.23

ACCOUNT 316.00 SUPPLY MAINS (NARUC ACCOUNT 309.00)

PLACEMENT 1	BAND 1947-1993	EXPERIENCE BAND 1947-2019			
AGE AT BEGIN OF INTERVAL			RETMT RATIO		PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 46.5 47.5 48.5	23,367 23,367 23,367 23,367 23,367 23,367 23,367 23,367 23,367 23,367 23,367		0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	56.23 56.23 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 58.5 59.5 60.5	23,367 23,367 23,367 19,821 19,821 19,821 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 0.0000 0.0000 1.0000	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 56.23 56.23 56.23

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 316.00 SUPPLY MAINS (NARUC ACCOUNT 309.00)

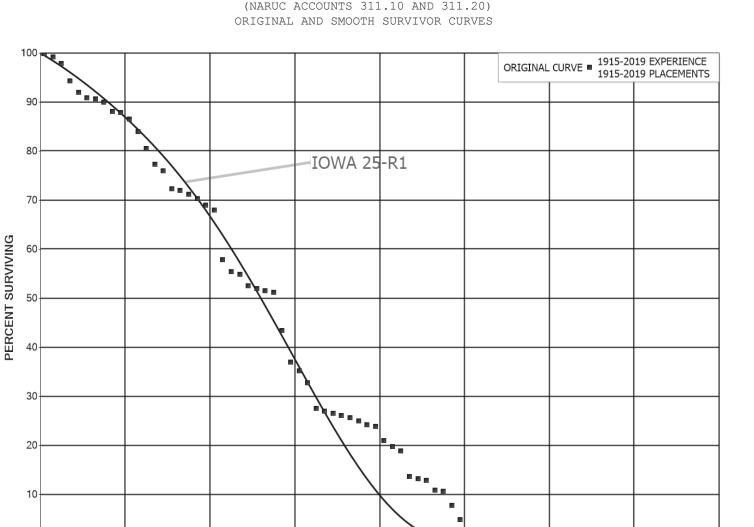
ORIGINAL LIFE TABLE

PLACEMENT E	BAND 1952-1993		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 8.5					
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	1,634 1,634 1,634 2,555 123,753	1,634	0.0000 0.0000 1.0000 0.0000 0.0000	1.0000 1.0000	100.00 100.00
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 11,569		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	84.81 84.81 84.81 84.81 84.81 84.81 84.81 84.81 84.81

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 316.00 SUPPLY MAINS (NARUC ACCOUNT 309.00)

PLACEMENT	BAND 1952-1993		EXPER	IENCE BAN	D 2008-2019
BEGIN OF	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO		
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 46.5 47.5 48.5	3,546 3,546 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 0.0000 0.0000		
49.5 50.5 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 1.0000		



40 AGE IN YEARS 50

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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

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Exhibit 11

Docket No. DW 20-184

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

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	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	1,185,105	17,876	0.0151	0.9849	87.78
10.5	1,133,446	32,848	0.0290	0.9710	86.46
11.5	1,098,415	44,402	0.0404	0.9596	83.95
12.5	1,051,745	43,353	0.0412	0.9588	80.56
13.5	1,008,392	16,328	0.0162	0.9838	77.24
14.5	967,624	47,620	0.0492	0.9508	75.99
15.5	906,751	3,706	0.0041	0.9959	72.25
16.5	831,621	9,395	0.0113	0.9887	71.95
17.5	822,227	10,492	0.0128	0.9872	71.14
18.5	811,735	15,247	0.0188	0.9812	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



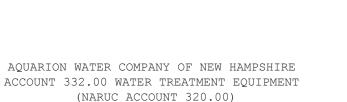
ACCOUNTS 325.00 AND 328.00 PUMPING EQUIPMENT (NARUC ACCOUNTS 311.10 AND 311.20)

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

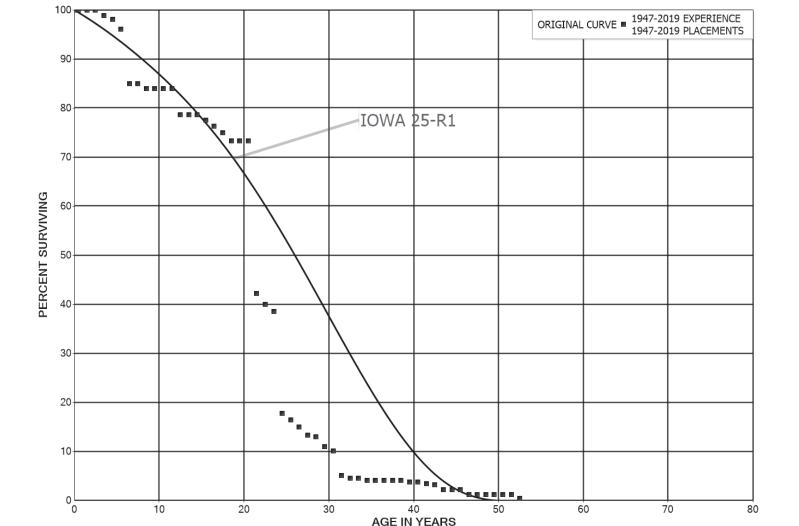
Aquarion Water Company December 31, 2019

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🎽 Gannett Fleming



ORIGINAL AND SMOOTH SURVIVOR CURVES



Docket No. DW 20-184 Exhibit 11

000094

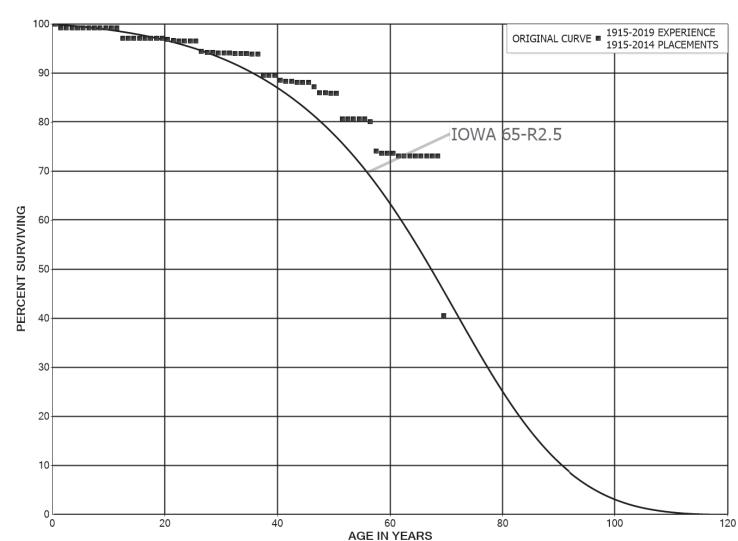
ACCOUNT 332.00 WATER TREATMENT EQUIPMENT (NARUC ACCOUNT 320.00)

ORIGINAL LIFE TABLE

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
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5 8.5	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	0.0000 0.0000 0.0115 0.0076 0.0206 0.1160 0.0000 0.0120 0.0000	1.0000 1.0000 0.9885 0.9924 0.9794 0.8840 1.0000 0.9880 1.0000	100.00 100.00 100.00 98.85 98.10 96.08 84.93 84.93 84.93 83.92
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	274,467 271,903 271,903 239,915 239,914 239,911 228,769 224,953 221,290 215,555	0 17,021 1 3,402 3,816 3,663 5,159 17	0.0000 0.0026 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 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 3,778	835 4,711 497 448 3 263	0.0813 0.4992 0.1053 0.0000 0.1059 0.0008 0.0000 0.0000 0.0000 0.0000 0.0697	0.9187 0.5008 0.8947 1.0000 0.8941 0.9992 1.0000 1.0000 1.0000 0.9303	$11.01 \\ 10.11 \\ 5.06 \\ 4.53 \\ 4.53 \\ 4.05 $

ACCOUNT 332.00 WATER TREATMENT EQUIPMENT (NARUC ACCOUNT 320.00)

