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June 29, 2020

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

Re: *Fitchburg Gas and Electric Light Company*, Docket No. ER20-___-000
Request for Updated Depreciation Rates

Dear Secretary Bose,

Pursuant to Section 205 of the Federal Power Act, 16 U.S.C. § 824d and the Federal Energy Regulatory Commission ("Commission") Order No. 618,[1] Fitchburg Gas and Electric Light Company ("FG&E" or the "Company")[2] hereby submit for acceptance proposed changes to the depreciation rates used to calculate FG&E's annual transmission revenue requirements for Pool Transmission Facilities ("PTF") and non-PTF Transmission Service under the ISO-New England Inc. Transmission, Markets and Services Tariff ("ISO-NE Tariff"). Additionally, FG&E is revising Schedule 21-FG&E to the ISO-NE Tariff to incorporate the revised depreciation rates.[3]

Background

FG&E is a participating transmission owner providing PTF and non-PTF transmission services under the ISO-NE Tariff. Costs for PTF transmission services are recovered under Section II, Attachment F formula rates approved by the Commission February 10, 2005. Service over FG&E's non-PTF is provided under Section II, Schedule 21-FG&E of the ISO-NE tariff as approved by the Commission on October 1, 2003 in Docket No. ER03-1410-000. Attachment H

[1] Depreciation Accounting, Order No. 618, FERC Stats. & Regs. [Regs. Preambles] ¶ 31,104 (2000).

[2] FG&E has the FPA section 205 rights over Schedule 21-FG&E of the ISO-NE OATT. This filing is being submitted through the eTariff system by ISO-NE on behalf of FG&E given ISO-NE's capacity as administrator of the ISO-NE OATT in the eTariff system.

[3] FG&E notes that on June 15, 2020, the New England Transmission Owners submitted to FERC a Settlement Agreement to resolve issues under consideration by the Commission in ISO New England Inc.: Participating Transmission Owners Administrative Committee, et al., Docket EL16-19. Today's filing, with respect to FG&E's common and depreciation rates, is consistent with the terms included in the Settlement Agreement. Upon FERC's approval of the Settlement Agreement in Docket EL16-19, FG&E will update its rates to reflect those outlined in today's filing.

of Schedule 21-FG&E provides FG&E the opportunity to recover the costs associated with its own transmission facilities that are not included within the definition of PTF.

In Order No. 618, the Commission determined that utilities changing their method of depreciation for accounting purposes could do so without making a formal filing with the Commission.[4] However, the Commission ruled that any proposal to modify prices charged for transmission services, "whether determined by stated rates or formula rates" must do so pursuant to Section 205 of the FPA.[5] As explained in more detail below, through this filing, FG&E proposes to revise the depreciation rates for its PTF and non-PTF consistent with a depreciation study filed and approved by the Massachusetts Department of Public Utilities ("MDPU") as part of FG&E's 2019 retail rate case. In support of the revised depreciation rates, FG&E submits the testimony of Christopher J. Goulding. Also included are the testimony and depreciation study, prepared by Ned W. Allis, filed and approved for implementation in FG&E's retail rate case before the MDPU. The proposed depreciation rates would be used in the formula rate calculations for PTF and non-PTF transmission going forward.

1. Description of Rate Change and Statement of Reasons for Rate Schedule Change

As explained in the Prepared Direct Testimony of Christopher J. Goulding (Exhibit FG&E-1), FG&E is proposing to reflect updated depreciation rates in its PTF and non-PTF formula rate calculations, as recommended in a depreciation study based on 2018 data and approved by the MDPU as part of FG&E's retail rate filing. The updated depreciation rates are summarized in Exhibit FG&E-2. The Direct Testimony and Depreciation Study of Ned W. Allis submitted before the MDPU is provided as Exhibit FG&E-3. Prior to this proceeding, FG&E last sought to update depreciation rates for PTF formula rates in ER16-1722-000. In ER16-1722-000, FG&E updated its depreciation rates in accordance with the results of a depreciation study filed and approved in its 2015 retail rate case, D.P.U. 15-80/81. This filing was accepted by letter order issued June 10, 2016.[6] As shown in Exhibit FG&E-2, the proposed updates to depreciation rates submitted herein result in an estimated annual decrease of $1,954 to depreciation expense. FG&E submits that the revised depreciation rates will have a *de minimus* effect on the transmission rates of PTF and non-PTF customers.

In recent orders, the Commission has required that all fixed components of a rate must be included in tariff or rate schedules.[7] FG&E has thus revised its formula rate tariff accordingly. The clean and redline tariffs filed in this proceeding contain additional language reflecting the depreciation rate changes discussed herein.

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[4] Order No. 618 at 61,695 n.25.

[5] *Id*.

[6] Letter Order, *Fitchburg Gas and Electric Light Company*, Docket No. ER16-1722-000 (June 10, 2016).

[7] *Arizona Public Service Company*, Letter Order, Docket ER11-4184 (Sept. 26, 2011); *Old Dominion Electric Cooperative*, 133 FERC ¶61,261 (2010).

2. List of Documents Submitted

Included in this filing are the following documents:

- Transmittal Letter
- Exhibit FG&E-1: Direct Testimony of Christopher J. Goulding
- Exhibit FG&E-2: Depreciation Rate Summary
- Exhibit FG&E-3: Direct Testimony and Depreciation Study of Ned W. Allis before the Massachusetts Department of Public Utilities.
- Attachment 1: Clean Tariff showing updated depreciation rates for inclusion in Schedule 21 – FG&E of the ISO-NE Tariff.
- Attachment 2: Redlined Tariff showing updated depreciation rates for inclusion in Schedule 21 – FG&E of the ISO-NE Tariff.
- Attachment 3: List of names and addresses of persons receiving copies of this filing.

3. Proposed Effective Date and request for Waiver of the 60-Day Prior Notice Requirement

FG&E requests that the proposed tariff changes and revised common plant general depreciation rates to be made effective as of March 1, 2020 and the revised general depreciation rates to be made effective as of November 1, 2020. The PTF and non-PTF revenue requirement calculations effective June 1, 2021 are based on 2020 calendar year data, which will include the depreciation rates proposed herein. The effective date of March 1, 2020 for common general plant and November 1, 2020 general plant ensures that the annual revenue requirements for bills rendered on and after June 1, 2021 can be calculated using unadjusted FERC Form 1 data, thus satisfying FERC transparency guidelines.

4. Persons to Whom This Filing Has Been Sent

Attachment 3 to this transmittal letter provides a list of names and addresses of recipients of this filing. In addition, the filing has also been sent to the Massachusetts Department of Public Utilities (MDPU).

Notice of this filing has been communicated electronically to ISO-NE, transmission committee members, the PTO-AC and the New England Conference of Public Utilities Commissioners, Inc. (NECPUC) in accordance with ISO-NE protocols.

This filing will also be posted to the ISO-NE website at http://www.iso-ne.com/participate/filings-orders/pto.

5. Correspondence

Correspondence or communications with respect to this filing may be addressed to the following persons:

Christopher J. Goulding
Director of Rates and Revenue Requirement
Unitil Service Corp.
6 Liberty Lane West
Hampton, NH 03842-1720
(603) 773-6446
gouldingc@unitil.com

Andrew O. Kaplan
Pierce Atwood LLP
100 Summer Street
Boston, MA 02110
(617) 488-8104
akaplan@pierceatwood.com

6. Conclusion

FG&E respectfully requests that the Commission authorize the proposed use of the updated depreciation rates and the proposed revisions to Schedule 21-FG&E. Thank you for your attention to this matter. Please contact the undersigned if you have any questions regarding this filing.

Respectfully submitted,

**FITCHBURG GAS AND ELECTRIC LIGHT COMPANY**

By its attorney,

Andrew O Kaplan

Enclosures

UNITED STATES OF AMERICA

BEFORE THE

FEDERAL ENERGY REGULATORY COMMISSION

Fitchburg Gas and Electric Light Company

Docket No. ER20-___-000

PREPARED DIRECT TESTIMONY

OF

CHRISTOPHER J. GOULDING

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## EXHIBITS

Exhibit FG&E – 2: Depreciation Rate Summary

Exhibit FG&E – 3: Depreciation Study and Testimony of Mr. Ned W. Allis before the Massachusetts Department of Public Utilities

## I. INTRODUCTION AND QUALIFICATIONS

**Q. Please state your name and business address.**

A. My name is Christopher J. Goulding, and my business address is 6 Liberty Lane West, Hampton, New Hampshire 03842.

**Q. What is your position and what are your responsibilities?**

A. I am the Director of Rates and Revenue Requirements for Unitil Service Corp. ("Unitil Service"), a subsidiary of Unitil Corporation that provides managerial, financial, regulatory and engineering services to Unitil Corporation's utility subsidiaries including Fitchburg Gas and Electric Light Company d/b/a Unitil (hereinafter referred to as "Unitil", the "Company", or "FG&E", as appropriate). My responsibilities include all rate and regulatory filings related to the financial requirements of FG&E and Unitil's other subsidiaries.

**Q. Please describe your business and educational background.**

A. In 2000 I was hired by NSTAR Electric & Gas Company ("NSTAR," now Eversource Energy) and held various positions with increasing responsibilities in Accounting, Corporate Finance and Regulatory. I was hired by Unitil Service Corp. in early 2019 to perform my current job responsibilities. I earned a Bachelor of Science degree in Business Administration with a

concentration in Accounting from Northeastern University in 2000 and a Master's in Business Administration from Boston College in 2009.

## II. PURPOSE OF TESTIMONY

**Q. What is the purpose of your testimony?**

A. The purpose of my testimony in this proceeding is to present data in support of Fitchburg Gas and Electric Light Company's ("FG&E") depreciation expense associated with revised depreciation rates for general plant and common plant. FG&E seeks approval to update its depreciation expense related to its internal transmission facilities under formula rates in the ISO-New England Inc. Transmission, Markets and Services Tariff ("ISO-NE Tariff")[1]. FG&E recovers its costs for Pool Transmission Facilities ("PTF") under Section II, Open Access Transmission Tariff, Attachment F of the ISO-NE Tariff. FG&E recovers its costs for non-PTF under Section II, Schedule 21-FG&E, Attachment H of the ISO-NE Tariff.

[1] FG&E notes that on June 15, 2020, the New England Transmission Owners submitted to FERC a Settlement Agreement to resolve issues under consideration by the Commission in *ISO New England Inc.: Participating Transmission Owners Administrative Committee, et al.*, Docket EL16-19. Today's filing, with respect to FG&E's common and depreciation rates, is consistent with the terms included in the Settlement Agreement. Upon FERC's approval of the Settlement Agreement in Docket EL16-19, FG&E will update its rates to reflect those outlined in today's filing.

**Q. Are you aware that utilities, although not required to make a separate filing to obtain Commission approval before implementing changes in depreciation rates for accounting purposes, must obtain Commission authorization to change prices charged for transmission services (whether determined by stated rates or formula rates) to reflect a change in depreciation rates?**

A. Yes. Accordingly, in this filing, FG&E seeks Commission approval to change the rates charged for PTF and non-PTF services to reflect a change in depreciation rates pursuant to the requirements for depreciation accounting, FERC Order No. 618, *Depreciation Accounting*, FERC Stats. and Reg. [Regs. Preambles] ¶ 31,104 (2000).

## III. SUMMARY OF TESTIMONY

**Q. Please summarize your testimony.**

A. As stated above, FG&E seeks approval to update its depreciation expense related to its internal transmission facilities as part of formula rates established in Section II of the ISO-NE Tariff.

**Q. Why is FG&E updating its depreciation rates?**

A. In 2019, FG&E filed general rate cases for the distribution functions of its electric and gas operations with the Massachusetts Department of Public Utilities ("MDPU"). A depreciation study and testimony were prepared and presented by Mr. Ned Allis of Gannett Fleming in those cases. The study scope encompassed all of FG&E's utility plant, including transmission plant. FG&E's previous depreciation study was performed for its general rates cases for the distribution functions of its gas and electric operations in 2015.

**Q. Are you proposing to use this same testimony and depreciation study for this proceeding?**

A. Yes. FG&E is presenting Mr. Ned Allis's depreciation study and testimony in this filing and seeks approval to recover in its transmission rates the depreciation expense associated with revised depreciation rates. On April 17, 2020, the MDPU issued an order in FG&E's retail rate case approving the implementation of the proposed rates in the depreciation study.

**Q. What exhibits in support of the proposed depreciation rates are included in this filing?**

A. Exhibit FG&E-2 is a schedule showing the current and proposed depreciation rates from Mr. Ned Allis's depreciation study for transmission plant, general plant and common plant. The exhibit also shows the allocation of FG&E general plant and common plant to internal transmission, and the resulting changes in depreciation expense based on 2018 data. Exhibit FG&E-3 is a complete copy of Mr. Allis's direct testimony and depreciation study submitted in the MDPU proceedings referenced above.

**Q. In Exhibit FG&E-2, how is the allocation of general plant and common plant to transmission plant derived?**

A. The Company allocates depreciation amounts not directly assigned to transmission with an allocation factor based on the ratio of transmission wages and salaries to total wages and salaries less administrative and general wages and salaries in accordance with the formula rate for PTF under Section

II, Attachment F and the formula rate for non-PTF under Section II, Schedule 21-FG&E, Attachment H of the ISO Tariff.

## IV. APPLICATION OF PROPOSED DEPRECIATION RATES

**Q. What depreciation rates are being proposed for FG&E?**

A. Please refer to Exhibit FG&E-2 for a comparison of the current and proposed depreciation rates for general plant and common plant.

**Q. When is FG&E requesting that these changes be reflected in its transmission charges?**

A. FG&E requests that the revised common plant depreciation rates be made effective as of March 1, 2020 and general plant depreciation rates be made effective November 1, 2020. These dates correspond to MDPU rate case approvals in MDPU 19-130 and MDPU 19-131. FG&E is requesting that these changes be reflected in its transmission charges effective June 1, 2021. PTF and non-PTF revenue requirements become effective June 1, 2021 based on 2020 calendar year data which would include the depreciation rates proposed herein.

**Q. What is the impact to annual depreciation expense related to transmission service resulting from the new depreciation rates?**

A. The estimated impact to annual depreciation expense related to transmission service resulting from the new depreciation rates is an annual decrease of $1,954 in depreciation expense.

## V. CONCLUSION

Q. Does that complete your testimony?

A. Yes.

**UNITED STATES OF AMERICA**
**FEDERAL ENERGY REGULATORY COMMISSION**

**Fitchburg Gas and Electric Light Company )** **Docket No. ER20-____**

**AFFIDAVIT OF CHIRSTOPHER J. GOULDING**

I, Christopher J. Goulding, personally reside at 1 Lagrange Street, Winchester, MA, being duly sworn, states that:

1. I am the Director of Rates and Revenue Requirements for Unitil Service Corp., a subsidiary of Unitil Corporation that provides managerial, financial, regulatory and engineering services to Unitil Corporation's utility subsidiaries including Fitchburg Gas and Electric Light Company.

2. On June 29, 2020, a filing was or will be made to the Federal Energy Regulatory Commission in the above-captioned matter.

3. Included in that filing is my Direct Testimony, which was prepared by me or under my direct supervision. If asked the questions contained in the text of the testimony today, I would give the identical answers that are herein set forth and I adopt the aforesaid answers as my direct testimony in this proceeding.

Christopher J. Goulding

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Subscribed and sworn to before me, this 23rd day of June 2020.

Notary Public

Talwinder Kumar Heera
Print Name

My Commission expires on: 10/12/2023

12158020.1

**Fitchburg Gas and Electric Light Company**
**Depreciation Rate Summary**
**Effective March 1, 2020**

| Acct. | | Current Rate | Proposed Rate | Change In Expense | Transmission Allocation Factor [B] | Allocation Change In Expense | Total Change In Expense |
|---|---|---|---|---|---|---|---|
| | **Transmission** | | | | | | |
| 351 | Clearing Land & Rights of Way | 1.27% | 1.27% | $ - | | | $ - |
| 352 | Structures & Improvements | 2.12% | 2.12% | - | | | - |
| 353 | Station Equipment | 3.92% | 3.92% | - | | | - |
| 355 | Poles & Fixtures | 6.13% | 6.13% | - | | | - |
| 356 | OH Conductors & Devices | 3.51% | 3.51% | - | | | - |
| | Total Transmission | | | $ - | | | $ - |
| | **General** | | | | | | |
| 394 | Tools, Shop & Garage Equipment | 3.22% | 3.22% | $ - | 6.989% | $ - | $ - |
| 395 | Laboratory Equipment | 4.03% | 4.03% | - | 6.989% | - | - |
| 397 | Communication Equipment | 2.64% | 2.64% | - | 6.989% | - | - |
| 398 | Miscellaneous Equipment | 3.56% | 3.56% | - | 6.989% | - | - |
| | Total General | | | $ - | | $ - | $ - |
| | **Common [A]** | | | | | | |
| 390 | Structures & Improvements | 2.64% | 1.98% | $ (48,107) | 6.989% | $ (3,362) | $ (3,362) |
| 391 | Office Furniture & Equipment | 4.59% | 6.67% | 9,862 | 6.989% | 689 | 689 |
| 393 | Stores Equipment | 2.36% | 4.00% | 448 | 6.989% | 31 | 31 |
| 394 | Tools, Shop & Garage Equipment | 2.76% | 5.00% | 2,091 | 6.989% | 146 | 146 |
| 396 | Power Operated Equipment | 1.63% | 0.16% | (10) | 6.989% | (1) | (1) |
| 397 | Communication Equipment | 10.02% | 6.67% | (32,199) | 6.989% | (2,250) | (2,250) |
| 398 | Miscellaneous Equipment | n/a | 5.00% | 2,202 | 6.989% | 154 | 154 |
| | Total Common | | | $ (65,713) | | $ (4,592) | $ (4,592) |
| | **Total Change in Depreciation Expense** | | | | | | **$ (4,592)** |

[A] Exhibit FG&E-3, Page 75 of 280.
[B] Transmission Wages and Salaries Allocation Factor (the ratio of Transmission–related direct wages and salaries to FG&E's total direct wages and salaries, excluding administrative and general wages and salaries), based on 2018 FERC Form 1 page 354 data.

**Fitchburg Gas and Electric Light Company**
**Depreciation Rate Summary**
**Effective November 1, 2020**

| Acct. | | Current Rate | Proposed Rate | Change In Expense | Transmission Allocation Factor [C] | Allocation Change In Expense | Total Change In Expense |
|---|---|---|---|---|---|---|---|
| | **Transmission** | | | | | | |
| 351 | Clearing Land & Rights of Way | 1.27% | 1.27% | $ - | | | $ - |
| 352 | Structures & Improvements | 2.12% | 2.12% | - | | | - |
| 353 | Station Equipment | 3.92% | 3.92% | - | | | - |
| 355 | Poles & Fixtures | 6.13% | 6.13% | - | | | - |
| 356 | OH Conductors & Devices | 3.51% | 3.51% | - | | | - |
| | Total Transmission | | | $ - | | | $ - |
| | **General [A]** | | | | | | |
| 394 | Tools, Shop & Garage Equipment | 3.22% | 4.00% | $ 5,584 | 6.989% | $ 390 | $ 390 |
| 395 | Laboratory Equipment | 4.03% | 5.00% | 3,558 | 6.989% | 249 | 249 |
| 397 | Communication Equipment | 2.64% | 6.67% | 28,268 | 6.989% | 1,976 | 1,976 |
| 398 | Miscellaneous Equipment | 3.56% | 5.00% | 348 | 6.989% | 24 | 24 |
| | Total General | | | $ 37,758 | | $ 2,639 | $ 2,639 |
| | **Common [B]** | | | | | | |
| 390 | Structures & Improvements | 1.98% | 1.98% | $ - | 6.989% | $ - | $ - |
| 391 | Office Furniture & Equipment | 6.67% | 6.67% | - | 6.989% | - | - |
| 393 | Stores Equipment | 4.00% | 4.00% | - | 6.989% | - | - |
| 394 | Tools, Shop & Garage Equipment | 5.00% | 5.00% | - | 6.989% | - | - |
| 396 | Power Operated Equipment | 0.16% | 0.16% | - | 6.989% | - | - |
| 397 | Communication Equipment | 6.67% | 6.67% | - | 6.989% | - | - |
| 398 | Miscellaneous Equipment | 5.00% | 5.00% | - | 6.989% | - | - |
| | Total Common | | | $ - | | $ - | $ - |
| | **Total Change in Depreciation Expense** | | | | | | **$ 2,639** |

[A] Exhibit FG&E-3, Page 73 & 74 of 280.
[B] Current Rates = Page 1 of 2 March 1, 2020 Rates
[C] Transmission Wages and Salaries Allocation Factor (the ratio of Transmission–related direct wages and salaries to FG&E's total direct wages and salaries, excluding administrative and general wages and salaries), based on 2018 FERC Form 1 page 354 data.

**THE COMMONWEALTH OF MASSACHUSETTS**

**DEPARTMENT OF PUBLIC UTILITIES**

# DIRECT TESTIMONY OF

# NED W. ALLIS

# GANNETT FLEMING VALUATION

# AND RATE CONSULTANTS, LLC

**D.P.U. 19-130**

**ON BEHALF OF**

**FITCHBURG GAS AND ELECTRIC LIGHT COMPANY d/b/a UNITIL**

**ELECTRIC DIVISION RATE REQUEST**

**December 17, 2019**

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Schedules:

Schedule Unitil-NWA-1: Depreciation Experience

Schedule Unitil-NWA-2: Depreciation Study

## I. INTRODUCTION

**Q. Please state your name and address.**

A. My name is Ned W. Allis. My business address is 207 Senate Avenue, Camp Hill, Pennsylvania, 17011.

**Q. By whom are you employed and in what capacity?**

A. I am Vice President of Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett Fleming"), which is part of the global infrastructure firm Gannett Fleming, Inc. I am responsible for conducting depreciation, valuation and original cost studies, determining service life and net 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.

**Q. How long have you been associated with Gannett Fleming?**

A. I have been associated with the firm since October 2006.

**Q. On whose behalf are you testifying in this case?**

A. I am testifying on behalf of Fitchburg Gas and Electric Light Company d/b/a Unitil ("Unitil" or the "Company").

**Q. Please state your qualifications.**

A. I have over 13 years of depreciation experience, which includes expert testimony in 34 cases before 11 regulatory commissions. I have worked on more than one hundred

depreciation assignments, which includes assisting other expert witnesses from Gannett Fleming in numerous U.S. jurisdictions and two Canadian provinces. Please refer to Schedule Unitil-NWA-1 for additional information on my qualifications, which includes my leadership in the Society of Depreciation Professionals (the "Society") and participation as a faculty member for depreciation training conducted by the Society.

## II. PURPOSE OF TESTIMONY

**Q. What is the purpose of your testimony?**

A. My testimony will support and explain the Depreciation Study performed for Unitil attached hereto as Schedule Unitil-NWA-2 ("Depreciation Study"). The Depreciation Study sets forth the calculated annual depreciation accrual rates by account for electric and common plant as of December 31, 2018.

**Q. Please summarize the results of your Depreciation Study.**

A. The depreciation rates as of December 31, 2018 appropriately reflect the rates at which the cost of Unitil' assets should be recovered through depreciation expense. These rates are based on the most commonly used methods and procedures for determining depreciation rates. The service life and net salvage parameters are based on widely used techniques and the depreciation rates are based on the straight line method, average service life procedure and remaining life technique.

**Q. Are the recommended depreciation accrual rates presented in the Depreciation Study reasonable and applicable to the plant in service as of December 31, 2018?**

A. Yes, they are. Based on the Depreciation Study, I am recommending depreciation rates using the December 31, 2018 plant and reserve balances for approval.

**Q. What is the effect of the recommended depreciation accrual rates?**

A. As explained in more detail later in my testimony, the Depreciation Study results in an increase of $41,110 in depreciation expense for electric plant and a decrease of $154,303 in depreciation expense for common plant. This represents a relatively moderate change and is primarily the result of the service life and net salvage estimates in the Depreciation Study.

## III. <u>DEPRECIATION STUDY</u>

**Q. Please define the concept of depreciation.**

A. The Federal Energy Regulatory Commission's Uniform System of Accounts Prescribed for Public Utilities and Licensees Subject to the Provisions of the Federal Power Act defines depreciation as follows:

> Depreciation, as applied to depreciable electric plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of electric plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities.[1]

**Q. Did you prepare the Depreciation Study filed by Unitil in this proceeding?**

A. Yes. I prepared the Company's Depreciation Study, which is provided as Schedule Unitil-

[1] 18 C.F.R. § 101, Definition 12.

NWA-2.

**Q. In preparing the Depreciation Study, did you follow generally accepted practices in the field of depreciation?**

A. Yes.

**Q. What is the purpose of the Depreciation Study?**

A. The purpose of my Depreciation Study is to estimate the annual depreciation accruals for Unitil's plant in service for financial and ratemaking purposes, and to determine appropriate service lives and net salvage percentages for each plant account.

**Q. Are the methods and procedures of this Depreciation Study consistent with previous depreciation studies for the Company?**

A. The Depreciation Study uses the same method, procedure and technique for calculating depreciation as used in the previous depreciation study. The study is based on the straight line method, equal life group procedure and remaining life technique.

The retirement rate method, which is an actuarial method of analyzing historical retirement data, was used to estimate life characteristics for the different plant accounts in the study. In previous studies, the Simulated Plant Records ("SPR") method was used due in part to the data that was available. The retirement rate method, which is described in more detail later in this testimony and in the Depreciation Study, is the predominant method used in the industry when aged data is available (*i.e.*, when the vintage year of transactions is known) and has been used for other utilities in Massachusetts. The method used to estimate

net salvage, in which historical cost of removal and gross salvage are expressed as a percentage of retirements, is the predominant approach used for estimating future net salvage and is consistent with the method used in previous depreciation studies.

Another change from previous studies is the use of amortization accounting for most General Plant accounts. Amortization accounting is used by most utilities across the country, including in Massachusetts. This method of accounting is used for accounts with a large number of units, but relatively small asset values and is described in further detail later in this testimony.

**Q. Please describe the contents of the Depreciation Study.**

A. The Depreciation Study is presented in nine parts: Part I, Introduction, presents the scope and basis for the Depreciation Study. Part II, Estimation of Survivor Curves, includes descriptions of the methodology of estimating survivor curves. Parts III and IV set forth the analysis for determining service life and net salvage estimates. Part V, Calculation of Annual and Accrued Depreciation, includes the concepts of depreciation and amortization using the remaining life. Part VI, Results of Study, presents a description of the results of the study and a summary of the depreciation calculations. Part VI also includes Tables 1 and 2 (see pages VI-4 through VI-7), which present the estimated survivor curve, the net salvage percent, the original cost as of December 31, 2018, the book depreciation reserve, and the calculated annual depreciation accrual and rate for each account or subaccount. Parts VII, VIII and IX include graphs and tables that relate to the service life and net salvage analyses, and the detailed depreciation calculations by account. The section beginning on

page VIII-3 presents the results of the net salvage analysis. The section beginning on page IX-3 presents the depreciation calculations related to surviving original cost as of December 31, 2018.

**Q. Please explain how you performed the Depreciation Study.**

A. I used the straight line remaining life method of depreciation (also referred to as the straight line method and remaining life technique), with the average service life procedure. The annual depreciation is based on a method of depreciation accounting that seeks to distribute the unrecovered cost of fixed capital assets over the estimated remaining useful life of each unit, or group of assets, in a systematic and reasonable manner.

For General Plant Accounts 391.00, 393.00, 394.00, 395.00, 397.00 and 398.00, I used the straight line remaining life method of amortization. The annual amortization is based on amortization accounting that distributes the unrecovered cost of fixed capital assets over the remaining amortization period selected for each account and vintage.

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

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

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

A. The service life and net salvage study consisted of compiling historical data from records related to Unitil's plant; analyzing these data to obtain historical trends of survivor characteristics; obtaining supplementary information from Company management and operating personnel concerning practices and plans as they relate to plant operations; and interpreting the data and the estimates used by other electric utilities to form judgments of average service life and net salvage characteristics.

**Q. What historical data did you analyze for the purpose of estimating service life characteristics?**

A. I analyzed the Company's accounting entries that record plant transactions during the period 1969 through 2018 to the extent available. The transactions I analyzed included additions, retirements, transfers, and the related balances.

**Q. What method did you use to analyze these service life data?**

A. I used the retirement rate method for most plant accounts. This is the most appropriate method when retirement data covering a long period of time is available, because this method determines the average rates of retirement actually experienced by the Company during the period of time covered by the Depreciation Study.

**Q. Please describe how you used the retirement rate method to analyze Unitil's service life data.**

A. I applied the retirement rate analysis to each different group of property in the study. For each property group, I used the retirement rate data to form a life table which, when plotted, shows an original survivor curve for that property group. Each original survivor curve

represents the average survivor pattern experienced by the several vintage groups during the experience band studied. The survivor patterns do not necessarily describe the life characteristics of the property group; therefore, interpretation of the original survivor curves is required in order to use them as valid considerations in estimating service life. The "Iowa-type survivor curves" were used to perform these interpretations.

**Q. What are "Iowa-type survivor curves" and how did you use such curves to estimate the service life characteristics for each property group?**

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

Iowa-type survivor curves are used to smooth and extrapolate original survivor curves determined by the retirement rate method. The Iowa curves and truncated Iowa curves were used in the Depreciation Study to describe the forecasted rates of retirement based on the observed rates of retirement and the outlook for future retirements. The estimated survivor curve designations for each depreciable property group indicate the average service life, the family within the Iowa system to which the property group belongs, and the relative height of the mode. For example, the Iowa 55-R2.5 indicates an average service life of 55 years; a right-moded, or R, type curve (the mode occurs after average life for right-moded curves); and a moderate height, 2.5, for the mode (possible modes for R type curves range

from 0.5 to 5).

**Q. Had the retirement rate method been used in Unitil's previous depreciation studies?**

A. No. Aged accounting data was available for the study since 2008. In previous depreciation studies, the SPR method was used in part because of the period time for which aged data was available. For the current study, because a longer period of aged data is available, the retirement rate method is the preferred method. Additionally, in order to have a longer and more robust period available for study, Company recorded retirements for years prior to 2008 were statistically aged. The statistical aging process, which is an accepted method for periods for which aged data is not available, uses Iowa survivor curve types to estimate vintage years for the Company's recorded retirements. It is generally understood that having a longer period of historic data can provide value to the historical life analysis based on the retirement rate method, which supports incorporating the statistically aged data into the life analysis. The approach of statistically aging unaged data has been used in other situations in which aged data was only available for a certain period of time and allows for a longer period of study that encompasses more of the full life cycle of the assets studied.

**Q. Does the retirement rate method allow for the study of different time periods for the available data?**

A. Yes. When using the retirement rate method, bands of years can be studied. For example, in the Depreciation Study bands were analyzed that incorporated the full period of available data (aged and statistically aged). Bands were also analyzed that only incorporated aged data.

**Q. Did you physically observe Unitil's plant and equipment as part of your Depreciation Study?**

A. Yes. I made a field review of Unitil's property as part of this study during July 2019 to observe representative portions of plant. Field reviews are conducted to become familiar with Company operations and obtain an understanding of the function of the plant and information with respect to the reasons for past retirements and the expected future causes of retirements. This knowledge, as well as information from other discussions with Unitil's management and operating personnel, was incorporated in the interpretation and extrapolation of the statistical analyses.

**Q. How did your experience in the development of other depreciation studies affect your work in this case for Unitil?**

A. Because I customarily conduct field reviews for my depreciation studies, I have had the opportunity to visit many similar facilities and meet with management and operations personnel at many other companies. The knowledge I have accumulated from those visits and meetings provides me with useful information to draw upon to confirm or challenge my numerical analyses concerning asset condition and remaining life estimates.

**Q. Please explain the concept of "net salvage".**

A. Net salvage is a component of the service value of capital assets that is recovered through depreciation rates. The service value of an asset is its original cost less its net salvage. Net salvage is the salvage value received for the asset upon retirement less the cost to retire the asset. When the cost to retire the asset exceeds the salvage value, the result is negative net

salvage.

Because depreciation expense is the loss in service value of an asset during a defined period (*e.g.*, one year), it must include a ratable portion of both the original cost of the asset and the net salvage. That is, the net salvage related to an asset should be incorporated in the cost of service during the same period as its original cost, so that customers receiving service from the asset pay rates that include a portion of both elements of the asset's service value, the original cost and the net salvage value. For example, the full service value of a $1,000 pole may also include $1,000 of cost of removal and $100 gross salvage, for a total service value of $1,900.

**Q. Please describe how you estimated net salvage percentages.**

A. I estimated the net salvage percentages by incorporating the Company's actual historical data for the period 1981 through 2018, to the extent available, and considered other factors such as the industry experience of net salvage estimates for other electric companies. The net salvage percentages in the Depreciation Study are based on a combination of statistical analyses and informed judgment. The statistical analyses consider the cost of removal and gross salvage ratios to the associated retirements during the 38-year period. Trends of these data are also measured based on three-year moving averages and the most recent five-year indications. In addition to the analysis of the overall range of data and moving averages, the analysis of data since 2002 was also considered.

**Q. Please describe the second phase of the process that you used in the Depreciation Study in which you calculated composite remaining lives and annual depreciation**

**accrual rates.**

A. After I estimated the service life and net salvage characteristics for each depreciable property group, I calculated the annual depreciation accrual rates for each group using the straight line remaining life method, and using remaining lives weighted consistent with the average service life procedure. The calculation of annual depreciation accrual rates were developed as of December 31, 2018.

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

A. The straight line remaining life method of depreciation (also referred to as the straight line method and remaining life technique) allocates the original cost of the property, less accumulated depreciation, less future net salvage, in equal amounts to each year of remaining service life.

**Q. Please describe the average service life procedure for calculating remaining life accrual rates.**

A. The average service life procedure defines the group or account for which the remaining life annual accrual is determined. Under this procedure, the annual accrual rate is determined for the entire group or account based on its average remaining life and the rate is then applied to the surviving balance of the group's cost. The average remaining life of the group is calculated by first dividing the future book accruals (original cost less allocated book reserve less future net salvage) by the average remaining life for each vintage. The average remaining life for each vintage is derived from the area under the survivor curve between the attained age of the vintage and the maximum age. The sum of the future book

accruals is then divided by the sum of the annual accruals to determine the average remaining life of the entire group for use in calculating the annual depreciation accrual rate.

**Q. Please describe amortization accounting in contrast to depreciation accounting.**

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

**Q. Is amortization accounting being utilized for certain plant accounts?**

A. Yes. However, amortization accounting is only appropriate for certain General Plant accounts. These accounts are 391.00, 393.00, 394.00, 395.00, 397.00 and 398.00, which represent slightly more than 2.5% of Unitil's depreciable electric and common plant.

**Q. Have you made additional recommendations for these amortization accounts?**

A. Yes. In order to achieve a more stable accrual rate for these accounts in the future, I have recommended a five-year amortization to adjust for unrecovered reserve due to the implementation of amortization accounting. This approach will achieve consistent amortization rates for existing assets as well as future assets.

**Q. Please use an example to illustrate how the annual depreciation accrual rate for a particular group of property is presented in your Depreciation Study.**

A. I will use Account 364.00, Poles, Towers and Fixtures, as an example because it is one of the larger depreciable accounts and provides a good illustration of the methods used in the Depreciation Study. The retirement rate method was used to analyze the survivor characteristics of this property group. Plant accounting data, both aged and statistically aged, was compiled from 1970 through 2018 and analyzed in periods that best represent the overall service life of this property. The life tables for the 1970-2018 experience band (which represents the full range of available data) and the 2008-2018 experience band (which does not include the statistically aged data) are presented on pages VII-49 through VII-54 of the Depreciation Study. The life tables display the retirement and surviving ratios of the aged plant data exposed to retirement by age interval. For example, page VII-49 of the study shows $42,624 retired at age 0.5 with $32,771,308 exposed to retirement.

Consequently, the retirement ratio is 0.0013 and the surviving ratio is 0.9987. These life tables, or original survivor curves, are plotted along with the estimated smooth survivor curve, the 55-R2.5 on page VII-48 of the study.

The net salvage analysis is presented on pages VIII-14 and VIII-15 of the Depreciation Study. The net salvage percentages shown on these pages are based on the result of annual gross salvage minus the cost to remove plant assets as compared to the original cost of plant retired during the period 1981 through 2018. This 38-year period experienced $2,220,685 ($316,848 - $2,537,532) in negative net salvage for $2,170,772 plant retired. The result is negative net salvage of 102 percent ($2,220,685/$2,170,772). Based on the overall negative 102 percent net salvage and the most recent five year average of negative 102 percent net salvage, as well as industry ranges and Company expectations, it was determined that negative 90 percent is the most appropriate estimate.

The calculation of the annual depreciation related to the original cost at December 31, 2018, is presented on pages IX-14 and IX-15 of the study. The calculation is based on the 55-R2.5 survivor curve, 90 percent negative net salvage, the attained age, and the allocated book reserve. The tabulation sets forth the installation year, the original cost, calculated accrued depreciation, allocated book reserve, future accruals, remaining life and annual accrual. These totals are brought forward to the table on page VI-4 of the Depreciation Study.

**Q. Please compare the proposed depreciation expense to the current pro-forma depreciation expense as of December 31, 2018.**

A. The overall change reflected in the Depreciation Study for electric plant is an increase of $41,110 annually, and for common plant a decrease of $154,303 annually. The minor increase for electric plant results from the updated plant balances and updated survivor curve and net salvage percent estimates. The decrease in common plant depreciation is primarily due to the DOC Facility.

**Q. Does this conclude your direct testimony?**

A. Yes.

**NED W. ALLIS**

**DEPRECIATION EXPERIENCE**

**Q. Please state your name.**

A. My name is Ned W. Allis.

**Q. What is your educational background?**

A. I have a Bachelor of Science degree in Mathematics from Lafayette College in Easton, PA.

**Q. Do you belong to any professional societies?**

A. Yes. I am a member and current 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 as an instructor for depreciation courses offered by the Society.

**Q. Do you hold any special certification as a depreciation expert?**

A. Yes. The Society of Depreciation Professionals has established national standards for depreciation professionals. The Society administers an examination to become certified in this field. I passed the certification exam in September 2011 and was recertified in March 2017.

**Q. Please outline your experience in the field of depreciation.**

A. I joined Gannett Fleming in October 2006 as an analyst. My responsibilities included assembling data required for depreciation studies, conducting statistical analyses of service life and net salvage data, calculating annual and accrued depreciation, and assisting in preparing reports and testimony setting forth and defending the results of the studies. I also developed and maintained Gannett Fleming's proprietary depreciation software. In March 2013, I was promoted to the position of Supervisor of Depreciation Studies. In March 2017

I was promoted to Project Manager, Depreciation and Technical Development. In January 2019, I was promoted to my current position of Vice President. In my current position, I am responsible for conducting depreciation, valuation and original cost studies, determining service life and salvage estimates, conducting field reviews, presenting recommended depreciation rates to clients, and supporting such rates before state and federal regulatory agencies. I am also responsible for Gannett Fleming's proprietary depreciation software, training of depreciation staff, and the development of solutions for technical issues related to depreciation. Since joining Gannett Fleming, I have worked on more than one hundred depreciation assignments.

**Q. Have you submitted testimony to any state utility commission on the subject of utility plant depreciation?**

A. Yes. I have submitted testimony on depreciation related topics to the Connecticut Public Utilities Regulatory Authority, the New York Department of Public Service, the New Jersey Board of Public Utilities, the Nevada Public Utilities Commission, the Florida Public Service Commission, the District of Columbia Public Service Commission, the California Public Utilities Commission, the Rhode Island Public Utilities Commission, the Massachusetts Department of Public Utilities, the Kansas Corporation Commission, the Maryland Public Service Commission and the Federal Energy Regulatory Commission ("FERC"). Please see pages 4 and 5 for a list of cases in which I have submitted testimony.

**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 Depreciation Study."

**Q. Does this conclude your qualification statement?**

A. Yes.

LIST OF CASES IN WHICH NED W. ALLIS SUBMITTED TESTIMONY

| | Year | Jurisdiction | Docket No. | Client/Utility | Subject |
|---|---|---|---|---|---|
| 01. | 2013 | NV | 13-06004 | Sierra Pacific Power Company | Depreciation |
| 02. | 2013 | NY | 13-E-0030, 13-G-0031 & 13-S-0032 | Consolidated Edison Company of New York | Depreciation |
| 03. | 2013 | DC | Case No. 1103 | 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 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 TO18 | 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 TO19 | 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 TO20 | Depreciation |

| | | | | | |
|---|---|---|---|---|---|
| 27. | 2018 | FERC | ER19-284-000 | Florida Power & Light Company | Depreciation |
| 28. | 2018 | CA | A. 18-12-009 | Pacific Gas & Electric Company | Depreciation |
| 29. | 2018 | NY | 19-E-0065 | Consolidated Edison Company of New York - Electric | Depreciation |
| 30. | 2018 | NY | 19-G-0065 | Consolidated Edison Company of New York - Gas | Depreciation |
| 31. | 2019 | MA | 18-150 | Massachusetts Electric Company | PBR / Depreciation |
| 32. | 2019 | MD | 9610 | Baltimore Gas & Electric Company | Depreciation |
| 33. | 2019 | NJ | ER19050552 | Rockland Electric Company | Depreciation |
| 34. | 2019 | KS | 19-ATMG-525-RTS | Atmos Energy Corporation | Depreciation |

# FITCHBURG GAS AND ELECTRIC LIGHT COMPANY

FITCHBURG, MASSACHUSSETS

# 2018 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO ELECTRIC AND COMMON PLANT
AS OF DECEMBER 31, 2018

*Prepared by:*

Gannett Fleming

*Excellence Delivered* ***As Promised***

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY

Fitchburg, Massachusetts

# 2018 DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO ELECTRIC AND COMMON PLANT
AS OF DECEMBER 31, 2018

GANNETT FLEMING VALUATION AND RATE CONSULTANTS, LLC

Harrisburg, Pennsylvania

Gannett Fleming

*Excellence Delivered* ***As Promised***

December 3, 2019

Fitchburg Gas and Electric Light Company
6 Liberty Lane West
Hampton, NH 03842

Attention Mr. Joseph F. Connelly
Regulatory Controller

Ladies and Gentlemen:

Pursuant to your request, we have conducted a depreciation study related to the electric and common plant of Fitchburg Gas and Electric Light Company as of December 31, 2018. The attached report presents a description of the methods used in the estimation of depreciation, the summary of annual depreciation accrual rates, the statistical support for the life and net salvage estimates and the detailed tabulations of annual depreciation.

Respectfully submitted,

GANNETT FLEMING VALUATION
AND RATE CONSULTANTS, LLC.

NED W. ALLIS
Vice President

NWA:mle

065832.100

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# FITCHBURG GAS AND ELECTRIC LIGHT COMPANY

# DEPRECIATION STUDY

## EXECUTIVE SUMMARY

Pursuant to Fitchburg Gas and Electric Light Company's ("Fitchburg Gas and Electric" or "Company") request, Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett Fleming") conducted a depreciation study related to the electric and common plant of Fitchburg Gas and Electric as of December 31, 2018. 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 a moderate change in depreciation expense. The most significant changes in the depreciation study are the use of actuarial data for life analysis and the recommended life span for the Company's DOC facility. Amortization accounting is also recommended for many general plant 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 2008 through 2018. In order to analyze data for a longer period of time, the unaged data used in the previous depreciation study was statistically aged and incorporated into

the actuarial life analysis. While generally the study resulted in increases in service lives for many accounts, this was offset by more negative net salvage for many accounts. For electric plant, the overall result was a moderate increase in depreciation expense. For Common plant, the overall result was a decrease in depreciation expense. This decrease was primarily the result of a longer life for the new DOC Facility.

Gannett Fleming recommends the calculated annual depreciation accrual rates set forth herein apply specifically to electric and common plant in service as of December 31, 2018 as summarized by Table 1 and Table 2 of the study. Supporting analysis and calculations are provided within the study.

The study results set forth an annual depreciation expense of approximately $6.7 million for electric plant and $0.5 million for common plant when applied to depreciable plant balances as of December 31, 2018. The results are summarized at the functional level as follows:

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

| FUNCTION | ORIGINAL COST | ACCRUAL RATE | ANNUAL ACCRUAL |
|---|---|---|---|
| **ELECTRIC PLANT** | | | |
| OTHER PRODUCTION PLANT | $ 2,829,776.08 | 5.86 | $ 165,947 |
| TRANSMISSION PLANT | 13,007,843.99 | 4.00 | 520,380 |
| DISTRIBUTION PLANT | 137,849,228.99 | 4.33 | 5,965,596 |
| GENERAL PLANT | 1,812,820.40 | 4.29 | 77,821 |
| UNRECOVERED RESERVE ADJUSTMENT FOR AMORTIZATION | | | 10,672 |
| **TOTAL ELECTRIC PLANT** | **$155,499,669.46** | 4.33 | **$6,740,416** |
| **COMMON PLANT** | | | |
| GENERAL PLANT | $ 17,274,614.43 | 2.60 | $ 449,154 |
| UNRECOVERED RESERVE ADJUSTMENT FOR AMORTIZATION | | | 6,198 |
| **TOTAL COMMON PLANT** | **$ 17,274,614.43** | 2.64 | **$ 455,352** |

# PART I. INTRODUCTION

# FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
# DEPRECIATION STUDY

## PART I. INTRODUCTION

### SCOPE

This report sets forth the results of the depreciation study for Fitchburg Gas and Electric Light Company ("Fitchburg Gas and Electric" or "Company"), to determine the annual depreciation accrual rates and amounts for book purposes applicable to the original cost of electric and common plant as of December 31, 2018. 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 electric and common plant in service as of December 31, 2018.

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 2018, a review of Company practice and outlook as they relate to plant operation and retirement, and consideration of current practice in the electric industry, including knowledge of service lives and net salvage estimates used for other electric companies.

### PLAN OF REPORT

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

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

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 electric industry, and comparisons of the service life and net salvage estimates from our studies of other electric utilities. The use of survivor curves to reflect the expected dispersion of retirement provides a consistent method of estimating depreciation for electric plant. Iowa type survivor curves were used to depict the estimated survivor curves for the plant accounts not subject to amortization accounting.

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

# PART II. ESTIMATION OF SURVIVOR CURVES

## PART II. ESTIMATION OF SURVIVOR CURVES

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

### SURVIVOR CURVES

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

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

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

**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 Iowa type curves. There are four families in the Iowa 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 Iowa curves were developed at the Iowa 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,

Figure 1. A Typical Survivor Curve and Derived Curves

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

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

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

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

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."[1] In 1957, Frank V. B. Couch, Jr., an Iowa State College graduate student submitted a thesis presenting his development of the fourth family consisting of the four O type survivor curves.

**Retirement Rate Method of Analysis**

The retirement rate method is an actuarial method of deriving survivor curves using the average rates at which property of each age group is retired. The method relates to property groups for which aged accounting experience is available and is the method used to develop the original stub survivor curves in this study. The method (also known as the annual rate method) is illustrated through the use of an example in the following text, and is also explained in several publications, including "Statistical Analyses of Industrial Property Retirements,"[2] "Engineering Valuation and Depreciation,"[3] and "Depreciation Systems."[4]

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

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

[2]Winfrey, Robley, Statistical Analyses of Industrial Property Retirement. Iowa State College Engineering Experiment Station, Bulletin 125. 1935.

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

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

aged property transactions, a schedule of plant exposed to retirement, a life table and illustrations of smoothing the stub survivor curve.

**Schedules of Annual Transactions in Plant Records**

The property group used to illustrate the retirement rate method is observed for the experience band 2009-2018 during which there were placements during the years 2004-2018. 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 2004 were retired in 2009. 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 2009 retirements of 2004 installations and ending with the 2018 retirements of the 2013 installations. Thus, the total amount of 143 for age interval 4½-5½ equals the sum of:

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

SCHEDULE 1. RETIREMENTS FOR EACH YEAR 2009-2018
SUMMARIZED BY AGE INTERVAL

Experience Band 2009-2018 | Placement Band 2004-2018

| Year Placed | Retirements, Thousands of Dollars During Year 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | Total During Age Interval | Age Interval |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
| 2004 | 10 | 11 | 12 | 13 | 14 | 16 | 23 | 24 | 25 | 26 | 26 | 13½-14½ |
| 2005 | 11 | 12 | 13 | 15 | 16 | 18 | 20 | 21 | 22 | 19 | 44 | 12½-13½ |
| 2006 | 11 | 12 | 13 | 14 | 16 | 17 | 19 | 21 | 22 | 18 | 64 | 11½-12½ |
| 2007 | 8 | 9 | 10 | 11 | 11 | 13 | 14 | 15 | 16 | 17 | 83 | 10½-11½ |
| 2008 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 17 | 19 | 20 | 93 | 9½-10½ |
| 2009 | 4 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 20 | 105 | 8½-9½ |
| 2010 | | 5 | 11 | 12 | 13 | 14 | 15 | 16 | 18 | 20 | 113 | 7½-8½ |
| 2011 | | | 6 | 12 | 13 | 15 | 16 | 17 | 19 | 19 | 124 | 6½-7½ |
| 2012 | | | | 6 | 13 | 15 | 16 | 17 | 19 | 19 | 131 | 5½-6½ |
| 2013 | | | | | 7 | 14 | 16 | 17 | 19 | 20 | 143 | 4½-5½ |
| 2014 | | | | | | 8 | 18 | 20 | 22 | 23 | 146 | 3½-4½ |
| 2015 | | | | | | | 9 | 20 | 22 | 25 | 150 | 2½-3½ |
| 2016 | | | | | | | | 11 | 23 | 25 | 151 | 1½-2½ |
| 2017 | | | | | | | | | 11 | 24 | 153 | ½-1½ |
| 2018 | | | | | | | | | | 13 | 80 | 0-½ |
| Total | 53 | 68 | 86 | 106 | 128 | 157 | 196 | 231 | 273 | 308 | 1,606 | |

SCHEDULE 2. OTHER TRANSACTIONS FOR EACH YEAR 2009-2018
SUMMARIZED BY AGE INTERVAL

Experience Band 2009-2018 | Placement Band 2004-2018

| Year Placed | Acquisitions, Transfers and Sales, Thousands of Dollars During Year | | | | | | | | | | Total During Age Interval | Age Interval |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
| 2004 | - | - | - | - | - | - | 60[a] | - | - | - | - | 13½-14½ |
| 2005 | - | - | - | - | - | - | - | - | - | - | - | 12½-13½ |
| 2006 | - | - | - | - | - | - | - | - | - | - | - | 11½-12½ |
| 2007 | - | - | - | - | - | - | - | (5)[b] | - | - | 60 | 10½-11½ |
| 2008 | - | - | - | - | - | - | - | 6[a] | - | - | - | 9½-10½ |
| 2009 | - | - | - | - | - | - | - | - | - | - | (5) | 8½-9½ |
| 2010 | | - | - | - | - | - | - | - | - | - | 6 | 7½-8½ |
| 2011 | | | - | - | - | - | - | - | - | - | - | 6½-7½ |
| 2012 | | | | - | - | - | - | (12)[b] | - | - | - | 5½-6½ |
| 2013 | | | | | - | - | - | - | 22[a] | - | - | 4½-5½ |
| 2014 | | | | | | - | - | (19)[b] | - | - | 10 | 3½-4½ |
| 2015 | | | | | | | - | - | - | - | - | 2½-3½ |
| 2016 | | | | | | | | - | - | (102)[c] | (121) | 1½-2½ |
| 2017 | | | | | | | | | - | - | - | ½-1½ |
| 2018 | | | | | | | | | | | - | 0-½ |
| Total | - | - | - | - | - | - | 60 | (30) | 22 | (102) | (50) | |

[a] Transfer Affecting Exposures at Beginning of Year
[b] Transfer Affecting Exposures at End of Year
[c] Sale with Continued Use
Parentheses Denote Credit Amount.

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 2009 through 2018 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 2014 are calculated in the following manner:

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

SCHEDULE 3. PLANT EXPOSED TO RETIREMENT
JANUARY 1 OF EACH YEAR 2009-2018
SUMMARIZED BY AGE INTERVAL

Experience Band 2009-2018 | Placement Band 2004-2018

| Year Placed | Exposures, Thousands of Dollars — Annual Survivors at the Beginning of the Year | | | | | | | | | | Total at Beginning of Age Interval | Age Interval |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
| 2004 | 255 | 245 | 234 | 222 | 209 | 195 | 239 | 216 | 192 | 167 | 167 | 13½-14½ |
| 2005 | 279 | 268 | 256 | 243 | 228 | 212 | 194 | 174 | 153 | 131 | 323 | 12½-13½ |
| 2006 | 307 | 296 | 284 | 271 | 257 | 241 | 224 | 205 | 184 | 162 | 531 | 11½-12½ |
| 2007 | 338 | 330 | 321 | 311 | 300 | 289 | 276 | 262 | 242 | 226 | 823 | 10½-11½ |
| 2008 | 376 | 367 | 357 | 346 | 334 | 321 | 307 | 297 | 280 | 261 | 1,097 | 9½-10½ |
| 2009 | 420[a] | 416 | 407 | 397 | 386 | 374 | 361 | 347 | 332 | 316 | 1,503 | 8½-9½ |
| 2010 | | 460[a] | 455 | 444 | 432 | 419 | 405 | 390 | 374 | 356 | 1,952 | 7½-8½ |
| 2011 | | | 510[a] | 504 | 492 | 479 | 464 | 448 | 431 | 412 | 2,463 | 6½-7½ |
| 2012 | | | | 580[a] | 574 | 561 | 546 | 530 | 501 | 482 | 3,057 | 5½-6½ |
| 2013 | | | | | 660[a] | 653 | 639 | 623 | 628 | 609 | 3,789 | 4½-5½ |
| 2014 | | | | | | 750[a] | 742 | 724 | 685 | 663 | 4,332 | 3½-4½ |
| 2015 | | | | | | | 850[a] | 841 | 821 | 799 | 4,955 | 2½-3½ |
| 2016 | | | | | | | | 960[a] | 949 | 926 | 5,719 | 1½-2½ |
| 2017 | | | | | | | | | 1,080[a] | 1,069 | 6,579 | ½-1½ |
| 2018 | | | | | | | | | | 1,220[a] | 7,490 | 0-½ |
| Total | 1,975 | 2,382 | 2,824 | 3,318 | 3,872 | 4,494 | 5,247 | 6,017 | 6,852 | 7,799 | 44,780 | |

[a]Additions during the year

For the entire experience band 2009-2018, 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:

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

**Original Life Table**

The original life table, illustrated in Schedule 4 on page II-16, is developed from the totals shown on the schedules of retirements and exposures, Schedules 1 and 3, respectively. The exposures at the beginning of the age interval are obtained from the corresponding age interval of the exposure schedule, and the retirements during the age interval are obtained from the corresponding age interval of the retirement schedule. The retirement ratio is the result of dividing the retirements during the age interval by the exposures at the beginning of the age interval. The percent surviving at the beginning of each age interval is derived from survivor ratios, each of which equals one minus the retirement ratio. The percent surviving 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 4½ to 5½ | = | 143,000 | | | | |
| Retirement Ratio | = | 143,000 ÷ 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

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

Experience Band 2009-2018 Placement Band 2004-2018

(Exposure and Retirement Amounts are in Thousands of Dollars)

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

Column 2 from Schedule 3, Column 12, Plant Exposed to Retirement.
Column 3 from Schedule 1, Column 12, Retirements for Each Year.
Column 4 = Column 3 Divided by Column 2.
Column 5 = 1.0000 Minus Column 4.
Column 6 = Column 5 Multiplied by Column 6 as of the Preceding Age Interval.

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

**Smoothing the Original Survivor Curve**

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

The Iowa 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 Iowa 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 Iowa 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 Iowa curve would be selected as the most representative of the plotted survivor characteristics of the group.

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

FIGURE 7. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN S0 IOWA TYPE CURVE
ORIGINAL AND SMOOTH SURVIVOR CURVES

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

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

# PART III. SERVICE LIFE CONSIDERATIONS

# PART III. SERVICE LIFE CONSIDERATIONS

## FIELD TRIPS

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

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

July 30-31, 2019
- Sawyer Solar Facility
- Flagg Pond Substation
- Princeton Road Substation
- Summer Street Substation
- Electric Avenue Service Center

## 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 electric companies. For the statistical analysis, aged data were available from 2008 through 2018. 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 2008. The data for the years prior to 2008 were the same data as the unaged data used in prior depreciation studies and were statistically aged using the historical unaged activity and the currently approved Iowa survivor curve

types. The resulting database allowed for the study of data using the retirement rate method from 1970 through 2018 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 80 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.

TRANSMISSION PLANT
- 353 Station Equipment
- 355 Poles and Fixtures

DISTRIBUTION PLANT
- 362 Station Equipment
- 364 Poles, Towers and Fixtures
- 365 Overhead Conductors and Devices
- 368 Line Transformers
- 369 Services
- 371 Installations on Customers' Premises
- 373 Street Lighting and Signal Systems

Account 364, Poles, Towers and Fixtures is one of the largest electric accounts and is used to illustrate the manner in which the study was conducted for the groups using the retirement rate method. Aged retirement data was available from 2008 through 2018. These data were coded in the course of the Company's normal recordkeeping according to plant account or property group, type of transaction, year in which the transaction took place, and year in which the electric plant was placed in service. Statistically aged data was also available from 1970 through 2007. Both the full range of data from 1970 through

2018 and the aged data from 2008 through 2018 were analyzed using the retirement rate method.

Retirements for poles typically occur do to decay, damage, clearances, relocations and as the result of the Company's pole inspection program. The current survivor curve estimate for this account is the 50-S2. The retirement rate analysis indicates a longer service life than the current estimate. 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-48 of the study. The original life tables depicted on the chart are presented on the pages that follow the chart. Typical estimates in the industry for poles, towers and fixtures range from 40 to 60 years. 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 electric companies.

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

**Life Span Estimates**

The life span method is appropriate for certain types of facilities, such as the Company's new DOC facility in common plant Account 390, Structures and Improvements, in which all assets at the facility are expected to be retired concurrently upon the final retirement of the facility. The life span estimate for this facility was based on current Company policies and outlook as determined during field review, discussions with management and the range of estimates from other electric utility companies. The

life span for this facility is 60 years. This estimate is consistent with the range of estimates of other facilities in the industry and the life span for major structures for other Massachusetts utilities.

# PART IV. NET SALVAGE CONSIDERATIONS

# PART IV. NET SALVAGE CONSIDERATIONS

## NET SALVAGE ANALYSIS

The estimates of net salvage by account were based in part on historical data compiled for the years 1981 through 2018. 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 1981 through 2018 contributed significantly toward the net salvage estimates for 12 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.

TRANSMISSION PLANT

353 Station Equipment
355 Poles and Fixtures
356 Overhead Conductors and Devices

DISTRIBUTION PLANT

361 Structures and Improvements
362 Station Equipment
364 Poles, Towers and Fixtures
365 Overhead Conductors and Devices
366 Underground Conduit
367 Underground Conductors and Devices
368 Line Transformers
369 Services
370 Meters and Meter Installations

The net salvage estimate for Account 364, Poles, Towers and Fixtures, will be used to illustrate the methods for estimating net salvage. The current net salvage estimate is negative 85 percent. The historical data indicates a more negative estimate than the current estimate. The overall average net salvage is negative 102 percent. The most recent five-year average is also negative 102 percent. Based on the historical data and the expectations provided by management for this account, a more negative net salvage estimate is recommended. However, a more gradual change to negative 90 percent, which is within the range of estimates used by other electric companies, is recommended at this time. If net salvage trends continue, it is likely that a more negative net salvage estimate will be appropriate in the next study.

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

# 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:

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

The accrued depreciation is:

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

**Remaining Life Annual Accruals**

For the purpose of calculating remaining life accruals as of December 31, 2018, 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, 2018, 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

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 electric plant in service. The accounts and their amortization periods are as follows:

| ACCT | TITLE | AMORTIZATION PERIOD, YEARS |
|---|---|---|
| 391 | Office Furniture and Equipment | 15 |
| 393 | Stores Equipment | 25 |
| 394 | Tools, Shop and Garage Equipment | 25 |
| 395 | Laboratory Equipment | 20 |
| 397 | Communication Equipment | 15 |
| 398 | Miscellaneous Equipment | 20 |

For the purpose of calculating annual amortization amounts as of December 31, 2018, the book depreciation reserve for each plant account or subaccount is assigned or allocated to vintages. The book reserve assigned to vintages with an age greater than the amortization period is equal to the vintage's original cost. The remaining book reserve is allocated among vintages with an age less than the amortization period in proportion to the calculated accrued amortization. The calculated accrued amortization is equal to the original cost multiplied by the ratio of the vintage's age to its amortization period. The

annual amortization amount is determined by dividing the future amortizations (original cost less allocated book reserve) by the remaining period of amortization for the vintage.

# PART VI. RESULTS OF STUDY

# PART VI. RESULTS OF STUDY

## QUALIFICATION OF RESULTS

The calculated annual and accrued depreciation are the principal results of the study. Continued surveillance and periodic revisions are normally required to maintain continued use of appropriate annual depreciation accrual rates. An assumption that accrual rates can remain unchanged over a long period of time implies a disregard for the inherent variability in service lives and salvage and for the change of the composition of property in service. The annual accrual rates were calculated in accordance with the straight line remaining life method of depreciation, using the 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 electric plant in service as of December 31, 2018. For most plant accounts, the application of such rates to future balances that reflect additions subsequent to December 31, 2018, 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 electric utilities. The results of the statistical analysis of service life are presented in the section beginning on page VII-2, within the supporting documents of this report.

For each depreciable group analyzed by the retirement rate method, a chart depicting the original and estimated survivor curves followed by a tabular presentation of

the original life table(s) plotted on the chart. The survivor curves estimated for the depreciable groups are shown as dark smooth curves on the charts. Each smooth survivor curve is denoted by a numeral followed by the curve type designation. The numeral used is the average life derived from the entire curve from 100 percent to zero percent surviving. The titles of the chart indicate the group, the symbol used to plot the points of the original life table, and the experience and placement bands of the life tables which where plotted. The experience band indicates the range of years for which retirements were used to develop the stub survivor curve. The placements indicate, for the related experience band, the range of years of installations which appear in the experience.

The analyses of 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, 2018 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.

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE PERCENTS, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION RATES RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2018

| | ACCOUNT | SURVIVOR CURVE | NET SALVAGE PERCENT | ORIGINAL COST AS OF DECEMBER 31, 2018 | BOOK DEPRECIATION RESERVE | FUTURE ACCRUALS | CALCULATED ANNUAL ACCRUAL AMOUNT | CALCULATED ANNUAL ACCRUAL RATE | COMPOSITE REMAINING LIFE |
|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8)=(7)/(4) | (9)=(6)/(7) |
| | **ELECTRIC PLANT** | | | | | | | | |
| | **OTHER PRODUCTION PLANT** | | | | | | | | |
| 343.02 | PRIME MOVERS - SOLAR PV FACILITY | 20-S3 | 0 | 2,422,009.38 | 138,202 | 2,283,807 | 123,449 | 5.10 | 18.5 |
| 343.03 | PRIME MOVERS - SOLAR PV FACILITY - INVERTERS | 10-S3 | 0 | 407,766.70 | 46,535 | 361,232 | 42,498 | 10.42 | 8.5 |
| | **TOTAL OTHER PRODUCTION PLANT** | | | **2,829,776.08** | **184,737** | **2,645,039** | **165,947** | **5.86** | **15.9** |
| | **TRANSMISSION PLANT** | | | | | | | | |
| 351.00 | LAND CLEARING | 55-R3 | 0 | 8,036.30 | 6,105 | 1,931 | 99 | 1.23 | 19.5 |
| 352.00 | STRUCTURES AND IMPROVEMENTS | 50-R3 | (30) | 59,384.47 | 59,384 | 17,816 | 469 | 0.79 | 38.0 |
| 353.00 | STATION EQUIPMENT | 55-R3 | (80) | 10,041,572.44 | 4,282,942 | 13,791,888 | 358,222 | 3.57 | 38.5 |
| 355.00 | POLES AND FIXTURES | 45-R3 | (120) | 1,002,754.46 | 876,311 | 1,329,749 | 82,289 | 8.21 | 16.2 |
| 356.00 | OVERHEAD CONDUCTORS AND DEVICES | 40-R1.5 | (60) | 1,896,096.32 | 367,887 | 2,665,867 | 79,301 | 4.18 | 33.6 |
| | **TOTAL TRANSMISSION PLANT** | | | **13,007,843.99** | **5,592,629** | **17,807,251** | **520,380** | **4.00** | **34.2** |
| | **DISTRIBUTION PLANT** | | | | | | | | |
| 361.00 | STRUCTURES AND IMPROVEMENTS | 55-R3 | (30) | 1,399,176.11 | 760,199 | 1,058,730 | 31,665 | 2.26 | 33.4 |
| 362.00 | STATION EQUIPMENT | 50-S2.5 | (80) | 15,870,373.86 | 8,308,275 | 20,258,398 | 630,392 | 3.97 | 32.1 |
| 364.00 | POLES, TOWERS AND FIXTURES | 55-R2.5 | (90) | 33,383,616.06 | 14,593,205 | 48,835,666 | 1,155,513 | 3.46 | 42.3 |
| 365.00 | OVERHEAD CONDUCTORS AND DEVICES | 52-R2 | (90) | 35,319,885.95 | 15,418,798 | 51,688,985 | 1,291,191 | 3.66 | 40.0 |
| 366.00 | UNDERGROUND CONDUIT | 70-R4 | (100) | 3,478,282.87 | 1,242,019 | 5,714,547 | 117,077 | 3.37 | 48.8 |
| 367.00 | UNDERGROUND CONDUCTORS AND DEVICES | 55-R3 | (90) | 12,692,703.42 | 6,054,148 | 18,061,988 | 466,261 | 3.67 | 38.7 |
| 368.00 | LINE TRANSFORMERS | 40-R2 | (35) | 15,627,168.54 | 4,814,762 | 16,281,916 | 623,160 | 3.99 | 26.1 |
| 369.00 | SERVICES | 53-R4 | (150) | 10,934,927.37 | 7,739,390 | 19,597,928 | 522,563 | 4.78 | 37.5 |
| 370.00 | METERS AND METER INSTALLATIONS | 20-S0.5 | (10) | 7,511,539.24 | 899,507 | 7,363,186 | 1,100,578 | 14.65 | 6.7 |
| 371.00 | INSTALLATIONS ON CUSTOMERS' PREMISES | 15-S2.5 | (10) | 1,279,261.74 | 1,160,928 | 246,260 | 20,539 | 1.61 | 12.0 |
| 373.00 | STREET LIGHTING AND SIGNAL SYSTEMS | 28-S0.5 | (10) | 352,293.83 | 232,981 | 154,542 | 6,657 | 1.89 | 23.2 |
| | **TOTAL DISTRIBUTION PLANT** | | | **137,849,228.99** | **61,224,212** | **189,262,146** | **5,965,596** | **4.33** | **31.7** |
| | **GENERAL PLANT** | | | | | | | | |
| 394.00 | TOOLS, SHOP AND GARAGE EQUIPMENT | | | | | | | | |
| | FULLY ACCRUED | | | 3,524.09 | 3,524 | 0 | 0 | - | - |
| | AMORTIZED | 25-SQ | 0 | 712,346.31 | 247,150 | 465,196 | 28,511 | 4.00 | 16.3 |
| | TOTAL TOOLS, SHOP AND GARAGE EQUIPMENT | | | 715,870.40 | 250,674 | 465,196 | 28,511 | 3.98 | |
| 395.00 | LABORATORY EQUIPMENT | | | | | | | | |
| | FULLY ACCRUED | | | 87,683.89 | 87,684 | 0 | 0 | - | - |
| | AMORTIZED | 20-SQ | 0 | 279,156.82 | 86,500 | 192,657 | 13,958 | 5.00 | 13.8 |
| | TOTAL LABORATORY EQUIPMENT | | | 366,840.71 | 174,184 | 192,657 | 13,958 | 3.80 | |
| 396.00 | POWER OPERATED EQUIPMENT | 20-S2 | 0 | 4,479.75 | 3,472 | 1,008 | 224 | 5.00 | 4.5 |
| 397.00 | COMMUNICATION EQUIPMENT | | | | | | | | |
| | FULLY ACCRUED | | | 175,135.11 | 175,135 | 0 | 0 | - | - |
| | AMORTIZED | 15-SQ | 0 | 526,305.07 | 144,500 | 381,805 | 35,099 | 6.67 | 10.9 |
| | TOTAL COMMUNICATION EQUIPMENT | | | 701,440.18 | 319,635 | 381,805 | 35,099 | 5.00 | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

TABLE 1. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE PERCENTS, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION RATES RELATED TO ELECTRIC PLANT AS OF DECEMBER 31, 2018

| | ACCOUNT | SURVIVOR CURVE | NET SALVAGE PERCENT | ORIGINAL COST AS OF DECEMBER 31, 2018 | BOOK DEPRECIATION RESERVE | FUTURE ACCRUALS | CALCULATED ANNUAL ACCRUAL AMOUNT | CALCULATED ANNUAL ACCRUAL RATE | COMPOSITE REMAINING LIFE |
|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8)=(7)/(4) | (9)=(6)/(7) |
| 398.00 | MISCELLANEOUS EQUIPMENT | | | | | | | | |
| | FULLY ACCRUED | | | 23,613.39 | 23,613 | 0 | 0 | - | - |
| | AMORTIZED | 20-SQ | 0 | 575.97 | 547 | 29 | 29 | 5.00 | 1.0 |
| | TOTAL MISCELLANEOUS EQUIPMENT | | | 24,189.36 | 24,160 | 29 | 29 | 0.12 | |
| | **TOTAL GENERAL PLANT** | | | **1,812,820.40** | **772,125** | **1,040,695** | **77,821** | **4.29** | **13.4** |
| | **UNRECOVERED RESERVE ADJUSTMENT FOR AMORTIZATION** | | | | | | | | |
| 394.00 | TOOLS, SHOP AND GARAGE EQUIPMENT | | | | (62,672) | | 12,534 * | | |
| 395.00 | LABORATORY EQUIPMENT | | | | (30,191) | | 6,038 * | | |
| 397.00 | COMMUNICATION EQUIPMENT | | | | 41,498 | | (8,300) * | | |
| 396.00 | POWER OPERATED EQUIPMENT | | | | 1,637 | | (327) * | | |
| 398.00 | MISCELLANEOUS EQUIPMENT | | | | (3,637) | | 727 * | | |
| | **TOTAL UNRECOVERED RESERVE ADJUSTMENT FOR AMORTIZATION** | | | | **(53,365)** | | **10,672** | | |
| | **TOTAL DEPRECIABLE ELECTRIC PLANT** | | | **155,499,669.46** | **67,720,338** | **210,755,131** | **6,740,416** | **4.33** | |
| | **NONDEPRECIABLE ACCOUNTS AND ACCOUNTS NOT STUDIED** | | | | | | | | |
| 303.00 | MISCELLANEOUS INTANGIBLE PLANT - 5 YEAR | | | 893,938.88 | | | | | |
| 303.01 | MISCELLANEOUS INTANGIBLE PLANT - 3 YEAR | | | 18,864.72 | | | | | |
| 303.02 | MISCELLANEOUS INTANGIBLE PLANT - 10 YEAR | | | 704,470.68 | | | | | |
| 350.00 | LAND | | | 454,767.00 | | | | | |
| 350.01 | RIGHTS OF WAY | | | 144,391.00 | | | | | |
| 360.00 | LAND | | | 455,140.57 | | | | | |
| 360.01 | RIGHTS OF WAY | | | 223,747.95 | | | | | |
| 372.00 | LEASED PROPERTY ON CUSTOMERS' PREMISES | | | 366,168.65 | 38,001 | | | | |
| 392.00 | TRANSPORTATION EQUIPMENT | | | 570,174.26 | | | | | |
| | **TOTAL NONDEPRECIABLE ACCOUNTS AND ACCOUNTS NOT STUDIED** | | | **3,831,663.71** | **38,001** | | | | |
| | **TOTAL ELECTRIC PLANT** | | | **159,331,333.17** | **67,758,339** | | | | |

* 5-YEAR AMORTIZATION OF UNRECOVERED RESERVE RELATED TO IMPLEMENTATION OF AMORTIZATION ACCOUNTING.

NOTE: ENERGY STORAGE ADDITIONS TO ACCOUNT 363 SHOULD USE A RATE OF 6.67%, BASED ON A 15-S3 SURVIVOR CURVE AND 0% NET SALVAGE

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
COMMON PLANT

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE PERCENTS, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION RATES RELATED TO COMMON PLANT AS OF DECEMBER 31, 2018

| | ACCOUNT | SURVIVOR CURVE | NET SALVAGE PERCENT | ORIGINAL COST AS OF DECEMBER 31, 2018 | BOOK DEPRECIATION RESERVE | FUTURE ACCRUALS | CALCULATED ANNUAL ACCRUAL AMOUNT | CALCULATED ANNUAL ACCRUAL RATE | COMPOSITE REMAINING LIFE |
|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8)=(7)/(4) | (9)=(6)/(7) |
| | **COMMON PLANT** | | | | | | | | |
| | STRUCTURES AND IMPROVEMENTS | | | | | | | | |
| 390.00 | MINOR STRUCTURES | 30-S0 | 0 | 2,779,548.17 | 1,152,885 | 1,626,663 | 77,154 | 2.78 | 21.1 |
| 390.01 | DOC FACILITY | 75-R2.5 * | 0 | 11,384,568.00 | 120,151 | 11,264,417 | 203,549 | 1.79 | 55.3 |
| | TOTAL STRUCTURES AND IMPROVEMENTS | | | 14,164,116.17 | 1,273,036 | 12,891,080 | 280,703 | 1.98 | 45.9 |
| 391.00 | OFFICE FURNITURE AND EQUIPMENT | | | | | | | | |
| | FULLY ACCRUED | | | 199,078.49 | 199,078 | 0 | 0 | - | - |
| | AMORTIZED | 15-SQ | 0 | 722,269.70 | 130,675 | 591,595 | 48,191 | 6.67 | 12.3 |
| | TOTAL OFFICE FURNITURE AND EQUIPMENT | | | 921,348.19 | 329,753 | 591,595 | 48,191 | 5.23 | |
| 393.00 | STORES EQUIPMENT | | | | | | | | |
| | FULLY ACCRUED | | | 12,028.88 | 12,029 | 0 | 0 | - | - |
| | AMORTIZED | 25-SQ | 0 | 41,028.58 | 24,209 | 16,820 | 1,641 | 4.00 | 10.2 |
| | TOTAL STORES EQUIPMENT | | | 53,057.46 | 36,238 | 16,820 | 1,641 | 3.09 | |
| 394.00 | TOOLS, SHOP AND GARAGE EQUIPMENT | | | | | | | | |
| | FULLY ACCRUED | | | 9,855.58 | 9,856 | 0 | 0 | - | - |
| | AMORTIZED | 25-SQ | 0 | 171,570.86 | 81,640 | 89,931 | 6,861 | 4.00 | 13.1 |
| | TOTAL TOOLS, SHOP AND GARAGE EQUIPMENT | | | 181,426.44 | 91,496 | 89,931 | 6,861 | 3.78 | |
| 396.00 | POWER OPERATED EQUIPMENT | 20-S2 | 0 | 1,287.31 | 1,280 | 7 | 2 | 0.16 | 3.5 |
| 397.00 | COMMUNICATION EQUIPMENT | | | | | | | | |
| | FULLY ACCRUED | | | 245,853.24 | 245,853 | 0 | 0 | - | - |
| | AMORTIZED | 15-SQ | 0 | 1,621,935.62 | 1,101,500 | 520,436 | 108,213 | 6.67 | 4.8 |
| | TOTAL COMMUNICATION EQUIPMENT | | | 1,867,788.86 | 1,347,353 | 520,436 | 108,213 | 5.79 | |
| 398.00 | MISCELLANEOUS EQUIPMENT | | | | | | | | |
| | FULLY ACCRUED | | | 14,717.34 | 14,717 | 0 | 0 | - | - |
| | AMORTIZED | 20-SQ | 0 | 70,872.66 | 55,140 | 15,733 | 3,543 | 5.00 | 4.4 |
| | TOTAL MISCELLANEOUS EQUIPMENT | | | 85,590.00 | 69,857 | 15,733 | 3,543 | 4.14 | |
| | **UNRECOVERED RESERVE ADJUSTMENT FOR AMORTIZATION** | | | | | | | | |
| 391.00 | OFFICE FURNITURE AND EQUIPMENT | | | | (26,542) | | 5,308 ** | | |
| 393.00 | STORES EQUIPMENT | | | | (9,574) | | 1,915 ** | | |
| 394.00 | TOOLS, SHOP AND GARAGE EQUIPMENT | | | | (31,310) | | 6,262 ** | | |
| 397.00 | COMMUNICATION EQUIPMENT | | | | 20,693 | | (4,139) ** | | |
| 398.00 | MISCELLANEOUS EQUIPMENT | | | | 15,742 | | (3,148) ** | | |
| | **TOTAL UNRECOVERED RESERVE ADJUSTMENT FOR AMORTIZATION** | | | | **(30,991)** | | **6,198** | | |
| | **TOTAL DEPRECIABLE COMMON PLANT** | | | **17,274,614.43** | **3,118,022** | **14,125,602** | **455,352** | **2.64** | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
COMMON PLANT

TABLE 2. SUMMARY OF ESTIMATED SURVIVOR CURVES, NET SALVAGE PERCENTS, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION RATES RELATED TO COMMON PLANT AS OF DECEMBER 31, 2018

| | ACCOUNT | SURVIVOR CURVE | NET SALVAGE PERCENT | ORIGINAL COST AS OF DECEMBER 31, 2018 | BOOK DEPRECIATION RESERVE | FUTURE ACCRUALS | CALCULATED ANNUAL ACCRUAL AMOUNT | CALCULATED ANNUAL ACCRUAL RATE | COMPOSITE REMAINING LIFE |
|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8)=(7)/(4) | (9)=(6)/(7) |
| | **NONDEPRECIABLE ACCOUNTS AND ACCOUNTS NOT STUDIED** | | | | | | | | |
| 303.00 | MISCELLANEOUS INTANGIBLE PLANT - 5 YEAR | | | 3,770,386.03 | | | | | |
| 303.02 | MISCELLANEOUS INTANGIBLE PLANT - 10 YEAR | | | 2,231,470.16 | | | | | |
| 389.00 | LAND | | | 1,434,792.27 | | | | | |
| | **TOTAL NONDEPRECIABLE ACCOUNTS AND ACCOUNTS NOT STUDIED** | | | **7,436,648.46** | | | | | |
| | **TOTAL COMMON PLANT** | | | **24,711,262.89** | | | | | |

* CURVE SHOWN IS INTERIM SURVIVOR CURVE. A 60-YEAR LIFE SPAN IS RECOMMENDED FOR THE DOC FACILITY.
** 5-YEAR AMORTIZATION OF UNRECOVERED RESERVE RELATED TO IMPLEMENTATION OF AMORTIZATION ACCOUNTING.

