#### 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 previously submitted testimony to the New Hampshire Public Utilities

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

	Year	<u>Jurisdiction</u>	Docket No.	Client/Utility	<u>Subject</u>
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
30.	2018	NY	19-G-0065	Consolidated Edison Company of New York - Gas	Depreciation
31.	2019	MA	D.P.U. 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	MA	D.P.U. 20-120	Boston Gas Company	Depreciation
35.	2020	FERC	ER20-2878-00	PG&E – Wholesale Distribution	Depreciation
36.	2020	NH	DW 20-184	Aquarion Water Company	Depreciation
37.	2021	FERC	RP21-100-000	National Grid Liquified Natural Gas	Depreciation
38.	2021	FL	20210016-EI	Duke Energy Florida	Depreciation
39.	2021	NY	21-E-0074	Orange and Rockland – Electric	Depreciation
40.	2021	NY	21-G-0073	Orange and Rockland – Gas	Depreciation
41.	2021	FERC	ER21-83-000	Pepco	Depreciation
42.	2021	FL	20210015-EI	Florida Power & Light Company	Depreciation
43.	2021	NH	DE 21-030	Unitil Energy Systems	Depreciation
44.	2021	FERC	ER21-1822-000	GridLiance High Plains	Depreciation

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# NORTHERN UTILITIES, INC. NEW HAMPSHIRE DIVISION

HAMPTON, NEW HAMPSHIRE

### 2020 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS PLANT AS OF DECEMBER 31, 2020

Prepared by:



Excellence Delivered As Promised

## NORTHERN UTILITIES, INC. NEW HAMPSHIRE DIVISION

Hampton, New Hampshire

#### 2020 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO GAS PLANT
AS OF DECEMBER 31, 2020

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC
Camp Hill, Pennsylvania



#### Excellence Delivered As Promised

July 22, 2021

Northern Utilities, Inc. 6 Liberty Lane West Hampton, NH 03842

Attention Mr. Dan Main

Manager of Regulatory Services and Corporate Compliance

Ladies and Gentlemen:

Pursuant to your request, we have conducted a depreciation study related to the gas plant of the New Hampshire Division of Northern Utilities, Inc. as of December 31, 2020. 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, CDP

Vice President

NWA:mle

068731

Gannett Fleming Valuation and Rate Consultants, LLC

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NORTHERN UTILITIES, INC.
NEW HAMPSHIRE DIVISION

**DEPRECIATION STUDY** 

**EXECUTIVE SUMMARY** 

Pursuant to Northern Utilities, Inc.'s ("Northern" or "Company") request, Gannett

Fleming Valuation and Rate Consultants, LLC ("Gannett Fleming") conducted a

depreciation study related to the gas plant of its New Hampshire Division as of December

31, 2020. 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 average service life and

forecasted net salvage characteristics for each depreciable group of assets.

The recommendations in the depreciation study are for changes to service life and

net salvage estimates for various accounts. In the aggregate, the overall impact of the

recommended depreciation rates is an increase in depreciation expense. While

somewhat offset by longer lives for some accounts, the overall increase in depreciation

expense is primarily the result of more negative net salvage estimates for certain

accounts.

In previous studies, the Simulated Plant Record (SPR) method was used for the

historical analysis of service lives. For the current study, aged data was available for the

period 2011 through 2020. In order to analyze data for a longer period of time, unaged

data for the period of 1988 to 2010 was statistically aged and incorporated into the

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actuarial life analysis. Amortization accounting is also recommended for certain general plant accounts.

Gannett Fleming recommends the calculated annual depreciation accrual rates set forth herein apply specifically to gas plant in service as of December 31, 2020, as summarized in Table 1 of the study. Supporting analysis and calculations are provided within the study.

The study results set forth an annual depreciation expense of approximately \$11.2 million for gas plant when applied to depreciable plant balances as of December 31, 2020. The results are summarized at the functional level as follows:

#### SUMMARY OF ORIGINAL COST, ACCRUAL RATES AND AMOUNTS

FUNCTION	ORIGINAL <u>COST</u>	ACCRUAL <u>RATE</u>	ANNUAL ACCRUAL
GAS PLANT DISTRIBUTION PLANT	\$277,936,056.89	3.72	10,329,813
GENERAL PLANT LEAK PRONE PIPE RESERVE ADJUSTMENT FOR AMORTIZATION	7,282,182.57 761,437.43	4.08	297,232 707,897 (147,312)
TOTAL DEPRECIABLE PLANT	<b>\$285,979,676,89</b>	3.91	<u>11,187,630</u>

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PART I. INTRODUCTION

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NORTHERN UTILITIES, INC. NEW HAMPSHIRE DIVISION DEPRECIATION STUDY

PART I. INTRODUCTION

SCOPE

This report sets forth the results of the depreciation study for the New Hampshire

Division of Northern Utilities, Inc. ("Northern" or "Company") to determine the annual

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

of gas plant as of December 31, 2020. The rates and amounts are based on the straight

line remaining life method of depreciation. This report also describes the concepts,

methods and judgments which underlie the recommended annual depreciation accrual

rates related to gas plant in service as of December 31, 2020.

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 2020, a review of Company practice and outlook as they relate to plant

operation and retirement, and consideration of current practice in the gas industry,

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

companies.

**PLAN OF REPORT** 

Part I, Introduction, contains statements with respect to the plan of the report, and

the basis of the study. Part II, Estimation of Survivor Curves, presents descriptions of the

considerations and 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

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group depreciation. Part VI, Results of Study, presents summaries by depreciable group

of annual depreciation accrual rates and amounts, as well as composite remaining lives.

Part VII, Service Life Statistics presents the statistical analysis of service life estimates,

Part VIII, Net Salvage Statistics sets forth the statistical indications of net salvage

percents, and Part IX, Detailed Depreciation Calculations presents the detailed

tabulations of annual depreciation.

**BASIS OF THE STUDY** 

**Depreciation** 

Depreciation, in public utility regulation, is the loss in service value not restored by

current maintenance, incurred in connection with the consumption or prospective

retirement of utility plant in the course of service from causes which are known to be in

current operation and against which the utility is not protected by insurance. Among

causes to be given consideration are wear and tear, deterioration, action of the elements,

inadequacy, obsolescence, changes in the art, changes in demand, and the requirements

of public authorities.

Depreciation, as used in accounting, is a method of distributing fixed capital costs,

less net salvage, over a period of time by allocating annual amounts to expense. Each

annual amount of such depreciation expense is part of that year's total cost of providing

gas services. 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

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

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

service lives and net salvage.

The straight line method, 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-3 of the report.

**Service Life and Net Salvage Estimates** 

The service life and net salvage estimates used in the depreciation and

amortization calculations were based on informed judgment which incorporated a review

of management's plans, policies and outlook, a general knowledge of the gas industry,

and comparisons of the service life and net salvage estimates from our studies of other

gas utilities. The use of survivor curves to reflect the expected dispersion of retirement

provides a consistent method of estimating depreciation for gas plant. Iowa type survivor

curves were used to depict the estimated survivor curves for the plant accounts not

subject to amortization accounting.

The procedure for estimating service lives consisted of compiling historical data

for the plant accounts or depreciable groups, analyzing this history through the use of

widely accepted techniques, and forecasting the survivor characteristics for each

depreciable group on the basis of interpretations of the historical data analyses and the

probable future. The combination of the historical experience and the estimated future

yielded estimated survivor curves from which the average service lives were derived.

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# PART II. ESTIMATION OF SURVIVOR CURVES

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#### PART II. ESTIMATION OF SURVIVOR CURVES

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

#### SURVIVOR CURVES

The use of an average service life for a property group implies that the various units in the group have different lives. Thus, the average life may be obtained by determining the separate lives of each of the units, or by constructing a survivor curve by plotting the number of units which survive at successive ages.

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

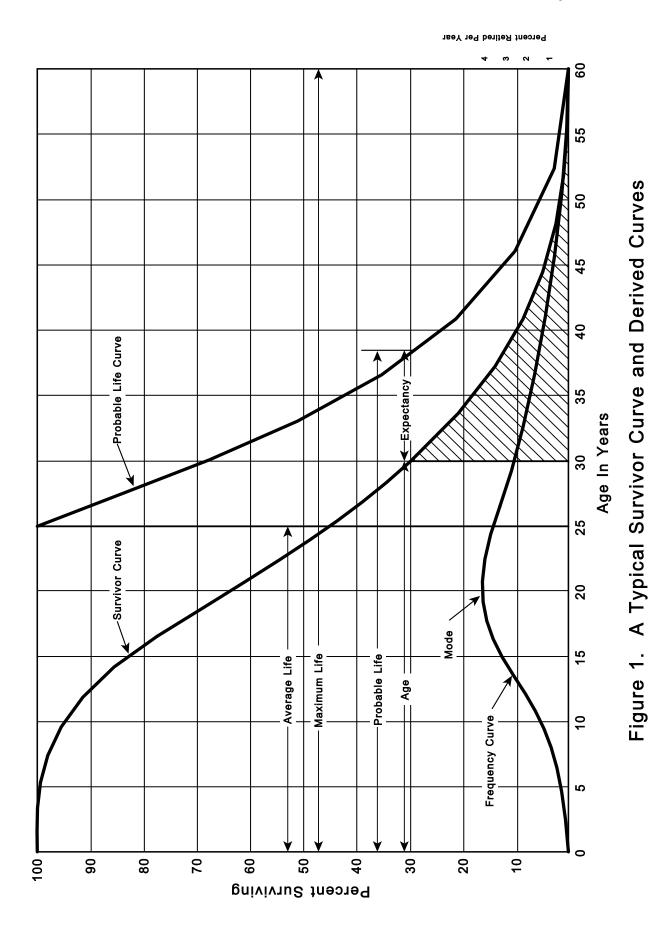
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This study has incorporated the use of lowa curves developed from a retirement rate analysis of historical retirement history. A discussion of the concepts of survivor curves and of the development of survivor curves using the retirement rate method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

#### Iowa Type Curves

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

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



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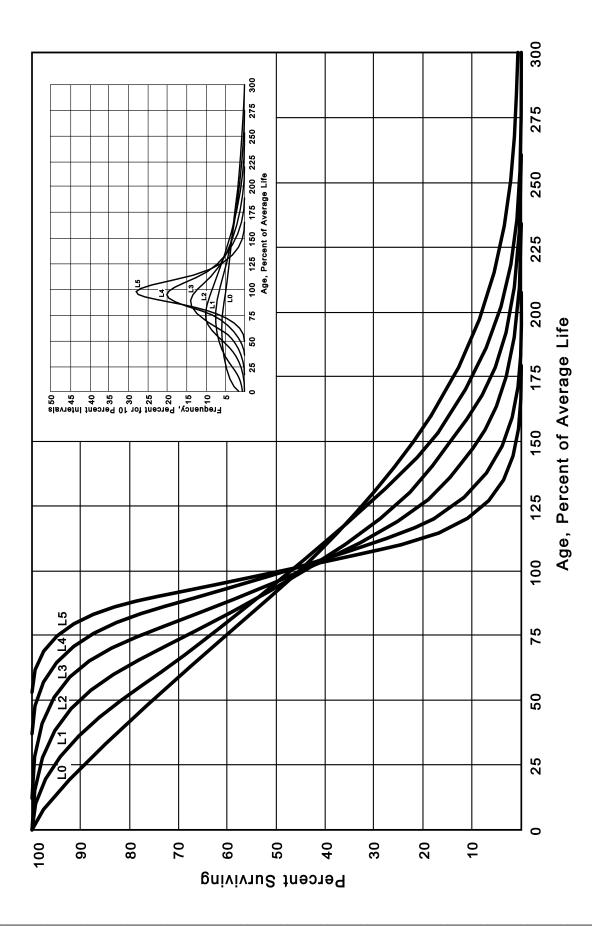


Figure 2. Left Modal or "L" lowa Type Survivor Curves

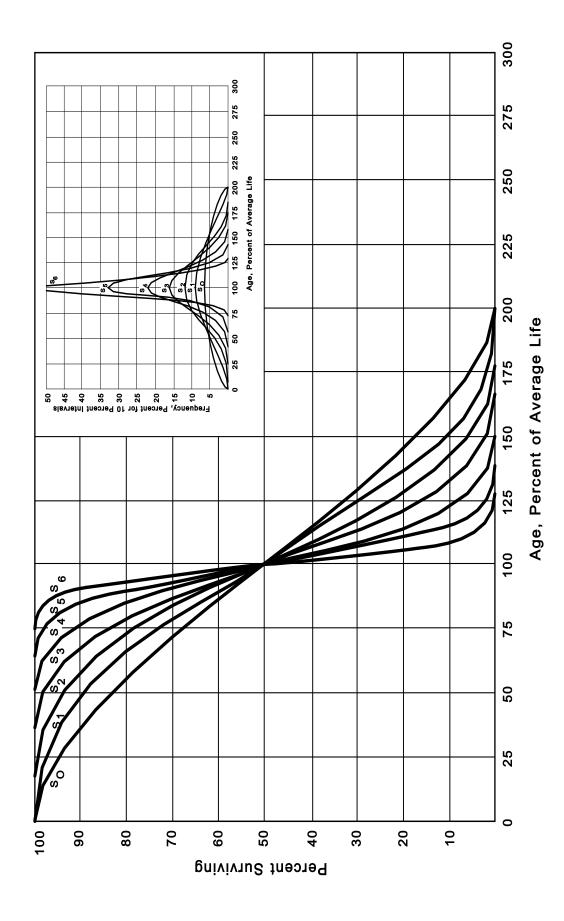


Figure 3. Symmetrical or "S" lowa Type Survivor Curves

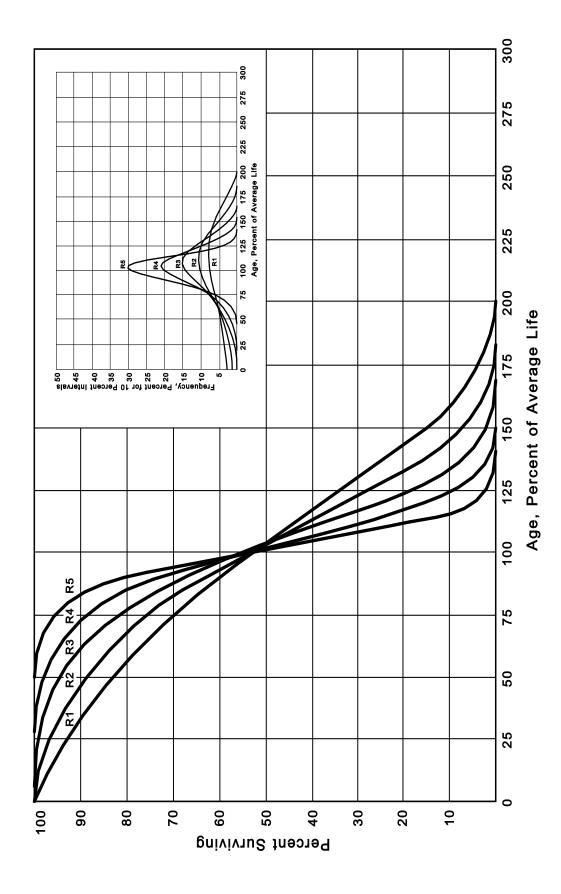
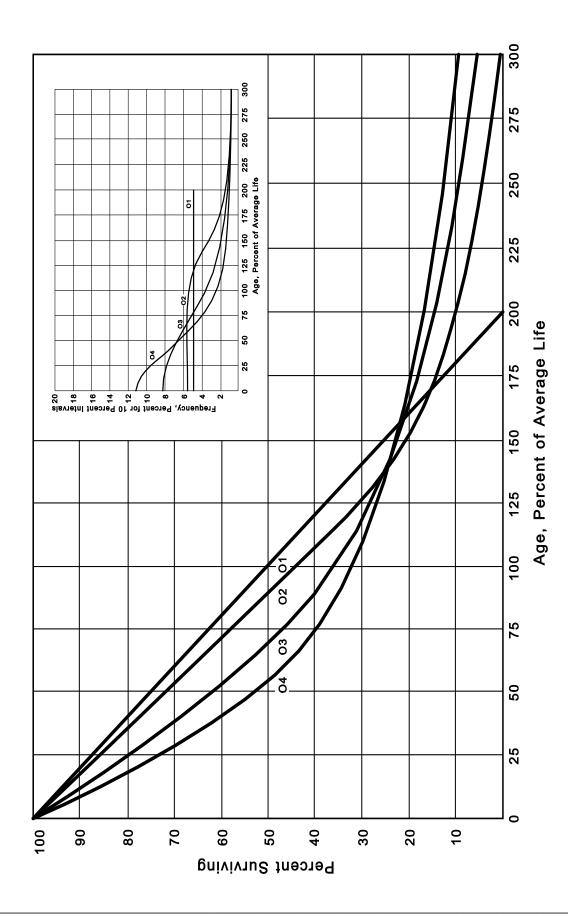


Figure 4. Right Modal or "R" lowa Type Survivor Curves



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

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which constitute three of the four families, was published in 1935 in the form of the Experiment Station's Bulletin 125. These curve types have also been presented in subsequent Experiment Station bulletins and in the text, "Engineering Valuation and Depreciation." In 1957, Frank V. B. Couch, Jr., an Iowa State College graduate student submitted a thesis presenting his development of the fourth family consisting of the four O type survivor curves.

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

The retirement rate method is an actuarial method of deriving survivor curves using the average rates at which property of each age group is retired. The method relates to property groups for which aged accounting experience is available and is the method used to develop the original stub survivor curves in this study. The method (also known as the annual rate method) is illustrated through the use of an example in the following text, and is also explained in several publications, including "Statistical Analyses of Industrial Property Retirements," Engineering Valuation and Depreciation, and "Depreciation Systems."

The average rate of retirement used in the calculation of the percent surviving for the survivor curve (life table) requires two sets of data: first, the property retired during a period of observation, identified by the property's age at retirement; and second, the property exposed to retirement at the beginning of the age intervals during the same period. The period of observation is referred to as the <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

<sup>&</sup>lt;sup>1</sup>Marston, Anson, Robley Winfrey and Jean C. Hempstead. Engineering Valuation and Depreciation, 2nd Edition. New York, McGraw-Hill Book Company. 1953.

<sup>&</sup>lt;sup>2</sup>Winfrey, Robley, <u>Statistical Analyses of Industrial Property Retirement.</u> Iowa State College Engineering Experiment Station, Bulletin 125. 1935.

<sup>&</sup>lt;sup>3</sup>Marston, Anson, Robley Winfrey, and Jean C. Hempstead, Supra Note 1.

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

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aged property transactions, a schedule of plant exposed to retirement, a life table and

illustrations of smoothing the stub survivor curve.

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

The property group used to illustrate the retirement rate method is observed for

the experience band 2011-2020 during which there were placements during the years

2006-2020. 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-11 and II-12.

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 2006 were retired in 2011.

The \$10,000 retirement occurred during the age interval between 4½ and 5½ years on

the basis that approximately one-half of the amount of property was installed prior to and

subsequent to July 1 of each year. That is, on the average, property installed during a

year is placed in service at the midpoint of the year for the purpose of the analysis. All

retirements also are stated as occurring at the midpoint of a one-year age interval of time,

except the first age interval which encompasses only one-half year.

The total retirements occurring in each age interval in a band are determined by

summing the amounts for each transaction year-installation year combination for that age

interval. For example, the total of \$143,000 retired for age interval 4½-5½ is the sum of

the retirements entered on Schedule 1 immediately above the stair step line drawn on the

table beginning with the 2011 retirements of 2006 installations and ending with the 2020

retirements of the 2015 installations. Thus, the total amount of 143 for age interval 4½-

5½ equals the sum of:

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

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SCHEDULE 2. OTHER TRANSACTIONS FOR EACH YEAR 2011-2020 SUMMARIZED BY AGE INTERVAL

7006-2020		Age <u>Interval</u> (13)	13½-14½	12½-13½	111/2-121/2	10½-11½	9½-10½	81/2-91/2	71/2-81/2	61/2-71/2	51/2-61/2	41/2-51/2	31/2-41/2	21/2-31/2	11/2-21/2	1/2-11/2	0-1/2	
Placement band zuub-zuzu		Total During Age Interval (12)	1	ı	ı	09	ı	(2)	9	•	ı	1	10	•	(121)	•		(20)
r F		<u>2020</u> (11)			•	•	•								$(102)^{c}$			(102)
		<u>2019</u> (10)		,	i	ı	1					$22^{a}$			ı			22
	of Dollars	201 <u>8</u> (9)			•	(2) <sub>p</sub>	e <sub>a</sub>				(12) <sup>b</sup>		(19) <sup>b</sup>		•			(30)
	Acquisitions, Transfers and Sales, Thousands of Dollars During Year	2017 (8)	<sub>e</sub> 09		•	,	•											09
	s and Sales, The During Year	<u>2016</u> (7)			•		•											
	sfers and During	<u>2015</u> (6)			•	•	•											
	ons, Tran	<u>2014</u> (5)			•	,	•											
) I	Acquisiti	$\frac{2013}{(4)}$				,	•	•										1
		201 <u>2</u> (3)	•		,													1
		<u>2011</u> (2)	,	•	,	,	,	•										
	•	Year Placed (1)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total

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

Parentheses Denote Credit Amount.