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 40.5 41.5 42.5 43.5 44.5 45.5 46.5 47.5 48.5	3,515 3,476 3,145 2,939 2,075 2,075 2,075 1,118 1,118 1,118	38 331 207 863 958	0.0108 0.0953 0.0657 0.2938 0.0000 0.0000 0.4614 0.0000 0.0000 0.0000	0.9892 0.9047 0.9343 0.7062 1.0000 1.0000 0.5386 1.0000 1.0000 1.0000	3.77 3.72 3.37 3.15 2.22 2.22 2.22 1.20 1.20 1.20
49.5 50.5 51.5 52.5 53.5	1,118 1,118 1,118 357	760 357	0.0000 0.0000 0.6802 1.0000	1.0000 1.0000 0.3198	1.20 1.20 1.20 0.38



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

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🎽 Gannett Fleming

ACCOUNT 342.00 DISTRIBUTION RESERVOIRS AND STANDPIPES (NARUC ACCOUNT 330.00)

ORIGINAL LIFE TABLE

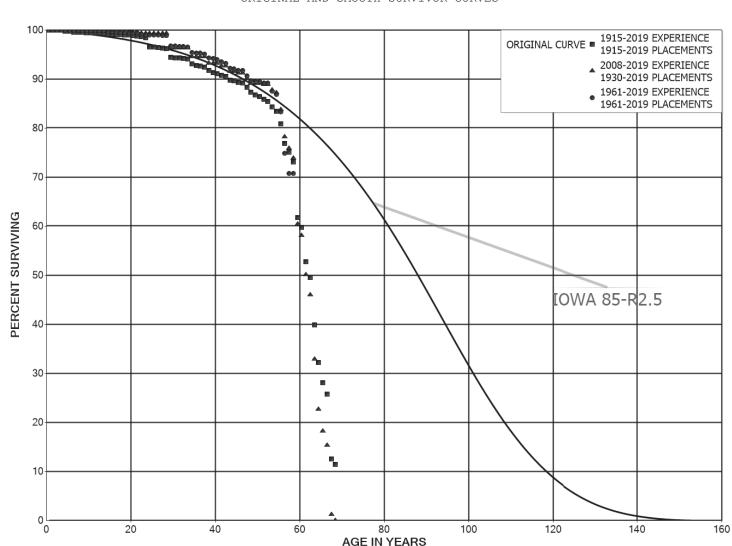
PLACEMENT H	BAND 1915-2014		EXPER	RIENCE BAN	D 1915-2019
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5 8.5	2,860,887 2,860,887 2,837,539 2,837,539 2,837,539 2,837,539 2,837,539 2,755,813 2,755,813 2,753,530 2,745,825 2,745,563	23,348 262	0.0000 0.0082 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0001	1.0000 0.9918 1.0000 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 99.18 99.18 99.18
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	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	0.0000 0.0214 0.0000 0.0000 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 1.0000	99.17 99.17 97.05 97.05 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 1.0000 0.9782 0.9982 1.0000 0.9985	97.05 96.81 96.61 96.50 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 9,063 187	0.0001 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 93.78 89.54

ACCOUNT 342.00 DISTRIBUTION RESERVOIRS AND STANDPIPES (NARUC ACCOUNT 330.00)

PLACEMENT E	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
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 46.5 47.5 48.5	189,309 187,365 186,776 186,775 186,396 186,396 186,396 184,438 181,849 181,824	1,944 589 1 379 1,958 2,590 24 107	0.0103 0.0031 0.0000 0.0020 0.0000 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 0.9994	89.45 88.53 88.26 88.25 88.08 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 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 0.0003 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 0.9227 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 68.5	99,426 99,426 98,687 98,687 98,687 98,687 98,687 22,518 22,518 22,518	738 10,010	0.0000 0.0074 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.4445	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 73.02
69.5 70.5 71.5 72.5 73.5 74.5 75.5 76.5 77.5 78.5	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 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 40.56 40.56

ACCOUNT 342.00 DISTRIBUTION RESERVOIRS AND STANDPIPES (NARUC ACCOUNT 330.00)

PLACEMENT E	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		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 0.0000 0.0000	1.0000 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
89.5 90.5 91.5 92.5 93.5	12,508 12,508 12,508 12,508	12,508	0.0000 0.0000 0.0000 1.0000	1.0000 1.0000 1.0000	40.56 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



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ACCOUNT 343.00 TRANSMISSION AND DISTRIBUTION MAINS (NARUC ACCOUNT 331.00)

ORIGINAL LIFE TABLE

PLACEMENT H	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	27,865,554	1,494	0.0001	0.9999	100.00
0.5	25,132,837	5,558	0.0002	0.9998	99.99
1.5	22,097,686	2,336	0.0001	0.9999	99.97
2.5	21,198,231	9,249	0.0004	0.9996	99.96
3.5	19,822,916	39,294	0.0020	0.9980	99.92
4.5	18,778,132	8,505	0.0005	0.9995	99.72
5.5	17,927,637	23,343	0.0013	0.9987	99.68
6.5	17,129,349	6,681	0.0004	0.9996	99.55
7.5	16,364,002	4,707	0.0003	0.9997	99.51
8.5	15,665,014	6,346	0.0004	0.9996	99.48
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	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 0.0003 0.0004 0.0018 0.0003 0.0003 0.0004 0.0008 0.0006	0.9998 0.9997 0.9997 0.9996 0.9982 0.9997 0.9997 0.9996 0.9992 0.9994	99.44 99.42 99.39 99.37 99.33 99.15 99.11 99.09 99.04 98.97
19.5	8,004,240	4,201	0.0005	0.9995	98.91
20.5	7,739,537	6,629	0.0009	0.9991	98.86
21.5	7,177,338	15,075	0.0021	0.9979	98.77
22.5	6,815,202	12,822	0.019	0.9981	98.57
23.5	6,755,033	125,508	0.0186	0.9814	98.38
24.5	6,427,129	4,941	0.0008	0.9992	96.55
25.5	6,126,283	5,868	0.0010	0.9990	96.48
26.5	5,992,849	5,367	0.0009	0.9991	96.39
27.5	5,853,243	5,366	0.0009	0.9991	96.30
28.5	5,762,760	108,655	0.0189	0.9811	96.21
29.5	5,521,532	3,680	0.0007	0.9993	94.40
30.5	5,093,970	4,860	0.0010	0.9990	94.33
31.5	4,457,404	4,038	0.0009	0.9991	94.24
32.5	3,932,266	3,973	0.0010	0.9990	94.16
33.5	3,580,872	38,409	0.0107	0.9893	94.06
34.5	3,247,009	10,800	0.0033	0.9967	93.05
35.5	3,005,835	4,481	0.0015	0.9985	92.75
36.5	2,698,405	5,715	0.0021	0.9979	92.61
37.5	2,510,868	18,939	0.0075	0.9925	92.41
38.5	2,466,475	10,343	0.0042	0.9958	91.71



ACCOUNT 343.00 TRANSMISSION AND DISTRIBUTION MAINS (NARUC ACCOUNT 331.00)

PLACEMENT H	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
39.5	2,390,091	5,757	0.0024	0.9976	91.33
40.5	2,286,639	10,536	0.0046	0.9954	91.11
41.5	1,979,385	4,384	0.0022	0.9978	90.69
42.5	1,846,181	15,203	0.0082	0.9918	90.49
43.5	1,796,951	3,003	0.0017	0.9983	89.74
44.5	1,737,799	5,541	0.0032	0.9968	89.59
45.5	1,679,233	3,183	0.0019	0.9981	89.31
46.5	1,608,991	14,482	0.0090	0.9910	89.14
47.5	1,539,060	17,946	0.0117	0.9883	88.34
48.5	1,463,507	9,487	0.0065	0.9935	87.31
49.5	$1,435,463\\1,336,468\\1,203,199\\1,143,088\\988,324\\885,198\\738,959\\658,612\\606,444\\553,613$	6,215	0.0043	0.9957	86.74
50.5		7,432	0.0056	0.9944	86.36
51.5		6,161	0.0051	0.9949	85.88
52.5		15,365	0.0134	0.9866	85.44
53.5		10,391	0.0105	0.9895	84.30
54.5		27,268	0.0308	0.9692	83.41
55.5		36,222	0.0490	0.9510	80.84
56.5		15,640	0.0237	0.9763	76.88
57.5		16,135	0.0266	0.9734	75.05
58.5		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 78.5 79.5	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 1.0000 0.1949	10.95 10.90 9.26 9.19 9.13 9.03 9.03 9.03 9.03 9.03 1.76

ACCOUNT 343.00 TRANSMISSION AND DISTRIBUTION MAINS (NARUC ACCOUNT 331.00)

ORIGINAL LIFE TABLE

PLACEMENT H	BAND 1930-2019		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 8.5	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 0.0000	1.0000 0.9997 1.0000 0.9993 1.0000 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 99.90 99.90
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	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 0.0030 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 0.9970 1.0000 1.0000 1.0000 1.0000 1.0000	99.90 99.90 99.90 99.90 99.60 99.60 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 1,158 103,849	0.0000 0.0027 0.0004 0.0000 0.0000 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 1.0000 0.9694	99.60 99.60 99.33 99.30 99.30 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 0.0182 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 94.50 93.14

🎽 Gannett Fleming

ACCOUNT 343.00 TRANSMISSION AND DISTRIBUTION MAINS (NARUC ACCOUNT 331.00)

ORIGINAL LIFE TABLE, CONT.