# PART VII. SERVICE LIFE STATISTICS

# ELECTRIC

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT
ACCOUNT 343.02 PRIME MOVERS - SOLAR PV FACILITY
ORIGINAL AND SMOOTH SURVIVOR CURVES

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 343.02 PRIME MOVERS - SOLAR PV FACILITY

ORIGINAL LIFE TABLE

PLACEMENT BAND 2017-2017 EXPERIENCE BAND 2018-2018

| 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 | | | | | 100.00 |
| 0.5 | 2,422,009 | | 0.0000 | | |
| 1.5 | | | | | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT
ACCOUNT 343.03 PRIME MOVERS - SOLAR PV FACILITY - INVERTERS
ORIGINAL AND SMOOTH SURVIVOR CURVES

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 343.03 PRIME MOVERS - SOLAR PV FACILITY - INVERTERS

ORIGINAL LIFE TABLE

PLACEMENT BAND 2017-2017 EXPERIENCE BAND 2018-2018

| 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 | | | | | 100.00 |
| 0.5 | 407,767 | | 0.0000 | | |
| 1.5 | | | | | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT
ACCOUNT 351.00 LAND CLEARING
ORIGINAL AND SMOOTH SURVIVOR CURVES
ORIGINAL CURVE
1986-2018 EXPERIENCE
1973-1992 PLACEMENTS
2008-2018 EXPERIENCE
1973-1992 PLACEMENTS
IOWA 55-R3
PERCENT SURVIVING
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
120
AGE IN YEARS

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 351.00 LAND CLEARING

ORIGINAL LIFE TABLE

PLACEMENT BAND 1973-1992 EXPERIENCE BAND 1986-2018

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 0.0 | 1,382 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 1,382 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 1,382 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 1,382 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 1,382 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 1,382 | | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 1,382 | | 0.0000 | 1.0000 | 100.00 |
| 6.5 | 1,382 | | 0.0000 | 1.0000 | 100.00 |
| 7.5 | 1,382 | | 0.0000 | 1.0000 | 100.00 |
| 8.5 | 1,382 | | 0.0000 | 1.0000 | 100.00 |
| 9.5 | 1,382 | | 0.0000 | 1.0000 | 100.00 |
| 10.5 | 1,382 | | 0.0000 | 1.0000 | 100.00 |
| 11.5 | 1,382 | | 0.0000 | 1.0000 | 100.00 |
| 12.5 | 8,036 | | 0.0000 | 1.0000 | 100.00 |
| 13.5 | 8,036 | | 0.0000 | 1.0000 | 100.00 |
| 14.5 | 8,036 | | 0.0000 | 1.0000 | 100.00 |
| 15.5 | 8,036 | | 0.0000 | 1.0000 | 100.00 |
| 16.5 | 8,036 | | 0.0000 | 1.0000 | 100.00 |
| 17.5 | 8,036 | | 0.0000 | 1.0000 | 100.00 |
| 18.5 | 8,036 | | 0.0000 | 1.0000 | 100.00 |
| 19.5 | 8,036 | | 0.0000 | 1.0000 | 100.00 |
| 20.5 | 8,036 | | 0.0000 | 1.0000 | 100.00 |
| 21.5 | 8,036 | | 0.0000 | 1.0000 | 100.00 |
| 22.5 | 8,036 | | 0.0000 | 1.0000 | 100.00 |
| 23.5 | 8,036 | | 0.0000 | 1.0000 | 100.00 |
| 24.5 | 8,036 | | 0.0000 | 1.0000 | 100.00 |
| 25.5 | 8,036 | | 0.0000 | 1.0000 | 100.00 |
| 26.5 | 6,654 | | 0.0000 | 1.0000 | 100.00 |
| 27.5 | 6,654 | | 0.0000 | 1.0000 | 100.00 |
| 28.5 | 6,654 | | 0.0000 | 1.0000 | 100.00 |
| 29.5 | 6,654 | | 0.0000 | 1.0000 | 100.00 |
| 30.5 | 6,654 | | 0.0000 | 1.0000 | 100.00 |
| 31.5 | 6,654 | | 0.0000 | 1.0000 | 100.00 |
| 32.5 | 6,654 | | 0.0000 | 1.0000 | 100.00 |
| 33.5 | 6,654 | | 0.0000 | 1.0000 | 100.00 |
| 34.5 | 6,654 | | 0.0000 | 1.0000 | 100.00 |
| 35.5 | 6,654 | | 0.0000 | 1.0000 | 100.00 |
| 36.5 | 6,654 | | 0.0000 | 1.0000 | 100.00 |
| 37.5 | 6,654 | | 0.0000 | 1.0000 | 100.00 |
| 38.5 | 6,654 | | 0.0000 | 1.0000 | 100.00 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 351.00 LAND CLEARING

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1973-1992 EXPERIENCE BAND 1986-2018

| 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 | 6,654 | | 0.0000 | 1.0000 | 100.00 |
| 40.5 | 6,654 | | 0.0000 | 1.0000 | 100.00 |
| 41.5 | 6,654 | | 0.0000 | 1.0000 | 100.00 |
| 42.5 | 6,654 | | 0.0000 | 1.0000 | 100.00 |
| 43.5 | 6,654 | | 0.0000 | 1.0000 | 100.00 |
| 44.5 | 6,654 | | 0.0000 | 1.0000 | 100.00 |
| 45.5 | | | | | 100.00 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 351.00 LAND CLEARING

ORIGINAL LIFE TABLE

PLACEMENT BAND 1973-1992 EXPERIENCE BAND 2008-2018

| 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 | | | | | 100.00 |
| 0.5 | | | | | |
| 1.5 | | | | | |
| 2.5 | | | | | |
| 3.5 | | | | | |
| 4.5 | | | | | |
| 5.5 | | | | | |
| 6.5 | | | | | |
| 7.5 | | | | | |
| 8.5 | | | | | |
| 9.5 | | | | | |
| 10.5 | | | | | |
| 11.5 | | | | | |
| 12.5 | | | | | |
| 13.5 | | | | | |
| 14.5 | | | | | |
| 15.5 | 1,382 | | 0.0000 | | |
| 16.5 | 1,382 | | 0.0000 | | |
| 17.5 | 1,382 | | 0.0000 | | |
| 18.5 | 1,382 | | 0.0000 | | |
| 19.5 | 1,382 | | 0.0000 | | |
| 20.5 | 1,382 | | 0.0000 | | |
| 21.5 | 1,382 | | 0.0000 | | |
| 22.5 | 1,382 | | 0.0000 | | |
| 23.5 | 1,382 | | 0.0000 | | |
| 24.5 | 1,382 | | 0.0000 | | |
| 25.5 | 1,382 | | 0.0000 | | |
| 26.5 | | | | | |
| 27.5 | | | | | |
| 28.5 | | | | | |
| 29.5 | | | | | |
| 30.5 | | | | | |
| 31.5 | | | | | |
| 32.5 | | | | | |
| 33.5 | | | | | |
| 34.5 | 6,654 | | 0.0000 | | |
| 35.5 | 6,654 | | 0.0000 | | |
| 36.5 | 6,654 | | 0.0000 | | |
| 37.5 | 6,654 | | 0.0000 | | |
| 38.5 | 6,654 | | 0.0000 | | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 351.00 LAND CLEARING

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1973-1992 EXPERIENCE BAND 2008-2018

| 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 | 6,654 | | 0.0000 | | |
| 40.5 | 6,654 | | 0.0000 | | |
| 41.5 | 6,654 | | 0.0000 | | |
| 42.5 | 6,654 | | 0.0000 | | |
| 43.5 | 6,654 | | 0.0000 | | |
| 44.5 | 6,654 | | 0.0000 | | |
| 45.5 | | | | | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT
ACCOUNT 352.00 STRUCTURES AND IMPROVEMENTS
ORIGINAL AND SMOOTH SURVIVOR CURVES
ORIGINAL CURVE
1976-2018 EXPERIENCE
1921-2006 PLACEMENTS
2008-2018 EXPERIENCE
1965-2006 PLACEMENTS
IOWA 50-R3
PERCENT SURVIVING
AGE IN YEARS
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
120

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 352.00 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1921-2006 EXPERIENCE BAND 1976-2018

| 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 | 44,467 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 44,467 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 44,467 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 44,467 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 44,467 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 44,467 | | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 44,467 | | 0.0000 | 1.0000 | 100.00 |
| 6.5 | 44,467 | | 0.0000 | 1.0000 | 100.00 |
| 7.5 | 44,467 | | 0.0000 | 1.0000 | 100.00 |
| 8.5 | 44,467 | | 0.0000 | 1.0000 | 100.00 |
| 9.5 | 44,859 | | 0.0000 | 1.0000 | 100.00 |
| 10.5 | 63,403 | | 0.0000 | 1.0000 | 100.00 |
| 11.5 | 63,427 | | 0.0000 | 1.0000 | 100.00 |
| 12.5 | 32,204 | | 0.0000 | 1.0000 | 100.00 |
| 13.5 | 32,204 | | 0.0000 | 1.0000 | 100.00 |
| 14.5 | 32,204 | 0 | 0.0000 | 1.0000 | 100.00 |
| 15.5 | 32,204 | | 0.0000 | 1.0000 | 100.00 |
| 16.5 | 32,204 | | 0.0000 | 1.0000 | 100.00 |
| 17.5 | 32,204 | | 0.0000 | 1.0000 | 100.00 |
| 18.5 | 32,204 | | 0.0000 | 1.0000 | 100.00 |
| 19.5 | 32,204 | 0 | 0.0000 | 1.0000 | 100.00 |
| 20.5 | 32,204 | | 0.0000 | 1.0000 | 100.00 |
| 21.5 | 32,204 | | 0.0000 | 1.0000 | 100.00 |
| 22.5 | 32,212 | | 0.0000 | 1.0000 | 100.00 |
| 23.5 | 32,212 | | 0.0000 | 1.0000 | 100.00 |
| 24.5 | 28,464 | | 0.0000 | 1.0000 | 100.00 |
| 25.5 | 28,481 | | 0.0000 | 1.0000 | 100.00 |
| 26.5 | 28,483 | | 0.0000 | 1.0000 | 100.00 |
| 27.5 | 28,483 | | 0.0000 | 1.0000 | 100.00 |
| 28.5 | 28,874 | | 0.0000 | 1.0000 | 100.00 |
| 29.5 | 28,878 | | 0.0000 | 1.0000 | 100.00 |
| 30.5 | 28,878 | | 0.0000 | 1.0000 | 100.00 |
| 31.5 | 29,671 | | 0.0000 | 1.0000 | 100.00 |
| 32.5 | 29,671 | | 0.0000 | 1.0000 | 100.00 |
| 33.5 | 29,671 | | 0.0000 | 1.0000 | 100.00 |
| 34.5 | 25,653 | | 0.0000 | 1.0000 | 100.00 |
| 35.5 | 25,653 | | 0.0000 | 1.0000 | 100.00 |
| 36.5 | 25,653 | 24 | 0.0009 | 0.9991 | 100.00 |
| 37.5 | 25,628 | | 0.0000 | 1.0000 | 99.91 |
| 38.5 | 24,168 | | 0.0000 | 1.0000 | 99.91 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 352.00 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1921-2006 EXPERIENCE BAND 1976-2018

| 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 | 24,169 | | 0.0000 | 1.0000 | 99.91 |
| 40.5 | 24,195 | | 0.0000 | 1.0000 | 99.91 |
| 41.5 | 20,181 | | 0.0000 | 1.0000 | 99.91 |
| 42.5 | 20,202 | | 0.0000 | 1.0000 | 99.91 |
| 43.5 | 20,291 | | 0.0000 | 1.0000 | 99.91 |
| 44.5 | 20,535 | | 0.0000 | 1.0000 | 99.91 |
| 45.5 | 20,566 | | 0.0000 | 1.0000 | 99.91 |
| 46.5 | 21,306 | | 0.0000 | 1.0000 | 99.91 |
| 47.5 | 21,779 | 7 | 0.0003 | 0.9997 | 99.91 |
| 48.5 | 22,721 | | 0.0000 | 1.0000 | 99.87 |
| 49.5 | 23,380 | | 0.0000 | 1.0000 | 99.87 |
| 50.5 | 24,392 | 18 | 0.0007 | 0.9993 | 99.87 |
| 51.5 | 24,488 | 1 | 0.0000 | 1.0000 | 99.80 |
| 52.5 | 24,095 | | 0.0000 | 1.0000 | 99.79 |
| 53.5 | 5,602 | 392 | 0.0699 | 0.9301 | 99.79 |
| 54.5 | 10,942 | 4 | 0.0004 | 0.9996 | 92.82 |
| 55.5 | 10,938 | | 0.0000 | 1.0000 | 92.78 |
| 56.5 | 10,938 | 792 | 0.0724 | 0.9276 | 92.78 |
| 57.5 | 10,145 | | 0.0000 | 1.0000 | 86.06 |
| 58.5 | 10,145 | | 0.0000 | 1.0000 | 86.06 |
| 59.5 | 10,145 | | 0.0000 | 1.0000 | 86.06 |
| 60.5 | 10,145 | | 0.0000 | 1.0000 | 86.06 |
| 61.5 | 10,145 | | 0.0000 | 1.0000 | 86.06 |
| 62.5 | 10,145 | | 0.0000 | 1.0000 | 86.06 |
| 63.5 | 10,145 | | 0.0000 | 1.0000 | 86.06 |
| 64.5 | 10,145 | 0 | 0.0000 | 1.0000 | 86.06 |
| 65.5 | 10,145 | 26 | 0.0026 | 0.9974 | 86.06 |
| 66.5 | 10,119 | 4 | 0.0004 | 0.9996 | 85.84 |
| 67.5 | 10,115 | 21 | 0.0021 | 0.9979 | 85.80 |
| 68.5 | 10,094 | 90 | 0.0089 | 0.9911 | 85.62 |
| 69.5 | 10,004 | 244 | 0.0244 | 0.9756 | 84.86 |
| 70.5 | 9,760 | 30 | 0.0031 | 0.9969 | 82.79 |
| 71.5 | 9,730 | 740 | 0.0761 | 0.9239 | 82.54 |
| 72.5 | 8,990 | 473 | 0.0526 | 0.9474 | 76.26 |
| 73.5 | 8,517 | 949 | 0.1115 | 0.8885 | 72.25 |
| 74.5 | 7,567 | 659 | 0.0871 | 0.9129 | 64.19 |
| 75.5 | 6,909 | 1,013 | 0.1466 | 0.8534 | 58.60 |
| 76.5 | 5,896 | 113 | 0.0192 | 0.9808 | 50.01 |
| 77.5 | 5,783 | | 0.0000 | 1.0000 | 49.05 |
| 78.5 | 5,783 | 51 | 0.0089 | 0.9911 | 49.05 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 352.00 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1921-2006 EXPERIENCE BAND 1976-2018

| 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 | 5,731 | 5,731 | 1.0000 | | 48.62 |
| 80.5 | | | | | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 352.00 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1965-2006 EXPERIENCE BAND 2008-2018

| 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 | 31,222 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 31,222 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 31,222 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 31,222 | | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 31,222 | | 0.0000 | 1.0000 | 100.00 |
| 6.5 | 31,222 | | 0.0000 | 1.0000 | 100.00 |
| 7.5 | 31,222 | | 0.0000 | 1.0000 | 100.00 |
| 8.5 | 31,222 | | 0.0000 | 1.0000 | 100.00 |
| 9.5 | 31,222 | | 0.0000 | 1.0000 | 100.00 |
| 10.5 | 31,222 | | 0.0000 | 1.0000 | 100.00 |
| 11.5 | 31,222 | | 0.0000 | 1.0000 | 100.00 |
| 12.5 | | | | | 100.00 |
| 13.5 | 3,748 | | 0.0000 | | |
| 14.5 | 3,748 | | 0.0000 | | |
| 15.5 | 3,748 | | 0.0000 | | |
| 16.5 | 3,748 | | 0.0000 | | |
| 17.5 | 3,748 | | 0.0000 | | |
| 18.5 | 3,748 | | 0.0000 | | |
| 19.5 | 3,748 | | 0.0000 | | |
| 20.5 | 3,748 | | 0.0000 | | |
| 21.5 | 3,748 | | 0.0000 | | |
| 22.5 | 3,748 | | 0.0000 | | |
| 23.5 | 3,748 | | 0.0000 | | |
| 24.5 | | | | | |
| 25.5 | | | | | |
| 26.5 | | | | | |
| 27.5 | 1,460 | | 0.0000 | | |
| 28.5 | 1,460 | | 0.0000 | | |
| 29.5 | 1,460 | | 0.0000 | | |
| 30.5 | 9,496 | | 0.0000 | | |
| 31.5 | 9,496 | | 0.0000 | | |
| 32.5 | 9,496 | | 0.0000 | | |
| 33.5 | 9,496 | | 0.0000 | | |
| 34.5 | 5,478 | | 0.0000 | | |
| 35.5 | 5,478 | | 0.0000 | | |
| 36.5 | 5,478 | | 0.0000 | | |
| 37.5 | 5,478 | | 0.0000 | | |
| 38.5 | 4,018 | | 0.0000 | | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 352.00 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1965-2006 EXPERIENCE BAND 2008-2018

| 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 | 4,018 | | 0.0000 | | |
| 40.5 | 4,018 | | 0.0000 | | |
| 41.5 | 392 | | 0.0000 | | |
| 42.5 | 18,936 | | 0.0000 | | |
| 43.5 | 18,936 | | 0.0000 | | |
| 44.5 | 18,936 | | 0.0000 | | |
| 45.5 | 18,936 | | 0.0000 | | |
| 46.5 | 18,936 | | 0.0000 | | |
| 47.5 | 18,936 | | 0.0000 | | |
| 48.5 | 18,936 | | 0.0000 | | |
| 49.5 | 18,936 | | 0.0000 | | |
| 50.5 | 18,936 | | 0.0000 | | |
| 51.5 | 18,936 | | 0.0000 | | |
| 52.5 | 18,544 | | 0.0000 | | |
| 53.5 | | | | | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT
ACCOUNT 353.00 STATION EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES
ORIGINAL CURVE
1969-2018 EXPERIENCE
1921-2018 PLACEMENTS
2008-2018 EXPERIENCE
1965-2018 PLACEMENTS
IOWA 55-R3
PERCENT SURVIVING
AGE IN YEARS
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
120

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 353.00 STATION EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1921-2018 EXPERIENCE BAND 1969-2018

| 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 | 11,845,885 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 11,705,325 | 2,614 | 0.0002 | 0.9998 | 100.00 |
| 1.5 | 11,635,462 | 2,073 | 0.0002 | 0.9998 | 99.98 |
| 2.5 | 10,742,492 | 130,955 | 0.0122 | 0.9878 | 99.96 |
| 3.5 | 10,412,439 | 0 | 0.0000 | 1.0000 | 98.74 |
| 4.5 | 10,406,112 | 0 | 0.0000 | 1.0000 | 98.74 |
| 5.5 | 7,745,559 | 18,733 | 0.0024 | 0.9976 | 98.74 |
| 6.5 | 7,666,779 | 4 | 0.0000 | 1.0000 | 98.50 |
| 7.5 | 7,638,452 | 7 | 0.0000 | 1.0000 | 98.50 |
| 8.5 | 7,628,380 | 73 | 0.0000 | 1.0000 | 98.50 |
| 9.5 | 7,526,202 | 96 | 0.0000 | 1.0000 | 98.50 |
| 10.5 | 7,542,631 | 54 | 0.0000 | 1.0000 | 98.50 |
| 11.5 | 7,477,937 | 83 | 0.0000 | 1.0000 | 98.50 |
| 12.5 | 6,563,395 | 30,789 | 0.0047 | 0.9953 | 98.50 |
| 13.5 | 6,060,586 | 46,863 | 0.0077 | 0.9923 | 98.04 |
| 14.5 | 5,014,074 | 978 | 0.0002 | 0.9998 | 97.28 |
| 15.5 | 4,974,921 | 783 | 0.0002 | 0.9998 | 97.26 |
| 16.5 | 4,700,727 | 1,248 | 0.0003 | 0.9997 | 97.24 |
| 17.5 | 4,698,436 | 15,033 | 0.0032 | 0.9968 | 97.22 |
| 18.5 | 4,732,460 | 44,430 | 0.0094 | 0.9906 | 96.91 |
| 19.5 | 4,643,599 | 7,374 | 0.0016 | 0.9984 | 96.00 |
| 20.5 | 4,558,008 | 5,131 | 0.0011 | 0.9989 | 95.84 |
| 21.5 | 4,577,349 | 2,530 | 0.0006 | 0.9994 | 95.74 |
| 22.5 | 4,028,841 | 3,149 | 0.0008 | 0.9992 | 95.68 |
| 23.5 | 3,784,004 | 2,094 | 0.0006 | 0.9994 | 95.61 |
| 24.5 | 3,786,665 | 6,411 | 0.0017 | 0.9983 | 95.56 |
| 25.5 | 3,788,237 | 5,160 | 0.0014 | 0.9986 | 95.39 |
| 26.5 | 3,360,739 | 12,701 | 0.0038 | 0.9962 | 95.26 |
| 27.5 | 3,329,409 | 17,698 | 0.0053 | 0.9947 | 94.90 |
| 28.5 | 3,306,635 | 6,312 | 0.0019 | 0.9981 | 94.40 |
| 29.5 | 3,300,488 | 3,351 | 0.0010 | 0.9990 | 94.22 |
| 30.5 | 3,279,827 | 5,206 | 0.0016 | 0.9984 | 94.12 |
| 31.5 | 3,270,454 | 8,824 | 0.0027 | 0.9973 | 93.97 |
| 32.5 | 3,250,397 | 29,676 | 0.0091 | 0.9909 | 93.72 |
| 33.5 | 3,189,566 | 18,510 | 0.0058 | 0.9942 | 92.87 |
| 34.5 | 3,068,722 | 15,674 | 0.0051 | 0.9949 | 92.33 |
| 35.5 | 3,038,737 | 28,508 | 0.0094 | 0.9906 | 91.86 |
| 36.5 | 2,955,807 | 40,043 | 0.0135 | 0.9865 | 90.99 |
| 37.5 | 2,953,801 | 86,122 | 0.0292 | 0.9708 | 89.76 |
| 38.5 | 2,873,956 | 54,149 | 0.0188 | 0.9812 | 87.14 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 353.00 STATION EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1921-2018 EXPERIENCE BAND 1969-2018

| 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 | 2,883,506 | 9,990 | 0.0035 | 0.9965 | 85.50 |
| 40.5 | 2,147,940 | 10,258 | 0.0048 | 0.9952 | 85.21 |
| 41.5 | 1,204,743 | 21,625 | 0.0179 | 0.9821 | 84.80 |
| 42.5 | 1,180,837 | 49,197 | 0.0417 | 0.9583 | 83.28 |
| 43.5 | 1,242,846 | 36,980 | 0.0298 | 0.9702 | 79.81 |
| 44.5 | 1,121,133 | 30,764 | 0.0274 | 0.9726 | 77.43 |
| 45.5 | 1,079,843 | 31,085 | 0.0288 | 0.9712 | 75.31 |
| 46.5 | 1,053,052 | 54,162 | 0.0514 | 0.9486 | 73.14 |
| 47.5 | 1,131,597 | 42,446 | 0.0375 | 0.9625 | 69.38 |
| 48.5 | 967,880 | 50,963 | 0.0527 | 0.9473 | 66.78 |
| 49.5 | 916,829 | 68,532 | 0.0747 | 0.9253 | 63.26 |
| 50.5 | 757,951 | 52,617 | 0.0694 | 0.9306 | 58.53 |
| 51.5 | 688,395 | 34,479 | 0.0501 | 0.9499 | 54.47 |
| 52.5 | 653,915 | 25,171 | 0.0385 | 0.9615 | 51.74 |
| 53.5 | 626,081 | 22,998 | 0.0367 | 0.9633 | 49.75 |
| 54.5 | 603,083 | 15,312 | 0.0254 | 0.9746 | 47.92 |
| 55.5 | 587,772 | 46,911 | 0.0798 | 0.9202 | 46.70 |
| 56.5 | 540,861 | 36,787 | 0.0680 | 0.9320 | 42.98 |
| 57.5 | 504,074 | 17,544 | 0.0348 | 0.9652 | 40.05 |
| 58.5 | 486,529 | 14,257 | 0.0293 | 0.9707 | 38.66 |
| 59.5 | 472,273 | 19,455 | 0.0412 | 0.9588 | 37.53 |
| 60.5 | 452,818 | 18,136 | 0.0401 | 0.9599 | 35.98 |
| 61.5 | 434,681 | 13,282 | 0.0306 | 0.9694 | 34.54 |
| 62.5 | 421,399 | 29,444 | 0.0699 | 0.9301 | 33.48 |
| 63.5 | 391,955 | 42,995 | 0.1097 | 0.8903 | 31.14 |
| 64.5 | 348,960 | 32,540 | 0.0932 | 0.9068 | 27.73 |
| 65.5 | 316,420 | 17,992 | 0.0569 | 0.9431 | 25.14 |
| 66.5 | 298,428 | 41,638 | 0.1395 | 0.8605 | 23.71 |
| 67.5 | 256,790 | 21,527 | 0.0838 | 0.9162 | 20.40 |
| 68.5 | 235,264 | 7,996 | 0.0340 | 0.9660 | 18.69 |
| 69.5 | 227,268 | 20,253 | 0.0891 | 0.9109 | 18.06 |
| 70.5 | 207,015 | 67,069 | 0.3240 | 0.6760 | 16.45 |
| 71.5 | 139,946 | 21,582 | 0.1542 | 0.8458 | 11.12 |
| 72.5 | 118,364 | 8,263 | 0.0698 | 0.9302 | 9.41 |
| 73.5 | 110,101 | 14,358 | 0.1304 | 0.8696 | 8.75 |
| 74.5 | 95,743 | 10,715 | 0.1119 | 0.8881 | 7.61 |
| 75.5 | 85,028 | 12,736 | 0.1498 | 0.8502 | 6.76 |
| 76.5 | 72,292 | 15,181 | 0.2100 | 0.7900 | 5.74 |
| 77.5 | 57,111 | 20,397 | 0.3571 | 0.6429 | 4.54 |
| 78.5 | 36,715 | 7,410 | 0.2018 | 0.7982 | 2.92 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 353.00 STATION EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1921-2018 EXPERIENCE BAND 1969-2018

| 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 | 29,305 | 8,807 | 0.3005 | 0.6995 | 2.33 |
| 80.5 | 20,498 | 8,532 | 0.4162 | 0.5838 | 1.63 |
| 81.5 | 11,966 | 3,571 | 0.2984 | 0.7016 | 0.95 |
| 82.5 | 8,395 | 1,028 | 0.1225 | 0.8775 | 0.67 |
| 83.5 | 7,367 | 4,595 | 0.6237 | 0.3763 | 0.59 |
| 84.5 | 2,772 | 2,772 | 1.0000 | | 0.22 |
| 85.5 | | | | | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 353.00 STATION EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1965-2018 EXPERIENCE BAND 2008-2018

| 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 | 4,507,589 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 4,422,028 | 2,614 | 0.0006 | 0.9994 | 100.00 |
| 1.5 | 5,344,067 | 2,073 | 0.0004 | 0.9996 | 99.94 |
| 2.5 | 4,473,080 | 130,954 | 0.0293 | 0.9707 | 99.90 |
| 3.5 | 5,063,618 | | 0.0000 | 1.0000 | 96.98 |
| 4.5 | 5,081,429 | | 0.0000 | 1.0000 | 96.98 |
| 5.5 | 3,340,151 | 18,732 | 0.0056 | 0.9944 | 96.98 |
| 6.5 | 3,267,269 | | 0.0000 | 1.0000 | 96.43 |
| 7.5 | 3,270,924 | | 0.0000 | 1.0000 | 96.43 |
| 8.5 | 3,465,430 | 36 | 0.0000 | 1.0000 | 96.43 |
| 9.5 | 3,423,292 | | 0.0000 | 1.0000 | 96.43 |
| 10.5 | 3,407,197 | | 0.0000 | 1.0000 | 96.43 |
| 11.5 | 3,933,940 | | 0.0000 | 1.0000 | 96.43 |
| 12.5 | 3,149,559 | 30,595 | 0.0097 | 0.9903 | 96.43 |
| 13.5 | 2,528,927 | 45,829 | 0.0181 | 0.9819 | 95.50 |
| 14.5 | 1,479,945 | | 0.0000 | 1.0000 | 93.77 |
| 15.5 | 1,859,727 | | 0.0000 | 1.0000 | 93.77 |
| 16.5 | 1,596,837 | | 0.0000 | 1.0000 | 93.77 |
| 17.5 | 1,600,869 | 14,079 | 0.0088 | 0.9912 | 93.77 |
| 18.5 | 1,586,790 | 42,610 | 0.0269 | 0.9731 | 92.94 |
| 19.5 | 1,362,637 | 5,010 | 0.0037 | 0.9963 | 90.44 |
| 20.5 | 1,279,402 | 2,406 | 0.0019 | 0.9981 | 90.11 |
| 21.5 | 1,254,093 | | 0.0000 | 1.0000 | 89.94 |
| 22.5 | 708,116 | | 0.0000 | 1.0000 | 89.94 |
| 23.5 | 470,064 | | 0.0000 | 1.0000 | 89.94 |
| 24.5 | 500,763 | | 0.0000 | 1.0000 | 89.94 |
| 25.5 | 511,532 | | 0.0000 | 1.0000 | 89.94 |
| 26.5 | 88,889 | | 0.0000 | 1.0000 | 89.94 |
| 27.5 | 84,671 | 183 | 0.0022 | 0.9978 | 89.94 |
| 28.5 | 154,721 | | 0.0000 | 1.0000 | 89.75 |
| 29.5 | 1,045,541 | | 0.0000 | 1.0000 | 89.75 |
| 30.5 | 2,166,635 | | 0.0000 | 1.0000 | 89.75 |
| 31.5 | 2,162,466 | | 0.0000 | 1.0000 | 89.75 |
| 32.5 | 2,169,336 | 14,556 | 0.0067 | 0.9933 | 89.75 |
| 33.5 | 2,224,312 | | 0.0000 | 1.0000 | 89.15 |
| 34.5 | 2,126,976 | | 0.0000 | 1.0000 | 89.15 |
| 35.5 | 2,106,062 | | 0.0000 | 1.0000 | 89.15 |
| 36.5 | 2,030,752 | | 0.0000 | 1.0000 | 89.15 |
| 37.5 | 2,083,401 | 64,325 | 0.0309 | 0.9691 | 89.15 |
| 38.5 | 2,018,662 | 45,777 | 0.0227 | 0.9773 | 86.39 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 353.00 STATION EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1965-2018 EXPERIENCE BAND 2008-2018

| 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 | 1,999,899 | | 0.0000 | 1.0000 | 84.43 |
| 40.5 | 1,284,576 | | 0.0000 | 1.0000 | 84.43 |
| 41.5 | 290,178 | | 0.0000 | 1.0000 | 84.43 |
| 42.5 | 379,813 | | 0.0000 | 1.0000 | 84.43 |
| 43.5 | 379,552 | | 0.0000 | 1.0000 | 84.43 |
| 44.5 | 283,533 | | 0.0000 | 1.0000 | 84.43 |
| 45.5 | 264,486 | 1,661 | 0.0063 | 0.9937 | 84.43 |
| 46.5 | 262,825 | 22,545 | 0.0858 | 0.9142 | 83.90 |
| 47.5 | 233,989 | 2,683 | 0.0115 | 0.9885 | 76.71 |
| 48.5 | 110,036 | | 0.0000 | 1.0000 | 75.83 |
| 49.5 | 109,948 | | 0.0000 | 1.0000 | 75.83 |
| 50.5 | 19,602 | | 0.0000 | 1.0000 | 75.83 |
| 51.5 | 2,662 | | 0.0000 | 1.0000 | 75.83 |
| 52.5 | 2,662 | | 0.0000 | 1.0000 | 75.83 |
| 53.5 | | | | | 75.83 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT
ACCOUNT 355.00 POLES AND FIXTURES
ORIGINAL AND SMOOTH SURVIVOR CURVES
ORIGINAL CURVE
1970-2018 EXPERIENCE
1969-2018 PLACEMENTS
2008-2018 EXPERIENCE
1969-2018 PLACEMENTS
IOWA 45-R3
PERCENT SURVIVING
AGE IN YEARS
100
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80
90
100

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 355.00 POLES AND FIXTURES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1969-2018 EXPERIENCE BAND 1970-2018

| 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 | 941,680 | 0 | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 1,004,331 | 50,129 | 0.0499 | 0.9501 | 100.00 |
| 1.5 | 926,532 | 10 | 0.0000 | 1.0000 | 95.01 |
| 2.5 | 926,522 | 970 | 0.0010 | 0.9990 | 95.01 |
| 3.5 | 925,552 | 12,662 | 0.0137 | 0.9863 | 94.91 |
| 4.5 | 897,000 | 283 | 0.0003 | 0.9997 | 93.61 |
| 5.5 | 870,410 | 2,124 | 0.0024 | 0.9976 | 93.58 |
| 6.5 | 868,286 | 2,825 | 0.0033 | 0.9967 | 93.35 |
| 7.5 | 865,460 | 2 | 0.0000 | 1.0000 | 93.05 |
| 8.5 | 842,862 | 0 | 0.0000 | 1.0000 | 93.05 |
| 9.5 | 817,732 | 28 | 0.0000 | 1.0000 | 93.05 |
| 10.5 | 816,891 | 122 | 0.0001 | 0.9999 | 93.04 |
| 11.5 | 816,769 | 345 | 0.0004 | 0.9996 | 93.03 |
| 12.5 | 816,424 | 39 | 0.0000 | 1.0000 | 92.99 |
| 13.5 | 815,308 | 225 | 0.0003 | 0.9997 | 92.99 |
| 14.5 | 815,083 | 563 | 0.0007 | 0.9993 | 92.96 |
| 15.5 | 814,520 | 624 | 0.0008 | 0.9992 | 92.90 |
| 16.5 | 813,896 | 0 | 0.0000 | 1.0000 | 92.83 |
| 17.5 | 813,896 | 1 | 0.0000 | 1.0000 | 92.83 |
| 18.5 | 813,895 | 22 | 0.0000 | 1.0000 | 92.83 |
| 19.5 | 609,802 | 177 | 0.0003 | 0.9997 | 92.82 |
| 20.5 | 609,625 | 200 | 0.0003 | 0.9997 | 92.80 |
| 21.5 | 604,420 | 1,681 | 0.0028 | 0.9972 | 92.77 |
| 22.5 | 602,740 | 1,179 | 0.0020 | 0.9980 | 92.51 |
| 23.5 | 601,561 | 3,438 | 0.0057 | 0.9943 | 92.33 |
| 24.5 | 598,123 | 4,270 | 0.0071 | 0.9929 | 91.80 |
| 25.5 | 593,853 | 5,856 | 0.0099 | 0.9901 | 91.14 |
| 26.5 | 587,997 | 1,154 | 0.0020 | 0.9980 | 90.25 |
| 27.5 | 586,843 | 3,495 | 0.0060 | 0.9940 | 90.07 |
| 28.5 | 583,348 | 3,385 | 0.0058 | 0.9942 | 89.53 |
| 29.5 | 579,963 | 7,176 | 0.0124 | 0.9876 | 89.01 |
| 30.5 | 572,787 | 6,475 | 0.0113 | 0.9887 | 87.91 |
| 31.5 | 566,312 | 5,020 | 0.0089 | 0.9911 | 86.92 |
| 32.5 | 561,292 | | 0.0000 | 1.0000 | 86.15 |
| 33.5 | 561,292 | 19 | 0.0000 | 1.0000 | 86.15 |
| 34.5 | 561,272 | | 0.0000 | 1.0000 | 86.14 |
| 35.5 | 561,272 | | 0.0000 | 1.0000 | 86.14 |
| 36.5 | 561,272 | | 0.0000 | 1.0000 | 86.14 |
| 37.5 | 561,272 | | 0.0000 | 1.0000 | 86.14 |
| 38.5 | 562,137 | 468 | 0.0008 | 0.9992 | 86.14 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 355.00 POLES AND FIXTURES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1969-2018 EXPERIENCE BAND 1970-2018

| 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 | 561,668 | 1,677 | 0.0030 | 0.9970 | 86.07 |
| 40.5 | 559,991 | 731 | 0.0013 | 0.9987 | 85.81 |
| 41.5 | 559,260 | 26 | 0.0000 | 1.0000 | 85.70 |
| 42.5 | 559,234 | 1,650 | 0.0030 | 0.9970 | 85.70 |
| 43.5 | 557,584 | 1,843 | 0.0033 | 0.9967 | 85.45 |
| 44.5 | 555,741 | 2,530 | 0.0046 | 0.9954 | 85.16 |
| 45.5 | 97,356 | | 0.0000 | 1.0000 | 84.78 |
| 46.5 | 97,356 | | 0.0000 | 1.0000 | 84.78 |
| 47.5 | 97,356 | | 0.0000 | 1.0000 | 84.78 |
| 48.5 | 97,356 | 4,410 | 0.0453 | 0.9547 | 84.78 |
| 49.5 | | | | | 80.94 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 355.00 POLES AND FIXTURES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1969-2018 EXPERIENCE BAND 2008-2018

| 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 | 243,799 | | 0.0000 | | |
| 0.5 | 118,406 | | 0.0000 | | |
| 1.5 | 90,736 | | 0.0000 | | |
| 2.5 | 91,813 | | 0.0000 | | |
| 3.5 | 91,813 | | 0.0000 | | |
| 4.5 | 75,923 | | 0.0000 | | |
| 5.5 | 49,616 | | 0.0000 | | |
| 6.5 | 49,616 | | 0.0000 | | |
| 7.5 | 49,616 | | 0.0000 | | |
| 8.5 | 231,090 | | 0.0000 | | |
| 9.5 | 205,961 | | 0.0000 | | |
| 10.5 | 210,153 | | 0.0000 | | |
| 11.5 | 210,153 | | 0.0000 | | |
| 12.5 | 210,153 | | 0.0000 | | |
| 13.5 | 209,076 | | 0.0000 | | |
| 14.5 | 209,076 | | 0.0000 | | |
| 15.5 | 209,076 | | 0.0000 | | |
| 16.5 | 209,076 | | 0.0000 | | |
| 17.5 | 209,076 | | 0.0000 | | |
| 18.5 | 209,076 | | 0.0000 | | |
| 19.5 | 5,005 | | 0.0000 | | |
| 20.5 | 5,005 | | 0.0000 | | |
| 21.5 | | | | | |
| 22.5 | | | | | |
| 23.5 | | | | | |
| 24.5 | | | | | |
| 25.5 | | | | | |
| 26.5 | | | | | |
| 27.5 | | | | | |
| 28.5 | | | | | |
| 29.5 | | | | | |
| 30.5 | 19 | | 0.0000 | | |
| 31.5 | 19 | | 0.0000 | | |
| 32.5 | 19 | | 0.0000 | | |
| 33.5 | 19 | 19 | 1.0000 | | |
| 34.5 | 459,323 | | 0.0000 | 1.0000 | 95.00 |
| 35.5 | 459,323 | | 0.0000 | 1.0000 | 95.00 |
| 36.5 | 459,323 | | 0.0000 | 1.0000 | 95.00 |
| 37.5 | 459,323 | | 0.0000 | 1.0000 | 95.00 |
| 38.5 | 562,137 | 468 | 0.0008 | 0.9992 | 95.00 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 355.00 POLES AND FIXTURES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1969-2018 EXPERIENCE BAND 2008-2018

| 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 | 561,668 | 1,677 | 0.0030 | 0.9970 | 94.92 |
| 40.5 | 559,991 | 731 | 0.0013 | 0.9987 | 94.64 |
| 41.5 | 559,260 | 26 | 0.0000 | 1.0000 | 94.51 |
| 42.5 | 559,234 | 1,650 | 0.0030 | 0.9970 | 94.51 |
| 43.5 | 557,584 | 1,843 | 0.0033 | 0.9967 | 94.23 |
| 44.5 | 555,741 | 2,530 | 0.0046 | 0.9954 | 93.92 |
| 45.5 | 97,356 | | 0.0000 | 1.0000 | 93.49 |
| 46.5 | 97,356 | | 0.0000 | 1.0000 | 93.49 |
| 47.5 | 97,356 | | 0.0000 | 1.0000 | 93.49 |
| 48.5 | 97,356 | 4,410 | 0.0453 | 0.9547 | 93.49 |
| 49.5 | | | | | 89.26 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT
ACCOUNT 356.00 OVERHEAD CONDUCTORS AND DEVICES
ORIGINAL AND SMOOTH SURVIVOR CURVES
ORIGINAL CURVE
1970-2018 EXPERIENCE
1969-2018 PLACEMENTS
2008-2018 EXPERIENCE
1969-2018 PLACEMENTS
IOWA 40-R1.5
PERCENT SURVIVING
AGE IN YEARS
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
120

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 356.00 OVERHEAD CONDUCTORS AND DEVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1969-2018 EXPERIENCE BAND 1970-2018

| 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 | 2,113,377 | 29,524 | 0.0140 | 0.9860 | 100.00 |
| 0.5 | 2,170,253 | 58,078 | 0.0268 | 0.9732 | 98.60 |
| 1.5 | 2,087,744 | 208 | 0.0001 | 0.9999 | 95.96 |
| 2.5 | 2,087,536 | 4,780 | 0.0023 | 0.9977 | 95.95 |
| 3.5 | 2,082,756 | 1,923 | 0.0009 | 0.9991 | 95.74 |
| 4.5 | 889,095 | 14,079 | 0.0158 | 0.9842 | 95.65 |
| 5.5 | 446,061 | 1,835 | 0.0041 | 0.9959 | 94.13 |
| 6.5 | 444,226 | 2,957 | 0.0067 | 0.9933 | 93.74 |
| 7.5 | 441,269 | 2,200 | 0.0050 | 0.9950 | 93.12 |
| 8.5 | 439,069 | 4,395 | 0.0100 | 0.9900 | 92.66 |
| 9.5 | 395,121 | 3,659 | 0.0093 | 0.9907 | 91.73 |
| 10.5 | 388,809 | 2,335 | 0.0060 | 0.9940 | 90.88 |
| 11.5 | 384,042 | 1,324 | 0.0034 | 0.9966 | 90.33 |
| 12.5 | 382,717 | 1,477 | 0.0039 | 0.9961 | 90.02 |
| 13.5 | 373,895 | 10,676 | 0.0286 | 0.9714 | 89.67 |
| 14.5 | 355,488 | 27,287 | 0.0768 | 0.9232 | 87.11 |
| 15.5 | 323,036 | 83 | 0.0003 | 0.9997 | 80.43 |
| 16.5 | 322,953 | 57 | 0.0002 | 0.9998 | 80.41 |
| 17.5 | 322,799 | 358 | 0.0011 | 0.9989 | 80.39 |
| 18.5 | 321,627 | 6,014 | 0.0187 | 0.9813 | 80.30 |
| 19.5 | 224,760 | 9 | 0.0000 | 1.0000 | 78.80 |
| 20.5 | 224,751 | 158 | 0.0007 | 0.9993 | 78.80 |
| 21.5 | 224,593 | 3,256 | 0.0145 | 0.9855 | 78.74 |
| 22.5 | 219,889 | 211 | 0.0010 | 0.9990 | 77.60 |
| 23.5 | 219,679 | 1,412 | 0.0064 | 0.9936 | 77.53 |
| 24.5 | 218,267 | 368 | 0.0017 | 0.9983 | 77.03 |
| 25.5 | 217,898 | 117 | 0.0005 | 0.9995 | 76.90 |
| 26.5 | 217,782 | 588 | 0.0027 | 0.9973 | 76.86 |
| 27.5 | 217,194 | 1,935 | 0.0089 | 0.9911 | 76.65 |
| 28.5 | 215,259 | 19 | 0.0001 | 0.9999 | 75.97 |
| 29.5 | 215,240 | 5 | 0.0000 | 1.0000 | 75.96 |
| 30.5 | 215,235 | 2,039 | 0.0095 | 0.9905 | 75.96 |
| 31.5 | 213,196 | 248 | 0.0012 | 0.9988 | 75.24 |
| 32.5 | 212,948 | 230 | 0.0011 | 0.9989 | 75.15 |
| 33.5 | 199,803 | 606 | 0.0030 | 0.9970 | 75.07 |
| 34.5 | 198,255 | 91 | 0.0005 | 0.9995 | 74.84 |
| 35.5 | 198,164 | 84 | 0.0004 | 0.9996 | 74.81 |
| 36.5 | 198,080 | 468 | 0.0024 | 0.9976 | 74.78 |
| 37.5 | 197,612 | | 0.0000 | 1.0000 | 74.60 |
| 38.5 | 211,469 | | 0.0000 | 1.0000 | 74.60 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 356.00 OVERHEAD CONDUCTORS AND DEVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1969-2018 EXPERIENCE BAND 1970-2018

| 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 | 211,469 | 53,589 | 0.2534 | 0.7466 | 74.60 |
| 40.5 | 157,881 | 34,668 | 0.2196 | 0.7804 | 55.70 |
| 41.5 | 122,424 | | 0.0000 | 1.0000 | 43.47 |
| 42.5 | 122,424 | | 0.0000 | 1.0000 | 43.47 |
| 43.5 | 122,424 | 18,586 | 0.1518 | 0.8482 | 43.47 |
| 44.5 | 103,838 | 11,745 | 0.1131 | 0.8869 | 36.87 |
| 45.5 | 14,119 | | 0.0000 | 1.0000 | 32.70 |
| 46.5 | 14,119 | | 0.0000 | 1.0000 | 32.70 |
| 47.5 | 14,119 | | 0.0000 | 1.0000 | 32.70 |
| 48.5 | 14,119 | | 0.0000 | 1.0000 | 32.70 |
| 49.5 | | | | | 32.70 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 356.00 OVERHEAD CONDUCTORS AND DEVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1969-2018 EXPERIENCE BAND 2008-2018

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 0.0 | 1,741,408 | 21,935 | 0.0126 | 0.9874 | 100.00 |
| 0.5 | 1,721,906 | 15,494 | 0.0090 | 0.9910 | 98.74 |
| 1.5 | 1,683,792 | | 0.0000 | 1.0000 | 97.85 |
| 2.5 | 1,694,810 | 1,444 | 0.0009 | 0.9991 | 97.85 |
| 3.5 | 1,701,097 | 1,444 | 0.0008 | 0.9992 | 97.77 |
| 4.5 | 516,524 | 13,762 | 0.0266 | 0.9734 | 97.69 |
| 5.5 | 73,806 | | 0.0000 | 1.0000 | 95.08 |
| 6.5 | 73,906 | | 0.0000 | 1.0000 | 95.08 |
| 7.5 | 74,720 | 1,811 | 0.0242 | 0.9758 | 95.08 |
| 8.5 | 204,257 | 3,957 | 0.0194 | 0.9806 | 92.78 |
| 9.5 | 160,747 | 2,276 | 0.0142 | 0.9858 | 90.98 |
| 10.5 | 155,819 | 2,015 | 0.0129 | 0.9871 | 89.69 |
| 11.5 | 152,819 | 3 | 0.0000 | 1.0000 | 88.53 |
| 12.5 | 152,816 | 1,449 | 0.0095 | 0.9905 | 88.53 |
| 13.5 | 144,022 | 10,353 | 0.0719 | 0.9281 | 87.69 |
| 14.5 | 125,938 | 26,708 | 0.2121 | 0.7879 | 81.39 |
| 15.5 | 94,065 | | 0.0000 | 1.0000 | 64.13 |
| 16.5 | 94,065 | | 0.0000 | 1.0000 | 64.13 |
| 17.5 | 93,968 | | 0.0000 | 1.0000 | 64.13 |
| 18.5 | 93,155 | 853 | 0.0092 | 0.9908 | 64.13 |
| 19.5 | 1,448 | | 0.0000 | 1.0000 | 63.54 |
| 20.5 | 1,448 | | 0.0000 | 1.0000 | 63.54 |
| 21.5 | 1,448 | | 0.0000 | 1.0000 | 63.54 |
| 22.5 | | | | | 63.54 |
| 23.5 | | | | | |
| 24.5 | | | | | |
| 25.5 | | | | | |
| 26.5 | | | | | |
| 27.5 | | | | | |
| 28.5 | | | | | |
| 29.5 | 12,915 | | 0.0000 | | |
| 30.5 | 15,076 | | 0.0000 | | |
| 31.5 | 15,076 | | 0.0000 | | |
| 32.5 | 15,076 | | 0.0000 | | |
| 33.5 | 2,160 | | 0.0000 | | |
| 34.5 | 153,591 | | 0.0000 | | |
| 35.5 | 153,591 | | 0.0000 | | |
| 36.5 | 153,591 | 429 | 0.0028 | | |
| 37.5 | 153,161 | | 0.0000 | | |
| 38.5 | 211,469 | | 0.0000 | | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 356.00 OVERHEAD CONDUCTORS AND DEVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1969-2018 EXPERIENCE BAND 2008-2018

| 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 | 211,469 | 53,589 | 0.2534 | | |
| 40.5 | 157,881 | 34,668 | 0.2196 | | |
| 41.5 | 122,424 | | 0.0000 | | |
| 42.5 | 122,424 | | 0.0000 | | |
| 43.5 | 122,424 | 18,586 | 0.1518 | | |
| 44.5 | 103,838 | 11,745 | 0.1131 | | |
| 45.5 | 14,119 | | 0.0000 | | |
| 46.5 | 14,119 | | 0.0000 | | |
| 47.5 | 14,119 | | 0.0000 | | |
| 48.5 | 14,119 | | 0.0000 | | |
| 49.5 | | | | | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT
ACCOUNT 361.00 STRUCTURES AND IMPROVEMENTS
ORIGINAL AND SMOOTH SURVIVOR CURVES

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 361.00 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1911-2012 EXPERIENCE BAND 1970-2018

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 0.0 | 1,287,011 | 6 | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 1,345,815 | 1 | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 1,346,990 | 16 | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 1,368,482 | 2 | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 1,387,275 | 21 | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 1,387,258 | 4 | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 1,387,262 | 5 | 0.0000 | 1.0000 | 100.00 |
| 6.5 | 1,371,001 | 30 | 0.0000 | 1.0000 | 100.00 |
| 7.5 | 1,373,418 | 21 | 0.0000 | 1.0000 | 99.99 |
| 8.5 | 1,373,402 | 6 | 0.0000 | 1.0000 | 99.99 |
| 9.5 | 1,376,229 | 27 | 0.0000 | 1.0000 | 99.99 |
| 10.5 | 1,373,217 | 8 | 0.0000 | 1.0000 | 99.99 |
| 11.5 | 1,374,014 | 4 | 0.0000 | 1.0000 | 99.99 |
| 12.5 | 1,376,059 | 12 | 0.0000 | 1.0000 | 99.99 |
| 13.5 | 1,376,110 | 21,838 | 0.0159 | 0.9841 | 99.99 |
| 14.5 | 1,354,274 | 11 | 0.0000 | 1.0000 | 98.40 |
| 15.5 | 1,363,574 | 9 | 0.0000 | 1.0000 | 98.40 |
| 16.5 | 1,311,296 | 2 | 0.0000 | 1.0000 | 98.40 |
| 17.5 | 1,311,712 | 6,826 | 0.0052 | 0.9948 | 98.40 |
| 18.5 | 387,190 | 6 | 0.0000 | 1.0000 | 97.89 |
| 19.5 | 394,095 | 26 | 0.0001 | 0.9999 | 97.89 |
| 20.5 | 346,799 | 61 | 0.0002 | 0.9998 | 97.88 |
| 21.5 | 328,163 | 34 | 0.0001 | 0.9999 | 97.86 |
| 22.5 | 302,473 | 9 | 0.0000 | 1.0000 | 97.85 |
| 23.5 | 302,502 | 8 | 0.0000 | 1.0000 | 97.85 |
| 24.5 | 302,616 | 38 | 0.0001 | 0.9999 | 97.85 |
| 25.5 | 302,635 | 25 | 0.0001 | 0.9999 | 97.83 |
| 26.5 | 304,494 | 27 | 0.0001 | 0.9999 | 97.83 |
| 27.5 | 304,488 | 94 | 0.0003 | 0.9997 | 97.82 |
| 28.5 | 304,435 | 29 | 0.0001 | 0.9999 | 97.79 |
| 29.5 | 300,703 | 23 | 0.0001 | 0.9999 | 97.78 |
| 30.5 | 303,029 | 8 | 0.0000 | 1.0000 | 97.77 |
| 31.5 | 303,026 | 55,174 | 0.1821 | 0.8179 | 97.77 |
| 32.5 | 249,977 | 203 | 0.0008 | 0.9992 | 79.97 |
| 33.5 | 249,803 | 18 | 0.0001 | 0.9999 | 79.90 |
| 34.5 | 199,086 | 28 | 0.0001 | 0.9999 | 79.90 |
| 35.5 | 190,283 | 59 | 0.0003 | 0.9997 | 79.88 |
| 36.5 | 190,252 | 19 | 0.0001 | 0.9999 | 79.86 |
| 37.5 | 190,357 | 17 | 0.0001 | 0.9999 | 79.85 |
| 38.5 | 190,683 | 34 | 0.0002 | 0.9998 | 79.84 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 361.00 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1911-2012 EXPERIENCE BAND 1970-2018

| 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 | 190,694 | 217 | 0.0011 | 0.9989 | 79.83 |
| 40.5 | 191,546 | 66 | 0.0003 | 0.9997 | 79.74 |
| 41.5 | 200,494 | 102 | 0.0005 | 0.9995 | 79.71 |
| 42.5 | 201,843 | 213 | 0.0011 | 0.9989 | 79.67 |
| 43.5 | 202,656 | 139 | 0.0007 | 0.9993 | 79.59 |
| 44.5 | 204,117 | 489 | 0.0024 | 0.9976 | 79.53 |
| 45.5 | 203,917 | 169 | 0.0008 | 0.9992 | 79.34 |
| 46.5 | 241,596 | 507 | 0.0021 | 0.9979 | 79.28 |
| 47.5 | 237,801 | 157 | 0.0007 | 0.9993 | 79.11 |
| 48.5 | 209,922 | 572 | 0.0027 | 0.9973 | 79.06 |
| 49.5 | 150,592 | 414 | 0.0028 | 0.9972 | 78.84 |
| 50.5 | 149,006 | 62 | 0.0004 | 0.9996 | 78.63 |
| 51.5 | 127,441 | 666 | 0.0052 | 0.9948 | 78.59 |
| 52.5 | 107,986 | 149 | 0.0014 | 0.9986 | 78.18 |
| 53.5 | 107,837 | 530 | 0.0049 | 0.9951 | 78.07 |
| 54.5 | 107,307 | 236 | 0.0022 | 0.9978 | 77.69 |
| 55.5 | 106,171 | 630 | 0.0059 | 0.9941 | 77.52 |
| 56.5 | 103,109 | 132 | 0.0013 | 0.9987 | 77.06 |
| 57.5 | 102,977 | 273 | 0.0027 | 0.9973 | 76.96 |
| 58.5 | 109,932 | 234 | 0.0021 | 0.9979 | 76.76 |
| 59.5 | 108,956 | 1,270 | 0.0117 | 0.9883 | 76.59 |
| 60.5 | 106,891 | 28 | 0.0003 | 0.9997 | 75.70 |
| 61.5 | 104,851 | 733 | 0.0070 | 0.9930 | 75.68 |
| 62.5 | 104,118 | 57 | 0.0005 | 0.9995 | 75.15 |
| 63.5 | 104,061 | 314 | 0.0030 | 0.9970 | 75.11 |
| 64.5 | 94,459 | 98 | 0.0010 | 0.9990 | 74.88 |
| 65.5 | 93,763 | 377 | 0.0040 | 0.9960 | 74.81 |
| 66.5 | 92,990 | 295 | 0.0032 | 0.9968 | 74.51 |
| 67.5 | 92,280 | 672 | 0.0073 | 0.9927 | 74.27 |
| 68.5 | 67,288 | 354 | 0.0053 | 0.9947 | 73.73 |
| 69.5 | 66,934 | 923 | 0.0138 | 0.9862 | 73.34 |
| 70.5 | 66,011 | 440 | 0.0067 | 0.9933 | 72.33 |
| 71.5 | 65,571 | 2,528 | 0.0385 | 0.9615 | 71.85 |
| 72.5 | 63,044 | 365 | 0.0058 | 0.9942 | 69.08 |
| 73.5 | 62,577 | 1,171 | 0.0187 | 0.9813 | 68.68 |
| 74.5 | 61,407 | 180 | 0.0029 | 0.9971 | 67.39 |
| 75.5 | 61,227 | 923 | 0.0151 | 0.9849 | 67.20 |
| 76.5 | 60,304 | 175 | 0.0029 | 0.9971 | 66.18 |
| 77.5 | 60,129 | 900 | 0.0150 | 0.9850 | 65.99 |
| 78.5 | 59,229 | 38 | 0.0006 | 0.9994 | 65.00 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 361.00 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1911-2012 EXPERIENCE BAND 1970-2018

| 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 | 56,937 | 177 | 0.0031 | 0.9969 | 64.96 |
| 80.5 | 56,760 | 258 | 0.0045 | 0.9955 | 64.76 |
| 81.5 | 54,419 | 637 | 0.0117 | 0.9883 | 64.47 |
| 82.5 | 53,782 | 0 | 0.0000 | 1.0000 | 63.71 |
| 83.5 | 53,782 | 2,044 | 0.0380 | 0.9620 | 63.71 |
| 84.5 | 51,737 | | 0.0000 | 1.0000 | 61.29 |
| 85.5 | 51,737 | 1,915 | 0.0370 | 0.9630 | 61.29 |
| 86.5 | 49,822 | | 0.0000 | 1.0000 | 59.02 |
| 87.5 | 49,822 | 1,826 | 0.0367 | 0.9633 | 59.02 |
| 88.5 | 47,996 | | 0.0000 | 1.0000 | 56.86 |
| 89.5 | 47,996 | | 0.0000 | 1.0000 | 56.86 |
| 90.5 | 39,692 | 638 | 0.0161 | 0.9839 | 56.86 |
| 91.5 | 39,054 | 176 | 0.0045 | 0.9955 | 55.94 |
| 92.5 | 38,877 | | 0.0000 | 1.0000 | 55.69 |
| 93.5 | 38,877 | 186 | 0.0048 | 0.9952 | 55.69 |
| 94.5 | 38,584 | | 0.0000 | 1.0000 | 55.42 |
| 95.5 | | | | | 55.42 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 361.00 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1923-2012 EXPERIENCE BAND 2008-2018

| 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 | 20,910 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 20,910 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 20,910 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 20,910 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 20,910 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 20,910 | | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 73,871 | | 0.0000 | 1.0000 | 100.00 |
| 6.5 | 56,701 | | 0.0000 | 1.0000 | 100.00 |
| 7.5 | 974,865 | | 0.0000 | 1.0000 | 100.00 |
| 8.5 | 994,576 | | 0.0000 | 1.0000 | 100.00 |
| 9.5 | 1,041,908 | | 0.0000 | 1.0000 | 100.00 |
| 10.5 | 1,056,835 | | 0.0000 | 1.0000 | 100.00 |
| 11.5 | 1,082,569 | | 0.0000 | 1.0000 | 100.00 |
| 12.5 | 1,104,398 | | 0.0000 | 1.0000 | 100.00 |
| 13.5 | 1,104,398 | 21,830 | 0.0198 | 0.9802 | 100.00 |
| 14.5 | 1,082,569 | | 0.0000 | 1.0000 | 98.02 |
| 15.5 | 1,082,569 | | 0.0000 | 1.0000 | 98.02 |
| 16.5 | 1,036,407 | | 0.0000 | 1.0000 | 98.02 |
| 17.5 | 1,036,407 | 6,800 | 0.0066 | 0.9934 | 98.02 |
| 18.5 | 115,147 | | 0.0000 | 1.0000 | 97.38 |
| 19.5 | 95,437 | | 0.0000 | 1.0000 | 97.38 |
| 20.5 | 48,104 | | 0.0000 | 1.0000 | 97.38 |
| 21.5 | 29,437 | | 0.0000 | 1.0000 | 97.38 |
| 22.5 | 3,704 | | 0.0000 | 1.0000 | 97.38 |
| 23.5 | 55,140 | | 0.0000 | 1.0000 | 97.38 |
| 24.5 | 63,940 | | 0.0000 | 1.0000 | 97.38 |
| 25.5 | 63,940 | | 0.0000 | 1.0000 | 97.38 |
| 26.5 | 63,940 | | 0.0000 | 1.0000 | 97.38 |
| 27.5 | 63,940 | | 0.0000 | 1.0000 | 97.38 |
| 28.5 | 63,940 | | 0.0000 | 1.0000 | 97.38 |
| 29.5 | 60,237 | | 0.0000 | 1.0000 | 97.38 |
| 30.5 | 115,382 | | 0.0000 | 1.0000 | 97.38 |
| 31.5 | 115,382 | 55,145 | 0.4779 | 0.5221 | 97.38 |
| 32.5 | 60,237 | | 0.0000 | 1.0000 | 50.84 |
| 33.5 | 60,237 | | 0.0000 | 1.0000 | 50.84 |
| 34.5 | 8,800 | | 0.0000 | 1.0000 | 50.84 |
| 35.5 | 736 | | 0.0000 | 1.0000 | 50.84 |
| 36.5 | 4,027 | | 0.0000 | 1.0000 | 50.84 |
| 37.5 | 35,387 | | 0.0000 | 1.0000 | 50.84 |
| 38.5 | 94,145 | | 0.0000 | 1.0000 | 50.84 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 361.00 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1923-2012 EXPERIENCE BAND 2008-2018

| 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 | 95,316 | | 0.0000 | 1.0000 | 50.84 |
| 40.5 | 116,819 | | 0.0000 | 1.0000 | 50.84 |
| 41.5 | 135,608 | | 0.0000 | 1.0000 | 50.84 |
| 42.5 | 135,608 | | 0.0000 | 1.0000 | 50.84 |
| 43.5 | 135,608 | | 0.0000 | 1.0000 | 50.84 |
| 44.5 | 136,508 | | 0.0000 | 1.0000 | 50.84 |
| 45.5 | 138,939 | | 0.0000 | 1.0000 | 50.84 |
| 46.5 | 138,203 | | 0.0000 | 1.0000 | 50.84 |
| 47.5 | 137,728 | | 0.0000 | 1.0000 | 50.84 |
| 48.5 | 107,111 | | 0.0000 | 1.0000 | 50.84 |
| 49.5 | 49,148 | | 0.0000 | 1.0000 | 50.84 |
| 50.5 | 49,990 | | 0.0000 | 1.0000 | 50.84 |
| 51.5 | 28,487 | | 0.0000 | 1.0000 | 50.84 |
| 52.5 | 9,698 | | 0.0000 | 1.0000 | 50.84 |
| 53.5 | 18,987 | | 0.0000 | 1.0000 | 50.84 |
| 54.5 | 19,584 | | 0.0000 | 1.0000 | 50.84 |
| 55.5 | 19,080 | | 0.0000 | 1.0000 | 50.84 |
| 56.5 | 17,064 | | 0.0000 | 1.0000 | 50.84 |
| 57.5 | 41,384 | | 0.0000 | 1.0000 | 50.84 |
| 58.5 | 38,568 | | 0.0000 | 1.0000 | 50.84 |
| 59.5 | 37,826 | | 0.0000 | 1.0000 | 50.84 |
| 60.5 | 37,031 | | 0.0000 | 1.0000 | 50.84 |
| 61.5 | 35,018 | | 0.0000 | 1.0000 | 50.84 |
| 62.5 | 35,119 | | 0.0000 | 1.0000 | 50.84 |
| 63.5 | 35,119 | | 0.0000 | 1.0000 | 50.84 |
| 64.5 | 25,831 | | 0.0000 | 1.0000 | 50.84 |
| 65.5 | 25,233 | | 0.0000 | 1.0000 | 50.84 |
| 66.5 | 24,836 | | 0.0000 | 1.0000 | 50.84 |
| 67.5 | 24,422 | | 0.0000 | 1.0000 | 50.84 |
| 68.5 | 2,354 | | 0.0000 | 1.0000 | 50.84 |
| 69.5 | 2,354 | | 0.0000 | 1.0000 | 50.84 |
| 70.5 | 4,438 | | 0.0000 | 1.0000 | 50.84 |
| 71.5 | 4,438 | | 0.0000 | 1.0000 | 50.84 |
| 72.5 | 4,438 | | 0.0000 | 1.0000 | 50.84 |
| 73.5 | 4,337 | | 0.0000 | 1.0000 | 50.84 |
| 74.5 | 4,337 | | 0.0000 | 1.0000 | 50.84 |
| 75.5 | 4,337 | | 0.0000 | 1.0000 | 50.84 |
| 76.5 | 4,337 | | 0.0000 | 1.0000 | 50.84 |
| 77.5 | 4,337 | | 0.0000 | 1.0000 | 50.84 |
| 78.5 | 4,337 | | 0.0000 | 1.0000 | 50.84 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 361.00 STRUCTURES AND IMPROVEMENTS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1923-2012 EXPERIENCE BAND 2008-2018

| 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 | 10,388 | | 0.0000 | 1.0000 | 50.84 |
| 80.5 | 10,388 | | 0.0000 | 1.0000 | 50.84 |
| 81.5 | 8,304 | | 0.0000 | 1.0000 | 50.84 |
| 82.5 | 8,304 | | 0.0000 | 1.0000 | 50.84 |
| 83.5 | 8,412 | | 0.0000 | 1.0000 | 50.84 |
| 84.5 | 46,996 | | 0.0000 | 1.0000 | 50.84 |
| 85.5 | 46,996 | | 0.0000 | 1.0000 | 50.84 |
| 86.5 | 46,996 | | 0.0000 | 1.0000 | 50.84 |
| 87.5 | 46,996 | | 0.0000 | 1.0000 | 50.84 |
| 88.5 | 46,996 | | 0.0000 | 1.0000 | 50.84 |
| 89.5 | 46,996 | | 0.0000 | 1.0000 | 50.84 |
| 90.5 | 38,691 | | 0.0000 | 1.0000 | 50.84 |
| 91.5 | 38,691 | | 0.0000 | 1.0000 | 50.84 |
| 92.5 | 38,691 | | 0.0000 | 1.0000 | 50.84 |
| 93.5 | 38,691 | | 0.0000 | 1.0000 | 50.84 |
| 94.5 | 38,584 | | 0.0000 | 1.0000 | 50.84 |
| 95.5 | | | | | 50.84 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT
ACCOUNT 362.00 STATION EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES
ORIGINAL CURVE
1969-2018 EXPERIENCE
1921-2018 PLACEMENTS
2008-2018 EXPERIENCE
1924-2018 PLACEMENTS
IOWA 50-S2.5
PERCENT SURVIVING
AGE IN YEARS
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
120

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 362.00 STATION EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1921-2018 EXPERIENCE BAND 1969-2018

| 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 | 14,997,816 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 12,771,739 | 2,622 | 0.0002 | 0.9998 | 100.00 |
| 1.5 | 12,485,531 | | 0.0000 | 1.0000 | 99.98 |
| 2.5 | 12,583,309 | 15,905 | 0.0013 | 0.9987 | 99.98 |
| 3.5 | 12,405,717 | 2,309 | 0.0002 | 0.9998 | 99.85 |
| 4.5 | 12,173,010 | 4,263 | 0.0004 | 0.9996 | 99.83 |
| 5.5 | 11,941,815 | 10,826 | 0.0009 | 0.9991 | 99.80 |
| 6.5 | 11,360,148 | 9,577 | 0.0008 | 0.9992 | 99.71 |
| 7.5 | 11,385,642 | 1,254 | 0.0001 | 0.9999 | 99.63 |
| 8.5 | 11,227,064 | 27,168 | 0.0024 | 0.9976 | 99.61 |
| 9.5 | 11,061,570 | 2 | 0.0000 | 1.0000 | 99.37 |
| 10.5 | 10,966,650 | 6,418 | 0.0006 | 0.9994 | 99.37 |
| 11.5 | 11,051,897 | 3,340 | 0.0003 | 0.9997 | 99.31 |
| 12.5 | 11,061,632 | 56,156 | 0.0051 | 0.9949 | 99.28 |
| 13.5 | 11,636,315 | 21,450 | 0.0018 | 0.9982 | 98.78 |
| 14.5 | 11,556,808 | 16,322 | 0.0014 | 0.9986 | 98.60 |
| 15.5 | 11,343,077 | 90,230 | 0.0080 | 0.9920 | 98.46 |
| 16.5 | 10,231,758 | 23,230 | 0.0023 | 0.9977 | 97.68 |
| 17.5 | 9,539,366 | 7,627 | 0.0008 | 0.9992 | 97.45 |
| 18.5 | 7,912,024 | 567 | 0.0001 | 0.9999 | 97.38 |
| 19.5 | 7,765,936 | 601 | 0.0001 | 0.9999 | 97.37 |
| 20.5 | 6,532,303 | 9,574 | 0.0015 | 0.9985 | 97.36 |
| 21.5 | 6,412,158 | 4,080 | 0.0006 | 0.9994 | 97.22 |
| 22.5 | 4,556,246 | 1,917 | 0.0004 | 0.9996 | 97.16 |
| 23.5 | 4,500,599 | 7,519 | 0.0017 | 0.9983 | 97.12 |
| 24.5 | 4,324,089 | 4,972 | 0.0011 | 0.9989 | 96.95 |
| 25.5 | 4,484,323 | 5,456 | 0.0012 | 0.9988 | 96.84 |
| 26.5 | 4,473,782 | 16,368 | 0.0037 | 0.9963 | 96.73 |
| 27.5 | 3,600,331 | 3,086 | 0.0009 | 0.9991 | 96.37 |
| 28.5 | 3,564,743 | 82,529 | 0.0232 | 0.9768 | 96.29 |
| 29.5 | 2,919,282 | 7,251 | 0.0025 | 0.9975 | 94.06 |
| 30.5 | 2,915,095 | 124,114 | 0.0426 | 0.9574 | 93.83 |
| 31.5 | 2,802,080 | 34,192 | 0.0122 | 0.9878 | 89.83 |
| 32.5 | 2,689,268 | 45,991 | 0.0171 | 0.9829 | 88.73 |
| 33.5 | 2,675,366 | 67,611 | 0.0253 | 0.9747 | 87.22 |
| 34.5 | 2,600,855 | 69,729 | 0.0268 | 0.9732 | 85.01 |
| 35.5 | 2,347,442 | 52,390 | 0.0223 | 0.9777 | 82.73 |
| 36.5 | 2,352,985 | 32,932 | 0.0140 | 0.9860 | 80.89 |
| 37.5 | 2,334,355 | 89,269 | 0.0382 | 0.9618 | 79.76 |
| 38.5 | 2,246,928 | 31,341 | 0.0139 | 0.9861 | 76.71 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 362.00 STATION EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1921-2018 EXPERIENCE BAND 1969-2018

| 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 | 2,200,636 | 33,306 | 0.0151 | 0.9849 | 75.64 |
| 40.5 | 2,214,409 | 56,335 | 0.0254 | 0.9746 | 74.49 |
| 41.5 | 2,126,190 | 39,668 | 0.0187 | 0.9813 | 72.60 |
| 42.5 | 2,092,236 | 106,354 | 0.0508 | 0.9492 | 71.24 |
| 43.5 | 2,007,502 | 46,297 | 0.0231 | 0.9769 | 67.62 |
| 44.5 | 1,809,905 | 113,310 | 0.0626 | 0.9374 | 66.06 |
| 45.5 | 1,376,628 | 60,765 | 0.0441 | 0.9559 | 61.92 |
| 46.5 | 1,297,874 | 74,651 | 0.0575 | 0.9425 | 59.19 |
| 47.5 | 1,267,697 | 41,866 | 0.0330 | 0.9670 | 55.79 |
| 48.5 | 1,230,488 | 91,531 | 0.0744 | 0.9256 | 53.94 |
| 49.5 | 1,054,339 | 66,242 | 0.0628 | 0.9372 | 49.93 |
| 50.5 | 1,055,978 | 57,078 | 0.0541 | 0.9459 | 46.79 |
| 51.5 | 859,506 | 72,177 | 0.0840 | 0.9160 | 44.27 |
| 52.5 | 733,083 | 33,976 | 0.0463 | 0.9537 | 40.55 |
| 53.5 | 607,851 | 35,740 | 0.0588 | 0.9412 | 38.67 |
| 54.5 | 571,586 | 32,699 | 0.0572 | 0.9428 | 36.40 |
| 55.5 | 536,974 | 28,462 | 0.0530 | 0.9470 | 34.31 |
| 56.5 | 504,136 | 20,638 | 0.0409 | 0.9591 | 32.49 |
| 57.5 | 431,714 | 18,796 | 0.0435 | 0.9565 | 31.16 |
| 58.5 | 412,319 | 86,214 | 0.2091 | 0.7909 | 29.81 |
| 59.5 | 325,020 | 9,823 | 0.0302 | 0.9698 | 23.57 |
| 60.5 | 292,221 | 6,224 | 0.0213 | 0.9787 | 22.86 |
| 61.5 | 192,491 | 5,618 | 0.0292 | 0.9708 | 22.38 |
| 62.5 | 148,911 | 17,041 | 0.1144 | 0.8856 | 21.72 |
| 63.5 | 131,870 | 8,334 | 0.0632 | 0.9368 | 19.24 |
| 64.5 | 122,002 | 6,562 | 0.0538 | 0.9462 | 18.02 |
| 65.5 | 114,555 | 7,456 | 0.0651 | 0.9349 | 17.05 |
| 66.5 | 107,083 | 14,761 | 0.1378 | 0.8622 | 15.94 |
| 67.5 | 91,155 | 7,273 | 0.0798 | 0.9202 | 13.74 |
| 68.5 | 67,374 | 3,105 | 0.0461 | 0.9539 | 12.65 |
| 69.5 | 64,269 | 9,360 | 0.1456 | 0.8544 | 12.06 |
| 70.5 | 50,888 | 5,420 | 0.1065 | 0.8935 | 10.31 |
| 71.5 | 44,037 | 4,192 | 0.0952 | 0.9048 | 9.21 |
| 72.5 | 39,844 | 3,863 | 0.0970 | 0.9030 | 8.33 |
| 73.5 | 35,181 | 6,632 | 0.1885 | 0.8115 | 7.53 |
| 74.5 | 26,626 | 1,472 | 0.0553 | 0.9447 | 6.11 |
| 75.5 | 20,510 | 306 | 0.0149 | 0.9851 | 5.77 |
| 76.5 | 16,501 | 2,140 | 0.1297 | 0.8703 | 5.68 |
| 77.5 | 14,360 | 173 | 0.0121 | 0.9879 | 4.95 |
| 78.5 | 14,187 | 111 | 0.0078 | 0.9922 | 4.89 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 362.00 STATION EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1921-2018 EXPERIENCE BAND 1969-2018

| 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 | 5,402 | 37 | 0.0068 | 0.9932 | 4.85 |
| 80.5 | 3,970 | 310 | 0.0780 | 0.9220 | 4.81 |
| 81.5 | 1,948 | | 0.0000 | 1.0000 | 4.44 |
| 82.5 | 1,948 | | 0.0000 | 1.0000 | 4.44 |
| 83.5 | 1,948 | | 0.0000 | 1.0000 | 4.44 |
| 84.5 | 1,654 | | 0.0000 | 1.0000 | 4.44 |
| 85.5 | 1,654 | | 0.0000 | 1.0000 | 4.44 |
| 86.5 | 1,654 | | 0.0000 | 1.0000 | 4.44 |
| 87.5 | 1,654 | | 0.0000 | 1.0000 | 4.44 |
| 88.5 | 1,654 | | 0.0000 | 1.0000 | 4.44 |
| 89.5 | 1,654 | | 0.0000 | 1.0000 | 4.44 |
| 90.5 | 1,654 | | 0.0000 | 1.0000 | 4.44 |
| 91.5 | 1,654 | | 0.0000 | 1.0000 | 4.44 |
| 92.5 | 1,654 | | 0.0000 | 1.0000 | 4.44 |
| 93.5 | 1,654 | | 0.0000 | 1.0000 | 4.44 |
| 94.5 | | | | | 4.44 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 362.00 STATION EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1924-2018 EXPERIENCE BAND 2008-2018

| 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 | 4,747,347 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 2,485,303 | 2,622 | 0.0011 | 0.9989 | 100.00 |
| 1.5 | 2,138,361 | | 0.0000 | 1.0000 | 99.89 |
| 2.5 | 2,149,560 | 15,905 | 0.0074 | 0.9926 | 99.89 |
| 3.5 | 2,049,535 | 2,309 | 0.0011 | 0.9989 | 99.16 |
| 4.5 | 2,089,253 | 4,263 | 0.0020 | 0.9980 | 99.04 |
| 5.5 | 2,377,049 | 10,826 | 0.0046 | 0.9954 | 98.84 |
| 6.5 | 2,494,612 | 9,577 | 0.0038 | 0.9962 | 98.39 |
| 7.5 | 4,076,035 | 1,254 | 0.0003 | 0.9997 | 98.01 |
| 8.5 | 4,105,227 | 27,167 | 0.0066 | 0.9934 | 97.98 |
| 9.5 | 5,195,794 | | 0.0000 | 1.0000 | 97.34 |
| 10.5 | 5,183,278 | 6,413 | 0.0012 | 0.9988 | 97.34 |
| 11.5 | 6,993,157 | 3,256 | 0.0005 | 0.9995 | 97.21 |
| 12.5 | 6,989,447 | 56,008 | 0.0080 | 0.9920 | 97.17 |
| 13.5 | 7,630,500 | 21,424 | 0.0028 | 0.9972 | 96.39 |
| 14.5 | 7,517,219 | 16,288 | 0.0022 | 0.9978 | 96.12 |
| 15.5 | 7,258,354 | 89,982 | 0.0124 | 0.9876 | 95.91 |
| 16.5 | 6,957,637 | 23,210 | 0.0033 | 0.9967 | 94.72 |
| 17.5 | 6,245,567 | 7,592 | 0.0012 | 0.9988 | 94.41 |
| 18.5 | 5,136,103 | | 0.0000 | 1.0000 | 94.29 |
| 19.5 | 4,976,681 | | 0.0000 | 1.0000 | 94.29 |
| 20.5 | 3,699,742 | 7,189 | 0.0019 | 0.9981 | 94.29 |
| 21.5 | 3,666,612 | | 0.0000 | 1.0000 | 94.11 |
| 22.5 | 1,821,856 | 779 | 0.0004 | 0.9996 | 94.11 |
| 23.5 | 1,763,745 | | 0.0000 | 1.0000 | 94.07 |
| 24.5 | 1,767,349 | | 0.0000 | 1.0000 | 94.07 |
| 25.5 | 1,781,733 | | 0.0000 | 1.0000 | 94.07 |
| 26.5 | 1,772,462 | 847 | 0.0005 | 0.9995 | 94.07 |
| 27.5 | 908,394 | | 0.0000 | 1.0000 | 94.02 |
| 28.5 | 875,194 | | 0.0000 | 1.0000 | 94.02 |
| 29.5 | 302,637 | 164 | 0.0005 | 0.9995 | 94.02 |
| 30.5 | 362,672 | 569 | 0.0016 | 0.9984 | 93.97 |
| 31.5 | 366,616 | | 0.0000 | 1.0000 | 93.83 |
| 32.5 | 286,739 | | 0.0000 | 1.0000 | 93.83 |
| 33.5 | 442,393 | | 0.0000 | 1.0000 | 93.83 |
| 34.5 | 815,622 | | 0.0000 | 1.0000 | 93.83 |
| 35.5 | 656,897 | | 0.0000 | 1.0000 | 93.83 |
| 36.5 | 717,872 | | 0.0000 | 1.0000 | 93.83 |
| 37.5 | 790,919 | 37,655 | 0.0476 | 0.9524 | 93.83 |
| 38.5 | 881,910 | 8,401 | 0.0095 | 0.9905 | 89.36 |

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ELECTRIC PLANT

ACCOUNT 362.00 STATION EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1924-2018 EXPERIENCE BAND 2008-2018

| 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 | 853,876 | 5,030 | 0.0059 | 0.9941 | 88.51 |
| 40.5 | 914,745 | | 0.0000 | 1.0000 | 87.99 |
| 41.5 | 949,548 | 3,948 | 0.0042 | 0.9958 | 87.99 |
| 42.5 | 955,068 | 35,305 | 0.0370 | 0.9630 | 87.62 |
| 43.5 | 902,445 | 3,752 | 0.0042 | 0.9958 | 84.38 |
| 44.5 | 744,904 | 66,936 | 0.0899 | 0.9101 | 84.03 |
| 45.5 | 359,161 | 12,725 | 0.0354 | 0.9646 | 76.48 |
| 46.5 | 378,711 | 2,782 | 0.0073 | 0.9927 | 73.77 |
| 47.5 | 371,800 | | 0.0000 | 1.0000 | 73.23 |
| 48.5 | 378,665 | 15,564 | 0.0411 | 0.9589 | 73.23 |
| 49.5 | 301,460 | | 0.0000 | 1.0000 | 70.22 |
| 50.5 | 468,073 | 5,072 | 0.0108 | 0.9892 | 70.22 |
| 51.5 | 371,196 | | 0.0000 | 1.0000 | 69.46 |
| 52.5 | 316,990 | 1,187 | 0.0037 | 0.9963 | 69.46 |
| 53.5 | 237,643 | | 0.0000 | 1.0000 | 69.20 |
| 54.5 | 238,004 | | 0.0000 | 1.0000 | 69.20 |
| 55.5 | 236,107 | 9,626 | 0.0408 | 0.9592 | 69.20 |
| 56.5 | 223,271 | 40 | 0.0002 | 0.9998 | 66.38 |
| 57.5 | 188,251 | 11,563 | 0.0614 | 0.9386 | 66.36 |
| 58.5 | 176,089 | 20 | 0.0001 | 0.9999 | 62.29 |
| 59.5 | 179,184 | 135 | 0.0008 | 0.9992 | 62.28 |
| 60.5 | 157,505 | | 0.0000 | 1.0000 | 62.23 |
| 61.5 | 63,999 | | 0.0000 | 1.0000 | 62.23 |
| 62.5 | 26,837 | | 0.0000 | 1.0000 | 62.23 |
| 63.5 | 28,760 | 179 | 0.0062 | 0.9938 | 62.23 |
| 64.5 | 31,691 | | 0.0000 | 1.0000 | 61.85 |
| 65.5 | 34,509 | | 0.0000 | 1.0000 | 61.85 |
| 66.5 | 34,492 | | 0.0000 | 1.0000 | 61.85 |
| 67.5 | 33,326 | 295 | 0.0089 | 0.9911 | 61.85 |
| 68.5 | 25,213 | | 0.0000 | 1.0000 | 61.30 |
| 69.5 | 26,609 | | 0.0000 | 1.0000 | 61.30 |
| 70.5 | 24,301 | | 0.0000 | 1.0000 | 61.30 |
| 71.5 | 22,869 | | 0.0000 | 1.0000 | 61.30 |
| 72.5 | 22,869 | | 0.0000 | 1.0000 | 61.30 |
| 73.5 | 22,363 | | 0.0000 | 1.0000 | 61.30 |
| 74.5 | 20,440 | 17 | 0.0009 | 0.9991 | 61.30 |
| 75.5 | 15,778 | | 0.0000 | 1.0000 | 61.25 |
| 76.5 | 12,075 | | 0.0000 | 1.0000 | 61.25 |
| 77.5 | 12,075 | | 0.0000 | 1.0000 | 61.25 |
| 78.5 | 12,075 | | 0.0000 | 1.0000 | 61.25 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 362.00 STATION EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1924-2018 EXPERIENCE BAND 2008-2018

| 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 | 3,402 | | 0.0000 | 1.0000 | 61.25 |
| 80.5 | 2,006 | | 0.0000 | 1.0000 | 61.25 |
| 81.5 | 294 | | 0.0000 | 1.0000 | 61.25 |
| 82.5 | 294 | | 0.0000 | 1.0000 | 61.25 |
| 83.5 | 1,948 | | 0.0000 | 1.0000 | 61.25 |
| 84.5 | 1,654 | | 0.0000 | 1.0000 | 61.25 |
| 85.5 | 1,654 | | 0.0000 | 1.0000 | 61.25 |
| 86.5 | 1,654 | | 0.0000 | 1.0000 | 61.25 |
| 87.5 | 1,654 | | 0.0000 | 1.0000 | 61.25 |
| 88.5 | 1,654 | | 0.0000 | 1.0000 | 61.25 |
| 89.5 | 1,654 | | 0.0000 | 1.0000 | 61.25 |
| 90.5 | 1,654 | | 0.0000 | 1.0000 | 61.25 |
| 91.5 | 1,654 | | 0.0000 | 1.0000 | 61.25 |
| 92.5 | 1,654 | | 0.0000 | 1.0000 | 61.25 |
| 93.5 | 1,654 | | 0.0000 | 1.0000 | 61.25 |
| 94.5 | | | | | 61.25 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT
ACCOUNT 364.00 POLES, TOWERS AND FIXTURES
ORIGINAL AND SMOOTH SURVIVOR CURVES
ORIGINAL CURVE
1970-2018 EXPERIENCE
1909-2018 PLACEMENTS
2008-2018 EXPERIENCE
1909-2018 PLACEMENTS
IOWA 55-R2.5
PERCENT SURVIVING
AGE IN YEARS
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
120

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 364.00 POLES, TOWERS AND FIXTURES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1909-2018 EXPERIENCE BAND 1970-2018

| 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 | 34,143,924 | 211 | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 32,771,308 | 42,624 | 0.0013 | 0.9987 | 100.00 |
| 1.5 | 30,857,135 | 54,759 | 0.0018 | 0.9982 | 99.87 |
| 2.5 | 29,831,539 | 20,854 | 0.0007 | 0.9993 | 99.69 |
| 3.5 | 28,696,494 | 20,532 | 0.0007 | 0.9993 | 99.62 |
| 4.5 | 26,800,626 | 96,957 | 0.0036 | 0.9964 | 99.55 |
| 5.5 | 25,431,728 | 35,327 | 0.0014 | 0.9986 | 99.19 |
| 6.5 | 24,227,815 | 19,130 | 0.0008 | 0.9992 | 99.05 |
| 7.5 | 23,939,539 | 42,170 | 0.0018 | 0.9982 | 98.97 |
| 8.5 | 22,739,683 | 70,465 | 0.0031 | 0.9969 | 98.80 |
| 9.5 | 18,549,533 | 34,368 | 0.0019 | 0.9981 | 98.49 |
| 10.5 | 17,304,073 | 23,179 | 0.0013 | 0.9987 | 98.31 |
| 11.5 | 16,506,706 | 32,924 | 0.0020 | 0.9980 | 98.18 |
| 12.5 | 15,487,015 | 45,752 | 0.0030 | 0.9970 | 97.98 |
| 13.5 | 14,522,694 | 41,014 | 0.0028 | 0.9972 | 97.69 |
| 14.5 | 13,315,717 | 40,398 | 0.0030 | 0.9970 | 97.42 |
| 15.5 | 12,218,088 | 28,992 | 0.0024 | 0.9976 | 97.12 |
| 16.5 | 11,488,116 | 33,631 | 0.0029 | 0.9971 | 96.89 |
| 17.5 | 10,617,116 | 28,930 | 0.0027 | 0.9973 | 96.61 |
| 18.5 | 9,908,910 | 31,148 | 0.0031 | 0.9969 | 96.35 |
| 19.5 | 9,144,784 | 29,323 | 0.0032 | 0.9968 | 96.04 |
| 20.5 | 8,562,434 | 29,726 | 0.0035 | 0.9965 | 95.74 |
| 21.5 | 7,854,145 | 30,333 | 0.0039 | 0.9961 | 95.40 |
| 22.5 | 7,027,466 | 32,029 | 0.0046 | 0.9954 | 95.03 |
| 23.5 | 6,611,731 | 30,846 | 0.0047 | 0.9953 | 94.60 |
| 24.5 | 6,263,283 | 34,605 | 0.0055 | 0.9945 | 94.16 |
| 25.5 | 5,740,296 | 35,358 | 0.0062 | 0.9938 | 93.64 |
| 26.5 | 5,473,530 | 30,163 | 0.0055 | 0.9945 | 93.06 |
| 27.5 | 5,162,586 | 35,651 | 0.0069 | 0.9931 | 92.55 |
| 28.5 | 4,806,096 | 35,673 | 0.0074 | 0.9926 | 91.91 |
| 29.5 | 4,487,227 | 32,687 | 0.0073 | 0.9927 | 91.23 |
| 30.5 | 4,212,345 | 37,025 | 0.0088 | 0.9912 | 90.56 |
| 31.5 | 4,002,810 | 39,028 | 0.0098 | 0.9902 | 89.77 |
| 32.5 | 3,876,615 | 43,273 | 0.0112 | 0.9888 | 88.89 |
| 33.5 | 3,751,085 | 41,426 | 0.0110 | 0.9890 | 87.90 |
| 34.5 | 3,615,134 | 34,531 | 0.0096 | 0.9904 | 86.93 |
| 35.5 | 3,456,227 | 34,753 | 0.0101 | 0.9899 | 86.10 |
| 36.5 | 3,299,599 | 34,288 | 0.0104 | 0.9896 | 85.23 |
| 37.5 | 3,154,553 | 41,933 | 0.0133 | 0.9867 | 84.35 |
| 38.5 | 3,003,768 | 53,273 | 0.0177 | 0.9823 | 83.23 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 364.00 POLES, TOWERS AND FIXTURES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1909-2018 EXPERIENCE BAND 1970-2018

| 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 | 2,814,385 | 61,725 | 0.0219 | 0.9781 | 81.75 |
| 40.5 | 2,644,581 | 47,223 | 0.0179 | 0.9821 | 79.96 |
| 41.5 | 2,442,110 | 53,023 | 0.0217 | 0.9783 | 78.53 |
| 42.5 | 2,293,883 | 45,157 | 0.0197 | 0.9803 | 76.83 |
| 43.5 | 2,188,992 | 48,307 | 0.0221 | 0.9779 | 75.31 |
| 44.5 | 1,954,826 | 97,962 | 0.0501 | 0.9499 | 73.65 |
| 45.5 | 1,182,157 | 47,283 | 0.0400 | 0.9600 | 69.96 |
| 46.5 | 1,070,257 | 25,150 | 0.0235 | 0.9765 | 67.16 |
| 47.5 | 1,047,600 | 26,268 | 0.0251 | 0.9749 | 65.58 |
| 48.5 | 993,379 | 30,572 | 0.0308 | 0.9692 | 63.94 |
| 49.5 | 847,545 | 22,113 | 0.0261 | 0.9739 | 61.97 |
| 50.5 | 811,361 | 22,347 | 0.0275 | 0.9725 | 60.35 |
| 51.5 | 752,812 | 20,755 | 0.0276 | 0.9724 | 58.69 |
| 52.5 | 702,711 | 20,823 | 0.0296 | 0.9704 | 57.07 |
| 53.5 | 649,678 | 25,312 | 0.0390 | 0.9610 | 55.38 |
| 54.5 | 580,698 | 24,088 | 0.0415 | 0.9585 | 53.22 |
| 55.5 | 519,902 | 18,620 | 0.0358 | 0.9642 | 51.02 |
| 56.5 | 458,532 | 26,611 | 0.0580 | 0.9420 | 49.19 |
| 57.5 | 394,481 | 16,603 | 0.0421 | 0.9579 | 46.34 |
| 58.5 | 348,907 | 13,993 | 0.0401 | 0.9599 | 44.39 |
| 59.5 | 309,043 | 12,632 | 0.0409 | 0.9591 | 42.60 |
| 60.5 | 277,187 | 12,749 | 0.0460 | 0.9540 | 40.86 |
| 61.5 | 245,593 | 12,459 | 0.0507 | 0.9493 | 38.98 |
| 62.5 | 215,451 | 10,094 | 0.0469 | 0.9531 | 37.01 |
| 63.5 | 193,750 | 10,592 | 0.0547 | 0.9453 | 35.27 |
| 64.5 | 166,432 | 7,685 | 0.0462 | 0.9538 | 33.34 |
| 65.5 | 146,225 | 7,593 | 0.0519 | 0.9481 | 31.80 |
| 66.5 | 130,300 | 7,589 | 0.0582 | 0.9418 | 30.15 |
| 67.5 | 105,842 | 6,228 | 0.0588 | 0.9412 | 28.40 |
| 68.5 | 94,282 | 6,470 | 0.0686 | 0.9314 | 26.73 |
| 69.5 | 84,194 | 6,499 | 0.0772 | 0.9228 | 24.89 |
| 70.5 | 77,104 | 5,166 | 0.0670 | 0.9330 | 22.97 |
| 71.5 | 64,843 | 5,461 | 0.0842 | 0.9158 | 21.43 |
| 72.5 | 56,549 | 3,989 | 0.0705 | 0.9295 | 19.63 |
| 73.5 | 50,583 | 3,968 | 0.0784 | 0.9216 | 18.24 |
| 74.5 | 44,155 | 4,002 | 0.0906 | 0.9094 | 16.81 |
| 75.5 | 39,345 | 3,471 | 0.0882 | 0.9118 | 15.29 |
| 76.5 | 31,710 | 2,903 | 0.0915 | 0.9085 | 13.94 |
| 77.5 | 27,106 | 2,142 | 0.0790 | 0.9210 | 12.66 |
| 78.5 | 24,035 | 1,758 | 0.0731 | 0.9269 | 11.66 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 364.00 POLES, TOWERS AND FIXTURES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1909-2018 EXPERIENCE BAND 1970-2018

| 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 | 20,166 | 1,662 | 0.0824 | 0.9176 | 10.81 |
| 80.5 | 16,659 | 1,634 | 0.0981 | 0.9019 | 9.92 |
| 81.5 | 14,575 | 1,512 | 0.1038 | 0.8962 | 8.94 |
| 82.5 | 12,279 | 1,340 | 0.1092 | 0.8908 | 8.02 |
| 83.5 | 10,266 | 2,121 | 0.2066 | 0.7934 | 7.14 |
| 84.5 | 7,983 | 1,137 | 0.1425 | 0.8575 | 5.67 |
| 85.5 | 6,457 | 605 | 0.0937 | 0.9063 | 4.86 |
| 86.5 | 4,165 | 205 | 0.0492 | 0.9508 | 4.40 |
| 87.5 | 3,594 | 368 | 0.1025 | 0.8975 | 4.19 |
| 88.5 | 2,399 | 216 | 0.0898 | 0.9102 | 3.76 |
| 89.5 | 1,625 | 84 | 0.0515 | 0.9485 | 3.42 |
| 90.5 | 1,490 | 49 | 0.0331 | 0.9669 | 3.24 |
| 91.5 | 1,324 | 934 | 0.7055 | 0.2945 | 3.14 |
| 92.5 | 340 | | 0.0000 | 1.0000 | 0.92 |
| 93.5 | 147 | | 0.0000 | 1.0000 | 0.92 |
| 94.5 | 115 | | 0.0000 | 1.0000 | 0.92 |
| 95.5 | 115 | | 0.0000 | 1.0000 | 0.92 |
| 96.5 | 115 | | 0.0000 | 1.0000 | 0.92 |
| 97.5 | 115 | | 0.0000 | 1.0000 | 0.92 |
| 98.5 | 115 | | 0.0000 | 1.0000 | 0.92 |
| 99.5 | 115 | | 0.0000 | 1.0000 | 0.92 |
| 100.5 | 115 | | 0.0000 | 1.0000 | 0.92 |
| 101.5 | 115 | | 0.0000 | 1.0000 | 0.92 |
| 102.5 | 115 | | 0.0000 | 1.0000 | 0.92 |
| 103.5 | 114 | | 0.0000 | 1.0000 | 0.92 |
| 104.5 | 114 | | 0.0000 | 1.0000 | 0.92 |
| 105.5 | 114 | | 0.0000 | 1.0000 | 0.92 |
| 106.5 | 114 | | 0.0000 | 1.0000 | 0.92 |
| 107.5 | 114 | | 0.0000 | 1.0000 | 0.92 |
| 108.5 | 114 | 28 | 0.2500 | 0.7500 | 0.92 |
| 109.5 | | | | | 0.69 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 364.00 POLES, TOWERS AND FIXTURES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1909-2018 EXPERIENCE BAND 2008-2018

| 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 | 17,557,613 | 211 | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 16,813,088 | 42,620 | 0.0025 | 0.9975 | 100.00 |
| 1.5 | 15,925,899 | 54,733 | 0.0034 | 0.9966 | 99.75 |
| 2.5 | 15,810,931 | 20,755 | 0.0013 | 0.9987 | 99.40 |
| 3.5 | 15,869,993 | 20,304 | 0.0013 | 0.9987 | 99.27 |
| 4.5 | 15,000,592 | 96,471 | 0.0064 | 0.9936 | 99.15 |
| 5.5 | 14,321,882 | 34,473 | 0.0024 | 0.9976 | 98.51 |
| 6.5 | 13,944,251 | 17,760 | 0.0013 | 0.9987 | 98.27 |
| 7.5 | 14,330,763 | 40,150 | 0.0028 | 0.9972 | 98.15 |
| 8.5 | 13,840,387 | 67,924 | 0.0049 | 0.9951 | 97.87 |
| 9.5 | 10,190,304 | 30,836 | 0.0030 | 0.9970 | 97.39 |
| 10.5 | 9,624,041 | 19,005 | 0.0020 | 0.9980 | 97.10 |
| 11.5 | 9,640,288 | 27,791 | 0.0029 | 0.9971 | 96.90 |
| 12.5 | 8,989,826 | 39,983 | 0.0044 | 0.9956 | 96.62 |
| 13.5 | 8,321,760 | 33,728 | 0.0041 | 0.9959 | 96.19 |
| 14.5 | 7,596,570 | 31,679 | 0.0042 | 0.9958 | 95.80 |
| 15.5 | 6,767,867 | 19,834 | 0.0029 | 0.9971 | 95.40 |
| 16.5 | 6,317,191 | 23,459 | 0.0037 | 0.9963 | 95.13 |
| 17.5 | 5,778,301 | 16,840 | 0.0029 | 0.9971 | 94.77 |
| 18.5 | 5,347,458 | 19,222 | 0.0036 | 0.9964 | 94.50 |
| 19.5 | 4,829,927 | 15,258 | 0.0032 | 0.9968 | 94.16 |
| 20.5 | 4,429,807 | 14,396 | 0.0032 | 0.9968 | 93.86 |
| 21.5 | 3,821,534 | 11,867 | 0.0031 | 0.9969 | 93.55 |
| 22.5 | 3,083,420 | 10,218 | 0.0033 | 0.9967 | 93.26 |
| 23.5 | 2,818,171 | 6,727 | 0.0024 | 0.9976 | 92.95 |
| 24.5 | 2,623,900 | 9,922 | 0.0038 | 0.9962 | 92.73 |
| 25.5 | 2,251,729 | 11,076 | 0.0049 | 0.9951 | 92.38 |
| 26.5 | 2,088,995 | 4,538 | 0.0022 | 0.9978 | 91.93 |
| 27.5 | 1,924,399 | 7,909 | 0.0041 | 0.9959 | 91.73 |
| 28.5 | 1,747,306 | 5,865 | 0.0034 | 0.9966 | 91.35 |
| 29.5 | 1,587,202 | 2,089 | 0.0013 | 0.9987 | 91.04 |
| 30.5 | 1,523,392 | 4,166 | 0.0027 | 0.9973 | 90.92 |
| 31.5 | 1,451,942 | 4,315 | 0.0030 | 0.9970 | 90.68 |
| 32.5 | 1,423,387 | 14,379 | 0.0101 | 0.9899 | 90.41 |
| 33.5 | 1,538,440 | 8,449 | 0.0055 | 0.9945 | 89.49 |
| 34.5 | 2,202,923 | 10,453 | 0.0047 | 0.9953 | 89.00 |
| 35.5 | 2,139,214 | 11,757 | 0.0055 | 0.9945 | 88.58 |
| 36.5 | 2,007,754 | 10,458 | 0.0052 | 0.9948 | 88.09 |
| 37.5 | 1,953,153 | 16,538 | 0.0085 | 0.9915 | 87.63 |
| 38.5 | 1,993,661 | 32,278 | 0.0162 | 0.9838 | 86.89 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 364.00 POLES, TOWERS AND FIXTURES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1909-2018 EXPERIENCE BAND 2008-2018

| 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 | 1,833,434 | 38,593 | 0.0210 | 0.9790 | 85.48 |
| 40.5 | 1,719,614 | 25,074 | 0.0146 | 0.9854 | 83.68 |
| 41.5 | 1,563,139 | 31,743 | 0.0203 | 0.9797 | 82.46 |
| 42.5 | 1,490,643 | 25,254 | 0.0169 | 0.9831 | 80.79 |
| 43.5 | 1,455,571 | 28,863 | 0.0198 | 0.9802 | 79.42 |
| 44.5 | 1,271,670 | 78,126 | 0.0614 | 0.9386 | 77.85 |
| 45.5 | 563,500 | 29,069 | 0.0516 | 0.9484 | 73.06 |
| 46.5 | 516,283 | 6,365 | 0.0123 | 0.9877 | 69.29 |
| 47.5 | 543,366 | 7,385 | 0.0136 | 0.9864 | 68.44 |
| 48.5 | 503,778 | 12,394 | 0.0246 | 0.9754 | 67.51 |
| 49.5 | 400,708 | 5,165 | 0.0129 | 0.9871 | 65.85 |
| 50.5 | 406,456 | 5,628 | 0.0138 | 0.9862 | 65.00 |
| 51.5 | 388,663 | 4,763 | 0.0123 | 0.9877 | 64.10 |
| 52.5 | 373,078 | 6,153 | 0.0165 | 0.9835 | 63.32 |
| 53.5 | 354,833 | 10,161 | 0.0286 | 0.9714 | 62.27 |
| 54.5 | 316,641 | 9,383 | 0.0296 | 0.9704 | 60.49 |
| 55.5 | 280,610 | 6,450 | 0.0230 | 0.9770 | 58.70 |
| 56.5 | 251,209 | 15,147 | 0.0603 | 0.9397 | 57.35 |
| 57.5 | 205,140 | 5,155 | 0.0251 | 0.9749 | 53.89 |
| 58.5 | 175,965 | 4,089 | 0.0232 | 0.9768 | 52.53 |
| 59.5 | 147,463 | 2,735 | 0.0185 | 0.9815 | 51.31 |
| 60.5 | 133,569 | 3,286 | 0.0246 | 0.9754 | 50.36 |
| 61.5 | 114,973 | 2,811 | 0.0245 | 0.9755 | 49.12 |
| 62.5 | 96,810 | 1,861 | 0.0192 | 0.9808 | 47.92 |
| 63.5 | 86,735 | 2,471 | 0.0285 | 0.9715 | 47.00 |
| 64.5 | 68,676 | 1,707 | 0.0249 | 0.9751 | 45.66 |
| 65.5 | 59,264 | 1,298 | 0.0219 | 0.9781 | 44.53 |
| 66.5 | 51,656 | 1,223 | 0.0237 | 0.9763 | 43.55 |
| 67.5 | 34,926 | 523 | 0.0150 | 0.9850 | 42.52 |
| 68.5 | 32,220 | 626 | 0.0194 | 0.9806 | 41.88 |
| 69.5 | 30,561 | 749 | 0.0245 | 0.9755 | 41.07 |
| 70.5 | 29,821 | 623 | 0.0209 | 0.9791 | 40.06 |
| 71.5 | 23,198 | 478 | 0.0206 | 0.9794 | 39.23 |
| 72.5 | 20,852 | 462 | 0.0222 | 0.9778 | 38.42 |
| 73.5 | 18,765 | 508 | 0.0270 | 0.9730 | 37.57 |
| 74.5 | 17,664 | 638 | 0.0361 | 0.9639 | 36.55 |
| 75.5 | 19,224 | 379 | 0.0197 | 0.9803 | 35.23 |
| 76.5 | 15,265 | 543 | 0.0356 | 0.9644 | 34.53 |
| 77.5 | 14,944 | 425 | 0.0284 | 0.9716 | 33.31 |
| 78.5 | 15,312 | 490 | 0.0320 | 0.9680 | 32.36 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 364.00 POLES, TOWERS AND FIXTURES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1909-2018 EXPERIENCE BAND 2008-2018

| 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 | 12,986 | 414 | 0.0319 | 0.9681 | 31.32 |
| 80.5 | 11,596 | 828 | 0.0714 | 0.9286 | 30.33 |
| 81.5 | 10,808 | 743 | 0.0688 | 0.9312 | 28.16 |
| 82.5 | 9,719 | 770 | 0.0792 | 0.9208 | 26.22 |
| 83.5 | 8,408 | 1,664 | 0.1979 | 0.8021 | 24.15 |
| 84.5 | 6,631 | 993 | 0.1497 | 0.8503 | 19.37 |
| 85.5 | 5,250 | 380 | 0.0723 | 0.9277 | 16.47 |
| 86.5 | 3,182 | 205 | 0.0644 | 0.9356 | 15.28 |
| 87.5 | 2,612 | 368 | 0.1410 | 0.8590 | 14.29 |
| 88.5 | 1,416 | 216 | 0.1522 | 0.8478 | 12.28 |
| 89.5 | 642 | 84 | 0.1302 | 0.8698 | 10.41 |
| 90.5 | 507 | 49 | 0.0974 | 0.9026 | 9.05 |
| 91.5 | 1,209 | 934 | 0.7726 | 0.2274 | 8.17 |
| 92.5 | 226 | | 0.0000 | 1.0000 | 1.86 |
| 93.5 | 33 | | 0.0000 | 1.0000 | 1.86 |
| 94.5 | 1 | | 0.0000 | 1.0000 | 1.86 |
| 95.5 | 1 | | 0.0000 | 1.0000 | 1.86 |
| 96.5 | 1 | | 0.0000 | 1.0000 | 1.86 |
| 97.5 | 1 | | 0.0000 | 1.0000 | 1.86 |
| 98.5 | 115 | | 0.0000 | 1.0000 | 1.86 |
| 99.5 | 115 | | 0.0000 | 1.0000 | 1.86 |
| 100.5 | 115 | | 0.0000 | 1.0000 | 1.86 |
| 101.5 | 115 | | 0.0000 | 1.0000 | 1.86 |
| 102.5 | 115 | | 0.0000 | 1.0000 | 1.86 |
| 103.5 | 114 | | 0.0000 | 1.0000 | 1.86 |
| 104.5 | 114 | | 0.0000 | 1.0000 | 1.86 |
| 105.5 | 114 | | 0.0000 | 1.0000 | 1.86 |
| 106.5 | 114 | | 0.0000 | 1.0000 | 1.86 |
| 107.5 | 114 | | 0.0000 | 1.0000 | 1.86 |
| 108.5 | 114 | 28 | 0.2500 | 0.7500 | 1.86 |
| 109.5 | | | | | 1.39 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT
ACCOUNT 365.00 OVERHEAD CONDUCTORS AND DEVICES
ORIGINAL AND SMOOTH SURVIVOR CURVES
ORIGINAL CURVE
1970-2018 EXPERIENCE
1910-2018 PLACEMENTS
2008-2018 EXPERIENCE
1910-2018 PLACEMENTS
IOWA 52-R2
PERCENT SURVIVING
AGE IN YEARS
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
120