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

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

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 2011 through 2020 is recorded by year in the portion of the table headed "Annual Survivors at the Beginning of the Year." The last amount entered in each column is the amount of new plant added to the group during the year. The amounts entered in Schedule 3 for each successive year following the beginning balance or addition are obtained by adding or subtracting the net entries shown on Schedules 1 and 2. For the purpose of determining the plant exposed to retirement, transfers-in are considered as being exposed to retirement in this group at the beginning of the year in which they occurred, and the sales and transfers-out are considered to be removed from the plant exposed to retirement at the beginning of the following year. Thus, the amounts of plant shown at the beginning of each year are the amounts of plant from each placement year considered to be exposed to retirement at the beginning of each successive transaction year. For example, the exposures for the installation year 2016 are calculated in the following manner:

= \$750,000
= \$742,000
= \$724,000
= \$685,000
= \$663,000

SCHEDULE 3. PLANT EXPOSED TO RETIREMENT JANUARY 1 OF EACH YEAR 2011-2020 SUMMARIZED BY AGE INTERVAL

Exposures, Thousands of Dollars           Total at Annual Survivors at the Beginning of the Year         Annual Survivors at the Beginning of the Year         Appeintment of the Year         Appeintment of the Year         Appeintment of the Year         Age interval Interval           2011         2013         2014         2015         2016         2017         2018         2019         400         410         411         411         412         414         415         416         417												
2012         2013         2014         2015         2016         2017         2018         2019         2020         Age Interval           (3)         (4)         (5)         (6)         (7)         (8)         (9)         (10)         (11)         (12)           5         245         234         222         209         195         239         216         192         167         167         (12)           7         268         256         243         228         212         194         174         153         131         323         323           7         296         284         271         257         241         224         205         184         162         531         323           6         367         321         376         262         242         226         226         226         823         823         316         1,097           0a         416         407         397         386         374         361         347         356         1,563         1,563         1,563         1,563         1,563         1,563         1,563         1,563         1,463         1,448         1,48         1,4					ures, Thou	sands of D	ollars	,			Total at	( (
2012         2013         2014         2015         2016         2017         2018         2019         2020         Age Interval           (3)         (4)         (5)         (6)         (7)         (8)         (9)         (10)         (11)         (12)           245         234         222         209         195         239         216         192         167         167           268         256         243         228         212         194         174         153         131         323           8         266         284         271         224         205         184         167         167         167           8         330         284         274         224         205         242         226         242         226         242         226         823         823         823         823         823         823         823         823         823         823         823         823         823         824         824         824         824         824         824         824         824         824         824         824         824         824         824         824         824					IVOIS AL LITE	pegillilli	ol me rea	7			Degining of	Age
(3)         (4)         (5)         (6)         (7)         (8)         (9)         (10)         (11)         (12)           245         234         222         209         195         239         216         192         167         167           268         256         243         228         212         194         174         153         131         323           296         284         271         257         241         224         205         184         162         531           330         321         330         289         276         262         226         226         823           410         407         346         374         367         280         261         1,097           440         452         449         472         280         261         1,503           460         455         449         446         448         441         1,097           580         574         560         663         653         653         623         628         663         6,719           580         572         724         686         667         749         7,490	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Age Interval	Interval
245         234         222         209         195         239         216         192         167         167           268         256         243         228         212         194         174         153         131         323           296         284         271         257         241         224         205         184         162         531           330         321         311         300         289         276         242         226         823           416         407         397         324         321         307         289         261         1,097           416         407         367         262         242         226         823         561         1,097           460*         455         449         405         390         374         356         1,553           460*         450*         479         464         448         431         412         2,463           560*         574         561         546         530         623         628         633         4,352           850*         450*         724         685         663         5719	(2)	(3)	(4)	(2)	(9)	(7)	(8)	(6)	(10)	(11)	(12)	(13)
268         256         243         228         212         194         174         153         131         323           296         284         271         257         241         224         205         184         162         531           330         321         300         289         276         262         242         226         823           367         357         346         321         307         289         276         260         261         1,097           460a         455         444         432         419         405         390         374         356         1,563           560a         504         492         479         464         448         431         412         2,463           580a         574         561         564         536         623         628         669         3,759           560a         653         653         623         628         663         4,955           750a         742         724         685         663         5,719           850a         850a         841         821         7,999         7,490           1,08	255		234	222	209	195	239	216	192	167	167	13½-14½
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	279		256	243	228	212	194	174	153	131	323	12½-13½
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	307		284	271	257	241	224	205	184	162	531	111/2-121/2
367         357         346         334         321         307         297         280         261         1,097           416         407         386         374         361         347         332         316         1,503           460a         455         444         432         419         405         390         374         356         1,952           510a         504         492         479         464         448         431         412         2,463           580a         574         561         564         530         623         628         609         3,789           660a         653         653         623         628         669         3,789           750a         742         724         685         663         4,955           850a         841         821         799         4,955           1,080a         1,080a         1,069         6,579           2,382         2,824         6,017         6,017         6,852         7,790	338		321	311	300	289	276	262	242	226	823	10%-111/2
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	376		357	346	334	321	307	297	280	261	1,097	9%-10%
460a         455         444         432         419         405         390         374         356         1,952           510a         504         492         479         464         448         431         412         2,463           580a         574         561         546         530         623         628         609         3,057           660a         653         653         623         628         663         4,332           750a         742         724         685         663         4,332           850a         841         821         799         4,355           960a         949         926         5,719           1,080a         1,080a         1,089         6,579           2,382         2,824         5,247         6,017         6,852         7,799	420		407	397	386	374	361	347	332	316	1,503	81/2-91/2
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		460a	455	444	432	419	405	390	374	356	1,952	71/2-81/2
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			$510^{a}$	504	492	479	464	448	431	412	2,463	61/2-71/2
2,382       2,824       653       653       653       663       679       3,789         750a       742       724       685       663       4,332         850a       841       821       799       4,955         960a       949       926       5,719         1,080a       1,089       6,579         1,220a       7,490				580a	574	561	546	230	501	482	3,057	51/2-61/2
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$					e009	653	639	623	628	609	3,789	41/2-51/2
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$						750a	742	724	685	663	4,332	31/2-41/2
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$							850a	841	821	799	4,955	21/2-31/2
								8096	949	926	5,719	11/2-21/2
									$1,080^{a}$	1,069	6,579	1/2-11/2
2,382     2,824     3,318     3,872     4,494     5,247     6,017     6,852     7,799										1,220ª	7,490	0-1/2
	1,975		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 2011-2020, 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 4½-5½, is obtained by summing:

#### **Original Life Table**

The original life table, illustrated in Schedule 4 on page II-16, is developed from the totals shown on the schedules of retirements and exposures, Schedules 1 and 3, respectively. The exposures at the beginning of the age interval are obtained from the corresponding age interval of the exposure schedule, and the retirements during the age interval are obtained from the corresponding age interval of the retirement schedule. The retirement ratio is the result of dividing the retirements during the age interval by the exposures at the beginning of the age interval. The percent surviving at the beginning of each age interval is derived from survivor ratios, each of which equals one minus the retirement ratio. The percent surviving is developed by starting with 100% at age zero and successively multiplying the percent surviving at the beginning of each interval by the survivor ratio, i.e., one minus the retirement ratio for that age interval. The calculations necessary to determine the percent surviving at age 5½ are as follows:

```
Percent surviving at age 4½
                                       88.15
                                =
Exposures at age 4½
                                 = 3.789,000
Retirements from age 4\frac{1}{2} to 5\frac{1}{2} =
                                     143.000
Retirement Ratio
                                =
                                     143,000 \div 3,789,000 = 0.0377
Survivor Ratio
                                       1.000 -
                                                   0.0377 = 0.9623
Percent surviving at age 5½
                                      (88.15) x (0.9623) =
                                                               84.83
                                =
```

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

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

Experience Band 2011-2020

Placement Band 2006-2020

(Exposure and Retirement Amounts are in Thousands of Dollars)

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

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

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

Column 4 = Column 3 Divided by Column 2.

Column 5 = 1.0000 Minus Column 4.

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

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

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

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

curves.

**Smoothing the Original Survivor Curve** 

The smoothing of the original survivor curve eliminates any irregularities and

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

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

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

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

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

to eliminate irregularities in the original curve.

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

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

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

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

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

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

12 and 13 years appears to be the best fit. In Figure 7, the S0 type curve with a 12-year

average life appears to be the best fit and appears to be better than the L1 fitting. In

Figure 8, the R1 type curve with a 12-year average life appears to be the best fit and

appears to be better than either the L1 or the S0.

In Figure 9, the three fittings, 12-L1, 12-S0 and 12-R1 are drawn for comparison

purposes. It is probable that the 12-R1 lowa curve would be selected as the most

representative of the plotted survivor characteristics of the group.

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45 FIGURE 6. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN L1 IOWA TYPE CURVE 2011-2020 EXPERIENCE 2006-2020 PLACEMENTS 9 ORIGINAL CURVE ■ 35 8 ORIGINAL AND SMOOTH SURVIVOR CURVES IOWA 12-L IOWA 13-L1 20 25 AGE IN YEARS 15 9 2 <del>ا</del>ه 100 8 70 40 30 20 9 8 20 РЕВСЕИТ ЗИВУІУІИВ

45 FIGURE 7. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN SO IOWA TYPE CURVE 2011-2020 EXPERIENCE 2006-2020 PLACEMENTS 9 ORIGINAL CURVE ■ 35 30 ORIGINAL AND SMOOTH SURVIVOR CURVES 20 25 AGE IN YEARS IOWA 13-S0 IOWA 12-50 5 9 IOWA 11-S0 2 <del>ا</del>ه 100 8 70 20 40 30 20 9 8 00 РЕВСЕИТ ЗИВУІУІИВ

45 FIGURE 8. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN R1 IOWA TYPE CURVE 2011-2020 EXPERIENCE 2006-2020 PLACEMENTS 9 ORIGINAL CURVE ■ 35 30 ORIGINAL AND SMOOTH SURVIVOR CURVES 20 25 AGE IN YEARS IOWA 13-R1 15 IOWA 12-R1 9 IOWA 11-R1 2 <del>ا</del>ه 100 18 9 8 70 9 20 40 30 20 9 РЕВСЕИТ ЗИВУІУІИВ

FIGURE 9. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN L1, SO AND R1 IOWA TYPE CURVE 45 ORIGINAL CURVE = 2006-2020 EXPERIENCE 2006-2020 PLACEMENTS 9 35 30 ORIGINAL AND SMOOTH SURVIVOR CURVES 20 25 AGE IN YEARS 15 9 2 IOWA <del>ا</del>ه 100 8 70 20 40 30 20 9 8 РЕВСЕИТ ЗИВУІУІИС

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PART III. SERVICE LIFE CONSIDERATIO	ONS	ATION	RATIO	IDER/	NSID	CON	_IFE		SER	III.	'ART	Р
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PART III. SERVICE LIFE CONSIDERATIONS

FIELD TRIPS

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

representative portions of the plant, field trips are normally conducted for Gannett

Fleming's depreciation studies. For this study, due to restrictions in place as a result of

COVID-19, a field trip was not feasible. However, the Company was able to provide

virtual field trips for the study. A general understanding of the function of the plant and

information with respect to the reasons for past retirements and the expected future

causes of retirements are obtained during these virtual field trips as well as with meetings

with Company personnel. This knowledge and information were incorporated in the

interpretation and extrapolation of the statistical analyses.

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

June 9, 2021

Portsmouth Office

Forest Street Station

SERVICE LIFE ANALYSIS

The service life estimates were based on informed judgment which considered a

number of factors. The primary factors were the statistical analyses of data; current

Company policies and outlook as determined during conversations with management;

and the survivor curve estimates from previous studies of this company and other gas

companies. For the statistical analysis, aged data were available from 2011 through

2020. In part because this is a relatively short period of time when compared to the full

life cycle of many of the Company's assets, the aged data was supplemented with

statistically aged data for years prior to 2011. The data for the years prior to 2011 were

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the unaged data used in prior depreciation studies and were statistically aged using the historical unaged activity and the currently approved lowa survivor curve types. The resulting database allowed for the study of data using the retirement rate method from 1988 through 2020 for most accounts.

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 approximately 94 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 below. The statistical support for the service life estimates is presented in the section beginning on page VII-2.

#### DISTRIBUTION PLANT

375	Structures and Improvements
376.2	Mains - Coated and Wrapped
376.4	Mains – Plastic
380	Services
381	Meters
382	Meter Installations
386	Other Property on Customers' Premises

Account 376.2, Mains – Coated and Wrapped, and Account 376.4, Mains - Plastic, which were studied together, comprise the largest depreciable group and are used to illustrate the manner in which the study was conducted for the groups using the retirement rate method. Aged retirement data were available from 2011 through 2020. 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 gas plant was placed in service. Statistically aged data was also available from 1988 through 2010. Both the full range of data from 1988 through 2020

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and the aged data from 2011 through 2020 were analyzed using the retirement rate

method. Additionally, because plastic and coated and wrapped steel mains are generally

vintage 1966 or subsequent, in order to analyze a longer history of the experience of gas

mains data for bare steel and cast iron mains were also considered.

The current survivor curve estimate for this account is the 47-R1.5. The retirement

rate analysis indicates a longer service life than the current estimate. The original life

tables depicted on the chart are presented on the pages that follow the chart. A chart

depicting the estimated 55-R2.5 survivor curve and original life tables used as the basis

for the estimate are presented on page VII-9 of the study. For the bands shown in the

chart, those with placements prior to 1966 include the experience of bare steel and cast

iron mains and those that only include placements from 1966 and subsequent effectively

provide the experience for plastic and coated and wrapped steel mains. The

recommended 55-R2.5 survivor curve is a good fit of the historical data, is consistent with

the expectations of Company personnel, and is within the range of typical estimates for

this type of property.

Similar studies were performed for the remaining plant accounts. Each of the

judgments represented a consideration of statistical analyses of aged plant activity,

management's outlook for the future, and the typical range of lives used by other gas

companies.

The selected amortization periods for other General Plant accounts are described

in the section "Calculated Annual and Accrued Amortization."

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PART IV. NET SALVAGE CONSIDERATIONS

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PART IV. NET SALVAGE CONSIDERATIONS

**NET SALVAGE ANALYSIS** 

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

compiled for the years 2009 through 2020. 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 "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 2009 through 2020 contributed

significantly toward the net salvage estimates for seven plant accounts, representing

approximately 96 percent of the depreciable plant. However, it should be noted that while

the historical data was a basis for the estimates shown in the table below, some of the

estimates are conservative (i.e. less negative) when compared to the historical data and

represent gradual changes from the existing net salvage estimates. These

considerations will be discussed in more detail below.

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#### DISTRIBUTION PLANT

3/5	Structures and improvements
376.2	Mains – Coated and Wrapped
376.4	Mains – Plastic
376.6	Mains – Cathodic Protection
378.2	Measuring and Regulating Station Equipment
380	Services
381	Meters
382	Meter Installations

The net salvage analysis for Account 376 Mains is used to illustrate the methods for estimating net salvage. The analysis for this account includes the historical experience for all types of mains and cathodic protection. The current net salvage estimate for Account 376.2 is negative 50 percent and the current estimate for Accounts 376.4 and 376.6 is negative 35 percent. The historical data indicates a more negative estimate than the current estimate. The overall average net salvage is negative 213 percent. The most recent five-year average is negative 240 percent. Based on the historical data and the expectations provided by management for this account, a more negative net salvage estimate is recommended. The recommended negative 60 percent net salvage estimate, which is within the range of estimates used by other gas companies, is recommended at this time.

The net salvage estimates for the remaining plant accounts were estimated using the above-described process of historical indications, judgment and reviewing the typical range of estimates used by other gas companies. The results of the net salvage for each plant account are presented in account sequence in the section titled "Net Salvage Statistics", beginning on page VIII-2.

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:

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

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**Remaining Life Annual Accruals** 

For the purpose of calculating remaining life accruals as of December 31, 2020,

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, 2020, are set forth in the Results of Study section of the report.

Average Service Life Procedure

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

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

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

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

average service life procedure.

The calculated accrued depreciation for each depreciable property group

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

to expense through future 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

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it applies, or over the period during which it is anticipated the benefit will be realized. Normally, the distribution of the amount is in equal amounts to each year of the amortization period.

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

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

		AMORTIZATION
		PERIOD,
<u>ACCT</u>	<u>TITLE</u>	<u>YEARS</u>
391.10	Office Furniture and Equipment	15
394.10	Tools, Shop and Garage Equipment	25
397.00	Communication Equipment	15
397.35	Communication Equipment – ERTs	15

For the purpose of calculating annual amortization amounts as of December 31, 2020, 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** 

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PART VI. RESULTS OF STUDY

**QUALIFICATION OF RESULTS** 

The calculated annual and accrued depreciation are the principal results of the

study. Continued surveillance and periodic revisions are normally required to maintain

continued use of appropriate annual depreciation accrual rates. An assumption that

accrual rates can remain unchanged over a long period of time implies a disregard for the

inherent variability in service lives and 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 gas plant

in service as of December 31, 2020. For most plant accounts, the application of such

rates to future balances that reflect additions subsequent to December 31, 2020, 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 gas utilities. The results of the statistical analysis of service life are

presented in the section beginning on page VII-2, within the supporting documents of this

report.

For each depreciable group analyzed by the retirement rate method, a chart

depicting the original and estimated survivor curves followed by a tabular presentation of

Northern Utilities, Inc. - NH Division December 31,3020

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the original life table(s) plotted on the chart. The survivor curves estimated for the

depreciable groups are shown as dark smooth curves on the charts. Each smooth

survivor curve is denoted by a numeral followed by the curve type designation. The

numeral used is the average life derived from the entire curve from 100 percent to zero

percent surviving. The titles of the chart indicate the group, the symbol used to plot the

points of the original life table, and the experience and placement bands of the life tables

which where plotted. The experience band indicates the range of years for which

retirements were used to develop the stub survivor curve. The placements indicate, for

the related experience band, the range of years of installations which appear in the

experience.

The analyses of net salvage data are presented in the section titled, "Net Salvage

Statistics". The tabulations present annual cost of removal and salvage data, three-year

moving averages and the most recent five-year average. Data are shown in dollars and

as percentages of original costs retired.

The tables of the calculated annual depreciation applicable to depreciable assets

as of December 31, 2020 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.

Northern Utilities, Inc. - NH Division December 31,3920

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NORTHERN UTILITIES, INC. NEW HAMPSHIRE DIVISION

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS PLANT AS OF DECEMBER 31, 2020