PLACEMENT	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 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 1.0000 0.9968 1.0000 0.9876 0.9895 0.9997	93.14 93.14 92.61 92.59 91.47 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 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 79.5	47,182 9,197	37,985 9,197	0.8051 1.0000		

ACCOUNT 343.00 TRANSMISSION AND DISTRIBUTION MAINS (NARUC ACCOUNT 331.00)

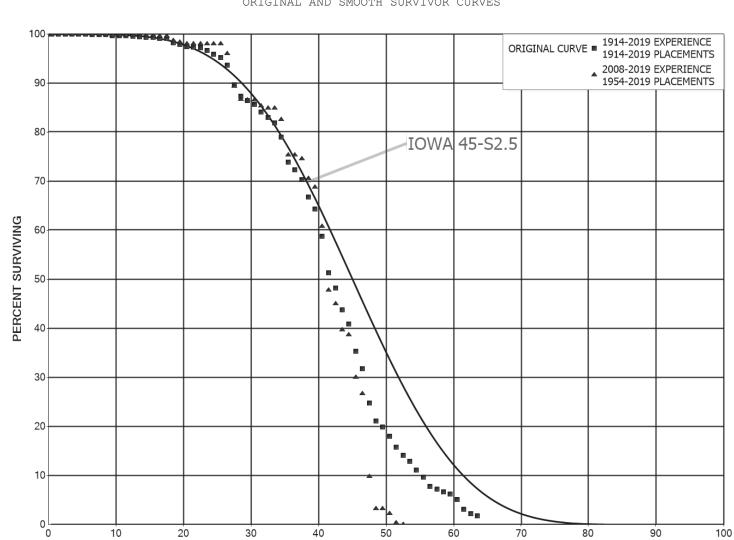
ORIGINAL LIFE TABLE

PLACEMENT BAND 1961-2019				EXPERIENCE BAND 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 8.5	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 0.9996 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 99.86	
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	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 0.0018 0.0002 0.0002 0.0002 0.0003 0.0005 0.0005	0.9998 0.9998 0.9998 0.9998 0.9982 0.9998 0.9998 0.9998 0.9995 0.9995	99.85 99.84 99.82 99.80 99.78 99.60 99.58 99.56 99.53 99.48	
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 0.0005 0.0006 0.0211	0.9996 0.9995 0.9981 0.9992 0.9994 0.9996 0.9995 0.9995 0.9994 0.9789	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 95.40 95.31 95.25 95.09 94.25	



ACCOUNT 343.00 TRANSMISSION AND DISTRIBUTION MAINS (NARUC ACCOUNT 331.00)

PLACEMENT BAND 1961-2019 EXPERIENCE BAND 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 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 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 87.52 86.88 83.28 74.88 70.78 70.78	



AGE IN YEARS

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



VII-34

ACCOUNT 345.00 SERVICES (NARUC ACCOUNT 333.00)

PLACEMENT E	BAND 1914-2019		EXPER	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 8.5	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 0.9998 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 18.5	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 0.0013 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 0.9913 0.9962	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)

ORIGINAL LIFE TABLE, CONT.

PLACEMENT H	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		PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 47.5	115,490 88,267 72,516 67,684 60,651 56,669 43,778 39,328 30,660	11,180 4,396 6,291 3,983 7,721 4,450 8,668 4,516	0.0929 0.0657 0.1362 0.1016 0.2204 0.1473	0.8733 0.9394 0.9071 0.9343 0.8638 0.8984 0.7796 0.8527	31.69 24.71
48.5 49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	26,144 24,593 22,227 19,460 17,449 15,949 13,693 11,932 9,541 8,865 8,243	2,768 2,011 1,500 2,255 1,761	0.0962 0.1245 0.1033 0.0859 0.1414 0.1286 0.2004 0.0709 0.0701		19.82 17.91 15.68 14.06 12.85 11.04 9.62 7.69 7.14
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5 68.5	7,598 6,310 3,779 2,755 2,183 1,817 1,580 1,413 1,169 552	1,288 2,531 1,024 572 365 237 167 243 617 224	0.2709 0.2078	0.8304 0.5989 0.7291 0.7922 0.8326 0.8695 0.8941 0.8278 0.4723 0.5938	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 76.5	328 40 15 8 7 6 5	288 25 7 2 1 1 5	0.6211 0.4595 0.2077	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)

ORIGINAL LIFE TABLE

PLACEMENT E	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	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5 8.5	1,255,954 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 0.0000 0.0026	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 0.0008 0.0000 0.0000 0.0012 0.0000 0.0090 0.0035	1.0000 1.0000 0.9992 1.0000 1.0000 0.9988 1.0000 0.9910 0.9965	99.74 99.74 99.74 99.66 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	8,671 3,680 11,896 5,115 267	0.0033 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 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 70.47

VII-37

Aquarion Water Company December 31, 2019

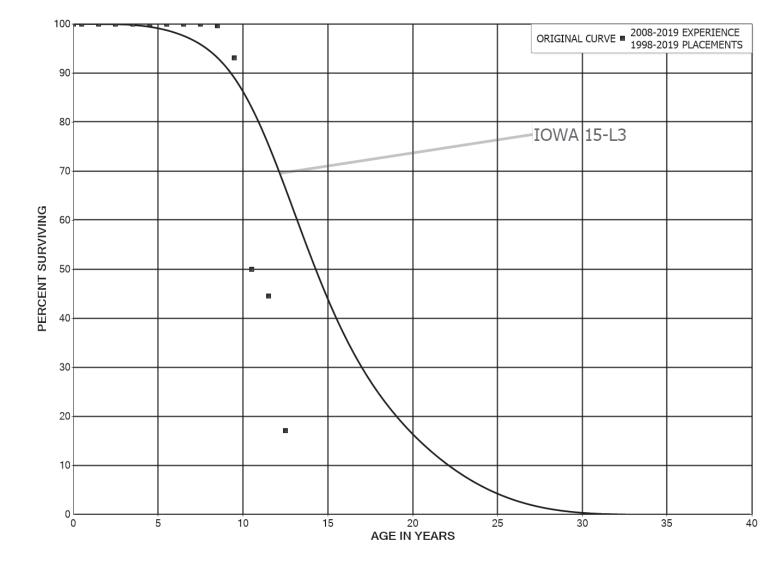
ACCOUNT 345.00 SERVICES (NARUC ACCOUNT 333.00)

ORIGINAL LIFE TABLE, CONT.