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 365.00 OVERHEAD CONDUCTORS AND DEVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1970-2018

| 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 | 36,675,546 | 25,302 | 0.0007 | 0.9993 | 100.00 |
| 0.5 | 35,515,547 | 69,844 | 0.0020 | 0.9980 | 99.93 |
| 1.5 | 34,242,699 | 63,155 | 0.0018 | 0.9982 | 99.73 |
| 2.5 | 33,132,916 | 53,018 | 0.0016 | 0.9984 | 99.55 |
| 3.5 | 31,290,505 | 69,434 | 0.0022 | 0.9978 | 99.39 |
| 4.5 | 29,519,751 | 36,059 | 0.0012 | 0.9988 | 99.17 |
| 5.5 | 28,531,529 | 47,437 | 0.0017 | 0.9983 | 99.05 |
| 6.5 | 25,863,735 | 65,836 | 0.0025 | 0.9975 | 98.88 |
| 7.5 | 25,511,481 | 64,225 | 0.0025 | 0.9975 | 98.63 |
| 8.5 | 24,136,462 | 96,213 | 0.0040 | 0.9960 | 98.38 |
| 9.5 | 21,202,260 | 129,789 | 0.0061 | 0.9939 | 97.99 |
| 10.5 | 19,021,474 | 167,479 | 0.0088 | 0.9912 | 97.39 |
| 11.5 | 17,685,244 | 281,578 | 0.0159 | 0.9841 | 96.54 |
| 12.5 | 16,127,972 | 367,013 | 0.0228 | 0.9772 | 95.00 |
| 13.5 | 15,191,482 | 221,558 | 0.0146 | 0.9854 | 92.84 |
| 14.5 | 13,546,644 | 198,605 | 0.0147 | 0.9853 | 91.48 |
| 15.5 | 12,714,722 | 114,420 | 0.0090 | 0.9910 | 90.14 |
| 16.5 | 11,606,122 | 102,440 | 0.0088 | 0.9912 | 89.33 |
| 17.5 | 10,670,521 | 84,842 | 0.0080 | 0.9920 | 88.54 |
| 18.5 | 9,762,746 | 52,536 | 0.0054 | 0.9946 | 87.84 |
| 19.5 | 8,814,479 | 30,096 | 0.0034 | 0.9966 | 87.36 |
| 20.5 | 8,463,575 | 32,331 | 0.0038 | 0.9962 | 87.07 |
| 21.5 | 7,964,184 | 18,177 | 0.0023 | 0.9977 | 86.73 |
| 22.5 | 7,284,561 | 22,025 | 0.0030 | 0.9970 | 86.54 |
| 23.5 | 6,876,237 | 21,319 | 0.0031 | 0.9969 | 86.27 |
| 24.5 | 6,536,383 | 32,317 | 0.0049 | 0.9951 | 86.01 |
| 25.5 | 6,182,003 | 25,309 | 0.0041 | 0.9959 | 85.58 |
| 26.5 | 6,106,458 | 30,781 | 0.0050 | 0.9950 | 85.23 |
| 27.5 | 5,688,705 | 42,841 | 0.0075 | 0.9925 | 84.80 |
| 28.5 | 5,203,173 | 41,178 | 0.0079 | 0.9921 | 84.16 |
| 29.5 | 4,969,370 | 40,887 | 0.0082 | 0.9918 | 83.50 |
| 30.5 | 4,686,404 | 41,670 | 0.0089 | 0.9911 | 82.81 |
| 31.5 | 4,383,070 | 36,570 | 0.0083 | 0.9917 | 82.07 |
| 32.5 | 4,201,733 | 29,707 | 0.0071 | 0.9929 | 81.39 |
| 33.5 | 4,101,163 | 44,496 | 0.0108 | 0.9892 | 80.81 |
| 34.5 | 4,069,347 | 38,834 | 0.0095 | 0.9905 | 79.94 |
| 35.5 | 3,980,572 | 39,608 | 0.0100 | 0.9900 | 79.17 |
| 36.5 | 3,821,982 | 47,225 | 0.0124 | 0.9876 | 78.39 |
| 37.5 | 3,718,882 | 46,088 | 0.0124 | 0.9876 | 77.42 |
| 38.5 | 3,614,053 | 50,636 | 0.0140 | 0.9860 | 76.46 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 365.00 OVERHEAD CONDUCTORS AND DEVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1970-2018

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 39.5 | 3,489,621 | 62,189 | 0.0178 | 0.9822 | 75.39 |
| 40.5 | 3,327,876 | 57,721 | 0.0173 | 0.9827 | 74.04 |
| 41.5 | 3,124,057 | 49,766 | 0.0159 | 0.9841 | 72.76 |
| 42.5 | 2,987,818 | 61,439 | 0.0206 | 0.9794 | 71.60 |
| 43.5 | 2,844,238 | 47,635 | 0.0167 | 0.9833 | 70.13 |
| 44.5 | 2,599,299 | 53,597 | 0.0206 | 0.9794 | 68.95 |
| 45.5 | 2,142,514 | 53,313 | 0.0249 | 0.9751 | 67.53 |
| 46.5 | 2,035,102 | 58,634 | 0.0288 | 0.9712 | 65.85 |
| 47.5 | 1,971,927 | 70,904 | 0.0360 | 0.9640 | 63.95 |
| 48.5 | 1,831,018 | 57,390 | 0.0313 | 0.9687 | 61.65 |
| 49.5 | 1,473,474 | 52,395 | 0.0356 | 0.9644 | 59.72 |
| 50.5 | 1,403,199 | 51,281 | 0.0365 | 0.9635 | 57.60 |
| 51.5 | 1,312,327 | 46,049 | 0.0351 | 0.9649 | 55.49 |
| 52.5 | 1,168,537 | 43,050 | 0.0368 | 0.9632 | 53.55 |
| 53.5 | 1,047,991 | 47,449 | 0.0453 | 0.9547 | 51.57 |
| 54.5 | 959,035 | 40,023 | 0.0417 | 0.9583 | 49.24 |
| 55.5 | 875,511 | 36,142 | 0.0413 | 0.9587 | 47.18 |
| 56.5 | 796,547 | 34,521 | 0.0433 | 0.9567 | 45.24 |
| 57.5 | 717,211 | 37,402 | 0.0521 | 0.9479 | 43.28 |
| 58.5 | 646,952 | 33,981 | 0.0525 | 0.9475 | 41.02 |
| 59.5 | 568,929 | 31,340 | 0.0551 | 0.9449 | 38.86 |
| 60.5 | 515,497 | 31,502 | 0.0611 | 0.9389 | 36.72 |
| 61.5 | 449,588 | 29,123 | 0.0648 | 0.9352 | 34.48 |
| 62.5 | 382,516 | 23,627 | 0.0618 | 0.9382 | 32.25 |
| 63.5 | 325,601 | 22,343 | 0.0686 | 0.9314 | 30.25 |
| 64.5 | 264,581 | 17,100 | 0.0646 | 0.9354 | 28.18 |
| 65.5 | 212,265 | 13,259 | 0.0625 | 0.9375 | 26.36 |
| 66.5 | 180,671 | 11,345 | 0.0628 | 0.9372 | 24.71 |
| 67.5 | 150,778 | 11,807 | 0.0783 | 0.9217 | 23.16 |
| 68.5 | 129,639 | 8,419 | 0.0649 | 0.9351 | 21.35 |
| 69.5 | 109,325 | 6,652 | 0.0608 | 0.9392 | 19.96 |
| 70.5 | 93,947 | 4,522 | 0.0481 | 0.9519 | 18.74 |
| 71.5 | 79,662 | 4,549 | 0.0571 | 0.9429 | 17.84 |
| 72.5 | 66,310 | 3,408 | 0.0514 | 0.9486 | 16.82 |
| 73.5 | 60,193 | 2,021 | 0.0336 | 0.9664 | 15.96 |
| 74.5 | 57,396 | 4,395 | 0.0766 | 0.9234 | 15.42 |
| 75.5 | 51,585 | 2,275 | 0.0441 | 0.9559 | 14.24 |
| 76.5 | 47,266 | 544 | 0.0115 | 0.9885 | 13.61 |
| 77.5 | 44,662 | 1,611 | 0.0361 | 0.9639 | 13.46 |
| 78.5 | 41,677 | 232 | 0.0056 | 0.9944 | 12.97 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 365.00 OVERHEAD CONDUCTORS AND DEVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1970-2018

| 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 | 35,944 | 812 | 0.0226 | 0.9774 | 12.90 |
| 80.5 | 32,249 | 286 | 0.0089 | 0.9911 | 12.61 |
| 81.5 | 29,003 | 244 | 0.0084 | 0.9916 | 12.50 |
| 82.5 | 25,600 | 726 | 0.0283 | 0.9717 | 12.39 |
| 83.5 | 20,396 | 200 | 0.0098 | 0.9902 | 12.04 |
| 84.5 | 9,615 | 126 | 0.0131 | 0.9869 | 11.92 |
| 85.5 | 8,555 | 54 | 0.0063 | 0.9937 | 11.77 |
| 86.5 | 6,415 | 60 | 0.0093 | 0.9907 | 11.69 |
| 87.5 | 4,628 | 143 | 0.0310 | 0.9690 | 11.58 |
| 88.5 | 4,251 | 16 | 0.0037 | 0.9963 | 11.22 |
| 89.5 | 4,118 | 14 | 0.0035 | 0.9965 | 11.18 |
| 90.5 | 3,575 | 129 | 0.0362 | 0.9638 | 11.14 |
| 91.5 | 3,402 | 10 | 0.0028 | 0.9972 | 10.74 |
| 92.5 | 2,775 | 6 | 0.0023 | 0.9977 | 10.71 |
| 93.5 | 2,172 | 4 | 0.0020 | 0.9980 | 10.69 |
| 94.5 | 1,201 | 1 | 0.0006 | 0.9994 | 10.66 |
| 95.5 | 1,049 | 0 | 0.0003 | 0.9997 | 10.66 |
| 96.5 | 649 | 2 | 0.0034 | 0.9966 | 10.66 |
| 97.5 | 647 | 1 | 0.0009 | 0.9991 | 10.62 |
| 98.5 | 393 | 0 | 0.0005 | 0.9995 | 10.61 |
| 99.5 | 393 | 0 | 0.0002 | 0.9998 | 10.60 |
| 100.5 | 315 | 104 | 0.3296 | 0.6704 | 10.60 |
| 101.5 | 314 | 0 | 0.0004 | 0.9996 | 7.11 |
| 102.5 | | | | | 7.11 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 365.00 OVERHEAD CONDUCTORS AND DEVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 2008-2018

| 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 | 18,559,320 | 25,302 | 0.0014 | 0.9986 | 100.00 |
| 0.5 | 18,370,445 | 69,844 | 0.0038 | 0.9962 | 99.86 |
| 1.5 | 18,493,437 | 63,155 | 0.0034 | 0.9966 | 99.48 |
| 2.5 | 18,023,192 | 53,018 | 0.0029 | 0.9971 | 99.14 |
| 3.5 | 17,682,051 | 69,434 | 0.0039 | 0.9961 | 98.85 |
| 4.5 | 16,706,622 | 36,059 | 0.0022 | 0.9978 | 98.46 |
| 5.5 | 16,818,385 | 47,437 | 0.0028 | 0.9972 | 98.25 |
| 6.5 | 15,108,100 | 65,836 | 0.0044 | 0.9956 | 97.97 |
| 7.5 | 15,825,430 | 64,225 | 0.0041 | 0.9959 | 97.55 |
| 8.5 | 15,372,668 | 96,213 | 0.0063 | 0.9937 | 97.15 |
| 9.5 | 12,919,191 | 129,789 | 0.0100 | 0.9900 | 96.54 |
| 10.5 | 11,511,395 | 167,479 | 0.0145 | 0.9855 | 95.57 |
| 11.5 | 10,973,160 | 281,578 | 0.0257 | 0.9743 | 94.18 |
| 12.5 | 9,848,415 | 367,011 | 0.0373 | 0.9627 | 91.77 |
| 13.5 | 9,168,113 | 221,556 | 0.0242 | 0.9758 | 88.35 |
| 14.5 | 7,805,454 | 198,592 | 0.0254 | 0.9746 | 86.21 |
| 15.5 | 7,007,262 | 114,391 | 0.0163 | 0.9837 | 84.02 |
| 16.5 | 6,249,995 | 102,382 | 0.0164 | 0.9836 | 82.65 |
| 17.5 | 5,743,893 | 84,701 | 0.0147 | 0.9853 | 81.29 |
| 18.5 | 4,993,550 | 52,368 | 0.0105 | 0.9895 | 80.09 |
| 19.5 | 4,284,618 | 29,741 | 0.0069 | 0.9931 | 79.25 |
| 20.5 | 4,186,890 | 31,914 | 0.0076 | 0.9924 | 78.70 |
| 21.5 | 3,826,835 | 17,609 | 0.0046 | 0.9954 | 78.10 |
| 22.5 | 3,200,959 | 20,972 | 0.0066 | 0.9934 | 77.74 |
| 23.5 | 2,849,927 | 19,470 | 0.0068 | 0.9932 | 77.24 |
| 24.5 | 2,590,005 | 29,175 | 0.0113 | 0.9887 | 76.71 |
| 25.5 | 2,368,500 | 21,858 | 0.0092 | 0.9908 | 75.84 |
| 26.5 | 2,330,296 | 24,931 | 0.0107 | 0.9893 | 75.14 |
| 27.5 | 1,996,312 | 35,362 | 0.0177 | 0.9823 | 74.34 |
| 28.5 | 1,600,486 | 28,892 | 0.0181 | 0.9819 | 73.02 |
| 29.5 | 1,504,616 | 28,307 | 0.0188 | 0.9812 | 71.70 |
| 30.5 | 1,368,250 | 22,737 | 0.0166 | 0.9834 | 70.36 |
| 31.5 | 1,176,911 | 12,323 | 0.0105 | 0.9895 | 69.19 |
| 32.5 | 1,099,941 | 8,185 | 0.0074 | 0.9926 | 68.46 |
| 33.5 | 1,233,868 | 8,065 | 0.0065 | 0.9935 | 67.95 |
| 34.5 | 1,589,154 | 5,319 | 0.0033 | 0.9967 | 67.51 |
| 35.5 | 1,574,908 | 2,272 | 0.0014 | 0.9986 | 67.28 |
| 36.5 | 1,455,216 | 2,800 | 0.0019 | 0.9981 | 67.19 |
| 37.5 | 1,508,648 | 1,788 | 0.0012 | 0.9988 | 67.06 |
| 38.5 | 1,751,667 | 4,355 | 0.0025 | 0.9975 | 66.98 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 365.00 OVERHEAD CONDUCTORS AND DEVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 2008-2018

| 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 | 1,677,977 | 13,152 | 0.0078 | 0.9922 | 66.81 |
| 40.5 | 1,590,702 | 6,347 | 0.0040 | 0.9960 | 66.29 |
| 41.5 | 1,523,498 | 2,436 | 0.0016 | 0.9984 | 66.02 |
| 42.5 | 1,513,316 | 13,966 | 0.0092 | 0.9908 | 65.92 |
| 43.5 | 1,454,084 | 4,024 | 0.0028 | 0.9972 | 65.31 |
| 44.5 | 1,276,585 | 8,010 | 0.0063 | 0.9937 | 65.13 |
| 45.5 | 899,783 | 4,403 | 0.0049 | 0.9951 | 64.72 |
| 46.5 | 901,689 | 9,102 | 0.0101 | 0.9899 | 64.40 |
| 47.5 | 915,787 | 21,442 | 0.0234 | 0.9766 | 63.75 |
| 48.5 | 822,520 | 7,560 | 0.0092 | 0.9908 | 62.26 |
| 49.5 | 545,372 | 7,520 | 0.0138 | 0.9862 | 61.69 |
| 50.5 | 561,318 | 6,868 | 0.0122 | 0.9878 | 60.84 |
| 51.5 | 561,215 | 8,764 | 0.0156 | 0.9844 | 60.09 |
| 52.5 | 497,340 | 8,201 | 0.0165 | 0.9835 | 59.15 |
| 53.5 | 460,182 | 3,859 | 0.0084 | 0.9916 | 58.18 |
| 54.5 | 462,093 | 3,858 | 0.0083 | 0.9917 | 57.69 |
| 55.5 | 438,705 | 5,142 | 0.0117 | 0.9883 | 57.21 |
| 56.5 | 420,378 | 6,913 | 0.0164 | 0.9836 | 56.54 |
| 57.5 | 385,440 | 7,845 | 0.0204 | 0.9796 | 55.61 |
| 58.5 | 357,025 | 8,171 | 0.0229 | 0.9771 | 54.48 |
| 59.5 | 313,765 | 9,868 | 0.0314 | 0.9686 | 53.23 |
| 60.5 | 292,170 | 8,005 | 0.0274 | 0.9726 | 51.56 |
| 61.5 | 258,911 | 6,757 | 0.0261 | 0.9739 | 50.14 |
| 62.5 | 216,968 | 6,247 | 0.0288 | 0.9712 | 48.83 |
| 63.5 | 178,239 | 5,637 | 0.0316 | 0.9684 | 47.43 |
| 64.5 | 136,106 | 4,503 | 0.0331 | 0.9669 | 45.93 |
| 65.5 | 98,556 | 2,358 | 0.0239 | 0.9761 | 44.41 |
| 66.5 | 79,988 | 2,438 | 0.0305 | 0.9695 | 43.35 |
| 67.5 | 60,417 | 358 | 0.0059 | 0.9941 | 42.03 |
| 68.5 | 56,494 | 259 | 0.0046 | 0.9954 | 41.78 |
| 69.5 | 47,353 | 189 | 0.0040 | 0.9960 | 41.58 |
| 70.5 | 41,933 | 419 | 0.0100 | 0.9900 | 41.42 |
| 71.5 | 35,029 | 165 | 0.0047 | 0.9953 | 41.00 |
| 72.5 | 30,850 | 265 | 0.0086 | 0.9914 | 40.81 |
| 73.5 | 42,823 | 298 | 0.0070 | 0.9930 | 40.46 |
| 74.5 | 42,854 | 2,928 | 0.0683 | 0.9317 | 40.18 |
| 75.5 | 40,781 | 1,066 | 0.0261 | 0.9739 | 37.43 |
| 76.5 | 40,571 | 257 | 0.0063 | 0.9937 | 36.45 |
| 77.5 | 38,490 | 1,399 | 0.0363 | 0.9637 | 36.22 |
| 78.5 | 36,409 | 194 | 0.0053 | 0.9947 | 34.91 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 365.00 OVERHEAD CONDUCTORS AND DEVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 2008-2018

| 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 | 31,317 | 812 | 0.0259 | 0.9741 | 34.72 |
| 80.5 | 27,666 | 286 | 0.0103 | 0.9897 | 33.82 |
| 81.5 | 25,676 | 244 | 0.0095 | 0.9905 | 33.47 |
| 82.5 | 22,924 | 726 | 0.0317 | 0.9683 | 33.15 |
| 83.5 | 18,831 | 200 | 0.0106 | 0.9894 | 32.10 |
| 84.5 | 8,224 | 126 | 0.0153 | 0.9847 | 31.76 |
| 85.5 | 7,776 | 54 | 0.0070 | 0.9930 | 31.28 |
| 86.5 | 5,636 | 60 | 0.0106 | 0.9894 | 31.06 |
| 87.5 | 4,105 | 143 | 0.0349 | 0.9651 | 30.73 |
| 88.5 | 3,728 | 16 | 0.0042 | 0.9958 | 29.66 |
| 89.5 | 3,794 | 14 | 0.0038 | 0.9962 | 29.53 |
| 90.5 | 3,250 | 129 | 0.0398 | 0.9602 | 29.42 |
| 91.5 | 3,402 | 10 | 0.0028 | 0.9972 | 28.25 |
| 92.5 | 2,775 | 6 | 0.0023 | 0.9977 | 28.17 |
| 93.5 | 2,172 | 4 | 0.0020 | 0.9980 | 28.11 |
| 94.5 | 1,201 | 1 | 0.0006 | 0.9994 | 28.05 |
| 95.5 | 1,049 | 0 | 0.0003 | 0.9997 | 28.03 |
| 96.5 | 649 | 2 | 0.0034 | 0.9966 | 28.03 |
| 97.5 | 647 | 1 | 0.0009 | 0.9991 | 27.93 |
| 98.5 | 393 | 0 | 0.0005 | 0.9995 | 27.91 |
| 99.5 | 393 | 0 | 0.0002 | 0.9998 | 27.89 |
| 100.5 | 315 | 104 | 0.3296 | 0.6704 | 27.89 |
| 101.5 | 314 | 0 | 0.0004 | 0.9996 | 18.70 |
| 102.5 | | | | | 18.69 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT
ACCOUNT 366.00 UNDERGROUND CONDUIT
ORIGINAL AND SMOOTH SURVIVOR CURVES
ORIGINAL CURVE
1970-2018 EXPERIENCE
1909-2018 PLACEMENTS
2008-2018 EXPERIENCE
1909-2018 PLACEMENTS
IOWA 70-R4
PERCENT SURVIVING
AGE IN YEARS
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
120

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 366.00 UNDERGROUND CONDUIT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1909-2018 EXPERIENCE BAND 1970-2018

| 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 | 3,164,318 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 3,122,283 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 2,868,295 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 2,620,853 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 2,244,096 | 354 | 0.0002 | 0.9998 | 100.00 |
| 4.5 | 2,007,772 | 1,988 | 0.0010 | 0.9990 | 99.98 |
| 5.5 | 1,897,481 | | 0.0000 | 1.0000 | 99.89 |
| 6.5 | 1,373,649 | | 0.0000 | 1.0000 | 99.89 |
| 7.5 | 1,321,840 | 3,087 | 0.0023 | 0.9977 | 99.89 |
| 8.5 | 1,126,899 | | 0.0000 | 1.0000 | 99.65 |
| 9.5 | 957,426 | | 0.0000 | 1.0000 | 99.65 |
| 10.5 | 945,164 | | 0.0000 | 1.0000 | 99.65 |
| 11.5 | 921,020 | | 0.0000 | 1.0000 | 99.65 |
| 12.5 | 927,346 | | 0.0000 | 1.0000 | 99.65 |
| 13.5 | 842,546 | 567 | 0.0007 | 0.9993 | 99.65 |
| 14.5 | 864,805 | | 0.0000 | 1.0000 | 99.58 |
| 15.5 | 901,841 | 166 | 0.0002 | 0.9998 | 99.58 |
| 16.5 | 936,708 | | 0.0000 | 1.0000 | 99.57 |
| 17.5 | 932,519 | | 0.0000 | 1.0000 | 99.57 |
| 18.5 | 927,825 | | 0.0000 | 1.0000 | 99.57 |
| 19.5 | 879,093 | | 0.0000 | 1.0000 | 99.57 |
| 20.5 | 855,610 | | 0.0000 | 1.0000 | 99.57 |
| 21.5 | 829,091 | | 0.0000 | 1.0000 | 99.57 |
| 22.5 | 769,258 | | 0.0000 | 1.0000 | 99.57 |
| 23.5 | 743,815 | | 0.0000 | 1.0000 | 99.57 |
| 24.5 | 736,009 | | 0.0000 | 1.0000 | 99.57 |
| 25.5 | 721,835 | | 0.0000 | 1.0000 | 99.57 |
| 26.5 | 740,385 | | 0.0000 | 1.0000 | 99.57 |
| 27.5 | 743,414 | 7,492 | 0.0101 | 0.9899 | 99.57 |
| 28.5 | 721,229 | | 0.0000 | 1.0000 | 98.56 |
| 29.5 | 675,765 | | 0.0000 | 1.0000 | 98.56 |
| 30.5 | 628,099 | | 0.0000 | 1.0000 | 98.56 |
| 31.5 | 630,658 | | 0.0000 | 1.0000 | 98.56 |
| 32.5 | 621,320 | | 0.0000 | 1.0000 | 98.56 |
| 33.5 | 621,654 | | 0.0000 | 1.0000 | 98.56 |
| 34.5 | 607,249 | | 0.0000 | 1.0000 | 98.56 |
| 35.5 | 601,485 | | 0.0000 | 1.0000 | 98.56 |
| 36.5 | 600,596 | | 0.0000 | 1.0000 | 98.56 |
| 37.5 | 600,596 | | 0.0000 | 1.0000 | 98.56 |
| 38.5 | 604,489 | 11 | 0.0000 | 1.0000 | 98.56 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 366.00 UNDERGROUND CONDUIT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1909-2018 EXPERIENCE BAND 1970-2018

| 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 | 590,141 | 0 | 0.0000 | 1.0000 | 98.56 |
| 40.5 | 563,080 | 877 | 0.0016 | 0.9984 | 98.56 |
| 41.5 | 547,317 | 2 | 0.0000 | 1.0000 | 98.41 |
| 42.5 | 555,605 | 8 | 0.0000 | 1.0000 | 98.41 |
| 43.5 | 557,834 | 85 | 0.0002 | 0.9998 | 98.41 |
| 44.5 | 449,525 | 16 | 0.0000 | 1.0000 | 98.39 |
| 45.5 | 413,241 | 16 | 0.0000 | 1.0000 | 98.39 |
| 46.5 | 398,466 | 21 | 0.0001 | 0.9999 | 98.38 |
| 47.5 | 398,124 | 106 | 0.0003 | 0.9997 | 98.38 |
| 48.5 | 399,023 | 470 | 0.0012 | 0.9988 | 98.35 |
| 49.5 | 397,035 | 152 | 0.0004 | 0.9996 | 98.24 |
| 50.5 | 391,406 | 506 | 0.0013 | 0.9987 | 98.20 |
| 51.5 | 390,697 | 788 | 0.0020 | 0.9980 | 98.07 |
| 52.5 | 390,946 | 362 | 0.0009 | 0.9991 | 97.87 |
| 53.5 | 393,064 | 737 | 0.0019 | 0.9981 | 97.78 |
| 54.5 | 391,146 | 462 | 0.0012 | 0.9988 | 97.60 |
| 55.5 | 389,994 | 929 | 0.0024 | 0.9976 | 97.49 |
| 56.5 | 388,738 | 401 | 0.0010 | 0.9990 | 97.25 |
| 57.5 | 384,030 | 261 | 0.0007 | 0.9993 | 97.15 |
| 58.5 | 383,769 | 18,297 | 0.0477 | 0.9523 | 97.09 |
| 59.5 | 350,630 | 3,293 | 0.0094 | 0.9906 | 92.46 |
| 60.5 | 317,374 | 928 | 0.0029 | 0.9971 | 91.59 |
| 61.5 | 296,334 | 8,623 | 0.0291 | 0.9709 | 91.32 |
| 62.5 | 283,605 | 7,784 | 0.0274 | 0.9726 | 88.66 |
| 63.5 | 244,868 | 10,905 | 0.0445 | 0.9555 | 86.23 |
| 64.5 | 192,085 | 7,128 | 0.0371 | 0.9629 | 82.39 |
| 65.5 | 138,823 | 1,438 | 0.0104 | 0.9896 | 79.33 |
| 66.5 | 130,624 | 772 | 0.0059 | 0.9941 | 78.51 |
| 67.5 | 122,349 | 1,346 | 0.0110 | 0.9890 | 78.05 |
| 68.5 | 113,264 | 659 | 0.0058 | 0.9942 | 77.19 |
| 69.5 | 106,864 | 1,621 | 0.0152 | 0.9848 | 76.74 |
| 70.5 | 102,810 | 3,622 | 0.0352 | 0.9648 | 75.58 |
| 71.5 | 95,547 | 2,185 | 0.0229 | 0.9771 | 72.91 |
| 72.5 | 91,718 | 4,163 | 0.0454 | 0.9546 | 71.25 |
| 73.5 | 87,555 | 1,956 | 0.0223 | 0.9777 | 68.01 |
| 74.5 | 85,599 | 902 | 0.0105 | 0.9895 | 66.49 |
| 75.5 | 84,697 | 447 | 0.0053 | 0.9947 | 65.79 |
| 76.5 | 79,074 | 356 | 0.0045 | 0.9955 | 65.44 |
| 77.5 | 78,527 | 720 | 0.0092 | 0.9908 | 65.15 |
| 78.5 | 75,488 | 393 | 0.0052 | 0.9948 | 64.55 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 366.00 UNDERGROUND CONDUIT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1909-2018 EXPERIENCE BAND 1970-2018

| 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 | 71,754 | 34 | 0.0005 | 0.9995 | 64.22 |
| 80.5 | 50,067 | 952 | 0.0190 | 0.9810 | 64.19 |
| 81.5 | 48,764 | 6 | 0.0001 | 0.9999 | 62.97 |
| 82.5 | 48,575 | 2 | 0.0000 | 1.0000 | 62.96 |
| 83.5 | 48,573 | 21 | 0.0004 | 0.9996 | 62.95 |
| 84.5 | 48,552 | 13 | 0.0003 | 0.9997 | 62.93 |
| 85.5 | 48,539 | 25 | 0.0005 | 0.9995 | 62.91 |
| 86.5 | 48,514 | 12 | 0.0003 | 0.9997 | 62.88 |
| 87.5 | 48,502 | 545 | 0.0112 | 0.9888 | 62.86 |
| 88.5 | 47,095 | 537 | 0.0114 | 0.9886 | 62.16 |
| 89.5 | 44,109 | 29 | 0.0006 | 0.9994 | 61.45 |
| 90.5 | 44,081 | 23 | 0.0005 | 0.9995 | 61.41 |
| 91.5 | 37,189 | 17 | 0.0005 | 0.9995 | 61.38 |
| 92.5 | 34,150 | 1,734 | 0.0508 | 0.9492 | 61.35 |
| 93.5 | 31,554 | 19 | 0.0006 | 0.9994 | 58.23 |
| 94.5 | 31,354 | 24 | 0.0008 | 0.9992 | 58.20 |
| 95.5 | 24,103 | 10 | 0.0004 | 0.9996 | 58.15 |
| 96.5 | 22,454 | 7 | 0.0003 | 0.9997 | 58.13 |
| 97.5 | 21,840 | 5 | 0.0002 | 0.9998 | 58.11 |
| 98.5 | 21,835 | 410 | 0.0188 | 0.9812 | 58.10 |
| 99.5 | 21,183 | 2 | 0.0001 | 0.9999 | 57.01 |
| 100.5 | 21,181 | 2 | 0.0001 | 0.9999 | 57.00 |
| 101.5 | 20,151 | 864 | 0.0429 | 0.9571 | 57.00 |
| 102.5 | 17,687 | 441 | 0.0250 | 0.9750 | 54.55 |
| 103.5 | 16,754 | 441 | 0.0263 | 0.9737 | 53.19 |
| 104.5 | 16,313 | | 0.0000 | 1.0000 | 51.79 |
| 105.5 | 16,313 | 1,323 | 0.0811 | 0.9189 | 51.79 |
| 106.5 | 14,990 | 1,102 | 0.0735 | 0.9265 | 47.59 |
| 107.5 | 13,888 | 661 | 0.0476 | 0.9524 | 44.09 |
| 108.5 | 13,227 | | 0.0000 | 1.0000 | 41.99 |
| 109.5 | | | | | 41.99 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 366.00 UNDERGROUND CONDUIT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1909-2018 EXPERIENCE BAND 2008-2018

| 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 | 2,243,447 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 2,271,203 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 2,025,462 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 1,866,733 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 1,501,018 | 354 | 0.0002 | 0.9998 | 100.00 |
| 4.5 | 1,274,668 | 1,988 | 0.0016 | 0.9984 | 99.98 |
| 5.5 | 1,176,709 | | 0.0000 | 1.0000 | 99.82 |
| 6.5 | 666,116 | | 0.0000 | 1.0000 | 99.82 |
| 7.5 | 630,569 | 3,087 | 0.0049 | 0.9951 | 99.82 |
| 8.5 | 499,956 | | 0.0000 | 1.0000 | 99.33 |
| 9.5 | 362,443 | | 0.0000 | 1.0000 | 99.33 |
| 10.5 | 364,701 | | 0.0000 | 1.0000 | 99.33 |
| 11.5 | 357,071 | | 0.0000 | 1.0000 | 99.33 |
| 12.5 | 371,465 | | 0.0000 | 1.0000 | 99.33 |
| 13.5 | 290,408 | 567 | 0.0020 | 0.9980 | 99.33 |
| 14.5 | 293,078 | | 0.0000 | 1.0000 | 99.14 |
| 15.5 | 288,112 | 166 | 0.0006 | 0.9994 | 99.14 |
| 16.5 | 276,078 | | 0.0000 | 1.0000 | 99.08 |
| 17.5 | 285,289 | | 0.0000 | 1.0000 | 99.08 |
| 18.5 | 316,541 | | 0.0000 | 1.0000 | 99.08 |
| 19.5 | 299,220 | | 0.0000 | 1.0000 | 99.08 |
| 20.5 | 292,596 | | 0.0000 | 1.0000 | 99.08 |
| 21.5 | 273,620 | | 0.0000 | 1.0000 | 99.08 |
| 22.5 | 209,941 | | 0.0000 | 1.0000 | 99.08 |
| 23.5 | 196,149 | | 0.0000 | 1.0000 | 99.08 |
| 24.5 | 194,053 | | 0.0000 | 1.0000 | 99.08 |
| 25.5 | 180,614 | | 0.0000 | 1.0000 | 99.08 |
| 26.5 | 180,614 | | 0.0000 | 1.0000 | 99.08 |
| 27.5 | 180,070 | 7,492 | 0.0416 | 0.9584 | 99.08 |
| 28.5 | 174,825 | | 0.0000 | 1.0000 | 94.96 |
| 29.5 | 163,704 | | 0.0000 | 1.0000 | 94.96 |
| 30.5 | 130,127 | | 0.0000 | 1.0000 | 94.96 |
| 31.5 | 104,968 | | 0.0000 | 1.0000 | 94.96 |
| 32.5 | 96,127 | | 0.0000 | 1.0000 | 94.96 |
| 33.5 | 205,677 | | 0.0000 | 1.0000 | 94.96 |
| 34.5 | 227,899 | | 0.0000 | 1.0000 | 94.96 |
| 35.5 | 247,399 | | 0.0000 | 1.0000 | 94.96 |
| 36.5 | 248,605 | | 0.0000 | 1.0000 | 94.96 |
| 37.5 | 255,896 | | 0.0000 | 1.0000 | 94.96 |
| 38.5 | 255,785 | 11 | 0.0000 | 1.0000 | 94.96 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 366.00 UNDERGROUND CONDUIT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1909-2018 EXPERIENCE BAND 2008-2018

| 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 | 244,237 | | 0.0000 | 1.0000 | 94.95 |
| 40.5 | 207,721 | 876 | 0.0042 | 0.9958 | 94.95 |
| 41.5 | 189,511 | | 0.0000 | 1.0000 | 94.55 |
| 42.5 | 189,335 | | 0.0000 | 1.0000 | 94.55 |
| 43.5 | 189,496 | 71 | 0.0004 | 0.9996 | 94.55 |
| 44.5 | 80,565 | | 0.0000 | 1.0000 | 94.52 |
| 45.5 | 44,264 | | 0.0000 | 1.0000 | 94.52 |
| 46.5 | 23,308 | | 0.0000 | 1.0000 | 94.52 |
| 47.5 | 21,294 | | 0.0000 | 1.0000 | 94.52 |
| 48.5 | 29,720 | | 0.0000 | 1.0000 | 94.52 |
| 49.5 | 75,363 | | 0.0000 | 1.0000 | 94.52 |
| 50.5 | 89,933 | | 0.0000 | 1.0000 | 94.52 |
| 51.5 | 93,836 | | 0.0000 | 1.0000 | 94.52 |
| 52.5 | 127,345 | | 0.0000 | 1.0000 | 94.52 |
| 53.5 | 169,246 | | 0.0000 | 1.0000 | 94.52 |
| 54.5 | 216,297 | 22 | 0.0001 | 0.9999 | 94.52 |
| 55.5 | 224,583 | 20 | 0.0001 | 0.9999 | 94.51 |
| 56.5 | 236,006 | 99 | 0.0004 | 0.9996 | 94.50 |
| 57.5 | 251,183 | 13 | 0.0001 | 0.9999 | 94.46 |
| 58.5 | 259,493 | 94 | 0.0004 | 0.9996 | 94.46 |
| 59.5 | 246,992 | 3,019 | 0.0122 | 0.9878 | 94.42 |
| 60.5 | 200,462 | 68 | 0.0003 | 0.9997 | 93.27 |
| 61.5 | 182,932 | 7,160 | 0.0391 | 0.9609 | 93.24 |
| 62.5 | 171,666 | 7,012 | 0.0408 | 0.9592 | 89.59 |
| 63.5 | 133,701 | 4,731 | 0.0354 | 0.9646 | 85.93 |
| 64.5 | 87,093 | 5,443 | 0.0625 | 0.9375 | 82.89 |
| 65.5 | 40,708 | 29 | 0.0007 | 0.9993 | 77.71 |
| 66.5 | 34,107 | 17 | 0.0005 | 0.9995 | 77.65 |
| 67.5 | 28,909 | 2 | 0.0001 | 0.9999 | 77.61 |
| 68.5 | 24,528 | 10 | 0.0004 | 0.9996 | 77.61 |
| 69.5 | 40,584 | 3 | 0.0001 | 0.9999 | 77.57 |
| 70.5 | 38,502 | 4 | 0.0001 | 0.9999 | 77.57 |
| 71.5 | 35,041 | 3 | 0.0001 | 0.9999 | 77.56 |
| 72.5 | 33,395 | 33 | 0.0010 | 0.9990 | 77.56 |
| 73.5 | 33,362 | 23 | 0.0007 | 0.9993 | 77.48 |
| 74.5 | 33,338 | 42 | 0.0013 | 0.9987 | 77.42 |
| 75.5 | 33,297 | 20 | 0.0006 | 0.9994 | 77.33 |
| 76.5 | 28,101 | 20 | 0.0007 | 0.9993 | 77.28 |
| 77.5 | 28,753 | 9 | 0.0003 | 0.9997 | 77.23 |
| 78.5 | 28,880 | 19 | 0.0006 | 0.9994 | 77.20 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 366.00 UNDERGROUND CONDUIT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1909-2018 EXPERIENCE BAND 2008-2018

| 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 | 25,520 | 14 | 0.0006 | 0.9994 | 77.15 |
| 80.5 | 11,317 | 1 | 0.0000 | 1.0000 | 77.11 |
| 81.5 | 14,533 | 1 | 0.0001 | 0.9999 | 77.10 |
| 82.5 | 15,211 | | 0.0000 | 1.0000 | 77.10 |
| 83.5 | 15,571 | 14 | 0.0009 | 0.9991 | 77.10 |
| 84.5 | 24,377 | 13 | 0.0005 | 0.9995 | 77.03 |
| 85.5 | 26,034 | 25 | 0.0009 | 0.9991 | 76.99 |
| 86.5 | 26,627 | 12 | 0.0005 | 0.9995 | 76.91 |
| 87.5 | 26,615 | 545 | 0.0205 | 0.9795 | 76.88 |
| 88.5 | 25,454 | 537 | 0.0211 | 0.9789 | 75.31 |
| 89.5 | 22,468 | 29 | 0.0013 | 0.9987 | 73.72 |
| 90.5 | 23,880 | 23 | 0.0010 | 0.9990 | 73.62 |
| 91.5 | 19,467 | 17 | 0.0009 | 0.9991 | 73.55 |
| 92.5 | 16,955 | 1,734 | 0.1023 | 0.8977 | 73.49 |
| 93.5 | 14,359 | 19 | 0.0013 | 0.9987 | 65.97 |
| 94.5 | 14,160 | 24 | 0.0017 | 0.9983 | 65.88 |
| 95.5 | 6,908 | 10 | 0.0014 | 0.9986 | 65.77 |
| 96.5 | 5,259 | 7 | 0.0013 | 0.9987 | 65.68 |
| 97.5 | 4,645 | 5 | 0.0010 | 0.9990 | 65.59 |
| 98.5 | 21,835 | 410 | 0.0188 | 0.9812 | 65.52 |
| 99.5 | 21,183 | 2 | 0.0001 | 0.9999 | 64.29 |
| 100.5 | 21,181 | 2 | 0.0001 | 0.9999 | 64.29 |
| 101.5 | 20,151 | 864 | 0.0429 | 0.9571 | 64.28 |
| 102.5 | 17,687 | 441 | 0.0250 | 0.9750 | 61.53 |
| 103.5 | 16,754 | 441 | 0.0263 | 0.9737 | 59.99 |
| 104.5 | 16,313 | | 0.0000 | 1.0000 | 58.41 |
| 105.5 | 16,313 | 1,323 | 0.0811 | 0.9189 | 58.41 |
| 106.5 | 14,990 | 1,102 | 0.0735 | 0.9265 | 53.68 |
| 107.5 | 13,888 | 661 | 0.0476 | 0.9524 | 49.73 |
| 108.5 | 13,227 | | 0.0000 | 1.0000 | 47.36 |
| 109.5 | | | | | 47.36 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT
ACCOUNT 367.00 UNDERGROUND CONDUCTORS AND DEVICES
ORIGINAL AND SMOOTH SURVIVOR CURVES
ORIGINAL CURVE
1970-2018 EXPERIENCE
1910-2018 PLACEMENTS
2008-2018 EXPERIENCE
1910-2018 PLACEMENTS
IOWA 55-R3
PERCENT SURVIVING
AGE IN YEARS
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
120

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 367.00 UNDERGROUND CONDUCTORS AND DEVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1970-2018

| 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 | 12,398,570 | 38 | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 11,981,472 | 2,937 | 0.0002 | 0.9998 | 100.00 |
| 1.5 | 11,384,856 | 177 | 0.0000 | 1.0000 | 99.98 |
| 2.5 | 10,961,485 | 3,390 | 0.0003 | 0.9997 | 99.97 |
| 3.5 | 10,628,729 | 8,094 | 0.0008 | 0.9992 | 99.94 |
| 4.5 | 10,224,372 | 5,123 | 0.0005 | 0.9995 | 99.87 |
| 5.5 | 9,486,770 | 946 | 0.0001 | 0.9999 | 99.82 |
| 6.5 | 8,555,380 | 8,789 | 0.0010 | 0.9990 | 99.81 |
| 7.5 | 8,279,869 | 15,096 | 0.0018 | 0.9982 | 99.70 |
| 8.5 | 8,076,151 | 6,602 | 0.0008 | 0.9992 | 99.52 |
| 9.5 | 7,945,901 | 10,672 | 0.0013 | 0.9987 | 99.44 |
| 10.5 | 7,353,752 | 4,175 | 0.0006 | 0.9994 | 99.31 |
| 11.5 | 7,040,057 | 43,332 | 0.0062 | 0.9938 | 99.25 |
| 12.5 | 6,612,051 | 2,423 | 0.0004 | 0.9996 | 98.64 |
| 13.5 | 6,116,658 | 971 | 0.0002 | 0.9998 | 98.60 |
| 14.5 | 5,542,782 | 3,696 | 0.0007 | 0.9993 | 98.59 |
| 15.5 | 5,429,162 | 1,394 | 0.0003 | 0.9997 | 98.52 |
| 16.5 | 5,128,775 | 2,430 | 0.0005 | 0.9995 | 98.50 |
| 17.5 | 4,015,213 | 546 | 0.0001 | 0.9999 | 98.45 |
| 18.5 | 3,825,116 | 678 | 0.0002 | 0.9998 | 98.44 |
| 19.5 | 3,554,632 | 2,330 | 0.0007 | 0.9993 | 98.42 |
| 20.5 | 3,168,283 | 1,036 | 0.0003 | 0.9997 | 98.36 |
| 21.5 | 2,717,805 | 5,516 | 0.0020 | 0.9980 | 98.32 |
| 22.5 | 2,563,905 | 897 | 0.0004 | 0.9996 | 98.12 |
| 23.5 | 2,338,164 | 1,028 | 0.0004 | 0.9996 | 98.09 |
| 24.5 | 2,150,629 | 1,146 | 0.0005 | 0.9995 | 98.05 |
| 25.5 | 2,077,965 | 4,971 | 0.0024 | 0.9976 | 97.99 |
| 26.5 | 2,080,379 | 1,801 | 0.0009 | 0.9991 | 97.76 |
| 27.5 | 2,046,824 | 2,473 | 0.0012 | 0.9988 | 97.67 |
| 28.5 | 1,960,825 | 3,025 | 0.0015 | 0.9985 | 97.56 |
| 29.5 | 1,800,711 | 2,457 | 0.0014 | 0.9986 | 97.41 |
| 30.5 | 1,658,751 | 3,552 | 0.0021 | 0.9979 | 97.27 |
| 31.5 | 1,438,886 | 1,380 | 0.0010 | 0.9990 | 97.07 |
| 32.5 | 1,366,898 | 2,103 | 0.0015 | 0.9985 | 96.97 |
| 33.5 | 1,257,284 | 2,127 | 0.0017 | 0.9983 | 96.82 |
| 34.5 | 1,194,038 | 2,144 | 0.0018 | 0.9982 | 96.66 |
| 35.5 | 1,117,477 | 5,083 | 0.0045 | 0.9955 | 96.49 |
| 36.5 | 1,091,329 | 24,278 | 0.0222 | 0.9778 | 96.05 |
| 37.5 | 1,061,525 | 3,301 | 0.0031 | 0.9969 | 93.91 |
| 38.5 | 1,130,064 | 4,980 | 0.0044 | 0.9956 | 93.62 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 367.00 UNDERGROUND CONDUCTORS AND DEVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1970-2018

| 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 | 1,106,102 | 8,535 | 0.0077 | 0.9923 | 93.21 |
| 40.5 | 1,049,608 | 6,512 | 0.0062 | 0.9938 | 92.49 |
| 41.5 | 1,026,305 | 5,440 | 0.0053 | 0.9947 | 91.91 |
| 42.5 | 985,219 | 7,636 | 0.0078 | 0.9922 | 91.43 |
| 43.5 | 949,592 | 8,108 | 0.0085 | 0.9915 | 90.72 |
| 44.5 | 862,955 | 5,965 | 0.0069 | 0.9931 | 89.94 |
| 45.5 | 735,424 | 4,294 | 0.0058 | 0.9942 | 89.32 |
| 46.5 | 681,764 | 3,344 | 0.0049 | 0.9951 | 88.80 |
| 47.5 | 671,168 | 6,930 | 0.0103 | 0.9897 | 88.36 |
| 48.5 | 651,017 | 6,121 | 0.0094 | 0.9906 | 87.45 |
| 49.5 | 636,030 | 3,066 | 0.0048 | 0.9952 | 86.63 |
| 50.5 | 626,721 | 5,594 | 0.0089 | 0.9911 | 86.21 |
| 51.5 | 616,879 | 4,588 | 0.0074 | 0.9926 | 85.44 |
| 52.5 | 607,742 | 5,753 | 0.0095 | 0.9905 | 84.81 |
| 53.5 | 588,905 | 10,417 | 0.0177 | 0.9823 | 84.00 |
| 54.5 | 576,679 | 8,600 | 0.0149 | 0.9851 | 82.52 |
| 55.5 | 552,596 | 3,783 | 0.0068 | 0.9932 | 81.29 |
| 56.5 | 545,909 | 7,278 | 0.0133 | 0.9867 | 80.73 |
| 57.5 | 488,987 | 6,114 | 0.0125 | 0.9875 | 79.65 |
| 58.5 | 475,231 | 6,393 | 0.0135 | 0.9865 | 78.66 |
| 59.5 | 460,805 | 5,596 | 0.0121 | 0.9879 | 77.60 |
| 60.5 | 419,630 | 7,236 | 0.0172 | 0.9828 | 76.66 |
| 61.5 | 382,641 | 4,034 | 0.0105 | 0.9895 | 75.34 |
| 62.5 | 371,657 | 4,800 | 0.0129 | 0.9871 | 74.54 |
| 63.5 | 348,935 | 3,724 | 0.0107 | 0.9893 | 73.58 |
| 64.5 | 281,582 | 2,089 | 0.0074 | 0.9926 | 72.79 |
| 65.5 | 251,573 | 10,162 | 0.0404 | 0.9596 | 72.25 |
| 66.5 | 236,224 | 4,338 | 0.0184 | 0.9816 | 69.33 |
| 67.5 | 223,212 | 3,779 | 0.0169 | 0.9831 | 68.06 |
| 68.5 | 204,901 | 2,131 | 0.0104 | 0.9896 | 66.91 |
| 69.5 | 148,777 | 1,560 | 0.0105 | 0.9895 | 66.21 |
| 70.5 | 146,957 | 4,991 | 0.0340 | 0.9660 | 65.52 |
| 71.5 | 141,268 | 2,582 | 0.0183 | 0.9817 | 63.29 |
| 72.5 | 137,075 | 3,213 | 0.0234 | 0.9766 | 62.14 |
| 73.5 | 133,199 | 2,177 | 0.0163 | 0.9837 | 60.68 |
| 74.5 | 130,797 | 1,902 | 0.0145 | 0.9855 | 59.69 |
| 75.5 | 126,042 | 9,326 | 0.0740 | 0.9260 | 58.82 |
| 76.5 | 114,339 | 853 | 0.0075 | 0.9925 | 54.47 |
| 77.5 | 112,529 | 804 | 0.0071 | 0.9929 | 54.06 |
| 78.5 | 108,737 | 654 | 0.0060 | 0.9940 | 53.68 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 367.00 UNDERGROUND CONDUCTORS AND DEVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1970-2018

| 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 | 107,913 | 255 | 0.0024 | 0.9976 | 53.35 |
| 80.5 | 107,084 | 862 | 0.0080 | 0.9920 | 53.23 |
| 81.5 | 91,745 | 5,918 | 0.0645 | 0.9355 | 52.80 |
| 82.5 | 84,843 | 1,392 | 0.0164 | 0.9836 | 49.39 |
| 83.5 | 83,418 | 501 | 0.0060 | 0.9940 | 48.58 |
| 84.5 | 82,739 | 919 | 0.0111 | 0.9889 | 48.29 |
| 85.5 | 81,577 | 6,969 | 0.0854 | 0.9146 | 47.75 |
| 86.5 | 74,608 | 2,141 | 0.0287 | 0.9713 | 43.67 |
| 87.5 | 23,234 | 238 | 0.0102 | 0.9898 | 42.42 |
| 88.5 | 18,885 | 366 | 0.0194 | 0.9806 | 41.99 |
| 89.5 | 18,126 | 213 | 0.0118 | 0.9882 | 41.17 |
| 90.5 | 17,850 | 19 | 0.0011 | 0.9989 | 40.69 |
| 91.5 | 14,329 | | 0.0000 | 1.0000 | 40.64 |
| 92.5 | 14,329 | 225 | 0.0157 | 0.9843 | 40.64 |
| 93.5 | 13,409 | 1 | 0.0000 | 1.0000 | 40.01 |
| 94.5 | 12,740 | 14 | 0.0011 | 0.9989 | 40.00 |
| 95.5 | 11,847 | | 0.0000 | 1.0000 | 39.96 |
| 96.5 | 11,545 | 41 | 0.0035 | 0.9965 | 39.96 |
| 97.5 | 10,866 | 76 | 0.0070 | 0.9930 | 39.82 |
| 98.5 | 10,790 | 688 | 0.0638 | 0.9362 | 39.54 |
| 99.5 | 10,102 | 1,210 | 0.1198 | 0.8802 | 37.02 |
| 100.5 | 8,780 | 246 | 0.0280 | 0.9720 | 32.58 |
| 101.5 | 7,391 | 168 | 0.0228 | 0.9772 | 31.67 |
| 102.5 | 6,680 | 78 | 0.0117 | 0.9883 | 30.95 |
| 103.5 | 6,000 | 108 | 0.0180 | 0.9820 | 30.59 |
| 104.5 | 5,228 | 19 | 0.0036 | 0.9964 | 30.04 |
| 105.5 | 5,057 | 15 | 0.0030 | 0.9970 | 29.93 |
| 106.5 | 4,985 | 90 | 0.0181 | 0.9819 | 29.84 |
| 107.5 | 4,895 | 47 | 0.0095 | 0.9905 | 29.30 |
| 108.5 | | | | | 29.02 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 367.00 UNDERGROUND CONDUCTORS AND DEVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 2008-2018

| 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 | 5,174,743 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 5,099,599 | 2,852 | 0.0006 | 0.9994 | 100.00 |
| 1.5 | 4,910,759 | 79 | 0.0000 | 1.0000 | 99.94 |
| 2.5 | 5,005,348 | 3,286 | 0.0007 | 0.9993 | 99.94 |
| 3.5 | 5,299,141 | 7,976 | 0.0015 | 0.9985 | 99.88 |
| 4.5 | 5,075,899 | 4,977 | 0.0010 | 0.9990 | 99.73 |
| 5.5 | 4,666,992 | 778 | 0.0002 | 0.9998 | 99.63 |
| 6.5 | 4,837,764 | 8,644 | 0.0018 | 0.9982 | 99.61 |
| 7.5 | 4,763,011 | 14,933 | 0.0031 | 0.9969 | 99.43 |
| 8.5 | 4,792,921 | 6,392 | 0.0013 | 0.9987 | 99.12 |
| 9.5 | 5,105,098 | 10,477 | 0.0021 | 0.9979 | 98.99 |
| 10.5 | 4,949,877 | 3,989 | 0.0008 | 0.9992 | 98.79 |
| 11.5 | 4,747,992 | 43,098 | 0.0091 | 0.9909 | 98.71 |
| 12.5 | 4,515,993 | 2,157 | 0.0005 | 0.9995 | 97.81 |
| 13.5 | 4,200,259 | 600 | 0.0001 | 0.9999 | 97.76 |
| 14.5 | 3,676,364 | 3,374 | 0.0009 | 0.9991 | 97.75 |
| 15.5 | 3,508,322 | 1,011 | 0.0003 | 0.9997 | 97.66 |
| 16.5 | 3,210,393 | 2,021 | 0.0006 | 0.9994 | 97.63 |
| 17.5 | 2,173,178 | | 0.0000 | 1.0000 | 97.57 |
| 18.5 | 2,137,017 | | 0.0000 | 1.0000 | 97.57 |
| 19.5 | 1,996,487 | 1,714 | 0.0009 | 0.9991 | 97.57 |
| 20.5 | 1,764,594 | 357 | 0.0002 | 0.9998 | 97.49 |
| 21.5 | 1,404,897 | 4,825 | 0.0034 | 0.9966 | 97.47 |
| 22.5 | 1,359,612 | | 0.0000 | 1.0000 | 97.13 |
| 23.5 | 1,196,982 | 53 | 0.0000 | 1.0000 | 97.13 |
| 24.5 | 1,084,127 | 304 | 0.0003 | 0.9997 | 97.13 |
| 25.5 | 1,033,189 | 4,346 | 0.0042 | 0.9958 | 97.10 |
| 26.5 | 1,015,754 | 603 | 0.0006 | 0.9994 | 96.69 |
| 27.5 | 1,009,822 | 1,676 | 0.0017 | 0.9983 | 96.64 |
| 28.5 | 951,809 | 1,265 | 0.0013 | 0.9987 | 96.48 |
| 29.5 | 861,398 | 725 | 0.0008 | 0.9992 | 96.35 |
| 30.5 | 741,510 | 2,252 | 0.0030 | 0.9970 | 96.27 |
| 31.5 | 562,100 | 70 | 0.0001 | 0.9999 | 95.97 |
| 32.5 | 503,664 | 254 | 0.0005 | 0.9995 | 95.96 |
| 33.5 | 477,607 | 332 | 0.0007 | 0.9993 | 95.91 |
| 34.5 | 549,971 | 172 | 0.0003 | 0.9997 | 95.85 |
| 35.5 | 531,463 | 3,301 | 0.0062 | 0.9938 | 95.82 |
| 36.5 | 514,351 | 22,530 | 0.0438 | 0.9562 | 95.22 |
| 37.5 | 524,049 | 1,583 | 0.0030 | 0.9970 | 91.05 |
| 38.5 | 501,990 | 2,441 | 0.0049 | 0.9951 | 90.78 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 367.00 UNDERGROUND CONDUCTORS AND DEVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 2008-2018

| 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 | 483,804 | 6,867 | 0.0142 | 0.9858 | 90.33 |
| 40.5 | 427,520 | 2,202 | 0.0051 | 0.9949 | 89.05 |
| 41.5 | 411,790 | 2,319 | 0.0056 | 0.9944 | 88.59 |
| 42.5 | 382,570 | 3,488 | 0.0091 | 0.9909 | 88.09 |
| 43.5 | 353,608 | 4,946 | 0.0140 | 0.9860 | 87.29 |
| 44.5 | 286,449 | 1,716 | 0.0060 | 0.9940 | 86.07 |
| 45.5 | 164,023 | 1,031 | 0.0063 | 0.9937 | 85.55 |
| 46.5 | 163,560 | 639 | 0.0039 | 0.9961 | 85.02 |
| 47.5 | 163,987 | 1,859 | 0.0113 | 0.9887 | 84.68 |
| 48.5 | 138,124 | 675 | 0.0049 | 0.9951 | 83.72 |
| 49.5 | 166,894 | 408 | 0.0024 | 0.9976 | 83.31 |
| 50.5 | 191,074 | 523 | 0.0027 | 0.9973 | 83.11 |
| 51.5 | 193,119 | 598 | 0.0031 | 0.9969 | 82.88 |
| 52.5 | 207,378 | 522 | 0.0025 | 0.9975 | 82.63 |
| 53.5 | 262,163 | 817 | 0.0031 | 0.9969 | 82.42 |
| 54.5 | 287,663 | 3,752 | 0.0130 | 0.9870 | 82.16 |
| 55.5 | 274,970 | 1,039 | 0.0038 | 0.9962 | 81.09 |
| 56.5 | 279,922 | 3,456 | 0.0123 | 0.9877 | 80.78 |
| 57.5 | 242,672 | 2,505 | 0.0103 | 0.9897 | 79.79 |
| 58.5 | 286,807 | 2,271 | 0.0079 | 0.9921 | 78.96 |
| 59.5 | 271,054 | 900 | 0.0033 | 0.9967 | 78.34 |
| 60.5 | 235,291 | 1,145 | 0.0049 | 0.9951 | 78.08 |
| 61.5 | 206,355 | 1,615 | 0.0078 | 0.9922 | 77.70 |
| 62.5 | 198,469 | 1,186 | 0.0060 | 0.9940 | 77.09 |
| 63.5 | 179,591 | 770 | 0.0043 | 0.9957 | 76.63 |
| 64.5 | 118,118 | 200 | 0.0017 | 0.9983 | 76.30 |
| 65.5 | 92,459 | 432 | 0.0047 | 0.9953 | 76.17 |
| 66.5 | 87,859 | 178 | 0.0020 | 0.9980 | 75.82 |
| 67.5 | 82,082 | 247 | 0.0030 | 0.9970 | 75.66 |
| 68.5 | 67,473 | 321 | 0.0048 | 0.9952 | 75.43 |
| 69.5 | 14,598 | 38 | 0.0026 | 0.9974 | 75.08 |
| 70.5 | 29,298 | 21 | 0.0007 | 0.9993 | 74.88 |
| 71.5 | 29,594 | 36 | 0.0012 | 0.9988 | 74.82 |
| 72.5 | 27,979 | 54 | 0.0019 | 0.9981 | 74.73 |
| 73.5 | 27,460 | 192 | 0.0070 | 0.9930 | 74.59 |
| 74.5 | 27,286 | 181 | 0.0066 | 0.9934 | 74.07 |
| 75.5 | 24,251 | 259 | 0.0107 | 0.9893 | 73.58 |
| 76.5 | 85,704 | 217 | 0.0025 | 0.9975 | 72.79 |
| 77.5 | 89,793 | 236 | 0.0026 | 0.9974 | 72.61 |
| 78.5 | 86,992 | 355 | 0.0041 | 0.9959 | 72.42 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 367.00 UNDERGROUND CONDUCTORS AND DEVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 2008-2018

| 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 | 86,529 | 40 | 0.0005 | 0.9995 | 72.12 |
| 80.5 | 89,985 | 167 | 0.0019 | 0.9981 | 72.09 |
| 81.5 | 75,341 | 5,450 | 0.0723 | 0.9277 | 71.95 |
| 82.5 | 69,619 | 912 | 0.0131 | 0.9869 | 66.75 |
| 83.5 | 69,730 | 295 | 0.0042 | 0.9958 | 65.87 |
| 84.5 | 70,166 | 734 | 0.0105 | 0.9895 | 65.60 |
| 85.5 | 69,491 | 6,664 | 0.0959 | 0.9041 | 64.91 |
| 86.5 | 63,468 | 2,141 | 0.0337 | 0.9663 | 58.69 |
| 87.5 | 12,115 | 238 | 0.0196 | 0.9804 | 56.71 |
| 88.5 | 7,767 | 366 | 0.0471 | 0.9529 | 55.59 |
| 89.5 | 7,213 | 213 | 0.0296 | 0.9704 | 52.97 |
| 90.5 | 8,341 | 19 | 0.0023 | 0.9977 | 51.41 |
| 91.5 | 5,572 | | 0.0000 | 1.0000 | 51.29 |
| 92.5 | 6,173 | 225 | 0.0365 | 0.9635 | 51.29 |
| 93.5 | 5,917 | 1 | 0.0001 | 0.9999 | 49.42 |
| 94.5 | 5,571 | 14 | 0.0025 | 0.9975 | 49.41 |
| 95.5 | 4,777 | | 0.0000 | 1.0000 | 49.29 |
| 96.5 | 5,323 | 41 | 0.0077 | 0.9923 | 49.29 |
| 97.5 | 10,866 | 76 | 0.0070 | 0.9930 | 48.91 |
| 98.5 | 10,790 | 688 | 0.0638 | 0.9362 | 48.57 |
| 99.5 | 10,102 | 1,210 | 0.1198 | 0.8802 | 45.47 |
| 100.5 | 8,780 | 246 | 0.0280 | 0.9720 | 40.02 |
| 101.5 | 7,391 | 168 | 0.0228 | 0.9772 | 38.90 |
| 102.5 | 6,680 | 78 | 0.0117 | 0.9883 | 38.01 |
| 103.5 | 6,000 | 108 | 0.0180 | 0.9820 | 37.57 |
| 104.5 | 5,228 | 19 | 0.0036 | 0.9964 | 36.89 |
| 105.5 | 5,057 | 15 | 0.0030 | 0.9970 | 36.76 |
| 106.5 | 4,985 | 90 | 0.0181 | 0.9819 | 36.65 |
| 107.5 | 4,895 | 47 | 0.0095 | 0.9905 | 35.98 |
| 108.5 | | | | | 35.64 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT
ACCOUNT 368.00 LINE TRANSFORMERS
ORIGINAL AND SMOOTH SURVIVOR CURVES
ORIGINAL CURVE
1970-2018 EXPERIENCE
1921-2018 PLACEMENTS
2008-2018 EXPERIENCE
1940-2018 PLACEMENTS
IOWA 40-R2
PERCENT SURVIVING
AGE IN YEARS
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
120

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 368.00 LINE TRANSFORMERS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1921-2018 EXPERIENCE BAND 1970-2018

| 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 | 18,061,554 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 17,886,496 | 55,741 | 0.0031 | 0.9969 | 100.00 |
| 1.5 | 17,113,182 | 27,645 | 0.0016 | 0.9984 | 99.69 |
| 2.5 | 16,461,361 | 40,317 | 0.0024 | 0.9976 | 99.53 |
| 3.5 | 15,285,333 | 52,076 | 0.0034 | 0.9966 | 99.28 |
| 4.5 | 15,261,502 | 41,738 | 0.0027 | 0.9973 | 98.95 |
| 5.5 | 14,587,515 | 24,909 | 0.0017 | 0.9983 | 98.67 |
| 6.5 | 14,006,903 | 20,520 | 0.0015 | 0.9985 | 98.51 |
| 7.5 | 13,429,756 | 25,392 | 0.0019 | 0.9981 | 98.36 |
| 8.5 | 12,980,951 | 33,233 | 0.0026 | 0.9974 | 98.18 |
| 9.5 | 12,704,949 | 57,286 | 0.0045 | 0.9955 | 97.92 |
| 10.5 | 12,021,304 | 34,732 | 0.0029 | 0.9971 | 97.48 |
| 11.5 | 11,268,482 | 32,074 | 0.0028 | 0.9972 | 97.20 |
| 12.5 | 10,794,009 | 19,942 | 0.0018 | 0.9982 | 96.92 |
| 13.5 | 10,237,572 | 24,216 | 0.0024 | 0.9976 | 96.75 |
| 14.5 | 9,774,711 | 29,427 | 0.0030 | 0.9970 | 96.52 |
| 15.5 | 9,384,428 | 25,404 | 0.0027 | 0.9973 | 96.23 |
| 16.5 | 9,005,757 | 28,071 | 0.0031 | 0.9969 | 95.97 |
| 17.5 | 8,765,438 | 56,794 | 0.0065 | 0.9935 | 95.67 |
| 18.5 | 8,155,682 | 56,600 | 0.0069 | 0.9931 | 95.05 |
| 19.5 | 7,624,294 | 83,168 | 0.0109 | 0.9891 | 94.39 |
| 20.5 | 7,243,004 | 83,554 | 0.0115 | 0.9885 | 93.36 |
| 21.5 | 6,954,591 | 130,534 | 0.0188 | 0.9812 | 92.28 |
| 22.5 | 5,998,362 | 168,304 | 0.0281 | 0.9719 | 90.55 |
| 23.5 | 5,528,436 | 207,684 | 0.0376 | 0.9624 | 88.01 |
| 24.5 | 4,962,932 | 215,844 | 0.0435 | 0.9565 | 84.70 |
| 25.5 | 4,502,013 | 215,858 | 0.0479 | 0.9521 | 81.02 |
| 26.5 | 4,226,406 | 238,194 | 0.0564 | 0.9436 | 77.13 |
| 27.5 | 3,771,740 | 267,833 | 0.0710 | 0.9290 | 72.79 |
| 28.5 | 3,332,202 | 226,083 | 0.0678 | 0.9322 | 67.62 |
| 29.5 | 2,861,065 | 216,135 | 0.0755 | 0.9245 | 63.03 |
| 30.5 | 2,392,178 | 155,059 | 0.0648 | 0.9352 | 58.27 |
| 31.5 | 2,037,457 | 138,574 | 0.0680 | 0.9320 | 54.49 |
| 32.5 | 1,688,945 | 112,624 | 0.0667 | 0.9333 | 50.79 |
| 33.5 | 1,472,982 | 71,745 | 0.0487 | 0.9513 | 47.40 |
| 34.5 | 1,330,630 | 58,009 | 0.0436 | 0.9564 | 45.09 |
| 35.5 | 1,157,814 | 34,194 | 0.0295 | 0.9705 | 43.12 |
| 36.5 | 1,055,001 | 35,221 | 0.0334 | 0.9666 | 41.85 |
| 37.5 | 967,396 | 18,797 | 0.0194 | 0.9806 | 40.45 |
| 38.5 | 914,399 | 18,595 | 0.0203 | 0.9797 | 39.67 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 368.00 LINE TRANSFORMERS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1921-2018 EXPERIENCE BAND 1970-2018

| 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 | 838,317 | 17,590 | 0.0210 | 0.9790 | 38.86 |
| 40.5 | 766,695 | 22,031 | 0.0287 | 0.9713 | 38.05 |
| 41.5 | 664,948 | 28,440 | 0.0428 | 0.9572 | 36.95 |
| 42.5 | 589,178 | 20,729 | 0.0352 | 0.9648 | 35.37 |
| 43.5 | 537,083 | 23,404 | 0.0436 | 0.9564 | 34.13 |
| 44.5 | 421,685 | 18,645 | 0.0442 | 0.9558 | 32.64 |
| 45.5 | 401,546 | 11,787 | 0.0294 | 0.9706 | 31.20 |
| 46.5 | 342,368 | 10,831 | 0.0316 | 0.9684 | 30.28 |
| 47.5 | 321,249 | 8,129 | 0.0253 | 0.9747 | 29.32 |
| 48.5 | 282,930 | 29,761 | 0.1052 | 0.8948 | 28.58 |
| 49.5 | 192,680 | 5,407 | 0.0281 | 0.9719 | 25.57 |
| 50.5 | 176,400 | 5,420 | 0.0307 | 0.9693 | 24.86 |
| 51.5 | 140,426 | 8,124 | 0.0578 | 0.9422 | 24.09 |
| 52.5 | 114,067 | 10,538 | 0.0924 | 0.9076 | 22.70 |
| 53.5 | 94,692 | 5,646 | 0.0596 | 0.9404 | 20.60 |
| 54.5 | 80,003 | 20,442 | 0.2555 | 0.7445 | 19.37 |
| 55.5 | 48,490 | 6,143 | 0.1267 | 0.8733 | 14.42 |
| 56.5 | 28,347 | 1,995 | 0.0704 | 0.9296 | 12.60 |
| 57.5 | 17,991 | 1,151 | 0.0640 | 0.9360 | 11.71 |
| 58.5 | 8,668 | 99 | 0.0114 | 0.9886 | 10.96 |
| 59.5 | 5,486 | 278 | 0.0507 | 0.9493 | 10.84 |
| 60.5 | 5,207 | 1,199 | 0.2302 | 0.7698 | 10.29 |
| 61.5 | 4,009 | 391 | 0.0975 | 0.9025 | 7.92 |
| 62.5 | 2,836 | 203 | 0.0716 | 0.9284 | 7.15 |
| 63.5 | 2,226 | 63 | 0.0283 | 0.9717 | 6.63 |
| 64.5 | 2,163 | | 0.0000 | 1.0000 | 6.45 |
| 65.5 | 2,163 | 63 | 0.0291 | 0.9709 | 6.45 |
| 66.5 | 2,100 | | 0.0000 | 1.0000 | 6.26 |
| 67.5 | 2,100 | 402 | 0.1912 | 0.8088 | 6.26 |
| 68.5 | 1,699 | | 0.0000 | 1.0000 | 5.06 |
| 69.5 | 1,699 | 101 | 0.0592 | 0.9408 | 5.06 |
| 70.5 | 1,598 | | 0.0000 | 1.0000 | 4.76 |
| 71.5 | 1,233 | 418 | 0.3387 | 0.6613 | 4.76 |
| 72.5 | 816 | 464 | 0.5691 | 0.4309 | 3.15 |
| 73.5 | 351 | 17 | 0.0493 | 0.9507 | 1.36 |
| 74.5 | 334 | 334 | 1.0000 | | 1.29 |
| 75.5 | | | | | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 368.00 LINE TRANSFORMERS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1940-2018 EXPERIENCE BAND 2008-2018

| 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 | 6,790,423 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 7,230,489 | 55,741 | 0.0077 | 0.9923 | 100.00 |
| 1.5 | 6,825,499 | 27,645 | 0.0041 | 0.9959 | 99.23 |
| 2.5 | 6,676,733 | 40,317 | 0.0060 | 0.9940 | 98.83 |
| 3.5 | 5,906,625 | 52,076 | 0.0088 | 0.9912 | 98.23 |
| 4.5 | 6,108,147 | 41,738 | 0.0068 | 0.9932 | 97.36 |
| 5.5 | 5,775,474 | 24,909 | 0.0043 | 0.9957 | 96.70 |
| 6.5 | 5,367,973 | 20,520 | 0.0038 | 0.9962 | 96.28 |
| 7.5 | 5,354,093 | 25,392 | 0.0047 | 0.9953 | 95.91 |
| 8.5 | 5,544,912 | 33,233 | 0.0060 | 0.9940 | 95.46 |
| 9.5 | 5,577,329 | 57,285 | 0.0103 | 0.9897 | 94.89 |
| 10.5 | 5,081,459 | 34,726 | 0.0068 | 0.9932 | 93.91 |
| 11.5 | 5,158,436 | 32,037 | 0.0062 | 0.9938 | 93.27 |
| 12.5 | 4,984,462 | 19,820 | 0.0040 | 0.9960 | 92.69 |
| 13.5 | 4,763,993 | 23,327 | 0.0049 | 0.9951 | 92.32 |
| 14.5 | 4,535,964 | 26,908 | 0.0059 | 0.9941 | 91.87 |
| 15.5 | 4,263,784 | 22,105 | 0.0052 | 0.9948 | 91.33 |
| 16.5 | 4,125,845 | 17,274 | 0.0042 | 0.9958 | 90.85 |
| 17.5 | 4,067,037 | 38,521 | 0.0095 | 0.9905 | 90.47 |
| 18.5 | 3,718,084 | 17,603 | 0.0047 | 0.9953 | 89.61 |
| 19.5 | 3,492,566 | 15,180 | 0.0043 | 0.9957 | 89.19 |
| 20.5 | 3,396,113 | 16,096 | 0.0047 | 0.9953 | 88.80 |
| 21.5 | 3,414,083 | 20,166 | 0.0059 | 0.9941 | 88.38 |
| 22.5 | 2,671,764 | 37,627 | 0.0141 | 0.9859 | 87.86 |
| 23.5 | 2,472,632 | 33,381 | 0.0135 | 0.9865 | 86.62 |
| 24.5 | 2,207,245 | 44,361 | 0.0201 | 0.9799 | 85.45 |
| 25.5 | 1,998,492 | 40,486 | 0.0203 | 0.9797 | 83.74 |
| 26.5 | 1,883,471 | 15,247 | 0.0081 | 0.9919 | 82.04 |
| 27.5 | 1,695,703 | 29,683 | 0.0175 | 0.9825 | 81.38 |
| 28.5 | 1,562,343 | 28,005 | 0.0179 | 0.9821 | 79.95 |
| 29.5 | 1,362,361 | 31,247 | 0.0229 | 0.9771 | 78.52 |
| 30.5 | 1,210,198 | 10,943 | 0.0090 | 0.9910 | 76.72 |
| 31.5 | 1,050,009 | 13,476 | 0.0128 | 0.9872 | 76.02 |
| 32.5 | 854,423 | 25,767 | 0.0302 | 0.9698 | 75.05 |
| 33.5 | 842,551 | 14,683 | 0.0174 | 0.9826 | 72.78 |
| 34.5 | 748,740 | 15,775 | 0.0211 | 0.9789 | 71.52 |
| 35.5 | 690,045 | 7,449 | 0.0108 | 0.9892 | 70.01 |
| 36.5 | 638,547 | 20,031 | 0.0314 | 0.9686 | 69.25 |
| 37.5 | 638,094 | 7,208 | 0.0113 | 0.9887 | 67.08 |
| 38.5 | 669,933 | 10,791 | 0.0161 | 0.9839 | 66.32 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 368.00 LINE TRANSFORMERS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1940-2018 EXPERIENCE BAND 2008-2018

| 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 | 619,344 | 8,677 | 0.0140 | 0.9860 | 65.25 |
| 40.5 | 588,436 | 13,875 | 0.0236 | 0.9764 | 64.34 |
| 41.5 | 510,570 | 20,770 | 0.0407 | 0.9593 | 62.82 |
| 42.5 | 452,689 | 15,154 | 0.0335 | 0.9665 | 60.27 |
| 43.5 | 414,859 | 18,279 | 0.0441 | 0.9559 | 58.25 |
| 44.5 | 318,969 | 13,496 | 0.0423 | 0.9577 | 55.68 |
| 45.5 | 317,004 | 7,489 | 0.0236 | 0.9764 | 53.33 |
| 46.5 | 269,330 | 5,685 | 0.0211 | 0.9789 | 52.07 |
| 47.5 | 260,340 | 4,833 | 0.0186 | 0.9814 | 50.97 |
| 48.5 | 223,813 | 3,579 | 0.0160 | 0.9840 | 50.02 |
| 49.5 | 168,708 | 4,153 | 0.0246 | 0.9754 | 49.22 |
| 50.5 | 162,861 | 5,042 | 0.0310 | 0.9690 | 48.01 |
| 51.5 | 135,489 | 7,716 | 0.0570 | 0.9430 | 46.52 |
| 52.5 | 111,637 | 10,538 | 0.0944 | 0.9056 | 43.88 |
| 53.5 | 92,262 | 5,646 | 0.0612 | 0.9388 | 39.73 |
| 54.5 | 77,678 | 20,442 | 0.2632 | 0.7368 | 37.30 |
| 55.5 | 46,164 | 6,143 | 0.1331 | 0.8669 | 27.49 |
| 56.5 | 26,120 | 1,995 | 0.0764 | 0.9236 | 23.83 |
| 57.5 | 15,890 | 1,151 | 0.0725 | 0.9275 | 22.01 |
| 58.5 | 6,568 | 99 | 0.0150 | 0.9850 | 20.41 |
| 59.5 | 3,385 | 278 | 0.0821 | 0.9179 | 20.11 |
| 60.5 | 3,472 | 1,199 | 0.3453 | 0.6547 | 18.45 |
| 61.5 | 2,341 | 391 | 0.1670 | 0.8330 | 12.08 |
| 62.5 | 1,168 | 203 | 0.1739 | 0.8261 | 10.06 |
| 63.5 | 659 | 63 | 0.0956 | 0.9044 | 8.31 |
| 64.5 | 1,598 | | 0.0000 | 1.0000 | 7.52 |
| 65.5 | 2,016 | 63 | 0.0313 | 0.9687 | 7.52 |
| 66.5 | 2,083 | | 0.0000 | 1.0000 | 7.28 |
| 67.5 | 2,100 | 402 | 0.1912 | 0.8088 | 7.28 |
| 68.5 | 1,699 | | 0.0000 | 1.0000 | 5.89 |
| 69.5 | 1,699 | 101 | 0.0592 | 0.9408 | 5.89 |
| 70.5 | 1,598 | | 0.0000 | 1.0000 | 5.54 |
| 71.5 | 1,233 | 418 | 0.3387 | 0.6613 | 5.54 |
| 72.5 | 816 | 464 | 0.5691 | 0.4309 | 3.67 |
| 73.5 | 351 | 17 | 0.0493 | 0.9507 | 1.58 |
| 74.5 | 334 | 334 | 1.0000 | | 1.50 |
| 75.5 | | | | | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT
ACCOUNT 369.00 SERVICES
ORIGINAL AND SMOOTH SURVIVOR CURVES
ORIGINAL CURVE
1970-2018 EXPERIENCE
1919-2018 PLACEMENTS
2008-2018 EXPERIENCE
1919-2018 PLACEMENTS
IOWA 53-R4
PERCENT SURVIVING
AGE IN YEARS
100
90
80
70
60
50
40
30
20
10
0
0
20
40
60
80
100
120

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 369.00 SERVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1919-2018 EXPERIENCE BAND 1970-2018

| 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 | 10,840,329 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 10,543,086 | 2,794 | 0.0003 | 0.9997 | 100.00 |
| 1.5 | 10,284,910 | 13,054 | 0.0013 | 0.9987 | 99.97 |
| 2.5 | 9,956,710 | 3,934 | 0.0004 | 0.9996 | 99.85 |
| 3.5 | 9,503,481 | 4,328 | 0.0005 | 0.9995 | 99.81 |
| 4.5 | 9,043,126 | 5,630 | 0.0006 | 0.9994 | 99.76 |
| 5.5 | 8,857,856 | 2,315 | 0.0003 | 0.9997 | 99.70 |
| 6.5 | 8,610,432 | 5,303 | 0.0006 | 0.9994 | 99.67 |
| 7.5 | 8,474,619 | 2,808 | 0.0003 | 0.9997 | 99.61 |
| 8.5 | 8,207,310 | 647 | 0.0001 | 0.9999 | 99.58 |
| 9.5 | 7,366,248 | 857 | 0.0001 | 0.9999 | 99.57 |
| 10.5 | 6,915,286 | 98 | 0.0000 | 1.0000 | 99.56 |
| 11.5 | 6,543,420 | 890 | 0.0001 | 0.9999 | 99.56 |
| 12.5 | 6,098,108 | 291 | 0.0000 | 1.0000 | 99.54 |
| 13.5 | 5,514,032 | 278 | 0.0001 | 0.9999 | 99.54 |
| 14.5 | 5,025,541 | 537 | 0.0001 | 0.9999 | 99.53 |
| 15.5 | 4,541,919 | 508 | 0.0001 | 0.9999 | 99.52 |
| 16.5 | 4,169,823 | 885 | 0.0002 | 0.9998 | 99.51 |
| 17.5 | 3,865,889 | 815 | 0.0002 | 0.9998 | 99.49 |
| 18.5 | 3,634,457 | 2,763 | 0.0008 | 0.9992 | 99.47 |
| 19.5 | 3,330,232 | 1,488 | 0.0004 | 0.9996 | 99.40 |
| 20.5 | 3,063,511 | 1,978 | 0.0006 | 0.9994 | 99.35 |
| 21.5 | 2,808,165 | 2,638 | 0.0009 | 0.9991 | 99.29 |
| 22.5 | 2,525,574 | 2,922 | 0.0012 | 0.9988 | 99.19 |
| 23.5 | 2,337,158 | 3,094 | 0.0013 | 0.9987 | 99.08 |
| 24.5 | 2,142,551 | 4,492 | 0.0021 | 0.9979 | 98.95 |
| 25.5 | 1,931,596 | 5,644 | 0.0029 | 0.9971 | 98.74 |
| 26.5 | 1,879,654 | 5,824 | 0.0031 | 0.9969 | 98.45 |
| 27.5 | 1,778,856 | 5,625 | 0.0032 | 0.9968 | 98.15 |
| 28.5 | 1,684,441 | 6,489 | 0.0039 | 0.9961 | 97.84 |
| 29.5 | 1,568,478 | 8,244 | 0.0053 | 0.9947 | 97.46 |
| 30.5 | 1,430,479 | 7,924 | 0.0055 | 0.9945 | 96.95 |
| 31.5 | 1,356,336 | 8,734 | 0.0064 | 0.9936 | 96.41 |
| 32.5 | 1,252,942 | 9,055 | 0.0072 | 0.9928 | 95.79 |
| 33.5 | 1,180,849 | 10,435 | 0.0088 | 0.9912 | 95.10 |
| 34.5 | 1,103,058 | 11,573 | 0.0105 | 0.9895 | 94.26 |
| 35.5 | 1,014,132 | 14,277 | 0.0141 | 0.9859 | 93.27 |
| 36.5 | 947,211 | 12,135 | 0.0128 | 0.9872 | 91.95 |
| 37.5 | 879,530 | 13,893 | 0.0158 | 0.9842 | 90.78 |
| 38.5 | 802,450 | 12,431 | 0.0155 | 0.9845 | 89.34 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 369.00 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1919-2018 EXPERIENCE BAND 1970-2018

| 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 | 744,510 | 13,107 | 0.0176 | 0.9824 | 87.96 |
| 40.5 | 684,450 | 13,322 | 0.0195 | 0.9805 | 86.41 |
| 41.5 | 642,870 | 14,809 | 0.0230 | 0.9770 | 84.73 |
| 42.5 | 596,218 | 12,973 | 0.0218 | 0.9782 | 82.78 |
| 43.5 | 567,920 | 13,394 | 0.0236 | 0.9764 | 80.98 |
| 44.5 | 525,873 | 12,344 | 0.0235 | 0.9765 | 79.07 |
| 45.5 | 468,453 | 10,742 | 0.0229 | 0.9771 | 77.21 |
| 46.5 | 439,721 | 18,902 | 0.0430 | 0.9570 | 75.44 |
| 47.5 | 419,697 | 13,774 | 0.0328 | 0.9672 | 72.20 |
| 48.5 | 394,767 | 16,922 | 0.0429 | 0.9571 | 69.83 |
| 49.5 | 370,926 | 14,471 | 0.0390 | 0.9610 | 66.83 |
| 50.5 | 346,930 | 14,876 | 0.0429 | 0.9571 | 64.23 |
| 51.5 | 317,869 | 17,073 | 0.0537 | 0.9463 | 61.47 |
| 52.5 | 292,206 | 17,289 | 0.0592 | 0.9408 | 58.17 |
| 53.5 | 257,908 | 16,745 | 0.0649 | 0.9351 | 54.73 |
| 54.5 | 230,364 | 26,899 | 0.1168 | 0.8832 | 51.18 |
| 55.5 | 188,330 | 14,364 | 0.0763 | 0.9237 | 45.20 |
| 56.5 | 162,935 | 10,944 | 0.0672 | 0.9328 | 41.75 |
| 57.5 | 136,325 | 9,817 | 0.0720 | 0.9280 | 38.95 |
| 58.5 | 112,342 | 8,397 | 0.0747 | 0.9253 | 36.14 |
| 59.5 | 87,476 | 6,383 | 0.0730 | 0.9270 | 33.44 |
| 60.5 | 54,634 | 4,108 | 0.0752 | 0.9248 | 31.00 |
| 61.5 | 40,134 | 3,675 | 0.0916 | 0.9084 | 28.67 |
| 62.5 | 29,828 | 3,473 | 0.1164 | 0.8836 | 26.05 |
| 63.5 | 22,378 | 2,768 | 0.1237 | 0.8763 | 23.01 |
| 64.5 | 19,458 | 2,246 | 0.1154 | 0.8846 | 20.17 |
| 65.5 | 17,061 | 1,465 | 0.0859 | 0.9141 | 17.84 |
| 66.5 | 15,569 | 1,128 | 0.0724 | 0.9276 | 16.31 |
| 67.5 | 14,441 | 843 | 0.0583 | 0.9417 | 15.13 |
| 68.5 | 13,085 | 2,668 | 0.2039 | 0.7961 | 14.24 |
| 69.5 | 9,140 | 395 | 0.0432 | 0.9568 | 11.34 |
| 70.5 | 8,276 | 366 | 0.0443 | 0.9557 | 10.85 |
| 71.5 | 5,302 | 262 | 0.0494 | 0.9506 | 10.37 |
| 72.5 | 5,040 | 109 | 0.0216 | 0.9784 | 9.86 |
| 73.5 | 4,931 | 246 | 0.0499 | 0.9501 | 9.64 |
| 74.5 | 4,685 | 86 | 0.0183 | 0.9817 | 9.16 |
| 75.5 | 3,897 | 213 | 0.0548 | 0.9452 | 9.00 |
| 76.5 | 3,038 | 39 | 0.0127 | 0.9873 | 8.50 |
| 77.5 | 3,017 | 26 | 0.0085 | 0.9915 | 8.39 |
| 78.5 | 2,820 | 15 | 0.0054 | 0.9946 | 8.32 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 369.00 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1919-2018 EXPERIENCE BAND 1970-2018

| 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 | 2,717 | 6 | 0.0023 | 0.9977 | 8.28 |
| 80.5 | 2,680 | 18 | 0.0066 | 0.9934 | 8.26 |
| 81.5 | 2,532 | | 0.0000 | 1.0000 | 8.20 |
| 82.5 | 2,457 | | 0.0000 | 1.0000 | 8.20 |
| 83.5 | 2,457 | | 0.0000 | 1.0000 | 8.20 |
| 84.5 | 2,380 | 157 | 0.0662 | 0.9338 | 8.20 |
| 85.5 | 2,172 | 105 | 0.0483 | 0.9517 | 7.66 |
| 86.5 | 1,979 | 343 | 0.1732 | 0.8268 | 7.29 |
| 87.5 | 1,611 | 36 | 0.0222 | 0.9778 | 6.03 |
| 88.5 | 1,576 | 89 | 0.0566 | 0.9434 | 5.90 |
| 89.5 | 806 | 38 | 0.0471 | 0.9529 | 5.56 |
| 90.5 | 768 | | 0.0000 | 1.0000 | 5.30 |
| 91.5 | 768 | | 0.0000 | 1.0000 | 5.30 |
| 92.5 | 121 | | 0.0000 | 1.0000 | 5.30 |
| 93.5 | | | | | 5.30 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 369.00 SERVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1919-2018 EXPERIENCE BAND 2008-2018

| 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 | 4,157,184 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 4,267,617 | 2,794 | 0.0007 | 0.9993 | 100.00 |
| 1.5 | 4,485,759 | 13,054 | 0.0029 | 0.9971 | 99.93 |
| 2.5 | 4,750,603 | 3,934 | 0.0008 | 0.9992 | 99.64 |
| 3.5 | 4,795,367 | 4,327 | 0.0009 | 0.9991 | 99.56 |
| 4.5 | 4,828,328 | 5,629 | 0.0012 | 0.9988 | 99.47 |
| 5.5 | 5,007,247 | 2,310 | 0.0005 | 0.9995 | 99.36 |
| 6.5 | 5,046,007 | 5,295 | 0.0010 | 0.9990 | 99.31 |
| 7.5 | 5,125,679 | 2,792 | 0.0005 | 0.9995 | 99.21 |
| 8.5 | 5,137,648 | 605 | 0.0001 | 0.9999 | 99.15 |
| 9.5 | 4,541,031 | 809 | 0.0002 | 0.9998 | 99.14 |
| 10.5 | 4,320,169 | | 0.0000 | 1.0000 | 99.12 |
| 11.5 | 4,197,097 | 756 | 0.0002 | 0.9998 | 99.12 |
| 12.5 | 3,907,222 | | 0.0000 | 1.0000 | 99.10 |
| 13.5 | 3,493,530 | | 0.0000 | 1.0000 | 99.10 |
| 14.5 | 3,190,300 | | 0.0000 | 1.0000 | 99.10 |
| 15.5 | 2,765,579 | | 0.0000 | 1.0000 | 99.10 |
| 16.5 | 2,477,501 | | 0.0000 | 1.0000 | 99.10 |
| 17.5 | 2,257,436 | 13 | 0.0000 | 1.0000 | 99.10 |
| 18.5 | 2,127,928 | 7 | 0.0000 | 1.0000 | 99.10 |
| 19.5 | 1,946,565 | 6 | 0.0000 | 1.0000 | 99.10 |
| 20.5 | 1,736,977 | 6 | 0.0000 | 1.0000 | 99.10 |
| 21.5 | 1,569,803 | | 0.0000 | 1.0000 | 99.10 |
| 22.5 | 1,342,999 | 26 | 0.0000 | 1.0000 | 99.10 |
| 23.5 | 1,230,137 | 9 | 0.0000 | 1.0000 | 99.10 |
| 24.5 | 1,116,896 | 992 | 0.0009 | 0.9991 | 99.10 |
| 25.5 | 962,387 | 983 | 0.0010 | 0.9990 | 99.01 |
| 26.5 | 934,147 | 509 | 0.0005 | 0.9995 | 98.91 |
| 27.5 | 904,753 | 128 | 0.0001 | 0.9999 | 98.86 |
| 28.5 | 860,300 | 88 | 0.0001 | 0.9999 | 98.84 |
| 29.5 | 801,488 | 129 | 0.0002 | 0.9998 | 98.83 |
| 30.5 | 702,017 | 243 | 0.0003 | 0.9997 | 98.82 |
| 31.5 | 669,847 | 383 | 0.0006 | 0.9994 | 98.78 |
| 32.5 | 590,680 | 335 | 0.0006 | 0.9994 | 98.73 |
| 33.5 | 560,502 | 475 | 0.0008 | 0.9992 | 98.67 |
| 34.5 | 533,130 | 1,113 | 0.0021 | 0.9979 | 98.59 |
| 35.5 | 474,445 | 1,704 | 0.0036 | 0.9964 | 98.38 |
| 36.5 | 421,971 | 1,625 | 0.0039 | 0.9961 | 98.03 |
| 37.5 | 384,167 | 2,523 | 0.0066 | 0.9934 | 97.65 |
| 38.5 | 323,431 | 2,180 | 0.0067 | 0.9933 | 97.01 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 369.00 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1919-2018 EXPERIENCE BAND 2008-2018

| 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 | 285,130 | 2,214 | 0.0078 | 0.9922 | 96.35 |
| 40.5 | 248,983 | 1,564 | 0.0063 | 0.9937 | 95.61 |
| 41.5 | 227,065 | 2,424 | 0.0107 | 0.9893 | 95.01 |
| 42.5 | 209,958 | 1,655 | 0.0079 | 0.9921 | 93.99 |
| 43.5 | 205,454 | 1,628 | 0.0079 | 0.9921 | 93.25 |
| 44.5 | 190,395 | 1,770 | 0.0093 | 0.9907 | 92.51 |
| 45.5 | 158,257 | 1,003 | 0.0063 | 0.9937 | 91.65 |
| 46.5 | 162,684 | 1,459 | 0.0090 | 0.9910 | 91.07 |
| 47.5 | 180,431 | 4,165 | 0.0231 | 0.9769 | 90.25 |
| 48.5 | 181,490 | 7,194 | 0.0396 | 0.9604 | 88.17 |
| 49.5 | 201,678 | 4,623 | 0.0229 | 0.9771 | 84.68 |
| 50.5 | 212,897 | 6,012 | 0.0282 | 0.9718 | 82.73 |
| 51.5 | 205,238 | 7,972 | 0.0388 | 0.9612 | 80.40 |
| 52.5 | 199,000 | 10,156 | 0.0510 | 0.9490 | 77.28 |
| 53.5 | 183,243 | 8,996 | 0.0491 | 0.9509 | 73.33 |
| 54.5 | 166,326 | 17,925 | 0.1078 | 0.8922 | 69.73 |
| 55.5 | 133,293 | 8,661 | 0.0650 | 0.9350 | 62.22 |
| 56.5 | 113,601 | 6,054 | 0.0533 | 0.9467 | 58.17 |
| 57.5 | 92,394 | 5,199 | 0.0563 | 0.9437 | 55.07 |
| 58.5 | 74,775 | 3,641 | 0.0487 | 0.9513 | 51.98 |
| 59.5 | 54,665 | 2,984 | 0.0546 | 0.9454 | 49.44 |
| 60.5 | 27,838 | 1,180 | 0.0424 | 0.9576 | 46.75 |
| 61.5 | 16,266 | 346 | 0.0213 | 0.9787 | 44.76 |
| 62.5 | 9,289 | 114 | 0.0123 | 0.9877 | 43.81 |
| 63.5 | 5,198 | | 0.0000 | 1.0000 | 43.27 |
| 64.5 | 5,748 | | 0.0000 | 1.0000 | 43.27 |
| 65.5 | 5,912 | | 0.0000 | 1.0000 | 43.27 |
| 66.5 | 6,510 | | 0.0000 | 1.0000 | 43.27 |
| 67.5 | 6,681 | | 0.0000 | 1.0000 | 43.27 |
| 68.5 | 6,256 | | 0.0000 | 1.0000 | 43.27 |
| 69.5 | 5,010 | | 0.0000 | 1.0000 | 43.27 |
| 70.5 | 4,671 | | 0.0000 | 1.0000 | 43.27 |
| 71.5 | 2,138 | | 0.0000 | 1.0000 | 43.27 |
| 72.5 | 2,156 | | 0.0000 | 1.0000 | 43.27 |
| 73.5 | 2,233 | 156 | 0.0700 | 0.9300 | 43.27 |
| 74.5 | 2,127 | | 0.0000 | 1.0000 | 40.24 |
| 75.5 | 1,512 | 156 | 0.1034 | 0.8966 | 40.24 |
| 76.5 | 736 | | 0.0000 | 1.0000 | 36.08 |
| 77.5 | 753 | | 0.0000 | 1.0000 | 36.08 |
| 78.5 | 1,263 | | 0.0000 | 1.0000 | 36.08 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 369.00 SERVICES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1919-2018 EXPERIENCE BAND 2008-2018

| 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 | 1,175 | | 0.0000 | 1.0000 | 36.08 |
| 80.5 | 1,144 | 18 | 0.0154 | 0.9846 | 36.08 |
| 81.5 | 1,643 | | 0.0000 | 1.0000 | 35.53 |
| 82.5 | 1,689 | | 0.0000 | 1.0000 | 35.53 |
| 83.5 | 1,951 | | 0.0000 | 1.0000 | 35.53 |
| 84.5 | 1,874 | 157 | 0.0840 | 0.9160 | 35.53 |
| 85.5 | 2,009 | 105 | 0.0522 | 0.9478 | 32.54 |
| 86.5 | 1,816 | 343 | 0.1887 | 0.8113 | 30.84 |
| 87.5 | 1,573 | 36 | 0.0227 | 0.9773 | 25.02 |
| 88.5 | 1,576 | 89 | 0.0566 | 0.9434 | 24.46 |
| 89.5 | 806 | 38 | 0.0471 | 0.9529 | 23.07 |
| 90.5 | 768 | | 0.0000 | 1.0000 | 21.98 |
| 91.5 | 768 | | 0.0000 | 1.0000 | 21.98 |
| 92.5 | 121 | | 0.0000 | 1.0000 | 21.98 |
| 93.5 | | | | | 21.98 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT
ACCOUNT 370.00 METERS AND METER INSTALLATIONS
ORIGINAL AND SMOOTH SURVIVOR CURVES