(9) (6) (7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 8 8 8 8	DEPRECIABLE GROUP	SURVIVOR CURVE	NET SALVAGE PERCENT	ORIGINAL COST AS OF DECEMBER 31, 2020	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL AMOUNT RA	ED RUAL RATE	COMPOSITE REMAINING LIFE
Comparison   Com	(1)	(2)	(3)	(4)	(5)	(9)	(2)	(8)	(2)/(9)=(6)
Series   Commentment   Series   Serie	GAS PLANT								
SFEAT OF FORCE AND WARRIED AND	DISTRIBUTION PLANT								
CONTEQ AND WINGHAMED         SERCES         (RM)         20244164         43.80,878         1,121,107         2.88           CONTED AND WINGHAMED         58-62.5         (RM)         720,4164         83.80,888         1,121,107         2.88         4.64           PASTIC         PASTIC         (RM)         720,4164         83.80,888         1,121,107         2.88         4.64           PASTIC         (RM)         720,4164         83.80,888         1,121,107         2.88         4.64         4.68         4.64         <		55-R2.5	(10)	3,260,871.26	596,162	2,990,796	89,338	2.74	33.5
Fig. 2012   Fig. 2013   Fig.	2	55-R2.5 55-R2.5 30-S5	(09) (09)	29,746,227,02 120,342,184,10 1,082,739,45	4,224,164 36,382,883 682,660	43,369,799 156,164,612 1,049,723	1,123,107 3,460,577 50,271	3.78 2.88 4.64	38.6 45.1 20.9
SERVICATION   SPECIAL PROJECT   SPECIAL PROJEC	TOTAL MAINS			151,171,150.57	41,289,708	200,584,134	4,633,955	3.07	
METERS   M		30-R2	(20)	7,328,248.14	672,808	8,121,090	356,985	4.87	22.7
Part of Part		45-R2.5	(06)	82,837,046.71	28,479,497	128,910,892	3,654,478	4.41	35.3
HOUSE PEGLIA TONS  12-R2  10-R2		30-R2	(15)	4,624,610.24	1,226,613	4,091,689 21.742,557	247,087 1.098.766	5.34 4.23	16.6
TOTAL DISTRIBUTION PLANT         TOTAL DISTRIBUTION PLANT         TOTAL DISTRIBUTION PLANT         16-50         TOTAL DISTRIBUTION PLANT         16-50		30-R3 12-R2	00	733,549.58 1,978,895.03	212,401 959,565	521,148 1,019,330	24,378 224,826	3.32 11.36	21.4
OFFICE FURNITURE AND EQUIPMENT         15-50         0         508.134.77         279.838         228.199         33.877         667           TOQLS, SHOP AND CARAGE EQUIPMENT         15-50         0         1,134.4431.22         25.8199         25.539         4.00         4.00           PULLY ACCREED         1,134.4431.22         5,34.112         780.340         25.339         4.00         4.00           TOTAL TOOLS, SHOP AND CARAGE EQUIPMENT         15-50         0         1,344.431.22         388.877         770.341         8.00         8.25.399         4.00         4.00           TOTAL TOOLS, SHOP AND CARAGE EQUIPMENT         11-50         0         1,344.431.22         770.341         770.341         8.07         8.07           TOTAL COMMUNICATION EQUIPMENT         11-50         1,187.4431.22         770.341         770.341         8.07         8.07           TOTAL COMMUNICATION EQUIPMENT - ERTS         11-50         1,187.4431         770.341         8.00         8.07         8.00           TOTAL COMMUNICATION EQUIPMENT - ERTS         10-50         1,187.4431         1,187.4431         8.00         8.00         8.00         8.00         8.00         8.00         8.00         8.00         8.00         8.00         8.00         8.00	TOTAL DISTRIBUTION PLANT			277,936,056.89	80,296,051	367,981,636	10,329,813	3.72	
TODAL S. SHOP AND GARAGE EQUIPMENT         15-SO         0         506,134.77         7729,596         228,196         728,196         73,877         667           TODAL S. SHOP AND GARAGE EQUIPMENT         25-SO         1,314,451.62         534,112         780,340         780,340         367           TOTAL TORTIZED         1,513,4451.62         386,887         7780,344         7780,340         52,539         367           TOTAL TORTIZED         1,524         1,513,4451.62         780,347         778,543         778,549         700,381         67           TOTAL COMMUNICATION EQUIPMENT         1,524         1,514,443.68         1,514,443.68         1,514,443.68         1,514,443         67         778,549         67           TOTAL COMMUNICATION EQUIPMENT - ERTS         15-SO         1,514,443.68         1,514,444         775,544         775,549         57         67           ANORTIZED         ANORTIZED         1,514,443.68         1,514,444         2,536,497         110,435         67         110,435         110,435         110,435         110,435         110,435         110,435         110,435         110,435         110,435         110,435         110,435         110,435         110,435         110,435         110,435         110,435         110,435	GENERAL PLANT								
TOOLS, SHOP AND GARAGE EQUIPMENT   TOOLS, SHOP AN		15-SQ	0	508,134.77	279,936	228,199	33,877	6.67	6.7
TOTAL TOOLS, SHOP AND GARAGE EQUIPMENT         15-SQ		25-80	0	115,969.89	115,970 534,112	0 780,340	52,539	- 4.00	- 14.9
COMMUNICATION EQUIPMENT         15-SQ         0         388.887.11 ass.887.11 ass.8887.11 ass.8887.1	TOTAL TOOLS, SHOP AND GARAGE EQUIPMENT			1,430,421.41	650,082	780,340	52,539	3.67	
TOTAL COMMUNICATION EQUIPMENT         1,873,480.21         1,187,48.86         1,187,644         705,836         100,381         5.36           COMMUNICATION EQUIPMENT - ERTS         15-SQ         0         1,65,997.32         1,814,149         0         1,181,148.86         110,436         110,436         667           AMORTIZED AMORTIZED AMORTIZED AMORTIZED AMORTIZED AMORTIZED AMORTIZED COMMUNICATION EQUIPMENT - ERTS         1,586,497         883,649         110,435         667           TOTAL COMMUNICATION EQUIPMENT - ERTS         1,586,497         4,684,169         2,586,497         3,18         3,18           TOTAL GENERAL PLANT         LEAK PRONE PIPE         1,00,436         2,586,024         2,596,024         4,684,189         3,18           MAINS - BARE STEEL MAINS - JOINT SEALS MAINS - CAST IRON         2,584,156         1,1187,409         1,1187,409         1,215,864         2,431,773         1,1187,409         1,1187,4		15-SQ	0	368,887.11 1,504,593.10	368,887 798,757	0 705,836	100,381	- 6.67	7.0
COMMUNICATION EQUIPMENT - ERTS         1.814.148.86         1.814.149         0         0         0         -           FULLY ACCRUED         AMORTIZED         772.348         883.649         1104.35         667           AMORTIZED         2.586.497         883.649         1104.35         3.18           TOTAL COMMUNICATION EQUIPMENT - ERTS         7,282,182.57         4,684,159         2,598,024         297,232         4,08           LEAK PRONE PIPE         MAINS - BARE STEL         190,836.93         (2,132,784)         2,323,621         464,724         7           MAINS - BARE STEL         MAINS - LAST IRON         284,455.49         (1,187,409)         1,215,864         243,173         1           MAINS - CAST IRON         284,555.49         (1,187,409)         3,539,486         707,897         707,897	TOTAL COMMUNICATION EQUIPMENT			1,873,480.21	1,167,644	705,836	100,381	5.36	
TOTAL COMMUNICATION EQUIPMENT - ERTS         2,586,497         883,649         110,435		15-SQ	0	1,814,148.86	1,814,149 772,348	0 883,649	110,435	- 6.67	- 8.0
TOTAL GENERAL PLANT         T,282,182,57         4,684,159         2,598,024         297,232           MAINS - BARE STEEL         190,836,93         (2,132,784)         2,323,621         464,724         1           MAINS - JOINT SEALS         MAINS - JOINT SEALS         542,145 01         542,145 01         542,145 01         542,145 01         1,215,864         243,173         1           TOTAL LEAK PRONE PIPE         761,437,43         (2,778,047)         3,539,485         707,897         707,897	TOTAL COMMUNICATION EQUIPMENT - ERTS			3,470,146.18	2,586,497	883,649	110,435	3.18	
MANNS - BARE STEEL         190.836.83         (2.132.784)         2.323.621           MANNS - BARE STEEL         542,145.01         542,145.01         542,145.01           MANNS - CAST IRON         28.455.49         (1.187.409)         1.215.884           TOTAL LEAK PRONE PIPE         761,437.43         (2,778.047)         3,539,485	TOTAL GENERAL PLANT			7,282,182.57	4,684,159	2,598,024	297,232	4.08	
MAINS - BARE STEEL         190,836,93         (2,132,784)         2,323,621           MAINS - JOINT SEALS         542,145 01         542,145 01         0           MAINS - CAST IRON         28,455,49         (1,187,409)         1,215,864           TOTAL LEAK PRONE PIPE         761,437,43         (2,778,047)         3,539,485	LEAK PRONE PIPE								
761,437,43 (2,778,047) 3,539,485				190,836.93 542,145.01 28,455.49	(2,132,784) 542,145 (1,187,409)	2,323,621 0 1,215,864	464,724 * 0 * 243,173 *		
	TOTAL LEAK PRONE PIPE			761,437.43	(2,778,047)	3,539,485	707,897		

NORTHERN UTILITIES, INC. NEW HAMPSHIRE DIVISION

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVE, NET SALVAGE PERCENT, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND

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Р
S PLANT AS
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CALCULATED

DEPRECIABLE GROUP (1)	SURVIVOR CURVE (2)	NET SALVAGE PERCENT (3)	ORIGINAL COST AS OF DECEMBER 31, 2020 (4)	BOOK DEPRECIATION RESERVE (5)	FUTURE ACCRUALS (6)	CALCULATED ANNUAL ACCRUAL AMOUNT (7)	ED RUAL RATE (8)	COM REM L
UNRECOVERED RESERVE TO BE AMORTIZED								
391.10 OFFICE FURNITURE AND EQUIPMENT 394.10 TOOLS, SHOP AND GARAGE EQUIPMENT 397.00 COMMUNICATION EQUIPMENT 397.35 COMMUNICATION EQUIPMENT - ERTS				18,142 135,659 402,958 179,802		(3,628) (27,132) (80,592) (35,960)	* * * *	
TOTAL UNRECOVERED RESERVE TO BE AMORTIZED				736,561		(147,312)		
TOTAL DEPRECIABLE PLANT			285,979,676.89	82,938,723	374,119,145	11,187,630	3.91	
NONDEPRECIABLE PLANT AND ACCOUNTS NOT STUDIED								
303.02 INTANGIBLE SOFTWARE - 10 YEARS 303.30 INTANGIBLE PLANT - MISCELLANEOUS SOFTWARE 304.20 LAND RIGHTS 374.40 LAND RIGHTS 374.50 RIGHTS OF WAY 375.00 STORES EQUIPMENT 385.00 STORES EQUIPMENT 385.00 STORES EQUIPMENT 386.00 POWER OPERATED EQUIPMENT 397.25 COMMUNICATION EQUIPMENT - METSCAN TOTAL NONDEPRECIABLE PLANT AND ACCOUNTS NOT STUDIED			2.064.603.93 6,176,113.26 6.816.33 89.11.32 17.910.67 222.946.85 31.51995 75.266.49 112.656.43 7.806.945.23	643,542 3,802,861 31,511 75,266 112,656 4,665,837 87,604,561				

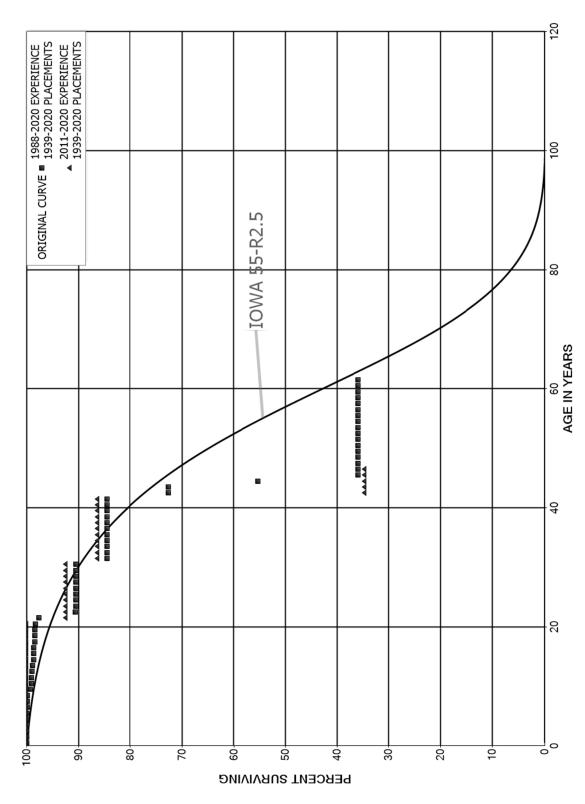
<sup>\*</sup> FIVE-YEAR AMORTIZATION OF UNRECOVERED LEAK PRONE PIPE COSTS. \*\* FIVE-YEAR AMORTIZATION OF UNRECOVERED RESERVE RELATED TO IMPLEMENTATION OF AMORTIZATION ACCOUNTING.

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PART VII.	SERVICE	LIFE	STAT	ISTIC	S
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NORTHERN UTILITIES, INC.

NEW HAMPSHIRE DIVISION
ACCOUNT 375.00 STRUCTURES AND IMPROVEMENTS
ORIGINAL AND SMOOTH SURVIVOR CURVES



#### ACCOUNT 375.00 STRUCTURES AND IMPROVEMENTS

### ORIGINAL LIFE TABLE

PLACEMENT E	BAND 1939-2020		EXPER	RIENCE BAN	D 1988-2020
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5	3,515,589 3,510,782 3,506,214 3,120,209 3,110,673 3,092,596 3,078,367 3,055,088 3,042,881 3,016,771	3,173 72 111 16 28 154 1,864 17 769 16,666	0.0009 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0003 0.0055	0.9991 1.0000 1.0000 1.0000 1.0000 0.9994 1.0000 0.9997 0.9945	100.00 99.91 99.91 99.90 99.90 99.90 99.84 99.84 99.81
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	2,995,371 2,900,379 2,323,063 2,319,686 2,318,657 2,277,761 2,277,233 2,269,230 2,264,598 2,248,849	5,824 123 3,377 1,829 4,371 527 873 4,632 688 481	0.0019 0.0000 0.0015 0.0008 0.0019 0.0002 0.0004 0.0020 0.0003 0.0003	0.9981 1.0000 0.9985 0.9992 0.9981 0.9998 0.9996 0.9997 0.9998	99.26 99.07 99.06 98.92 98.84 98.65 98.63 98.59 98.39
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	2,246,207 2,244,343 2,229,219 2,069,575 2,057,182 2,031,823 2,031,823 2,031,823 1,966,718 1,959,654	1,865 15,123 159,645 2,773	0.0008 0.0067 0.0716 0.0013 0.0000 0.0000 0.0000 0.0000 0.0000	0.9992 0.9933 0.9284 0.9987 1.0000 1.0000 0.9998 1.0000 1.0000	98.34 98.26 97.60 90.61 90.49 90.49 90.49 90.47 90.47
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	1,959,654 1,926,223 1,765,550 13,550 13,550 13,550 13,550 13,550 13,550 13,550	126,350	0.0000 0.0656 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 0.9344 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	90.47 90.47 84.54 84.54 84.54 84.54 84.54 84.54 84.54

#### ACCOUNT 375.00 STRUCTURES AND IMPROVEMENTS

PLACEMENT E	BAND 1939-2020		EXPER	RIENCE BAN	D 1988-2020
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 47.5 48.5	13,550 13,550 13,550 10,777 10,777 8,198 5,311 4,911 4,911 6,203	1,906 2,579 2,887	0.0000 0.0000 0.1407 0.0000 0.2393 0.3522 0.0000 0.0000 0.0000	1.0000 1.0000 0.8593 1.0000 0.7607 0.6478 1.0000 1.0000	84.54 84.54 72.64 72.64 55.26 35.80 35.80 35.80 35.80
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	6,203 6,203 6,203 6,203 6,203 6,203 6,203 6,203 6,203		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	35.80 35.80 35.80 35.80 35.80 35.80 35.80 35.80 35.80
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5	6,203 6,203 6,203 5,557 2,978 646 646 646 646	646	0.0000 0.0000 0.1041 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 0.8959 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	35.80 35.80 35.80 32.07 32.07 32.07 32.07 32.07 32.07 32.07
69.5 70.5 71.5 72.5 73.5 74.5 75.5 76.5 77.5	646 646 646 646 646 646 646 646		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	32.07 32.07 32.07 32.07 32.07 32.07 32.07 32.07 32.07 32.07

#### ACCOUNT 375.00 STRUCTURES AND IMPROVEMENTS

PLACEMENT 1	BAND 1939-2020		EXPE	RIENCE BAN	D 1988-2020
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5 80.5 81.5	646 646		0.0000	1.0000	32.07 32.07 32.07

#### ACCOUNT 375.00 STRUCTURES AND IMPROVEMENTS

### ORIGINAL LIFE TABLE

PLACEMENT E	BAND 1939-2020		EXPE	RIENCE BAN	D 2011-2020
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	502,896 590,429 1,163,127 777,232 767,712 786,189 772,114 757,829 745,639 735,358		0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	727,239 638,071 60,878 60,878 82,423 71,257 71,257 64,127 128,831 120,834		0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	118,673 157,262 184,878 2,063,228 2,053,609 2,028,249 2,028,249 2,028,249 1,963,545 1,956,481	11,925	0.0000 0.0758 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 0.9242 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	100.00 100.00 92.42 92.42 92.42 92.42 92.42 92.42 92.42 92.42 92.42
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	1,956,481 1,917,892 1,752,001 2,773 2,773 2,773 2,773 3,173 3,173 3,173	126,350	0.0000 0.0659 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 0.9341 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	92.42 92.42 86.33 86.33 86.33 86.33 86.33 86.33 86.33

#### ACCOUNT 375.00 STRUCTURES AND IMPROVEMENTS

PLACEMENT H	BAND 1939-2020		EXPER	RIENCE BAN	D 2011-2020
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	3,173 3,173 3,173 400 400 400 400	1,906	0.0000 0.0000 0.6006 0.0000 0.0000 0.0000	1.0000 1.0000 0.3994 1.0000 1.0000 1.0000	86.33 86.33 86.33 34.48 34.48 34.48 34.48
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	2,579 4,911 4,911 4,911 4,911		0.0000 0.0000 0.0000 0.0000 0.0000		
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5 68.5	4,911 4,911 4,911 4,911 2,332		0.0000 0.0000 0.0000 0.0000		
69.5 70.5 71.5 72.5 73.5 74.5 75.5 76.5 77.5	646 646 646 646 646 646 646		0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000		

#### ACCOUNT 375.00 STRUCTURES AND IMPROVEMENTS

PLACEMENT	BAND 1939-2020		EXPER	IENCE BAN	D 2011-2020
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5 80.5 81.5	646 646		0.0000		

120

AGE IN YEARS

ORIGINAL CURVE ■ 1928-2020 PLACEMENTS 2011-2020 EXPERIENCE 1928-2020 PLACEMENTS 1988-2020 EXPERIENCE 1966-2020 PLACEMENTS 2011-2020 EXPERIENCE 1966-2020 PLACEMENTS 9 IOWA 55-R2.5 ORIGINAL AND SMOOTH SURVIVOR CURVES 8 NORTHERN UTILITIES, INC. NEW HAMPSHIRE DIVISION ACCOUNT 376.00 MAINS 9 20 ا<sub>0</sub> 100 8 ò 70 9 - 20 40 30 8 9

РЕВСЕИТ SURVIVING

### ACCOUNT 376.00 MAINS

### ORIGINAL LIFE TABLE

PLACEMENT I	BAND 1928-2020		EXPER	RIENCE BAN	D 1988-2020
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	149,715,229 141,655,427 129,851,721 121,604,517 107,704,979 99,581,434 89,902,635 80,898,090 74,467,696 70,537,375	102,683 385,247 314,429 194,926 202,362 207,818 214,628 182,378 252,501 252,983	0.0007 0.0027 0.0024 0.0016 0.0019 0.0021 0.0024 0.0023 0.0034 0.0036	0.9993 0.9973 0.9976 0.9984 0.9981 0.9979 0.9976 0.9977 0.9966 0.9964	100.00 99.93 99.66 99.42 99.26 99.07 98.87 98.63 98.41 98.07
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	67,784,561 63,717,919 59,585,260 56,666,411 53,846,997 49,623,478 47,470,866 45,191,303 43,673,346 42,001,763	232,954 241,128 296,621 327,597 233,193 256,878 207,559 196,920 187,627 152,185	0.0034 0.0038 0.0050 0.0058 0.0043 0.0052 0.0044 0.0044 0.0043	0.9966 0.9962 0.9950 0.9942 0.9957 0.9948 0.9956 0.9957 0.9964	97.72 97.39 97.02 96.53 95.98 95.56 95.07 94.65 94.24 93.83
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	40,183,465 38,200,251 35,948,759 34,165,905 31,282,199 27,195,816 23,411,766 20,675,493 18,696,429 16,135,924	211,239 182,655 177,911 221,905 168,053 231,654 180,807 151,195 116,520 103,443	0.0053 0.0048 0.0049 0.0065 0.0054 0.0085 0.0077 0.0073 0.0062 0.0064	0.9947 0.9952 0.9951 0.9935 0.9946 0.9915 0.9923 0.9927 0.9938 0.9936	93.49 93.00 92.56 92.10 91.50 91.01 90.23 89.54 88.88 88.33
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	12,113,097 9,362,491 8,042,216 6,730,569 5,563,157 4,819,280 3,780,453 3,318,188 3,140,497 2,892,635	53,785 59,908 39,663 65,316 39,856 76,702 44,436 37,294 23,608 39,859	0.0044 0.0064 0.0049 0.0097 0.0072 0.0159 0.0118 0.0112 0.0075 0.0138	0.9956 0.9936 0.9951 0.9903 0.9928 0.9841 0.9882 0.9888 0.9925 0.9862	87.76 87.37 86.81 86.39 85.55 84.93 83.58 82.60 81.67 81.06

### ACCOUNT 376.00 MAINS

PLACEMENT I	BAND 1928-2020		EXPEF	RIENCE BAN	D 1988-2020
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	2,558,327	35,187	0.0138	0.9862	79.94
40.5	2,345,461	50,648	0.0216	0.9784	78.84
41.5	1,757,699	17,709	0.0101	0.9899	77.14
42.5	1,569,944	45,586	0.0290	0.9710	76.36
43.5	1,467,692	15,443	0.0105	0.9895	74.14
44.5	1,339,850	11,691	0.0087	0.9913	73.36
45.5	1,257,999	29,472	0.0234	0.9766	72.72
46.5	1,185,320	11,383	0.0096	0.9904	71.02
47.5	1,080,142	16,767	0.0155	0.9845	70.34
48.5	1,028,528	35,301	0.0343	0.9657	69.25
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	966,316	25,745	0.0266	0.9734	66.87
	839,406	35,473	0.0423	0.9577	65.09
	763,676	20,193	0.0264	0.9736	62.34
	665,830	19,573	0.0294	0.9706	60.69
	568,756	12,754	0.0224	0.9776	58.91
	423,915	4,125	0.0097	0.9903	57.58
	418,432	11,536	0.0276	0.9724	57.02
	376,738	12,654	0.0336	0.9664	55.45
	311,942	14,467	0.0464	0.9536	53.59
	265,897	14,962	0.0563	0.9437	51.10
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5	232,389 209,079 190,176 172,321 152,295 129,029 109,304 100,777 98,309 94,806	19,034 10,814 13,306 12,619 10,301 8,814 7,381 2,364 3,502 123	0.0819 0.0517 0.0700 0.0732 0.0676 0.0683 0.0675 0.0235 0.0356 0.0013	0.9181 0.9483 0.9300 0.9268 0.9324 0.9317 0.9325 0.9765 0.9644 0.9987	48.23 44.28 41.99 39.05 36.19 33.74 31.44 29.31 28.63 27.61
69.5 70.5 71.5 72.5 73.5 74.5 75.5 76.5 77.5	94,683	4,333	0.0458	0.9542	27.57
	87,740	9,479	0.1080	0.8920	26.31
	78,115	14,858	0.1902	0.8098	23.47
	63,257	12,248	0.1936	0.8064	19.00
	51,009	5,987	0.1174	0.8826	15.32
	45,022	2,198	0.0488	0.9512	13.53
	42,824	3,165	0.0739	0.9261	12.87
	39,660	2,592	0.0654	0.9346	11.91
	37,068	433	0.0117	0.9883	11.14
	36,635	7,180	0.1960	0.8040	11.01

### ACCOUNT 376.00 MAINS

PLACEMENT :	BAND 1928-2020		EXPE	RIENCE BAN	D 1988-2020
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5 80.5 81.5 82.5 83.5 84.5 85.5	5,418 5,105 3,701 3,701 3,701 3,701	3,701	0.0000 0.0000 0.0000 0.0000 0.0000 1.0000	1.0000 1.0000 1.0000 1.0000 1.0000	8.85 8.85 8.85 8.85 8.85