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	6,715 8,101 1,488 2,792 558 4,678 1,264 6,293 2,532	0.2132 0.0588 0.1193 0.0262 0.2222 0.1128	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 1,592	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



AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 346.00 METERS (NARUC ACCOUNT 334.00)

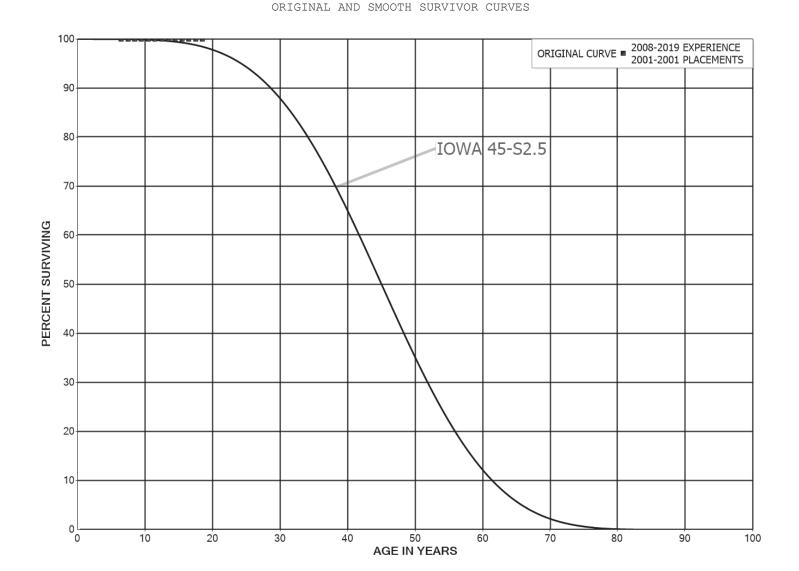
PLACEMENT 1	BAND 1998-2019		EXPER	RIENCE BAN	ID 2008-2019
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5 8.5	1,433,412 1,738,397 1,625,249 1,724,472 1,496,941 1,506,426 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 0.0000 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 December 31, 2019

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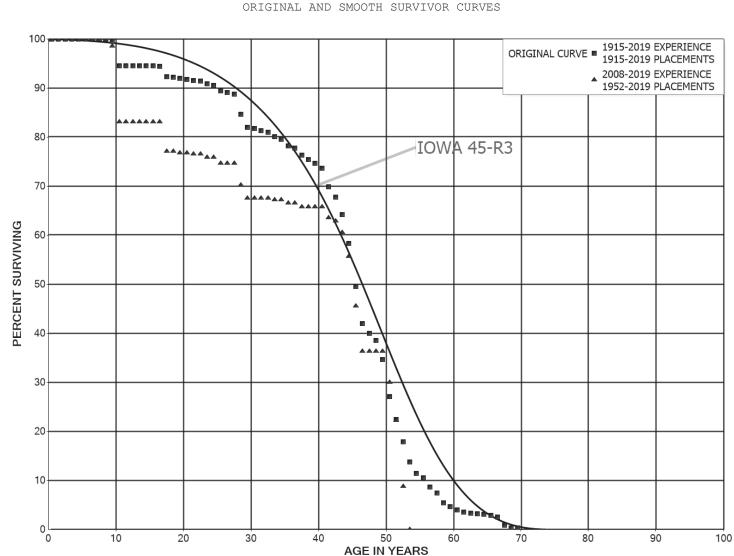


Docket No. DW 20-184 Exhibit 11

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 347.00 METER INSTALLATIONS (NARUC ACCOUNT 334.00)

PLACEMENT BAND 2001-2001 EXPERIENCE BAND 2008-2					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 18.5	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 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00



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)

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 8.5	857,863 848,510 845,396 845,396 838,097 838,097 811,812 790,583 774,601 743,676	0 0 2 4 8 4,015	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0054	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 18.5	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 0.0002 0.0002 0.0003 0.0005 0.0225 0.0011 0.0030	0.9505 0.9999 0.9999 0.9998 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 10,767	0.0014 0.0029 0.0016 0.0062 0.0027 0.0122 0.0041 0.0045 0.0454 0.0316	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 38.5	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

Aquarion Water Company December 31, 2019

ACCOUNT 348.00 HYDRANTS (NARUC ACCOUNT 335.00)

ORIGINAL LIFE TABLE, CONT.

PLACEMENT H	BAND 1915-2019		EXPER	RIENCE BAN	D 1915-2019
AGE AT BEGIN OF INTERVAL	BEGINNING OF	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO		PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5	95,927 72,656 57,787 53,130 49,041 37,522	1,301 3,718 1,703 2,861 4,430 5,693	0.0136 0.0512 0.0295 0.0539 0.0903 0.1517	0.9864 0.9488 0.9705 0.9461 0.9097 0.8483	74.62 73.60 69.84 67.78 64.13 58.34
45.5 46.5 47.5 48.5	30,374 20,511 15,751 14,093			0.9512	49.49 42.00 39.94 38.48
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5	10,941 6,866 5,240 4,157 3,197 2,674 2,455 2,020 1,722	1,083 960 522 220 435 298 469	0.1732 0.2067 0.2310 0.1634 0.0821 0.1772 0.1477 0.2724	0.7933 0.7690 0.8366 0.9179 0.8228 0.8523 0.7276	27.11 22.42 17.78 13.68 11.44 10.50 8.64 7.37
58.5 59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5 68.5	1,253 1,081 912 827 764 742 704 675 581 192 74	172 169 85 64 22 38 29 94 389 119 14	0.1560 0.0931 0.0768 0.0286 0.0510 0.0411 0.1392 0.6690	0.8440 0.9069 0.9232 0.9714 0.9490 0.9589 0.8608	5.36 4.62 3.90 3.54 3.27 3.17 3.01 2.89 2.49 0.82 0.31
69.5 70.5 71.5 72.5 73.5 74.5 75.5 76.5	60 36 21 6 6 2 2 2	24 15 15 4 2	0.3961 0.4111 0.6958 0.0000 0.6465 0.0000 1.0000	0.6039 0.5889 0.3042 1.0000 0.3535 1.0000	0.26 0.15 0.09 0.03 0.03 0.01 0.01

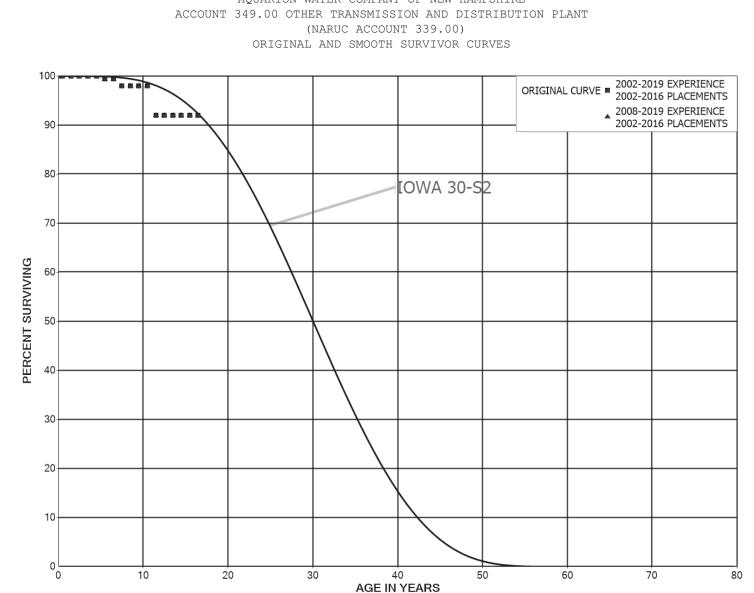
ACCOUNT 348.00 HYDRANTS (NARUC ACCOUNT 335.00)

PLACEMENT BAND 1952-2019			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 8.5	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 0.0000 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 18.5	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 0.0000 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 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 0.0000 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 76.46 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 0.0055 0.0000 0.0099 0.0000 0.0109 0.0000 0.0000	1.0000 1.0000 0.9945 1.0000 0.9901 1.0000 0.9891 1.0000 1.0000	67.51 67.51 67.51 67.14 67.14 66.47 66.47 65.74 65.74

ACCOUNT 348.00 HYDRANTS (NARUC ACCOUNT 335.00)

ORIGINAL LIFE TABLE, CONT.