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 370.00 METERS AND METER INSTALLATIONS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1919-2018 EXPERIENCE BAND 1970-2018

| 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 | 11,678,402 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 11,120,674 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 10,431,656 | 110,544 | 0.0106 | 0.9894 | 100.00 |
| 2.5 | 9,651,522 | 110,892 | 0.0115 | 0.9885 | 98.94 |
| 3.5 | 8,752,141 | 217,739 | 0.0249 | 0.9751 | 97.80 |
| 4.5 | 8,569,403 | 149,936 | 0.0175 | 0.9825 | 95.37 |
| 5.5 | 8,120,501 | 108,916 | 0.0134 | 0.9866 | 93.70 |
| 6.5 | 7,810,118 | 179,105 | 0.0229 | 0.9771 | 92.44 |
| 7.5 | 7,459,885 | 102,317 | 0.0137 | 0.9863 | 90.32 |
| 8.5 | 7,270,429 | 171,673 | 0.0236 | 0.9764 | 89.09 |
| 9.5 | 6,966,132 | 229,501 | 0.0329 | 0.9671 | 86.98 |
| 10.5 | 6,627,878 | 270,196 | 0.0408 | 0.9592 | 84.12 |
| 11.5 | 5,274,001 | 238,447 | 0.0452 | 0.9548 | 80.69 |
| 12.5 | 5,041,627 | 125,666 | 0.0249 | 0.9751 | 77.04 |
| 13.5 | 4,785,697 | 92,563 | 0.0193 | 0.9807 | 75.12 |
| 14.5 | 4,722,065 | 215,433 | 0.0456 | 0.9544 | 73.67 |
| 15.5 | 4,531,095 | 47,783 | 0.0105 | 0.9895 | 70.31 |
| 16.5 | 4,507,173 | 93,698 | 0.0208 | 0.9792 | 69.56 |
| 17.5 | 4,388,403 | 101,824 | 0.0232 | 0.9768 | 68.12 |
| 18.5 | 4,262,275 | 231,345 | 0.0543 | 0.9457 | 66.54 |
| 19.5 | 3,971,504 | 105,447 | 0.0266 | 0.9734 | 62.93 |
| 20.5 | 3,817,893 | 80,446 | 0.0211 | 0.9789 | 61.26 |
| 21.5 | 3,743,103 | 68,595 | 0.0183 | 0.9817 | 59.96 |
| 22.5 | 3,611,961 | 73,389 | 0.0203 | 0.9797 | 58.87 |
| 23.5 | 3,474,868 | 89,195 | 0.0257 | 0.9743 | 57.67 |
| 24.5 | 3,298,116 | 167,059 | 0.0507 | 0.9493 | 56.19 |
| 25.5 | 3,074,992 | 86,493 | 0.0281 | 0.9719 | 53.34 |
| 26.5 | 2,961,920 | 67,319 | 0.0227 | 0.9773 | 51.84 |
| 27.5 | 2,841,179 | 88,331 | 0.0311 | 0.9689 | 50.66 |
| 28.5 | 2,642,794 | 69,880 | 0.0264 | 0.9736 | 49.09 |
| 29.5 | 2,460,698 | 104,734 | 0.0426 | 0.9574 | 47.79 |
| 30.5 | 2,215,903 | 181,956 | 0.0821 | 0.9179 | 45.76 |
| 31.5 | 1,971,519 | 45,430 | 0.0230 | 0.9770 | 42.00 |
| 32.5 | 1,746,734 | 31,929 | 0.0183 | 0.9817 | 41.03 |
| 33.5 | 1,605,758 | 41,722 | 0.0260 | 0.9740 | 40.28 |
| 34.5 | 1,358,378 | 36,490 | 0.0269 | 0.9731 | 39.24 |
| 35.5 | 1,223,557 | 37,287 | 0.0305 | 0.9695 | 38.18 |
| 36.5 | 1,013,377 | 27,634 | 0.0273 | 0.9727 | 37.02 |
| 37.5 | 822,310 | 42,811 | 0.0521 | 0.9479 | 36.01 |
| 38.5 | 785,432 | 39,472 | 0.0503 | 0.9497 | 34.13 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 370.00 METERS AND METER INSTALLATIONS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1919-2018 EXPERIENCE BAND 1970-2018

| 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 | 749,843 | 38,324 | 0.0511 | 0.9489 | 32.42 |
| 40.5 | 714,975 | 37,905 | 0.0530 | 0.9470 | 30.76 |
| 41.5 | 678,024 | 42,702 | 0.0630 | 0.9370 | 29.13 |
| 42.5 | 640,255 | 42,752 | 0.0668 | 0.9332 | 27.30 |
| 43.5 | 601,951 | 38,042 | 0.0632 | 0.9368 | 25.47 |
| 44.5 | 570,123 | 39,220 | 0.0688 | 0.9312 | 23.86 |
| 45.5 | 538,227 | 49,357 | 0.0917 | 0.9083 | 22.22 |
| 46.5 | 497,951 | 45,265 | 0.0909 | 0.9091 | 20.18 |
| 47.5 | 460,152 | 44,901 | 0.0976 | 0.9024 | 18.35 |
| 48.5 | 444,811 | 52,380 | 0.1178 | 0.8822 | 16.56 |
| 49.5 | 394,906 | 49,299 | 0.1248 | 0.8752 | 14.61 |
| 50.5 | 346,446 | 58,961 | 0.1702 | 0.8298 | 12.79 |
| 51.5 | 287,485 | 57,417 | 0.1997 | 0.8003 | 10.61 |
| 52.5 | 230,068 | 40,829 | 0.1775 | 0.8225 | 8.49 |
| 53.5 | 189,239 | 26,560 | 0.1404 | 0.8596 | 6.98 |
| 54.5 | 162,679 | 25,258 | 0.1553 | 0.8447 | 6.00 |
| 55.5 | 137,482 | 18,879 | 0.1373 | 0.8627 | 5.07 |
| 56.5 | 118,603 | 34,512 | 0.2910 | 0.7090 | 4.37 |
| 57.5 | 84,090 | 13,080 | 0.1555 | 0.8445 | 3.10 |
| 58.5 | 71,010 | 10,043 | 0.1414 | 0.8586 | 2.62 |
| 59.5 | 60,967 | 6,116 | 0.1003 | 0.8997 | 2.25 |
| 60.5 | 54,790 | 7,723 | 0.1410 | 0.8590 | 2.02 |
| 61.5 | 47,067 | 7,992 | 0.1698 | 0.8302 | 1.74 |
| 62.5 | 39,075 | 3,623 | 0.0927 | 0.9073 | 1.44 |
| 63.5 | 35,452 | 4,843 | 0.1366 | 0.8634 | 1.31 |
| 64.5 | 30,609 | 4,163 | 0.1360 | 0.8640 | 1.13 |
| 65.5 | 26,446 | 1,552 | 0.0587 | 0.9413 | 0.98 |
| 66.5 | 24,895 | 1,423 | 0.0572 | 0.9428 | 0.92 |
| 67.5 | 23,471 | 1,004 | 0.0428 | 0.9572 | 0.87 |
| 68.5 | 22,467 | 1,020 | 0.0454 | 0.9546 | 0.83 |
| 69.5 | 21,447 | 1,696 | 0.0791 | 0.9209 | 0.79 |
| 70.5 | 19,751 | 842 | 0.0426 | 0.9574 | 0.73 |
| 71.5 | 18,910 | 1,041 | 0.0551 | 0.9449 | 0.70 |
| 72.5 | 17,792 | 1,187 | 0.0667 | 0.9333 | 0.66 |
| 73.5 | 16,682 | 1,353 | 0.0811 | 0.9189 | 0.62 |
| 74.5 | 15,328 | 196 | 0.0128 | 0.9872 | 0.57 |
| 75.5 | 15,133 | 169 | 0.0112 | 0.9888 | 0.56 |
| 76.5 | 14,964 | 152 | 0.0101 | 0.9899 | 0.55 |
| 77.5 | 14,812 | 254 | 0.0171 | 0.9829 | 0.55 |
| 78.5 | 14,558 | 315 | 0.0216 | 0.9784 | 0.54 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 370.00 METERS AND METER INSTALLATIONS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1919-2018 EXPERIENCE BAND 1970-2018

| 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 | 14,244 | 358 | 0.0251 | 0.9749 | 0.53 |
| 80.5 | 13,886 | 685 | 0.0493 | 0.9507 | 0.51 |
| 81.5 | 13,201 | 1,096 | 0.0831 | 0.9169 | 0.49 |
| 82.5 | 12,104 | 2,249 | 0.1858 | 0.8142 | 0.45 |
| 83.5 | 9,855 | 2,178 | 0.2210 | 0.7790 | 0.36 |
| 84.5 | 7,678 | 2,155 | 0.2807 | 0.7193 | 0.28 |
| 85.5 | 5,523 | 2,089 | 0.3782 | 0.6218 | 0.20 |
| 86.5 | 3,434 | 1,294 | 0.3769 | 0.6231 | 0.13 |
| 87.5 | 2,140 | 1,300 | 0.6078 | 0.3922 | 0.08 |
| 88.5 | 839 | 839 | 1.0000 | | 0.03 |
| 89.5 | | | | | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
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ACCOUNT 370.00 METERS AND METER INSTALLATIONS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1919-2018 EXPERIENCE BAND 2008-2018

| 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 | 4,198,821 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 4,890,557 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 4,573,155 | 110,544 | 0.0242 | 0.9758 | 100.00 |
| 2.5 | 4,064,731 | 110,892 | 0.0273 | 0.9727 | 97.58 |
| 3.5 | 3,342,747 | 217,739 | 0.0651 | 0.9349 | 94.92 |
| 4.5 | 3,255,937 | 149,936 | 0.0461 | 0.9539 | 88.74 |
| 5.5 | 2,881,390 | 108,916 | 0.0378 | 0.9622 | 84.65 |
| 6.5 | 2,711,340 | 179,105 | 0.0661 | 0.9339 | 81.45 |
| 7.5 | 2,459,056 | 102,317 | 0.0416 | 0.9584 | 76.07 |
| 8.5 | 2,462,104 | 171,673 | 0.0697 | 0.9303 | 72.91 |
| 9.5 | 2,319,063 | 229,500 | 0.0990 | 0.9010 | 67.82 |
| 10.5 | 2,051,769 | 270,192 | 0.1317 | 0.8683 | 61.11 |
| 11.5 | 841,178 | 238,431 | 0.2834 | 0.7166 | 53.06 |
| 12.5 | 763,681 | 125,636 | 0.1645 | 0.8355 | 38.02 |
| 13.5 | 649,374 | 92,452 | 0.1424 | 0.8576 | 31.77 |
| 14.5 | 806,024 | 215,281 | 0.2671 | 0.7329 | 27.24 |
| 15.5 | 740,004 | 47,536 | 0.0642 | 0.9358 | 19.97 |
| 16.5 | 838,896 | 93,095 | 0.1110 | 0.8890 | 18.69 |
| 17.5 | 916,443 | 101,007 | 0.1102 | 0.8898 | 16.61 |
| 18.5 | 1,124,049 | 227,639 | 0.2025 | 0.7975 | 14.78 |
| 19.5 | 1,079,465 | 104,022 | 0.0964 | 0.9036 | 11.79 |
| 20.5 | 1,057,486 | 76,701 | 0.0725 | 0.9275 | 10.65 |
| 21.5 | 1,228,429 | 65,745 | 0.0535 | 0.9465 | 9.88 |
| 22.5 | 1,256,995 | 65,950 | 0.0525 | 0.9475 | 9.35 |
| 23.5 | 1,446,324 | 82,801 | 0.0572 | 0.9428 | 8.86 |
| 24.5 | 1,557,136 | 159,860 | 0.1027 | 0.8973 | 8.35 |
| 25.5 | 1,605,190 | 79,948 | 0.0498 | 0.9502 | 7.49 |
| 26.5 | 1,691,401 | 60,185 | 0.0356 | 0.9644 | 7.12 |
| 27.5 | 1,701,335 | 79,833 | 0.0469 | 0.9531 | 6.87 |
| 28.5 | 1,557,243 | 62,435 | 0.0401 | 0.9599 | 6.55 |
| 29.5 | 1,416,429 | 87,469 | 0.0618 | 0.9382 | 6.28 |
| 30.5 | 1,248,467 | 172,530 | 0.1382 | 0.8618 | 5.90 |
| 31.5 | 1,027,909 | 35,530 | 0.0346 | 0.9654 | 5.08 |
| 32.5 | 813,922 | 22,207 | 0.0273 | 0.9727 | 4.91 |
| 33.5 | 703,555 | 26,525 | 0.0377 | 0.9623 | 4.77 |
| 34.5 | 469,742 | 16,332 | 0.0348 | 0.9652 | 4.59 |
| 35.5 | 385,556 | 25,190 | 0.0653 | 0.9347 | 4.43 |
| 36.5 | 186,275 | 7,287 | 0.0391 | 0.9609 | 4.14 |
| 37.5 | 30,810 | 19,545 | 0.6344 | 0.3656 | 3.98 |
| 38.5 | 21,254 | 15,822 | 0.7444 | 0.2556 | 1.46 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 370.00 METERS AND METER INSTALLATIONS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1919-2018 EXPERIENCE BAND 2008-2018

| 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 | 20,904 | 10,646 | 0.5093 | 0.4907 | 0.37 |
| 40.5 | 21,714 | 11,106 | 0.5115 | 0.4885 | 0.18 |
| 41.5 | 22,202 | 14,345 | 0.6461 | 0.3539 | 0.09 |
| 42.5 | 27,356 | 16,898 | 0.6177 | 0.3823 | 0.03 |
| 43.5 | 23,918 | 11,147 | 0.4661 | 0.5339 | 0.01 |
| 44.5 | 27,505 | 12,060 | 0.4385 | 0.5615 | 0.01 |
| 45.5 | 40,222 | 22,537 | 0.5603 | 0.4397 | 0.00 |
| 46.5 | 38,788 | 18,726 | 0.4828 | 0.5172 | 0.00 |
| 47.5 | 36,109 | 16,315 | 0.4518 | 0.5482 | 0.00 |
| 48.5 | 37,549 | 23,528 | 0.6266 | 0.3734 | 0.00 |
| 49.5 | 31,666 | 20,305 | 0.6412 | 0.3588 | 0.00 |
| 50.5 | 37,923 | 26,368 | 0.6953 | 0.3047 | 0.00 |
| 51.5 | 34,706 | 22,071 | 0.6360 | 0.3640 | 0.00 |
| 52.5 | 32,882 | 18,338 | 0.5577 | 0.4423 | 0.00 |
| 53.5 | 20,268 | 8,617 | 0.4251 | 0.5749 | 0.00 |
| 54.5 | 18,176 | 9,355 | 0.5147 | 0.4853 | 0.00 |
| 55.5 | 13,805 | 6,212 | 0.4500 | 0.5500 | 0.00 |
| 56.5 | 9,288 | 3,019 | 0.3251 | 0.6749 | 0.00 |
| 57.5 | 9,607 | 3,752 | 0.3905 | 0.6095 | 0.00 |
| 58.5 | 6,532 | 2,614 | 0.4002 | 0.5998 | 0.00 |
| 59.5 | 5,285 | 1,332 | 0.2519 | 0.7481 | 0.00 |
| 60.5 | 5,316 | 2,787 | 0.5243 | 0.4757 | 0.00 |
| 61.5 | 4,387 | 1,216 | 0.2772 | 0.7228 | 0.00 |
| 62.5 | 3,775 | 1,189 | 0.3149 | 0.6851 | 0.00 |
| 63.5 | 2,913 | 1,236 | 0.4242 | 0.5758 | 0.00 |
| 64.5 | 2,060 | 1,182 | 0.5739 | 0.4261 | 0.00 |
| 65.5 | 1,498 | 849 | 0.5668 | 0.4332 | 0.00 |
| 66.5 | 2,183 | 774 | 0.3544 | 0.6456 | 0.00 |
| 67.5 | 1,961 | 520 | 0.2653 | 0.7347 | 0.00 |
| 68.5 | 2,060 | 472 | 0.2293 | 0.7707 | 0.00 |
| 69.5 | 2,193 | 1,345 | 0.6134 | 0.3866 | 0.00 |
| 70.5 | 1,822 | 594 | 0.3262 | 0.6738 | 0.00 |
| 71.5 | 1,882 | 905 | 0.4807 | 0.5193 | 0.00 |
| 72.5 | 1,571 | 1,051 | 0.6691 | 0.3309 | 0.00 |
| 73.5 | 1,282 | 1,282 | 1.0000 | | 0.00 |
| 74.5 | 155 | 155 | 1.0000 | | |
| 75.5 | 233 | 131 | 0.5621 | | |
| 76.5 | 213 | 111 | 0.5215 | | |
| 77.5 | 338 | 236 | 0.6982 | | |
| 78.5 | 285 | 285 | 1.0000 | | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 370.00 METERS AND METER INSTALLATIONS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1919-2018 EXPERIENCE BAND 2008-2018

| 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 | 779 | 358 | 0.4592 | | |
| 80.5 | 1,107 | 685 | 0.6192 | | |
| 81.5 | 1,518 | 1,096 | 0.7223 | | |
| 82.5 | 2,434 | 2,249 | 0.9240 | | |
| 83.5 | 2,363 | 2,178 | 0.9217 | | |
| 84.5 | 2,340 | 2,155 | 0.9209 | | |
| 85.5 | 2,089 | 2,089 | 1.0000 | | |
| 86.5 | 1,294 | 1,294 | 1.0000 | | |
| 87.5 | 1,300 | 1,300 | 1.0000 | | |
| 88.5 | 839 | 839 | 1.0000 | | |
| 89.5 | | | | | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT
ACCOUNT 371.00 INSTALLATIONS ON CUSTOMERS' PREMISES
ORIGINAL AND SMOOTH SURVIVOR CURVES
ORIGINAL CURVE
1970-2018 EXPERIENCE
1961-2018 PLACEMENTS
2008-2018 EXPERIENCE
1966-2018 PLACEMENTS
IOWA 15-S2.5
PERCENT SURVIVING
AGE IN YEARS
100
90
80
70
60
50
40
30
20
10
0
0
5
10
15
20
25
30
35
40

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 371.00 INSTALLATIONS ON CUSTOMERS' PREMISES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1961-2018 EXPERIENCE BAND 1970-2018

| 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 | 2,790,770 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 2,748,204 | 3,238 | 0.0012 | 0.9988 | 100.00 |
| 1.5 | 2,724,830 | 8,076 | 0.0030 | 0.9970 | 99.88 |
| 2.5 | 2,620,102 | 28,270 | 0.0108 | 0.9892 | 99.59 |
| 3.5 | 2,540,361 | 21,604 | 0.0085 | 0.9915 | 98.51 |
| 4.5 | 2,443,858 | 39,773 | 0.0163 | 0.9837 | 97.67 |
| 5.5 | 2,347,009 | 42,468 | 0.0181 | 0.9819 | 96.08 |
| 6.5 | 2,225,601 | 51,781 | 0.0233 | 0.9767 | 94.35 |
| 7.5 | 2,139,010 | 45,573 | 0.0213 | 0.9787 | 92.15 |
| 8.5 | 2,017,294 | 64,918 | 0.0322 | 0.9678 | 90.19 |
| 9.5 | 1,710,991 | 82,329 | 0.0481 | 0.9519 | 87.29 |
| 10.5 | 1,576,264 | 114,394 | 0.0726 | 0.9274 | 83.09 |
| 11.5 | 1,407,162 | 120,906 | 0.0859 | 0.9141 | 77.06 |
| 12.5 | 1,255,334 | 142,761 | 0.1137 | 0.8863 | 70.43 |
| 13.5 | 1,059,755 | 209,370 | 0.1976 | 0.8024 | 62.42 |
| 14.5 | 796,286 | 151,094 | 0.1897 | 0.8103 | 50.09 |
| 15.5 | 605,638 | 119,040 | 0.1966 | 0.8034 | 40.59 |
| 16.5 | 465,728 | 106,974 | 0.2297 | 0.7703 | 32.61 |
| 17.5 | 338,029 | 71,309 | 0.2110 | 0.7890 | 25.12 |
| 18.5 | 248,013 | 41,704 | 0.1682 | 0.8318 | 19.82 |
| 19.5 | 189,943 | 30,833 | 0.1623 | 0.8377 | 16.49 |
| 20.5 | 135,071 | 14,899 | 0.1103 | 0.8897 | 13.81 |
| 21.5 | 111,851 | 11,480 | 0.1026 | 0.8974 | 12.29 |
| 22.5 | 92,862 | 8,333 | 0.0897 | 0.9103 | 11.03 |
| 23.5 | 77,576 | 3,048 | 0.0393 | 0.9607 | 10.04 |
| 24.5 | 67,180 | 3,372 | 0.0502 | 0.9498 | 9.64 |
| 25.5 | 60,819 | 3,230 | 0.0531 | 0.9469 | 9.16 |
| 26.5 | 52,810 | 1,526 | 0.0289 | 0.9711 | 8.67 |
| 27.5 | 51,284 | 1,530 | 0.0298 | 0.9702 | 8.42 |
| 28.5 | 48,853 | 2,409 | 0.0493 | 0.9507 | 8.17 |
| 29.5 | 46,073 | 3,280 | 0.0712 | 0.9288 | 7.77 |
| 30.5 | 43,164 | 1,422 | 0.0330 | 0.9670 | 7.21 |
| 31.5 | 41,552 | 1,037 | 0.0250 | 0.9750 | 6.98 |
| 32.5 | 38,265 | 2,803 | 0.0733 | 0.9267 | 6.80 |
| 33.5 | 35,158 | 1,114 | 0.0317 | 0.9683 | 6.30 |
| 34.5 | 33,822 | 2,665 | 0.0788 | 0.9212 | 6.10 |
| 35.5 | 31,157 | 2,177 | 0.0699 | 0.9301 | 5.62 |
| 36.5 | 28,824 | 3,954 | 0.1372 | 0.8628 | 5.23 |
| 37.5 | 24,870 | 417 | 0.0168 | 0.9832 | 4.51 |
| 38.5 | 23,580 | 422 | 0.0179 | 0.9821 | 4.44 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 371.00 INSTALLATIONS ON CUSTOMERS' PREMISES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1961-2018 EXPERIENCE BAND 1970-2018

| 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 | 22,376 | 1,529 | 0.0683 | 0.9317 | 4.36 |
| 40.5 | 19,987 | 1,427 | 0.0714 | 0.9286 | 4.06 |
| 41.5 | 17,579 | 880 | 0.0501 | 0.9499 | 3.77 |
| 42.5 | 16,085 | 2,440 | 0.1517 | 0.8483 | 3.58 |
| 43.5 | 12,088 | 2,219 | 0.1836 | 0.8164 | 3.04 |
| 44.5 | 8,496 | 489 | 0.0576 | 0.9424 | 2.48 |
| 45.5 | 6,216 | 601 | 0.0967 | 0.9033 | 2.34 |
| 46.5 | 4,995 | 133 | 0.0266 | 0.9734 | 2.11 |
| 47.5 | 4,862 | 125 | 0.0257 | 0.9743 | 2.06 |
| 48.5 | 2,938 | 258 | 0.0877 | 0.9123 | 2.00 |
| 49.5 | 2,336 | | 0.0000 | 1.0000 | 1.83 |
| 50.5 | 664 | | 0.0000 | 1.0000 | 1.83 |
| 51.5 | | | | | 1.83 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 371.00 INSTALLATIONS ON CUSTOMERS' PREMISES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1966-2018 EXPERIENCE BAND 2008-2018

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 0.0 | 1,050,616 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 1,076,691 | 3,238 | 0.0030 | 0.9970 | 100.00 |
| 1.5 | 1,091,287 | 8,076 | 0.0074 | 0.9926 | 99.70 |
| 2.5 | 1,068,296 | 28,265 | 0.0265 | 0.9735 | 98.96 |
| 3.5 | 1,066,353 | 21,395 | 0.0201 | 0.9799 | 96.34 |
| 4.5 | 1,037,020 | 39,012 | 0.0376 | 0.9624 | 94.41 |
| 5.5 | 963,909 | 37,968 | 0.0394 | 0.9606 | 90.86 |
| 6.5 | 879,159 | 37,827 | 0.0430 | 0.9570 | 87.28 |
| 7.5 | 852,671 | 23,118 | 0.0271 | 0.9729 | 83.52 |
| 8.5 | 808,207 | 28,965 | 0.0358 | 0.9642 | 81.26 |
| 9.5 | 590,880 | 16,967 | 0.0287 | 0.9713 | 78.35 |
| 10.5 | 574,492 | 27,566 | 0.0480 | 0.9520 | 76.10 |
| 11.5 | 547,368 | 23,327 | 0.0426 | 0.9574 | 72.45 |
| 12.5 | 544,332 | 39,503 | 0.0726 | 0.9274 | 69.36 |
| 13.5 | 517,032 | 108,436 | 0.2097 | 0.7903 | 64.33 |
| 14.5 | 401,071 | 66,356 | 0.1654 | 0.8346 | 50.83 |
| 15.5 | 345,485 | 51,290 | 0.1485 | 0.8515 | 42.42 |
| 16.5 | 293,928 | 58,852 | 0.2002 | 0.7998 | 36.13 |
| 17.5 | 223,501 | 40,065 | 0.1793 | 0.8207 | 28.89 |
| 18.5 | 172,322 | 29,650 | 0.1721 | 0.8279 | 23.71 |
| 19.5 | 128,269 | 25,178 | 0.1963 | 0.8037 | 19.63 |
| 20.5 | 81,270 | 13,364 | 0.1644 | 0.8356 | 15.78 |
| 21.5 | 62,309 | 11,195 | 0.1797 | 0.8203 | 13.18 |
| 22.5 | 44,631 | 8,333 | 0.1867 | 0.8133 | 10.82 |
| 23.5 | 30,471 | 3,048 | 0.1000 | 0.9000 | 8.80 |
| 24.5 | 22,260 | 3,372 | 0.1515 | 0.8485 | 7.92 |
| 25.5 | 19,526 | 3,230 | 0.1654 | 0.8346 | 6.72 |
| 26.5 | 14,180 | 1,526 | 0.1076 | 0.8924 | 5.61 |
| 27.5 | 18,469 | 1,530 | 0.0829 | 0.9171 | 5.00 |
| 28.5 | 18,534 | 2,409 | 0.1300 | 0.8700 | 4.59 |
| 29.5 | 18,454 | 3,280 | 0.1777 | 0.8223 | 3.99 |
| 30.5 | 17,390 | 1,422 | 0.0818 | 0.9182 | 3.28 |
| 31.5 | 17,678 | 1,037 | 0.0587 | 0.9413 | 3.01 |
| 32.5 | 17,240 | 2,803 | 0.1626 | 0.8374 | 2.84 |
| 33.5 | 19,642 | 1,114 | 0.0567 | 0.9433 | 2.38 |
| 34.5 | 21,303 | 2,665 | 0.1251 | 0.8749 | 2.24 |
| 35.5 | 19,258 | 2,177 | 0.1131 | 0.8869 | 1.96 |
| 36.5 | 16,925 | 3,954 | 0.2336 | 0.7664 | 1.74 |
| 37.5 | 15,973 | 417 | 0.0261 | 0.9739 | 1.33 |
| 38.5 | 15,365 | 422 | 0.0274 | 0.9726 | 1.30 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 371.00 INSTALLATIONS ON CUSTOMERS' PREMISES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1966-2018 EXPERIENCE BAND 2008-2018

| 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 | 17,704 | 1,529 | 0.0864 | 0.9136 | 1.26 |
| 40.5 | 18,905 | 1,427 | 0.0755 | 0.9245 | 1.15 |
| 41.5 | 17,579 | 880 | 0.0501 | 0.9499 | 1.07 |
| 42.5 | 16,085 | 2,440 | 0.1517 | 0.8483 | 1.01 |
| 43.5 | 12,088 | 2,219 | 0.1836 | 0.8164 | 0.86 |
| 44.5 | 8,496 | 489 | 0.0576 | 0.9424 | 0.70 |
| 45.5 | 6,216 | 601 | 0.0967 | 0.9033 | 0.66 |
| 46.5 | 4,995 | 133 | 0.0266 | 0.9734 | 0.60 |
| 47.5 | 4,862 | 125 | 0.0257 | 0.9743 | 0.58 |
| 48.5 | 2,938 | 258 | 0.0877 | 0.9123 | 0.57 |
| 49.5 | 2,336 | | 0.0000 | 1.0000 | 0.52 |
| 50.5 | 664 | | 0.0000 | 1.0000 | 0.52 |
| 51.5 | | | | | 0.52 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT
ACCOUNT 373.00 STREET LIGHTING AND SIGNAL SYSTEMS
ORIGINAL AND SMOOTH SURVIVOR CURVES

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 373.00 STREET LIGHTING AND SIGNAL SYSTEMS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1921-2018 EXPERIENCE BAND 1970-2018

| 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 | 2,205,621 | 6,014 | 0.0027 | 0.9973 | 100.00 |
| 0.5 | 2,177,368 | 18,746 | 0.0086 | 0.9914 | 99.73 |
| 1.5 | 2,098,895 | 10,938 | 0.0052 | 0.9948 | 98.87 |
| 2.5 | 2,077,403 | 11,861 | 0.0057 | 0.9943 | 98.35 |
| 3.5 | 2,010,191 | 12,888 | 0.0064 | 0.9936 | 97.79 |
| 4.5 | 1,801,061 | 12,316 | 0.0068 | 0.9932 | 97.16 |
| 5.5 | 1,753,487 | 13,885 | 0.0079 | 0.9921 | 96.50 |
| 6.5 | 1,625,696 | 18,247 | 0.0112 | 0.9888 | 95.74 |
| 7.5 | 1,552,821 | 17,643 | 0.0114 | 0.9886 | 94.66 |
| 8.5 | 1,520,336 | 18,207 | 0.0120 | 0.9880 | 93.59 |
| 9.5 | 1,412,571 | 19,524 | 0.0138 | 0.9862 | 92.47 |
| 10.5 | 1,393,234 | 17,571 | 0.0126 | 0.9874 | 91.19 |
| 11.5 | 1,340,928 | 17,586 | 0.0131 | 0.9869 | 90.04 |
| 12.5 | 1,321,410 | 19,119 | 0.0145 | 0.9855 | 88.86 |
| 13.5 | 1,291,594 | 19,803 | 0.0153 | 0.9847 | 87.57 |
| 14.5 | 1,254,443 | 20,500 | 0.0163 | 0.9837 | 86.23 |
| 15.5 | 1,200,069 | 22,488 | 0.0187 | 0.9813 | 84.82 |
| 16.5 | 1,125,402 | 21,306 | 0.0189 | 0.9811 | 83.23 |
| 17.5 | 1,067,659 | 24,834 | 0.0233 | 0.9767 | 81.65 |
| 18.5 | 1,020,996 | 24,945 | 0.0244 | 0.9756 | 79.75 |
| 19.5 | 882,911 | 42,495 | 0.0481 | 0.9519 | 77.81 |
| 20.5 | 812,646 | 40,038 | 0.0493 | 0.9507 | 74.06 |
| 21.5 | 764,265 | 30,130 | 0.0394 | 0.9606 | 70.41 |
| 22.5 | 711,182 | 41,065 | 0.0577 | 0.9423 | 67.64 |
| 23.5 | 661,963 | 44,906 | 0.0678 | 0.9322 | 63.73 |
| 24.5 | 599,366 | 32,567 | 0.0543 | 0.9457 | 59.41 |
| 25.5 | 520,401 | 27,468 | 0.0528 | 0.9472 | 56.18 |
| 26.5 | 530,316 | 27,877 | 0.0526 | 0.9474 | 53.21 |
| 27.5 | 502,572 | 25,005 | 0.0498 | 0.9502 | 50.42 |
| 28.5 | 474,285 | 25,242 | 0.0532 | 0.9468 | 47.91 |
| 29.5 | 448,511 | 27,185 | 0.0606 | 0.9394 | 45.36 |
| 30.5 | 417,999 | 28,382 | 0.0679 | 0.9321 | 42.61 |
| 31.5 | 384,652 | 27,490 | 0.0715 | 0.9285 | 39.72 |
| 32.5 | 352,049 | 36,210 | 0.1029 | 0.8971 | 36.88 |
| 33.5 | 280,944 | 31,631 | 0.1126 | 0.8874 | 33.08 |
| 34.5 | 254,227 | 32,603 | 0.1282 | 0.8718 | 29.36 |
| 35.5 | 222,010 | 27,087 | 0.1220 | 0.8780 | 25.59 |
| 36.5 | 192,635 | 20,875 | 0.1084 | 0.8916 | 22.47 |
| 37.5 | 166,644 | 8,506 | 0.0510 | 0.9490 | 20.04 |
| 38.5 | 154,193 | 22,802 | 0.1479 | 0.8521 | 19.01 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 373.00 STREET LIGHTING AND SIGNAL SYSTEMS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1921-2018 EXPERIENCE BAND 1970-2018

| 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 | 133,526 | 15,524 | 0.1163 | 0.8837 | 16.20 |
| 40.5 | 120,243 | 13,771 | 0.1145 | 0.8855 | 14.32 |
| 41.5 | 110,128 | 8,453 | 0.0768 | 0.9232 | 12.68 |
| 42.5 | 104,064 | 9,714 | 0.0933 | 0.9067 | 11.71 |
| 43.5 | 94,621 | 4,989 | 0.0527 | 0.9473 | 10.61 |
| 44.5 | 90,143 | 5,806 | 0.0644 | 0.9356 | 10.05 |
| 45.5 | 84,173 | 4,576 | 0.0544 | 0.9456 | 9.41 |
| 46.5 | 79,711 | 12,864 | 0.1614 | 0.8386 | 8.89 |
| 47.5 | 65,836 | 6,419 | 0.0975 | 0.9025 | 7.46 |
| 48.5 | 70,213 | 9,589 | 0.1366 | 0.8634 | 6.73 |
| 49.5 | 60,625 | 1,795 | 0.0296 | 0.9704 | 5.81 |
| 50.5 | 58,727 | 5,324 | 0.0907 | 0.9093 | 5.64 |
| 51.5 | 52,920 | 3,305 | 0.0624 | 0.9376 | 5.13 |
| 52.5 | 44,542 | 4,041 | 0.0907 | 0.9093 | 4.81 |
| 53.5 | 40,270 | 3,967 | 0.0985 | 0.9015 | 4.37 |
| 54.5 | 34,802 | 11,706 | 0.3363 | 0.6637 | 3.94 |
| 55.5 | 18,902 | 311 | 0.0164 | 0.9836 | 2.62 |
| 56.5 | 16,235 | 637 | 0.0392 | 0.9608 | 2.57 |
| 57.5 | 15,599 | 539 | 0.0346 | 0.9654 | 2.47 |
| 58.5 | 12,666 | 270 | 0.0213 | 0.9787 | 2.39 |
| 59.5 | 258 | | 0.0000 | 1.0000 | 2.34 |
| 60.5 | 258 | | 0.0000 | 1.0000 | 2.34 |
| 61.5 | | | | | 2.34 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 373.00 STREET LIGHTING AND SIGNAL SYSTEMS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1953-2018 EXPERIENCE BAND 2008-2018

| 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 | 633,342 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 717,367 | 6,962 | 0.0097 | 0.9903 | 100.00 |
| 1.5 | 709,482 | | 0.0000 | 1.0000 | 99.03 |
| 2.5 | 714,073 | 1,409 | 0.0020 | 0.9980 | 99.03 |
| 3.5 | 717,214 | 1,647 | 0.0023 | 0.9977 | 98.83 |
| 4.5 | 518,300 | 974 | 0.0019 | 0.9981 | 98.61 |
| 5.5 | 503,643 | 268 | 0.0005 | 0.9995 | 98.42 |
| 6.5 | 396,791 | 4,054 | 0.0102 | 0.9898 | 98.37 |
| 7.5 | 357,922 | 1,031 | 0.0029 | 0.9971 | 97.36 |
| 8.5 | 380,491 | | 0.0000 | 1.0000 | 97.08 |
| 9.5 | 313,999 | 1,271 | 0.0040 | 0.9960 | 97.08 |
| 10.5 | 349,188 | | 0.0000 | 1.0000 | 96.69 |
| 11.5 | 331,906 | 1,764 | 0.0053 | 0.9947 | 96.69 |
| 12.5 | 328,073 | 2,679 | 0.0082 | 0.9918 | 96.18 |
| 13.5 | 385,161 | 3,503 | 0.0091 | 0.9909 | 95.39 |
| 14.5 | 381,409 | 4,321 | 0.0113 | 0.9887 | 94.52 |
| 15.5 | 333,140 | 5,091 | 0.0153 | 0.9847 | 93.45 |
| 16.5 | 299,692 | 1,053 | 0.0035 | 0.9965 | 92.03 |
| 17.5 | 255,546 | 3,457 | 0.0135 | 0.9865 | 91.70 |
| 18.5 | 231,699 | 2,106 | 0.0091 | 0.9909 | 90.46 |
| 19.5 | 248,282 | 20,085 | 0.0809 | 0.9191 | 89.64 |
| 20.5 | 190,093 | 20,295 | 0.1068 | 0.8932 | 82.39 |
| 21.5 | 157,776 | 10,753 | 0.0682 | 0.9318 | 73.59 |
| 22.5 | 165,991 | 17,410 | 0.1049 | 0.8951 | 68.58 |
| 23.5 | 143,848 | 21,007 | 0.1460 | 0.8540 | 61.38 |
| 24.5 | 104,269 | 6,877 | 0.0660 | 0.9340 | 52.42 |
| 25.5 | 59,221 | 1,558 | 0.0263 | 0.9737 | 48.96 |
| 26.5 | 65,961 | 1,640 | 0.0249 | 0.9751 | 47.67 |
| 27.5 | 74,132 | 612 | 0.0082 | 0.9918 | 46.49 |
| 28.5 | 73,530 | 1,242 | 0.0169 | 0.9831 | 46.11 |
| 29.5 | 72,695 | 2,942 | 0.0405 | 0.9595 | 45.33 |
| 30.5 | 67,292 | 927 | 0.0138 | 0.9862 | 43.49 |
| 31.5 | 66,556 | 1,101 | 0.0165 | 0.9835 | 42.89 |
| 32.5 | 62,490 | 1,232 | 0.0197 | 0.9803 | 42.18 |
| 33.5 | 27,224 | 65 | 0.0024 | 0.9976 | 41.35 |
| 34.5 | 25,903 | 1,505 | 0.0581 | 0.9419 | 41.25 |
| 35.5 | 28,109 | | 0.0000 | 1.0000 | 38.86 |
| 36.5 | 25,034 | 435 | 0.0174 | 0.9826 | 38.86 |
| 37.5 | 20,366 | | 0.0000 | 1.0000 | 38.18 |
| 38.5 | 13,198 | 271 | 0.0205 | 0.9795 | 38.18 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 373.00 STREET LIGHTING AND SIGNAL SYSTEMS

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1953-2018 EXPERIENCE BAND 2008-2018

| 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 | 11,651 | 590 | 0.0507 | 0.9493 | 37.40 |
| 40.5 | 9,205 | | 0.0000 | 1.0000 | 35.50 |
| 41.5 | 8,064 | 344 | 0.0427 | 0.9573 | 35.50 |
| 42.5 | 8,068 | | 0.0000 | 1.0000 | 33.99 |
| 43.5 | 7,463 | | 0.0000 | 1.0000 | 33.99 |
| 44.5 | 5,894 | | 0.0000 | 1.0000 | 33.99 |
| 45.5 | 5,347 | | 0.0000 | 1.0000 | 33.99 |
| 46.5 | 8,224 | | 0.0000 | 1.0000 | 33.99 |
| 47.5 | 7,385 | | 0.0000 | 1.0000 | 33.99 |
| 48.5 | 7,392 | | 0.0000 | 1.0000 | 33.99 |
| 49.5 | 11,587 | | 0.0000 | 1.0000 | 33.99 |
| 50.5 | 14,281 | | 0.0000 | 1.0000 | 33.99 |
| 51.5 | 13,798 | | 0.0000 | 1.0000 | 33.99 |
| 52.5 | 11,118 | 86 | 0.0077 | 0.9923 | 33.99 |
| 53.5 | 25,905 | 1,349 | 0.0521 | 0.9479 | 33.73 |
| 54.5 | 23,925 | 870 | 0.0364 | 0.9636 | 31.97 |
| 55.5 | 18,860 | 270 | 0.0143 | 0.9857 | 30.81 |
| 56.5 | 16,235 | 637 | 0.0392 | 0.9608 | 30.37 |
| 57.5 | 15,599 | 539 | 0.0346 | 0.9654 | 29.18 |
| 58.5 | 12,666 | 270 | 0.0213 | 0.9787 | 28.17 |
| 59.5 | 258 | | 0.0000 | 1.0000 | 27.57 |
| 60.5 | 258 | | 0.0000 | 1.0000 | 27.57 |
| 61.5 | | | | | 27.57 |

# COMMON

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
COMMON PLANT
ACCOUNT 390.00 STRUCTURES AND IMPROVEMENTS - MINOR FACILITIES
ORIGINAL AND SMOOTH SURVIVOR CURVES
ORIGINAL CURVE
1970-2018 EXPERIENCE
1910-2018 PLACEMENTS
2008-2018 EXPERIENCE
1910-2018 PLACEMENTS
IOWA 30-S0
PERCENT SURVIVING
AGE IN YEARS
100
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60
70
80

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
COMMON PLANT

ACCOUNT 390.00 STRUCTURES AND IMPROVEMENTS - MINOR FACILITIES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1970-2018

| 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 | 2,767,889 | 148 | 0.0001 | 0.9999 | 100.00 |
| 0.5 | 1,831,956 | 2,185 | 0.0012 | 0.9988 | 99.99 |
| 1.5 | 1,884,334 | 1,254 | 0.0007 | 0.9993 | 99.88 |
| 2.5 | 1,940,724 | 1,965 | 0.0010 | 0.9990 | 99.81 |
| 3.5 | 1,975,311 | 72,408 | 0.0367 | 0.9633 | 99.71 |
| 4.5 | 1,902,946 | 113,937 | 0.0599 | 0.9401 | 96.05 |
| 5.5 | 982,066 | 58,071 | 0.0591 | 0.9409 | 90.30 |
| 6.5 | 981,697 | 58,616 | 0.0597 | 0.9403 | 84.96 |
| 7.5 | 934,922 | 36,669 | 0.0392 | 0.9608 | 79.89 |
| 8.5 | 940,092 | 11,040 | 0.0117 | 0.9883 | 76.76 |
| 9.5 | 1,013,093 | 71,127 | 0.0702 | 0.9298 | 75.85 |
| 10.5 | 972,940 | 3,086 | 0.0032 | 0.9968 | 70.53 |
| 11.5 | 1,012,469 | 10,123 | 0.0100 | 0.9900 | 70.31 |
| 12.5 | 1,000,053 | 13,966 | 0.0140 | 0.9860 | 69.60 |
| 13.5 | 916,203 | 53,909 | 0.0588 | 0.9412 | 68.63 |
| 14.5 | 797,869 | 24,025 | 0.0301 | 0.9699 | 64.59 |
| 15.5 | 753,646 | 11,455 | 0.0152 | 0.9848 | 62.65 |
| 16.5 | 907,362 | 20,762 | 0.0229 | 0.9771 | 61.69 |
| 17.5 | 926,590 | 14,349 | 0.0155 | 0.9845 | 60.28 |
| 18.5 | 972,415 | 22,259 | 0.0229 | 0.9771 | 59.35 |
| 19.5 | 977,531 | 14,976 | 0.0153 | 0.9847 | 57.99 |
| 20.5 | 815,283 | 36,254 | 0.0445 | 0.9555 | 57.10 |
| 21.5 | 719,627 | 11,998 | 0.0167 | 0.9833 | 54.56 |
| 22.5 | 647,490 | 7,435 | 0.0115 | 0.9885 | 53.65 |
| 23.5 | 501,365 | 7,376 | 0.0147 | 0.9853 | 53.04 |
| 24.5 | 526,649 | 11,480 | 0.0218 | 0.9782 | 52.26 |
| 25.5 | 501,857 | 1,749 | 0.0035 | 0.9965 | 51.12 |
| 26.5 | 639,834 | 4,531 | 0.0071 | 0.9929 | 50.94 |
| 27.5 | 624,935 | 10,846 | 0.0174 | 0.9826 | 50.58 |
| 28.5 | 571,748 | 3,629 | 0.0063 | 0.9937 | 49.70 |
| 29.5 | 527,122 | 5,314 | 0.0101 | 0.9899 | 49.39 |
| 30.5 | 486,881 | 4,176 | 0.0086 | 0.9914 | 48.89 |
| 31.5 | 440,637 | 4,113 | 0.0093 | 0.9907 | 48.47 |
| 32.5 | 490,063 | 20,746 | 0.0423 | 0.9577 | 48.02 |
| 33.5 | 469,697 | 13,436 | 0.0286 | 0.9714 | 45.98 |
| 34.5 | 481,586 | 17,070 | 0.0354 | 0.9646 | 44.67 |
| 35.5 | 464,913 | 3,432 | 0.0074 | 0.9926 | 43.08 |
| 36.5 | 369,266 | 6,936 | 0.0188 | 0.9812 | 42.77 |
| 37.5 | 344,716 | 183,609 | 0.5326 | 0.4674 | 41.96 |
| 38.5 | 159,839 | 92 | 0.0006 | 0.9994 | 19.61 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
COMMON PLANT

ACCOUNT 390.00 STRUCTURES AND IMPROVEMENTS - MINOR FACILITIES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1970-2018

| 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 | 159,834 | 552 | 0.0035 | 0.9965 | 19.60 |
| 40.5 | 161,676 | 3,984 | 0.0246 | 0.9754 | 19.53 |
| 41.5 | 173,875 | 2,738 | 0.0157 | 0.9843 | 19.05 |
| 42.5 | 157,372 | 4,755 | 0.0302 | 0.9698 | 18.75 |
| 43.5 | 154,104 | 847 | 0.0055 | 0.9945 | 18.19 |
| 44.5 | 155,692 | 2,246 | 0.0144 | 0.9856 | 18.09 |
| 45.5 | 153,172 | 16,100 | 0.1051 | 0.8949 | 17.82 |
| 46.5 | 137,072 | 42,847 | 0.3126 | 0.6874 | 15.95 |
| 47.5 | 94,225 | 6,137 | 0.0651 | 0.9349 | 10.96 |
| 48.5 | 84,115 | 3,553 | 0.0422 | 0.9578 | 10.25 |
| 49.5 | 80,562 | 5,589 | 0.0694 | 0.9306 | 9.82 |
| 50.5 | 77,387 | 1,889 | 0.0244 | 0.9756 | 9.14 |
| 51.5 | 75,223 | 3,035 | 0.0404 | 0.9596 | 8.91 |
| 52.5 | 72,187 | 6,067 | 0.0840 | 0.9160 | 8.55 |
| 53.5 | 62,863 | 1,311 | 0.0209 | 0.9791 | 7.83 |
| 54.5 | 58,688 | 5,469 | 0.0932 | 0.9068 | 7.67 |
| 55.5 | 53,220 | 1,383 | 0.0260 | 0.9740 | 6.96 |
| 56.5 | 51,837 | 16,137 | 0.3113 | 0.6887 | 6.78 |
| 57.5 | 34,059 | 5 | 0.0001 | 0.9999 | 4.67 |
| 58.5 | 33,741 | 23 | 0.0007 | 0.9993 | 4.67 |
| 59.5 | 34,565 | 53 | 0.0015 | 0.9985 | 4.66 |
| 60.5 | 34,512 | | 0.0000 | 1.0000 | 4.66 |
| 61.5 | 34,512 | | 0.0000 | 1.0000 | 4.66 |
| 62.5 | 32,679 | | 0.0000 | 1.0000 | 4.66 |
| 63.5 | 32,679 | | 0.0000 | 1.0000 | 4.66 |
| 64.5 | 32,679 | 24,612 | 0.7532 | 0.2468 | 4.66 |
| 65.5 | 8,066 | | 0.0000 | 1.0000 | 1.15 |
| 66.5 | 8,066 | | 0.0000 | 1.0000 | 1.15 |
| 67.5 | 7,230 | | 0.0000 | 1.0000 | 1.15 |
| 68.5 | 7,230 | | 0.0000 | 1.0000 | 1.15 |
| 69.5 | 3,647 | | 0.0000 | 1.0000 | 1.15 |
| 70.5 | 3,647 | | 0.0000 | 1.0000 | 1.15 |
| 71.5 | 3,647 | | 0.0000 | 1.0000 | 1.15 |
| 72.5 | 3,647 | 70 | 0.0191 | 0.9809 | 1.15 |
| 73.5 | 3,577 | | 0.0000 | 1.0000 | 1.13 |
| 74.5 | 3,577 | | 0.0000 | 1.0000 | 1.13 |
| 75.5 | 3,577 | 18 | 0.0051 | 0.9949 | 1.13 |
| 76.5 | 3,559 | | 0.0000 | 1.0000 | 1.12 |
| 77.5 | 3,559 | 24 | 0.0067 | 0.9933 | 1.12 |
| 78.5 | 1,676 | | 0.0000 | 1.0000 | 1.11 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
COMMON PLANT

ACCOUNT 390.00 STRUCTURES AND IMPROVEMENTS - MINOR FACILITIES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 1970-2018

| 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 | 1,173 | | 0.0000 | 1.0000 | 1.11 |
| 80.5 | 1,173 | | 0.0000 | 1.0000 | 1.11 |
| 81.5 | 1,173 | | 0.0000 | 1.0000 | 1.11 |
| 82.5 | 1,173 | | 0.0000 | 1.0000 | 1.11 |
| 83.5 | 1,173 | | 0.0000 | 1.0000 | 1.11 |
| 84.5 | 1,173 | | 0.0000 | 1.0000 | 1.11 |
| 85.5 | 1,173 | | 0.0000 | 1.0000 | 1.11 |
| 86.5 | 1,173 | | 0.0000 | 1.0000 | 1.11 |
| 87.5 | 846 | | 0.0000 | 1.0000 | 1.11 |
| 88.5 | 846 | | 0.0000 | 1.0000 | 1.11 |
| 89.5 | 846 | | 0.0000 | 1.0000 | 1.11 |
| 90.5 | 846 | | 0.0000 | 1.0000 | 1.11 |
| 91.5 | 846 | | 0.0000 | 1.0000 | 1.11 |
| 92.5 | 846 | | 0.0000 | 1.0000 | 1.11 |
| 93.5 | 846 | | 0.0000 | 1.0000 | 1.11 |
| 94.5 | 846 | | 0.0000 | 1.0000 | 1.11 |
| 95.5 | 846 | | 0.0000 | 1.0000 | 1.11 |
| 96.5 | 846 | | 0.0000 | 1.0000 | 1.11 |
| 97.5 | 846 | | 0.0000 | 1.0000 | 1.11 |
| 98.5 | 846 | | 0.0000 | 1.0000 | 1.11 |
| 99.5 | 846 | | 0.0000 | 1.0000 | 1.11 |
| 100.5 | 846 | | 0.0000 | 1.0000 | 1.11 |
| 101.5 | 846 | | 0.0000 | 1.0000 | 1.11 |
| 102.5 | 846 | | 0.0000 | 1.0000 | 1.11 |
| 103.5 | 846 | 249 | 0.2945 | 0.7055 | 1.11 |
| 104.5 | 597 | | 0.0000 | 1.0000 | 0.79 |
| 105.5 | 597 | | 0.0000 | 1.0000 | 0.79 |
| 106.5 | 597 | | 0.0000 | 1.0000 | 0.79 |
| 107.5 | 597 | | 0.0000 | 1.0000 | 0.79 |
| 108.5 | | | | | 0.79 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
COMMON PLANT

ACCOUNT 390.00 STRUCTURES AND IMPROVEMENTS - MINOR FACILITIES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 2008-2018

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 0.0 | 1,858,541 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 912,946 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 912,496 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 913,993 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 926,602 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 912,043 | | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 84,063 | 0 | 0.0000 | 1.0000 | 100.00 |
| 6.5 | 127,783 | | 0.0000 | 1.0000 | 100.00 |
| 7.5 | 117,202 | | 0.0000 | 1.0000 | 100.00 |
| 8.5 | 142,541 | | 0.0000 | 1.0000 | 100.00 |
| 9.5 | 188,955 | | 0.0000 | 1.0000 | 100.00 |
| 10.5 | 233,315 | | 0.0000 | 1.0000 | 100.00 |
| 11.5 | 256,998 | | 0.0000 | 1.0000 | 100.00 |
| 12.5 | 439,798 | | 0.0000 | 1.0000 | 100.00 |
| 13.5 | 356,271 | | 0.0000 | 1.0000 | 100.00 |
| 14.5 | 342,481 | | 0.0000 | 1.0000 | 100.00 |
| 15.5 | 453,209 | | 0.0000 | 1.0000 | 100.00 |
| 16.5 | 610,844 | | 0.0000 | 1.0000 | 100.00 |
| 17.5 | 662,076 | | 0.0000 | 1.0000 | 100.00 |
| 18.5 | 718,317 | | 0.0000 | 1.0000 | 100.00 |
| 19.5 | 716,742 | | 0.0000 | 1.0000 | 100.00 |
| 20.5 | 563,632 | | 0.0000 | 1.0000 | 100.00 |
| 21.5 | 496,781 | | 0.0000 | 1.0000 | 100.00 |
| 22.5 | 432,295 | | 0.0000 | 1.0000 | 100.00 |
| 23.5 | 292,432 | | 0.0000 | 1.0000 | 100.00 |
| 24.5 | 324,540 | | 0.0000 | 1.0000 | 100.00 |
| 25.5 | 311,991 | | 0.0000 | 1.0000 | 100.00 |
| 26.5 | 233,692 | | 0.0000 | 1.0000 | 100.00 |
| 27.5 | 225,570 | | 0.0000 | 1.0000 | 100.00 |
| 28.5 | 183,088 | | 0.0000 | 1.0000 | 100.00 |
| 29.5 | 140,965 | | 0.0000 | 1.0000 | 100.00 |
| 30.5 | 110,313 | | 0.0000 | 1.0000 | 100.00 |
| 31.5 | 84,985 | | 0.0000 | 1.0000 | 100.00 |
| 32.5 | 138,467 | | 0.0000 | 1.0000 | 100.00 |
| 33.5 | 138,467 | | 0.0000 | 1.0000 | 100.00 |
| 34.5 | 135,340 | | 0.0000 | 1.0000 | 100.00 |
| 35.5 | 135,340 | | 0.0000 | 1.0000 | 100.00 |
| 36.5 | 43,055 | | 0.0000 | 1.0000 | 100.00 |
| 37.5 | 38,838 | 3,532 | 0.0910 | 0.9090 | 100.00 |
| 38.5 | 32,985 | | 0.0000 | 1.0000 | 90.90 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
COMMON PLANT

ACCOUNT 390.00 STRUCTURES AND IMPROVEMENTS - MINOR FACILITIES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 2008-2018

| 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 | 74,369 | | 0.0000 | 1.0000 | 90.90 |
| 40.5 | 75,502 | | 0.0000 | 1.0000 | 90.90 |
| 41.5 | 74,245 | | 0.0000 | 1.0000 | 90.90 |
| 42.5 | 61,087 | | 0.0000 | 1.0000 | 90.90 |
| 43.5 | 61,537 | | 0.0000 | 1.0000 | 90.90 |
| 44.5 | 61,537 | | 0.0000 | 1.0000 | 90.90 |
| 45.5 | 61,014 | | 0.0000 | 1.0000 | 90.90 |
| 46.5 | 62,655 | 41,384 | 0.6605 | 0.3395 | 90.90 |
| 47.5 | 21,584 | 1,592 | 0.0738 | 0.9262 | 30.86 |
| 48.5 | 6,312 | | 0.0000 | 1.0000 | 28.59 |
| 49.5 | 20,693 | 376 | 0.0182 | 0.9818 | 28.59 |
| 50.5 | 22,731 | | 0.0000 | 1.0000 | 28.07 |
| 51.5 | 24,289 | | 0.0000 | 1.0000 | 28.07 |
| 52.5 | 24,289 | | 0.0000 | 1.0000 | 28.07 |
| 53.5 | 21,032 | | 0.0000 | 1.0000 | 28.07 |
| 54.5 | 18,168 | | 0.0000 | 1.0000 | 28.07 |
| 55.5 | 18,168 | | 0.0000 | 1.0000 | 28.07 |
| 56.5 | 19,005 | 14,381 | 0.7567 | 0.2433 | 28.07 |
| 57.5 | 27,595 | | 0.0000 | 1.0000 | 6.83 |
| 58.5 | 30,865 | | 0.0000 | 1.0000 | 6.83 |
| 59.5 | 30,865 | | 0.0000 | 1.0000 | 6.83 |
| 60.5 | 30,865 | | 0.0000 | 1.0000 | 6.83 |
| 61.5 | 30,865 | | 0.0000 | 1.0000 | 6.83 |
| 62.5 | 29,032 | | 0.0000 | 1.0000 | 6.83 |
| 63.5 | 29,032 | | 0.0000 | 1.0000 | 6.83 |
| 64.5 | 29,032 | 24,612 | 0.8478 | 0.1522 | 6.83 |
| 65.5 | 4,420 | | 0.0000 | 1.0000 | 1.04 |
| 66.5 | 4,489 | | 0.0000 | 1.0000 | 1.04 |
| 67.5 | 5,511 | | 0.0000 | 1.0000 | 1.04 |
| 68.5 | 6,015 | | 0.0000 | 1.0000 | 1.04 |
| 69.5 | 2,450 | | 0.0000 | 1.0000 | 1.04 |
| 70.5 | 2,450 | | 0.0000 | 1.0000 | 1.04 |
| 71.5 | 2,474 | | 0.0000 | 1.0000 | 1.04 |
| 72.5 | 2,474 | 70 | 0.0282 | 0.9718 | 1.04 |
| 73.5 | 2,404 | | 0.0000 | 1.0000 | 1.01 |
| 74.5 | 2,404 | | 0.0000 | 1.0000 | 1.01 |
| 75.5 | 2,404 | 18 | 0.0075 | 0.9925 | 1.01 |
| 76.5 | 2,712 | | 0.0000 | 1.0000 | 1.00 |
| 77.5 | 2,712 | 24 | 0.0088 | 0.9912 | 1.00 |
| 78.5 | 830 | | 0.0000 | 1.0000 | 0.99 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
COMMON PLANT

ACCOUNT 390.00 STRUCTURES AND IMPROVEMENTS - MINOR FACILITIES

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1910-2018 EXPERIENCE BAND 2008-2018

| 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 | 326 | | 0.0000 | 1.0000 | 0.99 |
| 80.5 | 326 | | 0.0000 | 1.0000 | 0.99 |
| 81.5 | 326 | | 0.0000 | 1.0000 | 0.99 |
| 82.5 | 326 | | 0.0000 | 1.0000 | 0.99 |
| 83.5 | 326 | | 0.0000 | 1.0000 | 0.99 |
| 84.5 | 326 | | 0.0000 | 1.0000 | 0.99 |
| 85.5 | 326 | | 0.0000 | 1.0000 | 0.99 |
| 86.5 | 326 | | 0.0000 | 1.0000 | 0.99 |
| 87.5 | | | | | 0.99 |
| 88.5 | | | | | |
| 89.5 | | | | | |
| 90.5 | | | | | |
| 91.5 | | | | | |
| 92.5 | | | | | |
| 93.5 | | | | | |
| 94.5 | | | | | |
| 95.5 | | | | | |
| 96.5 | | | | | |
| 97.5 | 846 | | 0.0000 | | |
| 98.5 | 846 | | 0.0000 | | |
| 99.5 | 846 | | 0.0000 | | |
| 100.5 | 846 | | 0.0000 | | |
| 101.5 | 846 | | 0.0000 | | |
| 102.5 | 846 | | 0.0000 | | |
| 103.5 | 846 | 249 | 0.2945 | | |
| 104.5 | 597 | | 0.0000 | | |
| 105.5 | 597 | | 0.0000 | | |
| 106.5 | 597 | | 0.0000 | | |
| 107.5 | 597 | | 0.0000 | | |
| 108.5 | | | | | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
COMMON PLANT
ACCOUNT 390.01 STRUCTURES AND IMPROVEMENTS - DOC FACILITY
ORIGINAL AND SMOOTH SURVIVOR CURVES

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
COMMON PLANT

ACCOUNT 390.01 STRUCTURES AND IMPROVEMENTS - DOC FACILITY

ORIGINAL LIFE TABLE

PLACEMENT BAND 2018-2018 EXPERIENCE BAND 2018-2018

| 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 | 11,384,568 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | | | | | 100.00 |

# ELECTRIC, GAS AND COMMON

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC, GAS AND COMMON PLANT
ACCOUNT 396.00 POWER OPERATED EQUIPMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES
ORIGINAL CURVE
1975-2018 EXPERIENCE
1942-2007 PLACEMENTS
1999-2018 EXPERIENCE
1942-2007 PLACEMENTS
2008-2018 EXPERIENCE
1945-2007 PLACEMENTS
IOWA 20-S2
PERCENT SURVIVING
AGE IN YEARS
100
90
80
70
60
50
40
30
20
10
0
0
10
20
30
40
50
60

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC, GAS AND COMMON PLANT

ACCOUNT 396.00 POWER OPERATED EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1942-2007 EXPERIENCE BAND 1975-2018

| 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 | 66,474 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 66,474 | 0 | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 66,967 | 1 | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 66,965 | 0 | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 66,965 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 66,965 | 1 | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 75,732 | 32 | 0.0004 | 0.9996 | 100.00 |
| 6.5 | 76,856 | 148 | 0.0019 | 0.9981 | 99.95 |
| 7.5 | 77,657 | 138 | 0.0018 | 0.9982 | 99.76 |
| 8.5 | 78,364 | 85 | 0.0011 | 0.9989 | 99.58 |
| 9.5 | 78,641 | 112 | 0.0014 | 0.9986 | 99.47 |
| 10.5 | 79,500 | 219 | 0.0027 | 0.9973 | 99.33 |
| 11.5 | 69,668 | 45 | 0.0006 | 0.9994 | 99.06 |
| 12.5 | 70,285 | 149 | 0.0021 | 0.9979 | 99.00 |
| 13.5 | 69,978 | 35 | 0.0005 | 0.9995 | 98.79 |
| 14.5 | 47,332 | 1,025 | 0.0216 | 0.9784 | 98.74 |
| 15.5 | 52,952 | 2,090 | 0.0395 | 0.9605 | 96.60 |
| 16.5 | 52,656 | 1,382 | 0.0262 | 0.9738 | 92.79 |
| 17.5 | 55,012 | 3,627 | 0.0659 | 0.9341 | 90.35 |
| 18.5 | 46,075 | 1,161 | 0.0252 | 0.9748 | 84.40 |
| 19.5 | 43,112 | 1,467 | 0.0340 | 0.9660 | 82.27 |
| 20.5 | 41,884 | 412 | 0.0098 | 0.9902 | 79.47 |
| 21.5 | 35,373 | 5 | 0.0001 | 0.9999 | 78.69 |
| 22.5 | 35,458 | | 0.0000 | 1.0000 | 78.68 |
| 23.5 | 35,458 | | 0.0000 | 1.0000 | 78.68 |
| 24.5 | 32,096 | | 0.0000 | 1.0000 | 78.68 |
| 25.5 | 27,185 | | 0.0000 | 1.0000 | 78.68 |
| 26.5 | 28,875 | | 0.0000 | 1.0000 | 78.68 |
| 27.5 | 29,075 | | 0.0000 | 1.0000 | 78.68 |
| 28.5 | 29,075 | | 0.0000 | 1.0000 | 78.68 |
| 29.5 | 30,280 | | 0.0000 | 1.0000 | 78.68 |
| 30.5 | 30,715 | 705 | 0.0230 | 0.9770 | 78.68 |
| 31.5 | 30,010 | | 0.0000 | 1.0000 | 76.87 |
| 32.5 | 30,936 | 37 | 0.0012 | 0.9988 | 76.87 |
| 33.5 | 30,899 | 1,799 | 0.0582 | 0.9418 | 76.78 |
| 34.5 | 29,101 | 1,304 | 0.0448 | 0.9552 | 72.31 |
| 35.5 | 27,796 | 527 | 0.0189 | 0.9811 | 69.07 |
| 36.5 | 27,270 | 320 | 0.0117 | 0.9883 | 67.76 |
| 37.5 | 26,950 | 1,052 | 0.0390 | 0.9610 | 66.96 |
| 38.5 | 25,897 | 559 | 0.0216 | 0.9784 | 64.35 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC, GAS AND COMMON PLANT

ACCOUNT 396.00 POWER OPERATED EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1942-2007 EXPERIENCE BAND 1975-2018

| 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 | 25,338 | 414 | 0.0163 | 0.9837 | 62.96 |
| 40.5 | 24,924 | 224 | 0.0090 | 0.9910 | 61.93 |
| 41.5 | 24,700 | 340 | 0.0138 | 0.9862 | 61.37 |
| 42.5 | 24,360 | 4,204 | 0.1726 | 0.8274 | 60.53 |
| 43.5 | 20,156 | 9,066 | 0.4498 | 0.5502 | 50.08 |
| 44.5 | 11,090 | 369 | 0.0333 | 0.9667 | 27.56 |
| 45.5 | 10,721 | 989 | 0.0923 | 0.9077 | 26.64 |
| 46.5 | 9,731 | 961 | 0.0988 | 0.9012 | 24.18 |
| 47.5 | 8,770 | 358 | 0.0408 | 0.9592 | 21.79 |
| 48.5 | 8,412 | 644 | 0.0766 | 0.9234 | 20.90 |
| 49.5 | 7,768 | 90 | 0.0116 | 0.9884 | 19.30 |
| 50.5 | 7,678 | | 0.0000 | 1.0000 | 19.08 |
| 51.5 | 7,678 | 3,222 | 0.4197 | 0.5803 | 19.08 |
| 52.5 | 4,456 | | 0.0000 | 1.0000 | 11.07 |
| 53.5 | 4,456 | 1,690 | 0.3793 | 0.6207 | 11.07 |
| 54.5 | 2,766 | 200 | 0.0723 | 0.9277 | 6.87 |
| 55.5 | 2,566 | | 0.0000 | 1.0000 | 6.38 |
| 56.5 | 2,566 | | 0.0000 | 1.0000 | 6.38 |
| 57.5 | 2,566 | 435 | 0.1695 | 0.8305 | 6.38 |
| 58.5 | 2,131 | | 0.0000 | 1.0000 | 5.30 |
| 59.5 | 2,131 | 926 | 0.4345 | 0.5655 | 5.30 |
| 60.5 | 1,205 | | 0.0000 | 1.0000 | 2.99 |
| 61.5 | 1,205 | | 0.0000 | 1.0000 | 2.99 |
| 62.5 | 1,205 | 1,205 | 1.0000 | | 2.99 |
| 63.5 | | | | | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC, GAS AND COMMON PLANT

ACCOUNT 396.00 POWER OPERATED EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1942-2007 EXPERIENCE BAND 1999-2018

| 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 | 44,890 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 44,890 | 0 | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 51,587 | 1 | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 51,586 | 0 | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 51,586 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 58,179 | 1 | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 63,513 | 1 | 0.0000 | 1.0000 | 100.00 |
| 6.5 | 63,511 | 1 | 0.0000 | 1.0000 | 99.99 |
| 7.5 | 63,510 | 1 | 0.0000 | 1.0000 | 99.99 |
| 8.5 | 63,509 | 2 | 0.0000 | 1.0000 | 99.99 |
| 9.5 | 63,507 | | 0.0000 | 1.0000 | 99.99 |
| 10.5 | 63,507 | | 0.0000 | 1.0000 | 99.99 |
| 11.5 | 53,532 | 8 | 0.0001 | 0.9999 | 99.99 |
| 12.5 | 53,524 | 12 | 0.0002 | 0.9998 | 99.97 |
| 13.5 | 52,875 | | 0.0000 | 1.0000 | 99.95 |
| 14.5 | 28,923 | | 0.0000 | 1.0000 | 99.95 |
| 15.5 | 28,923 | | 0.0000 | 1.0000 | 99.95 |
| 16.5 | 29,630 | | 0.0000 | 1.0000 | 99.95 |
| 17.5 | 29,630 | | 0.0000 | 1.0000 | 99.95 |
| 18.5 | 22,727 | | 0.0000 | 1.0000 | 99.95 |
| 19.5 | 21,001 | 2 | 0.0001 | 0.9999 | 99.95 |
| 20.5 | 21,558 | 410 | 0.0190 | 0.9810 | 99.94 |
| 21.5 | 14,453 | 4 | 0.0003 | 0.9997 | 98.04 |
| 22.5 | 14,449 | | 0.0000 | 1.0000 | 98.01 |
| 23.5 | 14,449 | | 0.0000 | 1.0000 | 98.01 |
| 24.5 | 7,865 | | 0.0000 | 1.0000 | 98.01 |
| 25.5 | 3,446 | | 0.0000 | 1.0000 | 98.01 |
| 26.5 | 3,446 | | 0.0000 | 1.0000 | 98.01 |
| 27.5 | 3,446 | | 0.0000 | 1.0000 | 98.01 |
| 28.5 | 3,446 | | 0.0000 | 1.0000 | 98.01 |
| 29.5 | 12,181 | | 0.0000 | 1.0000 | 98.01 |
| 30.5 | 13,184 | 705 | 0.0535 | 0.9465 | 98.01 |
| 31.5 | 13,288 | | 0.0000 | 1.0000 | 92.77 |
| 32.5 | 14,048 | 37 | 0.0026 | 0.9974 | 92.77 |
| 33.5 | 14,261 | 1,799 | 0.1261 | 0.8739 | 92.53 |
| 34.5 | 13,217 | 1,304 | 0.0987 | 0.9013 | 80.86 |
| 35.5 | 12,240 | 527 | 0.0430 | 0.9570 | 72.88 |
| 36.5 | 12,240 | 320 | 0.0261 | 0.9739 | 69.74 |
| 37.5 | 12,366 | 1,052 | 0.0851 | 0.9149 | 67.92 |
| 38.5 | 11,628 | 559 | 0.0481 | 0.9519 | 62.14 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC, GAS AND COMMON PLANT

ACCOUNT 396.00 POWER OPERATED EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1942-2007 EXPERIENCE BAND 1999-2018

| 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 | 15,617 | 414 | 0.0265 | 0.9735 | 59.15 |
| 40.5 | 15,614 | 224 | 0.0144 | 0.9856 | 57.58 |
| 41.5 | 15,499 | 340 | 0.0220 | 0.9780 | 56.76 |
| 42.5 | 15,601 | 4,204 | 0.2695 | 0.7305 | 55.51 |
| 43.5 | 11,551 | 9,066 | 0.7848 | 0.2152 | 40.55 |
| 44.5 | 2,725 | 369 | 0.1354 | 0.8646 | 8.73 |
| 45.5 | 2,953 | 989 | 0.3351 | 0.6649 | 7.54 |
| 46.5 | 2,053 | 961 | 0.4681 | 0.5319 | 5.02 |
| 47.5 | 1,092 | 358 | 0.3278 | 0.6722 | 2.67 |
| 48.5 | 3,956 | 644 | 0.1628 | 0.8372 | 1.79 |
| 49.5 | 3,312 | 90 | 0.0272 | 0.9728 | 1.50 |
| 50.5 | 4,912 | | 0.0000 | 1.0000 | 1.46 |
| 51.5 | 5,112 | 3,222 | 0.6303 | 0.3697 | 1.46 |
| 52.5 | 1,890 | | 0.0000 | 1.0000 | 0.54 |
| 53.5 | 3,095 | 1,690 | 0.5460 | 0.4540 | 0.54 |
| 54.5 | 1,840 | 200 | 0.1087 | 0.8913 | 0.25 |
| 55.5 | 1,640 | | 0.0000 | 1.0000 | 0.22 |
| 56.5 | 2,566 | | 0.0000 | 1.0000 | 0.22 |
| 57.5 | 2,566 | 435 | 0.1695 | 0.8305 | 0.22 |
| 58.5 | 2,131 | | 0.0000 | 1.0000 | 0.18 |
| 59.5 | 2,131 | 926 | 0.4345 | 0.5655 | 0.18 |
| 60.5 | 1,205 | | 0.0000 | 1.0000 | 0.10 |
| 61.5 | 1,205 | | 0.0000 | 1.0000 | 0.10 |
| 62.5 | 1,205 | 1,205 | 1.0000 | | 0.10 |
| 63.5 | | | | | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC, GAS AND COMMON PLANT

ACCOUNT 396.00 POWER OPERATED EQUIPMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1945-2007 EXPERIENCE BAND 2008-2018

| 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 | 9,975 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 9,975 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 10,612 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 34,564 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 34,564 | | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 34,564 | | 0.0000 | 1.0000 | 100.00 |
| 6.5 | 34,564 | | 0.0000 | 1.0000 | 100.00 |
| 7.5 | 41,471 | | 0.0000 | 1.0000 | 100.00 |
| 8.5 | 44,887 | | 0.0000 | 1.0000 | 100.00 |
| 9.5 | 44,887 | | 0.0000 | 1.0000 | 100.00 |
| 10.5 | 51,582 | | 0.0000 | 1.0000 | 100.00 |
| 11.5 | 41,607 | | 0.0000 | 1.0000 | 100.00 |
| 12.5 | 41,607 | | 0.0000 | 1.0000 | 100.00 |
| 13.5 | 47,554 | | 0.0000 | 1.0000 | 100.00 |
| 14.5 | 28,923 | | 0.0000 | 1.0000 | 100.00 |
| 15.5 | 28,923 | | 0.0000 | 1.0000 | 100.00 |
| 16.5 | 28,923 | | 0.0000 | 1.0000 | 100.00 |
| 17.5 | 28,923 | | 0.0000 | 1.0000 | 100.00 |
| 18.5 | 22,016 | | 0.0000 | 1.0000 | 100.00 |
| 19.5 | 18,600 | | 0.0000 | 1.0000 | 100.00 |
| 20.5 | 18,600 | 410 | 0.0220 | 0.9780 | 100.00 |
| 21.5 | 11,495 | | 0.0000 | 1.0000 | 97.80 |
| 22.5 | 11,495 | | 0.0000 | 1.0000 | 97.80 |
| 23.5 | 11,495 | | 0.0000 | 1.0000 | 97.80 |
| 24.5 | 4,911 | | 0.0000 | 1.0000 | 97.80 |
| 25.5 | 705 | | 0.0000 | 1.0000 | 97.80 |
| 26.5 | 705 | | 0.0000 | 1.0000 | 97.80 |
| 27.5 | 705 | | 0.0000 | 1.0000 | 97.80 |
| 28.5 | 2,395 | | 0.0000 | 1.0000 | 97.80 |
| 29.5 | 2,953 | | 0.0000 | 1.0000 | 97.80 |
| 30.5 | 2,953 | 705 | 0.2387 | 0.7613 | 97.80 |
| 31.5 | 2,248 | | 0.0000 | 1.0000 | 74.45 |
| 32.5 | 2,248 | | 0.0000 | 1.0000 | 74.45 |
| 33.5 | 2,248 | 1,689 | 0.7514 | 0.2486 | 74.45 |
| 34.5 | 1,051 | 1,051 | 1.0000 | | 18.51 |
| 35.5 | | | | | |
| 36.5 | | | | | |
| 37.5 | | | | | |
| 38.5 | 8,406 | | 0.0000 | | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC, GAS AND COMMON PLANT

ACCOUNT 396.00 POWER OPERATED EQUIPMENT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1945-2007 EXPERIENCE BAND 2008-2018

| 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 | 8,406 | | 0.0000 | | |
| 40.5 | 8,406 | | 0.0000 | | |
| 41.5 | 8,406 | | 0.0000 | | |
| 42.5 | 8,406 | | 0.0000 | | |
| 43.5 | 8,698 | 8,698 | 1.0000 | | |
| 44.5 | 294 | 294 | 1.0000 | | |
| 45.5 | 270 | 270 | 1.0000 | | |
| 46.5 | 432 | 432 | 1.0000 | | |
| 47.5 | | | | | |
| 48.5 | | | | | |
| 49.5 | | | | | |
| 50.5 | | | | | |
| 51.5 | | | | | |
| 52.5 | | | | | |
| 53.5 | | | | | |
| 54.5 | | | | | |
| 55.5 | | | | | |
| 56.5 | | | | | |
| 57.5 | | | | | |
| 58.5 | | | | | |
| 59.5 | | | | | |
| 60.5 | | | | | |
| 61.5 | | | | | |
| 62.5 | 1,205 | 1,205 | 1.0000 | | |
| 63.5 | | | | | |

# PART VIII. NET SALVAGE STATISTICS

# ELECTRIC

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 353.00 STATION EQUIPMENT

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| 1981 | 24,221 | 712 | 3 | | 0 | 712- | 3- |
| 1982 | 12,810 | 4,849 | 38 | | 0 | 4,849- | 38- |
| 1983 | | | | | | | |
| 1984 | 5,690 | 66 | 1 | | 0 | 66- | 1- |
| 1985 | 2,905 | 137 | 5 | 35 | 1 | 102- | 4- |
| 1986 | | | | | | | |
| 1987 | | | | | | | |
| 1988 | 13,654 | 1,317 | 10 | | 0 | 1,317- | 10- |
| 1989 | | | | | | | |
| 1990 | | | | | | | |
| 1991 | 62,685 | 8,393 | 13 | | 0 | 8,393- | 13- |
| 1992 | 302,638 | 120,866 | 40 | | 0 | 120,866- | 40- |
| 1993 | 152,102 | 119,884 | 79 | 15,922 | 10 | 103,962- | 68- |
| 1994 | 505 | 1,121 | 222 | 72 | 14 | 1,049- | 208- |
| 1995 | 93 | 66 | 71 | 9 | 10 | 57- | 61- |
| 1996 | 975 | 2,038 | 209 | 181 | 19 | 1,857- | 190- |
| 1997 | 12,131 | 20,884 | 172 | 1,360 | 11 | 19,524- | 161- |
| 1998 | 19,990 | 28,802 | 144 | 3,343 | 17 | 25,459- | 127- |
| 1999 | 8,848 | 15,669 | 177 | 1,653 | 19 | 14,016- | 158- |
| 2000 | 3,500 | 6,721 | 192 | 700 | 20 | 6,021- | 172- |
| 2001 | 2,737 | 4,935 | 180 | 620 | 23 | 4,315- | 158- |
| 2002 | 1,950 | 1,076 | 55 | 140 | 7 | 936- | 48- |
| 2003 | 83,836 | 126,106 | 150 | 7,495 | 9 | 118,611- | 141- |
| 2004 | 19,581 | 31,536 | 161 | 857 | 4 | 30,679- | 157- |
| 2005 | 153,563 | 170,075 | 111 | 10,322 | 7 | 159,752- | 104- |
| 2006 | 219,859 | 163,780 | 74 | 13,969 | 6 | 149,811- | 68- |
| 2007 | 65,786 | 46,621 | 71 | 5,126 | 8 | 41,495- | 63- |
| 2008 | 34,920 | 20,219 | 58 | 1,355- | 4- | 21,574- | 62- |
| 2009 | | | | | | | |
| 2010 | | | | | | | |
| 2011 | | | | | | | |
| 2012 | 18,027 | 21,998 | 122 | | 0 | 21,998- | 122- |
| 2013 | 33,016 | 309,131 | 936 | 170 | 1 | 308,961- | 936- |
| 2014 | 2,810 | 2,802 | 100 | | 0 | 2,802- | 100- |
| 2015 | 82,329 | 25,559 | 31 | | 0 | 25,559- | 31- |
| 2016 | 259,971 | 181,615 | 70 | | 0 | 181,615- | 70- |
| 2017 | 144 | 6,916 | | | 0 | 6,916- | |
| 2018 | 15,451 | 4,650 | 30 | | 0 | 4,650- | 30- |
| TOTAL | 1,616,728 | 1,448,544 | 90 | 60,619 | 4 | 1,387,925- | 86- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 353.00 STATION EQUIPMENT

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| THREE-YEAR MOVING AVERAGES | | | | | | | |
| 81-83 | 12,344 | 1,854 | 15 | | 0 | 1,854- | 15- |
| 82-84 | 6,167 | 1,638 | 27 | | 0 | 1,638- | 27- |
| 83-85 | 2,865 | 68 | 2 | 12 | 0 | 56- | 2- |
| 84-86 | 2,865 | 68 | 2 | 12 | 0 | 56- | 2- |
| 85-87 | 968 | 46 | 5 | 12 | 1 | 34- | 4- |
| 86-88 | 4,551 | 439 | 10 | | 0 | 439- | 10- |
| 87-89 | 4,551 | 439 | 10 | | 0 | 439- | 10- |
| 88-90 | 4,551 | 439 | 10 | | 0 | 439- | 10- |
| 89-91 | 20,895 | 2,798 | 13 | | 0 | 2,798- | 13- |
| 90-92 | 121,774 | 43,086 | 35 | | 0 | 43,086- | 35- |
| 91-93 | 172,475 | 83,048 | 48 | 5,307 | 3 | 77,740- | 45- |
| 92-94 | 151,748 | 80,624 | 53 | 5,331 | 4 | 75,292- | 50- |
| 93-95 | 50,900 | 40,357 | 79 | 5,334 | 10 | 35,023- | 69- |
| 94-96 | 524 | 1,075 | 205 | 87 | 17 | 988- | 188- |
| 95-97 | 4,400 | 7,663 | 174 | 517 | 12 | 7,146- | 162- |
| 96-98 | 11,032 | 17,241 | 156 | 1,628 | 15 | 15,613- | 142- |
| 97-99 | 13,656 | 21,785 | 160 | 2,119 | 16 | 19,666- | 144- |
| 98-00 | 10,779 | 17,064 | 158 | 1,899 | 18 | 15,165- | 141- |
| 99-01 | 5,028 | 9,108 | 181 | 991 | 20 | 8,117- | 161- |
| 00-02 | 2,729 | 4,244 | 156 | 487 | 18 | 3,757- | 138- |
| 01-03 | 29,508 | 44,039 | 149 | 2,752 | 9 | 41,288- | 140- |
| 02-04 | 35,123 | 52,906 | 151 | 2,831 | 8 | 50,076- | 143- |
| 03-05 | 85,660 | 109,239 | 128 | 6,225 | 7 | 103,014- | 120- |
| 04-06 | 131,001 | 121,797 | 93 | 8,383 | 6 | 113,414- | 87- |
| 05-07 | 146,403 | 126,825 | 87 | 9,806 | 7 | 117,020- | 80- |
| 06-08 | 106,855 | 76,873 | 72 | 5,913 | 6 | 70,960- | 66- |
| 07-09 | 33,569 | 22,280 | 66 | 1,257 | 4 | 21,023- | 63- |
| 08-10 | 11,640 | 6,740 | 58 | 452- | 4- | 7,191- | 62- |
| 09-11 | | | | | | | |
| 10-12 | 6,009 | 7,333 | 122 | | 0 | 7,333- | 122- |
| 11-13 | 17,014 | 110,376 | 649 | 57 | 0 | 110,320- | 648- |
| 12-14 | 17,951 | 111,310 | 620 | 57 | 0 | 111,254- | 620- |
| 13-15 | 39,385 | 112,497 | 286 | 57 | 0 | 112,440- | 285- |
| 14-16 | 115,037 | 69,992 | 61 | | 0 | 69,992- | 61- |
| 15-17 | 114,148 | 71,363 | 63 | | 0 | 71,363- | 63- |
| 16-18 | 91,856 | 64,394 | 70 | | 0 | 64,394- | 70- |
| FIVE-YEAR AVERAGE | | | | | | | |
| 14-18 | 72,141 | 44,308 | 61 | | 0 | 44,308- | 61- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 355.00 POLES AND FIXTURES