### ACCOUNT 376.00 MAINS

### ORIGINAL LIFE TABLE

PLACEMENT I	BAND 1928-2020		EXPER	RIENCE BAN	D 2011-2020
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	86,451,816 80,958,825 72,338,860 65,839,937 54,398,543 50,497,917 42,758,528 35,696,153 30,686,367 27,786,432	14,203 216,363 154,359 21,112 8,326 8,060 31,138 15,506 59,094 51,581	0.0002 0.0027 0.0021 0.0003 0.0002 0.0002 0.0007 0.0004 0.0019	0.9998 0.9973 0.9979 0.9997 0.9998 0.9998 0.9993 0.9996 0.9981	100.00 99.98 99.72 99.50 99.47 99.46 99.44 99.37 99.32 99.13
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	26,820,920 24,756,269 22,919,664 21,749,798 21,746,046 21,697,740 23,416,716 23,928,678 24,328,061 25,340,397	20,627 40,345 97,599 148,810 36,202 42,827 52,600 64,319 70,251 63,338	0.0008 0.0016 0.0043 0.0068 0.0017 0.0020 0.0022 0.0027 0.0029 0.0025	0.9992 0.9984 0.9957 0.9932 0.9983 0.9980 0.9978 0.9973 0.9971	98.95 98.87 98.71 98.29 97.62 97.46 97.26 97.05 96.79
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	27,676,239 28,532,890 27,603,336 27,210,158 25,554,014 22,215,047 19,438,565 17,139,096 15,338,379 13,024,901	120,247 96,471 131,789 183,482 135,084 201,475 155,044 122,596 96,567 78,222	0.0043 0.0034 0.0048 0.0067 0.0053 0.0091 0.0080 0.0072 0.0063 0.0060	0.9957 0.9966 0.9952 0.9933 0.9947 0.9909 0.9920 0.9928 0.9937 0.9940	96.26 95.85 95.52 95.07 94.43 93.93 93.07 92.33 91.67 91.09
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	9,352,088 6,810,972 6,111,138 4,989,027 3,952,763 3,369,032 2,450,152 2,120,689 2,065,770 1,922,281	36,972 40,316 22,656 46,584 24,985 65,240 27,334 29,138 9,845 27,164	0.0040 0.0059 0.0037 0.0093 0.0063 0.0194 0.0112 0.0137 0.0048 0.0141	0.9960 0.9941 0.9963 0.9907 0.9937 0.9806 0.9888 0.9863 0.9952 0.9859	90.55 90.19 89.66 89.32 88.49 87.93 86.23 85.27 84.09 83.69

### ACCOUNT 376.00 MAINS

PLACEMENT I	BAND 1928-2020		EXPER	RIENCE BAN	D 2011-2020
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 47.5 48.5	1,646,652 1,558,929 1,023,335 919,289 905,552 901,569 818,214 739,856 717,614 674,456	19,319 40,960 5,570 35,602 8,215 4,883 25,296 8,732 12,977 32,314		0.9883 0.9737 0.9946 0.9613 0.9909 0.9946 0.9691 0.9882 0.9819 0.9521	82.51 81.54 79.40 78.97 75.91 75.22 74.81 72.50 71.64 70.35
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	655,046 539,472 482,670 396,239 313,076 192,406 206,634 172,524 121,962 86,343	22,003 30,410 17,003 16,653 11,053 2,655 6,450 4,030 4,041 4,577	0.0336 0.0564 0.0352 0.0420 0.0353 0.0138 0.0312 0.0234 0.0331 0.0530	0.9664 0.9436 0.9648 0.9580 0.9647 0.9862 0.9688 0.9766 0.9669 0.9470	66.98 64.73 61.08 58.93 56.45 54.46 53.71 52.03 50.82 49.13
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5	59,520 52,539 43,062 35,638 28,166 15,181 9,758 6,741 6,386 3,296	5,429 1,785 2,874 65 21 138 1,871 250 3,089 45	0.0912 0.0340 0.0668 0.0018 0.0008 0.0091 0.1917 0.0372 0.4838 0.0137	0.9088 0.9660 0.9332 0.9982 0.9992 0.9909 0.8083 0.9628 0.5162 0.9863	46.53 42.28 40.85 38.12 38.05 38.02 37.68 30.45 29.32 15.14
69.5 70.5 71.5 72.5 73.5 74.5 75.5 76.5 77.5	40,913 38,020 74,414 59,556 47,308 41,322 39,124 35,959 33,367 32,934	2,415 4,875 14,858 12,248 5,987 2,198 3,165 2,592 433 7,180	0.0590 0.1282 0.1997 0.2057 0.1265 0.0532 0.0809 0.0721 0.0130 0.2180	0.9410 0.8718 0.8003 0.7943 0.8735 0.9468 0.9191 0.9279 0.9870 0.7820	14.93 14.05 12.25 9.80 7.79 6.80 6.44 5.92 5.49

### ACCOUNT 376.00 MAINS

PLACEMENT	BAND 1928-2020		EXPER	RIENCE BAN	D 2011-2020
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
79.5 80.5 81.5 82.5 83.5	1,718 1,405 3,701 3,701 3,701	3 <b>,</b> 701	0.0000 0.0000 0.0000 0.0000 1.0000	1.0000	4.24 4.24 4.24
85.5	3,701	3,701	1.0000		

### ACCOUNT 376.00 MAINS

### ORIGINAL LIFE TABLE

PLACEMENT 1	BAND 1966-2020		EXPER	RIENCE BAN	D 1988-2020
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	149,715,229 141,655,427 129,851,721 121,604,517 107,704,979 99,581,434 89,902,635 80,898,090 74,467,696 70,537,375	102,683 385,247 314,429 194,926 202,362 207,818 214,628 182,378 252,501 252,983	0.0007 0.0027 0.0024 0.0016 0.0019 0.0021 0.0024 0.0023 0.0034 0.0036	0.9993 0.9973 0.9976 0.9984 0.9981 0.9979 0.9976 0.9977 0.9966 0.9964	100.00 99.93 99.66 99.42 99.26 99.07 98.87 98.63 98.41 98.07
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	67,784,561 63,717,919 59,585,260 56,666,411 53,846,997 49,623,478 47,470,866 45,191,303 43,673,346 42,001,763	232,954 241,128 296,621 327,597 233,193 256,878 207,559 196,920 187,627 152,185	0.0034 0.0038 0.0050 0.0058 0.0043 0.0052 0.0044 0.0044 0.0043	0.9966 0.9962 0.9950 0.9942 0.9957 0.9948 0.9956 0.9957 0.9964	97.72 97.39 97.02 96.53 95.98 95.56 95.07 94.65 94.24 93.83
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	40,183,465 38,200,251 35,948,759 34,131,441 31,190,377 26,996,357 23,151,590 20,369,298 18,380,985 15,804,359	211,239 182,655 177,911 221,905 168,053 231,600 180,732 151,153 116,469 103,443	0.0053 0.0048 0.0049 0.0065 0.0054 0.0086 0.0078 0.0074 0.0063 0.0065	0.9947 0.9952 0.9951 0.9935 0.9946 0.9914 0.9922 0.9926 0.9937 0.9935	93.49 93.00 92.56 92.10 91.50 91.01 90.23 89.52 88.86 88.29
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	11,771,250 9,007,595 7,657,390 6,322,925 5,151,158 4,399,241 3,360,784 2,902,897 2,723,869 2,479,595	53,454 59,764 39,141 65,096 38,762 75,815 39,892 34,652 19,623 34,601	0.0045 0.0066 0.0051 0.0103 0.0075 0.0172 0.0119 0.0119 0.0072 0.0140	0.9955 0.9934 0.9949 0.9897 0.9925 0.9828 0.9881 0.9881 0.9928 0.9860	87.72 87.32 86.74 86.30 85.41 84.76 83.30 82.32 81.33 80.75

### ACCOUNT 376.00 MAINS

PLACEMENT	BAND 1966-2020		EXPER	RIENCE BAN	D 1988-2020
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	2,150,546 1,942,259 1,360,121 1,167,197 1,047,687 901,569 802,336 671,522 557,754 471,568	30,608 45,024 11,663 39,847 10,151 4,883 25,142 4,175 2,519 6,314	0.0142 0.0232 0.0086 0.0341 0.0097 0.0054 0.0313 0.0062 0.0045 0.0134	0.9858 0.9768 0.9914 0.9659 0.9903 0.9946 0.9687 0.9938 0.9955	79.62 78.49 76.67 76.01 73.41 72.70 72.31 70.04 69.61 69.29
49.5 50.5 51.5 52.5 53.5 54.5	439,021 335,898 294,758 215,874 137,493	1,958 884 1,230 880 5,407	0.0045 0.0026 0.0042 0.0041 0.0393	0.9955 0.9974 0.9958 0.9959 0.9607	68.37 68.06 67.88 67.60 67.32 64.68

### ACCOUNT 376.00 MAINS

### ORIGINAL LIFE TABLE

PLACEMENT I	BAND 1966-2020		EXPE	RIENCE BAN	D 2011-2020
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	86,451,816 80,958,825 72,338,860 65,839,937 54,398,543 50,497,917 42,758,528 35,696,153 30,686,367 27,786,432	14,203 216,363 154,359 21,112 8,326 8,060 31,138 15,506 59,094 51,581	0.0002 0.0027 0.0021 0.0003 0.0002 0.0002 0.0007 0.0004 0.0019	0.9998 0.9973 0.9979 0.9997 0.9998 0.9998 0.9993 0.9996 0.9981	100.00 99.98 99.72 99.50 99.47 99.46 99.37 99.32 99.13
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	26,820,920 24,756,269 22,919,664 21,749,798 21,746,046 21,697,740 23,416,716 23,928,678 24,328,061 25,340,397	20,627 40,345 97,599 148,810 36,202 42,827 52,600 64,319 70,251 63,338	0.0008 0.0016 0.0043 0.0068 0.0017 0.0020 0.0022 0.0027 0.0029 0.0025	0.9992 0.9984 0.9957 0.9932 0.9983 0.9980 0.9978 0.9973 0.9971	98.95 98.87 98.71 98.29 97.62 97.46 97.26 97.05 96.79
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	27,676,239 28,532,890 27,603,336 27,210,158 25,554,014 22,215,047 19,438,565 17,139,096 15,338,379 13,024,901	120,247 96,471 131,789 183,482 135,084 201,475 155,044 122,596 96,567 78,222	0.0043 0.0034 0.0048 0.0067 0.0053 0.0091 0.0080 0.0072 0.0063 0.0060	0.9957 0.9966 0.9952 0.9933 0.9947 0.9909 0.9920 0.9928 0.9937 0.9940	96.26 95.85 95.52 95.07 94.43 93.93 93.07 92.33 91.67 91.09
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	9,352,088 6,810,972 6,111,138 4,989,027 3,952,763 3,369,032 2,450,152 2,120,689 2,065,770 1,922,281	36,972 40,316 22,656 46,584 24,985 65,240 27,334 29,138 9,845 27,164	0.0040 0.0059 0.0037 0.0093 0.0063 0.0194 0.0112 0.0137 0.0048 0.0141	0.9960 0.9941 0.9963 0.9907 0.9937 0.9806 0.9888 0.9863 0.9952 0.9859	90.55 90.19 89.66 89.32 88.49 87.93 86.23 85.27 84.09 83.69

### ACCOUNT 376.00 MAINS

### ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1966-2020 EXPERIENCE				RIENCE BAN	D 2011-2020
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	1,646,652 1,558,929 1,023,335 919,289 905,552 901,569 802,336 671,522 557,754 471,568	19,319 40,960 5,570 35,602 8,215 4,883 25,142 4,175 2,519 6,314	0.0117 0.0263 0.0054 0.0387 0.0091 0.0054 0.0313 0.0062 0.0045 0.0134	0.9883 0.9737 0.9946 0.9613 0.9909 0.9946 0.9687 0.9938 0.9955	82.51 81.54 79.40 78.97 75.91 75.22 74.81 72.47 72.02 71.69
49.5 50.5 51.5 52.5 53.5 54.5	439,021 335,898 294,758 215,874 137,493	1,958 884 1,230 880 5,407	0.0045 0.0026 0.0042 0.0041 0.0393	0.9955 0.9974 0.9958 0.9959 0.9607	70.73 70.42 70.23 69.94 69.65 66.92

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AGE IN YEARS

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▲ 2011-2020 EXPERIENCE 1983-2020 PLACEMENTS ORIGINAL CURVE = 1983-2020 PLACEMENTS IOWA 30-S5 ACCOUNT 376.60 MAINS - CATHODIC PROTECTION ORIGINAL AND SMOOTH SURVIVOR CURVES NORTHERN UTILITIES, INC. NEW HAMPSHIRE DIVISION 

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РЕВСЕИТ SURVIVING

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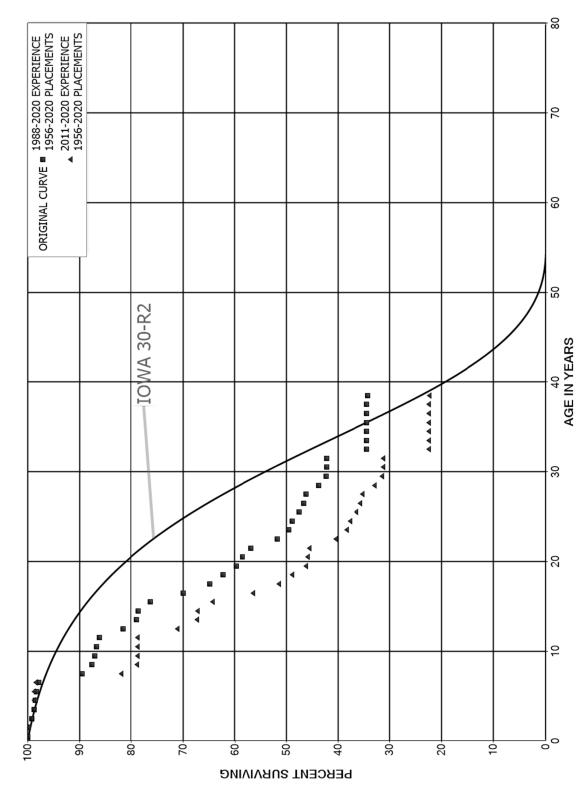
### ACCOUNT 376.60 MAINS - CATHODIC PROTECTION

PLACEMENT E	BAND 1983-2020		EXPER	RIENCE BAN	D 1988-2020
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5	1,076,745 1,065,855 942,686 836,411 808,306 692,772 608,126 552,247 551,776 548,873	0 231 512 569 470 1,230 656	0.0000 0.0000 0.0000 0.0000 0.0003 0.0007 0.0009 0.0009 0.0022 0.0012	1.0000 1.0000 1.0000 1.0000 0.9997 0.9993 0.9991 0.9978 0.9988	100.00 100.00 100.00 100.00 100.00 99.97 99.90 99.80 99.72 99.50
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	533,004 524,429 494,578 449,768 362,798 320,292 273,751 249,942 218,227 206,627	873 451 2,163 1,470 1,755 503 532 1,232 969 4,206	0.0016 0.0009 0.0044 0.0033 0.0048 0.0016 0.0019 0.0049 0.0044 0.0204	0.9984 0.9991 0.9956 0.9967 0.9952 0.9984 0.9981 0.9951 0.9956 0.9796	99.38 99.21 99.13 98.70 98.37 97.90 97.74 97.55 97.07 96.64
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	199,838 194,455 164,967 98,063 86,284 74,999 50,475 34,248 17,636 1,070	1,033 533	0.0000 0.0000 0.0000 0.0000 0.0120 0.0071 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 0.9880 0.9929 1.0000 1.0000	94.67 94.67 94.67 94.67 93.54 92.88 92.88 92.88
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5	1,206 1,206 1,206 1,206 1,206 1,206		0.0000 0.0000 0.0000 0.0000 0.0000		92.88

### ACCOUNT 376.60 MAINS - CATHODIC PROTECTION

PLACEMENT E	BAND 1983-2020		EXPER	RIENCE BAN	D 2011-2020
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	555,784 538,090 444,321 380,693 438,087 362,330 324,233 300,668 331,150 340,108		0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	327,477 325,159 325,247 341,036 267,316 236,818 214,771 207,721 194,383 201,351		0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00 100.00
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	199,838 194,455 164,967 98,063 86,284 74,999 50,475 34,248 17,636 1,070	1,033 533	0.0000 0.0000 0.0000 0.0000 0.0120 0.0071 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 0.9880 0.9929 1.0000 1.0000	100.00 100.00 100.00 100.00 100.00 98.80 98.10 98.10 98.10 98.10
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5	1,206 1,206 1,206 1,206 1,206 1,206		0.0000 0.0000 0.0000 0.0000 0.0000		98.10

ACCOUNT 378.20 MEASURING AND REGULATING STATION EQUIPMENT ORIGINAL AND SMOOTH SURVIVOR CURVES NORTHERN UTILITIES, INC. NEW HAMPSHIRE DIVISION



### ACCOUNT 378.20 MEASURING AND REGULATING STATION EQUIPMENT

PLACEMENT E	BAND 1956-2020		EXPER	RIENCE BAN	D 1988-2020
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	8,204,449 7,291,331 4,975,220 4,553,882 4,094,879 3,891,728 3,132,354 3,062,144 2,434,114 1,923,152	2,893 5,571 36,650 20,100 7,923 9,188 12,815 263,034 51,195 10,536	0.0004 0.0008 0.0074 0.0044 0.0019 0.0024 0.0041 0.0859 0.0210 0.0055	0.9996 0.9992 0.9926 0.9956 0.9981 0.9976 0.9959 0.9141 0.9790 0.9945	100.00 99.96 99.89 99.15 98.71 98.52 98.29 97.89 89.48 87.60
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	1,939,085 1,803,920 1,793,270 1,698,459 1,650,782 1,554,760 1,493,182 1,302,371 1,143,100 1,082,719	9,117 10,650 94,812 55,251 8,598 45,371 123,104 96,593 44,422 45,305	0.0047 0.0059 0.0529 0.0325 0.0052 0.0292 0.0824 0.0742 0.0389 0.0418	0.9953 0.9941 0.9471 0.9675 0.9948 0.9708 0.9176 0.9258 0.9611 0.9582	87.12 86.71 86.20 81.64 78.98 78.57 76.28 69.99 64.80 62.28
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	995,830 829,938 648,199 532,069 449,478 402,543 391,307 302,194 287,108 243,806	19,295 23,950 58,634 22,430 5,758 11,236 7,533 3,059 14,873 7,856	0.0194 0.0289 0.0905 0.0422 0.0128 0.0279 0.0193 0.0101 0.0518 0.0322	0.9806 0.9711 0.9095 0.9578 0.9872 0.9721 0.9807 0.9899 0.9482 0.9678	59.68 58.52 56.83 51.69 49.51 48.88 47.51 46.60 46.13 43.74
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	188,667 99,481 93,629 79,010 79,010 52,567 52,567 52,567 47,703	916 17,223 263	0.0049 0.0000 0.1839 0.0000 0.0000 0.0000 0.0000 0.0000 0.0050 0.0000	0.9951 1.0000 0.8161 1.0000 1.0000 1.0000 1.0000 0.9950 1.0000	42.33 42.12 42.12 34.37 34.37 34.37 34.37 34.37 34.37 34.37

#### ACCOUNT 378.20 MEASURING AND REGULATING STATION EQUIPMENT

#### ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1956-2020 EXPERIENCE BAND 1988-2020 AGE AT EXPOSURES AT PCT SURV RETIREMENTS BEGIN OF BEGINNING OF DURING AGE RETMT SURV BEGIN OF INTERVAL AGE INTERVAL INTERVAL RATIO RATIO INTERVAL 34.20 39.5 47,703 0.0000 1.0000 40.5 42,249 525 0.0124 0.9876 34.20 41.5 31,799 0.0000 1.0000 33.78 42.5 20,659 0.0000 1.0000 33.78 43.5 20,659 0.0000 1.0000 33.78 44.5 20,659 0.0000 1.0000 33.78 45.5 20,659 0.0000 1.0000 33.78 11,593 46.5 0.0000 1.0000 33.78 47.5 8,624 0.0000 1.0000 33.78 48.5 8,624 0.0000 1.0000 33.78 49.5 7,518 0.0000 1.0000 33.78 50.5 3,712 0.0000 1.0000 33.78 3,712 51.5 33.78 0.0000 1.0000 52.5 3,712 0.0000 1.0000 33.78 33.78 53.5 0.0000 1.0000 3,712 54.5 33.78 3,712 1,619 0.4361 0.5639 55.5 2,093 0.0000 1.0000 19.05 56.5 2,093 0.0000 1.0000 19.05 57.5 2,093 0.0000 1.0000 19.05 58.5 2,093 19.05 0.0000 1.0000 0.0000 59.5 2,093 1.0000 19.05 60.5 2,093 1.0000 0.0000 19.05 61.5 2,093 0.0000 1.0000 19.05 62.5 2,093 0.0000 1.0000 19.05 63.5 2,093 0.0000 1.0000 19.05

64.5

19.05

### ACCOUNT 378.20 MEASURING AND REGULATING STATION EQUIPMENT

PLACEMENT E	BAND 1956-2020		EXPEF	RIENCE BAN	D 2011-2020
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5	6,306,421 5,557,477 3,210,815 2,769,276 2,335,162 2,224,097 1,513,190 1,521,960 983,387 451,334	30,719 12,673 5,174 254,473 37,708 459	0.0000 0.0000 0.0096 0.0046 0.0000 0.0000 0.0034 0.1672 0.0383 0.0010	1.0000 1.0000 0.9904 0.9954 1.0000 1.0000 0.9966 0.8328 0.9617 0.9990	100.00 100.00 100.00 99.04 98.59 98.59 98.59 98.25 81.82 78.69
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	501,463 633,660 794,374 775,716 808,215 873,688 919,989 845,065 694,057 682,556	77,316 41,738 1,163 37,500 113,050 74,721 34,209 38,568	0.0000 0.0000 0.0973 0.0538 0.0014 0.0429 0.1229 0.0884 0.0493 0.0565	1.0000 1.0000 0.9027 0.9462 0.9986 0.9571 0.8771 0.9116 0.9507 0.9435	78.61 78.61 78.61 70.96 67.14 67.04 64.16 56.28 51.30 48.77
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	681,374 652,803 520,816 425,350 342,819 322,472 329,562 240,717 225,631 182,328	4,214 5,087 58,505 22,370 5,612 10,614 7,265 3,059 14,873 7,856	0.0062 0.0078 0.1123 0.0526 0.0164 0.0329 0.0220 0.0127 0.0659 0.0431	0.9938 0.9922 0.8877 0.9474 0.9836 0.9671 0.9780 0.9873 0.9341 0.9569	46.02 45.73 45.38 40.28 38.16 37.54 36.30 35.50 35.05 32.74
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5	128,845 45,114 61,042 58,351 58,351 31,908 31,908 40,974 43,943 39,079	916 17,223 263	0.0071 0.0000 0.2821 0.0000 0.0000 0.0000 0.0000 0.0000 0.0060 0.0000	0.9929 1.0000 0.7179 1.0000 1.0000 1.0000 1.0000 0.9940 1.0000	31.33 31.11 31.11 22.33 22.33 22.33 22.33 22.33 22.33 22.33 22.33

### ACCOUNT 378.20 MEASURING AND REGULATING STATION EQUIPMENT

### ORIGINAL LIFE TABLE, CONT.

PLACEMENT E	BAND 1956-2020		EXPER	RIENCE BAN	D 2011-2020
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	40,186 38,537 28,087 16,947 16,947 16,947 7,882 4,913 4,913	525	0.0000 0.0136 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 0.9864 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	22.20 22.20 21.89 21.89 21.89 21.89 21.89 21.89 21.89
50.5 51.5 52.5 53.5 54.5 55.5 56.5	3,712 2,093 2,093 2,093	1,619	0.0000 0.0000 0.0000		21.89
58.5 59.5 60.5 61.5 62.5 63.5 64.5	2,093 2,093 2,093 2,093 2,093 2,093		0.0000 0.0000 0.0000 0.0000 0.0000		

100 ▲ 2011-2020 EXPERIENCE 1945-2020 PLACEMENTS ORIGINAL CURVE = 1934-2020 EXPERIENCE 8 IOWA 45-R2.5 8 2 ORIGINAL AND SMOOTH SURVIVOR CURVES ACCOUNT 380.00 SERVICES 8 NEW HAMPSHIRE DIVISION AGE IN YEARS 40 3 50 9 ا<sub>0</sub> 100 8 ò 70 9 - 20 40 30 8 9 РЕВСЕИТ SURVIVING

NORTHERN UTILITIES, INC.