PLACEMENT E	BAND 1952-2019		EXPEF	RIENCE BAN	D 2008-2019
	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	0.9889 0.9630 0.9200 0.8175 0.7983 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 55.5 56.5 57.5 58.5	3,764 1,408 606 240 223 223 223 223 223	661 365 367 240	0.2593	0.8245 0.7407 0.3953	36.32 29.95 22.18 8.77
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5	223 223 223 223 223 223 223 223 223 223	223	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 1.0000		



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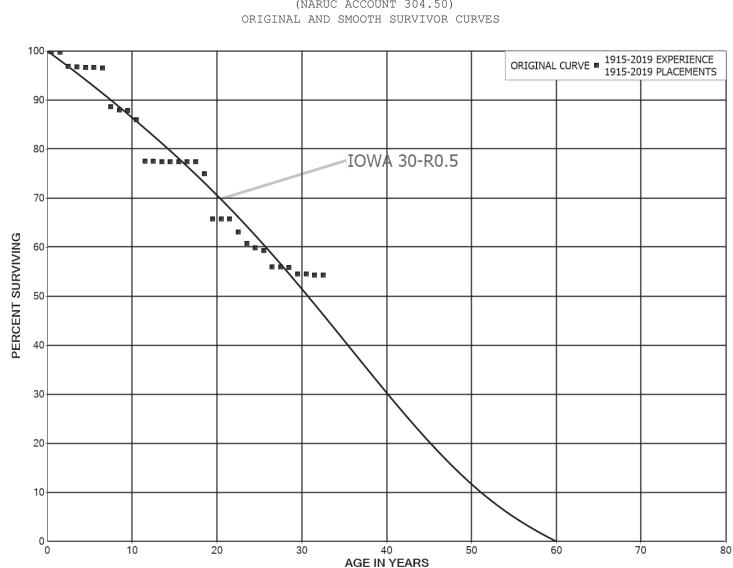
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ACCOUNT 349.00 OTHER TRANSMISSION AND DISTRIBUTION PLANT (NARUC ACCOUNT 339.00)

PLACEMENT	BAND 2002-2016		EXPER	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 0.0064 0.0000 0.0145 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 0.9936 1.0000 0.9855 1.0000 1.0000	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 16.5	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 0.0000	1.0000 0.9396 1.0000 1.0000 1.0000 1.0000 1.0000	97.92 97.92 92.01 92.01 92.01 92.01 92.01 92.01

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

PLACEMENT	BAND 2002-2016		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
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 1.0000	100.00 100.00 100.00 100.00 100.00 100.00 99.33 99.33 97.89 97.89
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5	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 0.0000	1.0000 0.9396 1.0000 1.0000 1.0000 1.0000 1.0000	97.89 97.89 91.98 91.98 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)

ORIGINAL LIFE TABLE

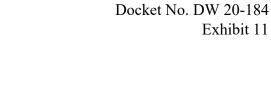
PLACEMENT 1	BAND 1915-2019		EXPE	RIENCE BAN	ID 1915-2019
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5 8.5	823,251 819,172 787,750 758,810 752,548 712,959 661,205 660,610 597,499 555,574	1,423 913 22,795 850 874 336 595 53,668 5,036 76	0.0017 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 88.64 87.89
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	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 77.40 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 0.0407 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 55.95 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 1	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 1.0000	54.51 54.26 54.25 54.25 53.76 53.59 53.59 53.56 53.56

Aquarion Water Company December 31, 2019

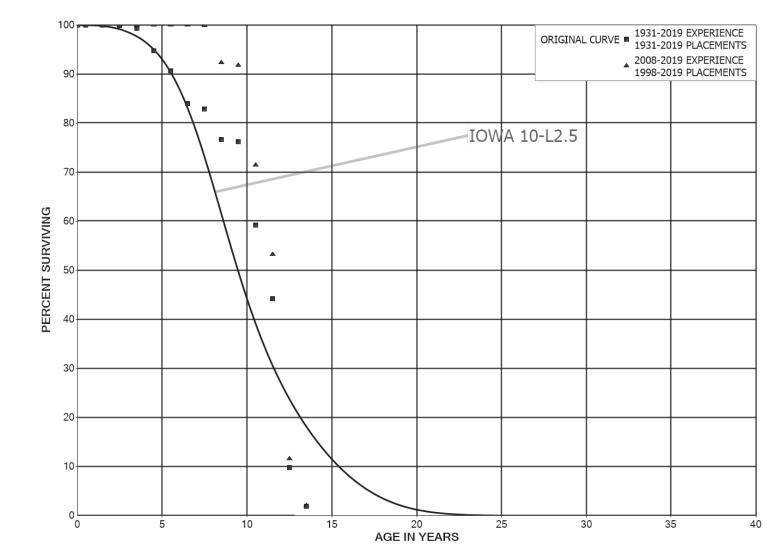
ACCOUNT 390.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNT 304.50)

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 40.5 41.5 42.5 43.5 44.5 45.5 46.5 46.5 47.5 48.5	13,450 13,450 13,268 13,268 13,268 13,268 13,268 13,268 13,268 13,268 13,268 13,268	181 1,500	0.0000 0.0135 0.0000 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 1.0000 0.8869 1.0000	53.56 53.56 52.84 52.84 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 4,734 4,608 4,438		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	46.86 46.86 46.86 46.86 46.86 46.86 46.86 46.86



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





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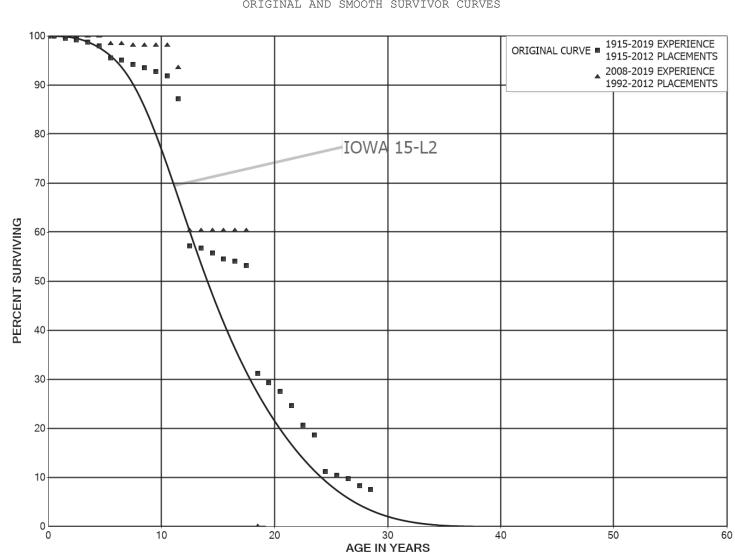
ACCOUNT 392.00 TRANSPORTATION EQUIPMENT (NARUC ACCOUNT 341.00)

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 8.5	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 0.0055 0.0458 0.0437 0.0732 0.0135 0.0748 0.0070	0.9999 0.9994 0.9994 0.9945 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 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 0.0000	0.7770 0.7462 0.2192 0.1897 1.0000 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 1.84 1.84 1.84
19.5 20.5 21.5 22.5 23.5 24.5 25.5	591 591 591 14 14 14	578	0.0000 0.0000 0.9772 0.0000 0.0000 1.0000	1.0000 1.0000 0.0228 1.0000 1.0000	1.84 1.84 1.84 0.04 0.04 0.04

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 392.00 TRANSPORTATION EQUIPMENT (NARUC ACCOUNT 341.00)

PLACEMENT	BAND 1998-2019		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
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5 8.5	638,186 660,149 511,731 519,498 519,498 482,777 482,777 482,777 440,403 472,471 365,055	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 16.5	283,203 192,428 143,441 29,967 5,205 5,205 5,205	62,843 48,987 112,461 24,762		0.7781 0.7454 0.2160 0.1737 1.0000 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)

PLACEMENT E	BAND 1915-2012		EXPER	RIENCE BAN	D 1915-2019
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT 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	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 0.0082	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 18.5	180,877 179,058 170,034 107,955 106,981 95,618 75,939 10,290 10,112 5,920	9,024 58,480 973 1,907 2,125 483	0.0178	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 28.5	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	0.0636	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 3	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

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 396.00 POWER OPERATED EQUIPMENT (NARUC ACCOUNT 345.00)

PLACEMENT E	BAND 1992-2012		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
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5 8.5	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 0.0163 0.0000 0.0028 0.0000 0.0028	1.0000 1.0000 1.0000 1.0000 0.9837 1.0000 0.9972 1.0000 1.0000	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 0.0000 1.0000	1.0000 0.9535 0.6441 1.0000 1.0000 1.0000 1.0000 1.0000	98.10 98.10 93.53 60.25 60.25 60.25 60.25 60.25 60.25

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)

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE 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 AVERAGE	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

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 314.00 WELLS AND SPRINGS (NARUC ACCOUNT 307.00)

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE 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	IS			
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
FIVE-YEA	R AVERAGE				
15-19	46,685	4,895	10	0	4,895- 10-

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 316.00 SUPPLY MAINS (NARUC ACCOUNT 309.00)

YEAR	REGULAR RETIREMENTS	COST O REMOVA AMOUNT		GROSS SALVAG AMOUNT		NET SALVAGE AMOUNT	PCT
2010 2011 2012	24,246		0		0		0
2012 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	CAR MOVING AVERAGE	ES					
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
FIVE-YEA	AR AVERAGE						
15-19	276		0		0		0