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| 1981 | 465 | 510 | 110 | 163 | 35 | 347- | 75- |
| 1982 | | | | | | | |
| 1983 | | | | | | | |
| 1984 | 410 | 384 | 94 | 81 | 20 | 303- | 74- |
| 1985 | 1,070 | 1,052 | 98 | 366 | 34 | 686- | 64- |
| 1986 | | | | | | | |
| 1987 | | | | | | | |
| 1988 | | | | | | | |
| 1989 | | | | | | | |
| 1990 | | | | | | | |
| 1991 | | | | | | | |
| 1992 | 7,816 | 26,292 | 336 | | 0 | 26,292- | 336- |
| 1993 | 2,139 | 1,686 | 79 | 224 | 10 | 1,462- | 68- |
| 1994 | 1,773 | 1,773 | 100 | 252 | 14 | 1,521- | 86- |
| 1995 | 11,331 | 8,075 | 71 | 1,136 | 10 | 6,939- | 61- |
| 1996 | 140 | 293 | 209 | 26 | 19 | 267- | 191- |
| 1997 | 687 | 77 | 11 | 1,184 | 172 | 1,107 | 161 |
| 1998 | | | | | | | |
| 1999 | 7,390 | 13,086 | 177 | 1,381 | 19 | 11,705- | 158- |
| 2000 | 6,493 | 12,468 | 192 | 1,298 | 20 | 11,170- | 172- |
| 2001 | | | | | | | |
| 2002 | | | | | | | |
| 2003 | | | | | | | |
| 2004 | | | | | | | |
| 2005 | | | | | | | |
| 2006 | | | | | | | |
| 2007 | | | | | | | |
| 2008 | 103 | 289 | 281 | 54 | 53 | 235- | 229- |
| 2009 | 946 | 387 | 41 | 965 | 102 | 578 | 61 |
| 2010 | | 8,368 | | | | 8,368- | |
| 2011 | 45 | 711 | | | 0 | 710- | |
| 2012 | 2,016 | 5,467 | 271 | 264 | 13 | 5,203- | 258- |
| 2013 | 2,574 | 542 | 21 | 13 | 1 | 529- | 21- |
| 2014 | 757 | 368 | 49 | | 0 | 368- | 49- |
| 2015 | | | | | | | |
| 2016 | | | | | | | |
| 2017 | | | | | | | |
| 2018 | 6,913 | 7,755 | 112 | 71 | 1 | 7,684- | 111- |
| TOTAL | 53,068 | 89,582 | 169 | 7,478 | 14 | 82,104- | 155- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 355.00 POLES AND FIXTURES

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| THREE-YEAR MOVING AVERAGES | | | | | | | |
| 81-83 | 155 | 170 | 110 | 54 | 35 | 116- | 75- |
| 82-84 | 137 | 128 | 94 | 27 | 20 | 101- | 74- |
| 83-85 | 493 | 479 | 97 | 149 | 30 | 330- | 67- |
| 84-86 | 493 | 479 | 97 | 149 | 30 | 330- | 67- |
| 85-87 | 357 | 351 | 98 | 122 | 34 | 229- | 64- |
| 86-88 | | | | | | | |
| 87-89 | | | | | | | |
| 88-90 | | | | | | | |
| 89-91 | | | | | | | |
| 90-92 | 2,605 | 8,764 | 336 | | 0 | 8,764- | 336- |
| 91-93 | 3,318 | 9,326 | 281 | 75 | 2 | 9,251- | 279- |
| 92-94 | 3,909 | 9,917 | 254 | 159 | 4 | 9,758- | 250- |
| 93-95 | 5,081 | 3,845 | 76 | 537 | 11 | 3,307- | 65- |
| 94-96 | 4,415 | 3,380 | 77 | 471 | 11 | 2,909- | 66- |
| 95-97 | 4,053 | 2,815 | 69 | 782 | 19 | 2,033- | 50- |
| 96-98 | 276 | 123 | 45 | 403 | 146 | 280 | 102 |
| 97-99 | 2,692 | 4,388 | 163 | 855 | 32 | 3,533- | 131- |
| 98-00 | 4,628 | 8,518 | 184 | 893 | 19 | 7,625- | 165- |
| 99-01 | 4,628 | 8,518 | 184 | 893 | 19 | 7,625- | 165- |
| 00-02 | 2,164 | 4,156 | 192 | 433 | 20 | 3,723- | 172- |
| 01-03 | | | | | | | |
| 02-04 | | | | | | | |
| 03-05 | | | | | | | |
| 04-06 | | | | | | | |
| 05-07 | | | | | | | |
| 06-08 | 34 | 96 | 281 | 18 | 53 | 78- | 229- |
| 07-09 | 350 | 225 | 64 | 340 | 97 | 114 | 33 |
| 08-10 | 350 | 3,015 | 862 | 340 | 97 | 2,675- | 765- |
| 09-11 | 330 | 3,155 | 955 | 322 | 97 | 2,834- | 858- |
| 10-12 | 687 | 4,848 | 706 | 88 | 13 | 4,760- | 693- |
| 11-13 | 1,545 | 2,240 | 145 | 92 | 6 | 2,147- | 139- |
| 12-14 | 1,782 | 2,126 | 119 | 92 | 5 | 2,033- | 114- |
| 13-15 | 1,110 | 303 | 27 | 4 | 0 | 299- | 27- |
| 14-16 | 252 | 123 | 49 | | 0 | 123- | 49- |
| 15-17 | | | | | | | |
| 16-18 | 2,304 | 2,585 | 112 | 24 | 1 | 2,561- | 111- |
| FIVE-YEAR AVERAGE | | | | | | | |
| 14-18 | 1,534 | 1,625 | 106 | 14 | 1 | 1,610- | 105- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 356.00 OVERHEAD CONDUCTORS AND DEVICES

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| 1981 | 476 | 681 | 143 | 112 | 24 | 569- | 120- |
| 1982 | | | | | | | |
| 1983 | | | | | | | |
| 1984 | 270 | 225 | 83 | 24 | 9 | 201- | 74- |
| 1985 | 1,979 | 1,610 | 81 | 32 | 2 | 1,578- | 80- |
| 1986 | | | | | | | |
| 1987 | | | | | | | |
| 1988 | | | | | | | |
| 1989 | | | | | | | |
| 1990 | | | | | | | |
| 1991 | 512 | 1,383 | 270 | | 0 | 1,383- | 270- |
| 1992 | 5,777 | 8,018 | 139 | | 0 | 8,018- | 139- |
| 1993 | | | | | | | |
| 1994 | 16 | 36 | 225 | 2 | 12 | 34- | 212- |
| 1995 | 1,269 | 904 | 71 | 127 | 10 | 777- | 61- |
| 1996 | 138 | 138 | 100 | 26 | 19 | 112- | 81- |
| 1997 | 2,085 | 3,587 | 172 | 234 | 11 | 3,353- | 161- |
| 1998 | | | | | | | |
| 1999 | 4 | 7 | 175 | 1 | 25 | 6- | 150- |
| 2000 | | | | | | | |
| 2001 | 16 | 29 | 181 | 4 | 25 | 25- | 156- |
| 2002 | | | | | | | |
| 2003 | | | | | | | |
| 2004 | 2,328 | 3,750 | 161 | 102 | 4 | 3,648- | 157- |
| 2005 | 569 | 630 | 111 | 38 | 7 | 592- | 104- |
| 2006 | 569 | 424 | 74 | 36 | 6 | 388- | 68- |
| 2007 | 284 | 202 | 71 | 22 | 8 | 179- | 63- |
| 2008 | 284 | 1,765 | 620 | | 0 | 1,765- | 620- |
| 2009 | 2,276 | 931 | 41 | 2,321 | 102 | 1,390 | 61 |
| 2010 | 293 | 528 | 180 | | 0 | 528- | 180- |
| 2011 | | | | | | | |
| 2012 | 2,893 | 4,805 | 166 | 232 | 8 | 4,573- | 158- |
| 2013 | 90,330 | 48,122 | 53 | 42 | 0 | 48,081- | 53- |
| 2014 | 118,842 | 69,268 | 58 | | 0 | 69,268- | 58- |
| 2015 | | | | | | | |
| 2016 | | | | | | | |
| 2017 | | | | | | | |
| 2018 | 7,603 | 9,617 | 126 | 385 | 5 | 9,233- | 121- |
| TOTAL | 238,814 | 156,659 | 66 | 3,740 | 2 | 152,919- | 64- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 356.00 OVERHEAD CONDUCTORS AND DEVICES

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| THREE-YEAR MOVING AVERAGES | | | | | | | |
| 81-83 | 159 | 227 | 143 | 37 | 24 | 190- | 120- |
| 82-84 | 90 | 75 | 83 | 8 | 9 | 67- | 74- |
| 83-85 | 750 | 612 | 82 | 19 | 2 | 593- | 79- |
| 84-86 | 750 | 612 | 82 | 19 | 2 | 593- | 79- |
| 85-87 | 660 | 537 | 81 | 11 | 2 | 526- | 80- |
| 86-88 | | | | | | | |
| 87-89 | | | | | | | |
| 88-90 | | | | | | | |
| 89-91 | 171 | 461 | 270 | | 0 | 461- | 270- |
| 90-92 | 2,096 | 3,134 | 149 | | 0 | 3,134- | 149- |
| 91-93 | 2,096 | 3,134 | 149 | | 0 | 3,134- | 149- |
| 92-94 | 1,931 | 2,685 | 139 | 1 | 0 | 2,684- | 139- |
| 93-95 | 428 | 313 | 73 | 43 | 10 | 270- | 63- |
| 94-96 | 474 | 359 | 76 | 52 | 11 | 308- | 65- |
| 95-97 | 1,164 | 1,543 | 133 | 129 | 11 | 1,414- | 121- |
| 96-98 | 741 | 1,242 | 168 | 87 | 12 | 1,155- | 156- |
| 97-99 | 696 | 1,198 | 172 | 78 | 11 | 1,120- | 161- |
| 98-00 | 1 | 2 | 175 | | 25 | 2- | 150- |
| 99-01 | 7 | 12 | 180 | 2 | 25 | 10- | 155- |
| 00-02 | 5 | 10 | 181 | 1 | 25 | 8- | 156- |
| 01-03 | 5 | 10 | 181 | 1 | 25 | 8- | 156- |
| 02-04 | 776 | 1,250 | 161 | 34 | 4 | 1,216- | 157- |
| 03-05 | 966 | 1,460 | 151 | 47 | 5 | 1,413- | 146- |
| 04-06 | 1,155 | 1,601 | 139 | 59 | 5 | 1,543- | 134- |
| 05-07 | 474 | 419 | 88 | 32 | 7 | 386- | 81- |
| 06-08 | 379 | 797 | 210 | 19 | 5 | 777- | 205- |
| 07-09 | 948 | 966 | 102 | 781 | 82 | 185- | 19- |
| 08-10 | 951 | 1,074 | 113 | 774 | 81 | 301- | 32- |
| 09-11 | 856 | 486 | 57 | 774 | 90 | 287 | 34 |
| 10-12 | 1,062 | 1,778 | 167 | 77 | 7 | 1,700- | 160- |
| 11-13 | 31,074 | 17,642 | 57 | 91 | 0 | 17,551- | 56- |
| 12-14 | 70,688 | 40,732 | 58 | 91 | 0 | 40,641- | 57- |
| 13-15 | 69,724 | 39,130 | 56 | 14 | 0 | 39,116- | 56- |
| 14-16 | 39,614 | 23,089 | 58 | | 0 | 23,089- | 58- |
| 15-17 | | | | | | | |
| 16-18 | 2,534 | 3,206 | 126 | 128 | 5 | 3,078- | 121- |
| FIVE-YEAR AVERAGE | | | | | | | |
| 14-18 | 25,289 | 15,777 | 62 | 77 | 0 | 15,700- | 62- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 361.00 STRUCTURES AND IMPROVEMENTS

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| 1981 | 808,631 | | 0 | | 0 | | 0 |
| 1982 | | | | | | | |
| 1983 | 3,383 | | 0 | 187 | 6 | 187 | 6 |
| 1984 | | | | | | | |
| 1985 | | | | | | | |
| 1986 | | | | | | | |
| 1987 | | | | | | | |
| 1988 | | | | | | | |
| 1989 | | | | | | | |
| 1990 | | | | | | | |
| 1991 | 386 | 1,234 | 320 | | 0 | 1,234- | 320- |
| 1992 | | | | | | | |
| 1993 | | | | | | | |
| 1994 | | | | | | | |
| 1995 | 4,930 | 3,513 | 71 | 494 | 10 | 3,019- | 61- |
| 1996 | | | | | | | |
| 1997 | 5,271 | 9,024 | 171 | 591 | 11 | 8,433- | 160- |
| 1998 | | | | | | | |
| 1999 | | 9,758 | | 1,030 | | 8,728- | |
| 2000 | | | | | | | |
| 2001 | | | | | | | |
| 2002 | 2,140 | 1,181 | 55 | 153 | 7 | 1,027- | 48- |
| 2003 | 801 | 1,205 | 150 | 72 | 9 | 1,133- | 141- |
| 2004 | | | | | | | |
| 2005 | 872 | 966 | 111 | 59 | 7 | 907- | 104- |
| 2006 | | | | | | | |
| 2007 | | | | | | | |
| 2008 | | | | | | | |
| 2009 | 83,775 | 406,947 | 486 | | 0 | 406,947- | 486- |
| 2010 | | | | | | | |
| 2011 | | | | | | | |
| 2012 | | | | | | | |
| 2013 | | | | | | | |
| 2014 | | | | | | | |
| 2015 | | | | | | | |
| 2016 | | | | | | | |
| 2017 | | | | | | | |
| 2018 | | | | | | | |
| TOTAL | 910,189 | 433,827 | 48 | 2,586 | 0 | 431,242- | 47- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 361.00 STRUCTURES AND IMPROVEMENTS

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| THREE-YEAR MOVING AVERAGES | | | | | | | |
| 81-83 | 270,671 | | 0 | 62 | 0 | 62 | 0 |
| 82-84 | 1,128 | | 0 | 62 | 6 | 62 | 6 |
| 83-85 | 1,128 | | 0 | 62 | 6 | 62 | 6 |
| 84-86 | | | | | | | |
| 85-87 | | | | | | | |
| 86-88 | | | | | | | |
| 87-89 | | | | | | | |
| 88-90 | | | | | | | |
| 89-91 | 129 | 411 | 320 | | 0 | 411- | 320- |
| 90-92 | 129 | 411 | 320 | | 0 | 411- | 320- |
| 91-93 | 129 | 411 | 320 | | 0 | 411- | 320- |
| 92-94 | | | | | | | |
| 93-95 | 1,643 | 1,171 | 71 | 165 | 10 | 1,006- | 61- |
| 94-96 | 1,643 | 1,171 | 71 | 165 | 10 | 1,006- | 61- |
| 95-97 | 3,400 | 4,179 | 123 | 362 | 11 | 3,817- | 112- |
| 96-98 | 1,757 | 3,008 | 171 | 197 | 11 | 2,811- | 160- |
| 97-99 | 1,757 | 6,261 | 356 | 540 | 31 | 5,720- | 326- |
| 98-00 | | 3,253 | | 343 | | 2,909- | |
| 99-01 | | 3,253 | | 343 | | 2,909- | |
| 00-02 | 713 | 394 | 55 | 51 | 7 | 342- | 48- |
| 01-03 | 980 | 795 | 81 | 75 | 8 | 720- | 73- |
| 02-04 | 980 | 795 | 81 | 75 | 8 | 720- | 73- |
| 03-05 | 558 | 724 | 130 | 43 | 8 | 680- | 122- |
| 04-06 | 291 | 322 | 111 | 20 | 7 | 302- | 104- |
| 05-07 | 291 | 322 | 111 | 20 | 7 | 302- | 104- |
| 06-08 | | | | | | | |
| 07-09 | 27,925 | 135,649 | 486 | | 0 | 135,649- | 486- |
| 08-10 | 27,925 | 135,649 | 486 | | 0 | 135,649- | 486- |
| 09-11 | 27,925 | 135,649 | 486 | | 0 | 135,649- | 486- |
| 10-12 | | | | | | | |
| 11-13 | | | | | | | |
| 12-14 | | | | | | | |
| 13-15 | | | | | | | |
| 14-16 | | | | | | | |
| 15-17 | | | | | | | |
| 16-18 | | | | | | | |
| FIVE-YEAR AVERAGE | | | | | | | |
| 14-18 | | | | | | | |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 362.00 STATION EQUIPMENT

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| 1981 | 4,817 | 142 | 3 | | 0 | 142- | 3- |
| 1982 | 150 | 59 | 39 | | 0 | 59- | 39- |
| 1983 | 7,614 | | 0 | | 0 | | 0 |
| 1984 | 55,319 | 640 | 1 | | 0 | 640- | 1- |
| 1985 | 4,544 | 214 | 5 | 54 | 1 | 160- | 4- |
| 1986 | | | | | | | |
| 1987 | | | | | | | |
| 1988 | | | | | | | |
| 1989 | | | | | | | |
| 1990 | | | | | | | |
| 1991 | 7,759 | 6,230 | 80 | | 0 | 6,230- | 80- |
| 1992 | 17,492 | 6,303 | 36 | | 0 | 6,303- | 36- |
| 1993 | 49,327 | 38,879 | 79 | 5,164 | 10 | 33,715- | 68- |
| 1994 | 37 | 82 | 222 | 5 | 14 | 77- | 208- |
| 1995 | 105,082 | 74,662 | 71 | 10,538 | 10 | 64,124- | 61- |
| 1996 | | | | | | | |
| 1997 | 2,310 | 3,978 | 172 | 259 | 11 | 3,719- | 161- |
| 1998 | 85,296 | 122,898 | 144 | 14,265 | 17 | 108,633- | 127- |
| 1999 | 11,866 | 21,013 | 177 | 2,217 | 19 | 18,796- | 158- |
| 2000 | 9,396 | 18,042 | 192 | 1,878 | 20 | 16,164- | 172- |
| 2001 | 2,260 | 4,076 | 180 | 512 | 23 | 3,564- | 158- |
| 2002 | 594,150 | 327,774 | 55 | 42,583 | 7 | 285,191- | 48- |
| 2003 | 12,054 | 18,131 | 150 | 1,078 | 9 | 17,054- | 141- |
| 2004 | 554,407 | 639,134 | 115 | 24,268 | 4 | 614,866- | 111- |
| 2005 | 8,725 | 9,663 | 111 | 586 | 7 | 9,076- | 104- |
| 2006 | 7,873 | 5,865 | 74 | 500 | 6 | 5,365- | 68- |
| 2007 | 44,285 | 31,384 | 71 | 3,451 | 8 | 27,933- | 63- |
| 2008 | 22,230 | 1,644 | 7 | | 0 | 1,644- | 7- |
| 2009 | | 246 | | | | 246- | |
| 2010 | 6,379 | | 0 | | 0 | | 0 |
| 2011 | 43,108 | 5,336 | 12 | | 0 | 5,336- | 12- |
| 2012 | 197,969 | 367,215 | 185 | 1,372 | 1 | 365,843- | 185- |
| 2013 | 21,655 | 16,595 | 77 | | 0 | 16,595- | 77- |
| 2014 | 2,458 | 19,437 | 791 | 2,016 | 82 | 17,421- | 709- |
| 2015 | 14,877 | 45,747 | 307 | | 0 | 45,747- | 307- |
| 2016 | 39,635 | 17,285 | 44 | | 0 | 17,285- | 44- |
| 2017 | 53,361 | 37,029 | 69 | | 0 | 37,029- | 69- |
| 2018 | 126,205 | 138,860 | 110 | | 0 | 138,860- | 110- |
| TOTAL | 2,112,640 | 1,978,564 | 94 | 110,746 | 5 | 1,867,818- | 88- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 362.00 STATION EQUIPMENT

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| THREE-YEAR MOVING AVERAGES | | | | | | | |
| 81-83 | 4,194 | 67 | 2 | | 0 | 67- | 2- |
| 82-84 | 21,028 | 233 | 1 | | 0 | 233- | 1- |
| 83-85 | 22,492 | 285 | 1 | 18 | 0 | 267- | 1- |
| 84-86 | 19,954 | 285 | 1 | 18 | 0 | 267- | 1- |
| 85-87 | 1,515 | 71 | 5 | 18 | 1 | 53- | 4- |
| 86-88 | | | | | | | |
| 87-89 | | | | | | | |
| 88-90 | | | | | | | |
| 89-91 | 2,586 | 2,077 | 80 | | 0 | 2,077- | 80- |
| 90-92 | 8,417 | 4,178 | 50 | | 0 | 4,178- | 50- |
| 91-93 | 24,859 | 17,137 | 69 | 1,721 | 7 | 15,416- | 62- |
| 92-94 | 22,285 | 15,088 | 68 | 1,723 | 8 | 13,365- | 60- |
| 93-95 | 51,482 | 37,874 | 74 | 5,236 | 10 | 32,639- | 63- |
| 94-96 | 35,040 | 24,915 | 71 | 3,514 | 10 | 21,400- | 61- |
| 95-97 | 35,797 | 26,213 | 73 | 3,599 | 10 | 22,614- | 63- |
| 96-98 | 29,202 | 42,292 | 145 | 4,841 | 17 | 37,451- | 128- |
| 97-99 | 33,157 | 49,296 | 149 | 5,580 | 17 | 43,716- | 132- |
| 98-00 | 35,519 | 53,984 | 152 | 6,120 | 17 | 47,864- | 135- |
| 99-01 | 7,841 | 14,377 | 183 | 1,536 | 20 | 12,841- | 164- |
| 00-02 | 201,935 | 116,631 | 58 | 14,991 | 7 | 101,640- | 50- |
| 01-03 | 202,821 | 116,660 | 58 | 14,724 | 7 | 101,936- | 50- |
| 02-04 | 386,870 | 328,346 | 85 | 22,643 | 6 | 305,703- | 79- |
| 03-05 | 191,728 | 222,309 | 116 | 8,644 | 5 | 213,665- | 111- |
| 04-06 | 190,335 | 218,221 | 115 | 8,452 | 4 | 209,769- | 110- |
| 05-07 | 20,294 | 15,637 | 77 | 1,512 | 7 | 14,125- | 70- |
| 06-08 | 24,796 | 12,964 | 52 | 1,317 | 5 | 11,648- | 47- |
| 07-09 | 22,172 | 11,091 | 50 | 1,150 | 5 | 9,941- | 45- |
| 08-10 | 9,536 | 630 | 7 | | 0 | 630- | 7- |
| 09-11 | 16,496 | 1,861 | 11 | | 0 | 1,861- | 11- |
| 10-12 | 82,485 | 124,184 | 151 | 457 | 1 | 123,727- | 150- |
| 11-13 | 87,577 | 129,716 | 148 | 457 | 1 | 129,258- | 148- |
| 12-14 | 74,027 | 134,416 | 182 | 1,129 | 2 | 133,286- | 180- |
| 13-15 | 12,997 | 27,260 | 210 | 672 | 5 | 26,588- | 205- |
| 14-16 | 18,990 | 27,490 | 145 | 672 | 4 | 26,818- | 141- |
| 15-17 | 35,958 | 33,354 | 93 | | 0 | 33,354- | 93- |
| 16-18 | 73,067 | 64,391 | 88 | | 0 | 64,391- | 88- |
| FIVE-YEAR AVERAGE | | | | | | | |
| 14-18 | 47,307 | 51,672 | 109 | 403 | 1 | 51,268- | 108- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 364.00 POLES, TOWERS AND FIXTURES

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| 1981 | 14,138 | 15,438 | 109 | 4,933 | 35 | 10,505- | 74- |
| 1982 | 8,583 | 10,069 | 117 | 3,160 | 37 | 6,909- | 80- |
| 1983 | 15,909 | 11,574 | 73 | 3,204 | 20 | 8,370- | 53- |
| 1984 | 12,793 | 11,996 | 94 | 2,520 | 20 | 9,476- | 74- |
| 1985 | 14,901 | 14,653 | 98 | 5,101 | 34 | 9,552- | 64- |
| 1986 | 7,135 | 7,131 | 100 | 3,346 | 47 | 3,785- | 53- |
| 1987 | 8,297 | 5,746 | 69 | 702 | 8 | 5,044- | 61- |
| 1988 | 20,604 | 11,705 | 57 | 5,588 | 27 | 6,117- | 30- |
| 1989 | 8,217 | 17,710 | 216 | 245 | 3 | 17,465- | 213- |
| 1990 | 19,612 | 20,570 | 105 | | 0 | 20,570- | 105- |
| 1991 | 22,612 | 35,536 | 157 | 3,506 | 16 | 32,030- | 142- |
| 1992 | 16,725 | 36,695 | 219 | 1,338 | 8 | 35,357- | 211- |
| 1993 | 28,197 | 22,224 | 79 | 2,952 | 10 | 19,272- | 68- |
| 1994 | 20,054 | 44,493 | 222 | 2,855 | 14 | 41,638- | 208- |
| 1995 | 35,398 | 25,225 | 71 | 3,550 | 10 | 21,675- | 61- |
| 1996 | 51,726 | 108,078 | 209 | 9,617 | 19 | 98,461- | 190- |
| 1997 | 57,773 | 99,457 | 172 | 6,477 | 11 | 92,980- | 161- |
| 1998 | 57,803 | 83,285 | 144 | 9,667 | 17 | 73,618- | 127- |
| 1999 | 47,576 | 84,248 | 177 | 8,890 | 19 | 75,358- | 158- |
| 2000 | 36,176 | 69,467 | 192 | 7,233 | 20 | 62,234- | 172- |
| 2001 | 51,082 | 92,117 | 180 | 11,580 | 23 | 80,537- | 158- |
| 2002 | 48,230 | 26,607 | 55 | 3,457 | 7 | 23,150- | 48- |
| 2003 | 53,746 | 80,845 | 150 | 4,805 | 9 | 76,040- | 141- |
| 2004 | 68,048 | 109,594 | 161 | 2,979 | 4 | 106,615- | 157- |
| 2005 | 77,022 | 85,304 | 111 | 5,177 | 7 | 80,127- | 104- |
| 2006 | 36,486 | 27,179 | 74 | 2,318 | 6 | 24,861- | 68- |
| 2007 | 75,021 | 53,165 | 71 | 5,845 | 8 | 47,320- | 63- |
| 2008 | 40,151 | 82,081 | 204 | 3,827 | 10 | 78,254- | 195- |
| 2009 | 155,373 | 105,651 | 68 | 157,270 | 101 | 51,619 | 33 |
| 2010 | 49,853 | 57,771 | 116 | 107- | 0 | 57,878- | 116- |
| 2011 | 129,172 | 101,783 | 79 | 5,152 | 4 | 96,632- | 75- |
| 2012 | 82,959 | 110,128 | 133 | 4,127 | 5 | 106,001- | 128- |
| 2013 | 62,014 | 110,194 | 178 | 16,475 | 27 | 93,720- | 151- |
| 2014 | 209,693 | 193,331 | 92 | 3,783 | 2 | 189,548- | 90- |
| 2015 | 91,867 | 53,018 | 58 | 712 | 1 | 52,307- | 57- |
| 2016 | 82,490 | 154,240 | 187 | 999 | 1 | 153,241- | 186- |
| 2017 | 52,612 | 141,795 | 270 | 1,037 | 2 | 140,758- | 268- |
| 2018 | 300,725 | 217,428 | 72 | 2,529 | 1 | 214,899- | 71- |
| TOTAL | 2,170,772 | 2,537,532 | 117 | 316,848 | 15 | 2,220,685- | 102- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 364.00 POLES, TOWERS AND FIXTURES

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| THREE-YEAR MOVING AVERAGES | | | | | | | |
| 81-83 | 12,877 | 12,360 | 96 | 3,766 | 29 | 8,595- | 67- |
| 82-84 | 12,428 | 11,213 | 90 | 2,961 | 24 | 8,252- | 66- |
| 83-85 | 14,534 | 12,741 | 88 | 3,608 | 25 | 9,133- | 63- |
| 84-86 | 11,610 | 11,260 | 97 | 3,656 | 31 | 7,604- | 66- |
| 85-87 | 10,111 | 9,177 | 91 | 3,050 | 30 | 6,127- | 61- |
| 86-88 | 12,012 | 8,194 | 68 | 3,212 | 27 | 4,982- | 41- |
| 87-89 | 12,373 | 11,720 | 95 | 2,178 | 18 | 9,542- | 77- |
| 88-90 | 16,144 | 16,662 | 103 | 1,944 | 12 | 14,717- | 91- |
| 89-91 | 16,814 | 24,605 | 146 | 1,250 | 7 | 23,355- | 139- |
| 90-92 | 19,650 | 30,934 | 157 | 1,615 | 8 | 29,319- | 149- |
| 91-93 | 22,511 | 31,485 | 140 | 2,599 | 12 | 28,886- | 128- |
| 92-94 | 21,659 | 34,471 | 159 | 2,382 | 11 | 32,089- | 148- |
| 93-95 | 27,883 | 30,647 | 110 | 3,119 | 11 | 27,528- | 99- |
| 94-96 | 35,726 | 59,265 | 166 | 5,341 | 15 | 53,925- | 151- |
| 95-97 | 48,299 | 77,587 | 161 | 6,548 | 14 | 71,039- | 147- |
| 96-98 | 55,767 | 96,940 | 174 | 8,587 | 15 | 88,353- | 158- |
| 97-99 | 54,384 | 88,997 | 164 | 8,345 | 15 | 80,652- | 148- |
| 98-00 | 47,185 | 79,000 | 167 | 8,597 | 18 | 70,403- | 149- |
| 99-01 | 44,945 | 81,944 | 182 | 9,234 | 21 | 72,710- | 162- |
| 00-02 | 45,163 | 62,730 | 139 | 7,423 | 16 | 55,307- | 122- |
| 01-03 | 51,019 | 66,523 | 130 | 6,614 | 13 | 59,909- | 117- |
| 02-04 | 56,674 | 72,348 | 128 | 3,747 | 7 | 68,602- | 121- |
| 03-05 | 66,272 | 91,914 | 139 | 4,320 | 7 | 87,594- | 132- |
| 04-06 | 60,518 | 74,026 | 122 | 3,491 | 6 | 70,534- | 117- |
| 05-07 | 62,843 | 55,216 | 88 | 4,447 | 7 | 50,769- | 81- |
| 06-08 | 50,552 | 54,142 | 107 | 3,997 | 8 | 50,145- | 99- |
| 07-09 | 90,182 | 80,299 | 89 | 55,647 | 62 | 24,652- | 27- |
| 08-10 | 81,792 | 81,834 | 100 | 53,663 | 66 | 28,171- | 34- |
| 09-11 | 111,466 | 88,402 | 79 | 54,105 | 49 | 34,297- | 31- |
| 10-12 | 87,328 | 89,894 | 103 | 3,057 | 4 | 86,837- | 99- |
| 11-13 | 91,381 | 107,369 | 117 | 8,584 | 9 | 98,784- | 108- |
| 12-14 | 118,222 | 137,884 | 117 | 8,128 | 7 | 129,756- | 110- |
| 13-15 | 121,191 | 118,848 | 98 | 6,990 | 6 | 111,858- | 92- |
| 14-16 | 128,017 | 133,530 | 104 | 1,831 | 1 | 131,698- | 103- |
| 15-17 | 75,656 | 116,351 | 154 | 916 | 1 | 115,435- | 153- |
| 16-18 | 145,276 | 171,154 | 118 | 1,521 | 1 | 169,633- | 117- |
| FIVE-YEAR AVERAGE | | | | | | | |
| 14-18 | 147,478 | 151,963 | 103 | 1,812 | 1 | 150,151- | 102- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 365.00 OVERHEAD CONDUCTORS AND DEVICES

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| 1981 | 7,688 | 11,055 | 144 | 1,823 | 24 | 9,232- | 120- |
| 1982 | 20,090 | 5,006 | 25 | 1,675 | 8 | 3,331- | 17- |
| 1983 | 6,247 | 7,310 | 117 | 1,176 | 19 | 6,134- | 98- |
| 1984 | 22,798 | 18,524 | 81 | 1,995 | 9 | 16,529- | 73- |
| 1985 | 15,796 | 12,895 | 82 | 259 | 2 | 12,636- | 80- |
| 1986 | 10,118 | 9,163 | 91 | | 0 | 9,163- | 91- |
| 1987 | 4,576 | 3,061 | 67 | | 0 | 3,061- | 67- |
| 1988 | 4,147 | 1,721 | 41 | | 0 | 1,721- | 41- |
| 1989 | 52,667 | 2,732 | 5 | | 0 | 2,732- | 5- |
| 1990 | 25,625 | 13,189 | 51 | | 0 | 13,189- | 51- |
| 1991 | 17,181 | 44,026 | 256 | | 0 | 44,026- | 256- |
| 1992 | 11,795 | 5,453 | 46 | | 0 | 5,453- | 46- |
| 1993 | 34,919 | 27,523 | 79 | 3,655 | 10 | 23,868- | 68- |
| 1994 | 52,097 | 115,555 | 222 | 7,415 | 14 | 108,140- | 208- |
| 1995 | 27,962 | 19,926 | 71 | 2,804 | 10 | 17,122- | 61- |
| 1996 | 56,785 | 118,648 | 209 | 10,557 | 19 | 108,091- | 190- |
| 1997 | 97,857 | 168,464 | 172 | 10,970 | 11 | 157,494- | 161- |
| 1998 | 48,783 | 70,289 | 144 | 8,158 | 17 | 62,131- | 127- |
| 1999 | 49,500 | 87,655 | 177 | 9,249 | 19 | 78,406- | 158- |
| 2000 | 37,955 | 72,883 | 192 | 7,588 | 20 | 65,295- | 172- |
| 2001 | 48,084 | 86,711 | 180 | 10,901 | 23 | 75,810- | 158- |
| 2002 | 38,494 | 21,236 | 55 | 2,759 | 7 | 18,477- | 48- |
| 2003 | 41,069 | 61,776 | 150 | 3,672 | 9 | 58,104- | 141- |
| 2004 | 89,270 | 143,773 | 161 | 3,908 | 4 | 139,865- | 157- |
| 2005 | 204,285 | 226,251 | 111 | 13,732 | 7 | 212,519- | 104- |
| 2006 | 56,564 | 42,136 | 74 | 3,594 | 6 | 38,542- | 68- |
| 2007 | 211,272 | 149,723 | 71 | 16,461 | 8 | 133,262- | 63- |
| 2008 | 94,813 | 168,943 | 178 | 12,446 | 13 | 156,496- | 165- |
| 2009 | 203,813 | 236,553 | 116 | 99,058 | 49 | 137,495- | 67- |
| 2010 | 460,038 | 214,390 | 47 | 9,936 | 2 | 204,454- | 44- |
| 2011 | 167,664 | 106,241 | 63 | 9,552 | 6 | 96,688- | 58- |
| 2012 | 189,685 | 441,951 | 233 | 14,923 | 8 | 427,028- | 225- |
| 2013 | 427,559 | 379,081 | 89 | 15,717 | 4 | 363,364- | 85- |
| 2014 | 304,660 | 309,094 | 101 | 11,527 | 4 | 297,566- | 98- |
| 2015 | 255,575 | 271,426 | 106 | 5,502 | 2 | 265,923- | 104- |
| 2016 | 261,070 | 241,651 | 93 | 4,476 | 2 | 237,175- | 91- |
| 2017 | 143,925 | 329,767 | 229 | 3,371 | 2 | 326,397- | 227- |
| 2018 | 371,774 | 333,884 | 90 | 5,477 | 1 | 328,407- | 88- |
| TOTAL | 4,174,198 | 4,579,663 | 110 | 314,336 | 8 | 4,265,328- | 102- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 365.00 OVERHEAD CONDUCTORS AND DEVICES

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| THREE-YEAR MOVING AVERAGES | | | | | | | |
| 81-83 | 11,342 | 7,790 | 69 | 1,558 | 14 | 6,232- | 55- |
| 82-84 | 16,378 | 10,280 | 63 | 1,615 | 10 | 8,665- | 53- |
| 83-85 | 14,947 | 12,910 | 86 | 1,143 | 8 | 11,766- | 79- |
| 84-86 | 16,237 | 13,527 | 83 | 751 | 5 | 12,776- | 79- |
| 85-87 | 10,163 | 8,373 | 82 | 86 | 1 | 8,287- | 82- |
| 86-88 | 6,280 | 4,648 | 74 | | 0 | 4,648- | 74- |
| 87-89 | 20,463 | 2,505 | 12 | | 0 | 2,505- | 12- |
| 88-90 | 27,480 | 5,881 | 21 | | 0 | 5,881- | 21- |
| 89-91 | 31,824 | 19,982 | 63 | | 0 | 19,982- | 63- |
| 90-92 | 18,200 | 20,889 | 115 | | 0 | 20,889- | 115- |
| 91-93 | 21,298 | 25,667 | 121 | 1,218 | 6 | 24,449- | 115- |
| 92-94 | 32,937 | 49,510 | 150 | 3,690 | 11 | 45,820- | 139- |
| 93-95 | 38,326 | 54,335 | 142 | 4,625 | 12 | 49,710- | 130- |
| 94-96 | 45,615 | 84,710 | 186 | 6,925 | 15 | 77,784- | 171- |
| 95-97 | 60,868 | 102,346 | 168 | 8,110 | 13 | 94,236- | 155- |
| 96-98 | 67,808 | 119,134 | 176 | 9,895 | 15 | 109,239- | 161- |
| 97-99 | 65,380 | 108,803 | 166 | 9,459 | 14 | 99,344- | 152- |
| 98-00 | 45,413 | 76,942 | 169 | 8,332 | 18 | 68,611- | 151- |
| 99-01 | 45,180 | 82,416 | 182 | 9,246 | 20 | 73,170- | 162- |
| 00-02 | 41,511 | 60,277 | 145 | 7,083 | 17 | 53,194- | 128- |
| 01-03 | 42,549 | 56,574 | 133 | 5,777 | 14 | 50,797- | 119- |
| 02-04 | 56,278 | 75,595 | 134 | 3,446 | 6 | 72,149- | 128- |
| 03-05 | 111,541 | 143,933 | 129 | 7,104 | 6 | 136,829- | 123- |
| 04-06 | 116,706 | 137,387 | 118 | 7,078 | 6 | 130,309- | 112- |
| 05-07 | 157,373 | 139,370 | 89 | 11,262 | 7 | 128,108- | 81- |
| 06-08 | 120,883 | 120,267 | 99 | 10,834 | 9 | 109,433- | 91- |
| 07-09 | 169,966 | 185,073 | 109 | 42,655 | 25 | 142,418- | 84- |
| 08-10 | 252,888 | 206,628 | 82 | 40,480 | 16 | 166,148- | 66- |
| 09-11 | 277,172 | 185,728 | 67 | 39,515 | 14 | 146,213- | 53- |
| 10-12 | 272,462 | 254,194 | 93 | 11,470 | 4 | 242,724- | 89- |
| 11-13 | 261,636 | 309,091 | 118 | 13,397 | 5 | 295,694- | 113- |
| 12-14 | 307,301 | 376,709 | 123 | 14,056 | 5 | 362,653- | 118- |
| 13-15 | 329,265 | 319,867 | 97 | 10,916 | 3 | 308,951- | 94- |
| 14-16 | 273,768 | 274,057 | 100 | 7,169 | 3 | 266,888- | 97- |
| 15-17 | 220,190 | 280,948 | 128 | 4,450 | 2 | 276,498- | 126- |
| 16-18 | 258,923 | 301,767 | 117 | 4,441 | 2 | 297,326- | 115- |
| FIVE-YEAR AVERAGE | | | | | | | |
| 14-18 | 267,401 | 297,164 | 111 | 6,071 | 2 | 291,094- | 109- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 366.00 UNDERGROUND CONDUIT

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| 1983 | 2,168 | 537 | 25 | | 0 | 537- | 25- |
| 1984 | 75 | 20 | 27 | | 0 | 20- | 27- |
| 1985 | | | | | | | |
| 1986 | | | | | | | |
| 1987 | | | | | | | |
| 1988 | | | | | | | |
| 1989 | | | | | | | |
| 1990 | | | | | | | |
| 1991 | | | | | | | |
| 1992 | | | | | | | |
| 1993 | 2,187 | 1,724 | 79 | 229 | 10 | 1,495- | 68- |
| 1994 | 2,594 | 5,755 | 222 | 369 | 14 | 5,386- | 208- |
| 1995 | 3,211 | 2,288 | 71 | 322 | 10 | 1,966- | 61- |
| 1996 | 1,006 | 2,103 | 209 | 187 | 19 | 1,916- | 190- |
| 1997 | | | | | | | |
| 1998 | 441 | 635 | 144 | 74 | 17 | 561- | 127- |
| 1999 | 5,732 | 10,150 | 177 | 1,071 | 19 | 9,079- | 158- |
| 2000 | | | | | | | |
| 2001 | 4 | 7 | 175 | 1 | 25 | 6- | 150- |
| 2002 | 35,613 | 19,647 | 55 | 2,552 | 7 | 17,094- | 48- |
| 2003 | | | | | | | |
| 2004 | 701 | 1,129 | 161 | 31 | 4 | 1,099- | 157- |
| 2005 | 14 | 16 | 111 | 1 | 7 | 15- | 104- |
| 2006 | 65 | 49 | 74 | 4 | 6 | 45- | 68- |
| 2007 | 383 | 272 | 71 | 30 | 8 | 242- | 63- |
| 2008 | 2,391 | 1,679 | 70 | 217 | 9 | 1,461- | 61- |
| 2009 | 78 | 122 | 156 | 1 | 1 | 121- | 155- |
| 2010 | 67 | 173 | 258 | 1 | 2 | 172- | 256- |
| 2011 | 5,162 | 36,941 | 716 | | 0 | 36,941- | 716- |
| 2012 | 10,217 | 24,638 | 241 | 173 | 2 | 24,465- | 239- |
| 2013 | 3,001 | 25,564 | 852 | 55 | 2 | 25,509- | 850- |
| 2014 | 2,206 | 10,090 | 457 | 108 | 5 | 9,982- | 452- |
| 2015 | 8,418 | 4,261 | 51 | 8 | 0 | 4,252- | 51- |
| 2016 | 7,285 | 15,578 | 214 | 2,027 | 28 | 13,551- | 186- |
| 2017 | 3,526 | 8,515 | 241 | 45 | 1 | 8,470- | 240- |
| 2018 | 8,450 | 5,581 | 66 | 1 | 0 | 5,580- | 66- |
| TOTAL | 104,998 | 177,473 | 169 | 7,508 | 7 | 169,965- | 162- |
| THREE-YEAR MOVING AVERAGES | | | | | | | |
| 83-85 | 748 | 186 | 25 | | 0 | 186- | 25- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 366.00 UNDERGROUND CONDUIT

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| THREE-YEAR MOVING AVERAGES | | | | | | | |
| 84-86 | 25 | 7 | 27 | | 0 | 7- | 27- |
| 85-87 | | | | | | | |
| 86-88 | | | | | | | |
| 87-89 | | | | | | | |
| 88-90 | | | | | | | |
| 89-91 | | | | | | | |
| 90-92 | | | | | | | |
| 91-93 | 729 | 575 | 79 | 76 | 10 | 498- | 68- |
| 92-94 | 1,594 | 2,493 | 156 | 199 | 13 | 2,294- | 144- |
| 93-95 | 2,664 | 3,256 | 122 | 307 | 12 | 2,949- | 111- |
| 94-96 | 2,270 | 3,382 | 149 | 293 | 13 | 3,089- | 136- |
| 95-97 | 1,406 | 1,464 | 104 | 170 | 12 | 1,294- | 92- |
| 96-98 | 482 | 913 | 189 | 87 | 18 | 826- | 171- |
| 97-99 | 2,058 | 3,595 | 175 | 382 | 19 | 3,213- | 156- |
| 98-00 | 2,058 | 3,595 | 175 | 382 | 19 | 3,213- | 156- |
| 99-01 | 1,912 | 3,386 | 177 | 357 | 19 | 3,028- | 158- |
| 00-02 | 11,872 | 6,551 | 55 | 851 | 7 | 5,700- | 48- |
| 01-03 | 11,872 | 6,551 | 55 | 851 | 7 | 5,700- | 48- |
| 02-04 | 12,105 | 6,925 | 57 | 861 | 7 | 6,064- | 50- |
| 03-05 | 238 | 382 | 160 | 11 | 4 | 371- | 156- |
| 04-06 | 260 | 398 | 153 | 12 | 5 | 386- | 148- |
| 05-07 | 154 | 112 | 73 | 12 | 8 | 100- | 65- |
| 06-08 | 947 | 666 | 70 | 84 | 9 | 583- | 62- |
| 07-09 | 951 | 691 | 73 | 83 | 9 | 608- | 64- |
| 08-10 | 845 | 658 | 78 | 73 | 9 | 585- | 69- |
| 09-11 | 1,769 | 12,412 | 702 | 1 | 0 | 12,411- | 702- |
| 10-12 | 5,149 | 20,584 | 400 | 58 | 1 | 20,526- | 399- |
| 11-13 | 6,127 | 29,048 | 474 | 76 | 1 | 28,972- | 473- |
| 12-14 | 5,142 | 20,097 | 391 | 112 | 2 | 19,986- | 389- |
| 13-15 | 4,542 | 13,305 | 293 | 57 | 1 | 13,248- | 292- |
| 14-16 | 5,970 | 9,976 | 167 | 715 | 12 | 9,262- | 155- |
| 15-17 | 6,410 | 9,451 | 147 | 694 | 11 | 8,758- | 137- |
| 16-18 | 6,420 | 9,891 | 154 | 691 | 11 | 9,200- | 143- |
| FIVE-YEAR AVERAGE | | | | | | | |
| 14-18 | 5,977 | 8,805 | 147 | 438 | 7 | 8,367- | 140- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 367.00 UNDERGROUND CONDUCTORS AND DEVICES

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| 1983 | 1,573 | 1,177 | 75 | | 0 | 1,177- | 75- |
| 1984 | 7,406 | 8,487 | 115 | | 0 | 8,487- | 115- |
| 1985 | 1,606 | 5,650 | 352 | | 0 | 5,650- | 352- |
| 1986 | 372 | 1,547 | 416 | | 0 | 1,547- | 416- |
| 1987 | 1,950 | 2,471 | 127 | | 0 | 2,471- | 127- |
| 1988 | 9,542 | 13,508 | 142 | | 0 | 13,508- | 142- |
| 1989 | 6,070 | 102 | 2 | | 0 | 102- | 2- |
| 1990 | 2,309 | 2,998 | 130 | | 0 | 2,998- | 130- |
| 1991 | 13,005 | 11,903 | 92 | | 0 | 11,903- | 92- |
| 1992 | 13,486 | 10,759 | 80 | 3,177 | 24 | 7,582- | 56- |
| 1993 | 619 | 488 | 79 | 65 | 11 | 423- | 68- |
| 1994 | | | | | | | |
| 1995 | 141 | 100 | 71 | 14 | 10 | 86- | 61- |
| 1996 | 1,138 | 2,378 | 209 | 212 | 19 | 2,166- | 190- |
| 1997 | 41,803 | 71,446 | 171 | 4,653 | 11 | 66,793- | 160- |
| 1998 | 3,706 | 620 | 17 | 5,340 | 144 | 4,720 | 127 |
| 1999 | 3,289 | 5,823 | 177 | 614 | 19 | 5,209- | 158- |
| 2000 | 786 | 1,510 | 192 | 157 | 20 | 1,353- | 172- |
| 2001 | 1,426 | 2,571 | 180 | 323 | 23 | 2,248- | 158- |
| 2002 | 13,292 | 7,333 | 55 | 953 | 7 | 6,380- | 48- |
| 2003 | 10,530 | 15,839 | 150 | 941 | 9 | 14,898- | 141- |
| 2004 | 11,811 | 19,022 | 161 | 517 | 4 | 18,505- | 157- |
| 2005 | 5,772 | 6,393 | 111 | 388 | 7 | 6,005- | 104- |
| 2006 | 6,641 | 4,947 | 74 | 422 | 6 | 4,525- | 68- |
| 2007 | 11,805 | 8,366 | 71 | 920 | 8 | 7,446- | 63- |
| 2008 | 12,612 | 16,618 | 132 | 355 | 3 | 16,263- | 129- |
| 2009 | 11,366 | 12,627 | 111 | 5,514 | 49 | 7,113- | 63- |
| 2010 | 4,187 | 2,016 | 48 | 65 | 2 | 1,951- | 47- |
| 2011 | 7,435 | 19,207 | 258 | 476 | 6 | 18,731- | 252- |
| 2012 | 25,153 | 20,318 | 81 | 538 | 2 | 19,781- | 79- |
| 2013 | 13,159 | 18,196 | 138 | 931 | 7 | 17,266- | 131- |
| 2014 | 11,306 | 52,104 | 461 | 216 | 2 | 51,888- | 459- |
| 2015 | 42,492 | 33,133 | 78 | 1,559 | 4 | 31,574- | 74- |
| 2016 | 61,342 | 41,811 | 68 | 794 | 1 | 41,017- | 67- |
| 2017 | 34,306 | 35,995 | 105 | 51 | 0 | 35,943- | 105- |
| 2018 | 12,573 | 65,910 | 524 | 453 | 4 | 65,457- | 521- |
| TOTAL | 406,009 | 523,375 | 129 | 29,648 | 7 | 493,727- | 122- |
| THREE-YEAR MOVING AVERAGES | | | | | | | |
| 83-85 | 3,528 | 5,105 | 145 | | 0 | 5,105- | 145- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 367.00 UNDERGROUND CONDUCTORS AND DEVICES

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| THREE-YEAR MOVING AVERAGES | | | | | | | |
| 84-86 | 3,128 | 5,228 | 167 | | 0 | 5,228- | 167- |
| 85-87 | 1,309 | 3,223 | 246 | | 0 | 3,223- | 246- |
| 86-88 | 3,955 | 5,842 | 148 | | 0 | 5,842- | 148- |
| 87-89 | 5,854 | 5,360 | 92 | | 0 | 5,360- | 92- |
| 88-90 | 5,974 | 5,536 | 93 | | 0 | 5,536- | 93- |
| 89-91 | 7,128 | 5,001 | 70 | | 0 | 5,001- | 70- |
| 90-92 | 9,600 | 8,553 | 89 | 1,059 | 11 | 7,494- | 78- |
| 91-93 | 9,037 | 7,717 | 85 | 1,081 | 12 | 6,636- | 73- |
| 92-94 | 4,702 | 3,749 | 80 | 1,081 | 23 | 2,668- | 57- |
| 93-95 | 253 | 196 | 77 | 26 | 10 | 170- | 67- |
| 94-96 | 426 | 826 | 194 | 75 | 18 | 751- | 176- |
| 95-97 | 14,361 | 24,641 | 172 | 1,626 | 11 | 23,015- | 160- |
| 96-98 | 15,549 | 24,815 | 160 | 3,402 | 22 | 21,413- | 138- |
| 97-99 | 16,266 | 25,963 | 160 | 3,536 | 22 | 22,427- | 138- |
| 98-00 | 2,594 | 2,651 | 102 | 2,037 | 79 | 614- | 24- |
| 99-01 | 1,834 | 3,301 | 180 | 365 | 20 | 2,937- | 160- |
| 00-02 | 5,168 | 3,805 | 74 | 478 | 9 | 3,327- | 64- |
| 01-03 | 8,416 | 8,581 | 102 | 739 | 9 | 7,842- | 93- |
| 02-04 | 11,878 | 14,065 | 118 | 804 | 7 | 13,261- | 112- |
| 03-05 | 9,371 | 13,751 | 147 | 615 | 7 | 13,136- | 140- |
| 04-06 | 8,075 | 10,121 | 125 | 442 | 5 | 9,678- | 120- |
| 05-07 | 8,073 | 6,568 | 81 | 577 | 7 | 5,992- | 74- |
| 06-08 | 10,353 | 9,977 | 96 | 565 | 5 | 9,412- | 91- |
| 07-09 | 11,928 | 12,537 | 105 | 2,263 | 19 | 10,274- | 86- |
| 08-10 | 9,389 | 10,421 | 111 | 1,978 | 21 | 8,442- | 90- |
| 09-11 | 7,663 | 11,284 | 147 | 2,018 | 26 | 9,265- | 121- |
| 10-12 | 12,258 | 13,847 | 113 | 360 | 3 | 13,488- | 110- |
| 11-13 | 15,249 | 19,241 | 126 | 648 | 4 | 18,593- | 122- |
| 12-14 | 16,540 | 30,206 | 183 | 561 | 3 | 29,645- | 179- |
| 13-15 | 22,319 | 34,478 | 154 | 902 | 4 | 33,576- | 150- |
| 14-16 | 38,380 | 42,349 | 110 | 856 | 2 | 41,493- | 108- |
| 15-17 | 46,046 | 36,980 | 80 | 801 | 2 | 36,178- | 79- |
| 16-18 | 36,074 | 47,905 | 133 | 433 | 1 | 47,472- | 132- |
| FIVE-YEAR AVERAGE | | | | | | | |
| 14-18 | 32,404 | 45,791 | 141 | 615 | 2 | 45,176- | 139- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 368.00 LINE TRANSFORMERS

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| 1981 | 3,472 | 4,549 | 131 | | 0 | 4,549- | 131- |
| 1982 | 2,453 | 930 | 38 | 600 | 24 | 330- | 13- |
| 1983 | 66,609 | 2,363 | 4 | 8,946 | 13 | 6,583 | 10 |
| 1984 | 58,885 | 7,581 | 13 | | 0 | 7,581- | 13- |
| 1985 | 55,717 | 12,767 | 23 | 1,563 | 3 | 11,204- | 20- |
| 1986 | 20,331 | 12,204 | 60 | | 0 | 12,204- | 60- |
| 1987 | 36,076 | 6,515 | 18 | 2,106 | 6 | 4,409- | 12- |
| 1988 | 88,029 | 11,288 | 13 | | 0 | 11,288- | 13- |
| 1989 | 8,149 | 7,800 | 96 | | 0 | 7,800- | 96- |
| 1990 | 17,528 | 8,174 | 47 | 4,050 | 23 | 4,124- | 24- |
| 1991 | 83,838 | 13,378 | 16 | | 0 | 13,378- | 16- |
| 1992 | 54,784 | 30,154 | 55 | | 0 | 30,154- | 55- |
| 1993 | 33,445 | | 0 | | 0 | | 0 |
| 1994 | 6,095 | | 0 | | 0 | | 0 |
| 1995 | 15,077 | | 0 | | 0 | | 0 |
| 1996 | 81,341 | | 0 | | 0 | | 0 |
| 1997 | 38,739 | | 0 | | 0 | | 0 |
| 1998 | 472 | | 0 | | 0 | | 0 |
| 1999 | | | | | | | |
| 2000 | 471,991 | | 0 | | 0 | | 0 |
| 2001 | 97,446 | | 0 | | 0 | | 0 |
| 2002 | 132,066 | 27,446 | 21 | | 0 | 27,446- | 21- |
| 2003 | 24,773 | 5,013 | 20 | | 0 | 5,013- | 20- |
| 2004 | 75,307 | 16,919 | 22 | | 0 | 16,919- | 22- |
| 2005 | 73,659 | 27,207 | 37 | | 0 | 27,207- | 37- |
| 2006 | 138,080 | 2,424 | 2 | | 0 | 2,424- | 2- |
| 2007 | 96,876 | 47,912 | 49 | | 0 | 47,912- | 49- |
| 2008 | 47,342 | 31,719 | 67 | 200 | 0 | 31,519- | 67- |
| 2009 | 282,385 | 44,910 | 16 | 2,643 | 1 | 42,267- | 15- |
| 2010 | 123,614 | 32,482 | 26 | 3,279- | 3- | 35,761- | 29- |
| 2011 | 88,698 | 39,194 | 44 | 1,484 | 2 | 37,710- | 43- |
| 2012 | 76,105 | 33,170 | 44 | | 0 | 33,170- | 44- |
| 2013 | 142,474 | 32,310 | 23 | 806 | 1 | 31,503- | 22- |
| 2014 | 170,923 | 71,481 | 42 | | 0 | 71,481- | 42- |
| 2015 | 10,537 | 20,199 | 192 | | 0 | 20,199- | 192- |
| 2016 | 78,833 | 30,226 | 38 | | 0 | 30,226- | 38- |
| 2017 | 138,415 | 84,619 | 61 | | 0 | 84,619- | 61- |
| 2018 | 68,145 | 78,947 | 116 | | 0 | 78,947- | 116- |
| TOTAL | 3,008,710 | 743,882 | 25 | 19,119 | 1 | 724,763- | 24- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 368.00 LINE TRANSFORMERS

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| THREE-YEAR MOVING AVERAGES | | | | | | | |
| 81-83 | 24,178 | 2,614 | 11 | 3,182 | 13 | 568 | 2 |
| 82-84 | 42,649 | 3,625 | 8 | 3,182 | 7 | 443- | 1- |
| 83-85 | 60,404 | 7,570 | 13 | 3,503 | 6 | 4,067- | 7- |
| 84-86 | 44,978 | 10,851 | 24 | 521 | 1 | 10,330- | 23- |
| 85-87 | 37,375 | 10,495 | 28 | 1,223 | 3 | 9,272- | 25- |
| 86-88 | 48,145 | 10,002 | 21 | 702 | 1 | 9,300- | 19- |
| 87-89 | 44,085 | 8,534 | 19 | 702 | 2 | 7,832- | 18- |
| 88-90 | 37,902 | 9,087 | 24 | 1,350 | 4 | 7,737- | 20- |
| 89-91 | 36,505 | 9,784 | 27 | 1,350 | 4 | 8,434- | 23- |
| 90-92 | 52,050 | 17,235 | 33 | 1,350 | 3 | 15,885- | 31- |
| 91-93 | 57,356 | 14,511 | 25 | | 0 | 14,511- | 25- |
| 92-94 | 31,441 | 10,051 | 32 | | 0 | 10,051- | 32- |
| 93-95 | 18,206 | | 0 | | 0 | | 0 |
| 94-96 | 34,171 | | 0 | | 0 | | 0 |
| 95-97 | 45,052 | | 0 | | 0 | | 0 |
| 96-98 | 40,184 | | 0 | | 0 | | 0 |
| 97-99 | 13,070 | | 0 | | 0 | | 0 |
| 98-00 | 157,488 | | 0 | | 0 | | 0 |
| 99-01 | 189,812 | | 0 | | 0 | | 0 |
| 00-02 | 233,834 | 9,149 | 4 | | 0 | 9,149- | 4- |
| 01-03 | 84,762 | 10,820 | 13 | | 0 | 10,820- | 13- |
| 02-04 | 77,382 | 16,460 | 21 | | 0 | 16,460- | 21- |
| 03-05 | 57,913 | 16,380 | 28 | | 0 | 16,380- | 28- |
| 04-06 | 95,682 | 15,517 | 16 | | 0 | 15,517- | 16- |
| 05-07 | 102,871 | 25,848 | 25 | | 0 | 25,848- | 25- |
| 06-08 | 94,099 | 27,352 | 29 | 67 | 0 | 27,285- | 29- |
| 07-09 | 142,201 | 41,514 | 29 | 948 | 1 | 40,566- | 29- |
| 08-10 | 151,114 | 36,370 | 24 | 145- | 0 | 36,516- | 24- |
| 09-11 | 164,899 | 38,862 | 24 | 283 | 0 | 38,579- | 23- |
| 10-12 | 96,139 | 34,948 | 36 | 598- | 1- | 35,547- | 37- |
| 11-13 | 102,426 | 34,891 | 34 | 763 | 1 | 34,128- | 33- |
| 12-14 | 129,834 | 45,653 | 35 | 269 | 0 | 45,385- | 35- |
| 13-15 | 107,978 | 41,330 | 38 | 269 | 0 | 41,061- | 38- |
| 14-16 | 86,764 | 40,635 | 47 | | 0 | 40,635- | 47- |
| 15-17 | 75,928 | 45,015 | 59 | | 0 | 45,015- | 59- |
| 16-18 | 95,131 | 64,597 | 68 | | 0 | 64,597- | 68- |
| FIVE-YEAR AVERAGE | | | | | | | |
| 14-18 | 93,371 | 57,094 | 61 | | 0 | 57,094- | 61- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 369.00 SERVICES

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| 1981 | 5,533 | 9,860 | 178 | | 0 | 9,860- | 178- |
| 1982 | 603 | 431 | 71 | | 0 | 431- | 71- |
| 1983 | 1,385 | 3,130 | 226 | | 0 | 3,130- | 226- |
| 1984 | 6,058 | 10,157 | 168 | 6 | 0 | 10,151- | 168- |
| 1985 | 7,882 | 3,029 | 38 | | 0 | 3,029- | 38- |
| 1986 | 859 | 2,272 | 264 | | 0 | 2,272- | 264- |
| 1987 | 5,269 | 2,727 | 52 | | 0 | 2,727- | 52- |
| 1988 | 2,053 | 1,077 | 52 | | 0 | 1,077- | 52- |
| 1989 | 179 | 579 | 323 | | 0 | 579- | 323- |
| 1990 | 6,976 | 6,999 | 100 | | 0 | 6,999- | 100- |
| 1991 | 3,651 | 4,268 | 117 | | 0 | 4,268- | 117- |
| 1992 | 1,189 | 3,568 | 300 | | 0 | 3,568- | 300- |
| 1993 | 10,058 | 7,928 | 79 | 1,053 | 10 | 6,875- | 68- |
| 1994 | 7,425 | 16,469 | 222 | 1,057 | 14 | 15,412- | 208- |
| 1995 | 6,748 | 4,807 | 71 | 677 | 10 | 4,130- | 61- |
| 1996 | 5,868 | 12,261 | 209 | 1,091 | 19 | 11,170- | 190- |
| 1997 | 22,194 | 36,206 | 163 | 2,466 | 11 | 33,740- | 152- |
| 1998 | 19,542 | 28,157 | 144 | 3,268 | 17 | 24,889- | 127- |
| 1999 | 14,535 | 25,738 | 177 | 2,716 | 19 | 23,022- | 158- |
| 2000 | 15,718 | 30,182 | 192 | 3,142 | 20 | 27,040- | 172- |
| 2001 | 10,947 | 19,741 | 180 | 2,482 | 23 | 17,259- | 158- |
| 2002 | 15,008 | 8,279 | 55 | 1,076 | 7 | 7,204- | 48- |
| 2003 | 9,204 | 13,845 | 150 | 823 | 9 | 13,022- | 141- |
| 2004 | 10,747 | 17,308 | 161 | 470 | 4 | 16,838- | 157- |
| 2005 | 17,891 | 19,815 | 111 | 1,203 | 7 | 18,612- | 104- |
| 2006 | 22,418 | 16,700 | 74 | 1,424 | 6 | 15,276- | 68- |
| 2007 | 22,564 | 15,991 | 71 | 1,758 | 8 | 14,233- | 63- |
| 2008 | 19,025 | 64,001 | 336 | 3,487 | 18 | 60,513- | 318- |
| 2009 | 20,238 | 37,647 | 186 | 6,566 | 32 | 31,081- | 154- |
| 2010 | 23,771 | 87,252 | 367 | 1,608 | 7 | 85,644- | 360- |
| 2011 | 18,088 | 71,398 | 395 | 1,400 | 8 | 69,998- | 387- |
| 2012 | 7,097 | 39,633 | 558 | 699 | 10 | 38,935- | 549- |
| 2013 | 7,300 | 10,969 | 150 | 1,905 | 26 | 9,064- | 124- |
| 2014 | 6,212 | 83,189 | | 216 | 3 | 82,973- | |
| 2015 | 34,700 | 28,492 | 82 | 488 | 1 | 28,004- | 81- |
| 2016 | 16,431 | 45,898 | 279 | 1,505 | 9 | 44,393- | 270- |
| 2017 | 6,284 | 22,348 | 356 | 439 | 7 | 21,909- | 349- |
| 2018 | 6,672 | 60,041 | 900 | 136 | 2 | 59,904- | 898- |
| TOTAL | 418,323 | 872,393 | 209 | 43,162 | 10 | 829,231- | 198- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 369.00 SERVICES

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| THREE-YEAR MOVING AVERAGES | | | | | | | |
| 81-83 | 2,507 | 4,474 | 178 | | 0 | 4,474- | 178- |
| 82-84 | 2,682 | 4,573 | 170 | 2 | 0 | 4,571- | 170- |
| 83-85 | 5,108 | 5,439 | 106 | 2 | 0 | 5,437- | 106- |
| 84-86 | 4,933 | 5,153 | 104 | 2 | 0 | 5,151- | 104- |
| 85-87 | 4,670 | 2,676 | 57 | | 0 | 2,676- | 57- |
| 86-88 | 2,727 | 2,025 | 74 | | 0 | 2,025- | 74- |
| 87-89 | 2,500 | 1,461 | 58 | | 0 | 1,461- | 58- |
| 88-90 | 3,069 | 2,885 | 94 | | 0 | 2,885- | 94- |
| 89-91 | 3,602 | 3,949 | 110 | | 0 | 3,949- | 110- |
| 90-92 | 3,939 | 4,945 | 126 | | 0 | 4,945- | 126- |
| 91-93 | 4,966 | 5,255 | 106 | 351 | 7 | 4,904- | 99- |
| 92-94 | 6,224 | 9,322 | 150 | 703 | 11 | 8,618- | 138- |
| 93-95 | 8,077 | 9,735 | 121 | 929 | 12 | 8,806- | 109- |
| 94-96 | 6,680 | 11,179 | 167 | 942 | 14 | 10,237- | 153- |
| 95-97 | 11,603 | 17,758 | 153 | 1,411 | 12 | 16,347- | 141- |
| 96-98 | 15,868 | 25,541 | 161 | 2,275 | 14 | 23,266- | 147- |
| 97-99 | 18,757 | 30,034 | 160 | 2,817 | 15 | 27,217- | 145- |
| 98-00 | 16,598 | 28,026 | 169 | 3,042 | 18 | 24,984- | 151- |
| 99-01 | 13,733 | 25,220 | 184 | 2,780 | 20 | 22,440- | 163- |
| 00-02 | 13,891 | 19,401 | 140 | 2,233 | 16 | 17,168- | 124- |
| 01-03 | 11,720 | 13,955 | 119 | 1,460 | 12 | 12,495- | 107- |
| 02-04 | 11,653 | 13,144 | 113 | 790 | 7 | 12,355- | 106- |
| 03-05 | 12,614 | 16,989 | 135 | 832 | 7 | 16,157- | 128- |
| 04-06 | 17,019 | 17,941 | 105 | 1,032 | 6 | 16,909- | 99- |
| 05-07 | 20,958 | 17,502 | 84 | 1,462 | 7 | 16,040- | 77- |
| 06-08 | 21,336 | 32,230 | 151 | 2,223 | 10 | 30,007- | 141- |
| 07-09 | 20,609 | 39,213 | 190 | 3,937 | 19 | 35,276- | 171- |
| 08-10 | 21,011 | 62,967 | 300 | 3,887 | 19 | 59,079- | 281- |
| 09-11 | 20,699 | 65,433 | 316 | 3,192 | 15 | 62,241- | 301- |
| 10-12 | 16,319 | 66,095 | 405 | 1,236 | 8 | 64,859- | 397- |
| 11-13 | 10,828 | 40,667 | 376 | 1,335 | 12 | 39,332- | 363- |
| 12-14 | 6,870 | 44,597 | 649 | 940 | 14 | 43,657- | 636- |
| 13-15 | 16,071 | 40,883 | 254 | 870 | 5 | 40,014- | 249- |
| 14-16 | 19,114 | 52,526 | 275 | 736 | 4 | 51,790- | 271- |
| 15-17 | 19,138 | 32,246 | 168 | 811 | 4 | 31,435- | 164- |
| 16-18 | 9,796 | 42,762 | 437 | 693 | 7 | 42,069- | 429- |
| FIVE-YEAR AVERAGE | | | | | | | |
| 14-18 | 14,060 | 47,994 | 341 | 557 | 4 | 47,437- | 337- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 370.00 METERS AND METER INSTALLATIONS

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| 1981 | 5,078 | 265 | 5 | | 0 | 265- | 5- |
| 1982 | 3,740 | | 0 | 857 | 23 | 857 | 23 |
| 1983 | 14,573 | 478 | 3 | 718 | 5 | 240 | 2 |
| 1984 | 8,068 | 1,550 | 19 | | 0 | 1,550- | 19- |
| 1985 | 7,599 | 55 | 1 | | 0 | 55- | 1- |
| 1986 | 5,864 | 72 | 1 | | 0 | 72- | 1- |
| 1987 | 4,318 | 70 | 2 | | 0 | 70- | 2- |
| 1988 | 10,591 | 203 | 2 | | 0 | 203- | 2- |
| 1989 | 5,797 | | 0 | | 0 | | 0 |
| 1990 | 7,941 | | 0 | | 0 | | 0 |
| 1991 | 10,215 | 27 | 0 | | 0 | 27- | 0 |
| 1992 | 9,415 | 292 | 3 | | 0 | 292- | 3- |
| 1993 | 9,309 | | 0 | 974 | 10 | 974 | 10 |
| 1994 | 22,562 | | 0 | | 0 | | 0 |
| 1995 | 9,059 | | 0 | | 0 | | 0 |
| 1996 | | | | | | | |
| 1997 | | | | | | | |
| 1998 | 5,113 | | 0 | | 0 | | 0 |
| 1999 | | | | | | | |
| 2000 | 141,429 | | 0 | | 0 | | 0 |
| 2001 | 8,163 | | 0 | | 0 | | 0 |
| 2002 | | | | | | | |
| 2003 | | | | | | | |
| 2004 | 23,018 | 37,071 | 161 | | 0 | 37,071- | 161- |
| 2005 | 81,427 | 90,182 | 111 | | 0 | 90,182- | 111- |
| 2006 | 8,647 | 6,441 | 74 | | 0 | 6,441- | 74- |
| 2007 | 255,257 | 180,894 | 71 | | 0 | 180,894- | 71- |
| 2008 | 3,144,330 | 424,570 | 14 | | 0 | 424,570- | 14- |
| 2009 | | | | | | | |
| 2010 | | 1,673 | | | | 1,673- | |
| 2011 | 351,768 | | 0 | | 0 | | 0 |
| 2012 | 224,468 | 1,533 | 1 | | 0 | 1,533- | 1- |
| 2013 | 22,102 | 9,844 | 45 | | 0 | 9,844- | 45- |
| 2014 | 132,618 | | 0 | | 0 | | 0 |
| 2015 | 2,588 | | 0 | | 0 | | 0 |
| 2016 | 17,132 | | 0 | | 0 | | 0 |
| 2017 | 300,733 | 25,204 | 8 | | 0 | 25,204- | 8- |
| 2018 | 171,926 | 6,902 | 4 | | 0 | 6,902- | 4- |
| TOTAL | 5,024,846 | 787,326 | 16 | 2,549 | 0 | 784,777- | 16- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 370.00 METERS AND METER INSTALLATIONS

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| THREE-YEAR MOVING AVERAGES | | | | | | | |
| 81-83 | 7,797 | 248 | 3 | 525 | 7 | 277 | 4 |
| 82-84 | 8,794 | 676 | 8 | 525 | 6 | 151- | 2- |
| 83-85 | 10,080 | 694 | 7 | 239 | 2 | 455- | 5- |
| 84-86 | 7,177 | 559 | 8 | | 0 | 559- | 8- |
| 85-87 | 5,927 | 66 | 1 | | 0 | 66- | 1- |
| 86-88 | 6,924 | 115 | 2 | | 0 | 115- | 2- |
| 87-89 | 6,902 | 91 | 1 | | 0 | 91- | 1- |
| 88-90 | 8,110 | 68 | 1 | | 0 | 68- | 1- |
| 89-91 | 7,984 | 9 | 0 | | 0 | 9- | 0 |
| 90-92 | 9,190 | 106 | 1 | | 0 | 106- | 1- |
| 91-93 | 9,646 | 106 | 1 | 325 | 3 | 218 | 2 |
| 92-94 | 13,762 | 97 | 1 | 325 | 2 | 227 | 2 |
| 93-95 | 13,643 | | 0 | 325 | 2 | 325 | 2 |
| 94-96 | 10,540 | | 0 | | 0 | | 0 |
| 95-97 | 3,020 | | 0 | | 0 | | 0 |
| 96-98 | 1,704 | | 0 | | 0 | | 0 |
| 97-99 | 1,704 | | 0 | | 0 | | 0 |
| 98-00 | 48,847 | | 0 | | 0 | | 0 |
| 99-01 | 49,864 | | 0 | | 0 | | 0 |
| 00-02 | 49,864 | | 0 | | 0 | | 0 |
| 01-03 | 2,721 | | 0 | | 0 | | 0 |
| 02-04 | 7,673 | 12,357 | 161 | | 0 | 12,357- | 161- |
| 03-05 | 34,815 | 42,418 | 122 | | 0 | 42,418- | 122- |
| 04-06 | 37,697 | 44,565 | 118 | | 0 | 44,565- | 118- |
| 05-07 | 115,110 | 92,506 | 80 | | 0 | 92,506- | 80- |
| 06-08 | 1,136,078 | 203,969 | 18 | | 0 | 203,969- | 18- |
| 07-09 | 1,133,195 | 201,821 | 18 | | 0 | 201,821- | 18- |
| 08-10 | 1,048,110 | 142,081 | 14 | | 0 | 142,081- | 14- |
| 09-11 | 117,256 | 558 | 0 | | 0 | 558- | 0 |
| 10-12 | 192,078 | 1,069 | 1 | | 0 | 1,069- | 1- |
| 11-13 | 199,446 | 3,792 | 2 | | 0 | 3,792- | 2- |
| 12-14 | 126,396 | 3,792 | 3 | | 0 | 3,792- | 3- |
| 13-15 | 52,436 | 3,281 | 6 | | 0 | 3,281- | 6- |
| 14-16 | 50,779 | | 0 | | 0 | | 0 |
| 15-17 | 106,818 | 8,401 | 8 | | 0 | 8,401- | 8- |
| 16-18 | 163,263 | 10,702 | 7 | | 0 | 10,702- | 7- |
| FIVE-YEAR AVERAGE | | | | | | | |
| 14-18 | 124,999 | 6,421 | 5 | | 0 | 6,421- | 5- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 371.00 INSTALLATIONS ON CUSTOMERS' PREMISES

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| 1981 | 6,478 | 3,290 | 51 | 4,600 | 71 | 1,310 | 20 |
| 1982 | 448 | 107 | 24 | 71 | 16 | 36- | 8- |
| 1983 | 14,040 | 4,752 | 34 | 5,630 | 40 | 878 | 6 |
| 1984 | 11,513 | 4,135 | 36 | 5,956 | 52 | 1,821 | 16 |
| 1985 | 9,647 | 1,821 | 19 | 4,149 | 43 | 2,328 | 24 |
| 1986 | 18,060 | 2,066 | 11 | 4,175 | 23 | 2,109 | 12 |
| 1987 | 6,838 | 4,125 | 60 | 3,263 | 48 | 862- | 13- |
| 1988 | 9,159 | 2,042 | 22 | 1,729 | 19 | 313- | 3- |
| 1989 | 12,013 | 1,609 | 13 | | 0 | 1,609- | 13- |
| 1990 | 19,489 | 4,227 | 22 | | 0 | 4,227- | 22- |
| 1991 | 39,924 | 10,628 | 27 | 4,234 | 11 | 6,394- | 16- |
| 1992 | 27,328 | 4,976 | 18 | 6,532 | 24 | 1,556 | 6 |
| 1993 | 42,874 | 33,793 | 79 | 4,488 | 10 | 29,305- | 68- |
| 1994 | 36,098 | 80,069 | 222 | 5,138 | 14 | 74,931- | 208- |
| 1995 | 37,629 | 26,815 | 71 | 3,773 | 10 | 23,042- | 61- |
| 1996 | 38,306 | 80,038 | 209 | 7,122 | 19 | 72,916- | 190- |
| 1997 | 51,662 | 91,936 | 178 | 6,792 | 13 | 85,144- | 165- |
| 1998 | 28,929 | 41,682 | 144 | 4,838 | 17 | 36,844- | 127- |
| 1999 | 21,721 | 38,464 | 177 | 4,059 | 19 | 34,405- | 158- |
| 2000 | 23,103 | 44,363 | 192 | 4,619 | 20 | 39,744- | 172- |
| 2001 | 24,772 | 44,582 | 180 | 5,605 | 23 | 38,977- | 157- |
| 2002 | 29,272 | 16,148 | 55 | 2,098 | 7 | 14,050- | 48- |
| 2003 | 34,150 | 51,368 | 150 | 3,053 | 9 | 48,315- | 141- |
| 2004 | 34,932 | 56,260 | 161 | 1,529 | 4 | 54,730- | 157- |
| 2005 | 36,270 | 40,170 | 111 | 2,438 | 7 | 37,732- | 104- |
| 2006 | 43,174 | 32,162 | 74 | 2,743 | 6 | 29,419- | 68- |
| 2007 | 51,825 | 36,727 | 71 | 4,038 | 8 | 32,689- | 63- |
| 2008 | 56,473 | 23,926 | 42 | 8,520 | 15 | 15,407- | 27- |
| 2009 | 95,897 | 34,920 | 36 | 38,675 | 40 | 3,755 | 4 |
| 2010 | 84,836 | 29,739 | 35 | 30,836 | 36 | 1,097 | 1 |
| 2011 | 67,975 | 16,255 | 24 | 3,006 | 4 | 13,249- | 19- |
| 2012 | 80,800 | 17,519 | 22 | 10,025 | 12 | 7,494- | 9- |
| 2013 | 49,897 | 11,499 | 23 | 3,884 | 8 | 7,615- | 15- |
| 2014 | 60,902 | 7,729 | 13 | 8,949 | 15 | 1,220 | 2 |
| 2015 | 86,825 | 8,007 | 9 | 8,639 | 10 | 633 | 1 |
| 2016 | 104,491 | 8,420 | 8 | 5,767 | 6 | 2,653- | 3- |
| 2017 | 30,581 | 5,745 | 19 | 5,342 | 17 | 404- | 1- |
| 2018 | 73,776 | 10,516 | 14 | 8,773 | 12 | 1,742- | 2- |
| TOTAL | 1,502,106 | 932,630 | 62 | 235,088 | 16 | 697,542- | 46- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 371.00 INSTALLATIONS ON CUSTOMERS' PREMISES

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| THREE-YEAR MOVING AVERAGES | | | | | | | |
| 81-83 | 6,989 | 2,716 | 39 | 3,434 | 49 | 717 | 10 |
| 82-84 | 8,667 | 2,998 | 35 | 3,886 | 45 | 888 | 10 |
| 83-85 | 11,733 | 3,569 | 30 | 5,245 | 45 | 1,676 | 14 |
| 84-86 | 13,073 | 2,674 | 20 | 4,760 | 36 | 2,086 | 16 |
| 85-87 | 11,515 | 2,671 | 23 | 3,862 | 34 | 1,192 | 10 |
| 86-88 | 11,352 | 2,744 | 24 | 3,056 | 27 | 311 | 3 |
| 87-89 | 9,337 | 2,592 | 28 | 1,664 | 18 | 928- | 10- |
| 88-90 | 13,554 | 2,626 | 19 | 576 | 4 | 2,050- | 15- |
| 89-91 | 23,809 | 5,488 | 23 | 1,411 | 6 | 4,077- | 17- |
| 90-92 | 28,914 | 6,610 | 23 | 3,589 | 12 | 3,022- | 10- |
| 91-93 | 36,709 | 16,466 | 45 | 5,085 | 14 | 11,381- | 31- |
| 92-94 | 35,433 | 39,613 | 112 | 5,386 | 15 | 34,227- | 97- |
| 93-95 | 38,867 | 46,892 | 121 | 4,466 | 11 | 42,426- | 109- |
| 94-96 | 37,344 | 62,307 | 167 | 5,344 | 14 | 56,963- | 153- |
| 95-97 | 42,532 | 66,263 | 156 | 5,896 | 14 | 60,367- | 142- |
| 96-98 | 39,632 | 71,219 | 180 | 6,251 | 16 | 64,968- | 164- |
| 97-99 | 34,104 | 57,361 | 168 | 5,230 | 15 | 52,131- | 153- |
| 98-00 | 24,584 | 41,503 | 169 | 4,505 | 18 | 36,998- | 150- |
| 99-01 | 23,199 | 42,470 | 183 | 4,761 | 21 | 37,709- | 163- |
| 00-02 | 25,716 | 35,031 | 136 | 4,107 | 16 | 30,924- | 120- |
| 01-03 | 29,398 | 37,366 | 127 | 3,585 | 12 | 33,781- | 115- |
| 02-04 | 32,784 | 41,259 | 126 | 2,227 | 7 | 39,032- | 119- |
| 03-05 | 35,117 | 49,266 | 140 | 2,340 | 7 | 46,926- | 134- |
| 04-06 | 38,125 | 42,864 | 112 | 2,237 | 6 | 40,627- | 107- |
| 05-07 | 43,756 | 36,353 | 83 | 3,073 | 7 | 33,280- | 76- |
| 06-08 | 50,491 | 30,938 | 61 | 5,100 | 10 | 25,838- | 51- |
| 07-09 | 68,065 | 31,858 | 47 | 17,078 | 25 | 14,780- | 22- |
| 08-10 | 79,069 | 29,528 | 37 | 26,010 | 33 | 3,518- | 4- |
| 09-11 | 82,903 | 26,971 | 33 | 24,172 | 29 | 2,799- | 3- |
| 10-12 | 77,870 | 21,171 | 27 | 14,622 | 19 | 6,549- | 8- |
| 11-13 | 66,224 | 15,091 | 23 | 5,638 | 9 | 9,453- | 14- |
| 12-14 | 63,866 | 12,249 | 19 | 7,619 | 12 | 4,630- | 7- |
| 13-15 | 65,874 | 9,078 | 14 | 7,157 | 11 | 1,921- | 3- |
| 14-16 | 84,072 | 8,052 | 10 | 7,785 | 9 | 267- | 0 |
| 15-17 | 73,965 | 7,391 | 10 | 6,583 | 9 | 808- | 1- |
| 16-18 | 69,616 | 8,227 | 12 | 6,627 | 10 | 1,600- | 2- |
| FIVE-YEAR AVERAGE | | | | | | | |
| 14-18 | 71,315 | 8,083 | 11 | 7,494 | 11 | 589- | 1- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 373.00 STREET LIGHTING AND SIGNAL SYSTEMS

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| 1981 | 2,230 | 899 | 40 | | 0 | 899- | 40- |
| 1982 | 78,763 | 38,659 | 49 | | 0 | 38,659- | 49- |
| 1983 | 19,217 | 4,939 | 26 | 264 | 1 | 4,675- | 24- |
| 1984 | 2,311 | 1,035 | 45 | 617 | 27 | 418- | 18- |
| 1985 | 4,965 | 1,567 | 32 | 382 | 8 | 1,185- | 24- |
| 1986 | 1,413 | 607 | 43 | | 0 | 607- | 43- |
| 1987 | 633 | 874 | 138 | | 0 | 874- | 138- |
| 1988 | 8,835 | 4,913 | 56 | | 0 | 4,913- | 56- |
| 1989 | 7,640 | 972 | 13 | | 0 | 972- | 13- |
| 1990 | 44,440 | 8,651 | 19 | 13,035 | 29 | 4,384 | 10 |
| 1991 | 34,342 | 15,003 | 44 | 449 | 1 | 14,554- | 42- |
| 1992 | 208,591 | 93,634 | 45 | 190 | 0 | 93,444- | 45- |
| 1993 | 39,428 | 31,076 | 79 | 4,127 | 10 | 26,949- | 68- |
| 1994 | 26,084 | 57,856 | 222 | 3,713 | 14 | 54,143- | 208- |
| 1995 | 33,702 | 24,016 | 71 | 3,380 | 10 | 20,636- | 61- |
| 1996 | 14,594 | 30,494 | 209 | 2,713 | 19 | 27,781- | 190- |
| 1997 | 23,306 | 40,122 | 172 | 2,613 | 11 | 37,509- | 161- |
| 1998 | 27,762 | 40,001 | 144 | 4,643 | 17 | 35,358- | 127- |
| 1999 | 29,671 | 52,542 | 177 | 5,544 | 19 | 46,998- | 158- |
| 2000 | 30,043 | 57,690 | 192 | 6,006 | 20 | 51,684- | 172- |
| 2001 | 35,020 | 63,152 | 180 | 7,939 | 23 | 55,213- | 158- |
| 2002 | 21,156 | 11,671 | 55 | 1,516 | 7 | 10,155- | 48- |
| 2003 | 17,669 | 26,577 | 150 | 1,580 | 9 | 24,997- | 141- |
| 2004 | 26,237 | 42,255 | 161 | 1,148 | 4 | 41,107- | 157- |
| 2005 | 16,132 | 17,866 | 111 | 1,084 | 7 | 16,782- | 104- |
| 2006 | 19,977 | 14,881 | 74 | 1,269 | 6 | 13,612- | 68- |
| 2007 | 39,341 | 27,880 | 71 | 3,065 | 8 | 24,815- | 63- |
| 2008 | 30,825 | 29,337 | 95 | 3,449 | 11 | 25,888- | 84- |
| 2009 | 24,530 | 15,195 | 62 | 20,720 | 84 | 5,525 | 23 |
| 2010 | 15,271 | 10,726 | 70 | 1,718 | 11 | 9,008- | 59- |
| 2011 | 25,042 | 22,317 | 89 | 2,423 | 10 | 19,894- | 79- |
| 2012 | 25,410 | 11,305 | 44 | 1,418 | 6 | 9,887- | 39- |
| 2013 | 20,577 | 14,565 | 71 | 825 | 4 | 13,739- | 67- |
| 2014 | 3,462 | 7,247 | 209 | 255 | 7 | 6,992- | 202- |
| 2015 | 3,773 | 998 | 26 | 883 | 23 | 115- | 3- |
| 2016 | 2,050 | 131 | 6 | 430 | 21 | 299 | 15 |
| 2017 | 3,940 | 727 | 18 | 731 | 19 | 5 | 0 |
| 2018 | 1,620 | 523 | 32 | 587 | 36 | 64 | 4 |
| TOTAL | 970,000 | 822,901 | 85 | 98,717 | 10 | 724,184- | 75- |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 373.00 STREET LIGHTING AND SIGNAL SYSTEMS

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| THREE-YEAR MOVING AVERAGES | | | | | | | |
| 81-83 | 33,403 | 14,832 | 44 | 88 | 0 | 14,744- | 44- |
| 82-84 | 33,430 | 14,878 | 45 | 294 | 1 | 14,584- | 44- |
| 83-85 | 8,831 | 2,514 | 28 | 421 | 5 | 2,093- | 24- |
| 84-86 | 2,896 | 1,070 | 37 | 333 | 11 | 737- | 25- |
| 85-87 | 2,337 | 1,016 | 43 | 127 | 5 | 889- | 38- |
| 86-88 | 3,627 | 2,131 | 59 | | 0 | 2,131- | 59- |
| 87-89 | 5,703 | 2,253 | 40 | | 0 | 2,253- | 40- |
| 88-90 | 20,305 | 4,845 | 24 | 4,345 | 21 | 500- | 2- |
| 89-91 | 28,807 | 8,209 | 28 | 4,495 | 16 | 3,714- | 13- |
| 90-92 | 95,791 | 39,096 | 41 | 4,558 | 5 | 34,538- | 36- |
| 91-93 | 94,120 | 46,571 | 49 | 1,589 | 2 | 44,982- | 48- |
| 92-94 | 91,368 | 60,855 | 67 | 2,677 | 3 | 58,179- | 64- |
| 93-95 | 33,071 | 37,649 | 114 | 3,740 | 11 | 33,909- | 103- |
| 94-96 | 24,793 | 37,455 | 151 | 3,269 | 13 | 34,187- | 138- |
| 95-97 | 23,867 | 31,544 | 132 | 2,902 | 12 | 28,642- | 120- |
| 96-98 | 21,887 | 36,872 | 168 | 3,323 | 15 | 33,549- | 153- |
| 97-99 | 26,913 | 44,222 | 164 | 4,267 | 16 | 39,955- | 148- |
| 98-00 | 29,159 | 50,078 | 172 | 5,398 | 19 | 44,680- | 153- |
| 99-01 | 31,578 | 57,795 | 183 | 6,496 | 21 | 51,298- | 162- |
| 00-02 | 28,740 | 44,171 | 154 | 5,154 | 18 | 39,017- | 136- |
| 01-03 | 24,615 | 33,800 | 137 | 3,678 | 15 | 30,122- | 122- |
| 02-04 | 21,687 | 26,834 | 124 | 1,415 | 7 | 25,420- | 117- |
| 03-05 | 20,012 | 28,899 | 144 | 1,271 | 6 | 27,629- | 138- |
| 04-06 | 20,782 | 25,001 | 120 | 1,167 | 6 | 23,834- | 115- |
| 05-07 | 25,150 | 20,209 | 80 | 1,806 | 7 | 18,403- | 73- |
| 06-08 | 30,048 | 24,033 | 80 | 2,594 | 9 | 21,438- | 71- |
| 07-09 | 31,565 | 24,137 | 76 | 9,078 | 29 | 15,059- | 48- |
| 08-10 | 23,542 | 18,419 | 78 | 8,629 | 37 | 9,790- | 42- |
| 09-11 | 21,614 | 16,079 | 74 | 8,287 | 38 | 7,792- | 36- |
| 10-12 | 21,908 | 14,783 | 67 | 1,853 | 8 | 12,930- | 59- |
| 11-13 | 23,676 | 16,062 | 68 | 1,556 | 7 | 14,507- | 61- |
| 12-14 | 16,483 | 11,039 | 67 | 833 | 5 | 10,206- | 62- |
| 13-15 | 9,271 | 7,603 | 82 | 654 | 7 | 6,949- | 75- |
| 14-16 | 3,095 | 2,792 | 90 | 523 | 17 | 2,269- | 73- |
| 15-17 | 3,254 | 618 | 19 | 681 | 21 | 63 | 2 |
| 16-18 | 2,537 | 460 | 18 | 583 | 23 | 123 | 5 |
| FIVE-YEAR AVERAGE | | | | | | | |
| 14-18 | 2,969 | 1,925 | 65 | 577 | 19 | 1,348- | 45- |