### ACCOUNT 380.00 SERVICES

PLACEMENT H		EXPERIENCE BAND 1988-2			
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5	82,700,546 77,640,737 73,895,770 68,099,721 61,126,399 55,578,404 48,983,091 43,868,106 37,592,978 33,027,925	16,997 30,687 37,698 49,616 52,119 51,576 80,387 64,372 84,331 86,820	0.0002 0.0004 0.0005 0.0007 0.0009 0.0016 0.0015 0.0022 0.0026	0.9998 0.9996 0.9995 0.9993 0.9991 0.9991 0.9984 0.9985 0.9978	100.00 99.98 99.94 99.89 99.82 99.73 99.64 99.47 99.33 99.11
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	30,372,454 27,703,342 25,856,486 24,323,194 23,294,097 21,648,975 20,792,241 19,727,563 18,743,180 17,537,176	89,469 76,371 97,810 109,002 111,480 112,205 139,807 181,421 141,057 137,296	0.0029 0.0028 0.0038 0.0045 0.0048 0.0052 0.0067 0.0092 0.0075 0.0078	0.9971 0.9972 0.9962 0.9955 0.9952 0.9948 0.9933 0.9908 0.9925 0.9922	98.85 98.55 98.28 97.91 97.47 97.01 96.50 95.85 94.97 94.26
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	16,752,719 15,774,016 14,794,767 13,682,753 12,551,233 11,478,570 10,553,464 8,958,591 8,130,497 7,121,240	144,333 135,180 144,068 120,705 109,470 117,432 115,923 115,404 103,705 84,354	0.0086 0.0086 0.0097 0.0088 0.0087 0.0102 0.0110 0.0129 0.0128 0.0118	0.9914 0.9914 0.9903 0.9912 0.9913 0.9898 0.9890 0.9871 0.9872 0.9882	93.52 92.71 91.92 91.02 90.22 89.43 88.52 87.55 86.42 85.32
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	5,850,519 4,622,637 3,846,766 3,142,565 2,552,273 2,136,397 1,801,977 1,599,820 1,445,973 1,272,404	66,026 66,531 75,050 68,561 60,040 47,502 46,390 35,419 36,438 39,644	0.0113 0.0144 0.0195 0.0218 0.0235 0.0222 0.0257 0.0221 0.0252 0.0312	0.9887 0.9856 0.9805 0.9782 0.9765 0.9778 0.9743 0.9779 0.9748	84.31 83.36 82.16 80.55 78.80 76.94 75.23 73.29 71.67 69.87

### ACCOUNT 380.00 SERVICES

### ORIGINAL LIFE TABLE, CONT.

PLACEMENT E	BAND 1934-2020		EXPE	RIENCE BAN	D 1988-2020
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 47.5 48.5	1,081,305 941,842 648,557 576,975 509,987 459,146 420,949 378,121 331,415 284,393	34,629 24,714 24,976 23,434 17,993 16,304 16,529 21,589 20,400 22,288	0.0385 0.0406 0.0353 0.0355 0.0393 0.0571 0.0616	0.9680 0.9738 0.9615 0.9594 0.9647 0.9645 0.9607 0.9429 0.9384 0.9216	67.69 65.52 63.80 61.34 58.85 56.78 54.76 52.61 49.61 46.55
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	242,738 212,814 181,943 149,447 120,764 88,672 68,965 48,077 36,821 26,901	23,931 26,705 22,155 18,390 22,382 10,723 8,385 4,473 3,564 5,338	0.0986 0.1255 0.1218 0.1231 0.1853 0.1209 0.1216 0.0930 0.0968	0.9014 0.8745 0.8782 0.8769 0.8147 0.8791 0.8784 0.9070 0.9032 0.8016	42.90 38.67 33.82 29.70 26.05 21.22 18.65 16.39 14.86
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5 68.5	17,882 14,159 9,761 6,538 5,132 3,746 1,563 667 309 285	2,996 3,494 2,524 1,406 1,386 2,183 224 66 24 44	0.1675 0.2468 0.2586 0.2150 0.2700 0.5828 0.1432 0.0988 0.0784 0.1546	0.8325 0.7532 0.7414 0.7850 0.7300 0.4172 0.8568 0.9012 0.9216 0.8454	10.76 8.96 6.75 5.00 3.93 2.87 1.20 1.02 0.92 0.85
69.5 70.5 71.5 72.5 73.5 74.5	241 213 149 119 21	27 65 30 6	0.1131 0.3027 0.2033 0.0527 0.0000	0.8869 0.6973 0.7967 0.9473 1.0000	0.72 0.64 0.44 0.35 0.34

### ACCOUNT 380.00 SERVICES

PLACEMENT H	BAND 1945-2020		EXPERIENCE BAND 2011		
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	54,847,716 51,836,124 49,507,142 44,899,216 38,805,287 34,792,429 28,889,413 24,574,300 19,007,295 15,172,338	701 5,974 15,602 15,197 13,892 40,901 23,562 41,578 42,538	0.0000 0.0000 0.0001 0.0003 0.0004 0.0014 0.0010 0.0022 0.0028	1.0000 1.0000 0.9999 0.9997 0.9996 0.9996 0.9990 0.9978 0.9972	100.00 100.00 100.00 99.99 99.95 99.91 99.87 99.73 99.64 99.42
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	13,189,852 11,403,497 10,461,536 9,974,343 10,051,005 9,489,646 9,518,618 10,167,638 10,003,985 9,858,427	43,780 30,765 48,787 57,634 59,434 61,734 78,011 127,590 91,086 90,022	0.0033 0.0027 0.0047 0.0058 0.0059 0.0065 0.0082 0.0125 0.0091 0.0091	0.9967 0.9973 0.9953 0.9942 0.9941 0.9935 0.9918 0.9875 0.9909	99.14 98.81 98.54 98.08 97.52 96.94 96.31 95.52 94.32 93.46
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	10,419,642 10,777,256 10,615,605 10,253,882 9,694,544 9,038,202 8,452,898 7,053,269 6,391,846 5,569,260	100,418 97,990 112,780 95,761 86,831 94,018 92,343 86,557 74,544 63,173	0.0096 0.0091 0.0106 0.0093 0.0090 0.0104 0.0109 0.0123 0.0117 0.0113	0.9904 0.9909 0.9894 0.9907 0.9910 0.9896 0.9891 0.9887 0.9883	92.61 91.72 90.88 89.92 89.08 88.28 87.36 86.41 85.35 84.35
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	4,513,940 3,441,228 3,041,527 2,412,471 1,906,054 1,555,284 1,275,940 1,161,229 1,069,438 949,887	50,945 48,162 59,703 52,386 44,469 33,604 32,318 24,585 25,697 27,742	0.0113 0.0140 0.0196 0.0217 0.0233 0.0216 0.0253 0.0212 0.0240 0.0292	0.9887 0.9860 0.9804 0.9783 0.9767 0.9784 0.9747 0.9788 0.9760	83.39 82.45 81.30 79.70 77.97 76.15 74.51 72.62 71.08 69.38

### ACCOUNT 380.00 SERVICES

### ORIGINAL LIFE TABLE, CONT.

PLACEMENT E	BAND 1945-2020		EXPER	RIENCE BAN	D 2011-2020
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	794,576 666,550 380,736 324,317 286,407 255,825 235,108 199,293 172,587	22,318 17,056 16,280 13,061 10,577 12,266 10,995 12,925 10,478	0.0607	0.9719 0.9744 0.9572 0.9597 0.9631 0.9521 0.9532 0.9351 0.9393	67.35 65.46 63.78 61.06 58.60 56.43 53.73 51.21 47.89
48.5 49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	154,934 138,666 123,369 108,392 94,056 70,112 53,431 40,268 25,305 16,454 9,022	11,395 13,414 15,147 9,225 10,055 6,971 4,179 3,635 2,672 1,076 841	0.1228 0.0851 0.1069 0.0994 0.0782 0.0903 0.1056	0.9265 0.9033 0.8772 0.9149 0.8931 0.9006 0.9218 0.9097 0.8944 0.9346 0.9068	44.99 41.68 37.65 33.02 30.21 26.98 24.30 22.40 20.38 18.23 17.03
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5 68.5	4,501 3,461 2,245 1,355 1,616 1,529 1,552 667 309 285	313 312 191 98 212 215 213 66 24 44	0.0696 0.0902 0.0851 0.0720 0.1310 0.1403 0.1374 0.0988 0.0784 0.1546	0.9304 0.9098 0.9149 0.9280 0.8690 0.8597 0.8626 0.9012 0.9216 0.8454	15.45 14.37 13.08 11.96 11.10 9.65 8.29 7.15 6.45 5.94
69.5 70.5 71.5 72.5 73.5 74.5	241 213 149 119 21	27 65 30 6	0.1131 0.3027 0.2033 0.0527 0.0000	0.8869 0.6973 0.7967 0.9473 1.0000	5.02 4.45 3.11 2.47 2.34 2.34

8 **▲** 2011-2020 EXPERIENCE **1975-2020 PLACEMENTS** ORIGINAL CURVE = 1971-2020 PLACEMENTS 2 9 ORIGINAL AND SMOOTH SURVIVOR CURVES OWA 30-R2 20 NORTHERN UTILITIES, INC. NEW HAMPSHIRE DIVISION ACCOUNT 381.00 METERS AGE IN YEARS 30 20 9 <del>ا</del>ه 100 8 8 70 9 - 20 40 Ś 20 9 РЕВСЕИТ SURVIVING

### ACCOUNT 381.00 METERS

PLACEMENT E	BAND 1971-2020		EXPERIENCE BAND 1988-2020		
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5	4,794,646 4,587,618 4,117,058 4,081,762 3,718,006 3,646,779 3,641,473 3,488,977 3,195,463 2,999,238	1,234 11,358 42,132 15,595 27,959 59,363 14,401 15,660 24,818 5,240	0.0003 0.0025 0.0102 0.0038 0.0075 0.0163 0.0040 0.0045 0.0078 0.0078	0.9997 0.9975 0.9898 0.9962 0.9925 0.9837 0.9960 0.9955 0.9922 0.9983	100.00 99.97 99.73 98.71 98.33 97.59 96.00 95.62 95.19 94.45
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	3,113,745 2,984,807 2,747,955 2,681,301 2,516,494 2,489,953 2,281,400 2,222,344 2,167,451 2,120,082	11,162 18,604 9,866 11,889 10,769 23,649 23,217 32,042 40,865 21,643	0.0036 0.0062 0.0036 0.0044 0.0043 0.0095 0.0102 0.0144 0.0189 0.0102	0.9964 0.9938 0.9964 0.9956 0.9957 0.9905 0.9898 0.9856 0.9811 0.9898	94.29 93.95 93.36 93.03 92.62 92.22 91.34 90.41 89.11 87.43
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	2,098,439 2,082,792 1,998,823 1,958,557 1,815,453 1,787,532 1,675,714 1,531,342 1,503,602 1,455,971	15,647 33,235 40,265 37,266 27,920 41,412 35,324 27,740 37,069 23,748	0.0075 0.0160 0.0201 0.0190 0.0154 0.0232 0.0211 0.0181 0.0247 0.0163	0.9925 0.9840 0.9799 0.9810 0.9846 0.9768 0.9789 0.9819 0.9753 0.9837	86.54 85.89 84.52 82.82 81.24 79.99 78.14 76.49 75.11
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	1,270,361 1,073,809 971,195 844,937 777,222 710,825 570,363 465,675 348,452 310,898	21,919 34,309 94,371 11,139 51,489 72,888 98,218 77,954 20,811 8,059	0.0173 0.0320 0.0972 0.0132 0.0662 0.1025 0.1722 0.1674 0.0597 0.0259	0.9827 0.9680 0.9028 0.9868 0.9338 0.8975 0.8278 0.8326 0.9403 0.9741	72.06 70.82 68.56 61.89 61.08 57.03 51.18 42.37 35.28 33.17

### ACCOUNT 381.00 METERS

### ORIGINAL LIFE TABLE, CONT.

PLACEMENT 1	EXPER	RIENCE BAN	D 1988-2020		
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	163,594 161,177 68,875 779	2,417 1,761 4,363 779	0.0148 0.0109 0.0633 1.0000	0.9852 0.9891 0.9367	32.31 31.83 31.49 29.49

### ACCOUNT 381.00 METERS

PLACEMENT E	BAND 1975-2020		EXPER	RIENCE BAN	D 2011-2020
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5	2,520,127 2,457,503 2,259,299 2,206,253 1,997,352 1,896,590 2,045,335 1,668,374 1,421,690 1,104,124	8,858 39,325 12,581 25,084 56,414 11,201 12,178 21,519 1,541	0.0000 0.0036 0.0174 0.0057 0.0126 0.0297 0.0055 0.0073 0.0151 0.0014	1.0000 0.9964 0.9826 0.9943 0.9874 0.9703 0.9945 0.9927 0.9849 0.9986	100.00 100.00 99.64 97.91 97.35 96.12 93.27 92.75 92.08 90.68
9.5	1,137,120	7,261 14,654 5,324 8,326 7,127 19,098 20,122 28,534 37,924 15,065	0.0064	0.9936	90.56
10.5	925,250		0.0158	0.9842	89.98
11.5	700,313		0.0076	0.9924	88.55
12.5	630,246		0.0132	0.9868	87.88
13.5	602,885		0.0118	0.9882	86.72
14.5	623,361		0.0306	0.9694	85.69
15.5	502,296		0.0401	0.9599	83.07
16.5	569,050		0.0501	0.9499	79.74
17.5	548,398		0.0692	0.9308	75.74
18.5	523,207		0.0288	0.9712	70.50
19.5	701,946	12,976 28,191 35,838 30,938 25,379 37,590 32,458 25,459 35,125 21,599	0.0185	0.9815	68.47
20.5	903,925		0.0312	0.9688	67.21
21.5	919,748		0.0390	0.9610	65.11
22.5	932,694		0.0332	0.9668	62.58
23.5	872,582		0.0291	0.9709	60.50
24.5	871,809		0.0431	0.9569	58.74
25.5	860,312		0.0377	0.9623	56.21
26.5	731,850		0.0348	0.9652	54.09
27.5	756,979		0.0464	0.9536	52.21
28.5	762,578		0.0283	0.9717	49.78
29.5	846,293	20,962	0.0248	0.9752	48.37
30.5	652,198	33,788	0.0518	0.9482	47.17
31.5	696,140	93,882	0.1349	0.8651	44.73
32.5	682,201	10,353	0.0152	0.9848	38.70
33.5	706,041	51,408	0.0728	0.9272	38.11
34.5	691,276	72,798	0.1053	0.8947	35.34
35.5	570,280	98,191	0.1722	0.8278	31.61
36.5	465,620	77,944	0.1674	0.8326	26.17
37.5	348,406	20,795	0.0597	0.9403	21.79
38.5	310,868	8,029	0.0258	0.9742	20.49

### ACCOUNT 381.00 METERS

### ORIGINAL LIFE TABLE, CONT.

PLACEMENT E	BAND 1975-2020		EXPER	RIENCE BAN	D 2011-2020
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	163,594 161,177 68,875 779	2,417 1,761 4,363 779	0.0148 0.0109 0.0633 1.0000	0.9852 0.9891 0.9367	19.96 19.67 19.45 18.22

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**▲** 2011-2020 EXPERIENCE **1975-2020 PLACEMENTS** ORIGINAL CURVE ■ 1971-2020 PLACEMENTS IOWA 30-R3 20 ORIGINAL AND SMOOTH SURVIVOR CURVES ACCOUNT 382.00 METER INSTALLATIONS NORTHERN UTILITIES, INC. NEW HAMPSHIRE DIVISION AGE IN YEARS 20 9 ٦° 1001 8 ò 70 9 50 40 Ś 20 9 РЕВСЕИТ SURVIVING

#### ACCOUNT 382.00 METER INSTALLATIONS

PLACEMENT H	BAND 1971-2020		EXPEF	RIENCE BAN	D 1988-2020
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	28,537,902 26,720,358 24,809,192 22,865,309 20,862,443 19,336,737 17,838,390 16,163,807 14,474,357 12,291,386	117 19,128 480,440 101,832 165,972 117,131 50,077 56,921 45,595 4,688	0.0000 0.0007 0.0194 0.0045 0.0080 0.0061 0.0028 0.0035 0.0032 0.0004	1.0000 0.9993 0.9806 0.9955 0.9920 0.9939 0.9972 0.9965 0.9968 0.9996	100.00 100.00 99.93 97.99 97.56 96.78 96.19 95.92 95.59 95.29
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	12,314,176 11,903,014 11,007,340 9,960,103 9,341,672 8,445,808 7,931,827 7,376,797 6,794,743 6,163,837	18,484 70,132 42,634 104,019 69,655 58,159 110,023 79,661 72,999 80,619	0.0015 0.0059 0.0039 0.0104 0.0075 0.0069 0.0139 0.0108 0.0107	0.9985 0.9941 0.9961 0.9896 0.9925 0.9931 0.9861 0.9892 0.9893 0.9869	95.25 95.11 94.55 94.18 93.20 92.50 91.86 90.59 89.61 88.65
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	5,655,667 5,127,077 4,420,786 3,879,861 3,392,348 2,965,289 2,494,768 2,014,386 1,527,645 1,061,540	103,515 105,411 137,026 101,054 102,321 160,596 127,853 154,645 156,294 106,392	0.0183 0.0206 0.0310 0.0260 0.0302 0.0542 0.0512 0.0768 0.1023 0.1002	0.9817 0.9794 0.9690 0.9740 0.9698 0.9458 0.9488 0.9232 0.8977 0.8998	87.49 85.89 84.12 81.51 79.39 77.00 72.83 69.09 63.79 57.26
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	706,569 513,692 304,711 148,388 63,580 32,839 20,190 7,708 16	93,024 58,023 63,623 45,362 30,741 12,649 12,483 7,692	0.1317 0.1130 0.2088 0.3057 0.4835 0.3852 0.6183 0.9980 1.0000	0.8683 0.8870 0.7912 0.6943 0.5165 0.6148 0.3817 0.0020	51.52 44.74 39.69 31.40 21.80 11.26 6.92 2.64 0.01

#### ACCOUNT 382.00 METER INSTALLATIONS

PLACEMENT E	BAND 1975-2020		EXPER	RIENCE BAN	D 2011-2020
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	16,761,346 15,243,465 14,148,890 13,180,187 11,769,517 11,107,129 10,095,832 8,895,298 7,724,887 6,104,155	18,815 479,951 101,132 165,030 115,829 48,203 54,376 42,479 331	0.0000 0.0012 0.0339 0.0077 0.0140 0.0104 0.0048 0.0061 0.0055 0.0001	1.0000 0.9988 0.9661 0.9923 0.9860 0.9896 0.9952 0.9939 0.9945 0.9999	100.00 100.00 99.88 96.49 95.75 94.41 93.42 92.98 92.41 91.90
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	6,575,324 6,607,791 6,384,162 5,826,381 5,633,435 5,109,518 4,937,944 4,792,215 4,615,015 4,371,540	12,620 63,259 34,835 93,648 56,578 44,771 95,160 61,512 54,929 61,300	0.0019 0.0096 0.0055 0.0161 0.0100 0.0088 0.0193 0.0128 0.0119 0.0140	0.9981 0.9904 0.9945 0.9839 0.9900 0.9912 0.9807 0.9872 0.9881 0.9860	91.89 91.72 90.84 90.34 88.89 88.00 87.23 85.55 84.45
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	4,223,270 4,043,193 3,601,692 3,238,894 2,882,564 2,537,763 2,137,357 1,710,681 1,281,479 877,835	82,609 82,516 116,088 83,431 86,275 140,272 106,546 131,545 134,606 87,191	0.0196 0.0204 0.0322 0.0258 0.0299 0.0553 0.0498 0.0769 0.1050 0.0993	0.9804 0.9796 0.9678 0.9742 0.9701 0.9447 0.9502 0.9231 0.8950 0.9007	82.27 80.66 79.02 76.47 74.50 72.27 68.28 64.87 59.88 53.59
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	566,456 404,816 234,498 99,271 32,884 19,328 16,451 7,104	79,256 47,446 54,602 34,900 24,580 7,822 9,347 7,089 16	0.1399 0.1172 0.2328 0.3516 0.7475 0.4047 0.5682 0.9978 1.0000	0.8601 0.8828 0.7672 0.6484 0.2525 0.5953 0.4318 0.0022	48.27 41.52 36.65 28.12 18.23 4.60 2.74 1.18 0.00