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 317.00 OTHER WATER SOURCE PLANT (NARUC ACCOUNT 339.00)

	REGULAR	COST OF REMOVAL	DOF	GROSS SALVAGE		NET SALVAGE	DOM
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-YEA	R AVERAGE						
15-19	2,001		0		0		0

AQUARION WATER COMPANY OF NEW HAMPSHIRE

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

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	gross Salvage Amount PCT	NET SALVAGE AMOUNT	PCT
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-YEA	AR MOVING AVERAGE	IS				
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-YEAR	R AVERAGE					
15-19	31,734	2,642	8	0	2,642-	8-

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 332.00 WATER TREATMENT EQUIPMENT (NARUC ACCOUNT 320.00)

	REGULAR	COST OF REMOVAL	GROSS SALVAGE	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	0.001	<u>_</u>	<u>_</u>	<u>,</u>
2018	2,061	0	0	0
2019	4,020	0	0	0
TOTAL	159,447	0	0	0
THREE-YE	AR MOVING AVERAGE	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

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 342.00 DISTRIBUTION RESERVOIRS AND STANDPIPES (NARUC ACCOUNT 330.00)

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE 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								
2015	27,038		0	0	0			
2016								
2017								
2018								
2019								
TOTAL	129,814	109,705	85	0	109,705- 85-			
THREE-YEAR MOVING AVERAGES								
08-10	24,961	36,568	146	0	36,568- 146-			
09-11	12,615	00,000	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-YEAR AVERAGE								
15-19	5,408		0	0	0			

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 343.00 TRANSMISSION AND DISTRIBUTION MAINS (NARUC ACCOUNT 331.00)

	REGULAR	COST OF REMOVAL		GROSS SALVAGE	NET SALVAGE			
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT PCT	AMOUNT	PCT		
2008	37,985		0	0		0		
2009	96,091		0	0		0		
2010	123,220		0	0		0		
2011	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-	14-		
2015	14,550	3,813	26	0	3,813-	26-		
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-YEA	AR MOVING AVERAGE	S						
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-	2-		
17-19	112,980	1,438	1	0	1,438-	1-		
FIVE-YEAR AVERAGE								
15-19	72,727	1,626	2	0	1,626-	2-		

AQUARION WATER COMPANY OF NEW HAMPSHIRE

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	1,821		0	0		0
2009	2,551		0	0		0
2010	13,660		0	0		0
2011	5,457		0	0		0
2012	5,908		0	0		0
2013	9,575		0	0		0
2014	10,161		0	0		0
2015	28,930		0	0		0
2016	39,670		0	0		0
2017	8,671	490	6	0	490-	6-
2018		8,753			8,753-	
2019	14,141		0	0		0
TOTAL	140,545	9,244	7	0	9,244-	7-
THREE-YEA	AR MOVING AVERAGE	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-
	R AVERAGE					
15-19	18,282	1,849	10	0	1,849-	10-

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 346.00 METERS (NARUC ACCOUNT 334.00)

	REGULAR	COST OF REMOVAL		GROSS SALVAGE		NET 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-YEAR MOVING AVERAGES										
08-10	135,404		0	6,932	5	6,932	5			
09-11	103,519		0	5,478	5	5,478	5			
10-12	38,074		0	10,261	27	10,261	27			
11-13	17,530		0	9,670	55	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			
FIVE-YEAR AVERAGE										
15-19	90,189		0	2,986	3	2,986	3			

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 348.00 HYDRANTS (NARUC ACCOUNT 335.00)

	REGULAR	COST OF REMOVAL	GROSS SALVAGE	NET SALVAGE					
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 AVERAGE	IS							
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					
FIVE-YEA	R AVERAGE								
15-19	1,149	0	0	0					

AQUARION WATER COMPANY OF NEW HAMPSHIRE

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	1,154		0		0		0
2012 2013 2014 2015 2016 2017 2018 2019	6,543 2,516		0 0		0 0		0 0
TOTAL	10,213		0		0		0
THREE-YE	AR MOVING AVERAGES	5					
08-10 09-11 10-12	385		0		0		0
11-13 12-14 13-15 14-16 15-17 16-18 17-19	2,181 3,020 3,020 839		0 0 0		0 0 0		0 0 0

FIVE-YEAR AVERAGE

15-19

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 390.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNT 304.50)

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
2010 2011	82,887		0		0		0
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-YE.	AR MOVING AVERAGE	S					
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-YEA	R AVERAGE						
15-19	13,065	50	0		0	50-	0

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 392.00 TRANSPORTATION EQUIPMENT (NARUC ACCOUNT 341.00)

	REGULAR	COST OF REMOVAL		GROSS SALVAGE		NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	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
IOIAL	201, 300		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
FIVE-YEA	R AVERAGE						
15-19	21,257		0		0		0
10-19	21,201		U		U		U

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 396.00 POWER OPERATED EQUIPMENT (NARUC ACCOUNT 345.00)

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT		GROSS SALVAG AMOUNT		NET SALVAGE AMOUNT	PCT
2010 2011	13,803		0		0		0
2012 2013	458		0		0		0
2014 2015 2016 2017 2018 2019	52,910		0		0		0
TOTAL	67,171		0		0		0
THREE-YE	AR MOVING AVERAGE	IS					
10-12 11-13 12-14 13-15 14-16 15-17 16-18 17-19	4,754 153 153 17,637 17,637 17,637		0 0 0 0				0 0 0 0 0
FIVE-YEA	R AVERAGE						
15-19	10,582		0		0		0

PART IX. DETAILED DEPRECIATION CALCULATIONS

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 311.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNT 304.10)

YEAR (1)	ORIGINAL C COST (2)	ALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 40 ALVAGE PERCENT 0	-R1.5				
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	G LIFE AND	ANNUAL ACCRUAL	RATE, PERCEN	r 28.1	2.25

ACCOUNT 314.00 WELLS AND SPRINGS (NARUC ACCOUNT 307.00)

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 SALVAGE PERCENT					
1957	3,611.69	3,792	3,792			
1964	-	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 REMAIN	ING LIFE AND	ANNUAL ACCRUA	L RATE, PERCEN	т 19.3	3 3.63

AQUARION WATER COMPANY OF NEW HAMPSHIRE

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)				
	SURVIVOR CURVE IOWA 60-S3 NET SALVAGE PERCENT5									
1967 1982 1989 1990	3,545.61 11,568.71 119,821.03 2,554.64	2,786 7,205 62,529 1,293	1,792 4,636 40,229 832	1,931 7,511 85,583 1,850	15.10 24.41 30.18 31.07	128 308 2,836 60				
	137,489.99	73,813	47,489	96 , 875		3,332				
	COMPOSITE REMAINI	NG LIFE AND	ANNUAL ACCRUAL	RATE, PERCEN	I 29.1	2.42				

🎽 Gannett Fleming

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 317.00 OTHER WATER SOURCE PLANT (NARUC ACCOUNT 339.00)

YEAR (1)	COST	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
INTEF PROBA	AND PRIOR RIM SURVIVOR CURVE. BLE RETIREMENT YEA RALVAGE PERCENT 0	~	29			
1990 2003 2004 2005 2006 2007 2008	737,861.86 317,260.67 5,000.00 8,107.68 416,574.47	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 10.00	303 29,992 13,343 218 367 19,596 7,288
2009	1,644,016.80 AND SUBSEQUENT	978 , 703	932,939	711,078		71,107
	VOR CURVE 20-SQU CALVAGE PERCENT 0	ARE				
2010 2016	-,	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 REMAININ	G LIFE AND	ANNUAL ACCRUAL	RATE, PERCEN	r 10.3	4.36

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 321.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNT 304.20)

YEAR (1)	(2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)			
	VOR CURVE IOWA SALVAGE PERCENT								
1958	,	5,655	6,512						
1963	,	4,747	5,701						
1964	,	8,648	10,482						
1967	- ,	15 , 778	19,692						
1975		388	534						
1978	27,016.40	18,797	27,016						
1982	1	847	1,245	62	14.07	4			
1987	-,	2,031	2,985	510	16.75	30			
1989	- ,	79 , 477	116,812	27,038	17.90	1,511			
1990		280	412	108	18.50	6			
1992		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		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)