# ELECTRIC, GAS AND COMMON

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC, GAS AND COMMON PLANT

ACCOUNT 396.00 POWER OPERATED EQUIPMENT

SUMMARY OF BOOK SALVAGE

| YEAR | REGULAR RETIREMENTS | COST OF REMOVAL AMOUNT | PCT | GROSS SALVAGE AMOUNT | PCT | NET SALVAGE AMOUNT | PCT |
|---|---|---|---|---|---|---|---|
| 2002 | 13,867 | | 0 | | 0 | | 0 |
| 2003 | | | | | | | |
| 2004 | | | | | | | |
| 2005 | | | | | | | |
| 2006 | 3,463 | | 0 | | 0 | | 0 |
| 2007 | | | | | | | |
| 2008 | 2,985 | | 0 | | 0 | | 0 |
| 2009 | | | | | | | |
| 2010 | | | | | | | |
| 2011 | | | | | | | |
| 2012 | | | | | | | |
| 2013 | 11,359 | | 0 | | 0 | | 0 |
| 2014 | 410 | | 0 | | 0 | | 0 |
| TOTAL | 32,085 | | 0 | | 0 | | 0 |
| THREE-YEAR MOVING AVERAGES | | | | | | | |
| 02-04 | 4,622 | | 0 | | 0 | | 0 |
| 03-05 | | | | | | | |
| 04-06 | 1,154 | | 0 | | 0 | | 0 |
| 05-07 | 1,154 | | 0 | | 0 | | 0 |
| 06-08 | 2,150 | | 0 | | 0 | | 0 |
| 07-09 | 995 | | 0 | | 0 | | 0 |
| 08-10 | 995 | | 0 | | 0 | | 0 |
| 09-11 | | | | | | | |
| 10-12 | | | | | | | |
| 11-13 | 3,786 | | 0 | | 0 | | 0 |
| 12-14 | 3,923 | | 0 | | 0 | | 0 |
| FIVE-YEAR AVERAGE | | | | | | | |
| 10-14 | 2,354 | | 0 | | 0 | | 0 |

# PART IX. DETAILED DEPRECIATION CALCULATIONS

# ELECTRIC

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 343.02 PRIME MOVERS - SOLAR PV FACILITY

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 20-S3 | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | |
| 2017 | 2,422,009.38 | 181,651 | 138,202 | 2,283,807 | 18.50 | 123,449 |
| | 2,422,009.38 | 181,651 | 138,202 | 2,283,807 | | 123,449 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 18.5 5.10

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 343.03 PRIME MOVERS - SOLAR PV FACILITY - INVERTERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 10-S3 | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | |
| 2017 | 407,766.70 | 61,165 | 46,535 | 361,232 | 8.50 | 42,498 |
| | 407,766.70 | 61,165 | 46,535 | 361,232 | | 42,498 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 8.5 10.42

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 351.00 LAND CLEARING

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 55-R3 | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | |
| 1973 | 6,654.38 | 4,680 | 5,393 | 1,261 | 16.32 | 77 |
| 1992 | 1,381.92 | 618 | 712 | 670 | 30.42 | 22 |
| | 8,036.30 | 5,298 | 6,105 | 1,931 | | 99 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 19.5 1.23

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 352.00 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 50-R3 | | | | | | |
| NET SALVAGE PERCENT.. -30 | | | | | | |
| 1965 | 18,544.00 | 19,980 | 24,107 | | | |
| 1966 | 392.00 | 418 | 510 | | | |
| 1977 | 4,018.08 | 3,683 | 5,224 | | | |
| 1980 | 1,460.00 | 1,264 | 1,898 | | | |
| 1994 | 3,747.99 | 2,211 | 4,872 | | | |
| 2006 | 31,222.40 | 9,774 | 22,773 | 17,816 | 37.96 | 469 |
| | 59,384.47 | 37,330 | 59,384 | 17,816 | | 469 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 38.0 0.79

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 353.00 STATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

SURVIVOR CURVE.. IOWA 55-R3
NET SALVAGE PERCENT.. -80

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| 1965 | 2,662.48 | 3,763 | 3,187 | 1,605 | 11.82 | 136 |
| 1967 | 16,939.04 | 23,367 | 19,790 | 10,700 | 12.85 | 833 |
| 1968 | 988.36 | 1,346 | 1,140 | 639 | 13.39 | 48 |
| 1970 | 33,601.99 | 44,527 | 37,710 | 22,774 | 14.51 | 1,570 |
| 1974 | 96,019.79 | 119,540 | 101,239 | 71,597 | 16.96 | 4,222 |
| 1977 | 989,809.35 | 1,168,125 | 989,290 | 792,367 | 18.94 | 41,836 |
| 1978 | 806,298.03 | 933,340 | 790,450 | 660,886 | 19.63 | 33,667 |
| 1983 | 21,174.57 | 22,002 | 18,634 | 19,480 | 23.25 | 838 |
| 1988 | 17,310.44 | 15,783 | 13,367 | 17,792 | 27.14 | 656 |
| 1990 | 5,075.66 | 4,359 | 3,692 | 5,444 | 28.76 | 189 |
| 1991 | 18,774.53 | 15,613 | 13,223 | 20,571 | 29.59 | 695 |
| 1992 | 422,643.14 | 339,990 | 287,939 | 472,819 | 30.42 | 15,543 |
| 1993 | 200.00 | 155 | 131 | 229 | 31.26 | 7 |
| 1994 | 1,708.18 | 1,280 | 1,084 | 1,991 | 32.11 | 62 |
| 1995 | 239,431.93 | 172,628 | 146,199 | 284,778 | 32.97 | 8,637 |
| 1996 | 545,977.47 | 378,097 | 320,212 | 662,547 | 33.84 | 19,579 |
| 1997 | 21,366.16 | 14,181 | 12,010 | 26,449 | 34.72 | 762 |
| 1998 | 78,225.36 | 49,666 | 42,062 | 98,744 | 35.60 | 2,774 |
| 1999 | 191,345.25 | 115,915 | 98,169 | 246,252 | 36.49 | 6,748 |
| 2001 | 1,043.44 | 570 | 483 | 1,395 | 38.30 | 36 |
| 2002 | 281,343.26 | 145,388 | 123,130 | 383,288 | 39.21 | 9,775 |
| 2003 | 529.89 | 258 | 219 | 735 | 40.13 | 18 |
| 2004 | 998,151.93 | 455,367 | 385,652 | 1,411,021 | 41.06 | 34,365 |
| 2006 | 1,018,745.10 | 402,415 | 340,807 | 1,492,934 | 42.93 | 34,776 |
| 2007 | 65,379.82 | 23,814 | 20,168 | 97,516 | 43.87 | 2,223 |
| 2008 | 5,870.49 | 1,958 | 1,658 | 8,909 | 44.81 | 199 |
| 2009 | 29,891.16 | 9,029 | 7,647 | 46,157 | 45.77 | 1,008 |
| 2010 | 710.33 | 192 | 163 | 1,116 | 46.72 | 24 |
| 2011 | 41,466.05 | 9,920 | 8,401 | 66,238 | 47.69 | 1,389 |
| 2012 | 60,394.67 | 12,551 | 10,629 | 98,081 | 48.65 | 2,016 |
| 2013 | 2,656,578.81 | 467,760 | 396,148 | 4,385,694 | 49.62 | 88,386 |
| 2014 | 7,020.17 | 1,013 | 858 | 11,778 | 50.59 | 233 |
| 2015 | 274,305.02 | 30,790 | 26,076 | 467,673 | 51.57 | 9,069 |
| 2016 | 782,116.04 | 62,971 | 53,331 | 1,354,478 | 52.54 | 25,780 |
| 2017 | 140,442.86 | 6,803 | 5,762 | 247,035 | 53.52 | 4,616 |
| 2018 | 168,031.67 | 2,695 | 2,282 | 300,175 | 54.51 | 5,507 |
| | 10,041,572.44 | 5,057,171 | 4,282,942 | 13,791,888 | | 358,222 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 38.5 3.57

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 355.00 POLES AND FIXTURES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 45-R3 | | | | | | |
| NET SALVAGE PERCENT.. -120 | | | | | | |
| 1969 | 92,946.16 | 171,854 | 125,355 | 79,127 | 7.18 | 11,020 |
| 1973 | 455,856.16 | 805,646 | 587,662 | 415,222 | 8.85 | 46,918 |
| 1997 | 5,004.97 | 4,884 | 3,563 | 7,448 | 25.04 | 297 |
| 1999 | 204,070.95 | 182,177 | 132,885 | 316,071 | 26.74 | 11,820 |
| 2005 | 1,077.02 | 680 | 496 | 1,873 | 32.08 | 58 |
| 2008 | 812.80 | 403 | 294 | 1,494 | 34.86 | 43 |
| 2009 | 25,129.70 | 11,290 | 8,235 | 47,050 | 35.81 | 1,314 |
| 2010 | 22,596.38 | 9,114 | 6,648 | 43,064 | 36.75 | 1,172 |
| 2013 | 26,306.85 | 6,906 | 5,038 | 52,837 | 39.63 | 1,333 |
| 2014 | 15,889.84 | 3,418 | 2,493 | 32,465 | 40.60 | 800 |
| 2017 | 27,669.96 | 1,989 | 1,451 | 59,423 | 43.53 | 1,365 |
| 2018 | 125,393.67 | 3,004 | 2,191 | 273,675 | 44.51 | 6,149 |
| | 1,002,754.46 | 1,201,365 | 876,311 | 1,329,749 | | 82,289 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 16.2 8.21

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 356.00 OVERHEAD CONDUCTORS AND DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

SURVIVOR CURVE.. IOWA 40-R1.5
NET SALVAGE PERCENT.. -60

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| 1969 | 14,119.16 | 17,525 | 14,610 | 7,981 | 8.97 | 890 |
| 1973 | 77,973.43 | 92,102 | 76,782 | 47,975 | 10.47 | 4,582 |
| 1977 | 788.44 | 878 | 732 | 530 | 12.17 | 44 |
| 1996 | 1,447.87 | 986 | 822 | 1,495 | 22.98 | 65 |
| 1999 | 90,853.57 | 54,367 | 45,324 | 100,042 | 25.04 | 3,995 |
| 2000 | 813.58 | 464 | 387 | 915 | 25.75 | 36 |
| 2001 | 96.67 | 52 | 43 | 112 | 26.46 | 4 |
| 2003 | 5,165.45 | 2,498 | 2,082 | 6,183 | 27.91 | 222 |
| 2004 | 7,730.83 | 3,510 | 2,926 | 9,443 | 28.65 | 330 |
| 2005 | 7,345.23 | 3,117 | 2,599 | 9,153 | 29.39 | 311 |
| 2007 | 2,432.15 | 886 | 739 | 3,152 | 30.89 | 102 |
| 2008 | 2,652.64 | 886 | 739 | 3,505 | 31.65 | 111 |
| 2009 | 39,552.71 | 11,992 | 9,997 | 53,287 | 32.42 | 1,644 |
| 2013 | 428,955.40 | 76,354 | 63,653 | 622,676 | 35.55 | 17,515 |
| 2014 | 1,191,738.65 | 174,471 | 145,450 | 1,761,332 | 36.34 | 48,468 |
| 2017 | 24,430.54 | 1,202 | 1,002 | 38,087 | 38.77 | 982 |
| | 1,896,096.32 | 441,290 | 367,887 | 2,665,867 | | 79,301 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 33.6 4.18

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 361.00 STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 55-R3 | | | | | | |
| NET SALVAGE PERCENT.. -30 | | | | | | |
| 1923 | 38,584.15 | 50,159 | 50,159 | | | |
| 1924 | 107.30 | 139 | 139 | | | |
| 1928 | 8,304.41 | 10,678 | 10,779 | 17 | 0.60 | 17 |
| 1937 | 2,083.65 | 2,572 | 2,596 | 113 | 2.78 | 41 |
| 1939 | 2,252.85 | 2,754 | 2,780 | 149 | 3.29 | 45 |
| 1945 | 101.61 | 120 | 121 | 11 | 4.83 | 2 |
| 1950 | 24,320.34 | 28,070 | 28,336 | 3,280 | 6.17 | 532 |
| 1951 | 414.45 | 476 | 481 | 58 | 6.46 | 9 |
| 1952 | 396.85 | 453 | 457 | 59 | 6.75 | 9 |
| 1953 | 597.35 | 677 | 683 | 94 | 7.06 | 13 |
| 1954 | 9,288.81 | 10,457 | 10,556 | 1,519 | 7.37 | 206 |
| 1957 | 2,013.00 | 2,217 | 2,238 | 379 | 8.40 | 45 |
| 1958 | 795.00 | 869 | 877 | 156 | 8.77 | 18 |
| 1959 | 742.00 | 804 | 812 | 153 | 9.16 | 17 |
| 1960 | 2,816.16 | 3,025 | 3,054 | 607 | 9.56 | 63 |
| 1962 | 2,431.00 | 2,562 | 2,586 | 574 | 10.41 | 55 |
| 1963 | 900.60 | 940 | 949 | 222 | 10.86 | 20 |
| 1966 | 18,789.00 | 18,950 | 19,130 | 5,296 | 12.33 | 430 |
| 1967 | 21,503.00 | 21,423 | 21,626 | 6,328 | 12.85 | 492 |
| 1968 | 1,171.00 | 1,152 | 1,163 | 359 | 13.39 | 27 |
| 1969 | 58,758.00 | 57,026 | 57,567 | 18,818 | 13.94 | 1,350 |
| 1970 | 31,359.30 | 30,012 | 30,296 | 10,471 | 14.51 | 722 |
| 1971 | 3,291.00 | 3,104 | 3,133 | 1,145 | 15.10 | 76 |
| 1972 | 736.25 | 684 | 690 | 267 | 15.71 | 17 |
| 1983 | 8,800.00 | 6,604 | 6,667 | 4,773 | 23.25 | 205 |
| 1984 | 51,436.69 | 37,677 | 38,034 | 28,834 | 24.01 | 1,201 |
| 1989 | 3,703.50 | 2,369 | 2,391 | 2,424 | 27.94 | 87 |
| 1996 | 25,733.89 | 12,871 | 12,993 | 20,461 | 33.84 | 605 |
| 1997 | 18,666.59 | 8,948 | 9,033 | 15,234 | 34.72 | 439 |
| 1998 | 47,332.81 | 21,704 | 21,910 | 39,623 | 35.60 | 1,113 |
| 1999 | 19,710.16 | 8,623 | 8,705 | 16,918 | 36.49 | 464 |
| 2000 | 918,164.00 | 382,171 | 385,794 | 807,819 | 37.39 | 21,605 |
| 2002 | 52,961.34 | 19,766 | 19,953 | 48,897 | 39.21 | 1,247 |
| 2008 | 3,740.00 | 901 | 910 | 3,952 | 44.81 | 88 |
| 2012 | 17,170.05 | 2,577 | 2,601 | 19,720 | 48.65 | 405 |
| | 1,399,176.11 | 753,534 | 760,199 | 1,058,730 | | 31,665 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 33.4 2.26

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 362.00 STATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

SURVIVOR CURVE.. IOWA 50-S2.5
NET SALVAGE PERCENT.. -80

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| 1924 | 1,654.29 | 2,918 | 2,535 | 443 | 1.01 | 439 |
| 1934 | 294.08 | 499 | 434 | 95 | 2.86 | 33 |
| 1937 | 1,711.76 | 2,870 | 2,493 | 588 | 3.42 | 172 |
| 1938 | 1,395.92 | 2,331 | 2,025 | 488 | 3.61 | 135 |
| 1939 | 8,673.49 | 14,426 | 12,533 | 3,079 | 3.80 | 810 |
| 1942 | 3,702.98 | 6,083 | 5,285 | 1,380 | 4.37 | 316 |
| 1943 | 4,644.47 | 7,598 | 6,601 | 1,759 | 4.56 | 386 |
| 1944 | 1,922.74 | 3,131 | 2,720 | 741 | 4.76 | 156 |
| 1945 | 800.16 | 1,297 | 1,127 | 313 | 4.96 | 63 |
| 1947 | 1,431.56 | 2,301 | 1,999 | 578 | 5.36 | 108 |
| 1948 | 4,020.54 | 6,431 | 5,587 | 1,650 | 5.57 | 296 |
| 1950 | 16,507.95 | 26,149 | 22,717 | 6,997 | 6.00 | 1,166 |
| 1951 | 1,166.74 | 1,839 | 1,598 | 502 | 6.22 | 81 |
| 1952 | 16.63 | 26 | 23 | 7 | 6.44 | 1 |
| 1953 | 885.43 | 1,381 | 1,200 | 394 | 6.67 | 59 |
| 1954 | 1,533.21 | 2,378 | 2,066 | 694 | 6.91 | 100 |
| 1956 | 37,962.05 | 58,219 | 50,579 | 17,753 | 7.40 | 2,399 |
| 1957 | 93,505.79 | 142,525 | 123,821 | 44,489 | 7.66 | 5,808 |
| 1958 | 22,976.50 | 34,807 | 30,239 | 11,119 | 7.92 | 1,404 |
| 1959 | 1,085.00 | 1,633 | 1,419 | 534 | 8.20 | 65 |
| 1960 | 599.00 | 895 | 778 | 300 | 8.48 | 35 |
| 1961 | 51,783.00 | 76,860 | 66,773 | 26,436 | 8.77 | 3,014 |
| 1962 | 4,377.00 | 6,449 | 5,603 | 2,276 | 9.07 | 251 |
| 1963 | 1,913.00 | 2,797 | 2,430 | 1,013 | 9.38 | 108 |
| 1964 | 525.00 | 762 | 662 | 283 | 9.69 | 29 |
| 1965 | 91,255.57 | 131,309 | 114,077 | 50,183 | 10.03 | 5,003 |
| 1966 | 54,246.37 | 77,392 | 67,236 | 30,407 | 10.37 | 2,932 |
| 1967 | 139,393.46 | 197,114 | 171,246 | 79,662 | 10.72 | 7,431 |
| 1968 | 21,477.04 | 30,084 | 26,136 | 12,523 | 11.09 | 1,129 |
| 1969 | 84,705.67 | 117,494 | 102,075 | 50,395 | 11.47 | 4,394 |
| 1970 | 83,011.62 | 113,978 | 99,020 | 50,401 | 11.86 | 4,250 |
| 1971 | 11,019.00 | 14,967 | 13,003 | 6,831 | 12.27 | 557 |
| 1972 | 19,509.01 | 26,204 | 22,765 | 12,351 | 12.69 | 973 |
| 1973 | 342,231.04 | 454,250 | 394,637 | 221,379 | 13.13 | 16,861 |
| 1974 | 156,951.04 | 205,782 | 178,776 | 103,736 | 13.58 | 7,639 |
| 1975 | 18,102.66 | 23,428 | 20,353 | 12,232 | 14.05 | 871 |
| 1976 | 343.14 | 438 | 381 | 237 | 14.53 | 16 |
| 1977 | 60,613.46 | 76,286 | 66,275 | 42,829 | 15.04 | 2,848 |
| 1978 | 6,722.27 | 8,335 | 7,241 | 4,859 | 15.56 | 312 |
| 1979 | 38,274.28 | 46,710 | 40,580 | 28,314 | 16.10 | 1,759 |
| 1980 | 1,050.42 | 1,261 | 1,096 | 795 | 16.65 | 48 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 362.00 STATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

SURVIVOR CURVE.. IOWA 50-S2.5
NET SALVAGE PERCENT.. -80

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| 1982 | 25,353.39 | 29,362 | 25,509 | 20,127 | 17.83 | 1,129 |
| 1983 | 186,348.73 | 211,722 | 183,937 | 151,491 | 18.44 | 8,215 |
| 1984 | 7,754.82 | 8,632 | 7,499 | 6,460 | 19.08 | 339 |
| 1985 | 9,317.13 | 10,150 | 8,818 | 7,953 | 19.74 | 403 |
| 1986 | 91,108.58 | 97,053 | 84,316 | 79,679 | 20.41 | 3,904 |
| 1989 | 579,279.76 | 572,236 | 497,139 | 545,565 | 22.56 | 24,183 |
| 1990 | 34,388.42 | 33,029 | 28,694 | 33,205 | 23.32 | 1,424 |
| 1991 | 864,271.01 | 806,157 | 700,361 | 855,327 | 24.09 | 35,505 |
| 1992 | 9,271.11 | 8,381 | 7,281 | 9,407 | 24.89 | 378 |
| 1994 | 171,512.42 | 144,914 | 125,896 | 182,826 | 26.53 | 6,891 |
| 1995 | 63,706.91 | 51,878 | 45,070 | 69,602 | 27.38 | 2,542 |
| 1996 | 1,854,236.87 | 1,452,535 | 1,261,913 | 2,075,713 | 28.24 | 73,503 |
| 1997 | 118,585.49 | 89,138 | 77,440 | 136,014 | 29.12 | 4,671 |
| 1998 | 1,276,938.81 | 918,477 | 797,941 | 1,500,549 | 30.02 | 49,985 |
| 1999 | 167,112.56 | 114,786 | 99,722 | 201,081 | 30.92 | 6,503 |
| 2000 | 1,681,151.95 | 1,099,070 | 954,834 | 2,071,240 | 31.84 | 65,052 |
| 2001 | 723,248.53 | 448,617 | 389,743 | 912,104 | 32.77 | 27,834 |
| 2002 | 1,086,438.47 | 636,740 | 553,178 | 1,402,411 | 33.72 | 41,590 |
| 2003 | 294,180.42 | 162,352 | 141,046 | 388,479 | 34.67 | 11,205 |
| 2004 | 97,058.75 | 50,210 | 43,621 | 131,085 | 35.63 | 3,679 |
| 2005 | 96,429.67 | 46,552 | 40,443 | 133,130 | 36.59 | 3,638 |
| 2006 | 101,644.55 | 45,484 | 39,515 | 143,445 | 37.57 | 3,818 |
| 2007 | 36,854.58 | 15,191 | 13,197 | 53,141 | 38.55 | 1,378 |
| 2008 | 178,979.03 | 67,461 | 58,608 | 263,554 | 39.53 | 6,667 |
| 2009 | 270,596.76 | 92,349 | 80,230 | 406,844 | 40.52 | 10,041 |
| 2010 | 208,091.10 | 63,601 | 55,254 | 319,310 | 41.51 | 7,692 |
| 2011 | 91,284.98 | 24,614 | 21,384 | 142,929 | 42.51 | 3,362 |
| 2012 | 589,657.95 | 137,980 | 119,872 | 941,512 | 43.50 | 21,644 |
| 2013 | 244,388.72 | 48,389 | 42,039 | 397,861 | 44.50 | 8,941 |
| 2014 | 246,489.16 | 39,931 | 34,691 | 408,989 | 45.50 | 8,989 |
| 2015 | 205,641.45 | 25,911 | 22,510 | 347,645 | 46.50 | 7,476 |
| 2016 | 174,851.22 | 15,737 | 13,672 | 301,060 | 47.50 | 6,338 |
| 2017 | 405,730.11 | 21,909 | 19,034 | 711,280 | 48.50 | 14,666 |
| 2018 | 2,284,476.11 | 41,121 | 35,724 | 4,076,333 | 49.50 | 82,350 |
| | 15,870,373.86 | 9,563,306 | 8,308,275 | 20,258,398 | | 630,392 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 32.1 3.97

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 364.00 POLES, TOWERS AND FIXTURES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 55-R2.5 | | | | | | |
| NET SALVAGE PERCENT.. -90 | | | | | | |
| 1909 | 85.33 | 162 | 162 | | | |
| 1915 | 1.36 | 3 | 3 | | | |
| 1924 | 32.00 | 59 | 59 | 2 | 2.00 | 1 |
| 1925 | 192.94 | 351 | 349 | 18 | 2.27 | 8 |
| 1926 | 50.01 | 91 | 91 | 4 | 2.54 | 2 |
| 1927 | 115.99 | 209 | 208 | 12 | 2.82 | 4 |
| 1928 | 51.56 | 92 | 92 | 6 | 3.08 | 2 |
| 1929 | 558.33 | 996 | 991 | 70 | 3.34 | 21 |
| 1930 | 827.25 | 1,469 | 1,462 | 110 | 3.59 | 31 |
| 1931 | 365.45 | 646 | 643 | 51 | 3.83 | 13 |
| 1932 | 1,687.94 | 2,971 | 2,957 | 250 | 4.05 | 62 |
| 1933 | 388.28 | 680 | 677 | 61 | 4.27 | 14 |
| 1934 | 74.11 | 129 | 128 | 13 | 4.49 | 3 |
| 1935 | 672.81 | 1,169 | 1,164 | 114 | 4.71 | 24 |
| 1936 | 784.00 | 1,356 | 1,350 | 140 | 4.93 | 28 |
| 1937 | 449.23 | 774 | 770 | 84 | 5.15 | 16 |
| 1938 | 1,844.96 | 3,163 | 3,149 | 356 | 5.37 | 66 |
| 1939 | 2,111.08 | 3,603 | 3,587 | 424 | 5.59 | 76 |
| 1940 | 929.11 | 1,579 | 1,572 | 193 | 5.82 | 33 |
| 1941 | 1,700.83 | 2,876 | 2,863 | 369 | 6.05 | 61 |
| 1942 | 4,163.95 | 7,008 | 6,976 | 936 | 6.28 | 149 |
| 1943 | 807.55 | 1,353 | 1,347 | 187 | 6.51 | 29 |
| 1944 | 2,460.20 | 4,101 | 4,082 | 592 | 6.75 | 88 |
| 1945 | 1,976.85 | 3,279 | 3,264 | 492 | 6.99 | 70 |
| 1946 | 2,833.33 | 4,675 | 4,654 | 729 | 7.24 | 101 |
| 1947 | 7,095.64 | 11,646 | 11,593 | 1,889 | 7.49 | 252 |
| 1948 | 590.37 | 964 | 960 | 162 | 7.75 | 21 |
| 1949 | 3,617.54 | 5,871 | 5,844 | 1,029 | 8.02 | 128 |
| 1950 | 5,332.53 | 8,605 | 8,566 | 1,566 | 8.29 | 189 |
| 1951 | 16,868.76 | 27,057 | 26,934 | 5,117 | 8.57 | 597 |
| 1952 | 8,330.95 | 13,279 | 13,219 | 2,610 | 8.86 | 295 |
| 1953 | 12,522.66 | 19,830 | 19,740 | 4,053 | 9.16 | 442 |
| 1954 | 16,725.12 | 26,306 | 26,186 | 5,592 | 9.47 | 590 |
| 1955 | 11,613.93 | 18,135 | 18,052 | 4,014 | 9.80 | 410 |
| 1956 | 17,676.30 | 27,393 | 27,268 | 6,317 | 10.14 | 623 |
| 1957 | 18,844.83 | 28,976 | 28,844 | 6,961 | 10.49 | 664 |
| 1958 | 19,337.86 | 29,487 | 29,353 | 7,389 | 10.86 | 680 |
| 1959 | 25,870.77 | 39,109 | 38,931 | 10,223 | 11.24 | 910 |
| 1960 | 28,971.85 | 43,407 | 43,209 | 11,838 | 11.63 | 1,018 |
| 1961 | 37,439.50 | 55,563 | 55,310 | 15,825 | 12.04 | 1,314 |
| 1962 | 42,834.53 | 62,933 | 62,647 | 18,739 | 12.47 | 1,503 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 364.00 POLES, TOWERS AND FIXTURES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

SURVIVOR CURVE.. IOWA 55-R2.5
NET SALVAGE PERCENT.. -90

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| 1963 | 36,623.23 | 53,251 | 53,009 | 16,575 | 12.91 | 1,284 |
| 1964 | 43,715.09 | 62,868 | 62,582 | 20,477 | 13.37 | 1,532 |
| 1965 | 33,077.90 | 47,022 | 46,808 | 16,040 | 13.85 | 1,158 |
| 1966 | 29,345.81 | 41,220 | 41,032 | 14,725 | 14.34 | 1,027 |
| 1967 | 36,201.57 | 50,212 | 49,983 | 18,800 | 14.85 | 1,266 |
| 1968 | 14,400.47 | 19,715 | 19,625 | 7,736 | 15.37 | 503 |
| 1969 | 115,014.70 | 155,354 | 154,647 | 63,881 | 15.90 | 4,018 |
| 1970 | 63,883.95 | 85,054 | 84,667 | 36,713 | 16.46 | 2,230 |
| 1971 | 3,047.75 | 3,999 | 3,981 | 1,810 | 17.02 | 106 |
| 1972 | 72,421.53 | 93,569 | 93,143 | 44,458 | 17.60 | 2,526 |
| 1973 | 682,710.18 | 867,910 | 863,959 | 433,190 | 18.20 | 23,802 |
| 1974 | 206,888.42 | 258,723 | 257,545 | 135,543 | 18.80 | 7,210 |
| 1975 | 66,263.43 | 81,446 | 81,075 | 44,826 | 19.42 | 2,308 |
| 1976 | 104,880.27 | 126,592 | 126,016 | 73,257 | 20.06 | 3,652 |
| 1977 | 166,165.87 | 196,893 | 195,997 | 119,718 | 20.70 | 5,783 |
| 1978 | 121,336.72 | 141,007 | 140,365 | 90,175 | 21.36 | 4,222 |
| 1979 | 145,186.16 | 165,361 | 164,608 | 111,246 | 22.03 | 5,050 |
| 1980 | 124,112.91 | 138,444 | 137,814 | 98,001 | 22.71 | 4,315 |
| 1981 | 120,652.43 | 131,710 | 131,110 | 98,130 | 23.40 | 4,194 |
| 1982 | 126,522.13 | 135,057 | 134,442 | 105,950 | 24.10 | 4,396 |
| 1983 | 130,992.81 | 136,616 | 135,994 | 112,892 | 24.81 | 4,550 |
| 1984 | 136,396.18 | 138,859 | 138,227 | 120,926 | 25.53 | 4,737 |
| 1985 | 88,074.15 | 87,444 | 87,046 | 80,295 | 26.26 | 3,058 |
| 1986 | 96,954.84 | 93,782 | 93,355 | 90,859 | 27.00 | 3,365 |
| 1987 | 181,999.46 | 171,326 | 170,546 | 175,253 | 27.75 | 6,315 |
| 1988 | 252,130.81 | 230,815 | 229,764 | 249,285 | 28.50 | 8,747 |
| 1989 | 289,616.59 | 257,428 | 256,256 | 294,016 | 29.27 | 10,045 |
| 1990 | 329,798.48 | 284,259 | 282,965 | 343,652 | 30.05 | 11,436 |
| 1991 | 290,055.68 | 242,183 | 241,081 | 310,025 | 30.83 | 10,056 |
| 1992 | 277,569.77 | 224,185 | 223,164 | 304,219 | 31.62 | 9,621 |
| 1993 | 497,169.90 | 387,815 | 386,050 | 558,573 | 32.42 | 17,229 |
| 1994 | 325,404.30 | 244,723 | 243,609 | 374,659 | 33.23 | 11,275 |
| 1995 | 395,973.25 | 286,577 | 285,272 | 467,077 | 34.05 | 13,717 |
| 1996 | 816,153.97 | 567,553 | 564,970 | 985,723 | 34.87 | 28,269 |
| 1997 | 694,209.06 | 462,849 | 460,742 | 858,255 | 35.70 | 24,041 |
| 1998 | 573,944.78 | 366,014 | 364,348 | 726,147 | 36.54 | 19,873 |
| 1999 | 753,421.78 | 458,596 | 456,508 | 974,993 | 37.38 | 26,083 |
| 2000 | 712,023.06 | 412,496 | 410,618 | 942,226 | 38.23 | 24,646 |
| 2001 | 861,775.11 | 473,643 | 471,487 | 1,165,886 | 39.09 | 29,826 |
| 2002 | 730,621.68 | 379,598 | 377,870 | 1,010,311 | 39.96 | 25,283 |
| 2003 | 1,093,072.14 | 535,076 | 532,640 | 1,544,197 | 40.83 | 37,820 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 364.00 POLES, TOWERS AND FIXTURES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 55-R2.5 | | | | | | |
| NET SALVAGE PERCENT.. -90 | | | | | | |
| 2004 | 1,202,918.39 | 552,279 | 549,765 | 1,735,780 | 41.71 | 41,615 |
| 2005 | 964,104.89 | 413,327 | 411,446 | 1,420,353 | 42.59 | 33,349 |
| 2006 | 1,033,624.89 | 411,336 | 409,464 | 1,554,423 | 43.48 | 35,750 |
| 2007 | 818,726.51 | 300,367 | 299,000 | 1,256,580 | 44.38 | 28,314 |
| 2008 | 1,260,175.59 | 423,151 | 421,225 | 1,973,109 | 45.28 | 43,576 |
| 2009 | 4,174,213.06 | 1,271,816 | 1,266,027 | 6,664,978 | 46.18 | 144,326 |
| 2010 | 1,227,304.05 | 335,371 | 333,844 | 1,998,034 | 47.09 | 42,430 |
| 2011 | 337,849.56 | 81,581 | 81,210 | 560,704 | 48.01 | 11,679 |
| 2012 | 1,234,099.47 | 258,771 | 257,593 | 2,087,196 | 48.93 | 42,657 |
| 2013 | 1,198,569.78 | 213,245 | 212,274 | 2,065,009 | 49.85 | 41,424 |
| 2014 | 2,089,726.17 | 304,655 | 303,268 | 3,667,212 | 50.78 | 72,218 |
| 2015 | 1,144,935.15 | 130,131 | 129,539 | 2,045,838 | 51.71 | 39,564 |
| 2016 | 1,060,487.53 | 86,098 | 85,706 | 1,929,220 | 52.65 | 36,642 |
| 2017 | 1,901,136.97 | 93,266 | 92,841 | 3,519,319 | 53.58 | 65,683 |
| 2018 | 1,597,098.14 | 25,945 | 25,827 | 3,008,659 | 54.53 | 55,174 |
| | 33,383,616.06 | 14,659,938 | 14,593,205 | 48,835,666 | | 1,155,513 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 42.3 3.46

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 365.00 OVERHEAD CONDUCTORS AND DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 52-R2 | | | | | | |
| NET SALVAGE PERCENT.. -90 | | | | | | |
| 1916 | 314.26 | 597 | 597 | | | |
| 1918 | 77.97 | 148 | 148 | | | |
| 1920 | 253.59 | 482 | 482 | | | |
| 1922 | 399.23 | 757 | 756 | 3 | 0.11 | 3 |
| 1923 | 151.66 | 287 | 287 | 1 | 0.28 | 1 |
| 1924 | 966.77 | 1,818 | 1,816 | 21 | 0.53 | 21 |
| 1925 | 596.09 | 1,115 | 1,114 | 19 | 0.79 | 19 |
| 1926 | 617.94 | 1,150 | 1,149 | 25 | 1.05 | 24 |
| 1927 | 43.41 | 80 | 80 | 2 | 1.31 | 2 |
| 1928 | 529.14 | 975 | 974 | 31 | 1.58 | 20 |
| 1929 | 117.18 | 215 | 215 | 8 | 1.85 | 4 |
| 1930 | 233.25 | 425 | 424 | 19 | 2.12 | 9 |
| 1931 | 1,727.44 | 3,131 | 3,127 | 155 | 2.39 | 65 |
| 1932 | 2,085.67 | 3,759 | 3,754 | 209 | 2.67 | 78 |
| 1933 | 934.58 | 1,675 | 1,673 | 103 | 2.95 | 35 |
| 1934 | 10,581.01 | 18,851 | 18,828 | 1,276 | 3.24 | 394 |
| 1935 | 4,477.77 | 7,932 | 7,922 | 586 | 3.52 | 166 |
| 1936 | 3,159.73 | 5,564 | 5,557 | 446 | 3.81 | 117 |
| 1937 | 2,959.92 | 5,180 | 5,174 | 450 | 4.10 | 110 |
| 1938 | 2,882.89 | 5,015 | 5,009 | 468 | 4.39 | 107 |
| 1939 | 5,500.46 | 9,510 | 9,498 | 953 | 4.68 | 204 |
| 1940 | 1,375.38 | 2,363 | 2,360 | 253 | 4.97 | 51 |
| 1941 | 2,059.80 | 3,518 | 3,514 | 400 | 5.26 | 76 |
| 1942 | 2,042.97 | 3,467 | 3,463 | 419 | 5.55 | 75 |
| 1943 | 1,416.07 | 2,388 | 2,385 | 306 | 5.85 | 52 |
| 1944 | 775.84 | 1,300 | 1,298 | 176 | 6.14 | 29 |
| 1945 | 2,709.51 | 4,510 | 4,504 | 644 | 6.44 | 100 |
| 1946 | 8,802.56 | 14,560 | 14,542 | 2,183 | 6.73 | 324 |
| 1947 | 9,763.33 | 16,039 | 16,019 | 2,531 | 7.04 | 360 |
| 1948 | 8,725.79 | 14,239 | 14,221 | 2,358 | 7.34 | 321 |
| 1949 | 11,895.15 | 19,276 | 19,252 | 3,349 | 7.65 | 438 |
| 1950 | 9,332.44 | 15,014 | 14,996 | 2,736 | 7.97 | 343 |
| 1951 | 18,547.92 | 29,623 | 29,587 | 5,654 | 8.29 | 682 |
| 1952 | 18,335.50 | 29,069 | 29,033 | 5,804 | 8.61 | 674 |
| 1953 | 35,217.14 | 55,396 | 55,328 | 11,585 | 8.95 | 1,294 |
| 1954 | 38,676.34 | 60,357 | 60,283 | 13,202 | 9.29 | 1,421 |
| 1955 | 33,288.06 | 51,523 | 51,460 | 11,787 | 9.64 | 1,223 |
| 1956 | 37,948.91 | 58,237 | 58,165 | 13,938 | 10.00 | 1,394 |
| 1957 | 34,480.33 | 52,448 | 52,383 | 13,130 | 10.37 | 1,266 |
| 1958 | 22,018.05 | 33,186 | 33,145 | 8,689 | 10.75 | 808 |
| 1959 | 44,042.06 | 65,769 | 65,688 | 17,992 | 11.13 | 1,617 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 365.00 OVERHEAD CONDUCTORS AND DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

SURVIVOR CURVE.. IOWA 52-R2
NET SALVAGE PERCENT.. -90

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| 1960 | 32,857.69 | 48,587 | 48,527 | 13,903 | 11.53 | 1,206 |
| 1961 | 44,814.22 | 65,596 | 65,515 | 19,632 | 11.94 | 1,644 |
| 1962 | 42,821.60 | 62,022 | 61,946 | 19,415 | 12.36 | 1,571 |
| 1963 | 43,501.01 | 62,323 | 62,246 | 20,406 | 12.79 | 1,595 |
| 1964 | 41,507.35 | 58,799 | 58,727 | 20,137 | 13.23 | 1,522 |
| 1965 | 77,864.80 | 109,022 | 108,888 | 39,055 | 13.68 | 2,855 |
| 1966 | 97,939.90 | 135,448 | 135,281 | 50,805 | 14.15 | 3,590 |
| 1967 | 39,789.17 | 54,345 | 54,278 | 21,321 | 14.62 | 1,458 |
| 1968 | 17,777.32 | 23,962 | 23,933 | 9,844 | 15.11 | 651 |
| 1969 | 300,409.29 | 399,436 | 398,945 | 171,833 | 15.61 | 11,008 |
| 1970 | 120,498.21 | 157,973 | 157,779 | 71,168 | 16.12 | 4,415 |
| 1971 | 13,699.10 | 17,699 | 17,677 | 8,351 | 16.64 | 502 |
| 1972 | 67,270.29 | 85,611 | 85,506 | 42,308 | 17.17 | 2,464 |
| 1973 | 416,179.08 | 521,280 | 520,639 | 270,101 | 17.72 | 15,243 |
| 1974 | 222,185.41 | 273,829 | 273,492 | 148,660 | 18.27 | 8,137 |
| 1975 | 97,322.34 | 117,917 | 117,772 | 67,140 | 18.84 | 3,564 |
| 1976 | 105,081.30 | 125,092 | 124,938 | 74,716 | 19.42 | 3,847 |
| 1977 | 163,471.06 | 191,075 | 190,840 | 119,755 | 20.01 | 5,985 |
| 1978 | 117,614.53 | 134,896 | 134,730 | 88,738 | 20.61 | 4,306 |
| 1979 | 85,596.31 | 96,298 | 96,180 | 66,453 | 21.21 | 3,133 |
| 1980 | 80,588.42 | 88,838 | 88,729 | 64,389 | 21.83 | 2,950 |
| 1981 | 84,362.48 | 91,025 | 90,913 | 69,376 | 22.47 | 3,087 |
| 1982 | 127,127.40 | 134,196 | 134,031 | 107,511 | 23.11 | 4,652 |
| 1983 | 73,962.96 | 76,319 | 76,225 | 64,305 | 23.76 | 2,706 |
| 1984 | 67,580.10 | 68,102 | 68,018 | 60,384 | 24.42 | 2,473 |
| 1985 | 71,900.22 | 70,696 | 70,609 | 66,001 | 25.09 | 2,631 |
| 1986 | 163,490.59 | 156,751 | 156,558 | 154,074 | 25.76 | 5,981 |
| 1987 | 275,980.20 | 257,645 | 257,328 | 267,034 | 26.45 | 10,096 |
| 1988 | 260,731.48 | 236,737 | 236,446 | 258,944 | 27.15 | 9,538 |
| 1989 | 202,708.33 | 178,796 | 178,576 | 206,570 | 27.86 | 7,415 |
| 1990 | 458,164.46 | 392,236 | 391,753 | 478,759 | 28.57 | 16,757 |
| 1991 | 398,675.97 | 330,816 | 330,409 | 427,075 | 29.29 | 14,581 |
| 1992 | 105,232.27 | 84,475 | 84,371 | 115,570 | 30.03 | 3,848 |
| 1993 | 330,203.32 | 256,143 | 255,828 | 371,558 | 30.77 | 12,075 |
| 1994 | 330,491.92 | 247,431 | 247,127 | 380,808 | 31.51 | 12,085 |
| 1995 | 409,979.26 | 295,553 | 295,189 | 483,772 | 32.27 | 14,991 |
| 1996 | 694,558.36 | 481,425 | 480,833 | 838,828 | 33.03 | 25,396 |
| 1997 | 509,744.25 | 338,796 | 338,379 | 630,135 | 33.81 | 18,638 |
| 1998 | 374,228.45 | 238,061 | 237,768 | 473,266 | 34.59 | 13,682 |
| 1999 | 940,683.82 | 571,596 | 570,893 | 1,216,406 | 35.37 | 34,391 |
| 2000 | 886,857.62 | 512,957 | 512,326 | 1,172,703 | 36.17 | 32,422 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 365.00 OVERHEAD CONDUCTORS AND DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 52-R2 | | | | | | |
| NET SALVAGE PERCENT.. -90 | | | | | | |
| 2001 | 884,464.09 | 485,726 | 485,128 | 1,195,354 | 36.97 | 32,333 |
| 2002 | 1,072,075.24 | 557,022 | 556,337 | 1,480,606 | 37.78 | 39,190 |
| 2003 | 841,146.42 | 412,138 | 411,631 | 1,186,547 | 38.59 | 30,748 |
| 2004 | 1,507,755.18 | 693,610 | 692,756 | 2,171,979 | 39.41 | 55,112 |
| 2005 | 668,218.25 | 287,123 | 286,770 | 982,845 | 40.24 | 24,425 |
| 2006 | 1,356,132.73 | 541,587 | 540,921 | 2,035,731 | 41.07 | 49,567 |
| 2007 | 1,273,968.44 | 469,222 | 468,645 | 1,951,895 | 41.92 | 46,562 |
| 2008 | 2,138,985.50 | 722,145 | 721,256 | 3,342,816 | 42.76 | 78,176 |
| 2009 | 2,948,915.60 | 902,914 | 901,803 | 4,701,137 | 43.62 | 107,775 |
| 2010 | 1,411,450.99 | 387,836 | 387,359 | 2,294,398 | 44.48 | 51,583 |
| 2011 | 363,727.01 | 88,514 | 88,405 | 602,676 | 45.34 | 13,292 |
| 2012 | 2,711,327.67 | 573,622 | 572,916 | 4,578,607 | 46.21 | 99,083 |
| 2013 | 1,078,729.30 | 193,522 | 193,284 | 1,856,302 | 47.09 | 39,420 |
| 2014 | 1,850,295.57 | 272,456 | 272,120 | 3,243,442 | 47.97 | 67,614 |
| 2015 | 1,869,722.16 | 214,498 | 214,234 | 3,338,238 | 48.86 | 68,323 |
| 2016 | 1,173,991.88 | 96,517 | 96,398 | 2,134,187 | 49.75 | 42,898 |
| 2017 | 1,297,541.53 | 64,000 | 63,921 | 2,401,408 | 50.65 | 47,412 |
| 2018 | 1,495,923.42 | 24,586 | 24,556 | 2,817,698 | 51.55 | 54,660 |
| | 35,319,885.95 | 15,437,790 | 15,418,798 | 51,688,985 | | 1,291,191 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 40.0 3.66

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 366.00 UNDERGROUND CONDUIT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 70-R4 | | | | | | |
| NET SALVAGE PERCENT.. -100 | | | | | | |
| 1909 | 13,226.85 | 26,454 | 26,454 | | | |
| 1915 | 491.04 | 972 | 767 | 215 | 0.70 | 215 |
| 1916 | 1,600.25 | 3,160 | 2,494 | 706 | 0.88 | 706 |
| 1917 | 1,028.43 | 2,024 | 1,597 | 460 | 1.11 | 414 |
| 1919 | 243.16 | 476 | 376 | 110 | 1.51 | 73 |
| 1921 | 606.91 | 1,180 | 931 | 283 | 1.94 | 146 |
| 1922 | 1,639.63 | 3,177 | 2,507 | 772 | 2.18 | 354 |
| 1923 | 7,226.88 | 13,958 | 11,015 | 3,439 | 2.40 | 1,433 |
| 1924 | 180.00 | 346 | 273 | 87 | 2.65 | 33 |
| 1925 | 862.09 | 1,653 | 1,304 | 420 | 2.88 | 146 |
| 1926 | 3,022.22 | 5,774 | 4,556 | 1,488 | 3.13 | 475 |
| 1927 | 6,868.04 | 13,073 | 10,316 | 3,420 | 3.38 | 1,012 |
| 1929 | 2,448.70 | 4,625 | 3,650 | 1,247 | 3.90 | 320 |
| 1930 | 862.09 | 1,622 | 1,280 | 444 | 4.16 | 107 |
| 1936 | 182.75 | 335 | 264 | 102 | 5.79 | 18 |
| 1937 | 351.38 | 642 | 507 | 196 | 6.07 | 32 |
| 1938 | 21,653.93 | 39,367 | 31,065 | 12,243 | 6.37 | 1,922 |
| 1939 | 3,340.82 | 6,045 | 4,770 | 1,912 | 6.67 | 287 |
| 1940 | 2,319.04 | 4,175 | 3,295 | 1,343 | 6.99 | 192 |
| 1941 | 190.66 | 341 | 269 | 112 | 7.31 | 15 |
| 1942 | 5,175.44 | 9,220 | 7,276 | 3,075 | 7.65 | 402 |
| 1946 | 1,643.12 | 2,857 | 2,255 | 1,031 | 9.15 | 113 |
| 1947 | 3,640.54 | 6,286 | 4,960 | 2,321 | 9.57 | 243 |
| 1948 | 2,433.38 | 4,170 | 3,291 | 1,576 | 10.02 | 157 |
| 1949 | 5,740.99 | 9,763 | 7,704 | 3,778 | 10.48 | 360 |
| 1950 | 7,738.46 | 13,052 | 10,300 | 5,177 | 10.97 | 472 |
| 1951 | 7,503.33 | 12,546 | 9,900 | 5,107 | 11.48 | 445 |
| 1952 | 6,761.94 | 11,204 | 8,841 | 4,683 | 12.01 | 390 |
| 1953 | 46,133.66 | 75,699 | 59,736 | 32,531 | 12.57 | 2,588 |
| 1954 | 41,878.17 | 68,022 | 53,677 | 30,079 | 13.15 | 2,287 |
| 1955 | 30,952.45 | 49,736 | 39,248 | 22,657 | 13.76 | 1,647 |
| 1956 | 4,106.00 | 6,525 | 5,149 | 3,063 | 14.38 | 213 |
| 1957 | 20,112.58 | 31,594 | 24,931 | 15,294 | 15.02 | 1,018 |
| 1958 | 47,158.46 | 73,203 | 57,766 | 36,551 | 15.67 | 2,333 |
| 1959 | 14,841.00 | 22,757 | 17,958 | 11,724 | 16.33 | 718 |
| 1961 | 4,307.00 | 6,436 | 5,079 | 3,535 | 17.70 | 200 |
| 1962 | 327.00 | 482 | 380 | 274 | 18.39 | 15 |
| 1963 | 690.00 | 1,003 | 791 | 589 | 19.10 | 31 |
| 1964 | 1,708.00 | 2,449 | 1,933 | 1,483 | 19.81 | 75 |
| 1966 | 404.00 | 562 | 443 | 365 | 21.28 | 17 |
| 1967 | 203.00 | 278 | 219 | 187 | 22.03 | 8 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 366.00 UNDERGROUND CONDUIT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 70-R4 | | | | | | |
| NET SALVAGE PERCENT.. -100 | | | | | | |
| 1968 | 5,723.06 | 7,721 | 6,093 | 5,353 | 22.78 | 235 |
| 1969 | 1,517.25 | 2,014 | 1,589 | 1,446 | 23.55 | 61 |
| 1970 | 6,415.00 | 8,371 | 6,606 | 6,224 | 24.33 | 256 |
| 1971 | 2,013.48 | 2,582 | 2,038 | 1,989 | 25.12 | 79 |
| 1972 | 25,263.18 | 31,810 | 25,102 | 25,424 | 25.93 | 980 |
| 1973 | 36,627.98 | 45,272 | 35,725 | 37,531 | 26.74 | 1,404 |
| 1974 | 109,549.68 | 132,838 | 104,825 | 114,274 | 27.56 | 4,146 |
| 1975 | 1,546.93 | 1,839 | 1,451 | 1,643 | 28.39 | 58 |
| 1976 | 176.88 | 206 | 163 | 191 | 29.23 | 7 |
| 1977 | 17,737.71 | 20,226 | 15,961 | 19,514 | 30.09 | 649 |
| 1978 | 36,719.34 | 40,969 | 32,329 | 41,110 | 30.95 | 1,328 |
| 1979 | 17,259.74 | 18,828 | 14,858 | 19,661 | 31.82 | 618 |
| 1980 | 1,628.03 | 1,735 | 1,369 | 1,887 | 32.70 | 58 |
| 1982 | 889.19 | 902 | 712 | 1,066 | 34.48 | 31 |
| 1983 | 5,763.98 | 5,700 | 4,498 | 7,030 | 35.39 | 199 |
| 1984 | 14,405.55 | 13,871 | 10,946 | 17,865 | 36.30 | 492 |
| 1986 | 10,388.00 | 9,456 | 7,462 | 13,314 | 38.14 | 349 |
| 1987 | 25,335.73 | 22,390 | 17,668 | 33,003 | 39.07 | 845 |
| 1988 | 51,314.46 | 43,969 | 34,697 | 67,932 | 40.01 | 1,698 |
| 1989 | 47,840.25 | 39,707 | 31,334 | 64,346 | 40.95 | 1,571 |
| 1990 | 15,012.44 | 12,053 | 9,511 | 20,514 | 41.90 | 490 |
| 1991 | 2,172.32 | 1,684 | 1,329 | 3,016 | 42.86 | 70 |
| 1993 | 14,328.60 | 10,325 | 8,148 | 20,509 | 44.78 | 458 |
| 1994 | 7,859.34 | 5,448 | 4,299 | 11,420 | 45.74 | 250 |
| 1995 | 28,198.11 | 18,764 | 14,807 | 41,589 | 46.71 | 890 |
| 1996 | 63,678.19 | 40,609 | 32,045 | 95,311 | 47.68 | 1,999 |
| 1997 | 29,364.12 | 17,904 | 14,128 | 44,600 | 48.66 | 917 |
| 1998 | 31,959.85 | 18,592 | 14,671 | 49,249 | 49.64 | 992 |
| 1999 | 68,635.16 | 38,005 | 29,991 | 107,279 | 50.62 | 2,119 |
| 2000 | 16,588.88 | 8,721 | 6,882 | 26,296 | 51.60 | 510 |
| 2001 | 13,293.75 | 6,613 | 5,218 | 21,370 | 52.59 | 406 |
| 2002 | 14,040.00 | 6,591 | 5,201 | 22,879 | 53.57 | 427 |
| 2003 | 4,965.74 | 2,191 | 1,729 | 8,202 | 54.56 | 150 |
| 2004 | 11,092.10 | 4,579 | 3,613 | 18,571 | 55.55 | 334 |
| 2005 | 88,916.29 | 34,195 | 26,984 | 150,849 | 56.54 | 2,668 |
| 2006 | 13,970.06 | 4,973 | 3,924 | 24,016 | 57.54 | 417 |
| 2007 | 71,308.19 | 23,369 | 18,441 | 124,175 | 58.53 | 2,122 |
| 2008 | 27,105.29 | 8,116 | 6,405 | 47,806 | 59.52 | 803 |
| 2009 | 169,472.90 | 45,903 | 36,223 | 302,723 | 60.52 | 5,002 |
| 2010 | 196,161.55 | 47,526 | 37,504 | 354,819 | 61.52 | 5,768 |
| 2011 | 52,135.56 | 11,157 | 8,804 | 95,467 | 62.51 | 1,527 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 366.00 UNDERGROUND CONDUIT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 70-R4 | | | | | | |
| NET SALVAGE PERCENT.. -100 | | | | | | |
| 2012 | 524,521.62 | 97,257 | 76,747 | 972,296 | 63.51 | 15,309 |
| 2013 | 110,010.80 | 17,256 | 13,617 | 206,405 | 64.51 | 3,200 |
| 2014 | 235,969.44 | 30,270 | 23,887 | 448,052 | 65.51 | 6,839 |
| 2015 | 376,695.29 | 37,670 | 29,726 | 723,665 | 66.50 | 10,882 |
| 2016 | 247,645.34 | 17,687 | 13,957 | 481,334 | 67.50 | 7,131 |
| 2017 | 259,711.29 | 11,131 | 8,784 | 510,639 | 68.50 | 7,455 |
| 2018 | 43,551.84 | 622 | 491 | 86,613 | 69.50 | 1,246 |
| | 3,478,282.87 | 1,566,860 | 1,242,019 | 5,714,547 | | 117,077 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 48.8 3.37

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 367.00 UNDERGROUND CONDUCTORS AND DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 55-R3 | | | | | | |
| NET SALVAGE PERCENT.. -90 | | | | | | |
| 1910 | 4,848.38 | 9,212 | 9,212 | | | |
| 1912 | 55.90 | 106 | 106 | | | |
| 1913 | 152.10 | 289 | 289 | | | |
| 1914 | 664.58 | 1,263 | 1,263 | | | |
| 1915 | 600.84 | 1,142 | 1,142 | | | |
| 1916 | 543.46 | 1,033 | 1,033 | | | |
| 1917 | 1,245.80 | 2,367 | 2,367 | | | |
| 1918 | 206.19 | 392 | 392 | | | |
| 1921 | 637.82 | 1,212 | 1,212 | | | |
| 1922 | 301.98 | 574 | 574 | | | |
| 1923 | 681.76 | 1,295 | 1,295 | | | |
| 1924 | 668.10 | 1,269 | 1,269 | | | |
| 1925 | 695.14 | 1,321 | 1,321 | | | |
| 1927 | 3,501.78 | 6,605 | 6,090 | 563 | 0.40 | 563 |
| 1928 | 61.94 | 116 | 107 | 11 | 0.60 | 11 |
| 1929 | 394.02 | 737 | 679 | 70 | 0.83 | 70 |
| 1930 | 4,110.15 | 7,657 | 7,059 | 750 | 1.07 | 701 |
| 1931 | 49,233.85 | 91,333 | 84,206 | 9,338 | 1.30 | 7,183 |
| 1933 | 242.51 | 446 | 411 | 50 | 1.77 | 28 |
| 1934 | 178.01 | 326 | 301 | 37 | 2.02 | 18 |
| 1935 | 32.75 | 60 | 55 | 7 | 2.27 | 3 |
| 1936 | 983.95 | 1,784 | 1,645 | 225 | 2.53 | 89 |
| 1937 | 14,477.04 | 26,116 | 24,078 | 3,428 | 2.78 | 1,233 |
| 1938 | 574.44 | 1,031 | 951 | 140 | 3.03 | 46 |
| 1939 | 169.53 | 303 | 279 | 43 | 3.29 | 13 |
| 1940 | 2,987.66 | 5,310 | 4,896 | 781 | 3.55 | 220 |
| 1941 | 956.90 | 1,692 | 1,560 | 258 | 3.80 | 68 |
| 1942 | 2,376.58 | 4,182 | 3,856 | 660 | 4.06 | 163 |
| 1943 | 2,853.90 | 4,996 | 4,606 | 816 | 4.32 | 189 |
| 1944 | 224.95 | 392 | 361 | 66 | 4.58 | 14 |
| 1945 | 663.16 | 1,149 | 1,059 | 201 | 4.83 | 42 |
| 1946 | 1,611.24 | 2,777 | 2,560 | 501 | 5.10 | 98 |
| 1947 | 698.36 | 1,198 | 1,105 | 222 | 5.36 | 41 |
| 1948 | 259.81 | 443 | 408 | 86 | 5.62 | 15 |
| 1949 | 53,993.32 | 91,583 | 84,436 | 18,151 | 5.90 | 3,076 |
| 1950 | 14,532.11 | 24,514 | 22,601 | 5,010 | 6.17 | 812 |
| 1951 | 8,674.48 | 14,546 | 13,411 | 3,071 | 6.46 | 475 |
| 1952 | 5,186.30 | 8,645 | 7,970 | 1,884 | 6.75 | 279 |
| 1953 | 27,920.28 | 46,239 | 42,631 | 10,418 | 7.06 | 1,476 |
| 1954 | 63,628.79 | 104,695 | 96,525 | 24,370 | 7.37 | 3,307 |
| 1955 | 17,921.54 | 29,284 | 26,999 | 7,052 | 7.70 | 916 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 367.00 UNDERGROUND CONDUCTORS AND DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

SURVIVOR CURVE.. IOWA 55-R3
NET SALVAGE PERCENT.. -90

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| 1956 | 6,950.27 | 11,275 | 10,395 | 2,811 | 8.04 | 350 |
| 1957 | 29,752.01 | 47,895 | 44,157 | 12,372 | 8.40 | 1,473 |
| 1958 | 35,578.87 | 56,821 | 52,387 | 15,213 | 8.77 | 1,735 |
| 1959 | 14,254.85 | 22,573 | 20,811 | 6,273 | 9.16 | 685 |
| 1960 | 8,490.56 | 13,328 | 12,288 | 3,844 | 9.56 | 402 |
| 1961 | 49,744.03 | 77,364 | 71,327 | 23,187 | 9.98 | 2,323 |
| 1962 | 3,226.04 | 4,969 | 4,581 | 1,548 | 10.41 | 149 |
| 1963 | 16,147.11 | 24,622 | 22,701 | 7,979 | 10.86 | 735 |
| 1964 | 2,410.72 | 3,637 | 3,353 | 1,227 | 11.33 | 108 |
| 1965 | 13,835.96 | 20,639 | 19,028 | 7,260 | 11.82 | 614 |
| 1966 | 5,952.65 | 8,775 | 8,090 | 3,220 | 12.33 | 261 |
| 1967 | 4,454.16 | 6,486 | 5,980 | 2,483 | 12.85 | 193 |
| 1968 | 6,242.73 | 8,974 | 8,274 | 3,587 | 13.39 | 268 |
| 1969 | 8,887.41 | 12,606 | 11,622 | 5,264 | 13.94 | 378 |
| 1970 | 38,829.12 | 54,312 | 50,074 | 23,701 | 14.51 | 1,633 |
| 1971 | 7,604.00 | 10,481 | 9,663 | 4,785 | 15.10 | 317 |
| 1972 | 52,094.11 | 70,707 | 65,189 | 33,790 | 15.71 | 2,151 |
| 1973 | 124,501.86 | 166,361 | 153,378 | 83,176 | 16.32 | 5,097 |
| 1974 | 79,535.14 | 104,518 | 96,362 | 54,755 | 16.96 | 3,228 |
| 1975 | 28,342.09 | 36,608 | 33,751 | 20,099 | 17.61 | 1,141 |
| 1976 | 41,319.70 | 52,429 | 48,338 | 30,169 | 18.27 | 1,651 |
| 1977 | 19,657.39 | 24,488 | 22,577 | 14,772 | 18.94 | 780 |
| 1978 | 54,029.22 | 66,017 | 60,865 | 41,791 | 19.63 | 2,129 |
| 1979 | 28,202.37 | 33,778 | 31,142 | 22,443 | 20.33 | 1,104 |
| 1980 | 29,485.25 | 34,591 | 31,892 | 24,130 | 21.04 | 1,147 |
| 1981 | 7,621.03 | 8,749 | 8,066 | 6,414 | 21.77 | 295 |
| 1982 | 21,594.37 | 24,245 | 22,353 | 18,676 | 22.50 | 830 |
| 1983 | 74,907.11 | 82,159 | 75,747 | 66,577 | 23.25 | 2,864 |
| 1984 | 62,322.26 | 66,719 | 61,512 | 56,900 | 24.01 | 2,370 |
| 1985 | 109,302.94 | 114,147 | 105,239 | 102,437 | 24.77 | 4,136 |
| 1986 | 92,804.47 | 94,415 | 87,047 | 89,281 | 25.55 | 3,494 |
| 1987 | 219,763.95 | 217,582 | 200,602 | 216,950 | 26.34 | 8,237 |
| 1988 | 140,258.84 | 134,991 | 124,456 | 142,036 | 27.14 | 5,233 |
| 1989 | 160,632.56 | 150,159 | 138,441 | 166,761 | 27.94 | 5,969 |
| 1990 | 84,634.28 | 76,719 | 70,732 | 90,073 | 28.76 | 3,132 |
| 1991 | 34,943.41 | 30,673 | 28,279 | 38,113 | 29.59 | 1,288 |
| 1992 | 22,803.06 | 19,363 | 17,852 | 25,474 | 30.42 | 837 |
| 1993 | 72,251.04 | 59,254 | 54,630 | 82,647 | 31.26 | 2,644 |
| 1994 | 187,789.97 | 148,493 | 136,905 | 219,896 | 32.11 | 6,848 |
| 1995 | 227,217.03 | 172,922 | 159,427 | 272,285 | 32.97 | 8,259 |
| 1996 | 149,956.68 | 109,616 | 101,062 | 183,856 | 33.84 | 5,433 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 367.00 UNDERGROUND CONDUCTORS AND DEVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 55-R3 | | | | | | |
| NET SALVAGE PERCENT.. -90 | | | | | | |
| 1997 | 452,145.93 | 316,768 | 292,048 | 567,029 | 34.72 | 16,331 |
| 1998 | 449,964.57 | 301,560 | 278,027 | 576,906 | 35.60 | 16,205 |
| 1999 | 287,125.93 | 183,601 | 169,273 | 376,266 | 36.49 | 10,311 |
| 2000 | 202,137.48 | 122,969 | 113,373 | 270,688 | 37.39 | 7,240 |
| 2001 | 1,119,965.89 | 646,126 | 595,703 | 1,532,232 | 38.30 | 40,006 |
| 2002 | 331,860.93 | 181,021 | 166,894 | 463,642 | 39.21 | 11,825 |
| 2003 | 187,471.99 | 96,301 | 88,786 | 267,411 | 40.13 | 6,664 |
| 2004 | 596,254.53 | 287,129 | 264,722 | 868,162 | 41.06 | 21,144 |
| 2005 | 501,723.86 | 225,497 | 207,900 | 745,375 | 41.99 | 17,751 |
| 2006 | 416,117.05 | 173,502 | 159,962 | 630,660 | 42.93 | 14,690 |
| 2007 | 349,473.65 | 134,367 | 123,881 | 540,119 | 43.87 | 12,312 |
| 2008 | 597,285.73 | 210,252 | 193,844 | 940,999 | 44.81 | 21,000 |
| 2009 | 134,389.52 | 42,851 | 39,507 | 215,833 | 45.77 | 4,716 |
| 2010 | 242,283.19 | 69,304 | 63,896 | 396,442 | 46.72 | 8,485 |
| 2011 | 270,946.01 | 68,422 | 63,082 | 451,715 | 47.69 | 9,472 |
| 2012 | 948,715.56 | 208,106 | 191,866 | 1,610,694 | 48.65 | 33,108 |
| 2013 | 735,791.58 | 136,753 | 126,081 | 1,271,923 | 49.62 | 25,633 |
| 2014 | 411,150.53 | 62,635 | 57,747 | 723,439 | 50.59 | 14,300 |
| 2015 | 327,832.07 | 38,843 | 35,812 | 587,069 | 51.57 | 11,384 |
| 2016 | 428,491.37 | 36,416 | 33,574 | 780,560 | 52.54 | 14,856 |
| 2017 | 607,152.19 | 31,043 | 28,620 | 1,124,969 | 53.52 | 21,020 |
| 2018 | 426,341.84 | 7,218 | 6,655 | 803,394 | 54.51 | 14,738 |
| | 12,692,703.42 | 6,564,778 | 6,054,148 | 18,061,988 | | 466,261 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 38.7 3.67

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 368.00 LINE TRANSFORMERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

SURVIVOR CURVE.. IOWA 40-R2
NET SALVAGE PERCENT.. -35

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| 1947 | 365.00 | 484 | 354 | 139 | 0.72 | 139 |
| 1955 | 406.16 | 508 | 372 | 176 | 2.92 | 60 |
| 1956 | 782.00 | 971 | 711 | 345 | 3.21 | 107 |
| 1959 | 3,084.10 | 3,739 | 2,738 | 1,426 | 4.08 | 350 |
| 1960 | 8,170.82 | 9,826 | 7,195 | 3,836 | 4.37 | 878 |
| 1961 | 8,361.38 | 9,970 | 7,301 | 3,987 | 4.67 | 854 |
| 1962 | 13,999.55 | 16,556 | 12,124 | 6,775 | 4.96 | 1,366 |
| 1963 | 11,072.20 | 12,982 | 9,506 | 5,441 | 5.26 | 1,034 |
| 1964 | 9,042.07 | 10,510 | 7,696 | 4,511 | 5.56 | 811 |
| 1965 | 8,836.85 | 10,179 | 7,454 | 4,476 | 5.87 | 763 |
| 1966 | 17,991.76 | 20,530 | 15,034 | 9,255 | 6.19 | 1,495 |
| 1967 | 30,554.08 | 34,535 | 25,289 | 15,959 | 6.51 | 2,451 |
| 1968 | 10,872.50 | 12,168 | 8,910 | 5,768 | 6.84 | 843 |
| 1969 | 60,488.59 | 66,981 | 49,048 | 32,612 | 7.19 | 4,536 |
| 1970 | 57,141.68 | 62,600 | 45,840 | 31,301 | 7.54 | 4,151 |
| 1971 | 12,837.36 | 13,908 | 10,184 | 7,146 | 7.90 | 905 |
| 1972 | 48,582.51 | 52,010 | 38,086 | 27,500 | 8.28 | 3,321 |
| 1973 | 4,417.42 | 4,671 | 3,420 | 2,544 | 8.67 | 293 |
| 1974 | 95,836.46 | 100,042 | 73,258 | 56,121 | 9.07 | 6,188 |
| 1975 | 29,823.80 | 30,710 | 22,488 | 17,774 | 9.49 | 1,873 |
| 1976 | 46,826.12 | 47,538 | 34,811 | 28,404 | 9.92 | 2,863 |
| 1977 | 86,347.52 | 86,349 | 63,231 | 53,338 | 10.37 | 5,143 |
| 1978 | 62,811.20 | 61,837 | 45,282 | 39,513 | 10.83 | 3,648 |
| 1979 | 61,988.39 | 60,023 | 43,953 | 39,731 | 11.31 | 3,513 |
| 1980 | 38,688.41 | 36,822 | 26,964 | 25,265 | 11.80 | 2,141 |
| 1981 | 38,982.78 | 36,444 | 26,687 | 25,940 | 12.30 | 2,109 |
| 1982 | 70,476.07 | 64,649 | 47,341 | 47,802 | 12.82 | 3,729 |
| 1983 | 116,826.43 | 105,039 | 76,917 | 80,799 | 13.36 | 6,048 |
| 1984 | 89,973.12 | 79,225 | 58,014 | 63,450 | 13.91 | 4,561 |
| 1985 | 106,430.01 | 91,704 | 67,152 | 76,529 | 14.47 | 5,289 |
| 1986 | 215,571.54 | 181,525 | 132,926 | 158,096 | 15.05 | 10,505 |
| 1987 | 201,534.46 | 165,692 | 121,332 | 150,740 | 15.64 | 9,638 |
| 1988 | 256,195.58 | 205,357 | 150,377 | 195,487 | 16.25 | 12,030 |
| 1989 | 246,681.87 | 192,569 | 141,013 | 192,008 | 16.87 | 11,382 |
| 1990 | 176,111.80 | 133,735 | 97,931 | 139,820 | 17.50 | 7,990 |
| 1991 | 218,333.50 | 161,007 | 117,901 | 176,849 | 18.15 | 9,744 |
| 1992 | 121,663.57 | 87,009 | 63,714 | 100,532 | 18.81 | 5,345 |
| 1993 | 249,585.80 | 172,851 | 126,574 | 210,367 | 19.48 | 10,799 |
| 1994 | 367,258.12 | 245,916 | 180,078 | 315,720 | 20.16 | 15,661 |
| 1995 | 313,598.67 | 202,577 | 148,342 | 275,016 | 20.86 | 13,184 |
| 1996 | 840,988.27 | 523,389 | 383,263 | 752,071 | 21.56 | 34,883 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 368.00 LINE TRANSFORMERS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 40-R2 | | | | | | |
| NET SALVAGE PERCENT.. -35 | | | | | | |
| 1997 | 225,841.82 | 135,065 | 98,904 | 205,982 | 22.28 | 9,245 |
| 1998 | 321,511.12 | 184,358 | 135,000 | 299,040 | 23.01 | 12,996 |
| 1999 | 502,652.22 | 275,673 | 201,868 | 476,712 | 23.75 | 20,072 |
| 2000 | 577,059.88 | 301,874 | 221,054 | 557,977 | 24.50 | 22,775 |
| 2001 | 236,615.42 | 117,710 | 86,196 | 233,235 | 25.26 | 9,233 |
| 2002 | 377,441.43 | 177,959 | 130,315 | 379,231 | 26.03 | 14,569 |
| 2003 | 253,161.63 | 112,613 | 82,463 | 259,305 | 26.82 | 9,668 |
| 2004 | 468,067.06 | 195,728 | 143,326 | 488,565 | 27.61 | 17,695 |
| 2005 | 597,283.61 | 233,635 | 171,085 | 635,248 | 28.41 | 22,360 |
| 2006 | 487,342.43 | 177,472 | 129,958 | 527,954 | 29.21 | 18,074 |
| 2007 | 723,394.25 | 243,413 | 178,245 | 798,337 | 30.03 | 26,585 |
| 2008 | 693,527.43 | 213,936 | 156,659 | 779,603 | 30.86 | 25,263 |
| 2009 | 252,712.38 | 70,876 | 51,901 | 289,261 | 31.69 | 9,128 |
| 2010 | 469,051.31 | 118,095 | 86,478 | 546,741 | 32.54 | 16,802 |
| 2011 | 619,301.73 | 138,158 | 101,169 | 734,888 | 33.39 | 22,009 |
| 2012 | 610,119.64 | 118,607 | 86,853 | 736,809 | 34.24 | 21,519 |
| 2013 | 660,399.57 | 108,991 | 79,811 | 811,728 | 35.11 | 23,120 |
| 2014 | 35,488.49 | 4,815 | 3,526 | 44,383 | 35.98 | 1,234 |
| 2015 | 1,235,239.04 | 130,488 | 95,553 | 1,572,020 | 36.87 | 42,637 |
| 2016 | 757,468.16 | 57,520 | 42,120 | 980,462 | 37.75 | 25,973 |
| 2017 | 832,722.16 | 37,941 | 27,783 | 1,096,392 | 38.65 | 28,367 |
| 2018 | 331,228.24 | 5,031 | 3,684 | 443,474 | 39.55 | 11,213 |
| | 15,627,168.54 | 6,575,095 | 4,814,762 | 16,281,916 | | 623,160 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 26.1 3.99

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 369.00 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

SURVIVOR CURVE.. IOWA 53-R4
NET SALVAGE PERCENT.. -150

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| 1925 | 121.17 | 303 | 303 | | | |
| 1926 | 646.95 | 1,617 | 1,617 | | | |
| 1929 | 680.22 | 1,701 | 1,701 | | | |
| 1931 | 25.11 | 63 | 63 | | | |
| 1932 | 87.89 | 220 | 220 | | | |
| 1933 | 50.22 | 126 | 126 | | | |
| 1934 | 77.22 | 193 | 193 | | | |
| 1936 | 75.34 | 188 | 188 | | | |
| 1937 | 129.95 | 325 | 325 | | | |
| 1938 | 31.39 | 78 | 78 | | | |
| 1939 | 87.91 | 218 | 214 | 6 | 0.36 | 6 |
| 1940 | 170.61 | 422 | 413 | 14 | 0.51 | 14 |
| 1942 | 627.82 | 1,543 | 1,512 | 58 | 0.89 | 58 |
| 1943 | 702.54 | 1,720 | 1,685 | 71 | 1.10 | 65 |
| 1947 | 2,608.31 | 6,272 | 6,144 | 377 | 2.02 | 187 |
| 1949 | 1,746.11 | 4,159 | 4,074 | 291 | 2.51 | 116 |
| 1950 | 512.95 | 1,216 | 1,191 | 91 | 2.76 | 33 |
| 1952 | 27.24 | 64 | 63 | 5 | 3.28 | 2 |
| 1953 | 151.12 | 352 | 345 | 33 | 3.55 | 9 |
| 1954 | 151.81 | 352 | 345 | 35 | 3.82 | 9 |
| 1955 | 3,977.03 | 9,175 | 8,988 | 955 | 4.09 | 233 |
| 1956 | 6,631.34 | 15,211 | 14,901 | 1,677 | 4.37 | 384 |
| 1957 | 10,392.19 | 23,696 | 23,214 | 2,766 | 4.66 | 594 |
| 1958 | 26,458.75 | 59,957 | 58,737 | 7,410 | 4.96 | 1,494 |
| 1959 | 16,468.51 | 37,078 | 36,323 | 4,848 | 5.27 | 920 |
| 1960 | 14,646.25 | 32,754 | 32,087 | 4,529 | 5.59 | 810 |
| 1961 | 15,665.93 | 34,775 | 34,067 | 5,098 | 5.94 | 858 |
| 1962 | 10,551.94 | 23,244 | 22,771 | 3,609 | 6.30 | 573 |
| 1963 | 15,134.96 | 33,068 | 32,395 | 5,442 | 6.68 | 815 |
| 1964 | 10,798.57 | 23,385 | 22,909 | 4,087 | 7.09 | 576 |
| 1965 | 17,007.99 | 36,479 | 35,737 | 6,783 | 7.53 | 901 |
| 1966 | 8,590.48 | 18,239 | 17,868 | 3,608 | 7.99 | 452 |
| 1967 | 14,185.51 | 29,783 | 29,177 | 6,287 | 8.49 | 741 |
| 1968 | 9,562.76 | 19,838 | 19,434 | 4,473 | 9.02 | 496 |
| 1969 | 7,395.68 | 15,151 | 14,843 | 3,646 | 9.57 | 381 |
| 1970 | 19,556.63 | 39,519 | 38,715 | 10,177 | 10.16 | 1,002 |
| 1971 | 2,811.28 | 5,600 | 5,486 | 1,542 | 10.77 | 143 |
| 1972 | 19,568.53 | 38,390 | 37,609 | 11,312 | 11.41 | 991 |
| 1973 | 47,176.41 | 91,081 | 89,227 | 28,714 | 12.07 | 2,379 |
| 1974 | 32,844.37 | 62,373 | 61,104 | 21,007 | 12.74 | 1,649 |
| 1975 | 17,413.42 | 32,510 | 31,848 | 11,686 | 13.42 | 871 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 369.00 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 53-R4 | | | | | | |
| NET SALVAGE PERCENT.. -150 | | | | | | |
| 1976 | 34,375.27 | 63,043 | 61,760 | 24,178 | 14.12 | 1,712 |
| 1977 | 30,956.71 | 55,737 | 54,603 | 22,789 | 14.83 | 1,537 |
| 1978 | 50,457.53 | 89,111 | 87,297 | 38,847 | 15.56 | 2,497 |
| 1979 | 47,183.51 | 81,681 | 80,019 | 37,940 | 16.30 | 2,328 |
| 1980 | 66,307.04 | 112,440 | 110,152 | 55,616 | 17.05 | 3,262 |
| 1981 | 57,427.97 | 95,297 | 93,358 | 50,212 | 17.82 | 2,818 |
| 1982 | 53,838.53 | 87,361 | 85,583 | 49,013 | 18.60 | 2,635 |
| 1983 | 78,871.11 | 125,040 | 122,495 | 74,683 | 19.39 | 3,852 |
| 1984 | 78,691.97 | 121,750 | 119,272 | 77,458 | 20.20 | 3,835 |
| 1985 | 64,964.57 | 97,968 | 95,974 | 66,437 | 21.03 | 3,159 |
| 1986 | 97,110.62 | 142,643 | 139,740 | 103,037 | 21.86 | 4,713 |
| 1987 | 67,966.19 | 97,108 | 95,132 | 74,783 | 22.71 | 3,293 |
| 1988 | 131,521.27 | 182,578 | 178,862 | 149,941 | 23.57 | 6,362 |
| 1989 | 110,920.23 | 149,376 | 146,336 | 130,965 | 24.45 | 5,356 |
| 1990 | 92,999.85 | 121,383 | 118,913 | 113,587 | 25.33 | 4,484 |
| 1991 | 96,731.95 | 122,146 | 119,660 | 122,170 | 26.23 | 4,658 |
| 1992 | 85,921.34 | 104,807 | 102,674 | 112,129 | 27.14 | 4,132 |
| 1993 | 207,883.50 | 244,653 | 239,674 | 280,035 | 28.05 | 9,983 |
| 1994 | 194,365.63 | 220,221 | 215,739 | 270,175 | 28.98 | 9,323 |
| 1995 | 191,994.33 | 209,111 | 204,855 | 275,131 | 29.91 | 9,199 |
| 1996 | 292,149.47 | 305,238 | 299,026 | 431,348 | 30.85 | 13,982 |
| 1997 | 264,383.41 | 264,383 | 259,002 | 401,957 | 31.80 | 12,640 |
| 1998 | 277,588.60 | 265,021 | 259,627 | 434,344 | 32.76 | 13,258 |
| 1999 | 312,914.97 | 284,573 | 278,781 | 503,506 | 33.72 | 14,932 |
| 2000 | 240,458.39 | 207,792 | 203,563 | 397,583 | 34.68 | 11,464 |
| 2001 | 312,269.59 | 255,561 | 250,360 | 530,314 | 35.65 | 14,876 |
| 2002 | 384,822.39 | 297,150 | 291,103 | 670,953 | 36.63 | 18,317 |
| 2003 | 510,647.48 | 370,947 | 363,398 | 913,221 | 37.60 | 24,288 |
| 2004 | 511,114.15 | 347,660 | 340,584 | 937,201 | 38.58 | 24,292 |
| 2005 | 609,681.12 | 386,233 | 378,373 | 1,145,830 | 39.57 | 28,957 |
| 2006 | 481,113.85 | 282,318 | 276,572 | 926,213 | 40.56 | 22,836 |
| 2007 | 415,221.71 | 224,458 | 219,890 | 818,164 | 41.54 | 19,696 |
| 2008 | 484,436.74 | 239,021 | 234,157 | 976,935 | 42.54 | 22,965 |
| 2009 | 872,797.98 | 389,879 | 381,944 | 1,800,051 | 43.53 | 41,352 |
| 2010 | 298,153.62 | 119,261 | 116,834 | 628,550 | 44.52 | 14,118 |
| 2011 | 155,490.78 | 54,861 | 53,744 | 334,983 | 45.52 | 7,359 |
| 2012 | 271,200.54 | 83,021 | 81,331 | 596,670 | 46.51 | 12,829 |
| 2013 | 200,274.67 | 51,861 | 50,806 | 449,881 | 47.51 | 9,469 |
| 2014 | 481,302.57 | 101,940 | 99,865 | 1,103,391 | 48.51 | 22,746 |
| 2015 | 465,194.50 | 76,804 | 75,241 | 1,087,745 | 49.50 | 21,975 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 369.00 SERVICES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 53-R4 | | | | | | |
| NET SALVAGE PERCENT.. -150 | | | | | | |
| 2016 | 336,636.94 | 39,698 | 38,890 | 802,702 | 50.50 | 15,895 |
| 2017 | 271,376.87 | 19,200 | 18,809 | 659,633 | 51.50 | 12,808 |
| 2018 | 309,657.50 | 7,300 | 7,152 | 766,992 | 52.50 | 14,609 |
| | 10,934,927.37 | 7,900,072 | 7,739,390 | 19,597,928 | | 522,563 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 37.5 4.78

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 370.00 METERS AND METER INSTALLATIONS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

SURVIVOR CURVE.. IOWA 20-S0.5
NET SALVAGE PERCENT.. -10

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| 1981 | 166,342.84 | 174,926 | 47,763 | 135,214 | 0.88 | 135,214 |
| 1982 | 174,903.83 | 180,658 | 49,328 | 143,066 | 1.22 | 117,267 |
| 1983 | 101,359.10 | 102,798 | 28,069 | 83,426 | 1.56 | 53,478 |
| 1984 | 225,385.43 | 224,495 | 61,298 | 186,626 | 1.89 | 98,744 |
| 1985 | 112,742.21 | 110,189 | 30,087 | 93,929 | 2.23 | 42,121 |
| 1986 | 183,515.41 | 176,028 | 48,064 | 153,803 | 2.56 | 60,079 |
| 1987 | 65,725.04 | 61,814 | 16,878 | 55,420 | 2.90 | 19,110 |
| 1988 | 144,713.87 | 133,397 | 36,424 | 122,761 | 3.24 | 37,889 |
| 1989 | 115,117.81 | 103,963 | 28,387 | 98,243 | 3.58 | 27,442 |
| 1990 | 116,008.66 | 102,534 | 27,997 | 99,613 | 3.93 | 25,347 |
| 1991 | 56,024.66 | 48,408 | 13,218 | 48,409 | 4.29 | 11,284 |
| 1992 | 102,843.85 | 86,826 | 23,708 | 89,420 | 4.65 | 19,230 |
| 1993 | 57,707.37 | 47,577 | 12,991 | 50,487 | 5.01 | 10,077 |
| 1994 | 91,064.82 | 73,175 | 19,980 | 80,191 | 5.39 | 14,878 |
| 1995 | 73,544.74 | 57,560 | 15,717 | 65,182 | 5.77 | 11,297 |
| 1996 | 79,785.22 | 60,733 | 16,583 | 71,181 | 6.16 | 11,555 |
| 1997 | 14,313.65 | 10,581 | 2,889 | 12,856 | 6.56 | 1,960 |
| 1998 | 65,741.68 | 47,078 | 12,854 | 59,462 | 6.98 | 8,519 |
| 1999 | 85,356.63 | 59,152 | 16,151 | 77,741 | 7.40 | 10,506 |
| 2000 | 47,384.07 | 31,690 | 8,653 | 43,469 | 7.84 | 5,545 |
| 2001 | 51,466.57 | 33,147 | 9,051 | 47,562 | 8.29 | 5,737 |
| 2002 | 3,948.32 | 2,443 | 667 | 3,676 | 8.75 | 420 |
| 2003 | 3,912.97 | 2,318 | 633 | 3,671 | 9.23 | 398 |
| 2004 | 13,775.82 | 7,781 | 2,125 | 13,028 | 9.73 | 1,339 |
| 2005 | 176,572.79 | 94,687 | 25,854 | 168,376 | 10.25 | 16,427 |
| 2006 | 37,644.12 | 19,069 | 5,207 | 36,202 | 10.79 | 3,355 |
| 2007 | 1,115,718.00 | 530,803 | 144,933 | 1,082,357 | 11.35 | 95,362 |
| 2008 | 144,143.99 | 63,978 | 17,469 | 141,089 | 11.93 | 11,826 |
| 2009 | 166,100.59 | 68,151 | 18,608 | 164,103 | 12.54 | 13,086 |
| 2010 | 125,470.96 | 47,064 | 12,851 | 125,167 | 13.18 | 9,497 |
| 2011 | 211,984.95 | 71,821 | 19,610 | 213,573 | 13.84 | 15,432 |
| 2012 | 232,632.93 | 69,860 | 19,075 | 236,821 | 14.54 | 16,288 |
| 2013 | 331,803.16 | 86,319 | 23,569 | 341,414 | 15.27 | 22,358 |
| 2015 | 819,584.06 | 142,444 | 38,894 | 862,648 | 16.84 | 51,226 |
| 2016 | 697,638.02 | 88,635 | 24,201 | 743,201 | 17.69 | 42,012 |
| 2017 | 719,563.20 | 56,594 | 15,453 | 776,067 | 18.57 | 41,791 |
| 2018 | 579,997.90 | 15,631 | 4,268 | 633,730 | 19.51 | 32,482 |
| | 7,511,539.24 | 3,294,327 | 899,507 | 7,363,186 | | 1,100,578 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 6.7 14.65

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 371.00 INSTALLATIONS ON CUSTOMERS' PREMISES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 15-S2.5 | | | | | | |
| NET SALVAGE PERCENT.. -10 | | | | | | |
| 1967 | 664.37 | 731 | 731 | | | |
| 1968 | 1,672.02 | 1,839 | 1,839 | | | |
| 1969 | 343.99 | 378 | 378 | | | |
| 1970 | 1,799.27 | 1,979 | 1,979 | | | |
| 1972 | 619.97 | 682 | 682 | | | |
| 1973 | 1,790.80 | 1,970 | 1,970 | | | |
| 1974 | 1,373.03 | 1,510 | 1,510 | | | |
| 1975 | 1,556.49 | 1,712 | 1,712 | | | |
| 1976 | 613.63 | 675 | 675 | | | |
| 1977 | 980.97 | 1,079 | 1,079 | | | |
| 1978 | 859.62 | 946 | 946 | | | |
| 1979 | 782.31 | 861 | 861 | | | |
| 1980 | 872.86 | 960 | 960 | | | |
| 1982 | 156.14 | 172 | 172 | | | |
| 1984 | 221.40 | 244 | 244 | | | |
| 1985 | 303.87 | 334 | 334 | | | |
| 1986 | 2,250.44 | 2,475 | 2,475 | | | |
| 1987 | 189.38 | 208 | 208 | | | |
| 1990 | 900.86 | 973 | 991 | | | |
| 1992 | 4,779.77 | 5,033 | 5,258 | | | |
| 1993 | 2,988.64 | 3,106 | 3,288 | | | |
| 1994 | 7,348.63 | 7,534 | 8,083 | | | |
| 1995 | 6,952.86 | 7,031 | 7,648 | | | |
| 1996 | 7,509.76 | 7,490 | 8,261 | | | |
| 1997 | 8,321.20 | 8,177 | 9,153 | | | |
| 1998 | 24,038.50 | 23,252 | 26,442 | | | |
| 1999 | 16,366.65 | 15,555 | 18,003 | | | |
| 2000 | 19,529.24 | 18,217 | 21,482 | | | |
| 2001 | 19,902.69 | 18,156 | 21,893 | | | |
| 2002 | 20,869.84 | 18,580 | 22,957 | | | |
| 2003 | 39,553.17 | 34,227 | 43,508 | | | |
| 2004 | 54,098.68 | 45,306 | 59,509 | | | |
| 2005 | 52,818.07 | 42,606 | 58,100 | | | |
| 2006 | 30,921.84 | 23,833 | 34,014 | | | |
| 2007 | 54,708.51 | 40,039 | 60,179 | | | |
| 2008 | 52,397.47 | 36,004 | 57,637 | | | |
| 2009 | 241,919.34 | 154,345 | 266,111 | | | |
| 2010 | 75,669.46 | 44,226 | 83,236 | | | |
| 2011 | 36,767.05 | 19,332 | 40,444 | | | |
| 2012 | 90,621.49 | 41,934 | 88,575 | 11,109 | 8.69 | 1,278 |
| 2013 | 70,516.62 | 27,925 | 58,985 | 18,583 | 9.60 | 1,936 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 371.00 INSTALLATIONS ON CUSTOMERS' PREMISES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 15-S2.5 | | | | | | |
| NET SALVAGE PERCENT.. -10 | | | | | | |
| 2014 | 81,497.45 | 26,655 | 56,302 | 33,345 | 10.54 | 3,164 |
| 2015 | 58,550.91 | 14,942 | 31,561 | 32,845 | 11.52 | 2,851 |
| 2016 | 102,904.84 | 18,866 | 39,850 | 73,345 | 12.50 | 5,868 |
| 2017 | 29,214.86 | 3,214 | 6,789 | 25,347 | 13.50 | 1,878 |
| 2018 | 50,542.78 | 1,853 | 3,914 | 51,683 | 14.50 | 3,564 |
| | 1,279,261.74 | 727,166 | 1,160,928 | 246,260 | | 20,539 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 12.0 1.61

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 373.00 STREET LIGHTING AND SIGNAL SYSTEMS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 28-S0.5 | | | | | | |
| NET SALVAGE PERCENT.. -10 | | | | | | |
| 1957 | 257.99 | 284 | 284 | | | |
| 1968 | 102.48 | 105 | 113 | | | |
| 1970 | 1,146.67 | 1,145 | 1,261 | | | |
| 1972 | 2,196.14 | 2,135 | 2,416 | | | |
| 1973 | 433.66 | 416 | 477 | | | |
| 1974 | 750.71 | 710 | 826 | | | |
| 1975 | 80.03 | 75 | 88 | | | |
| 1978 | 820.49 | 732 | 903 | | | |
| 1979 | 492.31 | 432 | 542 | | | |
| 1980 | 3,300.57 | 2,853 | 3,631 | | | |
| 1981 | 1,171.19 | 996 | 1,288 | | | |
| 1982 | 1,196.72 | 1,000 | 1,316 | | | |
| 1984 | 231.73 | 187 | 255 | | | |
| 1985 | 29,863.11 | 23,640 | 32,849 | | | |
| 1986 | 291.12 | 226 | 320 | | | |
| 1987 | 1,245.56 | 948 | 1,370 | | | |
| 1988 | 4,340.21 | 3,235 | 4,774 | | | |
| 1989 | 466.44 | 340 | 513 | | | |
| 1991 | 571.75 | 398 | 629 | | | |
| 1993 | 1,931.05 | 1,278 | 2,124 | | | |
| 1994 | 7,726.56 | 4,978 | 8,499 | | | |
| 1995 | 3,345.01 | 2,095 | 3,680 | | | |
| 1996 | 2,184.30 | 1,327 | 2,403 | | | |
| 1997 | 7,555.84 | 4,444 | 8,311 | | | |
| 1998 | 4,178.97 | 2,377 | 4,597 | | | |
| 1999 | 30,909.70 | 16,952 | 33,666 | 335 | 14.04 | 24 |
| 2000 | 6,719.40 | 3,548 | 7,046 | 345 | 14.56 | 24 |
| 2001 | 9,464.42 | 4,796 | 9,525 | 886 | 15.10 | 59 |
| 2002 | 1,615.69 | 783 | 1,555 | 222 | 15.66 | 14 |
| 2003 | 9,108.06 | 4,212 | 8,365 | 1,654 | 16.23 | 102 |
| 2004 | 8,820.97 | 3,874 | 7,694 | 2,009 | 16.82 | 119 |
| 2005 | 2,677.28 | 1,112 | 2,208 | 737 | 17.43 | 42 |
| 2006 | 8,028.64 | 3,135 | 6,226 | 2,606 | 18.06 | 144 |
| 2007 | 9,019.48 | 3,292 | 6,538 | 3,383 | 18.71 | 181 |
| 2008 | 9,170.76 | 3,106 | 6,168 | 3,920 | 19.38 | 202 |
| 2009 | 35,647.95 | 11,105 | 22,054 | 17,159 | 20.07 | 855 |
| 2010 | 8,185.55 | 2,319 | 4,606 | 4,398 | 20.79 | 212 |
| 2011 | 48.70 | 12 | 24 | 30 | 21.53 | 1 |
| 2012 | 17,845.59 | 4,003 | 7,950 | 11,680 | 22.29 | 524 |
| 2013 | 22,973.22 | 4,431 | 8,800 | 16,471 | 23.09 | 713 |
| 2014 | 11,700.87 | 1,880 | 3,734 | 9,137 | 23.91 | 382 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 373.00 STREET LIGHTING AND SIGNAL SYSTEMS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 28-S0.5 | | | | | | |
| NET SALVAGE PERCENT.. -10 | | | | | | |
| 2015 | 24,113.22 | 3,069 | 6,095 | 20,430 | 24.76 | 825 |
| 2016 | 21,941.24 | 2,034 | 4,039 | 20,096 | 25.64 | 784 |
| 2017 | 23,623.29 | 1,336 | 2,653 | 23,333 | 26.56 | 879 |
| 2018 | 14,799.19 | 285 | 566 | 15,713 | 27.51 | 571 |
| | 352,293.83 | 131,640 | 232,981 | 154,542 | | 6,657 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 23.2 1.89