9 ORIGINAL CURVE = 1999-2020 EXPERIENCE 1999-2020 PLACEMENTS 20 IOWA 30-R3 4 ORIGINAL AND SMOOTH SURVIVOR CURVES ACCOUNT 383.00 HOUSE REGULATORS NORTHERN UTILITIES, INC. NEW HAMPSHIRE DIVISION AGE IN YEARS -8 9 <del>ا</del>ه 100 5 4 8 ò -09 50 Ś 20 9 РЕВСЕИТ SURVIVING

### ACCOUNT 383.00 HOUSE REGULATORS

PLACEMENT E	BAND 1999-2020		EXPER	RIENCE BAN	D 1999-2020
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	734,380 723,305 652,271 581,394 533,756 494,226 448,714 402,339 389,444 325,257	114 197 259 146 75 21	0.0002 0.0003 0.0004 0.0003 0.0001 0.0000 0.0000 0.0000 0.0000	0.9998 0.9997 0.9996 0.9997 0.9999 1.0000 1.0000 1.0000	100.00 99.98 99.96 99.92 99.89 99.87 99.87 99.87
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	315,791 222,729 185,193 185,193 185,193 185,193 185,193 145,657 145,114 144,764	2	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	99.87 99.87 99.87 99.87 99.87 99.87 99.87 99.87 99.87
19.5 20.5 21.5	10,520 6,776		0.0000	1.0000	99.87 99.87 99.87

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**▲** 2011-2020 EXPERIENCE **1994-2020 PLACEMENTS** ORIGINAL CURVE **1979-2020 PLACEMENTS** 35 ACCOUNT 386.00 OTHER PROPERTY ON CUSTOMERS' PREMISES 3 IOWA ORIGINAL AND SMOOTH SURVIVOR CURVES -22 NORTHERN UTILITIES, INC. NEW HAMPSHIRE DIVISION AGE IN YEARS 5 9 2 100 8 ò 70 9 - 20 40 Ś 8 9 РЕВСЕИТ SURVIVING

#### ACCOUNT 386.00 OTHER PROPERTY ON CUSTOMERS' PREMISES

PLACEMENT I	BAND 1979-2020		EXPEF	RIENCE BAN	D 1988-2020
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	4,854,474 4,813,535 4,648,345 4,428,334 4,210,083 4,013,657 3,770,767 3,572,529 3,298,980 3,420,251	29,778 58,279 79,494 78,877 100,220 121,240 90,838 184,153 171,818 459,782	0.0061 0.0121 0.0171 0.0178 0.0238 0.0302 0.0241 0.0515 0.0521 0.1344	0.9939 0.9879 0.9829 0.9822 0.9762 0.9698 0.9759 0.9485 0.9479 0.8656	100.00 99.39 98.18 96.50 94.79 92.53 89.73 87.57 83.06 78.73
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	2,960,470 2,684,456 2,287,626 1,994,714 1,707,707 1,489,299 1,293,904 1,110,694 1,017,913 856,991	199,028 339,473 287,671 283,363 216,326 184,383 174,343 85,628 70,603 66,156	0.0672 0.1265 0.1258 0.1421 0.1267 0.1238 0.1347 0.0771 0.0694 0.0772	0.9328 0.8735 0.8742 0.8579 0.8733 0.8762 0.8653 0.9229 0.9306 0.9228	68.15 63.57 55.53 48.55 41.65 36.37 31.87 27.58 25.45 23.68
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5	733,304 572,416 469,925 374,099 206,994 128,449 24,669	37,057 19,419 19,374 91,009 2,387 2,387 796	0.0505 0.0339 0.0412 0.2433 0.0115 0.0186 0.0323	0.9495 0.9661 0.9588 0.7567 0.9885 0.9814 0.9677	21.86 20.75 20.05 19.22 14.55 14.38 14.11 13.66

#### ACCOUNT 386.00 OTHER PROPERTY ON CUSTOMERS' PREMISES

PLACEMENT E	BAND 1994-2020		EXPEF	RIENCE BAN	D 2011-2020
AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5	1,097,829 1,090,704 1,028,612 955,501 864,313 838,813 782,863 751,001 710,345 654,454	885 989 868 686 549 2,824 189,504	0.0000 0.0008 0.0010 0.0009 0.0000 0.0008 0.0007 0.0000 0.0040 0.2896	1.0000 0.9992 0.9990 0.9991 1.0000 0.9992 0.9993 1.0000 0.9960 0.7104	100.00 100.00 99.92 99.82 99.73 99.65 99.58 99.58 99.18
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	557,198 602,370 481,533 463,961 536,415 619,990 700,872 735,772 727,823 637,504	35,084 146,552 88,781 9,499 796	0.2896 0.0630 0.2433 0.1844 0.0000 0.00153 0.0000 0.0011 0.0000 0.0025	0.7104 0.9370 0.7567 0.8156 1.0000 1.0000 0.9847 1.0000 0.9989 1.0000 0.9975	70.46 66.03 49.96 40.75 40.75 40.75 40.13 40.13 40.08
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5	578,382 452,163 366,704 290,253 206,994 128,449 24,669	2,387 2,387 7,162 2,387 2,387 796	0.0041 0.0053 0.0000 0.0247 0.0115 0.0186 0.0323	0.9959 0.9947 1.0000 0.9753 0.9885 0.9814 0.9677	39.98 39.82 39.61 39.61 38.63 38.19 37.48 36.27

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**PART VIII. NET SALVAGE STATISTICS** 

#### ACCOUNT 375.00 STRUCTURES AND IMPROVEMENTS

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT	PCT
2010 2011 2012 2013	187,432	13,323	7	0	13,323-	7-
2013 2014 2015 2016 2017						
2017	11,925	3,265	27	0	3,265-	27-
2019	126,350	45,486	36	0	45,486-	
2020	1,906	144,400		0	144,400-	
TOTAL	327,613	206,474	63	0	206,474-	63-
THREE-YEA	AR MOVING AVERAGE	ES				
10-12 11-13 12-14 13-15 14-16 15-17	62,477	4,441	7	0	4,441-	7-
16-18	3 <b>,</b> 975	1,088	27	0	1,088-	27-
17-19	46,092	16,250	35	0	16,250-	
18-20	46,727	64,384	138	0	64,384-	138-
FIVE-YEAR	R AVERAGE					
16-20	28,036	38,630	138	0	38,630-	138-

### ACCOUNT 376.00 MAINS

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
2009	8,862		0		0		0
2010	168,710	1,904	1		0	1,904-	1-
2011	436,388	331 <b>,</b> 675	76		0	331 <b>,</b> 675-	76-
2012	233,872	459 <b>,</b> 779	197	1,011	0	458 <b>,</b> 768-	196-
2013	195,118	711,056	364		0	711,056-	364-
2014	469,517	797 <b>,</b> 618	170	111	0	797 <b>,</b> 507-	170-
2015	173,621	820 <b>,</b> 632	473		0	820,632-	473-
2016	452 <b>,</b> 769	787 <b>,</b> 947	174		0	787 <b>,</b> 947-	174-
2017	94,402	570 <b>,</b> 072	604		0	570 <b>,</b> 072-	604-
2018	502,649	737 <b>,</b> 809	147		0	737 <b>,</b> 809-	147-
2019	20,196	1,786,133			0	1,786,133-	
2020	678 <b>,</b> 915	317,483	47		0	317,483-	47-
TOTAL	3,435,019	7,322,107	213	1,122	0	7,320,985-	213-
THREE-YE.	AR MOVING AVERAG	ES					
09-11	204,653	111,193	54		0	111,193-	54-
10-12	279,657	264,453	95	337	0	264,116-	94-
11-13	288,459	500,837	174	337	0	500,500-	174-
12-14	299 <b>,</b> 502	656 <b>,</b> 151	219	374	0	655 <b>,</b> 777-	219-
13-15	279,419	776 <b>,</b> 435	278	37	0	776 <b>,</b> 398-	278-
14-16	365 <b>,</b> 302	802 <b>,</b> 066	220	37	0	802 <b>,</b> 029-	220-
15-17	240,264	726 <b>,</b> 217	302		0	726,217-	302-
16-18	349,940	698 <b>,</b> 609	200		0	698,609-	200-
17-19	205,749	1,031,338	501		0	1,031,338-	501-
18-20	400,587	947,141	236		0	947,141-	236-
	R AVERAGE						
	-						
16-20	349,786	839,889	240		0	839,889-	240-

### ACCOUNT 378.20 MEASURING AND REGULATING STATION EQUIPMENT

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT	PCT
2011	115,652		0	0		0
2012	215,717	1,694	1	0	1,694-	1-
2013	259 <b>,</b> 722	18,985	7	0	18,985-	7-
2014		5,119			5,119-	
2015						
2016	263	1,203	457	0	1,203-	457-
2017	4,718	11,593	246	0	11,593-	246-
2018	24,499	7,756	32	0	7,756-	32-
2019	19,181	17,271	90	0	17,271-	90-
2020	279 <b>,</b> 719	272 <b>,</b> 577	97	0	272 <b>,</b> 577-	97-
TOTAL	919,470	336,198	37	0	336,198-	37-
THREE-YEA	AR MOVING AVERAGE	IS				
11-13	197,030	6 <b>,</b> 893	3	0	6,893-	3-
12-14	158,480	8,599	5	0	8,599-	
13-15	86,574	8,035	9	0	8,035-	
14-16	88	2,107		0	2,107-	
15-17	1,660		257	0	4,265-	257-
16-18	9,826	6,851	70	0	6,851-	70-
17-19	16,132	12,207	76	0	12,207-	76-
18-20	107,800	99,202	92	0	99,202-	92-
FIVE-YEAR	R AVERAGE					
16-20	65,676	62,080	95	0	62,080-	95-

### ACCOUNT 380.00 SERVICES

	REGULAR	COST OF REMOVAL		GROSS SALVAGE	NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT PCT	AMOUNT	PCT
2009	2,921		0	0		0
2010	119,477	63,633	53	0	63,633-	53-
2011	392,584	116,573	30	0	116,573-	30-
2012	231,687	105,051	45	0	105,051-	45-
2013	178 <b>,</b> 958	139,735	78	0	139 <b>,</b> 735-	78-
2014	405,385	175,948	43	0	175 <b>,</b> 948-	43-
2015	316,598	195,246	62	0	195,246-	62-
2016	260,540	272,591	105	0	272 <b>,</b> 591-	105-
2017	181,892	224,274	123	0	224,274-	123-
2018	205,263	422,442	206	0	422,442-	206-
2019	138,125	340,691	247	0	340,691-	247-
2020	87 <b>,</b> 804	227 <b>,</b> 967	260	0	227,967-	260-
TOTAL	2,521,234	2,284,150	91	0	2,284,150-	91-
THREE-YEA	AR MOVING AVERAGE	IS				
09-11	171,661	60,069	35	0	60,069-	35-
10-12	247,916	95,086	38	0	95,086-	38-
11-13	267,743	120,453	45	0	120,453-	45-
12-14	272,010	140,245	52	0	140,245-	52-
13-15	300,314	170,310	57	0	170,310-	57-
14-16	327 <b>,</b> 508	214,595	66	0	214,595-	66-
15-17	253,010	230,704	91	0	230,704-	91-
16-18	215,899	306,436	142	0	306,436-	142-
17-19	175,094	329,135	188	0	329,135-	188-
18-20	143,731	330,366	230	0	330,366-	230-
	R AVERAGE					
16-20	174,725	297,593	170	0	297,593-	170-

### ACCOUNT 381.00 METERS

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT	PCT
2010	2,275		0	0		0
2011	6,376		0	0		0
2012	97 <b>,</b> 752	7,899	8	0	7,899-	8 –
2013	190,297	4,721	2	0	4,721-	2-
2014	33,156	13,212	40	0	13,212-	40-
2015	137,414	5 <b>,</b> 657	4	0	5,657-	4 –
2016	82,010	7,039	9	0	7,039-	9-
2017	31,148	44,327	142	0	44,327-	142-
2018	140,731	46,969	33	0	46,969-	33-
2019	175 <b>,</b> 177	66,850	38	0	66,850-	38-
2020	241,099	52,894	22	0	52,894-	22-
TOTAL	1,137,435	249,569	22	0	249,569-	22-
THREE-YE	AR MOVING AVERAG	ES				
10-12	35,468	2,633	7	0	2,633-	7-
11-13	98,142	4,207	4	0	4,207-	4 –
12-14	107,068	8,611	8	0	8,611-	8 –
13-15	120,289	7,863	7	0	7,863-	7 –
14-16	84,193	8,636	10	0	8,636-	10-
15-17	83,524	19,008	23	0	19,008-	23-
16-18	84,630	32 <b>,</b> 779	39	0	32 <b>,</b> 779-	39-
17-19	115,685	52 <b>,</b> 716	46	0	52,716-	46-
18-20	185,669	55 <b>,</b> 571	30	0	55,571-	30-
FIVE-YEA	R AVERAGE					
16-20	134,033	43,616	33	0	43,616-	33-

#### ACCOUNT 382.00 METER INSTALLATIONS

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT PCT	NET SALVAGE AMOUNT	PCT
2011		430			430-	
2012	127,025	22,286	18	0	22,286-	18-
2013	215,708	5,120	2	0	5,120-	2-
2014	56,912	22,679	40	0	22,679-	40-
2015	413,684	16,737	4	0	16,737-	4 –
2016	261,495	26,215	10	0	26,215-	10-
2017	101,056	62,422	62	0	62,422-	62-
2018	274,007	52,452	19	0	52,452-	19-
2019	362,822	48,890	13	0	48,890-	13-
2020	1,108,186	94,033	8	0	94,033-	8-
TOTAL	2,920,895	351,263	12	0	351,263-	12-
THREE-YE	AR MOVING AVERAGI	ΞS				
11-13	114,244	9,279	8	0	9,279-	8-
12-14	133,215	16,695	13	0	16,695-	13-
13-15	228,768	14,845	6	0	14,845-	6-
14-16	244,030	21,877	9	0	21,877-	9-
15-17	258 <b>,</b> 745	35,125	14	0	35,125-	14-
16-18	212,186	47,030	22	0	47,030-	22-
17-19	245,962	54,588	22	0	54,588-	22-
18-20	581 <b>,</b> 672	65 <b>,</b> 125	11	0	65,125-	11-
D.T. 17-3						
F.TAE-AEV	R AVERAGE					
16-20	421,513	56,802	13	0	56,802-	13-

#### ACCOUNT 386.00 OTHER PROPERTY ON CUSTOMERS' PREMISES

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT	PCT	GROSS SALVAGE AMOUNT	PCT	NET SALVAGE AMOUNT	PCT
2009	890		0	75	8	75	8
2010	97 <b>,</b> 275	1,665	2	2,010	2	345	0
2011	63,705	_,	0	4,462	7	4,462	7
2012	63,105	220	0	,	0	220-	0
2013	61,468	6,514	11	887	1	5 <b>,</b> 627-	9-
2014	52,401	7,166	14	3,472	7	3,694-	7-
2015	54,265	5,662	10	4,026	7	1,636-	3-
2016		5,489		7,069		1,580	
2017	7,162	3,111	43	3 <b>,</b> 859	54	749	10
2018	78,400	5 <b>,</b> 337	7		0	5 <b>,</b> 337-	7-
2019	26 <b>,</b> 702	18,487	69	2 <b>,</b> 025	8	16,462-	62-
2020	88,909	13,917	16	11,358	13	2,559-	3-
TOTAL	594,281	67,567	11	39,244	7	28,323-	5-
THREE-YE	AR MOVING AVERAG	ES					
09-11	53,957	555	1	2,182	4	1,627	3
10-12	74 <b>,</b> 695	628	1	2,157	3	1,529	2
11-13	62,759	2,245	4	1,783	3	462-	1-
12-14	58,991	4,633	8	1,453	2	3,180-	5-
13-15	56 <b>,</b> 045	6,447	12	2 <b>,</b> 795	5	3 <b>,</b> 652-	7 –
14-16	35 <b>,</b> 555	6,106	17	4,856	14	1,250-	4 –
15-17	20,476	4,754	23	4,985	24	231	1
16-18	28,521	4,646	16	3,643	13	1,003-	4 –
17-19	37,421	8,978	24	1,962	5	7,017-	19-
18-20	64,670	12,580	19	4,461	7	8,119-	13-
	R AVERAGE						
16-20	40,234	9,268	23	4,862	12	4,406-	11-

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# PART IX. DETAILED DEPRECIATION CALCULATIONS

#### ACCOUNT 375.00 STRUCTURES AND IMPROVEMENTS

### CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	OR CURVE IOWA LVAGE PERCENT					
1939	646.07	644	297	414	5.15	80
1956	2,331.59	2,123	980	1,585	9.47	167
1957	2,578.95	2,331	1,076	1,761	9.80	180
1974	400.00	299	138	302	17.60	17
1978	867.27	606	280	674	20.06	34
1988	1,752,000.57	981,119	452 <b>,</b> 977	1,474,224	27.00	54,601
1989	39,541.29	21,550	9 <b>,</b> 950	33 <b>,</b> 545	27.75	1,209
1990	38,588.71	20,452	9,443	33 <b>,</b> 005	28.50	1,158
1992	7,064.07	3 <b>,</b> 525	1,627	6,143	30.05	204
1993	64,704.70	31,278	14,441	56 <b>,</b> 734	30.83	1,840
1996	28,033.76	12,206	5 <b>,</b> 635	25,202	33.23	758
1997	10,179.76	4,265	1,969	9,229	34.05	271
1998	2,908.58	1,171	541	2,658	34.87	76
2001	2,160.50	761	351	2,026	37.38	54
2002	15,061.71	5,052	2,332	14,236	38.23	372
2004	7,130.00	2,145	990	6 <b>,</b> 853	39.96	171
2006	36,525.99	9,709	4,483	35 <b>,</b> 696	41.71	856
2007	80,891.87	20,078	9,270	79 <b>,</b> 711	42.59	1,872
2009	577,192.39	122 <b>,</b> 595	56 <b>,</b> 602	578 <b>,</b> 310	44.38	13,031
2010	89,167.96	17 <b>,</b> 335	8,003	90,082	45.28	1,989
2011	10,280.34	1,813	837	10,471	46.18	227
2012	25,341.82	4,009	1,851	26 <b>,</b> 025	47.09	553
2013	12,190.39	1,704	787	12,622	48.01	263
2014	21,414.74	2,600	1,200	22,356	48.93	457
2015	14,075.31	1,450	669	14,814	49.85	297
2016	18,049.54	1,523	703	19,151	50.78	377
2017	9,519.74	626	289	10,183	51.71	197
2018	385,894.39	18,138	8 <b>,</b> 375	416,109	52.65	7,903
2019	4,495.25	128	59	4,886	53.58	91
2020	1,634.00	15	7	1,790	54.53	33
	3,260,871.26	1,291,250	596 <b>,</b> 162	2,990,796		89,338

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 33.5 2.74

#### ACCOUNT 376.20 MAINS - COATED AND WRAPPED

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					
1966	132,086.54	159,964	57 <b>,</b> 811	153 <b>,</b> 527	13.37	11,483
1967	77,501.16	92 <b>,</b> 776	33,530	90,472	13.85	6 <b>,</b> 532
1968	77,653.61	91 <b>,</b> 851	33,195	91,051	14.34	6,349
1969	40,257.03	47,020	16,993	47,418	14.85	3,193
1970	101,164.72	116,631	42,151	119,713	15.37	7 <b>,</b> 789
1971	26,232.63	29 <b>,</b> 838	10,784	31,188	15.90	1,962
1972	83,667.64	93 <b>,</b> 805	33,901	99 <b>,</b> 967	16.46	6 <b>,</b> 073
1973	109,592.89	121 <b>,</b> 087	43,761	131,588	17.02	7,731
1974	103,748.29	112 <b>,</b> 878	40 <b>,</b> 794	125,203	17.60	7,114
1975	76 <b>,</b> 807.42	82 <b>,</b> 226	29 <b>,</b> 717	93 <b>,</b> 175	18.20	5,120
1976	109,214.74	115,013	41,566	133,178	18.80	7,084
1977	37,152.34	38 <b>,</b> 455	13 <b>,</b> 898	45 <b>,</b> 546	19.42	2,345
1978	160,548.94	163 <b>,</b> 187	58 <b>,</b> 976	197 <b>,</b> 902	20.06	9,866
1979	409,275.74	408,385	147 <b>,</b> 592	507 <b>,</b> 249	20.70	24,505
1980	43,068.59	42,148	15 <b>,</b> 232	53 <b>,</b> 678	21.36	2,513
1981	80 <b>,</b> 380.79	77 <b>,</b> 095	27 <b>,</b> 862	100,747	22.03	4,573
1982	151,252.52	142 <b>,</b> 078	51,347	190 <b>,</b> 657	22.71	8 <b>,</b> 395
1983	51,857.84	47 <b>,</b> 672	17 <b>,</b> 229	65 <b>,</b> 744	23.40	2,810
1984	242,047.42	217 <b>,</b> 579	78 <b>,</b> 634	308,642	24.10	12,807
1985	486,633.21	427 <b>,</b> 389	154,460	624,153	24.81	25 <b>,</b> 157
1986	250,066.60	214,385	77 <b>,</b> 479	322,628	25.53	12,637
1987	132,202.41	110,532	39,947	171,577	26.26	6,534
1988	180,829.00	147,293	53,232	236,094	27.00	8,744
1989	335,583.03	266 <b>,</b> 023	96,142	440,791	27.75	15,884
1990	861,440.61	664,095	240,006	1,138,299	28.50	39,940
1991	1,040,463.64	778 <b>,</b> 800	281,461	1,383,281	29.27	47,259
1992	194,698.61	141,317	51,072	260,446	30.05	8,667
1993	95,253.88	66 <b>,</b> 975	24,205	128,201	30.83	4,158
1994	78,711.86	53,535	19,348	106,591	31.62	3,371
1995	1,956,738.22	1,285,342	464,527	2,666,254	32.42	82,241
1996	2,743,363.66	1,737,405	627,903	3,761,479	33.23	113,195
1997	1,122,566.68	684 <b>,</b> 155	247,256	1,548,851	34.05	45,488
1998	237,851.01	139,286	50,338	330,224	34.87	9,470
1999	269,017.19	151,041	54,587	375,841	35.70	10,528
2000	426,366.89	228,969	82,750	599,437	36.54	16,405
2001	216,541.16	110,994	40,114	306,352	37.38	8,196
2002	795,988.45	388,328	140,343	1,133,239	38.23	29,643
2003	180,173.75	83,390	30,137	258,141	39.09	6,604
2004	126,576.67	55,380	20,015	182,508	39.96	4,567
2005	64,723.58	26,681	9,643	93,915	40.83	2,300
2006	610,096.03	235,878	85 <b>,</b> 247	890,907	41.71	21,360