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 CALVAGE 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 REMAINI	ING LIFE AND	ANNUAL ACCRUAI	RATE, PERCEN	т 12.4	8.22

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 328.00 OTHER PUMPING EQUIPMENT (NARUC ACCOUNT 311.20)

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					
1996 2010 2012	17,816.53 1,414.32 12,845.47	11,277 398 2,881	976 34 250	17,731 1,451 13,238	9.93 18.30 19.66	1,786 79 673
	32,076.32	14,556	1,260	32,420		2,538
	COMPOSITE REMAINI	NG LIFE AND	ANNUAL ACCRUAL	RATE, PERCENT	r 12.8	7.91

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 331.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNT 304.30)

YEAR (1)		CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 4 SALVAGE PERCENT 0	0-R1.5				
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 REMAININ	G LIFE AND	ANNUAL ACCRUAL	RATE, PERCEN	r30.4	3.16

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 332.00 WATER TREATMENT EQUIPMENT (NARUC ACCOUNT 320.00)

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					
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 REMAINI	ING LIFE AND	ANNUAL ACCRUAI	RATE, PERCEN	т 14.	0 6.68

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 341.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNT 304.40)

YEAR (1)		CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE ACCRU (5	JALS	REM. LIFE (6)	ANNUA ACCRUA (7)	_
	VOR CURVE IOWA 4							
NET S	ALVAGE 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 REMAININ	NG LIFE AND	ANNUAL ACCRUAL	RATE,	PERCENT	36.1	0.14	

ACCOUNT 342.00 DISTRIBUTION RESERVOIRS AND STANDPIPES (NARUC ACCOUNT 330.00)

YEAR (1)		CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 6 ALVAGE 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 REMAININ	NG LIFE AND	ANNUAL ACCRUAL	RATE, PERCEN	т 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	78,660	82,717	63,651	39.32	1,619
1967	53,950.18	29,956	31,501	25,147	40.05	628
1968	125,836.22	68,738	72,283	59,845	40.78	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



Aquarion Water Company December 31, 2019

ACCOUNT 343.00 TRANSMISSION AND DISTRIBUTION MAINS (NARUC ACCOUNT 331.00)

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 SALVAGE 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		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 REMAIN	ING LIFE AND	ANNUAL ACCRUAI	C RATE, PERCEN	I72.0	1.22

ACCOUNT 345.00 SERVICES (NARUC ACCOUNT 333.00)

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)
	DR CURVE IOWA 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

Aquarion Water Company December 31, 2019

AQUARION WATER COMPANY OF NEW HAMPSHIRE

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	2 28.8	2.26

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 346.00 METERS (NARUC ACCOUNT 334.00)

YEAR (1)		ALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 15 ALVAGE PERCENT +5					
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	G LIFE AND	ANNUAL ACCRUAL	RATE, PERCENI	8.7	9.94

AQUARION WATER COMPANY OF NEW HAMPSHIRE

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 REMAIN	ING LIFE AND	ANNUAL ACCRUAL	RATE, PERCEN	r 27.0	2.24

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)
	CURVE IOWA AGE PERCENT					
NEI SALV	AGE PERCENI	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
1976	1,228.02	960	1,150	78	9.81	8
1977	2,953.24	2,276	2,727	226	10.32	22
1978	11,151.43	8,463	10,139	1,012	10.85	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 1984	27,676.35 9,052.64	19,177 6,144	22,974 7,361	4,702 1,692	13.82 14.46	340 117
1985	10,797.55	7,167	8,586	2,212	15.13	146
1985	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	21,356.54	11,400	13,657	7,700	20.98	367
1994	9,196.48	4,747	5,687	3,509	21.77	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 4,793.20	865	1,036	1,320	28.49	46
2003	,	1,665	1,995	2,798	29.37	95 124
2004 2005	6,666.62 9,130.89	2,182 2,806	2,614 3,362	4,053 5,769	30.27 31.17	134 185
2005	23,142.23	2,808 6,644	5,362 7,959	15,183	32.08	473
2000	68,030.22	18,142	21,734	46,296	33.00	1,403
2010	63,124.02	12,891	15,443	40,290	35.81	1,403
2010	00,121.02	121071	10/110	1,,001	00.01	±, JJI



Aquarion Water Company December 31, 2019

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 348.00 HYDRANTS (NARUC ACCOUNT 335.00)

YEAR (1)		ALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 45 SALVAGE PERCENT 0	5-R3				
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	G LIFE AND	ANNUAL ACCRUAL	RATE, PERCEN	г 27.5	1.70

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

YEAR (1)		CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 3 CALVAGE PERCENT 0					
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 REMAININ	IG LIFE AND	ANNUAL ACCRUAI	RATE, PERCEN	T 19.7	2.47

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 390.00 STRUCTURES AND IMPROVEMENTS (NARUC ACCOUNT 304.50)

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					
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 REMAIN	ING LIFE AND	ANNUAL ACCRUA	L RATE, PERCEN	IT 16.	0 5.12

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 391.00 OFFICE FURNITURE AND EQUIPMENT (NARUC ACCOUNT 340.10)

YEAR (1)	COST		ALLOC. BOOK RESERVE (4)	ACCR			ANNUAL ACCRUAL (7)	
FULLY	ACCRUED							
1968 1985 1992 1993 1995	225.00 859.00 601.45 2,592.15	135 225 859 601 2,592 4,412	135 225 859 601 2,593 4,413					
	TIZED EVOR CURVE 20-SQUA BALVAGE PERCENT 0	RE						
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,	PERCENI	19.5	1.68	

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

YEAR (1)		CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)			ANNUAL ACCRUAL (7)
FULLY	ACCRUED					
2007 2008 2009 2011 2012 2013 2014	948.66 20,917.34 67,824.47 13,464.55 22,033.50	13,465	238 949 20,917 67,824 13,465 22,034 18,965 144,392			
	TIZED IVOR CURVE 5-SQUA BALVAGE PERCENT (
2015 2016	- ,	28,755 5,650	25,930 5,095		0 0.50 6 1.50	6,020 1,984
	40,021.48	34,405	31,025	8,99	6	8,004
	184,413.03	178,797	175,417	8,99	6	8,004
	COMPOSITE REMAINI	NG LIFE AND	ANNUAL ACCRUAL	RATE, PERCI	ENT 1.1	4.34

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

YEAR (1)		CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	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			
	TIZED Nor curve 5-squa Galvage percent (
2015 2016		43,297 2,077	38,637 1,853	9,472 1,113	0.50 1.50	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 REMAININ	NG LIFE AND	ANNUAL ACCRUAL	RATE, PERCENT	1.0	2.44

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 392.00 TRANSPORTATION EQUIPMENT (NARUC ACCOUNT 341.00)

YEAR (1)	011101111111111111111111111111111111111	ALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 10 ALVAGE PERCENT +5	-L2.5				
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

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 393.00 STORES EQUIPMENT (NARUC ACCOUNT 342.00)

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
FULLY	ACCRUED					
1969	330.88	331	331			
	330.88	331	331			
	COMPOSITE REMAINI	NG LIFE AND	ANNUAL ACCRUAL	RATE, PERCENT	r 0.0	0.00

AQUARION WATER COMPANY OF NEW HAMPSHIRE

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

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)		FUTURE BOOK ACCRUALS (5)		ANNUAL ACCRUAL (7)
FULLY	ACCRUED					
1989 1990 1991 1993	881.51 561.56	185 882 562 37,075 38,704	185 882 562 37,075 38,703			
	TZED VOR CURVE 20-SG ALVAGE PERCENT					
2003 2005 2009 2012 2014	7,390.00 8,264.31	18,100 5,358 4,339 2,928 1,030	18,100 5,358 4,339 2,928 1,030	,	5.50 9.50 12.50	369
	49,146.51	31,755	31,755	17,392		2,456
	87,849.36	70,459	70,458	17,392		2,456
	COMPOSITE REMAIN	ING LIFE AND	ANNUAL ACCRUA	L RATE, PERCEN	r 7.1	2.80

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 396.00 POWER OPERATED EQUIPMENT (NARUC ACCOUNT 345.00)

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	RESERVE ACCRUALS LI		REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVIVOR CURVE IOWA 15-L2 NET SALVAGE PERCENT 0						
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 REMAININ	NG LIFE AND	ANNUAL ACCRUAL	RATE, PERCENT	6.3	1.82