FULLY ACCRUED

| | | | |
|---|---|---|---|
| 1974 | 848.47 | 848 | 848 |
| 1993 | 2,675.62 | 2,676 | 2,676 |
| | 3,524.09 | 3,524 | 3,524 |

AMORTIZED
SURVIVOR CURVE.. 25-SQUARE
NET SALVAGE PERCENT.. 0

| | | | | | | |
|---|---|---|---|---|---|---|
| 1994 | 2,374.37 | 2,327 | 2,323 | 51 | 0.50 | 51 |
| 1995 | 23,184.52 | 21,793 | 21,759 | 1,425 | 1.50 | 950 |
| 1996 | 2,652.39 | 2,387 | 2,383 | 269 | 2.50 | 108 |
| 1997 | 13,387.05 | 11,513 | 11,495 | 1,892 | 3.50 | 541 |
| 1998 | 2,167.05 | 1,777 | 1,774 | 393 | 4.50 | 87 |
| 1999 | 9,246.01 | 7,212 | 7,201 | 2,045 | 5.50 | 372 |
| 2000 | 42,827.50 | 31,692 | 31,643 | 11,184 | 6.50 | 1,721 |
| 2001 | 20,326.75 | 14,229 | 14,207 | 6,120 | 7.50 | 816 |
| 2002 | 9,537.01 | 6,294 | 6,284 | 3,253 | 8.50 | 383 |
| 2003 | 10,238.69 | 6,348 | 6,338 | 3,900 | 9.50 | 411 |
| 2004 | 7,600.53 | 4,408 | 4,401 | 3,199 | 10.50 | 305 |
| 2005 | 10,623.22 | 5,737 | 5,728 | 4,895 | 11.50 | 426 |
| 2006 | 7,259.34 | 3,630 | 3,624 | 3,635 | 12.50 | 291 |
| 2007 | 11,415.98 | 5,251 | 5,243 | 6,173 | 13.50 | 457 |
| 2008 | 17,721.12 | 7,443 | 7,432 | 10,290 | 14.50 | 710 |
| 2009 | 18,550.13 | 7,049 | 7,038 | 11,512 | 15.50 | 743 |
| 2010 | 139,557.57 | 47,450 | 47,377 | 92,181 | 16.50 | 5,587 |
| 2011 | 24,436.80 | 7,331 | 7,320 | 17,117 | 17.50 | 978 |
| 2012 | 104,485.75 | 27,166 | 27,124 | 77,362 | 18.50 | 4,182 |
| 2013 | 26,212.69 | 5,767 | 5,758 | 20,455 | 19.50 | 1,049 |
| 2014 | 55,222.09 | 9,940 | 9,925 | 45,297 | 20.50 | 2,210 |
| 2015 | 21,820.37 | 3,055 | 3,050 | 18,770 | 21.50 | 873 |
| 2016 | 38,284.89 | 3,828 | 3,822 | 34,463 | 22.50 | 1,532 |
| 2017 | 50,978.46 | 3,059 | 3,054 | 47,924 | 23.50 | 2,039 |
| 2018 | 42,236.03 | 845 | 844 | 41,392 | 24.50 | 1,689 |
| | 712,346.31 | 247,531 | 247,150 | 465,196 | | 28,511 |
| | 715,870.40 | 251,055 | 250,674 | 465,196 | | 28,511 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 16.3 3.98

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 395.00 LABORATORY EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| FULLY ACCRUED | | | | | | |
| 1987 | 3,135.61 | 3,136 | 3,136 | | | |
| 1992 | 1,115.00 | 1,115 | 1,115 | | | |
| 1993 | 6,988.00 | 6,988 | 6,988 | | | |
| 1994 | 10,300.80 | 10,301 | 10,301 | | | |
| 1995 | 19,029.12 | 19,029 | 19,029 | | | |
| 1996 | 1,187.55 | 1,188 | 1,188 | | | |
| 1997 | 19,225.01 | 19,225 | 19,225 | | | |
| 1998 | 26,702.80 | 26,703 | 26,703 | | | |
| | 87,683.89 | 87,685 | 87,684 | | | |
| AMORTIZED | | | | | | |
| SURVIVOR CURVE.. 20-SQUARE | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | |
| 1999 | 871.05 | 849 | 848 | 23 | 0.50 | 23 |
| 2001 | 13,456.88 | 11,775 | 11,757 | 1,700 | 2.50 | 680 |
| 2003 | 22,325.20 | 17,302 | 17,275 | 5,050 | 4.50 | 1,122 |
| 2004 | 1,994.48 | 1,446 | 1,444 | 551 | 5.50 | 100 |
| 2006 | 15,012.64 | 9,383 | 9,369 | 5,644 | 7.50 | 753 |
| 2009 | 6,236.58 | 2,962 | 2,957 | 3,279 | 10.50 | 312 |
| 2011 | 7,271.29 | 2,727 | 2,723 | 4,548 | 12.50 | 364 |
| 2012 | 7,119.48 | 2,314 | 2,310 | 4,809 | 13.50 | 356 |
| 2013 | 74,420.14 | 20,466 | 20,435 | 53,986 | 14.50 | 3,723 |
| 2014 | 31,822.66 | 7,160 | 7,149 | 24,674 | 15.50 | 1,592 |
| 2015 | 25,452.58 | 4,454 | 4,447 | 21,005 | 16.50 | 1,273 |
| 2016 | 12,759.43 | 1,595 | 1,593 | 11,167 | 17.50 | 638 |
| 2017 | 53,804.16 | 4,035 | 4,029 | 49,775 | 18.50 | 2,691 |
| 2018 | 6,610.25 | 165 | 165 | 6,446 | 19.50 | 331 |
| | 279,156.82 | 86,633 | 86,500 | 192,657 | | 13,958 |
| | 366,840.71 | 174,318 | 174,184 | 192,657 | | 13,958 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 13.8 3.80

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 396.00 POWER OPERATED EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 20-S2 | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | |
| 1997 | 4,479.75 | 3,472 | 3,472 | 1,008 | 4.50 | 224 |
| | 4,479.75 | 3,472 | 3,472 | 1,008 | | 224 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 4.5 5.00

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 397.00 COMMUNICATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| FULLY ACCRUED | | | | | | |
| 1997 | 1,041.15 | 1,041 | 1,041 | | | |
| 2002 | 174,093.96 | 174,094 | 174,094 | | | |
| | 175,135.11 | 175,135 | 175,135 | | | |
| AMORTIZED | | | | | | |
| SURVIVOR CURVE.. 15-SQUARE | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | |
| 2004 | 6,272.53 | 6,063 | 6,034 | 239 | 0.50 | 239 |
| 2006 | 102,924.41 | 85,770 | 85,353 | 17,571 | 2.50 | 7,028 |
| 2008 | 5,270.12 | 3,689 | 3,671 | 1,599 | 4.50 | 355 |
| 2009 | 3,500.29 | 2,217 | 2,206 | 1,294 | 5.50 | 235 |
| 2011 | 1,135.22 | 568 | 565 | 570 | 7.50 | 76 |
| 2013 | 16,377.45 | 6,005 | 5,976 | 10,402 | 9.50 | 1,095 |
| 2014 | 28,140.00 | 8,442 | 8,401 | 19,739 | 10.50 | 1,880 |
| 2015 | 1,792.85 | 418 | 416 | 1,377 | 11.50 | 120 |
| 2016 | 97,038.85 | 16,173 | 16,094 | 80,944 | 12.50 | 6,476 |
| 2017 | 105,985.62 | 10,599 | 10,547 | 95,438 | 13.50 | 7,069 |
| 2018 | 157,867.73 | 5,262 | 5,236 | 152,631 | 14.50 | 10,526 |
| | 526,305.07 | 145,206 | 144,500 | 381,805 | | 35,099 |
| | 701,440.18 | 320,341 | 319,635 | 381,805 | | 35,099 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 10.9 5.00

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
ELECTRIC PLANT

ACCOUNT 398.00 MISCELLANEOUS EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| FULLY ACCRUED | | | | | | |
| 1984 | 350.38 | 350 | 350 | | | |
| 1987 | 910.10 | 910 | 910 | | | |
| 1990 | 1,944.97 | 1,945 | 1,945 | | | |
| 1991 | 2,598.13 | 2,598 | 2,598 | | | |
| 1995 | 6,607.65 | 6,608 | 6,608 | | | |
| 1996 | 2,426.03 | 2,426 | 2,426 | | | |
| 1997 | 6,293.00 | 6,293 | 6,293 | | | |
| 1998 | 2,483.13 | 2,483 | 2,483 | | | |
| | 23,613.39 | 23,613 | 23,613 | | | |
| AMORTIZED | | | | | | |
| SURVIVOR CURVE.. 20-SQUARE | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | |
| 1999 | 575.97 | 562 | 547 | 29 | 0.50 | 29 |
| | 575.97 | 562 | 547 | 29 | | 29 |
| | 24,189.36 | 24,175 | 24,160 | 29 | | 29 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 1.0 0.12

# COMMON

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
COMMON PLANT

ACCOUNT 390.00 STRUCTURES AND IMPROVEMENTS - MINOR STRUCTURES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 30-S0 | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | |
| 1910 | 597.21 | 597 | 597 | | | |
| 1931 | 326.12 | 326 | 326 | | | |
| 1939 | 503.64 | 504 | 504 | | | |
| 1940 | 1,858.72 | 1,859 | 1,859 | | | |
| 1949 | 3,583.09 | 3,583 | 3,583 | | | |
| 1951 | 836.68 | 837 | 837 | | | |
| 1956 | 1,833.30 | 1,833 | 1,833 | | | |
| 1960 | 313.00 | 307 | 313 | | | |
| 1961 | 1,641.00 | 1,591 | 1,641 | | | |
| 1964 | 2,864.00 | 2,670 | 2,864 | | | |
| 1965 | 3,257.00 | 2,996 | 3,257 | | | |
| 1967 | 275.00 | 246 | 275 | | | |
| 1970 | 13,680.00 | 11,719 | 13,680 | | | |
| 1973 | 522.89 | 428 | 523 | | | |
| 1976 | 16,790.64 | 13,063 | 16,090 | 701 | 6.66 | 105 |
| 1977 | 1,257.87 | 962 | 1,185 | 73 | 7.06 | 10 |
| 1978 | 733.62 | 551 | 679 | 55 | 7.46 | 7 |
| 1980 | 2,320.95 | 1,680 | 2,069 | 252 | 8.28 | 30 |
| 1981 | 17,896.68 | 12,707 | 15,651 | 2,246 | 8.70 | 258 |
| 1982 | 92,285.06 | 64,261 | 79,150 | 13,135 | 9.11 | 1,442 |
| 1984 | 3,649.73 | 2,438 | 3,003 | 647 | 9.96 | 65 |
| 1986 | 37,653.35 | 24,073 | 29,651 | 8,002 | 10.82 | 740 |
| 1987 | 42,118.69 | 26,310 | 32,406 | 9,713 | 11.26 | 863 |
| 1988 | 39,092.00 | 23,846 | 29,371 | 9,721 | 11.70 | 831 |
| 1989 | 42,856.16 | 25,499 | 31,407 | 11,449 | 12.15 | 942 |
| 1990 | 80,136.29 | 46,479 | 57,248 | 22,888 | 12.60 | 1,817 |
| 1991 | 52,561.60 | 29,680 | 36,557 | 16,005 | 13.06 | 1,225 |
| 1992 | 135,286.91 | 74,317 | 91,537 | 43,750 | 13.52 | 3,236 |
| 1993 | 56,555.63 | 30,182 | 37,175 | 19,381 | 13.99 | 1,385 |
| 1994 | 33,677.61 | 17,434 | 21,474 | 12,204 | 14.47 | 843 |
| 1995 | 192,424.99 | 96,534 | 118,901 | 73,524 | 14.95 | 4,918 |
| 1996 | 64,486.00 | 31,297 | 38,549 | 25,937 | 15.44 | 1,680 |
| 1997 | 71,296.21 | 33,438 | 41,186 | 30,110 | 15.93 | 1,890 |
| 1998 | 186,788.27 | 84,428 | 103,990 | 82,798 | 16.44 | 5,036 |
| 1999 | 1,575.00 | 685 | 844 | 731 | 16.95 | 43 |
| 2000 | 5,423.00 | 2,265 | 2,790 | 2,633 | 17.47 | 151 |
| 2001 | 8,914.71 | 3,566 | 4,392 | 4,523 | 18.00 | 251 |
| 2002 | 29,153.34 | 11,137 | 13,717 | 15,436 | 18.54 | 833 |
| 2003 | 26,133.45 | 9,504 | 11,706 | 14,427 | 19.09 | 756 |
| 2004 | 71,322.93 | 24,606 | 30,307 | 41,016 | 19.65 | 2,087 |
| 2005 | 92,441.46 | 30,136 | 37,119 | 55,322 | 20.22 | 2,736 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
COMMON PLANT

ACCOUNT 390.00 STRUCTURES AND IMPROVEMENTS - MINOR STRUCTURES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 30-S0 | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | |
| 2006 | 38,778.99 | 11,879 | 14,631 | 24,148 | 20.81 | 1,160 |
| 2007 | 5,271.63 | 1,509 | 1,859 | 3,413 | 21.41 | 159 |
| 2008 | 52,462.53 | 13,938 | 17,167 | 35,296 | 22.03 | 1,602 |
| 2009 | 46,027.45 | 11,262 | 13,871 | 32,156 | 22.66 | 1,419 |
| 2010 | 13,440.39 | 2,993 | 3,687 | 9,753 | 23.32 | 418 |
| 2011 | 15,852.91 | 3,176 | 3,912 | 11,941 | 23.99 | 498 |
| 2012 | 8,742.51 | 1,550 | 1,909 | 6,834 | 24.68 | 277 |
| 2013 | 874,007.19 | 134,012 | 165,063 | 708,944 | 25.40 | 27,911 |
| 2014 | 27,999.07 | 3,593 | 4,426 | 23,573 | 26.15 | 901 |
| 2015 | 1,781.00 | 182 | 224 | 1,557 | 26.93 | 58 |
| 2016 | 7,245.16 | 546 | 673 | 6,572 | 27.74 | 237 |
| 2017 | 7,162.87 | 334 | 411 | 6,752 | 28.60 | 236 |
| 2018 | 243,852.67 | 3,902 | 4,806 | 239,047 | 29.52 | 8,098 |
| | 2,779,548.17 | 939,450 | 1,152,885 | 1,626,663 | | 77,154 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 21.1 2.78

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
COMMON PLANT

ACCOUNT 390.01 STRUCTURES AND IMPROVEMENTS - DOC FACILITY

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| INTERIM SURVIVOR CURVE.. IOWA 75-R2.5 | | | | | | |
| PROBABLE RETIREMENT YEAR.. 12-2078 | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | |
| 2018 | 11,384,568.00 | 97,907 | 120,151 | 11,264,417 | 55.34 | 203,549 |
| | 11,384,568.00 | 97,907 | 120,151 | 11,264,417 | | 203,549 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 55.3 1.79

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
COMMON PLANT

ACCOUNT 391.00 OFFICE FURNITURE AND EQUPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| FULLY ACCRUED | | | | | | |
| 1982 | 20,674.92 | 20,675 | 20,675 | | | |
| 1983 | 4,583.99 | 4,584 | 4,584 | | | |
| 1984 | 7,201.38 | 7,201 | 7,201 | | | |
| 1985 | 458.77 | 459 | 459 | | | |
| 1986 | 10,329.22 | 10,329 | 10,329 | | | |
| 1987 | 6,250.00 | 6,250 | 6,250 | | | |
| 1988 | 15,516.12 | 15,516 | 15,516 | | | |
| 1989 | 22,351.21 | 22,351 | 22,351 | | | |
| 1990 | 6,630.52 | 6,631 | 6,631 | | | |
| 1992 | 5,846.20 | 5,846 | 5,846 | | | |
| 1993 | 6,653.65 | 6,654 | 6,654 | | | |
| 1995 | 10,407.91 | 10,408 | 10,408 | | | |
| 1996 | 8,348.55 | 8,349 | 8,349 | | | |
| 1997 | 52,214.33 | 52,214 | 52,214 | | | |
| 1998 | 13,184.73 | 13,185 | 13,185 | | | |
| 1999 | 498.75 | 499 | 499 | | | |
| 2000 | 3,554.57 | 3,555 | 3,555 | | | |
| 2001 | 1,142.37 | 1,142 | 1,142 | | | |
| 2002 | 2,884.80 | 2,885 | 2,885 | | | |
| 2003 | 346.50 | 346 | 346 | | | |
| | 199,078.49 | 199,079 | 199,078 | | | |
| AMORTIZED<br>SURVIVOR CURVE.. 15-SQUARE<br>NET SALVAGE PERCENT.. 0 | | | | | | |
| 2004 | 8,791.24 | 8,498 | 8,423 | 368 | 0.50 | 368 |
| 2005 | 3,303.28 | 2,973 | 2,947 | 356 | 1.50 | 237 |
| 2006 | 34,189.23 | 28,491 | 28,241 | 5,948 | 2.50 | 2,379 |
| 2007 | 22,840.94 | 17,511 | 17,357 | 5,483 | 3.50 | 1,567 |
| 2008 | 9,143.40 | 6,400 | 6,344 | 2,800 | 4.50 | 622 |
| 2009 | 60,465.28 | 38,294 | 37,958 | 22,507 | 5.50 | 4,092 |
| 2010 | 4,295.06 | 2,434 | 2,413 | 1,882 | 6.50 | 290 |
| 2011 | 4,219.32 | 2,110 | 2,091 | 2,128 | 7.50 | 284 |
| 2012 | 4,821.26 | 2,089 | 2,071 | 2,751 | 8.50 | 324 |
| 2013 | 3,379.40 | 1,239 | 1,228 | 2,151 | 9.50 | 226 |
| 2014 | 4,766.26 | 1,430 | 1,417 | 3,349 | 10.50 | 319 |
| 2015 | 5,841.20 | 1,363 | 1,351 | 4,490 | 11.50 | 390 |

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
COMMON PLANT

ACCOUNT 391.00 OFFICE FURNITURE AND EQUPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| AMORTIZED | | | | | | |
| SURVIVOR CURVE.. 15-SQUARE | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | |
| 2016 | 3,019.63 | 503 | 499 | 2,521 | 12.50 | 202 |
| 2017 | 870.00 | 87 | 86 | 784 | 13.50 | 58 |
| 2018 | 552,324.20 | 18,409 | 18,248 | 534,077 | 14.50 | 36,833 |
| | 722,269.70 | 131,831 | 130,675 | 591,595 | | 48,191 |
| | 921,348.19 | 330,910 | 329,753 | 591,595 | | 48,191 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 12.3 5.23

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
COMMON PLANT

ACCOUNT 393.00 STORES EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| FULLY ACCRUED | | | | | | |
| 1990 | 3,023.54 | 3,024 | 3,024 | | | |
| 1991 | 4,473.45 | 4,473 | 4,473 | | | |
| 1992 | 4,531.89 | 4,532 | 4,532 | | | |
| | 12,028.88 | 12,029 | 12,029 | | | |
| AMORTIZED | | | | | | |
| SURVIVOR CURVE.. 25-SQUARE | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | |
| 1997 | 5,017.38 | 4,315 | 4,315 | 702 | 3.50 | 201 |
| 1998 | 1,601.75 | 1,313 | 1,313 | 289 | 4.50 | 64 |
| 2005 | 34,409.45 | 18,581 | 18,581 | 15,828 | 11.50 | 1,376 |
| | 41,028.58 | 24,209 | 24,209 | 16,820 | | 1,641 |
| | 53,057.46 | 36,238 | 36,238 | 16,820 | | 1,641 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 10.2 3.09

FULLY ACCRUED

| | | | | | | |
|---|---|---|---|---|---|---|
| 1984 | 3,635.95 | 3,636 | 3,636 | | | |
| 1990 | 529.07 | 529 | 529 | | | |
| 1993 | 5,690.56 | 5,691 | 5,691 | | | |
| | 9,855.58 | 9,856 | 9,856 | | | |

AMORTIZED
SURVIVOR CURVE.. 25-SQUARE
NET SALVAGE PERCENT.. 0

| | | | | | | |
|---|---|---|---|---|---|---|
| 1994 | 5,413.15 | 5,305 | 5,270 | 143 | 0.50 | 143 |
| 1995 | 3,465.00 | 3,257 | 3,236 | 229 | 1.50 | 153 |
| 1996 | 8,107.63 | 7,297 | 7,249 | 859 | 2.50 | 344 |
| 1997 | 241.00 | 207 | 206 | 35 | 3.50 | 10 |
| 1998 | 241.45 | 198 | 197 | 45 | 4.50 | 10 |
| 1999 | 733.95 | 572 | 568 | 166 | 5.50 | 30 |
| 2000 | 7,490.63 | 5,543 | 5,507 | 1,984 | 6.50 | 305 |
| 2001 | 10,731.79 | 7,512 | 7,463 | 3,269 | 7.50 | 436 |
| 2002 | 7,184.80 | 4,742 | 4,711 | 2,474 | 8.50 | 291 |
| 2004 | 419.95 | 244 | 242 | 178 | 10.50 | 17 |
| 2006 | 2,692.11 | 1,346 | 1,337 | 1,355 | 12.50 | 108 |
| 2007 | 55,675.79 | 25,611 | 25,442 | 30,233 | 13.50 | 2,239 |
| 2008 | 1,116.63 | 469 | 466 | 651 | 14.50 | 45 |
| 2009 | 17,055.02 | 6,481 | 6,438 | 10,617 | 15.50 | 685 |
| 2010 | 30,977.48 | 10,532 | 10,463 | 20,515 | 16.50 | 1,243 |
| 2011 | 1,381.20 | 414 | 411 | 970 | 17.50 | 55 |
| 2012 | 5,267.96 | 1,370 | 1,361 | 3,907 | 18.50 | 211 |
| 2014 | 3,487.48 | 628 | 624 | 2,864 | 20.50 | 140 |
| 2016 | 3,069.38 | 307 | 305 | 2,764 | 22.50 | 123 |
| 2017 | 253.46 | 15 | 15 | 239 | 23.50 | 10 |
| 2018 | 6,565.00 | 131 | 130 | 6,435 | 24.50 | 263 |
| | 171,570.86 | 82,181 | 81,640 | 89,931 | | 6,861 |
| | 181,426.44 | 92,037 | 91,496 | 89,931 | | 6,861 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 13.1 3.78

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
COMMON PLANT

ACCOUNT 396.00 POWER OPERATED EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| SURVIVOR CURVE.. IOWA 20-S2 | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | |
| 1993 | 409.50 | 344 | 410 | | | |
| 1997 | 877.81 | 680 | 870 | 8 | 4.50 | 2 |
| | 1,287.31 | 1,024 | 1,280 | 7 | | 2 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 3.5 0.16

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
COMMON PLANT

ACCOUNT 397.00 COMMUNICATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| FULLY ACCRUED | | | | | | |
| 1990 | 1,383.00 | 1,383 | 1,383 | | | |
| 1991 | 2,415.00 | 2,415 | 2,415 | | | |
| 1994 | 8,586.75 | 8,587 | 8,587 | | | |
| 1995 | 8,016.39 | 8,016 | 8,016 | | | |
| 1996 | 48,639.13 | 48,639 | 48,639 | | | |
| 1997 | 525.00 | 525 | 525 | | | |
| 1998 | 7,420.82 | 7,421 | 7,421 | | | |
| 2000 | 4,392.00 | 4,392 | 4,392 | | | |
| 2002 | 164,475.15 | 164,475 | 164,475 | | | |
| | 245,853.24 | 245,853 | 245,853 | | | |
| AMORTIZED | | | | | | |
| SURVIVOR CURVE.. 15-SQUARE | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | |
| 2004 | 103,994.56 | 100,528 | 99,513 | 4,482 | 0.50 | 4,482 |
| 2007 | 986,483.16 | 756,307 | 748,669 | 237,814 | 3.50 | 67,947 |
| 2008 | 6,620.15 | 4,634 | 4,587 | 2,033 | 4.50 | 452 |
| 2009 | 71,792.97 | 45,469 | 45,010 | 26,783 | 5.50 | 4,870 |
| 2010 | 69,805.06 | 39,556 | 39,157 | 30,649 | 6.50 | 4,715 |
| 2011 | 2,611.62 | 1,306 | 1,293 | 1,319 | 7.50 | 176 |
| 2012 | 380,628.10 | 164,938 | 163,272 | 217,356 | 8.50 | 25,571 |
| | 1,621,935.62 | 1,112,738 | 1,101,500 | 520,436 | | 108,213 |
| | 1,867,788.86 | 1,358,591 | 1,347,353 | 520,436 | | 108,213 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 4.8 5.79

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
COMMON PLANT

ACCOUNT 398.00 MISCELLANEOUS EQUPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL
RELATED TO ORIGINAL COST AS OF DECEMBER 31, 2018

| YEAR (1) | ORIGINAL COST (2) | CALCULATED ACCRUED (3) | ALLOC. BOOK RESERVE (4) | FUTURE BOOK ACCRUALS (5) | REM. LIFE (6) | ANNUAL ACCRUAL (7) |
|---|---|---|---|---|---|---|
| FULLY ACCRUED | | | | | | |
| 1986 | 1,585.96 | 1,586 | 1,586 | | | |
| 1990 | 2,665.95 | 2,666 | 2,666 | | | |
| 1992 | 2,203.30 | 2,203 | 2,203 | | | |
| 1996 | 1,917.75 | 1,918 | 1,918 | | | |
| 1998 | 6,344.38 | 6,344 | 6,344 | | | |
| | 14,717.34 | 14,717 | 14,717 | | | |
| AMORTIZED | | | | | | |
| SURVIVOR CURVE.. 20-SQUARE | | | | | | |
| NET SALVAGE PERCENT.. 0 | | | | | | |
| 2000 | 43,944.62 | 40,649 | 40,649 | 3,296 | 1.50 | 2,197 |
| 2004 | 2,204.99 | 1,599 | 1,599 | 606 | 5.50 | 110 |
| 2008 | 23,841.17 | 12,517 | 12,517 | 11,324 | 9.50 | 1,192 |
| 2010 | 881.88 | 375 | 375 | 507 | 11.50 | 44 |
| | 70,872.66 | 55,140 | 55,140 | 15,733 | | 3,543 |
| | 85,590.00 | 69,857 | 69,857 | 15,733 | | 3,543 |

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 4.4 4.14

**SCHEDULE 21 - FG&E**

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
LOCAL SERVICE SCHEDULE

# SCHEDULE 21-FG&E

## Fitchburg Gas and Electric Light Company Local Service Schedule

## I. COMMON SERVICE PROVISIONS

Fitchburg Gas and Electric Light Company ("FG&E") is a participant in the New England Control Area and has agreed to provide transmission and ancillary services over PTF pursuant to the Tariff. The services provided under this Schedule 21-FG&E apply only to Non-PTF, except in the case of service to Network Customers that have all or part of their Network Load directly connected to the PTF in the Local Network. These Network Customers shall pay for Local Network Service pursuant to Attachment H to this Schedule 21-FG&E. Provisions of this Schedule 21-FG&E shall have priority over any conflicting provisions in the Tariff.

### 1 Definitions

**1.0 Annual Transmission Costs**: The total annual cost of the Local Network for purposes of Local Network Service shall be the amount specified in Attachment H until amended by FG&E or modified by the Commission.

**1.1 Curtailment**: A reduction in firm or non-firm transmission service in response to a transmission capacity shortage as a result of system reliability conditions.

**1.2 Load Ratio Share**: Ratio of a Transmission Customer's Non-PTF Network Load to FG&E's total load computed in accordance with Sections II.10 and II.10(a) of this Schedule under Sections Supplementing Section 21 of the OATT and calculated on a rolling twelve month basis.

**1.3.1 Local Network**: The transmission facilities owned, controlled, or operated by FG&E that are used to provide transmission service under Schedule 21 of the OATT.

**1.4 Local Network Service**: The transmission service provided under Schedule 21 of the OATT and this Schedule.

**1.5 Network Load**: The load directly interconnected to the PTF or Non-PTF facilities of FG&E. A Network Customer may elect to designate less than its total load as Network Load but

may not designate only part of the load at a discrete Point of Delivery. Where a Eligible Customer has elected not to designate a particular load at discrete points of delivery as Network Load, the Eligible Customer is responsible for making separate arrangements under Schedule 21 of the OATT for any Local Point-to-Point Service that may be necessary for such non-designated load. For purposes of establishing rates and charges under this Tariff, the Network Load will be subdivided into one of two categories:

**A.** PTF Network Load shall be the load over FG&E's PTF facilities and shall equal the load of Network Customers directly interconnected with FG&E's PTF or indirectly utilizing FG&E's PTF through Non-PTF facilities of FG&E.

**B**. Non-PTF Network Load shall be the load over FG&E's Non-PTF directly interconnected with FG&E's Non-PTF facilities.

**1.6 Network Upgrades**: Modifications or additions to transmission-related facilities that are integrated with and support FG&E's overall Local Network for the general benefit of all users of such Local Network.

**1.7 Parties**: FG&E and the Transmission Customer receiving service under this Schedule and the OATT.

**SECTIONS SUPPLEMENTING THE BODY OF THE TARIFF**

**Preamble**

The following provisions supplement the provisions of the Tariff. Provisions of this Schedule 21-FG&E shall have priority over any conflicting provisions in the Tariff. The section numbers of this Schedule 21-FG&E correspond to or are consecutive to the section numbers in the body of the Tariff that are affected by the additional provisions herein.

**Sections Supplementing Section 1: General Terms and Conditions**

**1.7 Creditworthiness**: For the purpose of determining the ability of the Transmission Customer to meet its obligations related to service hereunder, FG&E may require reasonable credit review procedures in accordance with Attachment L to Schedule 21-FG&E.

**Sections Supplementing Section II of the Tariff: Open Access Transmission Tariff (OATT)**

## II.A. COMMON SERVICE PROVISIONS

### II.4 Ancillary Services

Ancillary Services are needed with transmission service to maintain reliability within and among the Control Areas affected by the transmission service. FG&E is required to provide (or offer to arrange with the ISO as discussed below), and the Transmission Customer is required to purchase Scheduling, System Control and Dispatch Service.

The following Ancillary Services are available pursuant to Section II.4 of the Tariff only to the Transmission Customer serving load within the New England Control Area: (i) Reactive Supply and Voltage Control Service, (ii) Regulation and Frequency Response , (iii) Energy Imbalance, (iv) Ten-Minute Spinning Reserve Service, (v) Ten-Minute Non-Spinning Reserve Service and (vi) Thirty-Minute Operating Reserve Service.

### II.8 Billing and Invoicing; Accounting

**8.2 Invoicing**: Within a reasonable time after the first day of each month, FG&E shall submit an invoice to the Transmission Customer for the charges for all services furnished under the OATT during the preceding month. The invoice shall be paid by the Transmission Customer within twenty (20) days of receipt. All payments shall be made in immediately available funds payable to FG&E, or by wire transfer to a bank named by FG&E.

**8.4 Customer Default**: In the event the Transmission Customer fails, for any reason other than a billing dispute as described below, to make payment to FG&E on or before the due date as described above, and such failure of payment is not corrected within thirty (30) calendar days after FG&E notifies the Transmission Customer to cure such failure, a default by the Transmission Customer shall be deemed to exist. Upon the occurrence of a default, FG&E may initiate a proceeding with the Commission to terminate service but shall not terminate service until the Commission so approves any such request. In the event of a billing dispute between FG&E and the Transmission Customer, FG&E will continue to provide service under the Service Agreement as long as the Transmission Customer (i) continues to make all payments not in dispute, and (ii) pays into an independent escrow account the portion of the invoice in dispute,

pending resolution of such dispute. If the Transmission Customer fails to meet these two requirements for continuation of service, then FG&E may provide notice to the Transmission Customer of its intention to suspend service in sixty (60) days, in accordance with Commission policy.

**II.10.2 Stranded Cost Recovery**

FG&E may seek to recover stranded costs from the Transmission Customer pursuant to this OATT in accordance with the terms, conditions and procedures set forth in FERC Order No. 888. However, FG&E must separately file any specific proposed stranded cost charge under Section 205 of the Federal Power Act.

## SECTIONS SUPPLEMENTING SCHEDULE 21 OF THE OATT

## I. Local Point-to-Point Service Over the Local Network Owned by FG&E

**Preamble**

In addition to the provisions set forth in Schedule 21 of the OATT, the provisions of this Schedule 21-FG&E shall govern Local Point-To-Point transactions using the Local Network owned by FG&E. Provisions of this Schedule 21-FG&E shall have priority over any conflicting provisions in the Tariff. The section numbers of this Schedule 21-FG&E correspond to or are consecutive to the sections of Schedule 21 of the OATT that are affected by the additional provisions herein.

To the extent not otherwise covered in the OATT, the then-current ISO New England Operating Documents, or the TOA, or the rules adopted thereunder, whenever FG&E implements least-cost redispatch procedures in response to a transmission constraint, FG&E and the Transmission Customer(s) taking Local Point-To-Point Service will each bear a proportionate share of the total redispatch cost.

### 3) Service Availability

**b) Determination of Available Transfer Capability (ATC)**: A description of FG&E's specific methodology for assessing ATC is contained in Attachment C of this Schedule. In the event sufficient transfer capability may not exist to accommodate a service request, FG&E will respond by performing a System Impact Study.

**g) Real Power Losses**: Real power losses are associated with all transmission service.

FG&E is not obligated to provide real power losses. The Transmission Customer is responsible for replacing losses associated with all transmission service as calculated by FG&E. The applicable real power loss factors tabulated below will be applied to metered loads and Reserved Capacity amounts to account for losses on FG&E's system. The applicable real power loss factors are as follows:

Firm Local Point-to-Point Service = 0.72% at 69 kV subtransmission.

Non-firm Local Point-to-Point Service = 0.72% at 69 kV subtransmission.

**6) Procedures for Arranging Non-Firm Local Point-To-Point Service**

**f) Determination of Available Transfer Capability**: Following receipt of a tendered schedule FG&E will make a determination on a non-discriminatory basis of ATC pursuant to Attachment C of this Schedule. Such determination shall be made as soon as reasonably practicable after receipt, but not later than the following time periods for the following terms of service (i) thirty (30) minutes for hourly service, (ii) thirty minutes for daily service, (iii) four (4) hours for weekly service, and (iv) two (2) days for monthly service (during FG&E's normal business hours of 8:00 a.m. to 4:30 p.m., Monday to Friday).

**11) Sale or Assignment of Local Point-to-Point Service**

**c) Information on Assignment or Transfer of Service**: FG&E currently has waiver from the obligations of FERC Order No. 889 to maintain an OASIS. In the future, upon implementation of any FG&E OASIS site, resellers may use FG&E's OASIS site to post transmission capacity available for resale.

## II. Local Network Service using Non-PTF Owned by FG&E

**Preamble**

In addition to the provisions set forth in Schedule 21 of the OATT, the provisions of this Schedule 21-FG&E shall govern Local Network Service using Non-PTF owned by FG&E. Provisions of this Schedule 21-FG&E shall have priority over any conflicting provision in the Tariff. The section numbers of this Schedule 21-FG&E correspond to the sections of Schedule 21 of the OATT that are affected by the additional provisions herein.

Local Network Service allows the Network Customer to integrate, economically dispatch, and regulate its current and planned Network Resources to serve its Network Load in a manner comparable to that in which FG&E utilizes its Non-PTF to serve its Native Load Customers. Local Network Service also may be used by the Network Customer to deliver economy energy purchases to its Network Load from non-designated resources on an as-available basis without additional charge. Transmission service for sales to non-designated loads will be provided pursuant to the applicable terms and conditions of Schedule 21 of the OATT.

**2) Availability of Local Network Service**

**f) Real Power Losses**: The Network Customer is responsible for replacing losses associated with all transmission service as calculated by FG&E. The applicable real power loss factors tabulated below will be applied to metered loads and Reserved Capacity amounts to account for losses on FG&E's system. The applicable real power loss factors are as follows:

Local Network Service = 0.72% at 69 kV subtransmission.

**8) Load Shedding and Curtailments**

**a) Procedures**: Prior to the Service Commencement Date, FG&E and the Network Customer shall establish Load Shedding and Curtailment procedures pursuant to Section II.20 of the Tariff, with the objective of responding to contingencies on the Non-PTF. The Parties will implement such programs during any period when the ISO, the Local Control Center or FG&E determines that a system contingency exists and such procedures are necessary to alleviate such contingency. FG&E will notify all affected Network Customers in a timely manner of any scheduled Curtailment.

**b) Transmission Constraints**: During any period when FG&E determines that a transmission constraint exists on the Local Network, and such constraint may impair the reliability of FG&E's system, FG&E will take whatever actions, consistent with then-current ISO New England Operating Documents or the TOA, and the rules adopted thereunder, and with Good Utility Practice, that are reasonably necessary to maintain the reliability of FG&E's system. To the extent ISO determines that the reliability of the ISO New England transmission system can be maintained by redispatching resources, FG&E will initiate procedures pursuant to the OATT,

the then-current ISO New England Operating Documents, or the TOA, and the rules adopted thereunder to redispatch all Network Resources and FG&E's own resources on a least-cost basis without regard to the ownership of such resources. Any redispatch under this section may not unduly discriminate between FG&E's use of the Local Network on behalf of its Native Load Customers and any Network Customer's use of the Local Network to serve its designated Network Load.

**c) Cost Responsibility for Relieving Transmission Constraints**: To the extent not otherwise covered in the OATT, the then-current ISO New England Operating Documents, or the TOA, or the rules adopted thereunder, whenever FG&E implements least-cost redispatch procedures in response to a transmission constraint, FG&E and the Network Customer(s) will each bear a proportionate share of the total redispatch cost based on their respective Load Ratio Shares.

**d) Curtailments of Scheduled Deliveries**: If a transmission constraint on FG&E's Local Network cannot be relieved through the implementation of least-cost redispatch procedures and FG&E determines that it is necessary to Curtail scheduled deliveries, the Parties shall Curtail such schedules in accordance with Section II.22 of the Tariff.

**e) Allocation of Curtailments**: The ISO, the Local Control Center or FG&E shall, on a non-discriminatory basis, Curtail the transaction(s) that effectively relieve the constraint. However, to the extent practicable and consistent with Good Utility Practice, any Curtailment will be shared by FG&E and Network Customers in proportion to their respective Load Ratio Shares. Neither the ISO, the Local Control Center, nor FG&E shall direct the Network Customer to Curtail schedules to an extent greater than either would Curtail FG&E's schedules under similar circumstances.

**f) Load Shedding**: To the extent that a system contingency exists on FG&E's Local Network and the ISO, the Local Control Center or FG&E determines that it is necessary for FG&E and the Network Customers to shed load, the Parties shall shed load in accordance with previously established procedures in accordance with Section II.22 of the Tariff, the then-current ISO New England Operating Documents, or the TOA, and the rules adopted thereunder.

**g) System Reliability**: Notwithstanding any other provisions of this Schedule, FG&E

reserves the right, consistent with Good Utility Practice and on a not unduly discriminatory basis, to Curtail Local Network Service without liability on the part of FG&E for the purpose of making necessary adjustments to, changes in, or repairs on FG&E's lines, substations, and facilities, and in cases where the continuance of Local Network Service would endanger persons or property. In the event of any adverse conditions or disturbances on FG&E's Local Network or on any other system(s) directly or indirectly interconnected with FG&E's Local Network, FG&E, consistent with Good Utility Practice, also may Curtail Local Network Service in order to (i) limit the extent or damage of the adverse condition(s) or disturbance(s), (ii) prevent damage to generating or transmission facilities, or (iii) expedite restoration of service. FG&E will give the Network Customer as much advance notice as is practicable in the event of such Curtailment. Any Curtailment of Local Network Service will not be unduly discriminatory relative to FG&E's use of its Local Network on behalf of its Native Load Customers. FG&E shall specify the rate treatment and all related terms and conditions applicable in the event that the Network Customer fails to respond to established Load Shedding and Curtailment procedures.

**9) Rates and Charges**

In addition to the above sections that correspond to sections in Schedule 21 of the OATT, the following additional provision shall apply to Local Network Service over FG&E's Local Network.

**a) Monthly Demand Charge**: The Network Customer shall pay a Monthly Demand Charge which shall be determined by multiplying its Load Ratio Share times one twelfth (1/12) of FG&E's Annual Transmission Revenue Requirement as specified in Attachment H to this Schedule 21-FG&E.

**10) Determination of Network Customer's Local Monthly Network Load**: The Network Customer's local monthly Network Load is its hourly load (including its designated Network Load not physically interconnected with FG&E under Section II.5(c) of Schedule 21 of the OATT) coincident with the FG&E's Monthly Local Network Peak. Monthly revenue requirements not otherwise paid for through charges to Eligible Customers for Local Point-to-Point Service will be allocated among FG&E's Network Customers receiving service under the tariff on the basis of their loads during the hour in the month in which the total connected load to the local network is at its maximum, without any adjustment for credits for generation.

In addition to the above sections that correspond to sections in Schedule 21 of the OATT, the following

three provisions shall apply to Local Network Service over FG&E's local network.

**10a) Determination of FG&E's Monthly Local Network Load**: FG&E's monthly Local Network Load is FG&E's Monthly Local Network Peak minus the coincident peak usage of all firm Local Point-To-Point Service customers pursuant to Schedule 21 of the OATT plus the Reserved Capacity of all firm Local Point-To-Point Service customers.

**10b) Recovery of PTF Transmission Revenue Requirements**: The portion of FG&E's annual transmission revenue requirements with respect to PTF which is not recovered through the distribution of revenues from Regional Network Service or Local Point-to-Point Service shall be recovered from Eligible Customers taking Regional Network Service or Local Point-to-Point Service pursuant to Section II.12.2(b) of the Tariff.

## SCHEDULE 1

## Local Scheduling, System Control and Dispatch Service

This service is required to schedule the movement of power through, out of, within, or into FG&E's Local Network Control Area. Local Scheduling, System Control and Dispatch Service is to be provided directly by FG&E and the ISO. The Transmission Customer must purchase this service from FG&E. The charges for FG&E's Local Scheduling, System Control and Dispatch Service are to be based on the rates set forth below. To the extent that the ISO performs this service for FG&E, charges to the Transmission Customer are to reflect only a pass-through of the costs charged to FG&E by the ISO.

Each firm Local Point-To-Point Service Customer under this Tariff will be charged for Local Scheduling, System Control and Dispatch Services for the total Reserved Capacity specified in each reservation for firm Local Point-To-Point Service made under the Tariff at the rates set forth in Appendix A of this Schedule 1.

Each Network Customer under this Tariff will be charged a monthly Local Scheduling, System Control and Dispatch Service Demand Charge, which shall be determined by multiplying its Load Ratio Share times one twelfth (1/12) of the Formula Requirements specified in Appendix B of this Schedule 1.

Each Transmission Customer with generation within the ISO's Control Area shall be required also to provide for Scheduling, System Control and Dispatch Service for that generation. It is anticipated that the Transmission Customer will obtain these services by contracting with the ISO for these services on an unbundled basis. FG&E will make available Generation Scheduling, System Control and Dispatch Service at the rates set forth in Appendix C of this Schedule 1.

Each Transmission Customer with generation located outside of the ISO Control Area shall be required to provide for Scheduling, System Control and Dispatching Service for that generation. It is anticipated that the Transmission Customer will obtain these services by contracting for these services from the provider of these services within the Control Area where the generation is located. FG&E shall have the right, at any time, unilaterally to file for a change in any of the provisions of this Schedule 1 in accordance with Section 205 of the Federal Power Act and the Commission's implementing regulations.

**SCHEDULE 1**

**Appendix A**

**Determination Of**

**FG&E's Local Network Point-To-Point Formula Rate**

**For Local Scheduling, System Control And Dispatch Service**

FG&E's Formula Rate for Point-To-Point Local Scheduling, System Control and Dispatch Service ("Formula Rate") is an annual rate determined from the following formula.

$$\text{FORMULA RATE}_i = \frac{A_{i-1} - B_{i-1}}{C_{i-1}}$$

WHERE:

- i equals the calendar year during which service is being rendered ("Service Year").

- $A_{i-1}$ is the Annual Control Center Expenses (expressed in dollars) of FG&E for the calendar year prior to the Service Year. The Annual Control Center Expenses are determined pursuant to the formula specified in Exhibit 1 to this Appendix A of Schedule 1.

- $B_{i-1}$ is the actual local scheduling, system control and dispatch revenues (expressed in dollars) provided from the provision of transmission services to others. The actual local scheduling and dispatch revenues shall be those recorded on the books of FG&E in FERC Account No. 456 pertaining to Transmission of Electricity for Others and such other applicable FERC Account for the calendar year prior to the Service Year.

- $C_{i-1}$ is the single annual coincident peak transmission load (expressed in kilowatts) of FG&E for the calendar year prior to the Service Year, as reported in FERC Form No. 1.

**Schedule 1**

**Appendix A**

**Exhibit 1**

**Determination of Annual Control Center Expenses**

The rate formula for determination of the annual control center expenses revenue requirements for FG&E is determined as follows:

A. ANNUAL CONTROL CENTER EXPENSES = Sum of FG&E's (Account 556 System Control and Load Dispatching Expense) + (Account 557 Other Expense) X .50* for the calendar year prior to the Service Year.

* This factor reflects allocation to the transmission function of a portion (50 percent) of the costs recorded in Accounts 556 and 557 associated with dispatching transmission and generating facilities. This 50 percent allocation of control center costs is based on two functions performed by the control center (i) control of generation and (ii) control of transmission.

**SCHEDULE 1**

**Appendix B**

**Determination of FG&E's**
**Network Formula Requirements**
**For Local Scheduling, System Control**
**And Dispatch Service**

FG&E's formula requirements for Network Local Scheduling, System Control and Dispatch Service is determined from the following formula.

Formula Requirements$_i$ = $A_{i-1} - B_{i-1}$

WHERE:

- i equals the calendar year during which service is being rendered ("Service Year").

- $A_{i-1}$ is the Annual Control Center Expenses (expressed in dollars) of FG&E for the calendar year prior to the Service Year. The Annual Control Center Expenses are determined pursuant to the formula specified in Exhibit 1 to Appendix A of Schedule 1.

- $B_{i-1}$ is the actual local scheduling, system control and dispatch revenues (expressed in dollars) provided from the provision of transmission services to others. The actual local scheduling, system control and dispatch revenues shall be those recorded on the books of FG&E in FERC Account No. 456 pertaining to Transmission of Electricity for Others and such other applicable FERC Account for the calendar year prior to the Service Year.

**SCHEDULE 1**

**Appendix C**

**Determination Of FG&E's Formula Rate**

**For Generation Scheduling, System Control And Dispatch Service**

FG&E's Formula Rate for Generation Scheduling, System Control and Dispatch Service ("Formula Rate") shall be calculated using the Formula Rate for Point-to-Point Local Scheduling, System Control and Dispatch Service in Appendix A of Schedule 21 - FG&E.

## SCHEDULE 7

## Long-Term Firm Local and Short-Term Firm Local Point-to-Point Service

The Transmission Customer shall compensate FG&E each month for firm Reserved Capacity at the sum of the applicable charges set forth below:

**1) Yearly delivery**:

The Yearly Delivery Charge per kW shall be FG&E's Annual Transmission Revenue Requirement (determined in accordance with Attachment H of this Tariff) divided by FG&E's Total Peak Load for the corresponding calendar year. Total Peak Load, calculated based on the monthly average for the year, shall be FG&E's peak load, minus the coincident peak of all firm local point-to-point customers, plus the contract demand reservation for firm local point-to-point customers.

**2) Monthly delivery**:

The Monthly Delivery Charge per kW shall be determined by dividing the Yearly Delivery Charge by 12.

**3) Weekly delivery**:

The Weekly Delivery Charge per kW shall be determined by dividing the Yearly Delivery Charge by 52.

**4) Daily delivery**:

The Daily Delivery Charge per kW shall be determined by dividing the Yearly Delivery Charge by 365.

The total delivery charge in any week, pursuant to a reservation for daily delivery, shall not exceed the Weekly Delivery Charge specified in section (3) above times the highest amount in kilowatts of firm Reserved Capacity in any day during such week.

**5) Discounts**: Three principal requirements apply to discounts for transmission service as follows (1) any offer of a discount made by FG&E must be announced to all Eligible Customers solely by posting on Unitil.com, (2) any customer-initiated requests for discounts (including requests for use by one's wholesale merchant or an Affiliate's use) must occur solely by posting on Unitil.com, and (3) once a discount is negotiated, details must be immediately posted on Unitil.com. For any discount agreed upon for service on a path from point(s) of receipt to point(s) of delivery, FG&E must offer the same discounted transmission service rate for the same time period to all Eligible Customers on all

unconstrained transmission paths that go to the same point(s) of delivery on FG&E's Local Network.

**6)** **Resales**: The rates and rules governing charges and discounts stated above shall not apply to resales of transmission service, compensation for which shall be governed by section I.11 (a) of Schedule 21 of the OATT.

## SCHEDULE 8

## Non-Firm Local Point-to-Point Service

The Transmission Customer shall compensate FG&E for non-firm Local Point-To-Point Service for non-firm Reserved Capacity up to the sum of the applicable charges set forth below:

**1) Monthly delivery**:
The Monthly Delivery Charge shall be determined by multiplying the Monthly Delivery Charge as described on Schedule 7 by .75.

**2) Weekly delivery**:
The Weekly Delivery Charge shall be determined by multiplying the Weekly Delivery Charge as described on Schedule 7 by .75.

**3) Daily delivery**:
The Daily Delivery Charge shall be determined by multiplying the Daily Delivery Charge as described on Schedule 7 by .75.
The total delivery charge in any week, pursuant to a reservation for Daily delivery, shall not exceed the Weekly Delivery Charge specified in section (2) above times the highest amount in kilowatts of non-firm Reserved Capacity in any day during such week.

**4) Hourly delivery**: The basic charge shall be that agreed upon by the Parties at the time this service is reserved and in no event shall exceed the Daily Delivery Charge specified in section (3) above divided by 24. The total delivery charge in any day, pursuant to a reservation for Hourly delivery, shall not exceed the Daily Delivery Charge specified in section (3) above times the highest amount in kilowatts of non-firm Reserved Capacity in any hour during such day. In addition, the total delivery charge in any week, pursuant to a reservation for Hourly or Daily delivery, shall not exceed the Weekly Delivery Charge specified in section (2) above times the highest amount in kilowatts of non-firm Reserved Capacity in any hour during such week.

**5) Discounts**: Three principal requirements apply to discounts for transmission service as follows (1) any offer of a discount made by FG&E must be announced to all Eligible Customers solely by posting on Unitil.com, (2) any customer-initiated requests for discounts (including requests for use by one's wholesale merchant or an Affiliate's use) must occur solely by posting on Unitil.com, and (3) once a

discount is negotiated, details must be immediately posted on Unitil.com. For any discount agreed upon for service on a path from point(s) of receipt to point(s) of delivery, FG&E must offer the same discounted transmission service rate for the same time period to all Eligible Customers on all unconstrained transmission paths that go to the same point(s) of delivery on FG&E's Local Network.

**6)** **Resales**: The rates and rules governing charges and discounts stated above shall not apply to resales of transmission service, compensation for which shall be governed by section I.11 (a) of Schedule 21 of the OATT.

## SCHEDULE 9
## DISTRIBUTION ADDER UNDER TARIFF

In the case where distribution facilities of FG&E are employed in providing service under Schedule 21 of the OATT, the Transmission Customer shall compensate FG&E for the use of such facilities. In addition to the charges contained in this Tariff, the compensation for such distribution facilities will be determined on a case-by-case basis.

All such charges shall be subject to appropriate regulatory approval.

## ATTACHMENT C

## Methodology To Assess Available Transfer Capability

### 1. Introduction

ISO is the regional transmission organization (RTO) for the New England Control Area. The New England Control Area includes the transmission system located in the states of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont, but does not include the transmission system in northern Maine (i.e., Aroostook and parts of Penobscot and Washington Counties) that is radially connected to New Brunswick and administered by the Northern Maine Independent System Administrator. The New England Control Area is comprised of PTF, non-PTF, OTF, MTF, and is interconnected to three neighboring Balancing Authority Areas ("BAA") with various interface types.

As part of its RTO responsibilities, the ISO is registered with the North American Electric Reliability Corporation ("NERC") as several functional model entities that have responsibilities related to the calculation of ATC as defined in the following NERC Standards: MOD-001 – Available Transmission System Capability ("MOD-001"). MOD-004 – Capacity Benefit Margin ("MOD-004"), and MOD-008 – Transmission Reliability Margin Calculation Methodology ("MOD-008"). The extent of those responsibilities is based on various Commission approved transmission operating agreements and the provisions of the ISO New England Operating Documents.

While the ISO is the Transmission Service Provider for regional transmission service ("Regional Transmission Service") associated with Pool Transmission Facilities, the Participating Transmission Owners ("PTOs") provide local transmission service over Non-Pool Transmission Facilities within the RTOP footprint and are responsible for calculating TTC and ATC associated with Local Transmission Service provided under Schedule 21 pursuant to the Transmission Operating Agreement ("TOA"). Pursuant to CFR § 37.6(b)[1] of the FERC Regulations, Transmission Provider's are obligated to calculate and post TTC and ATC for each Posted Path. The ISO is not responsible for the calculation of these values.

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1 Section §37.6(b) Posting transfer capability. The available transfer capability on the Transmission Provider's system (ATC) and the total transfer capability (TTC) of that system shall be calculated and posted for each Posted Path as set out in this section.

Posted Path is defined as any control area to control area interconnection; any path for which service is denied, curtailed or interrupted for more than 24 hours in the past 12 months; and any path for which a customer requests to have ATC or TTC posted. For this last category, the posting must continue for 180 days and thereafter until 180 days have elapsed from the most recent request for service over the requested path. For purposes of this definition, an hour includes any part of any hour during which service was denied, curtailed or interrupted.[2]

FG&E does not currently have any Posted Paths based on the above definition. However, to the extent that FG&E does in the future have a Posted Path, FG&E will calculate TTC using the NERC Standard MOD-029 – Rated System Path Methodology ("MOD-029") as outlined below.

### 1.1 Scope of Document

The scope of this document is limited to those functions performed by FG&E as the Transmission Service Provider of Schedule 21-FG&E Point-to Point transmission service over Local Facilities pursuant to the PTOs' Transmission Operating Agreement and the ISO OATT:

- Methodology for calculating Total Transfer Capability (TTC)
- Methodology for calculating Available Transfer Capability (ATC)
- Existing Transmission Commitment (ETC)
- Use of Transmission Reliability Margin (TRM)
- Use of Capacity Benefit Margin (CBM)
- Use of Rollover Rights (ROR) in the calculation of ETC

TTC and ATC are required to be calculated only for certain non-PTF internal Posted Paths over which Local Point-to-Point transmission service is provided under Schedule 21-FG&E. TTC and ATC is not calculated by FG&E for Local Network Service because ISO employs a market model for economic, security constrained dispatch of generation, and FG&E does not require advance reservation for such network service.

## 2. Transmission Service in the New England Markets

Since the inception of the OATT for New England, the process by which generation located inside New

2 Section § 37.6(b)(1)(i).

England supplies energy to the bulk electric system has differed from the Commission pro forma OATT. The fundamental difference is that internal generation is dispatched in an economic, security constrained manner by the ISO rather than utilizing a system of physical rights, advance reservations and point-to-point transmission service. Through this process, internal generation provides offers that are utilized by the ISO in the Real-Time Energy Market dispatch software. This process provides the least-cost dispatch to satisfy Real-Time load on the system.

In addition to offers from generation within New England, entities may submit External Transactions to move energy into the New England Control Area, out of the New England Control Area or through the New England Control Area. The Real-Time Energy Market clears these External Transactions based on forecast Locational Marginal Pricing (LMPs) and the transfer capability of the associated external interfaces. With those External Transactions in place, the Real-Time Energy Market dispatches internal generation in an economic, security constrained manner to meet Real-Time load within the region.

The process for submitting External Transactions into the Real-Time Energy Market does not require an advance physical reservation for use of the PTF. In the event that the net of the economic External Transactions is greater than the transfer capability of the associated external interface, the External Transactions selected to flow are selected based on the rules specified in the Tariff. For any External Transactions that are confirmed to flow in Real-Time based on the economics of the system, a transmission reservation for RNS or Through or Out Service is created after-the-fact to satisfy the transparency needs of the market.

The process described above is applicable to the PTF within the ISO Area, and non-PTF Local Facilities where utilized for Local Network Service by generation or load. However, FG&E owns Local Facilities over which an advance transmission service reservation for firm or non-firm transmission service may be required. On those Local Facilities, the market participant may obtain a transmission service reservation from FG&E under Schedule 21-FG&E prior to delivery of energy into the Real-Time Energy Market.[3] This document addresses the calculation of ATC and TTC for these non-PTF internal paths.

## 3. Schedule 21-FG&E Total Transfer Capability (TTC)

The TTC on FG&E's non-PTF Local Facilities that require Point-to-Point transmission service reservations are relatively static values and are calculated using the NERC Standard MOD-029 – Rated

3 See n - 2, 3 and 6, supra.

System Path Methodology. TTC is the amount of electric power that can be moved or transferred reliably from one area to another area of the interconnected transmission systems by way of all transmission lines (or paths) between those areas under specified system conditions. FG&E calculates TTC according to this definition applying the process as described below.

### 3.1 Guidelines and Principles

When estimating TTC, FG&E will apply the following, as amended and/or adopted from time to time

- Good Utility Practice
- NERC criteria and guidelines
- ISO New England criteria, rules and reliability standards
- Northeast Power Coordinating Council (NPCC) criteria and guidelines
- Fitchburg Gas and Electric Light Company guides

### 3.2 Transmission System Model Representation

FG&E will estimate TTC using transmission system load flow models developed for FG&E's system. The models may include representations of other neighboring systems. FG&E will use system models that it deems appropriate for study of the request for firm transmission service. Additional system models and operating conditions, including assumptions specific to a particular analysis, may be developed for conditions not available in the library of load flow cases. The system models may be modified, if necessary, to include additional system information on load, transfers and configuration, as it becomes available.

### 3.3 Contingency Analysis

FG&E will perform, if necessary, power flow and transient stability analysis to ensure that the interface's physical limits will not be violated for credible system contingencies per NERC, NPCC and ISO reliability criteria. TTC, based on contingency analysis, is the incremental transfer capability of the transmission system following the loss of the most critical element while maintaining thermal, and stability performance of the system within acceptable regional practices and consistent with guidelines of Item 3.1 of this Attachment.

### 3.4 Posting TTCs

When necessary, FG&E will estimate TTC as outlined above and post on its website.

## 4. Capacity Benefit Margin (CBM)

CBM is defined as the amount of firm transmission transfer capability set aside by a TSP for use by the Load Serving Entities. The ISO does not set aside any CBM for use by the Load Serving Entities, because of the New England approach to capacity planning requirements in the ISO New England Operating Documents. Load Serving Entities operating within the New England Control Area are required to arrange for their Capacity Requirements prior to the beginning of any given month in accordance with ISO Tariff, Section III.13.7.3.1 (Calculation of Capacity Requirement and Capacity Load Obligation). Load Serving Entities do not utilize CBM to ensure that their capacity needs are met; therefore, CBM is not applicable within the New England market design. Accordingly, for purposes of ATC calculation, CBM for the New England Control Area is set to zero (0).

**Existing Transmission Commitments, Firm ($ETC_F$)**

The $ETC_F$ are those confirmed firm transmission reservations ($PTP_F$) plus any rollover rights for firm transmission reservations ($ROR_F$) that have been exercised. There are no allowances necessary for Native Load forecast commitments ($NL_F$), Network Integration Transmission Service ($NITS_F$), grandfathered Transmission Service ($GF_F$) and other service(s), contract(s) or agreement(s) ($OS_F$) to be considered in the $ETC_F$ calculation.

**Existing Transmission Commitments, Non-Firm($ETC_{NF}$)**

The ($ETC_{NF}$) are those confirmed non-firm transmission reservations ($PTP_{NF}$). There are no allowances necessary for non-firm Network Integration Transmission Service ($NITS_{NF}$), non-firm grandfathered Transmission Service ($GF_{NF}$) or other service(s), contract(s) or agreement(s) ($OS_{NF}$).

## 5. Transmission Reliability Margin (TRM)

TRM is the amount of transmission transfer capability set aside to provide reasonable assurance that the interconnected transmission network will be secure. TRM accounts for the inherent uncertainty in system conditions and the need for operating flexibility to ensure reliable system operation as system conditions change. It is used only for external interfaces under the New England market design. FG&E, under Schedule 21, does not have any external interfaces, and therefore, TRM for FG&E's non-PTF facilities is zero.

## 6. Calculation of ATC for FG&E's Local Facilities

**General Description**

This section defines the ATC calculations performed by FG&E pursuant to MOD-029 for its non-PTF internal interfaces. Consistent with the NERC definition, the equation for Available Transfer Capability is: ATC = (TTC – CBM – TRM – Existing Transmission Commitments + Postbacks + counterflows). As discussed above, the CBM and TRM for the PTF interfaces for which FG&E calculates ATC are zero (0). As consistent with the ISO calculation, the equations for firm and non-firm Available Transfer Capability are:

Firm ATC = (TTC – CBM – TRM – firm ETC)

Non-firm ATC = (TTC – CBM – TRM – firm and non-firm ETC)[4]

As discussed above, the TRM and CBM for FG&E's non-PTF paths are zero. The purpose of the Existing Transmission Commitments ("ETC") component of the ATC equation is for FG&E to reduce the amount of ATC by the amount of existing firm transmission commitments that are not otherwise included in CBM or TRM. There is no requirement to purchase transmission service in advance of flowing energy in Real-Time, and there is no MW amount set aside by FG&E on any interface. One such example is point-to-point service commitments. Point-to-point service commitments sharing common transmission paths would be combined through system modeling to calculate the net existing transmission capacity (ETC) impact. This ETC value is then used in the ATC calculation shown above. Therefore there are no Existing Transmission Commitments to be applied in the ATC equation. For this reason, ETC equals zero (0) for the purposes of ATC calculation. Because Postbacks and counterflows are related to ETC and ETC is zero (0), both Postbacks and counterflows also are equal to zero (0).

As described in Section 2, under Schedule 21-FG&E, FG&E requires the purchase of transmission service in advance of delivery of energy to the New England Wholesale Market over certain non-PTF paths, and those existing transmission commitments would be applied to the ATC equation for the specific posted path. As a practical matter, the ratings of the radial transmission paths are always higher than the transmission requirements of the Transmission Customers connected to that path. As such, transmission services over these posted paths are considered to be always available.

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4 Existing Transmission Commitments ("ETC")

Entities submit their bids and offers to move energy into, out of and through the Energy Market through External Transactions. As Real-Time approaches, the ISO determines which of the submitted External Transactions will be scheduled in the coming hour in accordance with the rules set forth in the ISO New England Operating Documents. Basically, the ATC of the non-PTF assets in the New England market is almost always positive. The ATC is equal to the amount of External Transactions that the ISO will schedule on an interface for the designated hour. With this simplified version of ATC, there is no detailed algorithm to be described or posted other than: ATC equals TTC. Thus, for those non-PTF facilities that serve as a path for the FG&E's Schedule 21-FG&E Point-to-Point Transmission Customers, FG&E would post the ATC as 9999, consistent with industry practice. ATC on these paths varies depending on the time of day. However, it would be posted with an ATC of "9999" to reflect the fact that there are no restrictions on these paths for commercial transactions.

## 6.1 Calculation of Schedule 21-FG&E Firm ATC ($ATC_F$)

### 6.1.1 Calculation of $ATC_F$ in the Planning Horizon (PH)

For purposes of this Attachment C, PH is any period before the Operating Horizon.

Consistent with the NERC definition, $ATC_F$ is the capability for firm transmission reservations that remain after allowing for TRM, CBM, $ETC_F$, $Postbacks_F$ and $counterflows_F$.

As discussed above, TRM and CBM are zero. Firm Transmission Service under Schedule 21-FG&E that is available in the Planning Horizon (PH) includes: Yearly, Monthly, Weekly, and Daily. $Postbacks_F$ and $counterflows_F$ of Schedule 21-FG&E transmission reservations are not considered in the ATC calculation. Therefore, $ATC_F$ in the PH is equal to the TTC minus $ETC_F$

### 6.1.2 Calculation of $ATC_F$ in the Schedule 21-FG&E Operating Horizon (OH)

For purposes of this Attachment C, OH is noon eastern prevailing time each day. At that time, the OH spans from noon through midnight of the next day for a total of 36 hours. As time progresses the total hours remaining in the OH decreases until noon the following day when the OH is once again reset to 36 hours.

Consistent with the NERC definition, $ATC_F$ is the capability for firm transmission reservations that

remain after allowing for $ETC_F$, CBM, TRM, $Postbacks_F$ and $counterflows_F$.

As discussed above, TRM and CBM is zero. Daily firm Transmission Service under Schedule 21-FG&E is the only firm service offered in the Operating Horizon (OH). $Postbacks_F$ and $counterflows_F$ of Schedule 21-FG&E transmission reservations are not considered in the $ATC_F$ calculation. Therefore, $ATC_F$ in the OH is equal to the TTC minus $ETC_F$.

**6.1.3** Because firm Schedule 21-FG&E transmission service is not offered in the Scheduling Horizon (SH): $ATC_F$ in the SH is zero.

## 6.2 Calculation of Schedule 21-FG&E Non-Firm ATC ($ATC_{NF}$)

### 6.2.1 Calculation of $ATC_{NF}$ in the PH

$ATC_{NF}$ is the capability for non-firm transmission reservations that remain after allowing for $ETC_F$, $ETC_{NF}$, scheduled CBM ($CBM_S$), unreleased TRM ($TRM_U$), non-firm Postbacks ($Postbacks_{NF}$) and non-firm counterflows ($counterflows_{NF}$).

As discussed above, the TRM and CBM for Schedule 21-FG&E are zero. Non-firm ATC available in the PH includes: Monthly, Weekly, Daily and Hourly. $TRM_U$, $Postbacks_{NF}$ and $counterflows_{NF}$ of Schedule 21-FG&E transmission reservations are not considered in this calculation. Therefore, $ATC_{NF}$ in the PH is equal to the TTC minus $ETC_F$ and $ETC_{NF}$.

### 6.2.2 Calculation of $ATC_{NF}$ in the OH

$ATC_{NF}$ available in the OH includes: Daily and Hourly.

As discussed above TRM and CBM for Schedule 21-FG&E are zero. $TRM_U$, counterflows and $ETC_{NF}$ are not considered in this calculation. Therefore, $ATC_{NF}$ in the OH is equal to the TTC minus $ETC_F$, plus postbacks of $PTP_F$ in OH as $PTP_{NF}$ ($Postbacks_{NF}$).

## 6.3 Negative ATC

As stated above, the ratings of the radial transmission paths are always higher than the transmission

requirements of the Transmission Customers connected to that path. As such, transmission services over these posted paths are considered to be always available.

As stated above, FG&E's non-PTF facilities are primarily radial paths that provide transmission service to directly interconnected generators. It is possible, in the future, that a particular radial path may interconnect more nameplate capacity generation than the path's TTC. However, due to the ISO's security constrained dispatch methodology, the ISO will only dispatch an amount of generation interconnected to such path so as not to incur a reliability or stability violation on the subject path. Therefore, ATC in the PH, OH and SH may become zero, but will not become negative.

**ATC Process Flow Diagram for Non-PTF Interfaces**

The process flow diagram illustrates the steps through which ATC is calculated both on an operating and planning horizon.

## 7. Posting of Schedule 21-FG&E ATC

### 7.1 Location of ATC Posting.

When necessary, FG&E will estimate ATC values for these internal paths as outlined above and post on its website, http://www.unitil.net/nepool/ma/pdf/atc_cbm_ttc_trm_fge.pdf.

### 7.2 Updates To ATC

When any of the variables in the ATC equations change, the ATC values are recalculated and immediately posted.

### 7.3 Coordination of ATC Calculations

Schedule 21-FG&E non-PTF has no external interfaces. Therefore it is not necessary to coordinate the values.

### 7.4 Mathematical Algorithms

A link to the actual mathematical algorithm for the calculation of ATC for FG&E's non-PTF internal interfaces is located at http://www.unitil.com/sites/default/files/pdfs/fge_atc_algorithms_3_11.pdf.

## ATTACHMENT D

## Methodology for Completing a System Impact Study

FG&E will perform System Impact Studies for the purpose of determining the feasibility of integrating Network Load and Network Resources into FG&E's Local Network under Schedule 21 of the OATT, or for the purpose of determining the feasibility of providing Local Point-To-Point Service under this Tariff. All System Impact Studies will be completed using the same method employed by FG&E to integrate into FG&E's Local Network (i) generation resources owned or acquired to serve its Native Load Customers, and (ii) its Native Load Customers' load. Specifically, System Impact Studies will be performed by applying the applicable criteria, rules, standards and operating procedures. In addition to applying the applicable criteria, rules, standards and operating procedures, to determine the feasibility of providing service to Network Load and/or Local Point-To-Point Service, System Impact Studies will also be performed by applying Unitil Service Corp.'s "Electric System Planning Guide".

**ATTACHMENT E**

**Index Of Local Point-To-Point Service Customers**

| Customer | Date of Service Agreement |
|---|---|
| Fitchburg Gas and Electric Light Company | September 10, 1996 |
| Pinetree Power Fitchburg Inc. | March 9, 1999 |

**ATTACHMENT H**

**Annual Transmission Revenue Requirement For Local Network Service**

The Transmission Revenue Requirement for FG&E will reflect FG&E's costs with respect to transmission facilities not related to PTF ("Non PTF"). Except as provided below for the transitional implementation of this formula rate, the Transmission Revenue Requirement will be an annual calculation, effective June 1, based on the previous year's calendar data as reported in FG&E's FERC Form 1 report for that year, or other reasonable documentation, using end-of-year balances for each rate base item, as set forth below. The initial Transmission Revenue Requirement shall be effective October 1, 2003 through May 31, 2004 based on calendar year 2002 data as adjusted, as approved by the Commission. Further, the Transmission Revenue Requirement to be effective June 1, 2004, based on calendar year 2003 data, shall include an adjustment to annualize the impact on 2003 depreciation expense of revised depreciation rates effective October 1, 2003, as approved by the Commission. Depreciation expense shall be calculated according to Appendix A of this attachment, as approved by the Commission.

Beginning July 31, 2004, FG&E shall make an annual informational filing on or before July 31 of each year showing the Transmission Revenue Requirement in effect for the period beginning June 1 of that year through May 31 of the subsequent year. If there are corrections made to the information reflected in the informational filing after it has been submitted, FG&E will file corrections to the informational filing.

I. FORMULA

A. The Transmission Revenue Requirement for FG&E's Non-PTF shall equal the sum of the following: (A) Non-PTF Return and Associated Income Taxes, plus (B) Non-PTF Depreciation Expense, plus (C) Non-PTF Amortization of Intangible Plant and Other Regulatory Assets/Liabilities, plus (D) Non-PTF Amortization of Rate Case Expense, plus (E) Non-PTF Amortization of Loss on Reacquired Debt, minus (F) Non-PTF Amortization of Investment Tax Credits, plus (G) Non-PTF Property Tax Expense, plus (H) Non-PTF Payroll Tax Expense, plus (I) Non-PTF Transmission Operation and Maintenance Expense, plus (J) Non-PTF Customer Accounting Bad Debts Expense, plus (K) Non-PTF Administrative and General Expense, plus (L) Non-PTF Transmission Related Taxes and Fees Charge, minus (M) Non-PTF Transmission Rents Received from Electric Property, minus (N) Non-PTF Revenue for Through or Out Service.

B. Each of the components of A. above shall be calculated by subtracting the related PTF costs and revenues from the same calendar year, as included in ISO-NE's OATT, from the total transmission costs and revenues as described in Section III. Support Expense included in PTF shall only be included in this computation to the extent these costs are included in the determination of total transmission costs.

## II. DEFINITIONS

### A. ALLOCATION FACTORS

1. Transmission Wages and Salaries Allocation Factor shall equal the ratio of Transmission–related direct wages and salaries to FG&E's total direct wages and salaries, excluding administrative and general wages and salaries.
2. Transmission Plant Allocation Factor shall equal the ratio of the sum of (1) Transmission Plant, (2) Transmission Related Intangible Plant, (3) Transmission Related General Plant, and (4) Transmission Related Common Plant, to Total Plant in Service.
3. Transmission Revenue Allocation Factor shall equal the ratio of Total Internal Transmission Revenue to Total Billed Revenue from Sales to Ultimate Customers.

### B. TERMS

Administrative and General Expense shall equal FG&E's expenses as recorded in FERC Account Nos. 920-935, excluding FERC Account Nos. 924, 928 and 930.1.

Amortization of Intangible Plant and Common Plant shall equal FG&E's expenses related to Intangible Plant and Common Plant as recorded in FERC Account No. 404.

Amortization of Investment Tax Credits shall equal FG&E's credits as recorded in FERC Account No. 411.4.

Amortization of Loss on Reacquired Debt shall equal FG&E's expenses as recorded in FERC Account No. 428.1.

Amortization of Other Regulatory Assets/Liabilities-FAS 109 shall equal FG&E's expenses related to Other Regulatory Assets/Liabilities–FAS 109 as recorded in FERC Account No. 407.

Amortization of Rate Case Expenses shall equal FG&E's expenses related to the deferred costs of regulatory rate proceedings related to transmission service as approved by FERC and as recorded in FERC Account No. 407.

Common Plant shall equal FG&E's gross balance of the plant common to both electric and gas operations as recorded in FERC Account Nos. 303, 310, 389-399, excluding capital leases.

Common Plant Amortization Reserve shall equal FG&E's Common Plant reserve balances as recorded in FERC Account No. 111.

Common Plant Depreciation Expense shall equal FG&E's Common Plant expenses as recorded in FERC Account No. 403.

Common Plant Depreciation Reserve shall equal FG&E's Common Plant reserve balance as recorded in FERC Account No. 108.

Customer Accounting Bad Debts Expense shall equal FG&E's expenses as recorded in FERC Account No. 904.

General Plant shall equal FG&E's gross plant balance as recorded in FERC Account Nos. 389-399.

General Plant Depreciation Expense shall equal FG&E's General Plant expenses as recorded in FERC Account No. 403.

General Plant Depreciation Reserve shall equal FG&E's General Plant reserve balance as recorded in FERC Account No. 108.

Intangible Plant shall equal FG&E's gross plant balance as recorded in FERC Account No. 303 (consisting of investments in computer systems and software).

Intangible Plant Amortization Reserve shall equal FG&E's Intangible Plant reserve balance as recorded in FERC Account No. 111.

Other Regulatory Assets/Liabilities–FAS 106 shall equal the net of FG&E's FAS 106 balance as recorded in FERC Account No. 182.3 and any FAS 106 balance as recorded in FG&E's FERC Account No. 254.

Other Regulatory Assets/Liabilities–FAS 109 shall equal the net of FG&E's FAS 109 balance as recorded in FERC Account No. 182.3 and any FAS 109 balance as recorded in FG&E's FERC Account No. 254.

Payroll Tax Expense shall equal those payroll tax expenses as recorded in FG&E's FERC Account Nos. 408.1 and 409.1.

Plant Held for Future Use shall equal FG&E's balance in FERC Account No. 105.

Prepayments shall equal FG&E's electric prepayment balance as recorded in FERC Account No. 165. The electric portion shall be determined by multiplying the balance in FERC Account No. 165 by the ratio of electric utility plant to total utility plant as reported in FG&E's FERC Form 1.

Property Insurance Expense shall equal FG&E's expenses as recorded in FERC Account No. 924.

Property Tax Expense shall equal FG&E's property tax expenses as recorded in FERC Account Nos. 408.1 and 409.1.

Support Expense shall equal Transmission Support Expense as defined in the OATT Attachment F.

Total Accumulated Deferred Income Taxes shall equal the net of the deferred tax balances as recorded in FERC Account Nos. 281-283 and FERC Account No. 190.

Total Billed Revenue from Sales to Ultimate Customers shall equal FG&E's total electric service revenues as recorded in FERC Account Nos. 440, 442, 444, 445, 446, 448, and 449.

Total Internal Transmission Revenue shall equal FG&E's internal transmission revenues as recorded in FERC Account Nos. 440, 442, 444, 445, 446, 448 and 449.

Total Loss on Reacquired Debt shall equal FG&E's expenses as recorded in FERC Account No. 189.

Total Plant in Service shall equal FG&E's total electric gross plant balance as recorded in FERC Account

Nos. 301-399 (inclusive of electric Common Plant).

Transmission Operation and Maintenance Expense shall equal FG&E's electric expenses as recorded in FERC Account Nos. 560-564 and 566-576.5 and shall exclude expenses already included in PTF Transmission Support Expense, costs billed to Select Energy, Inc. under a generation related entitlement sales agreement and Account Nos. 561.4 and 575.7.

Transmission Plant shall equal FG&E's gross plant balance as recorded in FERC Account Nos. 350-359 excluding joint owned unit costs.

Transmission Plant Depreciation Expense shall equal FG&E's Transmission Plant expenses as recorded in FERC Account No. 403 less joint owned unit costs.

Transmission Plant Depreciation Reserve shall equal FG&E's Transmission Plant reserve balance as recorded in FERC Account 108 less joint owned unit reserves.

Transmission Plant Held for Future Use shall equal the transmission-related balance of electric Plant Held for Future Use.

Transmission Plant Materials and Supplies shall equal FG&E's balance as assigned to transmission, as recorded in FERC Account No. 154.

Transmission Prepayments shall equal FG&E's Prepayments multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Accumulated Deferred Income Taxes shall equal FG&E's electric balance of Total Accumulated Deferred Income Taxes multiplied by the Transmission Plant Allocation Factor.

Transmission Related Administrative and General Expense shall equal the sum of (1) electric Administrative and General Expenses multiplied by the Transmission Wages and Salaries Allocation Factor, plus (2) electric Property Insurance Expense reduced by amounts billed to Select Energy Inc. under a generation related entitlement sales agreement and multiplied by the Transmission Plant Allocation Factor, plus (3) electric expenses included in FERC Account No. 928 related to FERC fees and assessments, plus (4) any other electric transmission related expenses included in FERC Account No. 928

plus (5) specific electric transmission related expenses included in FERC Account No. 930.1 and minus (6) any Administrative and General Expense amounts billed to Select Energy Inc. and not already deducted elsewhere, multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Amortization of Intangible Plant and Other Regulatory Assets/Liabilities shall equal the sum of (1) electric Amortization of Intangible Plant and Common Plant multiplied by the Transmission Wages and Salaries Allocation Factor and (2) electric Amortization of Other Regulatory Assets/Liabilities-FAS 109 multiplied by the Transmission Plant Allocation Factor. This component shall include additional regulatory assets/liabilities as established by regulatory authority and relevant to transmission services.

Transmission Related Amortization of Investment Tax Credits shall equal FG&E's electric Amortization of Investment Tax Credits multiplied by the Transmission Plant Allocation Factor.

Transmission Related Amortization of Loss on Reacquired Debt shall equal FG&E's electric Amortization of Loss on Reacquired Debt multiplied by the Transmission Plant Allocation Factor.

Transmission Related Cash Working Capital shall be 12.5% allowance (45 days/360 days) of the sum of Transmission Operation and Maintenance Expense, plus Transmission Related Customer Accounting Bad Debts Expense and plus Transmission Related Administrative and General Expense.

Transmission Related Common Plant shall equal FG&E's electric Common Plant multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Customer Accounting Bad Debts Expense shall equal FG&E's electric Customer Accounting Bad Debts Expense multiplied by the Transmission Revenue Allocation Factor.

Transmission Related Depreciation & Amortization Reserve shall equal the sum of (1) Transmission Plant Depreciation Reserve plus (2) electric Intangible Plant and electric Common Plant Amortization Reserves multiplied by the Transmission Wages and Salaries Allocation Factor and (3) electric General Plant and electric Common Plant Depreciation Reserves multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Depreciation Expense shall equal the sum of (1) Transmission Plant Depreciation

Expense, (2) electric General Plant Depreciation Expense multiplied by the Transmission Wages and Salaries Allocation Factor and (3) electric Common Plant Depreciation Expense multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related General Plant shall equal FG&E's electric General Plant multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Intangible Plant shall equal FG&E's electric Intangible Plant multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Loss on Reacquired Debt shall equal FG&E's electric balance of Total Loss on Reacquired Debt multiplied by the Transmission Plant Allocation Factor.

Transmission Related Other Regulatory Assets/Liabilities shall equal the sum of (1) FG&E's electric balance of Other Regulatory Assets/Liabilities-FAS 106 multiplied by the Transmission Wages and Salaries Allocation Factor, and (2) FG&E's electric balance of Other Regulatory Assets/Liabilities-FAS 109 multiplied by the Transmission Plant Allocation Factor. This component shall include additional regulatory assets/liabilities as established by regulatory authority and relevant to transmission services.

Transmission Related Payroll Tax shall equal FG&E's electric Payroll Tax Expense multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Property Tax shall equal FG&E's electric Property Tax Expense, reduced by amounts billed to Select Energy, Inc. under a generation related entitlement sales agreement, multiplied by the Transmission Plant Allocation Factor.

## III. CALCULATION OF TRANSMISSION REVENUE REQUIREMENT

This section describes the calculation of the components of the Transmission Revenue Requirement for FG&E's Non-PTF as provided in Section I.

A. Non-PTF Return and Associated Income Taxes shall equal the product of the Total Internal Transmission Investment Base and the Cost of Capital Rate, reduced by the amount recovered as PTF. For purposes of this computation, the PTF amount shall be calculated using the Cost of Capital Rate

defined in III.A.2 below.

1. Total Internal Transmission Investment Base

The Total Internal Transmission Investment Base shall be the sum of the year end balances of the following items as defined in Section II.: (a) Transmission Plant, plus (b) Transmission Related Intangible Plant, plus (c) Transmission Related General Plant, plus (d) Transmission Related Common Plant, plus (e) Transmission Plant Held for Future Use, minus (f) Transmission Related Depreciation & Amortization Reserve, minus (g) Transmission Related Accumulated Deferred Income Taxes, plus (h) Transmission Related Loss on Reacquired Debt, plus (i) Transmission Related Other Regulatory Assets/Liabilities, plus (j) Transmission Prepayments, plus (k) Transmission Plant Materials and Supplies, plus (l) Transmission Related Cash Working Capital.

2. Cost of Capital Rate

The Cost of Capital Rate will equal (a) FG&E's Weighted Cost of Capital, plus (b) Federal Income Tax plus (c) State Income Tax.

(a) The Weighted Cost of Capital will be calculated based upon the capital structure at the end of each year and will equal the sum of:

(i) the long-term debt component, which equals the product of the actual weighted average embedded cost to maturity of FG&E's long-term debt then outstanding and the ratio that long-term debt is to FG&E's total capital.

(ii) the preferred stock component, which equals the product of the actual weighted average embedded cost to maturity of FG&E's preferred stock then outstanding and the ratio that preferred stock is to FG&E's total capital.

(iii) the return on equity component, which equals the product of the cost of equity of 10.57% and the ratio that common equity is to FG&E's total capital.

(b) Federal Income Tax shall equal

$$\frac{(A+[(C+B)/])x\ FT}{1-FT}$$

Where FT is the Federal Income Tax Rate; A is the sum of the preferred stock component and the return on equity component, as determined in Sections III.A.2.(a)(ii) and (iii) above; B is Transmission Related Amortization of Investment Tax Credits, as defined in Section II above, C is the equity AFUDC

component of Transmission Related Depreciation Expense, as defined in Section II above, and D is Total Internal Transmission Investment Base, as determined in Section III.A.1., above.

(c) State Income Tax shall equal

$$\frac{(A+[(C+B)/D] + \text{Federal Income Tax}) \times ST}{1-ST}$$

Where ST is the State Income Tax Rate; A is the sum of the preferred stock component and return on equity component as determined in Sections III.A.2. (a)(ii) and (iii) above; B is the Transmission Related Amortization of Investment Tax Credits as defined in Section II. above; C is the equity AFUDC component of Transmission Related Depreciation Expense, as defined in Section II above; D is the Total Internal Transmission Investment Base, as determined in Section III.A.1. above; and Federal Income Tax is the rate determined in Section III.A.2.(b) above.

B. Non-PTF Depreciation Expense shall equal FG&E's Transmission Related Depreciation Expense reduced by the amount recovered as PTF.

C. Non-PTF Amortization of Intangible Plant and Other Regulatory Assets/Liabilities shall equal FG&E's Transmission Related Amortization of Intangible Plant and Other Regulatory Assets/Liabilities reduced by the amount recovered as PTF.

D. Non-PTF Amortization of Rate Case Expenses shall equal the Amortization of Rate Case Expenses reduced by the amount recovered as PTF.

E. Non-PTF Amortization of Loss on Reacquired Debt shall equal FG&E's Transmission Related Amortization of Loss on Reacquired Debt reduced by the amount recovered as PTF.

F. Non-PTF Amortization of Investment Tax Credits shall equal FG&E's Transmission Related Amortization of Investment Tax Credits reduced by the amount recovered as PTF.

G. Non-PTF Property Tax Expense shall equal FG&E's Transmission Related Property Tax Expense reduced by the amount recovered as PTF.

H. Non-PTF Payroll Tax Expense shall equal FG&E's Transmission Related Payroll Tax Expense

reduced by the amount recovered as PTF.

I. Non-PTF Transmission Operation and Maintenance Expense shall equal Transmission Operation and Maintenance Expenses reduced by the amount recovered as PTF.

J. Non-PTF Customer Accounting Bad Debts Expense shall equal the Transmission Related Customer Accounting Bad Debts Expense reduced by the amount recovered as PTF.

K. Non-PTF Administrative and General Expenses shall equal the Transmission Related Administrative and General Expenses reduced by the amount recovered as PTF.

L. Non-PTF Transmission Related Taxes and Fees Charge shall include any fee or assessment imposed by any governmental authority on service provided hereunder which is not specifically identified under any other section. This amount shall be reduced by the amount recovered as PTF.

M. Non-PTF Transmission Rents Received from Electric Property shall equal any amount in FERC Account No. 454, Rents from Electric Property, associated with Transmission Plant. This amount shall be reduced by the amount recovered as PTF.

N. Non-PTF Revenue for Through or Out Service shall equal distributions received by FG&E from ISO out of revenues paid for Through or Out Service (as defined in the OATT), pursuant to Section II.12.2(d) of the Tariff.

Appendix A

PTF and non-PTF Depreciation Rates

| Account | Description | Depreciation Rates (%) Eff. March 1, 2020 |
|---|---|---|
| Transmission Plant | | |
| 351.00 | Clearing Land and Rights of Way | 1.27 |
| 352.00 | Structures and Improvements | 2.12 |
| 353.00 | Station Equipment | 3.92 |
| 355.00 | Poles and Fixtures | 6.13 |
| 356.00 | Overhead Conductors and Devices | 3.51 |
| General Plant | | |
| 394.00 | Tools, Shop and Garage Equipment | 3.22 |
| 395.00 | Laboratory Equipment | 4.03 |
| 397.00 | Communication Equipment | 2.64 |
| 398.00 | Miscellaneous Equipment | 3.56 |
| Common Plant | | |
| 390.00 | Structures and Improvements | 1.98 |
| 391.00 | Office Furniture and Equipment | 6.67 |
| 393.00 | Stores Equipment | 4.00 |
| 394.00 | Tools, Shop and Garage Equipment | 5.00 |
| 396.00 | Power Operated Equipment | 0.16 |
| 397.00 | Communication Equipment | 6.67 |
| 398.00 | Miscellaneous Equipment | 5.00 |

## ATTACHMENT I

## Index Of Local Network Service Customers

| Customer | Date of Service Agreement |
| --- | --- |
| Fitchburg Gas and Electric Light Company | September 10, 1997 |
| Massachusetts Bay Transportation Company | April 17, 2000 |

## Attachment L

## Creditworthiness Policy

### 1. Introduction

This guide establishes creditworthiness standards for transmission service and/or interconnection service customers ("Customers") entering into new or amended service agreements with Fitchburg Gas and Electric Light Company ("FG&E") under the ISO New England Open Access Transmission Tariff ("ISO-NE OATT").[5] In accordance with the Federal Energy Regulatory Commission's Policy Statement on Credit-Related Issues for Electric OATT Transmission Providers, Independent System Operators and Regional Transmission Organizations ("Policy Statement"), this Creditworthiness Policy is intended to make FG&E's credit-related practices more transparent and comprehensive. The following describes FG&E credit review procedures and the types of security that are acceptable to FG&E to protect against the risk of non-payment.

### 2. Creditworthiness

FG&E will evaluate the creditworthiness of Customers entering into new or amended transmission or interconnection service agreements with FG&E in order to assess a Customer's credit risk relative to the exposure of "Total Outstanding Obligation" as defined in Section 2.1 below, created by the transaction or transactions that FG&E has with the Customer. For purposes of determining the ability of a Customer to meet its obligations, FG&E may require the Customer to submit financial information for the credit review, including credit ratings, credit reports and audited financial statements for the last five years, including audited quarterly reports for the prior two years, if available. Further, the Customer will be expected to provide calculations of the following: Current Total Capitalization Ratio, Including Short-Term Debt; Tangible Net Worth for a period within sixty days of a Customer's request; Earnings Before Interest, Taxes, Depreciation and Amortization for twelve of the last fifteen consecutive months; and additional calculations and other information deemed necessary for the evaluation credit. In completing its evaluation, FG&E may consider other factors including but not limited to past billing history or the characteristics of service being requested.