#### ACCOUNT 376.20 MAINS - COATED AND WRAPPED

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	OR CURVE IOWA ALVAGE PERCENT					
2007	282,906.41	102,136	36,912	415,738	42.59	9,761
2008	840,635.19	281,714	101,812	1,243,204	43.48	28,593
2009	140,254.84	43,331	15,660	208,748	44.38	4,704
2010	6,923.14	1,958	708	10,369	45.28	229
2011	138,416.44	35 <b>,</b> 514	12,835	208,631	46.18	4,518
2012	157,802.55	36,312	13,123	239,361	47.09	5 <b>,</b> 083
2013	308,648.66	62 <b>,</b> 762	22,682	471 <b>,</b> 156	48.01	9,814
2014	911,382.58	160,928	58 <b>,</b> 160	1,400,052	48.93	28,613
2015	291,358.68	43,653	15 <b>,</b> 776	450 <b>,</b> 398	49.85	9,035
2016	12,588.06	1,545	558	19,583	50.78	386
2017	1,248,891.66	119,534	43,200	1,955,027	51.71	37,808
2018	5,888,360.91	402,575	145,492	9,275,885	52.65	176,180
2019	4,741,285.11	195,872	70 <b>,</b> 789	7,515,267	53.58	140,263
2020	257,375.80	3 <b>,</b> 521	1,272	410,529	54.53	7 <b>,</b> 528
	29,746,227.02	11,688,236	4,224,164	43,369,799		1,123,107

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 38.6 3.78

#### ACCOUNT 376.40 MAINS - PLASTIC

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
CHIDATA	OR CURVE IOWA	55_D2 5				
	LVAGE PERCENT					
MUI DA	DVAGE IERCENI	00				
1974	1,923.80	2,093	2,180	898	17.60	51
1975	17,542.19	18,780	19,557	8,511	18.20	468
1976	26,751.89	28,172	29,337	13,466	18.80	716
1977	42,510.76	44,001	45,821	22,196	19.42	1,143
1978	20,711.52	21,052	21,923	11,215	20.06	559
1979	127,838.75	127,561	132,837	71,705	20.70	3,464
1980	134,610.93	131,733	137,181	78 <b>,</b> 196	21.36	3,661
1981	214,067.70	205,317	213,809	128,699	22.03	5,842
1982	73,398.62	68,947	71,799	45,639	22.71	2,010
1983	92,518.10	85,050	88,568	59,461	23.40	2,541
1984	175,948.18	158,162	164,703	116,814	24.10	4,847
1985	476,009.18	418,058	435,349	326,266	24.81	13,151
1986	463,087.86	397,011	413,431	327,510	25.53	12,828
1987	974,479.27	814,743	848,440	710,727	26.26	27,065
1988	1,114,495.11	907,805	945,351	837,841	27.00	31,031
1989	954,857.85	756,935	788,241	739,532	27.75	26,650
1990	1,848,760.33	1,425,232	1,484,178	1,473,839	28.50	51,714
1991	2,880,906.15	2,156,393	2,245,580	2,363,870	29.27	80,761
1992	2,265,458.28	1,644,324	1,712,332	1,912,401	30.05	63,641
1993	1,664,427.28	1,170,292	1,218,694	1,444,390	30.83	46,850
1994	2,470,065.71	1,680,000	1,749,483	2,202,622	31.62	69,659
1995	1,618,511.66	1,063,168	1,107,140	1,482,479	32.42	45 <b>,</b> 727
1996	1,218,190.16	771,494	803,402	1,145,702	33.23	34,478
1997	1,508,570.63	919 <b>,</b> 407	957,433	1,456,280	34.05	42,769
1998	1,367,302.44	800 <b>,</b> 692	833,808	1,353,876	34.87	38,826
1999	1,944,059.53	1,091,504	1,136,648	1,973,847	35.70	55 <b>,</b> 290
2000	1,456,590.21	782 <b>,</b> 224	814,576	1,515,968	36.54	41,488
2001	1,542,582.52	790 <b>,</b> 691	823 <b>,</b> 393	1,644,739	37.38	44,001
2002	733,853.60	358 <b>,</b> 015	372,822	801,344	38.23	20,961
2003	1,263,749.01	584 <b>,</b> 903	609,094	1,412,904	39.09	36,145
2004	1,963,975.90	859 <b>,</b> 279	894,818	2,247,543	39.96	56 <b>,</b> 245
2005	1,908,213.42	786 <b>,</b> 611	819,145	2,233,996	40.83	54,715
2006	3,504,074.28	1,354,759	1,410,791	4,195,728	41.71	100,593
2007	2,346,871.25	847,277	882,320	2,872,674	42.59	67,449
2008	1,894,351.61	634,835	661,091	2,369,872	43.48	54,505
2009	3,938,400.56	1,216,745	1,267,069	5,034,372	44.38	113,438
2010	3,969,937.28	1,122,571	1,169,000	5,182,900	45.28	114,463
2011	2,592,770.40	665,243	692 <b>,</b> 757	3,455,676	46.18	74,831
2012	4,256,983.95	979 <b>,</b> 583	1,020,098	5,791,076	47.09	122,979
2013	6,206,518.21	1,262,058	1,314,256	8,616,173	48.01	179,466
2014	8,278,802.88	1,461,838	1,522,298	11,723,787	48.93	239,603

#### ACCOUNT 376.40 MAINS - PLASTIC

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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					
2015	9,464,162.94	1,417,959	1,476,605	13,666,056	49.85	274,144
2016	8,101,261.09	994,576	1,035,711	11,926,307	50.78	234,862
2017	12,985,516.38	1,242,870	1,294,274	19,482,552	51.71	376 <b>,</b> 766
2018	3,232,484.22	220 <b>,</b> 998	230,138	4,941,837	52.65	93 <b>,</b> 862
2019	7,755,557.09	320 <b>,</b> 398	333 <b>,</b> 649	12,075,242	53.58	225,368
2020	9,248,523.42	126,520	131,753	14,665,884	54.53	268,951
	120,342,184.10	34,937,879	36,382,883	156,164,612		3,460,577
	COMPOSITE DEMAIN	TMC TIBE AND	ANINITAT ACCRITAT		m /E 1	2 00

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 45.1 2.88

#### ACCOUNT 376.60 MAINS - CATHODIC PROTECTION

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	OR CURVE IOWA LVAGE PERCENT					
1983	1,205.82	1,854	1,929			
1991	1,069.53	1,538	1,711			
1992	16,566.40	23,440	26,133	373	3.47	107
1993	16,611.90	23,062	25 <b>,</b> 711	868	3.97	219
1994	16,227.44	22,026	24,556	1,408	4.55	309
1995	23,991.12	31,719	35 <b>,</b> 363	3 <b>,</b> 023	5.21	580
1996	10,252.03	13,150	14,661	1,742	5.95	293
1997	11,779.22	14,594	16,271	2,576	6.77	381
1998	66,903.24	79 <b>,</b> 784	88,950	18,095	7.64	2,368
1999	29,488.21	33,703	37 <b>,</b> 575	9,606	8.57	1,121
2000	5,383.56	5 <b>,</b> 877	6,552	2,062	9.53	216
2001	2,582.15	2,684	2,992	1,139	10.51	108
2002	10,631.12	10,489	11,694	5,316	11.50	462
2003	30,482.95	28,451	31,720	17,053	12.50	1,364
2004	31,744.74	27 <b>,</b> 935	31,144	19,648	13.50	1,455
2005	46,037.88	38 <b>,</b> 058	42,430	31,231	14.50	2,154
2006	40,750.36	31,513	35 <b>,</b> 134	30,067	15.50	1,940
2007	85,499.21	61 <b>,</b> 559	68 <b>,</b> 631	68 <b>,</b> 168	16.50	4,131
2008	42,647.16	28,432	31,699	36 <b>,</b> 536	17.50	2,088
2009	29 <b>,</b> 399.79	18,032	20,104	26 <b>,</b> 936	18.50	1,456
2010	7 <b>,</b> 701.89	4,313	4,809	7,514	19.50	385
2011	15,213.21	7,708	8 <b>,</b> 594	15 <b>,</b> 747	20.50	768
2012	1,673.26	759	846	1,831	21.50	85
2014	55,310.10	19,174	21,377	67 <b>,</b> 119	23.50	2,856
2015	84,134.66	24 <b>,</b> 679	27 <b>,</b> 514	107,101	24.50	4,371
2016	116,508.17	27 <b>,</b> 962	31,174	155 <b>,</b> 239	25.50	6,088
2017	28,105.13	5,246	5 <b>,</b> 849	39 <b>,</b> 119	26.50	1,476
2018	106,274.68	14,169	15 <b>,</b> 797	154 <b>,</b> 242	27.50	5 <b>,</b> 609
2019	123,169.30	9,854	10,985	186,086	28.50	6 <b>,</b> 529
2020	25,395.22	677	755	39 <b>,</b> 877	29.50	1,352
	1,082,739.45	612,441	682,660	1,049,723		50,271

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 20.9 4.64

#### ACCOUNT 378.20 MEASURING AND REGULATING STATION EQUIPMENT

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE IOWA VAGE PERCENT					
1956	2,092.93	2,512	2,512			
1970	3,806.03	4,359	1,896	2 <b>,</b> 671	1.37	1,950
1971	1,106.53	1,254	546	782	1.66	471
1973	2,969.09	3,298	1,435	2,128	2.23	954
1974	9,065.61	9,965	4,335	6 <b>,</b> 544	2.52	2 <b>,</b> 597
1978	11,140.22	11,728	5,102	8 <b>,</b> 266	3.68	2,246
1979	9,924.70	10,330	4,494	7,416	3.98	1,863
1980	5,454.31	5 <b>,</b> 609	2,440	4,105	4.29	957
1982	4,601.48	4,616	2,008	3,514	4.92	714
1986	26,442.33	25 <b>,</b> 004	10,878	20,853	6.36	3 <b>,</b> 279
1988	1,997.49	1,824	794	1,603	7.17	224
1989	9,563.82	8,565	3,726	7,751	7.61	1,019
1990	88,269.71	77,465	33,700	72,224	8.06	8,961
1991	47,282.57	40,587	17,657	39,082	8.54	4,576
1992	28,429.95	23,847	10,374	23,742	9.03	2,629
1993	12,026.64	9,838	4,280	10,152	9.55	1,063
1994	81,580.09	64,971	28,264	69,632	10.09	6,901
1996	41,176.92	30,948	13,463	35,949	11.21	3,207
1997	60,161.57	43,773	19,043	53,151	11.81	4,501
1998	57,495.52	40,431	17,589	51,406	12.42	4,139
1999	157,788.96	106,981	46,540	142,807	13.05	10,943
2000	146,597.27	95,641	41,607	134,310	13.69	9,811
2001	41,583.39	26,014	11,317	38,583	14.36	2,687
2002	15,958.64	9,550	4,155	14,995	15.04	997
2003	90,272.94	51,528	22,416	85,912	15.73	5,462
2004	74,106.34	40,195	17,486	71,442	16.44	4,346
2005	20,252.89	10,394	4,522	19,781	17.17	1,152
2006	99,500.37	48,118	20,933	98,467	17.91	5,498
2007	24,735.98	11,220	4,881	24,802	18.66	1,329
2010	125,530.07	45,191	19,660	130,976	21.00	6,237
2012	510,303.63	150,440	65,446	546,918	22.63	24,168
2013	375,408.77	98,207	42,723	407,768	23.46	17,381
2014	60,163.02	13,717	5 <b>,</b> 967	66,229	24.30	2,725
2015	752,225.70	145,935	63,487	839,184	25.15	33,367
2016	210,046.65	33,523	14,584	237,472	26.01	9,130
2017	446,176.51	55 <b>,</b> 683	24,224	511,188	26.88	19,017

#### ACCOUNT 378.20 MEASURING AND REGULATING STATION EQUIPMENT

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					
2018 2019 2020	411,279.24 2,346,661.58 915,068.68	36,852 126,720 16,471	16,032 55,127 7,165	477,503 2,760,867 1,090,917	27.76 28.65 29.55	17,201 96,365 36,918
	7,328,248.14	1,543,304	672 <b>,</b> 808	8,121,090		356 <b>,</b> 985
	COMPOSITE REMAIN	ING LIFE AND	ANNUAL ACCRUAL	RATE, PERCEN'	r 22.7	4.87

#### ACCOUNT 380.00 SERVICES

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE IOWA VAGE PERCENT					
NEI SAL	VAGE FERCENI	- 90				
1946	20.90	38	33	7	2.40	3
1947	91.42	163	143	31	2.67	12
1953	292.26	506	444	111	4.03	28
1954	671.82	1,156	1,014	262	4.25	62
1958	699.02	1,176	1,031	297	5.16	58
1959	903.62	1,511	1,325	392	5.39	73
1960	726.94	1,208	1,059	322	5.63	57
1961	3,680.94	6,080	5,332	1,662	5.88	283
1962	6,355.74	10,431	9,148	2,928	6.13	478
1963	6,783.16	11,058	9,698	3,190	6.39	499
1964	12,503.13	20,240	17,751	6,005	6.66	902
1965	8,983.81	14,441	12,665	4,404	6.93	635
1966	9,709.91	15 <b>,</b> 489	13,584	4,865	7.22	674
1967	13,889.13	21 <b>,</b> 979	19,276	7,113	7.52	946
1968	10,340.61	16,224	14,229	5,418	7.84	691
1969	4,166.81	6,480	5,683	2,234	8.17	273
1970	5 <b>,</b> 992.62	9,230	8 <b>,</b> 095	3 <b>,</b> 291	8.52	386
1971	19,367.11	29 <b>,</b> 536	25 <b>,</b> 903	10,895	8.88	1,227
1972	30,227.00	45 <b>,</b> 613	40,003	17,428	9.26	1,882
1973	31,166.50	46,491	40,773	18,443	9.67	1,907
1974	53,623.05	79 <b>,</b> 039	69 <b>,</b> 318	32 <b>,</b> 566	10.09	3 <b>,</b> 228
1975	30,966.35	45 <b>,</b> 068	39 <b>,</b> 525	19 <b>,</b> 311	10.53	1,834
1976	40,208.07	57 <b>,</b> 755	50 <b>,</b> 652	25 <b>,</b> 743	10.98	2,345
1977	52 <b>,</b> 330.67	74,107	64 <b>,</b> 993	34,435	11.46	3 <b>,</b> 005
1978	55,881.43	77 <b>,</b> 956	68 <b>,</b> 368	37 <b>,</b> 807	11.96	3,161
1979	275,526.95	378 <b>,</b> 319	331 <b>,</b> 791	191,710	12.48	15 <b>,</b> 361
1980	113,580.32	153 <b>,</b> 412	134,544	81 <b>,</b> 259	13.01	6,246
1981	157,336.43	208,791	183,112	115,827	13.57	8,536
1982	141,597.39	184,499	161,808	107,227	14.14	7,583
1983	118,428.13	151,360	132,745	92,268	14.73	6,264
1984	157,305.16	197,060	172,824	126,056	15.33	8,223
1985	289,551.20	355 <b>,</b> 153	311,474	238,673	15.95	14,964
1986	362,892.18	435,299	381 <b>,</b> 763	307,732	16.59	18,549
1987	527,771.01	618,596	542 <b>,</b> 517	460,248	17.24	26 <b>,</b> 697
1988	642,330.27	734,966	644 <b>,</b> 575	575 <b>,</b> 853	17.90	32,171
1989	722,229.72	805 <b>,</b> 654	706 <b>,</b> 569	665 <b>,</b> 667	18.58	35 <b>,</b> 827
1990	1,174,749.88	1,276,227	1,119,268	1,112,757	19.27	57 <b>,</b> 746
1991	1,200,969.31	1,269,206	1,113,110	1,168,732	19.97	58,524
1992	919,697.30	943,994	827 <b>,</b> 895	919,530	20.69	44,443
1993	716,799.89	713,646	625 <b>,</b> 877	736,043	21.42	34,362
1994	1,505,265.27	1,451,624	1,273,093	1,586,911	22.16	71,612

#### ACCOUNT 380.00 SERVICES

### CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	OR CURVE IOWA ALVAGE PERCENT					
1995	818,903.31	763 <b>,</b> 784	669,849	886 <b>,</b> 067	22.91	38,676
1996	992,732.01	894 <b>,</b> 054	784 <b>,</b> 097	1,102,094	23.67	46,561
1997	1,059,598.24	919 <b>,</b> 828	806 <b>,</b> 701	1,206,536	24.44	49,367
1998	990,461.53	827 <b>,</b> 198	725,464	1,156,413	25.22	45,853
1999	876,104.74	702 <b>,</b> 095	615 <b>,</b> 747	1,048,852	26.02	40,309
2000	878,108.74	674 <b>,</b> 036	591 <b>,</b> 138	1,077,269	26.82	40,167
2001	674,162.26	494,431	433,622	847,286	27.63	30,665
2002	1,078,684.12	753 <b>,</b> 765	661,062	1,388,438	28.45	48,803
2003	819,174.43	543 <b>,</b> 708	476,839	1,079,592	29.28	36,871
2004	973,643.34	611 <b>,</b> 714	536 <b>,</b> 481	1,313,441	30.12	43,607
2005	812,057.28	481,048	421,885	1,121,024	30.97	36 <b>,</b> 197
2006	1,606,379.42	893 <b>,</b> 264	783,404	2,268,717	31.83	71,276
2007	1,020,947.03	530 <b>,</b> 652	465,389	1,474,410	32.69	45,103
2008	1,493,382.34	720 <b>,</b> 706	632,069	2,205,357	33.57	65 <b>,</b> 694
2009	1,843,043.82	820 <b>,</b> 958	719,991	2,781,792	34.45	80,749
2010	2,671,965.32	1,090,939	956 <b>,</b> 768	4,119,966	35.33	116,614
2011	2,659,771.39	984 <b>,</b> 889	863,761	4,189,805	36.23	115,645
2012	4,923,906.11	1,636,170	1,434,943	7,920,479	37.13	213,318
2013	6,392,849.94	1,881,358	1,649,975	10,496,440	38.03	276,004
2014	5,276,911.46	1,347,913	1,182,137	8,843,995	38.95	227,060
2015	6,740,284.28	1,462,763	1,282,862	11,523,678	39.86	289,104
2016	5,656,703.12	1,005,558	881,888	9,865,848	40.79	241,869
2017	7,132,601.96	990 <b>,</b> 783	868,930	12,683,014	41.71	304,076
2018	6,134,925.45	608 <b>,</b> 695	533,833	11,122,525	42.65	260,786
2019	4,185,709.11	249,163	218,520	7,734,327	43.59	177,434
2020	5,698,423.53	113,034	99,132	10,727,873	44.53	240,913
	82,837,046.71	32,473,287	28,479,497	128,910,892		3,654,478

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 35.3 4.41

#### ACCOUNT 381.00 METERS

### CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	OR CURVE IOWA LVAGE PERCENT					
1978	63,732.62	64,302	42,480	30,813	3.68	8,373
1979	90 <b>,</b> 540.78	90,308	59 <b>,</b> 660	44,462	3.98	11,171
1981	139,244.85	135 <b>,</b> 579	89 <b>,</b> 568	70 <b>,</b> 564	4.60	15 <b>,</b> 340
1982	16,742.55	16,096	10,634	8 <b>,</b> 620	4.92	1,752
1983	39 <b>,</b> 269.77	37 <b>,</b> 242	24,603	20 <b>,</b> 557	5.26	3,908
1984	6,469.46	6,049	3 <b>,</b> 996	3,444	5.61	614
1985	67 <b>,</b> 574.85	62 <b>,</b> 247	41,122	36 <b>,</b> 589	5.97	6,129
1986	14,907.32	13,509	8,924	8,219	6.36	1,292
1987	56 <b>,</b> 576.00	50,423	33,311	31 <b>,</b> 751	6.75	4,704
1988	31 <b>,</b> 887.54	27 <b>,</b> 906	18,436	18 <b>,</b> 235	7.17	2,543
1989	68,305.23	58 <b>,</b> 625	38 <b>,</b> 730	39 <b>,</b> 821	7.61	5,233
1990	174,633.10	146,872	97 <b>,</b> 029	103 <b>,</b> 799	8.06	12,878
1991	161,862.22	133,153	87 <b>,</b> 965	98 <b>,</b> 177	8.54	11,496
1992	10,562.06	8,490	5 <b>,</b> 609	6 <b>,</b> 537	9.03	724
1994	109,047.73	83 <b>,</b> 227	54 <b>,</b> 982	70,423	10.09	6 <b>,</b> 979
1995	70,406.64	52 <b>,</b> 251	34,519	46,449	10.64	4,366
1997	105,838.72	73 <b>,</b> 799	48 <b>,</b> 754	72 <b>,</b> 961	11.81	6 <b>,</b> 178
1999	50 <b>,</b> 734.28	32 <b>,</b> 965	21 <b>,</b> 778	36 <b>,</b> 566	13.05	2,802
2002	6,504.34	3 <b>,</b> 730	2,464	5 <b>,</b> 016	15.04	334
2003	22,851.10	12,500	8,258	18,021	15.73	1,146
2004	39 <b>,</b> 553.68	20 <b>,</b> 560	13,583	31 <b>,</b> 904	16.44	1,941
2005	186,736.65	91,841	60 <b>,</b> 673	154 <b>,</b> 074	17.17	8 <b>,</b> 973
2006	16,812.96	7 <b>,</b> 792	5,148	14,187	17.91	792
2007	155,845.21	67 <b>,</b> 746	44,755	134,467	18.66	7,206
2008	78 <b>,</b> 337.17	31,741	20,969	69 <b>,</b> 119	19.43	3 <b>,</b> 557
2009	274 <b>,</b> 298.32	102,939	68 <b>,</b> 005	247,438	20.21	12,243
2010	215,511.82	74 <b>,</b> 352	49,119	198,720	21.00	9,463
2012	327 <b>,</b> 050.70	92 <b>,</b> 399	61,042	315,066	22.63	13,922
2013	279,446.75	70 <b>,</b> 057	46,282	275 <b>,</b> 082	23.46	11,726
2014	420,634.17	91 <b>,</b> 909	60 <b>,</b> 718	423,011	24.30	17,408
2016	96,428.24	14 <b>,</b> 749	9,744	101,148	26.01	3 <b>,</b> 889
2017	361 <b>,</b> 829.90	43,275	28 <b>,</b> 589	387 <b>,</b> 515	26.88	14,416
2018	94,028.64	8,074	5,334	102,799	27.76	3,703
2019	484,857.36	25 <b>,</b> 091	16 <b>,</b> 576	541,010	28.65	18,883
2020	285,547.51	4,926	3,254	325,126	29.55	11,003
	4,624,610.24	1,856,724	1,226,613	4,091,689		247,087