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 397.00 COMMUNICATION EQUIPMENT (NARUC ACCOUNT 346.00)

YEAR (1)	ORIGINAL C COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)	
SURVIVOR CURVE 10-SQUARE NET SALVAGE PERCENT 0							
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 REMAININ	G LIFE AND	ANNUAL ACCRUAL	RATE, PERCENT	4.9	10.00	

AQUARION WATER COMPANY OF NEW HAMPSHIRE

ACCOUNT 398.00 MISCELLANEOUS EQUIPMENT (NARUC ACCOUNT 347.00)

YEAR (1)		CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	ACCRUALS		
FULLY	ACCRUED					
2002 2003 2004	12,621.93	12,622				
	18,577.41	18,577	18,577			
	IZED VOR CURVE 15-SQ ALVAGE PERCENT					
2010 2011 2012 2013 2014 2015 2016 2018 2019	45,975.44 5,214.90 92,979.03 12,506.02 8,319.92 4,501.02 6,920.38 16,233.05	26,053 2,607 40,291	5,215 26,053 2,607 40,291 4,586 2,496 1,050 692 541 83,531	3,019 19,922 2,608 52,688 7,920 5,824 3,451 6,228 15,692 117,352	6.50 7.50 8.50 9.50	3,065 348 6,199
	219,460.69	102,108	102,108	117,352		13,393
	COMPOSITE REMAINI	NG LIFE AND	ANNUAL ACCRUAL	RATE, PERCEN	r 8.8	6.10

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	CALCULAT ANNUAL ACC		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)
		WATER PLANT										
		SOURCE OF SUPPLY PLANT	_									
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 2009 AND SUBSEQUENT	1,644,016.80 79.244.32	20-SQ 20-SQ	0	71,737 3,962	4.36 5.00	SQUARE 20-SQ	* 0 0	71,107 3.962	4.33 5.00	(630) 0
				20-30	U	3,902		20-50	U		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	_									
321.00	304.20	STRUCTURES AND IMPROVEMENTS	1,392,388.27	40-R5	(10)	38,291	2.75	40-R1.5	0	22,586	1.62	(15,705)
325.00	311.10	ELECTRIC PUMPING EQUIPMENT	907,573.32	35-R1	(20)	31,130	3.43	25-R1	(5)	74,579	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	_									
331.00	304.30	STRUCTURES AND IMPROVEMENTS	58,588.17	40-R5	(10)	1,611	2.75	40-R1.5	0	1,853	3.16	242
332.00	320.00	WATER TREATMENT EQUIPMENT	231,133.66	30-R5	(5)	8,090	3.50	25-R1	0	15,438	6.68	7,348
		TOTAL WATER TREATMENT PLANT	289,721.83			9,701	3.35			17,291	5.97	7,590
		TRANSMISSION AND DISTRIBUTION PLANT	_									
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	331.00	TRANSMISSION AND DISTRIBUTION MAINS	26,634,035.12	100-R3	(20)	319,608	1.20	85-R2.5	(5)	325,129	1.22	5,521
345.00 346.00	333.00 334.00	SERVICES METERS	5,731,678.62 1,620,461.06	65-R3 25-R1	(20) 5	106,036 61,578	1.85 3.80	45-S2.5 15-L3	(5) 5	129,474 161,089	2.26 9.94	23,438 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	U	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										(a.a)
		FULLY ACCRUED AMORTIZED	4,412.60 2,237.30	13-R1 13-R1	3 3	329 167	7.46 7.46	20-SQ	0	0 112	- 5.01	(329) (55)
		TOTAL OFFICE FURNITURE AND EQUIPMENT	6,649.90	10-111	5	496	7.46	20-04	Ū	112	1.68	(384)
			0,040.00				7.40			112	1.00	(004)
391.10	340.20	OFFICE FURNITURE AND EQUIPMENT - COMPUTER HARDWARE FULLY ACCRUED	144 201 55	5.00	0	0 **	20.00			0		0
		AMORTIZED	144,391.55 40,021.48	5-SQ 5-SQ	0	0 **	20.00	5-SQ	0	8,004	20.00	8,004
		TOTAL OFFICE FURNITURE AND EQUIPMENT - COMPUTER HARDWARE	184,413.03			0					4.34	
		TOTAL OFFICE FURNITURE AND EQUIPMENT - COMPUTER HARDWARE	104,413.03			J	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				
			ORIGINAL COST	NET CALCULATED			NET		CALCULATED			
AQUARION	NARUC	ACCOUNT	AS OF DECEMBER 31, 2019	SURVIVOR CURVE	SALVAGE PERCENT	ANNUAL ACCR AMOUNT		SURVIVOR	SALVAGE PERCENT	ANNUAL ACC		INCREASE/ DECREASE
ACCOUNT	ACCOUNT	(1)	(2)	(3)	(4)	(5)=(6)*(2)	RATE (6)	CURVE (7)	(8)	(9)	 (10)	(11)
			()	(-)	()	(,, (,, (,)	(1)	()	(-)		()	()
391.20	340.30	OFFICE FURNITURE AND EQUIPMENT - COMPUTER SOFTWARE FULLY ACCRUED	368,220.13	5-SQ	0	0 **	20.00			0		0
		AMORTIZED	51,074.98	5-SQ 5-SQ	0	0 **	20.00	5-SQ	0	10,214	- 20.00	10,214
		TOTAL OFFICE FURNITURE AND EQUIPMENT - COMPUTER SOFTWARE	419,295.11			0	20.00			10,214	2.44	10,214
392.00	341.00	TRANSPORTATION EQUIPMENT	644,403.27	8-S6	10	72,495	11.25	10-L2.5	5	6,406	0.99	(66,089)
393.00	342.00	STORES EQUIPMENT	330.88	20-SQ	0	17	5.00	FULLY A	CCRUED	0	- ***	(17)
394.00	343.00	TOOLS, SHOP AND GARAGE EQUIPMENT										
		FULLY ACCRUED	38,702.85	20-SQ	0	1,935	5.00			0	-	(1,935)
		AMORTIZED	49,146.51	20-SQ	0	2,457	5.00	20-SQ	0	2,456	5.00	(1)
		TOTAL TOOLS, SHOP AND GARAGE EQUIPMENT	87,849.36			4,392	5.00			2,456	2.80	(1,936)
396.00	345.00	POWER OPERATED EQUIPMENT	109,715.27	15-R3	0	7,318	6.67	15-L2	0	1,995	1.82	(5,323)
397.00	346.00	COMMUNICATION EQUIPMENT	51,552.91	10-SQ	0	5,155	10.00	10-SQ	0	5,155	10.00	0
398.00	347.00	MISCELLANEOUS EQUIPMENT										
		FULLY ACCRUED	18,577.41	15-SQ	0	1,239	6.67			0	-	(1,239)
		AMORTIZED	200,883.28	15-SQ	0	13,399	6.67	15-SQ	0	13,393	6.67	(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	303.00	MISCELLANEOUS INTANGIBLE PLANT								3.044		3.044
391.00	340.10	OFFICE FURNITURE AND EQUIPMENT								(1.868)		(1,868)
391.10	340.20	OFFICE FURNITURE AND EQUIPMENT - COMPUTER HARDWARE								(17,186)		(17,186)
391.20	340.30	OFFICE FURNITURE AND EQUIPMENT - COMPUTER SOFTWARE								(4,435)		(4,435)
393.00	342.00	STORES EQUIPMENT								(896)		(896)
394.00	343.00	TOOLS, SHOP AND GARAGE EQUIPMENT								2,808		2,808
395.00	344.00	LABORATORY EQUIPMENT								102		102
397.00	346.00	COMMUNICATIONS EQUIPMENT								(8,352)		(8,352)
398.00	347.00	MISCELLANEOUS EQUIPMENT								1,808		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
		NONDEPRECIABLE PLANT AND ACCOUNTS NOT STUDIED										
301.00	301.00	ORGANIZATION ***	17.700.00									
310.00	303.10	LAND AND LAND RIGHTS	635,643.46									
340.00	303.40	LAND AND LAND RIGHTS	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%

TOTAL NONDEPRECIABLE PLANT AND ACCOUNTS NOT STUDIED

TOTAL WATER PLANT