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 16.6 5.34

#### ACCOUNT 382.00 METER INSTALLATIONS

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVI	OR CURVE IOWA	30-R3				
	ALVAGE PERCENT					
1987	39,445.49	36 <b>,</b> 737	28,931	14,459	4.60	3,143
1988	92,699.87	85 <b>,</b> 043	66 <b>,</b> 973	34 <b>,</b> 997	4.98	7,028
1989	150,957.68	136,275	107,320	58,733	5.38	10,917
1990	99,852.77	88 <b>,</b> 529	69 <b>,</b> 719	40,119	5.82	6,893
1991	248,579.65	216,106	170,188	103,250	6.29	16,415
1992	309,810.37	263,660	207,638	133,153	6.79	19,610
1993	332,096.45	276 <b>,</b> 051	217,397	147,909	7.33	20,179
1994	352,528.89	285 <b>,</b> 795	225,070	162,712	7.89	20,623
1995	309,924.92	244,550	192,589	148,328	8.48	17,492
1996	324,737.91	248,859	195,982	161,230	9.10	17,718
1997	386,459.60	286,946	225,977	199,129	9.75	20,423
1998	403,899.23	289,823	228,242	216,047	10.43	20,714
1999	600,879.74	415,967	327,584	333,384	11.12	29,981
2000	425,074.52	283,041	222,901	244,681	11.84	20,666
2001	427,551.14	273 <b>,</b> 093	215,067	255 <b>,</b> 239	12.58	20,289
2002	557 <b>,</b> 906.97	340,805	268,392	345,306	13.34	25 <b>,</b> 885
2003	502,392.92	292 <b>,</b> 525	230,370	322,262	14.12	22,823
2004	476,074.53	263,412	207,443	316,239	14.91	21,210
2005	485,986.37	254 <b>,</b> 286	200,256	334,329	15.73	21,254
2006	861,596.42	424,907	334,624	613,132	16.55	37 <b>,</b> 047
2007	552,222.21	255 <b>,</b> 127	200,919	406,525	17.40	23,364
2008	1,030,117.67	443,428	349,210	783 <b>,</b> 919	18.26	42,931
2009	852,840.11	339 <b>,</b> 601	267,444	670 <b>,</b> 680	19.14	35,041
2010	421,722.10	154,166	121,409	342,485	20.03	17,099
2012	2,196,535.86	656 <b>,</b> 406	516 <b>,</b> 935	1,899,254	21.85	86 <b>,</b> 922
2013	1,669,722.44	442,037	348,115	1,488,580	22.78	65 <b>,</b> 346
2014	1,667,799.91	384 <b>,</b> 656	302 <b>,</b> 926	1,531,654	23.71	64 <b>,</b> 599
2015	1,435,971.17	281,163	221,422	1,358,146	24.66	55 <b>,</b> 075
2016	1,403,893.92	225,465	177,559	1,366,724	25.62	53,346
2017	1,940,997.90	243,401	191,684	1,943,414	26.58	73,116
2018	1,522,528.07	136 <b>,</b> 779	107,717	1,567,064	27.55	56 <b>,</b> 881
2019	1,973,648.00	106,380	83 <b>,</b> 776	2,087,237	28.53	73 <b>,</b> 159
2020	1,945,230.56	34,942	27,518	2,112,236	29.51	71,577
	26,001,685.36	8,709,961	6,859,297	21,742,557		1,098,766

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 19.8 4.23

#### ACCOUNT 383.00 HOUSE REGULATORS

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

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					
1999	6,775.57	4,264	4,289	2,487	11.12	224
2000	3,744.90	2,267	2,280	1,465	11.84	124
2001	134,243.25	77,951	78,403	55,840	12.58	4,439
2002	350.30	195	196	154	13.34	12
2003	542.83	287	289	254	14.12	18
2004	39,535.89	19 <b>,</b> 887	20,002	19,534	14.91	1,310
2009	37,535.84	13,588	13,667	23,869	19.14	1,247
2010	93,060.08	30 <b>,</b> 927	31,106	61,954	20.03	3,093
2011	9,465.59	2,862	2 <b>,</b> 879	6 <b>,</b> 587	20.93	315
2012	64,187.72	17,438	17 <b>,</b> 539	46,649	21.85	2,135
2013	12,894.30	3,103	3,121	9,773	22.78	429
2014	46,358.20	9,720	9,776	36,582	23.71	1,543
2015	45,490.64	8 <b>,</b> 097	8,144	37,347	24.66	1,514
2016	39,455.52	5 <b>,</b> 761	5 <b>,</b> 794	33,662	25.62	1,314
2017	47,491.48	5,414	5,445	42,046	26.58	1,582
2018	70,618.38	5 <b>,</b> 767	5,800	64,818	27.55	2,353
2019	70,836.85	3,471	3,491	67 <b>,</b> 346	28.53	2,361
2020	10,962.24	179	180	10,782	29.51	365
	733,549.58	211,178	212,401	521,148		24,378

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 21.4 3.32

#### ACCOUNT 386.00 OTHER PROPERTY ON CUSTOMERS' PREMISES

### CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	OR CURVE IOWA LVAGE PERCENT					
1994	23,873.55	23,874	23,874			
1995	101,392.20	101,392	101,392			
1996	76,158.18	76 <b>,</b> 158	76 <b>,</b> 158			
1997	76,096.54	76 <b>,</b> 097	76 <b>,</b> 097			
1998	76,451.16	76 <b>,</b> 451	76,451			
1999	83,071.82	81,687	62,109	20,963	0.20	20,963
2000	123,831.03	118,981	90,464	33 <b>,</b> 367	0.47	33 <b>,</b> 367
2001	57 <b>,</b> 530.70	53 <b>,</b> 935	41,008	16,523	0.75	16,523
2002	90,319.47	82 <b>,</b> 491	62 <b>,</b> 720	27 <b>,</b> 599	1.04	26 <b>,</b> 538
2003	7,153.19	6,360	4,836	2,317	1.33	1,742
2004	8,867.40	7 <b>,</b> 670	5,832	3,035	1.62	1,873
2005	11,011.24	9,231	7,019	3,992	1.94	2,058
2006	2,082.08	1,686	1,282	800	2.28	351
2007	3,643.31	2,836	2,156	1,487	2.66	559
2008	5,241.14	3,892	2 <b>,</b> 959	2,282	3.09	739
2009	57 <b>,</b> 357.02	40,341	30 <b>,</b> 672	26 <b>,</b> 685	3.56	7,496
2010	76,985.59	50 <b>,</b> 747	38,584	38,402	4.09	9,389
2012	143,385.65	80,296	61,051	82 <b>,</b> 335	5.28	15,594
2013	89,395.84	45,071	34,269	55 <b>,</b> 127	5.95	9,265
2014	107,399.88	47,882	36,406	70,994	6.65	10,676
2015	121,649.76	46,734	35 <b>,</b> 533	86,117	7.39	11,653
2016	96,206.38	30 <b>,</b> 786	23,407	72 <b>,</b> 799	8.16	8,921
2017	139,373.50	35,192	26 <b>,</b> 757	112,616	8.97	12,555
2018	171,146.73	31,376	23 <b>,</b> 856	147,291	9.80	15,030
2019	144,276.16	16,111	12,250	132,026	10.66	12,385
2020	84,995.51	3,187	2,423	82 <b>,</b> 573	11.55	7,149
	1,978,895.03	1,150,464	959 <b>,</b> 565	1,019,330		224,826

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 4.5 11.36

#### ACCOUNT 391.10 OFFICE FURNITURE AND EQUIPMENT

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE 15-S VAGE PERCENT	-				
2009	224,447.63	172,077	172,073	52,375	3.50	14,964
2010	18,803.58	13,163	13,163	5,641	4.50	1,254
2011	1,820.07	1,153	1,153	667	5.50	121
2012	26,428.04	14,976	14,976	11,452	6.50	1,762
2013	133,660.63	66 <b>,</b> 830	66 <b>,</b> 827	66,834	7.50	8,911
2014	6,042.09	2,618	2,618	3,424	8.50	403
2015	3,651.85	1,339	1,339	2,313	9.50	243
2016	6,673.54	2,002	2,002	4,672	10.50	445
2017	4,364.84	1,018	1,018	3,347	11.50	291
2018	5,941.70	990	990	4,952	12.50	396
2019	18,505.11	1,851	1,851	16,654	13.50	1,234
2020	57,795.69	1,926	1,926	55 <b>,</b> 870	14.50	3,853
	508,134.77	279,943	279,936	228,199		33,877

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 6.7 6.67

#### ACCOUNT 394.10 TOOLS, SHOP AND GARAGE EQUIPMENT

### CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
FIIT.T.V Z	ACCRUED					
	LVAGE PERCENT	0				
1992	27,385.41	27 <b>,</b> 385	27,385			
1993	12,409.22	12,409	12,409			
1994	20,052.13	20,052	20,052			
1995	56,123.13	56,123	56,123			
	115,969.89	115,969	115,970			
AMORTIZ	ZED					
	OR CURVE 25-S					
NET SAI	LVAGE PERCENT	0				
1996	30,741.37	30,127	29 <b>,</b> 958	783	0.50	783
1997	22,755.60	21,390	21,270	1,485	1.50	990
1998	33,774.01	30 <b>,</b> 397	30 <b>,</b> 227	3 <b>,</b> 547	2.50	1,419
1999	50,066.79	43,057	42,816	7,251	3.50	2,072
2000	10,212.93	8 <b>,</b> 375	8,328	1,885	4.50	419
2001	18,174.14	14,176	14,097	4,078	5.50	741
2002	8,399.98	6,216	6,181	2,219	6.50	341
2003	15,486.21	10,840	10,779	4,707	7.50	628
2004	38,224.04	25 <b>,</b> 228	25 <b>,</b> 087	13,137	8.50	1,546
2005	7,715.09	4,783	4,756	2 <b>,</b> 959	9.50	311
2006	30,667.12	17 <b>,</b> 787	17 <b>,</b> 687	12,980	10.50	1,236
2008	48,815.30	24,408	24,271	24,544	12.50	1,964
2009	248,756.76	114,428	113,787	134,970	13.50	9,998
2010	197,936.06	83,133	82,667	115,269	14.50	7,950
2011	25,087.59	9,533	9,480	15,608	15.50	1,007
2012	24,296.89	8,261	8,215	16,082	16.50	975
2013	145,321.22	43,596	43,352	101,969	17.50	5 <b>,</b> 827
2014	27,446.67	7,136	7,096	20,351	18.50	1,100
2015	30,833.38	6 <b>,</b> 783	6,745	24,088	19.50	1,235
2016	47,306.04	8,515	8,467	38,839	20.50	1,895
2017	39,782.10	5 <b>,</b> 569	5 <b>,</b> 538	34,244	21.50	1,593
2018	76,355.10	7,636			22.50	3,056
2019	75,529.94	4,532	4,507	71,023	23.50	3,022
2020	60,767.19	1,215	1,208	59,559	24.50	2,431
	1,314,451.52	537,121	534,112	780,340		52 <b>,</b> 539
	1,430,421.41	653 <b>,</b> 090	650,082	780,340		52,539

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 14.9 3.67

#### ACCOUNT 397.00 COMMUNICATION EQUIPMENT

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
FULLY A	ACCRUED LVAGE PERCENT	0				
1991 1992 1993 1994 1995 1996 1998 1999 2001 2005	20,776.59 65,780.69 33,432.84 11,586.00 48,773.69 35,392.71 52,121.15 45,663.49 8,875.30 46,484.65	20,777 65,781 33,433 11,586 48,774 35,393 52,121 45,663 8,875 46,485	20,777 65,781 33,433 11,586 48,774 35,393 52,121 45,663 8,875 46,485			
	ZED DR CURVE 15-SC LVAGE PERCENT					
2006 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020	32,656.80 425,712.04 185,879.43 83,755.25 8,608.03 211,531.15 10,039.05 2,564.26 82,503.03 5,660.46 109,158.37 42,502.63 133,059.36 170,963.24	31,568 354,759 142,508 58,629 5,452 119,868 5,020 1,111 30,251 1,698 25,470 7,084 13,306 5,698	31,424 353,139 141,857 58,361 5,427 119,321 4,997 1,106 30,113 1,690 25,354 7,052 13,245 5,672	1,233 72,573 44,022 25,394 3,181 92,211 5,042 1,458 52,390 3,970 83,805 35,451 119,814 165,291	0.50 2.50 3.50 4.50 5.50 6.50 7.50 8.50 9.50 10.50 11.50 12.50 13.50 14.50	1,233 29,029 12,578 5,643 578 14,186 672 172 5,515 378 7,287 2,836 8,875 11,399
	1,504,593.10 1,873,480.21	802,422 1,171,310	798,757 1,167,644	705,836 705,836		100,381 100,381

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 7.0 5.36

#### ACCOUNT 397.35 COMMUNICATION EQUIPMENT - ERTs

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2020

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	ACCRUED LVAGE PERCENT	0				
2003 2004 2005	1,635,028.25 73,637.00 105,483.61	1,635,028 73,637 105,484	1,635,028 73,637 105,484			
	1,814,148.86	1,814,149	1,814,149			
	ZED OR CURVE 15-S LVAGE PERCENT					
2006 2007 2008 2009 2010 2012 2013 2014 2015 2016 2017 2018 2019 2020	8,323.98 269,434.27 113,656.57 65,996.83 72,888.13 131,079.51 172,937.38 169,053.77 23,991.36 40,712.03 74,662.09 170,013.85 212,363.28 130,884.27	8,047 242,491 94,713 50,598 51,022 74,279 86,469 73,256 8,797 12,214 17,421 28,336 21,236 4,362	8,038 242,211 94,604 50,540 50,963 74,193 86,369 73,171 8,787 12,200 17,401 28,303 21,211 4,357	286 27,223 19,053 15,457 21,925 56,886 86,568 95,882 15,205 28,512 57,261 141,711 191,152 126,527	0.50 1.50 2.50 3.50 4.50 6.50 7.50 8.50 9.50 10.50 11.50 12.50 13.50	286 18,149 7,621 4,416 4,872 8,752 11,542 11,280 1,601 2,715 4,979 11,337 14,159 8,726
	1,655,997.32	773,241	772 <b>,</b> 348	883 <b>,</b> 649		110,435
	3,470,146.18	2,587,390	2,586,497	883,649		110,435

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 8.0 3.18

#### UNITIL CORPORATION NORTHERN UTILITIES, INC.

#### COMPARISON OF CURRENT ANNUAL DEPRECIATION EXPENSE VS. PROPOSED ANNUAL DEPRECIATION EXPENSE AS OF DECEMBER 31, 2020

					CURRENT			PROPOSED				
		ORIGINAL COST AS OF	BOOK DEPRECIATION	SURVIVOR	NET SALVAGE	CALCULATE ANNUAL ACCR	UAL	SURVIVOR	NET SALVAGE	CALCULATE ANNUAL ACCE	RUAL	INCREASE/
	DEPRECIABLE GROUP (1)	DECEMBER 31, 2020 (2)	RESERVE (3)	CURVE (4)	PERCENT (5)	AMOUNT (6)=(7)x(2)	(7)	CURVE (8)	PERCENT (9)	AMOUNT (10)	(11)	(DECREASE) (12)=(10)-(6)
		( )	\-,'	( )	( )	(7, (7, (7,	• • •	(-)	(-,	, ,	` '	( ) ( ) ( )
	DISTRIBUTION PLANT											
375.00	STRUCTURES AND IMPROVEMENTS	3,260,871.26	596,162	70-L0	0	46,630	1.43	55-R2.5	(10)	89,338	2.74	42,708
376.20	MAINS COATED AND WRAPPED	29.746.227.02	4,224,164	47-R1.5	(25)	791.250	2.66	55-R2.5	(60)	1,123,107	3.78	331,857
376.20	PLASTIC	120,342,184.10	36,382,883	47-R1.5 47-R1.5	(35)	3,453,821	2.87	55-R2.5 55-R2.5	(60)	3,460,577	2.88	6,756
376.60	CATHODIC PROTECTION	1,082,739.45	682,660	30-S5	(25)	45,150	4.17	30-S5	(60)	50,271	4.64	5,121
	TOTAL MAINS	151,171,150.57	41,289,708			4,290,221	2.84			4,633,955	3.75	343,734
378.20	MEASURING AND REGULATING STATION EQUIPMENT	7,328,248.14	672,808	30-R2	(5)	256,489	3.50	30-R2	(20)	356,985	4.87	100,496
380.00	SERVICES	82,837,046.71	28,479,497	45-R2.5	(65)	3,040,120	3.67	45-R2.5	(90)	3,654,478	4.41	614,358
381.00 382.00	METERS METER INSTALLATIONS	4,624,610.24 26,001,685.36	1,226,613 6,859,297	30-R2 33-R4	0 (10)	154,000 865,856	3.33 3.33	30-R2 30-R3	(15) (10)	247,087 1,098,766	5.34 4.23	93,087 232,910
383.00		733,549.58	212,401	30-R3	0	24,427	3.33	30-R3	0	24,378	3.32	(49)
	OTHER PROPERTY ON CUSTOMERS' PREMISES	1,978,895.03	959,565	13.5-R1.5	0	146,636	7.41	12-R2	0	224,826	11.36	78,190
	TOTAL DISTRIBUTION PLANT	277,936,056.89	80,296,051			8,824,378	3.17			10,329,813	3.72	1,505,435
	GENERAL PLANT											
391.10	OFFICE FURNITURE AND EQUIPMENT	508,134.77	279,936	11.5-S3	0	44,208	8.70	15-SQ	0	33,877	6.67	(10,331)
394.10	TOOLS, SHOP AND GARAGE EQUIPMENT											
	FULLY ACCRUED AMORTIZED	115,969.89 1,314,451.52	115,970 534,112	19-R3 19-R3	0	6,100 69,140	5.26 5.26	25-SQ	0	0 52,539	4.00	(6,100) (16,601)
				19-103	0			25-3Q	U			
	TOTAL TOOLS, SHOP AND GARAGE EQUIPMENT	1,430,421.41	650,082			75,240	5.26			52,539	3.67	(22,701)
397.00	COMMUNICATION EQUIPMENT											
	FULLY ACCRUED	368,887.11	368,887	11-R5	0	33,532	9.09			0	-	(33,532)
	AMORTIZED	1,504,593.10	798,757	11-R5	0	136,768	9.09	15-SQ	0	100,381	6.67	(36,387)
	TOTAL COMMUNICATION EQUIPMENT	1,873,480.21	1,167,644			170,299	9.09			100,381	5.36	(69,918)
397.35	COMMUNICATION EQUIPMENT - ERTs				_							
	FULLY ACCRUED AMORTIZED	1,814,148.86 1,655,997.32	1,814,149 772,348	15-SQ 15-SQ	0	121,004 110,455	6.67 6.67	15-SQ	0	0 110,435	6.67	(121,004)
				13-30	0			13-30	U			(20)
	TOTAL COMMUNICATION EQUIPMENT - ERTs	3,470,146.18	2,586,497			231,459	6.67			110,435	3.18	(121,024)
	TOTAL GENERAL PLANT	7,282,182.57	4,684,159			521,206	7.16			297,232	4.08	(223,974)
	LEAK PRONE PIPE											
376.30	MAINS - BARE STEEL	190,836.93	(2,132,784)	NONDEP	RECIABLE	0				464,724		464,724
376.50	MAINS - JOINT SEALS	542,145.01	542,145		RECIABLE	Ō				0		0
376.80	MAINS - CAST IRON	28,455.49	(1,187,409)	NONDEP	RECIABLE	0				243,173		243,173
	TOTAL LEAK PRONE PIPE	761,437.43	(2,778,047)			0				707,897		707,897
	UNRECOVERED RESERVE TO BE AMORTIZED											
391.10	OFFICE FURNITURE AND EQUIPMENT		18,142							(3,628) *		(3,628)
394.10	TOOLS, SHOP AND GARAGE EQUIPMENT		135,659							(27,132) *		(27,132)
397.00			402,958							(80,592) *		(80,592)
397.35	COMMUNICATION EQUIPMENT - ERTs		179,802							(35,960) *		(35,960)
	TOTAL UNRECOVERED RESERVE TO BE AMORTIZED		736,561							(147,312)		(147,312)
	TOTAL DEPRECIABLE PLANT	285,979,676.89	82,938,723			9,345,584	3.27			11,187,630	3.91	1,842,046

 $<sup>^{\</sup>star}$  5-YEAR AMORTIZATION OF UNRECOVERED RESERVE RELATED TO IMPLEMENTATION OF AMORTIZATION ACCOUNTING

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