### 2.1 Total Outstanding Obligation

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5 *See* ISO New England Inc., ISO New England Inc. Transmission, Markets and Services Tariff, Section II. This policy is applicable to transmission or interconnection service agreements established from time-to-time under Schedules 21 - FG&E of the ISO-NE OATT and to individually negotiated agreements for similar transmission or interconnection services.

The Customer's Total Outstanding Obligation to FG&E will be the sum total of the following components:

2.1.1 If the Customer is making payments to FG&E for ongoing expenses (including, but not limited to, O&M expenses related to interconnections or other monthly charges such as monthly transmission charges under Schedule 21 – FG&E) the Customer will be required to provide security pursuant to Section 2.2 below, for four months' worth of the Customer's average payment obligation for such charges.

2.1.2 In accordance with the provisions of the ISO-NE OATT, a Customer will pay a Contribution in Aid of Construction ("CIAC") or transfer ownership of facilities to FG&E for transmission or interconnection facilities that are to be constructed on behalf of a Customer at the Customer's sole expense. If FG&E determines in good faith that the receipt of CIAC payments or property from the Customer are non-taxable, FG&E will require a form of security from the customer pursuant to Section 2.2 below for the amount of the potential tax liability to FG&E that would occur if such facilities were deemed taxable.

2.1.3 In accordance with the provisions of Schedule 21 – FG&E to the ISO-NE OATT, a Customer will pay a formula rate over time for return of and on the cost of capital incurred by FG&E on behalf of a Customer at the Customer's sole expense. The Customer will also be required to provide security pursuant to Section 2.2 below, for the unamortized balance of plant in service reserved for the sole use of the Customer.

**2.2 Creditworthiness Requirements**

A Customer will be considered creditworthy upon satisfying at least one of the following conditions or a combination of those conditions at the time that the customer enters into a transmission or interconnection service agreement and for so long as the Customer maintains satisfaction of at least one of these conditions for any outstanding obligations thereunder:

2.2.1 The Customer maintains a minimum credit rating from Standard & Poor's Long-term Issuer Credit Rating of BBB- or better or Moody's Investors Service Long-term Issuer Credit Rating of Baa3 or better so long as the Customer's Total Outstanding Obligation plus any other unsecured obligations with FG&E does not exceed the Credit Limits discussed in Section 4 below. When FG&E reviews a Customer's rating from two or more rating agencies and a split

rating is present, the lower debt rating will apply. In the event that the Customer has no rating from either Standard & Poor's or Moody's Investors Service, a rating from Fitch may also be used with acceptable ratings equivalent to those from either Standard and Poor's or Moody's Investors Service. If unrated, the Customer's financial statements will be reviewed to determine an equivalent rating based on the Customer's unsecured credit limits and/or financial statements.

If, at any time, the Customer's rating falls below investment grade (BBB- from Standard and Poor's and/or Baa3 from Moody's or equivalent ratings from Fitch), the Customer will be required to (i) notify FG&E within 10 days and, (ii) within 30 days, provide another form of security reasonably acceptable to FG&E, as described in this Section 2.2.

2.2.2 The Customer provides and maintains in effect during the term of and until full and final payment and performance of the service agreement an unconditional and irrevocable standby letter of credit for the Total Outstanding Obligation in the form and substance and issued by a bank reasonably acceptable to FG&E. A draft, acceptable form letter of credit is attached. Any such bank must satisfy the creditworthiness criteria described in 2.2.1 above.

If, at any time, the bank's rating falls below investment grade (BBB- from Standard and Poor's and/or Baa3 from Moody's or equivalent ratings from Fitch), the Customer will be required to (i) notify FG&E within 10 days and, (ii) within 30 days, provide another form of security reasonably acceptable to FG&E, as described in this Section 2.2.

2.2.3 If the Customer's parent or an affiliate company satisfies the creditworthiness criteria described in 2.2.1 above and, subject to the Credit Limits stated in Section 4 below, such company submits to FG&E and maintains in effect a letter of guaranty reasonably acceptable to FG&E as to amount, form and substance for the term of and until full and final payment and performance of the service agreement.

If, at any time, the credit rating of the Customer's parent or affiliate providing the guaranty falls below investment grade (BBB- from Standard and Poor's and/or Baa3 from Moody's or equivalent ratings from Fitch), the Customer will be required to (i) notify FG&E within 10 days and, (ii) within 30 days, provide another form of security reasonably acceptable to FG&E, as described in this Section 2.

2.2.4 The Customer makes an advance payment to FG&E in immediately available funds for the Total Outstanding Obligation.

**3. Customer Costs Requiring Prepayment**

In accordance with the provisions of the ISO-NE OATT, a Customer will pay a Contribution in Aid of Construction ("CIAC") for transmission or interconnection facilities to be constructed by FG&E on behalf of a Customer at the Customer's sole expense. The Customer will have the option to (i) prepay the CIAC in immediately available funds to FG&E, or (ii) make periodic CIAC progress payments, as defined in the Customer's service agreement, to prepay in increments capital costs scheduled to be incurred by FG&E. If FG&E determines in good faith that such payments or property transfers made by the Customer should be reported as income subject to taxation, the Customer shall also prepay all costs associated with the cost consequences of the current tax liability imposed on FG&E by those facilities (the "Tax Gross- up").

**4. Determination of Credit Limits**

FG&E reserves the right to limit the total amount of unsecured credit extended to a Customer under 2.2.1 and 2.2.3 above such that the sum of all unsecured credit that such Customer has with FG&E, including the Total Outstanding Obligation, shall not exceed the Credit Limits defined below. Such limitations are based on an assessment of the Customer's or its Guarantor's credit rating and the net worth of the Customer's or its Guarantor's assets.

| Standard and Poor's (or Equivalent) Rating | Unsecured Credit Limit as Percent of Customer's or Guarantor's Tangible Net Worth |
|---|---|
| A and above | 1.0% |
| A- | 0.5% |
| BBB+ | 0.3% |
| BBB | 0.2% |
| BBB- | 0.1% |

Once FG&E has evaluated or reevaluated and determined the maximum Credit limits for each Customer, it will inform the prospective Customer of the amount of such credit limits. A customer may request in writing a reevaluation of the maximum Credit limits, within 14 days from the date that they were informed by FG&E of such limits. Justification for such a reevaluation should be contained in the

request.  All requests for reevaluation must be submitted directly to the FG&E Contract Administrator.

From time to time, principally due to unknown factors such as changing market, economic, banking or other financial conditions, but not solely limited to these factors, FG&E may find it necessary to modify or amend its creditworthiness policies and guidelines after a 15 day notice period and require that present and future Transmission Customers fulfill any additional conditions contained in the modified Creditworthiness Guide.  Transmission Customers will have 30 days after the notice period to cure any deficiency.

FORM LETTER OF CREDIT

_____ Bank

_____

(address)

IRREVOCABLE STANDBY LETTER OF CREDIT

DATE: _____

AMOUNT U.S. $_____

_____

FOR INTERNAL IDENTIFICATION PURPOSES ONLY

_____

Our Number:

Beneficiary: Applicant:

_____ _____

_____ _____

_____ _____

_____ _____

Attn: At the request of:

_____

Ref:_____

LADIES AND GENTLEMEN;

WE HEREBY ESTABLISH THIS IRREVOCABLE, AND UNCONDITIONAL, EXCEPT AS STATED HEREIN, LETTER OF CREDIT NUMBER _____ (LETTER OF CREDIT), BY ORDER OF, FOR THE ACCOUNT OF, AND ON BEHALF OF [CUSTOMER NAME] (ACCOUNT PARTY) IN FAVOR OF FITCHBURG GAS AND ELECTRIC LIGHT COMPANY (BENEFICIARY) FOR DRAWINGS, IN ONE OF MORE DRAFTS, UP TO AN AGGREGATE AMOUNT NOT EXCEEDING U.S. $_____ EFFECTIVE IMMEDIATELY. THE TERM 'BENEFICIARY' INCLUDES ANY SUCCESSOR OF THE NAMED BENEFICIARY.

THIS LETTER OF CREDIT CANNOT BE AMENDED, MODIFIED OR REVOKED WITHOUT THE PRIOR WRITTEN CONSENT OF BOTH THE BANK AND THE BENEFICIARY. THE BENEFICIARY SHALL NOT BE DEEMED TO HAVE WAIVED ANY RIGHTS UNDER THIS LETTER OF CREDIT, UNLESS AN OFFICER OF THE BENEFICIARY SHALL HAVE SIGNED A WRITTEN WAIVER EXPRESSLY REFERENCING THE RIGHT TO BE WAIVED. NO SUCH WAIVER SHALL BE EFFECTIVE AS TO ANY TRANSACTION THAT OCCURS SUBSEQUENT TO THE DATE OF THE WAIVER, NOT AS TO ANY CONTINUANCE OF A BREACH AFTER THE WAIVER.

WE HEREBY UNDERTAKE TO PROMPTLY HONOR YOUR DRAFT(S) DRAWN ON US, INDICATING OUR LETTER OF CREDIT NUMBER _____ IS ISSUED, PRESENTABLE AND PAYABLE AND WE GUARANTY TO THE DRAWERS, ENDORSERS, AND BONA FIDE HOLDERS OF THIS LETTER OF CREDIT, THAT DRAFTS UNDER AND IN COMPLIANCE WITH THE TERMS OF THIS LETTER OF CREDIT WILL BE HONORED. THIS LETTER OF CREDIT MAY NOT BE TRANSFERRED OR ASSIGNED BY US.

SUBJECT TO THE EXPRESS TERMS AND CONDITIONS HEREIN, FUNDS UNDER THIS LETTER OF CREDIT ARE AVAILABLE TO YOU BY PRESENTATION AT OUR OFFICES LOCATED AT [_____] OF BENEFICIARY'S DRAWING CERTIFICATE ISSUED SUBSTANTIALLY IN THE FORM OF ANNEX 1 ATTACHED HERETO AND WHICH FORMS AN INTEGRAL PART HEREOF, DULY COMPLETED AND PURPORTEDLY BEARING THE ORIGINAL SIGNATURE OF AN OFFICER OF THE BENEFICIARY. PRRESENTATION OF ANY DRAWING CERTIFICATE UNDER THIS LETTER OF CREDIT MAY BE MADE IN PERSON TO

US OR MAY BE SENT TO US BY TELEX TO [_____] OR BY FACSIMILE TRANSMISSION TO FACSIMILE TELEPHONE NUMBER [_____].

ALL COMMISSIONS AND CHARGES WILL BE BORNE BY THE ACCOUNT PARTY. IF DOCUMENTS, IN COMPLIANCE WITH THE TERMS OF THIS LETTER OF CREDIT, ARE RECEIVED BEFORE 10:00 AM (EASTERN TIME) ON A BUSINESS DAY, PAYMENT WILL BE EFFECTED ON OR BEFORE 5:00 PM (EASTERN TIME) ON THE NEXT BUSINESS DAY. IF DOCUMENTS, IN COMPLIANCE WITH THE TERMS OF THIS LETTER OF CREDIT ARE RECEIVED AFTER 10:00 AM ON A BUSINESS DAY, PAYMENT WILL BE EFFECTED ON OR BEFORE 5:00 PM ON THE SECOND BUSINESS DAY FOLLOWING SUCH DATE OF RECEIPT.

EXCEPT AS EXPRESSLY STATED HEREIN, THIS UNDERTAKING IS NOT SUBJECT TO ANY AGREEMENT, CONDITION OR QUALIFICATION. THIS LETTER OF CREDIT DOES NOT INCORPORATE, AND SHALL NOT BE DEEMED MODIFIED OR AMENDED BY REFERENCE TO ANY DOCUMENT, INSTRUMENT OR AGREEMENT (A) THAT IS REFERRED TO HEREIN (EXCEPT FOR THE UNIFORM CUSTOMS, AS DEFINED BELOW), OR (B) IN WHICH THIS LETTER OF CREDIT IS REFERRED TO OR TO WHICH THIS LETTER OF CREDIT RELATES.

OUR OBLIGATION UNDER THIS LETTER OF CREDIT SHALL BE OUR INDIVIDUAL OBLIGATION AND IS IN NO WAY CONTINGENT UPON THE REIMBURSEMENT WITH RESPECT THERETO, OR UPON OUR ABILITY TO PERFECT ANY LIEN, SECURITY INTEREST OR ANY OTHER REIMBURSEMENT.

THIS LETTER OF CREDIT EXPIRES WITH OUR CLOSE OF BUSINESS ON [364 days from effective date]; HOWEVER, IT IS A CONDITION OF THIS LETTER OF CREDIT THAT IT SHALL BE DEEMED AUTOMATICALLY EXTENDED WITHOUT AMENDMENT FOR 364 DAYS FROM THE PRESENT OR ANY FUTURE EXPIRATION DATE HEREOF, UNLESS AT LEAST SIXTY (60) DAYS BEFORE ANY SUCH EXPIRATION DATE WE NOTIFY YOU BY REGISTERED MAIL ADDRESSED TO: [address of beneficiary, ATTN: _____], THAT WE ELECT NOT TO RENEW THIS LETTER FOR SUCH ADDITIONAL PERIOD.

THIS LETTER OF CREDIT IS SUBJECT TO THE UNIFORM CUSTOMS AND PRACTICE FOR DOCUMENTARY CREDITS (1993 REVISION) INTERNATIONAL CHAMBER OF COMMERCE, PUBLICATION NO. 500. IF THIS LETTER OF CREDIT EXPIRES DURING THE INTERRUPTION

OF BUSINESS AS DESCRIBED IN ARTICLE 17 THEREOF WE HEREBY SPECIFICALLY AGREE TO EFFECT PAYMENT IF THE LETTER OF CREDIT IS DRAWN AGAINST WITHIN 30 DAYS AFTER THE RESUMPTION OF BUSINESS.

ANNEX 1 TO [BANKNAME]
IRREVOCABLE LETTER OF CREDIT NO. _____

[INSERT DATE]

[BANK NAME]
[ATTENTION]
[BANK ADDRESS 1]
[BANK ADDRESS 2]

LADIES AND GENTLEMEN:

THE UNDERSIGNED _____, A DULY ELECTED AND ACTING OFFICER OF FITCHBURG GAS AND ELECTRIC LIGHT COMPANY (THE "BENEFICIARY"), HEREBY CERTIFIES TO [INSERT BANK NAME] (THE "BANK"), WITH REFERENCE TO IRREVOCABLE LETTER OF CREDIT NO. _____ DATED _____, ISSUED BY THE BANK IN FAVOR OF THE BENEFICIARY (THE "LETTER OF CREDIT"), AS FOLLOWS AS OF THE DATE THEREOF:

1. THE BENEFICIARY IS A PARTY TO THAT CERTAIN [INTERCONNECTION AGREEMENT], EFFECTIVE _____, BETWEEN THE BENEFICIARY AND [CUSTOMER NAME] (THE "AGREEMENT").

2. BENEFICIARY IS MAKING A DRAWING UNDER THE LETTER OF CREDIT IN THE AMOUNT OF $_____ BECAUSE [CHECK APPLICABLE PROVISION]:

[____] (A) THERE CURRENTLY EXIST ONE OR MORE UNPAID AMOUNTS WHICH [CUSTOMER NAME] IS OBLIGATED TO PAY PURSUANT TO THE TERMS OF THE AGREEMENT.

[____] (B) THE BENEFICIARY HAS RECEIVED NOTICE FROM THE BANK OF ITS INTENTION NOT TO RENEW THE LETTER OF CREDIT BEYOND THE CURRENT EXPIRATION DATE AND [CUSTOMER NAME] HAS FAILED, PRIOR TO THE CLOSE OF BUSINESS ON _____ [INSERT DATE WHICH IS NOT MORE THAN THIRTY (30) DAYS BEFORE

THE PRESENT EXPIRATION DATE], TO DELIVER TO BENEFICIARY A REPLACEMENT LETTER OF CREDIT SATISFYING THE REQUIREMENTS OF THE AGREEMENT.

3. BASED UPON THE FOREGOING, THE BENEFICIARY HEREBY MAKES DEMAND UNDER THE LETTER OF CREDIT FOR PAYMENT OF U.S. DOLLARS _____ AND _____/100THS (U.S. $_____).

4. FUNDS PAID PURSUANT TO THE PROVISIONS OF THE LETTER OF CREDIT SHALL BE WIRE TRANSFERRED TO THE BENEFICIARY IN ACCORDANCE WITH THE FOLLOWING INSTRUCTIONS:

_____

_____

_____

UNLESS OTHERWISE PROVIDED HEREIN, CAPITALIZED TERMS WHICH ARE USED AND NOT DEFINED HEREIN SHALL HAVE THE MEANING GIVEN EACH SUCH TERM IN THE LETTER OF CREDIT.

IN WITNESS WHEREOF, THIS CERTIFICATE HAS BEEN DULY EXECUTED AND DELIVERED ON BEHALF OF THE BENEFICIARY BY ITS DULY ELECTED AND ACTING OFFICER AS OF THIS _____ DAY OF _____, _____.

BENEFICIARY: FITCHBURG GAS AND ELECTRIC LIGHT COMPANY

_____

NAME:

_____

TITLE

**SCHEDULE 21 - FG&E**

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
LOCAL SERVICE SCHEDULE

# SCHEDULE 21-FG&E

## Fitchburg Gas and Electric Light Company Local Service Schedule

## I. COMMON SERVICE PROVISIONS

Fitchburg Gas and Electric Light Company ("FG&E") is a participant in the New England Control Area and has agreed to provide transmission and ancillary services over PTF pursuant to the Tariff. The services provided under this Schedule 21-FG&E apply only to Non-PTF, except in the case of service to Network Customers that have all or part of their Network Load directly connected to the PTF in the Local Network. These Network Customers shall pay for Local Network Service pursuant to Attachment H to this Schedule 21-FG&E. Provisions of this Schedule 21-FG&E shall have priority over any conflicting provisions in the Tariff.

### 1 Definitions

**1.0 Annual Transmission Costs**: The total annual cost of the Local Network for purposes of Local Network Service shall be the amount specified in Attachment H until amended by FG&E or modified by the Commission.

**1.1 Curtailment**: A reduction in firm or non-firm transmission service in response to a transmission capacity shortage as a result of system reliability conditions.

**1.2 Load Ratio Share**: Ratio of a Transmission Customer's Non-PTF Network Load to FG&E's total load computed in accordance with Sections II.10 and II.10(a) of this Schedule under Sections Supplementing Section 21 of the OATT and calculated on a rolling twelve month basis.

**1.3.1 Local Network**: The transmission facilities owned, controlled, or operated by FG&E that are used to provide transmission service under Schedule 21 of the OATT.

**1.4 Local Network Service**: The transmission service provided under Schedule 21 of the OATT and this Schedule.

**1.5 Network Load**: The load directly interconnected to the PTF or Non-PTF facilities of FG&E. A Network Customer may elect to designate less than its total load as Network Load but

may not designate only part of the load at a discrete Point of Delivery. Where a Eligible Customer has elected not to designate a particular load at discrete points of delivery as Network Load, the Eligible Customer is responsible for making separate arrangements under Schedule 21 of the OATT for any Local Point-to-Point Service that may be necessary for such non-designated load. For purposes of establishing rates and charges under this Tariff, the Network Load will be subdivided into one of two categories:

**A.** PTF Network Load shall be the load over FG&E's PTF facilities and shall equal the load of Network Customers directly interconnected with FG&E's PTF or indirectly utilizing FG&E's PTF through Non-PTF facilities of FG&E.

**B**. Non-PTF Network Load shall be the load over FG&E's Non-PTF directly interconnected with FG&E's Non-PTF facilities.

**1.6 Network Upgrades**: Modifications or additions to transmission-related facilities that are integrated with and support FG&E's overall Local Network for the general benefit of all users of such Local Network.

**1.7 Parties**: FG&E and the Transmission Customer receiving service under this Schedule and the OATT.

**SECTIONS SUPPLEMENTING THE BODY OF THE TARIFF**

**Preamble**

The following provisions supplement the provisions of the Tariff. Provisions of this Schedule 21-FG&E shall have priority over any conflicting provisions in the Tariff. The section numbers of this Schedule 21-FG&E correspond to or are consecutive to the section numbers in the body of the Tariff that are affected by the additional provisions herein.

**Sections Supplementing Section 1: General Terms and Conditions**

**1.7 Creditworthiness**: For the purpose of determining the ability of the Transmission Customer to meet its obligations related to service hereunder, FG&E may require reasonable credit review procedures in accordance with Attachment L to Schedule 21-FG&E.

**Sections Supplementing Section II of the Tariff: Open Access Transmission Tariff (OATT)**

## II.A. COMMON SERVICE PROVISIONS

### II.4 Ancillary Services

Ancillary Services are needed with transmission service to maintain reliability within and among the Control Areas affected by the transmission service. FG&E is required to provide (or offer to arrange with the ISO as discussed below), and the Transmission Customer is required to purchase Scheduling, System Control and Dispatch Service.

The following Ancillary Services are available pursuant to Section II.4 of the Tariff only to the Transmission Customer serving load within the New England Control Area: (i) Reactive Supply and Voltage Control Service, (ii) Regulation and Frequency Response , (iii) Energy Imbalance, (iv) Ten-Minute Spinning Reserve Service, (v) Ten-Minute Non-Spinning Reserve Service and (vi) Thirty-Minute Operating Reserve Service.

### II.8 Billing and Invoicing; Accounting

**8.2 Invoicing**: Within a reasonable time after the first day of each month, FG&E shall submit an invoice to the Transmission Customer for the charges for all services furnished under the OATT during the preceding month. The invoice shall be paid by the Transmission Customer within twenty (20) days of receipt. All payments shall be made in immediately available funds payable to FG&E, or by wire transfer to a bank named by FG&E.

**8.4 Customer Default**: In the event the Transmission Customer fails, for any reason other than a billing dispute as described below, to make payment to FG&E on or before the due date as described above, and such failure of payment is not corrected within thirty (30) calendar days after FG&E notifies the Transmission Customer to cure such failure, a default by the Transmission Customer shall be deemed to exist. Upon the occurrence of a default, FG&E may initiate a proceeding with the Commission to terminate service but shall not terminate service until the Commission so approves any such request. In the event of a billing dispute between FG&E and the Transmission Customer, FG&E will continue to provide service under the Service Agreement as long as the Transmission Customer (i) continues to make all payments not in dispute, and (ii) pays into an independent escrow account the portion of the invoice in dispute,

pending resolution of such dispute. If the Transmission Customer fails to meet these two requirements for continuation of service, then FG&E may provide notice to the Transmission Customer of its intention to suspend service in sixty (60) days, in accordance with Commission policy.

**II.10.2 Stranded Cost Recovery**

FG&E may seek to recover stranded costs from the Transmission Customer pursuant to this OATT in accordance with the terms, conditions and procedures set forth in FERC Order No. 888. However, FG&E must separately file any specific proposed stranded cost charge under Section 205 of the Federal Power Act.

## SECTIONS SUPPLEMENTING SCHEDULE 21 OF THE OATT

### I. Local Point-to-Point Service Over the Local Network Owned by FG&E

**Preamble**

In addition to the provisions set forth in Schedule 21 of the OATT, the provisions of this Schedule 21-FG&E shall govern Local Point-To-Point transactions using the Local Network owned by FG&E. Provisions of this Schedule 21-FG&E shall have priority over any conflicting provisions in the Tariff. The section numbers of this Schedule 21-FG&E correspond to or are consecutive to the sections of Schedule 21 of the OATT that are affected by the additional provisions herein.

To the extent not otherwise covered in the OATT, the then-current ISO New England Operating Documents, or the TOA, or the rules adopted thereunder, whenever FG&E implements least-cost redispatch procedures in response to a transmission constraint, FG&E and the Transmission Customer(s) taking Local Point-To-Point Service will each bear a proportionate share of the total redispatch cost.

**3) Service Availability**

**b) Determination of Available Transfer Capability (ATC)**: A description of FG&E's specific methodology for assessing ATC is contained in Attachment C of this Schedule. In the event sufficient transfer capability may not exist to accommodate a service request, FG&E will respond by performing a System Impact Study.

**g) Real Power Losses**: Real power losses are associated with all transmission service.

FG&E is not obligated to provide real power losses. The Transmission Customer is responsible for replacing losses associated with all transmission service as calculated by FG&E. The applicable real power loss factors tabulated below will be applied to metered loads and Reserved Capacity amounts to account for losses on FG&E's system. The applicable real power loss factors are as follows:

Firm Local Point-to-Point Service = 0.72% at 69 kV subtransmission.

Non-firm Local Point-to-Point Service = 0.72% at 69 kV subtransmission.

**6) Procedures for Arranging Non-Firm Local Point-To-Point Service**

**f) Determination of Available Transfer Capability**: Following receipt of a tendered schedule FG&E will make a determination on a non-discriminatory basis of ATC pursuant to Attachment C of this Schedule. Such determination shall be made as soon as reasonably practicable after receipt, but not later than the following time periods for the following terms of service (i) thirty (30) minutes for hourly service, (ii) thirty minutes for daily service, (iii) four (4) hours for weekly service, and (iv) two (2) days for monthly service (during FG&E's normal business hours of 8:00 a.m. to 4:30 p.m., Monday to Friday).

**11) Sale or Assignment of Local Point-to-Point Service**

**c) Information on Assignment or Transfer of Service**: FG&E currently has waiver from the obligations of FERC Order No. 889 to maintain an OASIS. In the future, upon implementation of any FG&E OASIS site, resellers may use FG&E's OASIS site to post transmission capacity available for resale.

## II. Local Network Service using Non-PTF Owned by FG&E

**Preamble**

In addition to the provisions set forth in Schedule 21 of the OATT, the provisions of this Schedule 21-FG&E shall govern Local Network Service using Non-PTF owned by FG&E. Provisions of this Schedule 21-FG&E shall have priority over any conflicting provision in the Tariff. The section numbers of this Schedule 21-FG&E correspond to the sections of Schedule 21 of the OATT that are affected by the additional provisions herein.

Local Network Service allows the Network Customer to integrate, economically dispatch, and regulate its current and planned Network Resources to serve its Network Load in a manner comparable to that in which FG&E utilizes its Non-PTF to serve its Native Load Customers. Local Network Service also may be used by the Network Customer to deliver economy energy purchases to its Network Load from non-designated resources on an as-available basis without additional charge. Transmission service for sales to non-designated loads will be provided pursuant to the applicable terms and conditions of Schedule 21 of the OATT.

**2) Availability of Local Network Service**

**f) Real Power Losses**: The Network Customer is responsible for replacing losses associated with all transmission service as calculated by FG&E. The applicable real power loss factors tabulated below will be applied to metered loads and Reserved Capacity amounts to account for losses on FG&E's system. The applicable real power loss factors are as follows:

Local Network Service = 0.72% at 69 kV subtransmission.

**8) Load Shedding and Curtailments**

**a) Procedures**: Prior to the Service Commencement Date, FG&E and the Network Customer shall establish Load Shedding and Curtailment procedures pursuant to Section II.20 of the Tariff, with the objective of responding to contingencies on the Non-PTF. The Parties will implement such programs during any period when the ISO, the Local Control Center or FG&E determines that a system contingency exists and such procedures are necessary to alleviate such contingency. FG&E will notify all affected Network Customers in a timely manner of any scheduled Curtailment.

**b) Transmission Constraints**: During any period when FG&E determines that a transmission constraint exists on the Local Network, and such constraint may impair the reliability of FG&E's system, FG&E will take whatever actions, consistent with then-current ISO New England Operating Documents or the TOA, and the rules adopted thereunder, and with Good Utility Practice, that are reasonably necessary to maintain the reliability of FG&E's system. To the extent ISO determines that the reliability of the ISO New England transmission system can be maintained by redispatching resources, FG&E will initiate procedures pursuant to the OATT,

the then-current ISO New England Operating Documents, or the TOA, and the rules adopted thereunder to redispatch all Network Resources and FG&E's own resources on a least-cost basis without regard to the ownership of such resources. Any redispatch under this section may not unduly discriminate between FG&E's use of the Local Network on behalf of its Native Load Customers and any Network Customer's use of the Local Network to serve its designated Network Load.

**c) Cost Responsibility for Relieving Transmission Constraints**: To the extent not otherwise covered in the OATT, the then-current ISO New England Operating Documents, or the TOA, or the rules adopted thereunder, whenever FG&E implements least-cost redispatch procedures in response to a transmission constraint, FG&E and the Network Customer(s) will each bear a proportionate share of the total redispatch cost based on their respective Load Ratio Shares.

**d) Curtailments of Scheduled Deliveries**: If a transmission constraint on FG&E's Local Network cannot be relieved through the implementation of least-cost redispatch procedures and FG&E determines that it is necessary to Curtail scheduled deliveries, the Parties shall Curtail such schedules in accordance with Section II.22 of the Tariff.

**e) Allocation of Curtailments**: The ISO, the Local Control Center or FG&E shall, on a non-discriminatory basis, Curtail the transaction(s) that effectively relieve the constraint. However, to the extent practicable and consistent with Good Utility Practice, any Curtailment will be shared by FG&E and Network Customers in proportion to their respective Load Ratio Shares. Neither the ISO, the Local Control Center, nor FG&E shall direct the Network Customer to Curtail schedules to an extent greater than either would Curtail FG&E's schedules under similar circumstances.

**f) Load Shedding**: To the extent that a system contingency exists on FG&E's Local Network and the ISO, the Local Control Center or FG&E determines that it is necessary for FG&E and the Network Customers to shed load, the Parties shall shed load in accordance with previously established procedures in accordance with Section II.22 of the Tariff, the then-current ISO New England Operating Documents, or the TOA, and the rules adopted thereunder.

**g) System Reliability**: Notwithstanding any other provisions of this Schedule, FG&E

reserves the right, consistent with Good Utility Practice and on a not unduly discriminatory basis, to Curtail Local Network Service without liability on the part of FG&E for the purpose of making necessary adjustments to, changes in, or repairs on FG&E's lines, substations, and facilities, and in cases where the continuance of Local Network Service would endanger persons or property. In the event of any adverse conditions or disturbances on FG&E's Local Network or on any other system(s) directly or indirectly interconnected with FG&E's Local Network, FG&E, consistent with Good Utility Practice, also may Curtail Local Network Service in order to (i) limit the extent or damage of the adverse condition(s) or disturbance(s), (ii) prevent damage to generating or transmission facilities, or (iii) expedite restoration of service. FG&E will give the Network Customer as much advance notice as is practicable in the event of such Curtailment. Any Curtailment of Local Network Service will not be unduly discriminatory relative to FG&E's use of its Local Network on behalf of its Native Load Customers. FG&E shall specify the rate treatment and all related terms and conditions applicable in the event that the Network Customer fails to respond to established Load Shedding and Curtailment procedures.

**9) Rates and Charges**

In addition to the above sections that correspond to sections in Schedule 21 of the OATT, the following additional provision shall apply to Local Network Service over FG&E's Local Network.

**a) Monthly Demand Charge**: The Network Customer shall pay a Monthly Demand Charge which shall be determined by multiplying its Load Ratio Share times one twelfth (1/12) of FG&E's Annual Transmission Revenue Requirement as specified in Attachment H to this Schedule 21-FG&E.

**10) Determination of Network Customer's Local Monthly Network Load**: The Network Customer's local monthly Network Load is its hourly load (including its designated Network Load not physically interconnected with FG&E under Section II.5(c) of Schedule 21 of the OATT) coincident with the FG&E's Monthly Local Network Peak. Monthly revenue requirements not otherwise paid for through charges to Eligible Customers for Local Point-to-Point Service will be allocated among FG&E's Network Customers receiving service under the tariff on the basis of their loads during the hour in the month in which the total connected load to the local network is at its maximum, without any adjustment for credits for generation.

In addition to the above sections that correspond to sections in Schedule 21 of the OATT, the following

three provisions shall apply to Local Network Service over FG&E's local network.

**10a) Determination of FG&E's Monthly Local Network Load**: FG&E's monthly Local Network Load is FG&E's Monthly Local Network Peak minus the coincident peak usage of all firm Local Point-To-Point Service customers pursuant to Schedule 21 of the OATT plus the Reserved Capacity of all firm Local Point-To-Point Service customers.

**10b) Recovery of PTF Transmission Revenue Requirements**: The portion of FG&E's annual transmission revenue requirements with respect to PTF which is not recovered through the distribution of revenues from Regional Network Service or Local Point-to-Point Service shall be recovered from Eligible Customers taking Regional Network Service or Local Point-to-Point Service pursuant to Section II.12.2(b) of the Tariff.

## SCHEDULE 1

## Local Scheduling, System Control and Dispatch Service

This service is required to schedule the movement of power through, out of, within, or into FG&E's Local Network Control Area. Local Scheduling, System Control and Dispatch Service is to be provided directly by FG&E and the ISO. The Transmission Customer must purchase this service from FG&E. The charges for FG&E's Local Scheduling, System Control and Dispatch Service are to be based on the rates set forth below. To the extent that the ISO performs this service for FG&E, charges to the Transmission Customer are to reflect only a pass-through of the costs charged to FG&E by the ISO.

Each firm Local Point-To-Point Service Customer under this Tariff will be charged for Local Scheduling, System Control and Dispatch Services for the total Reserved Capacity specified in each reservation for firm Local Point-To-Point Service made under the Tariff at the rates set forth in Appendix A of this Schedule 1.

Each Network Customer under this Tariff will be charged a monthly Local Scheduling, System Control and Dispatch Service Demand Charge, which shall be determined by multiplying its Load Ratio Share times one twelfth (1/12) of the Formula Requirements specified in Appendix B of this Schedule 1.

Each Transmission Customer with generation within the ISO's Control Area shall be required also to provide for Scheduling, System Control and Dispatch Service for that generation. It is anticipated that the Transmission Customer will obtain these services by contracting with the ISO for these services on an unbundled basis. FG&E will make available Generation Scheduling, System Control and Dispatch Service at the rates set forth in Appendix C of this Schedule 1.

Each Transmission Customer with generation located outside of the ISO Control Area shall be required to provide for Scheduling, System Control and Dispatching Service for that generation. It is anticipated that the Transmission Customer will obtain these services by contracting for these services from the provider of these services within the Control Area where the generation is located. FG&E shall have the right, at any time, unilaterally to file for a change in any of the provisions of this Schedule 1 in accordance with Section 205 of the Federal Power Act and the Commission's implementing regulations.

**SCHEDULE 1**

**Appendix A**

**Determination Of**

**FG&E's Local Network Point-To-Point Formula Rate**

**For Local Scheduling, System Control And Dispatch Service**

FG&E's Formula Rate for Point-To-Point Local Scheduling, System Control and Dispatch Service ("Formula Rate") is an annual rate determined from the following formula.

$$\text{FORMULA RATE}_i = \frac{A_{i-1} - B_{i-1}}{C_{i-1}}$$

WHERE:

- i equals the calendar year during which service is being rendered ("Service Year").

- $A_{i-1}$ is the Annual Control Center Expenses (expressed in dollars) of FG&E for the calendar year prior to the Service Year. The Annual Control Center Expenses are determined pursuant to the formula specified in Exhibit 1 to this Appendix A of Schedule 1.

- $B_{i-1}$ is the actual local scheduling, system control and dispatch revenues (expressed in dollars) provided from the provision of transmission services to others. The actual local scheduling and dispatch revenues shall be those recorded on the books of FG&E in FERC Account No. 456 pertaining to Transmission of Electricity for Others and such other applicable FERC Account for the calendar year prior to the Service Year.

- $C_{i-1}$ is the single annual coincident peak transmission load (expressed in kilowatts) of FG&E for the calendar year prior to the Service Year, as reported in FERC Form No. 1.

**Schedule 1**

**Appendix A**

**Exhibit 1**

**Determination of Annual Control Center Expenses**

The rate formula for determination of the annual control center expenses revenue requirements for FG&E is determined as follows:

A. ANNUAL CONTROL CENTER EXPENSES = Sum of FG&E's (Account 556 System Control and Load Dispatching Expense) + (Account 557 Other Expense) X .50* for the calendar year prior to the Service Year.

* This factor reflects allocation to the transmission function of a portion (50 percent) of the costs recorded in Accounts 556 and 557 associated with dispatching transmission and generating facilities. This 50 percent allocation of control center costs is based on two functions performed by the control center (i) control of generation and (ii) control of transmission.

**SCHEDULE 1**

**Appendix B**

**Determination of FG&E's**
**Network Formula Requirements**
**For Local Scheduling, System Control**
**And Dispatch Service**

FG&E's formula requirements for Network Local Scheduling, System Control and Dispatch Service is determined from the following formula.

Formula Requirements$_i$ = $A_{i-1} - B_{i-1}$

WHERE:

- i equals the calendar year during which service is being rendered ("Service Year").

- $A_{i-1}$ is the Annual Control Center Expenses (expressed in dollars) of FG&E for the calendar year prior to the Service Year. The Annual Control Center Expenses are determined pursuant to the formula specified in Exhibit 1 to Appendix A of Schedule 1.

- $B_{i-1}$ is the actual local scheduling, system control and dispatch revenues (expressed in dollars) provided from the provision of transmission services to others. The actual local scheduling, system control and dispatch revenues shall be those recorded on the books of FG&E in FERC Account No. 456 pertaining to Transmission of Electricity for Others and such other applicable FERC Account for the calendar year prior to the Service Year.

**SCHEDULE 1**

**Appendix C**

**Determination Of FG&E's Formula Rate**

**For Generation Scheduling, System Control And Dispatch Service**

FG&E's Formula Rate for Generation Scheduling, System Control and Dispatch Service ("Formula Rate") shall be calculated using the Formula Rate for Point-to-Point Local Scheduling, System Control and Dispatch Service in Appendix A of Schedule 21 - FG&E.

## SCHEDULE 7

## Long-Term Firm Local and Short-Term Firm Local Point-to-Point Service

The Transmission Customer shall compensate FG&E each month for firm Reserved Capacity at the sum of the applicable charges set forth below:

**1) Yearly delivery**:

The Yearly Delivery Charge per kW shall be FG&E's Annual Transmission Revenue Requirement (determined in accordance with Attachment H of this Tariff) divided by FG&E's Total Peak Load for the corresponding calendar year. Total Peak Load, calculated based on the monthly average for the year, shall be FG&E's peak load, minus the coincident peak of all firm local point-to-point customers, plus the contract demand reservation for firm local point-to-point customers.

**2) Monthly delivery**:

The Monthly Delivery Charge per kW shall be determined by dividing the Yearly Delivery Charge by 12.

**3) Weekly delivery**:

The Weekly Delivery Charge per kW shall be determined by dividing the Yearly Delivery Charge by 52.

**4) Daily delivery**:

The Daily Delivery Charge per kW shall be determined by dividing the Yearly Delivery Charge by 365.

The total delivery charge in any week, pursuant to a reservation for daily delivery, shall not exceed the Weekly Delivery Charge specified in section (3) above times the highest amount in kilowatts of firm Reserved Capacity in any day during such week.

**5) Discounts**: Three principal requirements apply to discounts for transmission service as follows (1) any offer of a discount made by FG&E must be announced to all Eligible Customers solely by posting on Unitil.com, (2) any customer-initiated requests for discounts (including requests for use by one's wholesale merchant or an Affiliate's use) must occur solely by posting on Unitil.com, and (3) once a discount is negotiated, details must be immediately posted on Unitil.com. For any discount agreed upon for service on a path from point(s) of receipt to point(s) of delivery, FG&E must offer the same discounted transmission service rate for the same time period to all Eligible Customers on all

unconstrained transmission paths that go to the same point(s) of delivery on FG&E's Local Network.

**6)** **Resales**: The rates and rules governing charges and discounts stated above shall not apply to resales of transmission service, compensation for which shall be governed by section I.11 (a) of Schedule 21 of the OATT.

## SCHEDULE 8

## Non-Firm Local Point-to-Point Service

The Transmission Customer shall compensate FG&E for non-firm Local Point-To-Point Service for non-firm Reserved Capacity up to the sum of the applicable charges set forth below:

**1) Monthly delivery**:
The Monthly Delivery Charge shall be determined by multiplying the Monthly Delivery Charge as described on Schedule 7 by .75.

**2) Weekly delivery**:
The Weekly Delivery Charge shall be determined by multiplying the Weekly Delivery Charge as described on Schedule 7 by .75.

**3) Daily delivery**:
The Daily Delivery Charge shall be determined by multiplying the Daily Delivery Charge as described on Schedule 7 by .75.
The total delivery charge in any week, pursuant to a reservation for Daily delivery, shall not exceed the Weekly Delivery Charge specified in section (2) above times the highest amount in kilowatts of non-firm Reserved Capacity in any day during such week.

**4) Hourly delivery**: The basic charge shall be that agreed upon by the Parties at the time this service is reserved and in no event shall exceed the Daily Delivery Charge specified in section (3) above divided by 24. The total delivery charge in any day, pursuant to a reservation for Hourly delivery, shall not exceed the Daily Delivery Charge specified in section (3) above times the highest amount in kilowatts of non-firm Reserved Capacity in any hour during such day. In addition, the total delivery charge in any week, pursuant to a reservation for Hourly or Daily delivery, shall not exceed the Weekly Delivery Charge specified in section (2) above times the highest amount in kilowatts of non-firm Reserved Capacity in any hour during such week.

**5) Discounts**: Three principal requirements apply to discounts for transmission service as follows (1) any offer of a discount made by FG&E must be announced to all Eligible Customers solely by posting on Unitil.com, (2) any customer-initiated requests for discounts (including requests for use by one's wholesale merchant or an Affiliate's use) must occur solely by posting on Unitil.com, and (3) once a

discount is negotiated, details must be immediately posted on Unitil.com. For any discount agreed upon for service on a path from point(s) of receipt to point(s) of delivery, FG&E must offer the same discounted transmission service rate for the same time period to all Eligible Customers on all unconstrained transmission paths that go to the same point(s) of delivery on FG&E's Local Network.

**6)** **Resales**: The rates and rules governing charges and discounts stated above shall not apply to resales of transmission service, compensation for which shall be governed by section I.11 (a) of Schedule 21 of the OATT.

## SCHEDULE 9
## DISTRIBUTION ADDER UNDER TARIFF

In the case where distribution facilities of FG&E are employed in providing service under Schedule 21 of the OATT, the Transmission Customer shall compensate FG&E for the use of such facilities. In addition to the charges contained in this Tariff, the compensation for such distribution facilities will be determined on a case-by-case basis.

All such charges shall be subject to appropriate regulatory approval.

## ATTACHMENT C

## Methodology To Assess Available Transfer Capability

### 1. Introduction

ISO is the regional transmission organization (RTO) for the New England Control Area. The New England Control Area includes the transmission system located in the states of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont, but does not include the transmission system in northern Maine (i.e., Aroostook and parts of Penobscot and Washington Counties) that is radially connected to New Brunswick and administered by the Northern Maine Independent System Administrator. The New England Control Area is comprised of PTF, non-PTF, OTF, MTF, and is interconnected to three neighboring Balancing Authority Areas ("BAA") with various interface types.

As part of its RTO responsibilities, the ISO is registered with the North American Electric Reliability Corporation ("NERC") as several functional model entities that have responsibilities related to the calculation of ATC as defined in the following NERC Standards: MOD-001 – Available Transmission System Capability ("MOD-001"). MOD-004 – Capacity Benefit Margin ("MOD-004"), and MOD-008 – Transmission Reliability Margin Calculation Methodology ("MOD-008"). The extent of those responsibilities is based on various Commission approved transmission operating agreements and the provisions of the ISO New England Operating Documents.

While the ISO is the Transmission Service Provider for regional transmission service ("Regional Transmission Service") associated with Pool Transmission Facilities, the Participating Transmission Owners ("PTOs") provide local transmission service over Non-Pool Transmission Facilities within the RTOP footprint and are responsible for calculating TTC and ATC associated with Local Transmission Service provided under Schedule 21 pursuant to the Transmission Operating Agreement ("TOA"). Pursuant to CFR § 37.6(b)[1] of the FERC Regulations, Transmission Provider's are obligated to calculate and post TTC and ATC for each Posted Path. The ISO is not responsible for the calculation of these values.

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1 Section §37.6(b) Posting transfer capability. The available transfer capability on the Transmission Provider's system (ATC) and the total transfer capability (TTC) of that system shall be calculated and posted for each Posted Path as set out in this section.

Posted Path is defined as any control area to control area interconnection; any path for which service is denied, curtailed or interrupted for more than 24 hours in the past 12 months; and any path for which a customer requests to have ATC or TTC posted. For this last category, the posting must continue for 180 days and thereafter until 180 days have elapsed from the most recent request for service over the requested path. For purposes of this definition, an hour includes any part of any hour during which service was denied, curtailed or interrupted.[2]

FG&E does not currently have any Posted Paths based on the above definition. However, to the extent that FG&E does in the future have a Posted Path, FG&E will calculate TTC using the NERC Standard MOD-029 – Rated System Path Methodology ("MOD-029") as outlined below.

### 1.1 Scope of Document

The scope of this document is limited to those functions performed by FG&E as the Transmission Service Provider of Schedule 21-FG&E Point-to Point transmission service over Local Facilities pursuant to the PTOs' Transmission Operating Agreement and the ISO OATT:

- Methodology for calculating Total Transfer Capability (TTC)
- Methodology for calculating Available Transfer Capability (ATC)
- Existing Transmission Commitment (ETC)
- Use of Transmission Reliability Margin (TRM)
- Use of Capacity Benefit Margin (CBM)
- Use of Rollover Rights (ROR) in the calculation of ETC

TTC and ATC are required to be calculated only for certain non-PTF internal Posted Paths over which Local Point-to-Point transmission service is provided under Schedule 21-FG&E. TTC and ATC is not calculated by FG&E for Local Network Service because ISO employs a market model for economic, security constrained dispatch of generation, and FG&E does not require advance reservation for such network service.

## 2. Transmission Service in the New England Markets

Since the inception of the OATT for New England, the process by which generation located inside New

2 Section § 37.6(b)(1)(i).

England supplies energy to the bulk electric system has differed from the Commission pro forma OATT. The fundamental difference is that internal generation is dispatched in an economic, security constrained manner by the ISO rather than utilizing a system of physical rights, advance reservations and point-to-point transmission service. Through this process, internal generation provides offers that are utilized by the ISO in the Real-Time Energy Market dispatch software. This process provides the least-cost dispatch to satisfy Real-Time load on the system.

In addition to offers from generation within New England, entities may submit External Transactions to move energy into the New England Control Area, out of the New England Control Area or through the New England Control Area. The Real-Time Energy Market clears these External Transactions based on forecast Locational Marginal Pricing (LMPs) and the transfer capability of the associated external interfaces. With those External Transactions in place, the Real-Time Energy Market dispatches internal generation in an economic, security constrained manner to meet Real-Time load within the region.

The process for submitting External Transactions into the Real-Time Energy Market does not require an advance physical reservation for use of the PTF. In the event that the net of the economic External Transactions is greater than the transfer capability of the associated external interface, the External Transactions selected to flow are selected based on the rules specified in the Tariff. For any External Transactions that are confirmed to flow in Real-Time based on the economics of the system, a transmission reservation for RNS or Through or Out Service is created after-the-fact to satisfy the transparency needs of the market.

The process described above is applicable to the PTF within the ISO Area, and non-PTF Local Facilities where utilized for Local Network Service by generation or load. However, FG&E owns Local Facilities over which an advance transmission service reservation for firm or non-firm transmission service may be required. On those Local Facilities, the market participant may obtain a transmission service reservation from FG&E under Schedule 21-FG&E prior to delivery of energy into the Real-Time Energy Market.[3] This document addresses the calculation of ATC and TTC for these non-PTF internal paths.

## 3. Schedule 21-FG&E Total Transfer Capability (TTC)

The TTC on FG&E's non-PTF Local Facilities that require Point-to-Point transmission service reservations are relatively static values and are calculated using the NERC Standard MOD-029 – Rated

3 See n - 2, 3 and 6, supra.

System Path Methodology. TTC is the amount of electric power that can be moved or transferred reliably from one area to another area of the interconnected transmission systems by way of all transmission lines (or paths) between those areas under specified system conditions. FG&E calculates TTC according to this definition applying the process as described below.

### 3.1 Guidelines and Principles

When estimating TTC, FG&E will apply the following, as amended and/or adopted from time to time

- Good Utility Practice
- NERC criteria and guidelines
- ISO New England criteria, rules and reliability standards
- Northeast Power Coordinating Council (NPCC) criteria and guidelines
- Fitchburg Gas and Electric Light Company guides

### 3.2 Transmission System Model Representation

FG&E will estimate TTC using transmission system load flow models developed for FG&E's system. The models may include representations of other neighboring systems. FG&E will use system models that it deems appropriate for study of the request for firm transmission service. Additional system models and operating conditions, including assumptions specific to a particular analysis, may be developed for conditions not available in the library of load flow cases. The system models may be modified, if necessary, to include additional system information on load, transfers and configuration, as it becomes available.

### 3.3 Contingency Analysis

FG&E will perform, if necessary, power flow and transient stability analysis to ensure that the interface's physical limits will not be violated for credible system contingencies per NERC, NPCC and ISO reliability criteria. TTC, based on contingency analysis, is the incremental transfer capability of the transmission system following the loss of the most critical element while maintaining thermal, and stability performance of the system within acceptable regional practices and consistent with guidelines of Item 3.1 of this Attachment.

### 3.4 Posting TTCs

When necessary, FG&E will estimate TTC as outlined above and post on its website.

## 4. Capacity Benefit Margin (CBM)

CBM is defined as the amount of firm transmission transfer capability set aside by a TSP for use by the Load Serving Entities. The ISO does not set aside any CBM for use by the Load Serving Entities, because of the New England approach to capacity planning requirements in the ISO New England Operating Documents. Load Serving Entities operating within the New England Control Area are required to arrange for their Capacity Requirements prior to the beginning of any given month in accordance with ISO Tariff, Section III.13.7.3.1 (Calculation of Capacity Requirement and Capacity Load Obligation). Load Serving Entities do not utilize CBM to ensure that their capacity needs are met; therefore, CBM is not applicable within the New England market design. Accordingly, for purposes of ATC calculation, CBM for the New England Control Area is set to zero (0).

**Existing Transmission Commitments, Firm ($ETC_F$)**

The $ETC_F$ are those confirmed firm transmission reservations ($PTP_F$) plus any rollover rights for firm transmission reservations ($ROR_F$) that have been exercised. There are no allowances necessary for Native Load forecast commitments ($NL_F$), Network Integration Transmission Service ($NITS_F$), grandfathered Transmission Service ($GF_F$) and other service(s), contract(s) or agreement(s) ($OS_F$) to be considered in the $ETC_F$ calculation.

**Existing Transmission Commitments, Non-Firm($ETC_{NF}$)**

The ($ETC_{NF}$) are those confirmed non-firm transmission reservations ($PTP_{NF}$). There are no allowances necessary for non-firm Network Integration Transmission Service ($NITS_{NF}$), non-firm grandfathered Transmission Service ($GF_{NF}$) or other service(s), contract(s) or agreement(s) ($OS_{NF}$).

## 5. Transmission Reliability Margin (TRM)

TRM is the amount of transmission transfer capability set aside to provide reasonable assurance that the interconnected transmission network will be secure. TRM accounts for the inherent uncertainty in system conditions and the need for operating flexibility to ensure reliable system operation as system conditions change. It is used only for external interfaces under the New England market design. FG&E, under Schedule 21, does not have any external interfaces, and therefore, TRM for FG&E's non-PTF facilities is zero.

## 6. Calculation of ATC for FG&E's Local Facilities

**General Description**

This section defines the ATC calculations performed by FG&E pursuant to MOD-029 for its non-PTF internal interfaces. Consistent with the NERC definition, the equation for Available Transfer Capability is: ATC = (TTC – CBM – TRM – Existing Transmission Commitments + Postbacks + counterflows). As discussed above, the CBM and TRM for the PTF interfaces for which FG&E calculates ATC are zero (0). As consistent with the ISO calculation, the equations for firm and non-firm Available Transfer Capability are:

Firm ATC = (TTC – CBM – TRM – firm ETC)

Non-firm ATC = (TTC – CBM – TRM – firm and non-firm ETC)[4]

As discussed above, the TRM and CBM for FG&E's non-PTF paths are zero. The purpose of the Existing Transmission Commitments ("ETC") component of the ATC equation is for FG&E to reduce the amount of ATC by the amount of existing firm transmission commitments that are not otherwise included in CBM or TRM. There is no requirement to purchase transmission service in advance of flowing energy in Real-Time, and there is no MW amount set aside by FG&E on any interface. One such example is point-to-point service commitments. Point-to-point service commitments sharing common transmission paths would be combined through system modeling to calculate the net existing transmission capacity (ETC) impact. This ETC value is then used in the ATC calculation shown above. Therefore there are no Existing Transmission Commitments to be applied in the ATC equation. For this reason, ETC equals zero (0) for the purposes of ATC calculation. Because Postbacks and counterflows are related to ETC and ETC is zero (0), both Postbacks and counterflows also are equal to zero (0).

As described in Section 2, under Schedule 21-FG&E, FG&E requires the purchase of transmission service in advance of delivery of energy to the New England Wholesale Market over certain non-PTF paths, and those existing transmission commitments would be applied to the ATC equation for the specific posted path. As a practical matter, the ratings of the radial transmission paths are always higher than the transmission requirements of the Transmission Customers connected to that path. As such, transmission services over these posted paths are considered to be always available.

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4 Existing Transmission Commitments ("ETC")

Entities submit their bids and offers to move energy into, out of and through the Energy Market through External Transactions. As Real-Time approaches, the ISO determines which of the submitted External Transactions will be scheduled in the coming hour in accordance with the rules set forth in the ISO New England Operating Documents. Basically, the ATC of the non-PTF assets in the New England market is almost always positive. The ATC is equal to the amount of External Transactions that the ISO will schedule on an interface for the designated hour. With this simplified version of ATC, there is no detailed algorithm to be described or posted other than: ATC equals TTC. Thus, for those non-PTF facilities that serve as a path for the FG&E's Schedule 21-FG&E Point-to-Point Transmission Customers, FG&E would post the ATC as 9999, consistent with industry practice. ATC on these paths varies depending on the time of day. However, it would be posted with an ATC of "9999" to reflect the fact that there are no restrictions on these paths for commercial transactions.

## 6.1 Calculation of Schedule 21-FG&E Firm ATC ($ATC_F$)

### 6.1.1 Calculation of $ATC_F$ in the Planning Horizon (PH)

For purposes of this Attachment C, PH is any period before the Operating Horizon.

Consistent with the NERC definition, $ATC_F$ is the capability for firm transmission reservations that remain after allowing for TRM, CBM, $ETC_F$, $Postbacks_F$ and $counterflows_F$.

As discussed above, TRM and CBM are zero. Firm Transmission Service under Schedule 21-FG&E that is available in the Planning Horizon (PH) includes: Yearly, Monthly, Weekly, and Daily. $Postbacks_F$ and $counterflows_F$ of Schedule 21-FG&E transmission reservations are not considered in the ATC calculation. Therefore, $ATC_F$ in the PH is equal to the TTC minus $ETC_F$

### 6.1.2 Calculation of $ATC_F$ in the Schedule 21-FG&E Operating Horizon (OH)

For purposes of this Attachment C, OH is noon eastern prevailing time each day. At that time, the OH spans from noon through midnight of the next day for a total of 36 hours. As time progresses the total hours remaining in the OH decreases until noon the following day when the OH is once again reset to 36 hours.

Consistent with the NERC definition, $ATC_F$ is the capability for firm transmission reservations that

remain after allowing for $ETC_F$, CBM, TRM, $Postbacks_F$ and $counterflows_F$.

As discussed above, TRM and CBM is zero. Daily firm Transmission Service under Schedule 21-FG&E is the only firm service offered in the Operating Horizon (OH). $Postbacks_F$ and $counterflows_F$ of Schedule 21-FG&E transmission reservations are not considered in the $ATC_F$ calculation. Therefore, $ATC_F$ in the OH is equal to the TTC minus $ETC_F$.

**6.1.3** Because firm Schedule 21-FG&E transmission service is not offered in the Scheduling Horizon (SH): $ATC_F$ in the SH is zero.

## 6.2 Calculation of Schedule 21-FG&E Non-Firm ATC ($ATC_{NF}$)

### 6.2.1 Calculation of $ATC_{NF}$ in the PH

$ATC_{NF}$ is the capability for non-firm transmission reservations that remain after allowing for $ETC_F$, $ETC_{NF}$, scheduled CBM ($CBM_S$), unreleased TRM ($TRM_U$), non-firm Postbacks ($Postbacks_{NF}$) and non-firm counterflows ($counterflows_{NF}$).

As discussed above, the TRM and CBM for Schedule 21-FG&E are zero. Non-firm ATC available in the PH includes: Monthly, Weekly, Daily and Hourly. $TRM_U$, $Postbacks_{NF}$ and $counterflows_{NF}$ of Schedule 21-FG&E transmission reservations are not considered in this calculation. Therefore, $ATC_{NF}$ in the PH is equal to the TTC minus $ETC_F$ and $ETC_{NF}$.

### 6.2.2 Calculation of $ATC_{NF}$ in the OH

$ATC_{NF}$ available in the OH includes: Daily and Hourly.

As discussed above TRM and CBM for Schedule 21-FG&E are zero. $TRM_U$, counterflows and $ETC_{NF}$ are not considered in this calculation. Therefore, $ATC_{NF}$ in the OH is equal to the TTC minus $ETC_F$, plus postbacks of $PTP_F$ in OH as $PTP_{NF}$ ($Postbacks_{NF}$).

## 6.3 Negative ATC

As stated above, the ratings of the radial transmission paths are always higher than the transmission

requirements of the Transmission Customers connected to that path. As such, transmission services over these posted paths are considered to be always available.

As stated above, FG&E's non-PTF facilities are primarily radial paths that provide transmission service to directly interconnected generators. It is possible, in the future, that a particular radial path may interconnect more nameplate capacity generation than the path's TTC. However, due to the ISO's security constrained dispatch methodology, the ISO will only dispatch an amount of generation interconnected to such path so as not to incur a reliability or stability violation on the subject path. Therefore, ATC in the PH, OH and SH may become zero, but will not become negative.

**ATC Process Flow Diagram for Non-PTF Interfaces**

The process flow diagram illustrates the steps through which ATC is calculated both on an operating and planning horizon.

## 7. Posting of Schedule 21-FG&E ATC

### 7.1 Location of ATC Posting.

When necessary, FG&E will estimate ATC values for these internal paths as outlined above and post on its website, http://www.unitil.net/nepool/ma/pdf/atc_cbm_ttc_trm_fge.pdf.

### 7.2 Updates To ATC

When any of the variables in the ATC equations change, the ATC values are recalculated and immediately posted.

### 7.3 Coordination of ATC Calculations

Schedule 21-FG&E non-PTF has no external interfaces. Therefore it is not necessary to coordinate the values.

### 7.4 Mathematical Algorithms

A link to the actual mathematical algorithm for the calculation of ATC for FG&E's non-PTF internal interfaces is located at http://www.unitil.com/sites/default/files/pdfs/fge_atc_algorithms_3_11.pdf.

## ATTACHMENT D

## Methodology for Completing a System Impact Study

FG&E will perform System Impact Studies for the purpose of determining the feasibility of integrating Network Load and Network Resources into FG&E's Local Network under Schedule 21 of the OATT, or for the purpose of determining the feasibility of providing Local Point-To-Point Service under this Tariff. All System Impact Studies will be completed using the same method employed by FG&E to integrate into FG&E's Local Network (i) generation resources owned or acquired to serve its Native Load Customers, and (ii) its Native Load Customers' load. Specifically, System Impact Studies will be performed by applying the applicable criteria, rules, standards and operating procedures. In addition to applying the applicable criteria, rules, standards and operating procedures, to determine the feasibility of providing service to Network Load and/or Local Point-To-Point Service, System Impact Studies will also be performed by applying Unitil Service Corp.'s "Electric System Planning Guide".

**ATTACHMENT E**

**Index Of Local Point-To-Point Service Customers**

| Customer | Date of Service Agreement |
|---|---|
| Fitchburg Gas and Electric Light Company | September 10, 1996 |
| Pinetree Power Fitchburg Inc. | March 9, 1999 |

**ATTACHMENT H**

**Annual Transmission Revenue Requirement For Local Network Service**

The Transmission Revenue Requirement for FG&E will reflect FG&E's costs with respect to transmission facilities not related to PTF ("Non PTF"). Except as provided below for the transitional implementation of this formula rate, the Transmission Revenue Requirement will be an annual calculation, effective June 1, based on the previous year's calendar data as reported in FG&E's FERC Form 1 report for that year, or other reasonable documentation, using end-of-year balances for each rate base item, as set forth below. The initial Transmission Revenue Requirement shall be effective October 1, 2003 through May 31, 2004 based on calendar year 2002 data as adjusted, as approved by the Commission. Further, the Transmission Revenue Requirement to be effective June 1, 2004, based on calendar year 2003 data, shall include an adjustment to annualize the impact on 2003 depreciation expense of revised depreciation rates effective October 1, 2003, as approved by the Commission. Depreciation expense shall be calculated according to Appendix A of this attachment, as approved by the Commission.

Beginning July 31, 2004, FG&E shall make an annual informational filing on or before July 31 of each year showing the Transmission Revenue Requirement in effect for the period beginning June 1 of that year through May 31 of the subsequent year. If there are corrections made to the information reflected in the informational filing after it has been submitted, FG&E will file corrections to the informational filing.

I. FORMULA

A. The Transmission Revenue Requirement for FG&E's Non-PTF shall equal the sum of the following: (A) Non-PTF Return and Associated Income Taxes, plus (B) Non-PTF Depreciation Expense, plus (C) Non-PTF Amortization of Intangible Plant and Other Regulatory Assets/Liabilities, plus (D) Non-PTF Amortization of Rate Case Expense, plus (E) Non-PTF Amortization of Loss on Reacquired Debt, minus (F) Non-PTF Amortization of Investment Tax Credits, plus (G) Non-PTF Property Tax Expense, plus (H) Non-PTF Payroll Tax Expense, plus (I) Non-PTF Transmission Operation and Maintenance Expense, plus (J) Non-PTF Customer Accounting Bad Debts Expense, plus (K) Non-PTF Administrative and General Expense, plus (L) Non-PTF Transmission Related Taxes and Fees Charge, minus (M) Non-PTF Transmission Rents Received from Electric Property, minus (N) Non-PTF Revenue for Through or Out Service.

B. Each of the components of A. above shall be calculated by subtracting the related PTF costs and revenues from the same calendar year, as included in ISO-NE's OATT, from the total transmission costs and revenues as described in Section III. Support Expense included in PTF shall only be included in this computation to the extent these costs are included in the determination of total transmission costs.

## II. DEFINITIONS

### A. ALLOCATION FACTORS

1. Transmission Wages and Salaries Allocation Factor shall equal the ratio of Transmission–related direct wages and salaries to FG&E's total direct wages and salaries, excluding administrative and general wages and salaries.
2. Transmission Plant Allocation Factor shall equal the ratio of the sum of (1) Transmission Plant, (2) Transmission Related Intangible Plant, (3) Transmission Related General Plant, and (4) Transmission Related Common Plant, to Total Plant in Service.
3. Transmission Revenue Allocation Factor shall equal the ratio of Total Internal Transmission Revenue to Total Billed Revenue from Sales to Ultimate Customers.

### B. TERMS

Administrative and General Expense shall equal FG&E's expenses as recorded in FERC Account Nos. 920-935, excluding FERC Account Nos. 924, 928 and 930.1.

Amortization of Intangible Plant and Common Plant shall equal FG&E's expenses related to Intangible Plant and Common Plant as recorded in FERC Account No. 404.

Amortization of Investment Tax Credits shall equal FG&E's credits as recorded in FERC Account No. 411.4.

Amortization of Loss on Reacquired Debt shall equal FG&E's expenses as recorded in FERC Account No. 428.1.

Amortization of Other Regulatory Assets/Liabilities-FAS 109 shall equal FG&E's expenses related to Other Regulatory Assets/Liabilities–FAS 109 as recorded in FERC Account No. 407.

Amortization of Rate Case Expenses shall equal FG&E's expenses related to the deferred costs of regulatory rate proceedings related to transmission service as approved by FERC and as recorded in FERC Account No. 407.

Common Plant shall equal FG&E's gross balance of the plant common to both electric and gas operations as recorded in FERC Account Nos. 303, 310, 389-399, excluding capital leases.

Common Plant Amortization Reserve shall equal FG&E's Common Plant reserve balances as recorded in FERC Account No. 111.

Common Plant Depreciation Expense shall equal FG&E's Common Plant expenses as recorded in FERC Account No. 403.

Common Plant Depreciation Reserve shall equal FG&E's Common Plant reserve balance as recorded in FERC Account No. 108.

Customer Accounting Bad Debts Expense shall equal FG&E's expenses as recorded in FERC Account No. 904.

General Plant shall equal FG&E's gross plant balance as recorded in FERC Account Nos. 389-399.

General Plant Depreciation Expense shall equal FG&E's General Plant expenses as recorded in FERC Account No. 403.

General Plant Depreciation Reserve shall equal FG&E's General Plant reserve balance as recorded in FERC Account No. 108.

Intangible Plant shall equal FG&E's gross plant balance as recorded in FERC Account No. 303 (consisting of investments in computer systems and software).

Intangible Plant Amortization Reserve shall equal FG&E's Intangible Plant reserve balance as recorded in FERC Account No. 111.

Other Regulatory Assets/Liabilities–FAS 106 shall equal the net of FG&E's FAS 106 balance as recorded in FERC Account No. 182.3 and any FAS 106 balance as recorded in FG&E's FERC Account No. 254.

Other Regulatory Assets/Liabilities–FAS 109 shall equal the net of FG&E's FAS 109 balance as recorded in FERC Account No. 182.3 and any FAS 109 balance as recorded in FG&E's FERC Account No. 254.

Payroll Tax Expense shall equal those payroll tax expenses as recorded in FG&E's FERC Account Nos. 408.1 and 409.1.

Plant Held for Future Use shall equal FG&E's balance in FERC Account No. 105.

Prepayments shall equal FG&E's electric prepayment balance as recorded in FERC Account No. 165. The electric portion shall be determined by multiplying the balance in FERC Account No. 165 by the ratio of electric utility plant to total utility plant as reported in FG&E's FERC Form 1.

Property Insurance Expense shall equal FG&E's expenses as recorded in FERC Account No. 924.

Property Tax Expense shall equal FG&E's property tax expenses as recorded in FERC Account Nos. 408.1 and 409.1.

Support Expense shall equal Transmission Support Expense as defined in the OATT Attachment F.

Total Accumulated Deferred Income Taxes shall equal the net of the deferred tax balances as recorded in FERC Account Nos. 281-283 and FERC Account No. 190.

Total Billed Revenue from Sales to Ultimate Customers shall equal FG&E's total electric service revenues as recorded in FERC Account Nos. 440, 442, 444, 445, 446, 448, and 449.

Total Internal Transmission Revenue shall equal FG&E's internal transmission revenues as recorded in FERC Account Nos. 440, 442, 444, 445, 446, 448 and 449.

Total Loss on Reacquired Debt shall equal FG&E's expenses as recorded in FERC Account No. 189.

Total Plant in Service shall equal FG&E's total electric gross plant balance as recorded in FERC Account

Nos. 301-399 (inclusive of electric Common Plant).

Transmission Operation and Maintenance Expense shall equal FG&E's electric expenses as recorded in FERC Account Nos. 560-564 and 566-576.5 and shall exclude expenses already included in PTF Transmission Support Expense, costs billed to Select Energy, Inc. under a generation related entitlement sales agreement and Account Nos. 561.4 and 575.7.

Transmission Plant shall equal FG&E's gross plant balance as recorded in FERC Account Nos. 350-359 excluding joint owned unit costs.

Transmission Plant Depreciation Expense shall equal FG&E's Transmission Plant expenses as recorded in FERC Account No. 403 less joint owned unit costs.

Transmission Plant Depreciation Reserve shall equal FG&E's Transmission Plant reserve balance as recorded in FERC Account 108 less joint owned unit reserves.

Transmission Plant Held for Future Use shall equal the transmission-related balance of electric Plant Held for Future Use.

Transmission Plant Materials and Supplies shall equal FG&E's balance as assigned to transmission, as recorded in FERC Account No. 154.

Transmission Prepayments shall equal FG&E's Prepayments multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Accumulated Deferred Income Taxes shall equal FG&E's electric balance of Total Accumulated Deferred Income Taxes multiplied by the Transmission Plant Allocation Factor.

Transmission Related Administrative and General Expense shall equal the sum of (1) electric Administrative and General Expenses multiplied by the Transmission Wages and Salaries Allocation Factor, plus (2) electric Property Insurance Expense reduced by amounts billed to Select Energy Inc. under a generation related entitlement sales agreement and multiplied by the Transmission Plant Allocation Factor, plus (3) electric expenses included in FERC Account No. 928 related to FERC fees and assessments, plus (4) any other electric transmission related expenses included in FERC Account No. 928

plus (5) specific electric transmission related expenses included in FERC Account No. 930.1 and minus (6) any Administrative and General Expense amounts billed to Select Energy Inc. and not already deducted elsewhere, multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Amortization of Intangible Plant and Other Regulatory Assets/Liabilities shall equal the sum of (1) electric Amortization of Intangible Plant and Common Plant multiplied by the Transmission Wages and Salaries Allocation Factor and (2) electric Amortization of Other Regulatory Assets/Liabilities-FAS 109 multiplied by the Transmission Plant Allocation Factor. This component shall include additional regulatory assets/liabilities as established by regulatory authority and relevant to transmission services.

Transmission Related Amortization of Investment Tax Credits shall equal FG&E's electric Amortization of Investment Tax Credits multiplied by the Transmission Plant Allocation Factor.

Transmission Related Amortization of Loss on Reacquired Debt shall equal FG&E's electric Amortization of Loss on Reacquired Debt multiplied by the Transmission Plant Allocation Factor.

Transmission Related Cash Working Capital shall be 12.5% allowance (45 days/360 days) of the sum of Transmission Operation and Maintenance Expense, plus Transmission Related Customer Accounting Bad Debts Expense and plus Transmission Related Administrative and General Expense.

Transmission Related Common Plant shall equal FG&E's electric Common Plant multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Customer Accounting Bad Debts Expense shall equal FG&E's electric Customer Accounting Bad Debts Expense multiplied by the Transmission Revenue Allocation Factor.

Transmission Related Depreciation & Amortization Reserve shall equal the sum of (1) Transmission Plant Depreciation Reserve plus (2) electric Intangible Plant and electric Common Plant Amortization Reserves multiplied by the Transmission Wages and Salaries Allocation Factor and (3) electric General Plant and electric Common Plant Depreciation Reserves multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Depreciation Expense shall equal the sum of (1) Transmission Plant Depreciation

Expense, (2) electric General Plant Depreciation Expense multiplied by the Transmission Wages and Salaries Allocation Factor and (3) electric Common Plant Depreciation Expense multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related General Plant shall equal FG&E's electric General Plant multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Intangible Plant shall equal FG&E's electric Intangible Plant multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Loss on Reacquired Debt shall equal FG&E's electric balance of Total Loss on Reacquired Debt multiplied by the Transmission Plant Allocation Factor.

Transmission Related Other Regulatory Assets/Liabilities shall equal the sum of (1) FG&E's electric balance of Other Regulatory Assets/Liabilities-FAS 106 multiplied by the Transmission Wages and Salaries Allocation Factor, and (2) FG&E's electric balance of Other Regulatory Assets/Liabilities-FAS 109 multiplied by the Transmission Plant Allocation Factor. This component shall include additional regulatory assets/liabilities as established by regulatory authority and relevant to transmission services.

Transmission Related Payroll Tax shall equal FG&E's electric Payroll Tax Expense multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Property Tax shall equal FG&E's electric Property Tax Expense, reduced by amounts billed to Select Energy, Inc. under a generation related entitlement sales agreement, multiplied by the Transmission Plant Allocation Factor.

## III. CALCULATION OF TRANSMISSION REVENUE REQUIREMENT

This section describes the calculation of the components of the Transmission Revenue Requirement for FG&E's Non-PTF as provided in Section I.

A. Non-PTF Return and Associated Income Taxes shall equal the product of the Total Internal Transmission Investment Base and the Cost of Capital Rate, reduced by the amount recovered as PTF. For purposes of this computation, the PTF amount shall be calculated using the Cost of Capital Rate

defined in III.A.2 below.

1. Total Internal Transmission Investment Base

The Total Internal Transmission Investment Base shall be the sum of the year end balances of the following items as defined in Section II.: (a) Transmission Plant, plus (b) Transmission Related Intangible Plant, plus (c) Transmission Related General Plant, plus (d) Transmission Related Common Plant, plus (e) Transmission Plant Held for Future Use, minus (f) Transmission Related Depreciation & Amortization Reserve, minus (g) Transmission Related Accumulated Deferred Income Taxes, plus (h) Transmission Related Loss on Reacquired Debt, plus (i) Transmission Related Other Regulatory Assets/Liabilities, plus (j) Transmission Prepayments, plus (k) Transmission Plant Materials and Supplies, plus (l) Transmission Related Cash Working Capital.

2. Cost of Capital Rate

The Cost of Capital Rate will equal (a) FG&E's Weighted Cost of Capital, plus (b) Federal Income Tax plus (c) State Income Tax.

(a) The Weighted Cost of Capital will be calculated based upon the capital structure at the end of each year and will equal the sum of:

(i) the long-term debt component, which equals the product of the actual weighted average embedded cost to maturity of FG&E's long-term debt then outstanding and the ratio that long-term debt is to FG&E's total capital.

(ii) the preferred stock component, which equals the product of the actual weighted average embedded cost to maturity of FG&E's preferred stock then outstanding and the ratio that preferred stock is to FG&E's total capital.

(iii) the return on equity component, which equals the product of the cost of equity of 10.57% and the ratio that common equity is to FG&E's total capital.

(b) Federal Income Tax shall equal

$$\frac{(A+[(C+B)/])x\ FT}{1-FT}$$

Where FT is the Federal Income Tax Rate; A is the sum of the preferred stock component and the return on equity component, as determined in Sections III.A.2.(a)(ii) and (iii) above; B is Transmission Related Amortization of Investment Tax Credits, as defined in Section II above, C is the equity AFUDC

component of Transmission Related Depreciation Expense, as defined in Section II above, and D is Total Internal Transmission Investment Base, as determined in Section III.A.1., above.

(c) State Income Tax shall equal

$$\frac{(A+[(C+B)/D] + \text{Federal Income Tax}) \times ST}{1-ST}$$

Where ST is the State Income Tax Rate; A is the sum of the preferred stock component and return on equity component as determined in Sections III.A.2. (a)(ii) and (iii) above; B is the Transmission Related Amortization of Investment Tax Credits as defined in Section II. above; C is the equity AFUDC component of Transmission Related Depreciation Expense, as defined in Section II above; D is the Total Internal Transmission Investment Base, as determined in Section III.A.1. above; and Federal Income Tax is the rate determined in Section III.A.2.(b) above.

B. Non-PTF Depreciation Expense shall equal FG&E's Transmission Related Depreciation Expense reduced by the amount recovered as PTF.

C. Non-PTF Amortization of Intangible Plant and Other Regulatory Assets/Liabilities shall equal FG&E's Transmission Related Amortization of Intangible Plant and Other Regulatory Assets/Liabilities reduced by the amount recovered as PTF.

D. Non-PTF Amortization of Rate Case Expenses shall equal the Amortization of Rate Case Expenses reduced by the amount recovered as PTF.

E. Non-PTF Amortization of Loss on Reacquired Debt shall equal FG&E's Transmission Related Amortization of Loss on Reacquired Debt reduced by the amount recovered as PTF.

F. Non-PTF Amortization of Investment Tax Credits shall equal FG&E's Transmission Related Amortization of Investment Tax Credits reduced by the amount recovered as PTF.

G. Non-PTF Property Tax Expense shall equal FG&E's Transmission Related Property Tax Expense reduced by the amount recovered as PTF.

H. Non-PTF Payroll Tax Expense shall equal FG&E's Transmission Related Payroll Tax Expense

reduced by the amount recovered as PTF.

I. Non-PTF Transmission Operation and Maintenance Expense shall equal Transmission Operation and Maintenance Expenses reduced by the amount recovered as PTF.

J. Non-PTF Customer Accounting Bad Debts Expense shall equal the Transmission Related Customer Accounting Bad Debts Expense reduced by the amount recovered as PTF.

K. Non-PTF Administrative and General Expenses shall equal the Transmission Related Administrative and General Expenses reduced by the amount recovered as PTF.

L. Non-PTF Transmission Related Taxes and Fees Charge shall include any fee or assessment imposed by any governmental authority on service provided hereunder which is not specifically identified under any other section. This amount shall be reduced by the amount recovered as PTF.

M. Non-PTF Transmission Rents Received from Electric Property shall equal any amount in FERC Account No. 454, Rents from Electric Property, associated with Transmission Plant. This amount shall be reduced by the amount recovered as PTF.

N. Non-PTF Revenue for Through or Out Service shall equal distributions received by FG&E from ISO out of revenues paid for Through or Out Service (as defined in the OATT), pursuant to Section II.12.2(d) of the Tariff.

Appendix A

PTF and non-PTF Depreciation Rates

| Account | Description | Depreciation Rates (%) Eff. March 1, 2020 | Depreciation Rates (%) Eff. November 1, 2020 |
|---|---|---|---|
| Transmission Plant | | | |
| 351.00 | Clearing Land and Rights of Way | 1.27 | 1.27 |
| 352.00 | Structures and Improvements | 2.12 | 2.12 |
| 353.00 | Station Equipment | 3.92 | 3.92 |
| 355.00 | Poles and Fixtures | 6.13 | 6.13 |
| 356.00 | Overhead Conductors and Devices | 3.51 | 3.51 |
| General Plant | | | |
| 394.00 | Tools, Shop and Garage Equipment | 3.22 | 4.00 |
| 395.00 | Laboratory Equipment | 4.03 | 5.00 |
| 397.00 | Communication Equipment | 2.64 | 6.67 |
| 398.00 | Miscellaneous Equipment | 3.56 | 5.00 |
| Common Plant | | | |
| 390.00 | Structures and Improvements | 1.98 | 1.98 |
| 391.00 | Office Furniture and Equipment | 6.67 | 6.67 |
| 393.00 | Stores Equipment | 4.00 | 4.00 |
| 394.00 | Tools, Shop and Garage Equipment | 5.00 | 5.00 |
| 396.00 | Power Operated Equipment | 0.16 | 0.16 |
| 397.00 | Communication Equipment | 6.67 | 6.67 |
| 398.00 | Miscellaneous Equipment | 5.00 | 5.00 |

**ATTACHMENT I**

**Index Of Local Network Service Customers**

| Customer | Date of Service Agreement |
| --- | --- |
| Fitchburg Gas and Electric Light Company | September 10, 1997 |
| Massachusetts Bay Transportation Company | April 17, 2000 |

## Attachment L

## Creditworthiness Policy

### 1. Introduction

This guide establishes creditworthiness standards for transmission service and/or interconnection service customers ("Customers") entering into new or amended service agreements with Fitchburg Gas and Electric Light Company ("FG&E") under the ISO New England Open Access Transmission Tariff ("ISO-NE OATT").[5] In accordance with the Federal Energy Regulatory Commission's Policy Statement on Credit-Related Issues for Electric OATT Transmission Providers, Independent System Operators and Regional Transmission Organizations ("Policy Statement"), this Creditworthiness Policy is intended to make FG&E's credit-related practices more transparent and comprehensive. The following describes FG&E credit review procedures and the types of security that are acceptable to FG&E to protect against the risk of non-payment.

### 2. Creditworthiness

FG&E will evaluate the creditworthiness of Customers entering into new or amended transmission or interconnection service agreements with FG&E in order to assess a Customer's credit risk relative to the exposure of "Total Outstanding Obligation" as defined in Section 2.1 below, created by the transaction or transactions that FG&E has with the Customer. For purposes of determining the ability of a Customer to meet its obligations, FG&E may require the Customer to submit financial information for the credit review, including credit ratings, credit reports and audited financial statements for the last five years, including audited quarterly reports for the prior two years, if available. Further, the Customer will be expected to provide calculations of the following: Current Total Capitalization Ratio, Including Short-Term Debt; Tangible Net Worth for a period within sixty days of a Customer's request; Earnings Before Interest, Taxes, Depreciation and Amortization for twelve of the last fifteen consecutive months; and additional calculations and other information deemed necessary for the evaluation credit. In completing its evaluation, FG&E may consider other factors including but not limited to past billing history or the characteristics of service being requested.

### 2.1 Total Outstanding Obligation

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5 *See* ISO New England Inc., ISO New England Inc. Transmission, Markets and Services Tariff, Section II. This policy is applicable to transmission or interconnection service agreements established from time-to-time under Schedules 21 - FG&E of the ISO-NE OATT and to individually negotiated agreements for similar transmission or interconnection services.

The Customer's Total Outstanding Obligation to FG&E will be the sum total of the following components:

2.1.1 If the Customer is making payments to FG&E for ongoing expenses (including, but not limited to, O&M expenses related to interconnections or other monthly charges such as monthly transmission charges under Schedule 21 – FG&E) the Customer will be required to provide security pursuant to Section 2.2 below, for four months' worth of the Customer's average payment obligation for such charges.

2.1.2 In accordance with the provisions of the ISO-NE OATT, a Customer will pay a Contribution in Aid of Construction ("CIAC") or transfer ownership of facilities to FG&E for transmission or interconnection facilities that are to be constructed on behalf of a Customer at the Customer's sole expense. If FG&E determines in good faith that the receipt of CIAC payments or property from the Customer are non-taxable, FG&E will require a form of security from the customer pursuant to Section 2.2 below for the amount of the potential tax liability to FG&E that would occur if such facilities were deemed taxable.

2.1.3 In accordance with the provisions of Schedule 21 – FG&E to the ISO-NE OATT, a Customer will pay a formula rate over time for return of and on the cost of capital incurred by FG&E on behalf of a Customer at the Customer's sole expense. The Customer will also be required to provide security pursuant to Section 2.2 below, for the unamortized balance of plant in service reserved for the sole use of the Customer.

**2.2 Creditworthiness Requirements**

A Customer will be considered creditworthy upon satisfying at least one of the following conditions or a combination of those conditions at the time that the customer enters into a transmission or interconnection service agreement and for so long as the Customer maintains satisfaction of at least one of these conditions for any outstanding obligations thereunder:

2.2.1 The Customer maintains a minimum credit rating from Standard & Poor's Long-term Issuer Credit Rating of BBB- or better or Moody's Investors Service Long-term Issuer Credit Rating of Baa3 or better so long as the Customer's Total Outstanding Obligation plus any other unsecured obligations with FG&E does not exceed the Credit Limits discussed in Section 4 below. When FG&E reviews a Customer's rating from two or more rating agencies and a split

rating is present, the lower debt rating will apply. In the event that the Customer has no rating from either Standard & Poor's or Moody's Investors Service, a rating from Fitch may also be used with acceptable ratings equivalent to those from either Standard and Poor's or Moody's Investors Service. If unrated, the Customer's financial statements will be reviewed to determine an equivalent rating based on the Customer's unsecured credit limits and/or financial statements.

If, at any time, the Customer's rating falls below investment grade (BBB- from Standard and Poor's and/or Baa3 from Moody's or equivalent ratings from Fitch), the Customer will be required to (i) notify FG&E within 10 days and, (ii) within 30 days, provide another form of security reasonably acceptable to FG&E, as described in this Section 2.2.

2.2.2 The Customer provides and maintains in effect during the term of and until full and final payment and performance of the service agreement an unconditional and irrevocable standby letter of credit for the Total Outstanding Obligation in the form and substance and issued by a bank reasonably acceptable to FG&E. A draft, acceptable form letter of credit is attached. Any such bank must satisfy the creditworthiness criteria described in 2.2.1 above.

If, at any time, the bank's rating falls below investment grade (BBB- from Standard and Poor's and/or Baa3 from Moody's or equivalent ratings from Fitch), the Customer will be required to (i) notify FG&E within 10 days and, (ii) within 30 days, provide another form of security reasonably acceptable to FG&E, as described in this Section 2.2.

2.2.3 If the Customer's parent or an affiliate company satisfies the creditworthiness criteria described in 2.2.1 above and, subject to the Credit Limits stated in Section 4 below, such company submits to FG&E and maintains in effect a letter of guaranty reasonably acceptable to FG&E as to amount, form and substance for the term of and until full and final payment and performance of the service agreement.

If, at any time, the credit rating of the Customer's parent or affiliate providing the guaranty falls below investment grade (BBB- from Standard and Poor's and/or Baa3 from Moody's or equivalent ratings from Fitch), the Customer will be required to (i) notify FG&E within 10 days and, (ii) within 30 days, provide another form of security reasonably acceptable to FG&E, as described in this Section 2.

2.2.4 The Customer makes an advance payment to FG&E in immediately available funds for the Total Outstanding Obligation.

**3. Customer Costs Requiring Prepayment**

In accordance with the provisions of the ISO-NE OATT, a Customer will pay a Contribution in Aid of Construction ("CIAC") for transmission or interconnection facilities to be constructed by FG&E on behalf of a Customer at the Customer's sole expense. The Customer will have the option to (i) prepay the CIAC in immediately available funds to FG&E, or (ii) make periodic CIAC progress payments, as defined in the Customer's service agreement, to prepay in increments capital costs scheduled to be incurred by FG&E. If FG&E determines in good faith that such payments or property transfers made by the Customer should be reported as income subject to taxation, the Customer shall also prepay all costs associated with the cost consequences of the current tax liability imposed on FG&E by those facilities (the "Tax Gross- up").

**4. Determination of Credit Limits**

FG&E reserves the right to limit the total amount of unsecured credit extended to a Customer under 2.2.1 and 2.2.3 above such that the sum of all unsecured credit that such Customer has with FG&E, including the Total Outstanding Obligation, shall not exceed the Credit Limits defined below. Such limitations are based on an assessment of the Customer's or its Guarantor's credit rating and the net worth of the Customer's or its Guarantor's assets.

| Standard and Poor's (or Equivalent) Rating | Unsecured Credit Limit as Percent of Customer's or Guarantor's Tangible Net Worth |
|---|---|
| A and above | 1.0% |
| A- | 0.5% |
| BBB+ | 0.3% |
| BBB | 0.2% |
| BBB- | 0.1% |

Once FG&E has evaluated or reevaluated and determined the maximum Credit limits for each Customer, it will inform the prospective Customer of the amount of such credit limits. A customer may request in writing a reevaluation of the maximum Credit limits, within 14 days from the date that they were informed by FG&E of such limits. Justification for such a reevaluation should be contained in the

request.  All requests for reevaluation must be submitted directly to the FG&E Contract Administrator.

From time to time, principally due to unknown factors such as changing market, economic, banking or other financial conditions, but not solely limited to these factors, FG&E may find it necessary to modify or amend its creditworthiness policies and guidelines after a 15 day notice period and require that present and future Transmission Customers fulfill any additional conditions contained in the modified Creditworthiness Guide.  Transmission Customers will have 30 days after the notice period to cure any deficiency.

FORM LETTER OF CREDIT

_____ Bank

_____

(address)

IRREVOCABLE STANDBY LETTER OF CREDIT

DATE: _____

AMOUNT U.S. $_____

_____

FOR INTERNAL IDENTIFICATION PURPOSES ONLY

_____

Our Number:

Beneficiary: Applicant:

_____ _____

_____ _____

_____ _____

_____ _____

Attn: At the request of:

_____

Ref:_____

LADIES AND GENTLEMEN;

WE HEREBY ESTABLISH THIS IRREVOCABLE, AND UNCONDITIONAL, EXCEPT AS STATED HEREIN, LETTER OF CREDIT NUMBER _____ (LETTER OF CREDIT), BY ORDER OF, FOR THE ACCOUNT OF, AND ON BEHALF OF [CUSTOMER NAME] (ACCOUNT PARTY) IN FAVOR OF FITCHBURG GAS AND ELECTRIC LIGHT COMPANY (BENEFICIARY) FOR DRAWINGS, IN ONE OF MORE DRAFTS, UP TO AN AGGREGATE AMOUNT NOT EXCEEDING U.S. $_____ EFFECTIVE IMMEDIATELY. THE TERM 'BENEFICIARY' INCLUDES ANY SUCCESSOR OF THE NAMED BENEFICIARY.

THIS LETTER OF CREDIT CANNOT BE AMENDED, MODIFIED OR REVOKED WITHOUT THE PRIOR WRITTEN CONSENT OF BOTH THE BANK AND THE BENEFICIARY. THE BENEFICIARY SHALL NOT BE DEEMED TO HAVE WAIVED ANY RIGHTS UNDER THIS LETTER OF CREDIT, UNLESS AN OFFICER OF THE BENEFICIARY SHALL HAVE SIGNED A WRITTEN WAIVER EXPRESSLY REFERENCING THE RIGHT TO BE WAIVED. NO SUCH WAIVER SHALL BE EFFECTIVE AS TO ANY TRANSACTION THAT OCCURS SUBSEQUENT TO THE DATE OF THE WAIVER, NOT AS TO ANY CONTINUANCE OF A BREACH AFTER THE WAIVER.

WE HEREBY UNDERTAKE TO PROMPTLY HONOR YOUR DRAFT(S) DRAWN ON US, INDICATING OUR LETTER OF CREDIT NUMBER _____ IS ISSUED, PRESENTABLE AND PAYABLE AND WE GUARANTY TO THE DRAWERS, ENDORSERS, AND BONA FIDE HOLDERS OF THIS LETTER OF CREDIT, THAT DRAFTS UNDER AND IN COMPLIANCE WITH THE TERMS OF THIS LETTER OF CREDIT WILL BE HONORED. THIS LETTER OF CREDIT MAY NOT BE TRANSFERRED OR ASSIGNED BY US.

SUBJECT TO THE EXPRESS TERMS AND CONDITIONS HEREIN, FUNDS UNDER THIS LETTER OF CREDIT ARE AVAILABLE TO YOU BY PRESENTATION AT OUR OFFICES LOCATED AT [_____] OF BENEFICIARY'S DRAWING CERTIFICATE ISSUED SUBSTANTIALLY IN THE FORM OF ANNEX 1 ATTACHED HERETO AND WHICH FORMS AN INTEGRAL PART HEREOF, DULY COMPLETED AND PURPORTEDLY BEARING THE ORIGINAL SIGNATURE OF AN OFFICER OF THE BENEFICIARY. PRRESENTATION OF ANY DRAWING CERTIFICATE UNDER THIS LETTER OF CREDIT MAY BE MADE IN PERSON TO

US OR MAY BE SENT TO US BY TELEX TO [_____] OR BY FACSIMILE TRANSMISSION TO FACSIMILE TELEPHONE NUMBER [_____].

ALL COMMISSIONS AND CHARGES WILL BE BORNE BY THE ACCOUNT PARTY. IF DOCUMENTS, IN COMPLIANCE WITH THE TERMS OF THIS LETTER OF CREDIT, ARE RECEIVED BEFORE 10:00 AM (EASTERN TIME) ON A BUSINESS DAY, PAYMENT WILL BE EFFECTED ON OR BEFORE 5:00 PM (EASTERN TIME) ON THE NEXT BUSINESS DAY. IF DOCUMENTS, IN COMPLIANCE WITH THE TERMS OF THIS LETTER OF CREDIT ARE RECEIVED AFTER 10:00 AM ON A BUSINESS DAY, PAYMENT WILL BE EFFECTED ON OR BEFORE 5:00 PM ON THE SECOND BUSINESS DAY FOLLOWING SUCH DATE OF RECEIPT.

EXCEPT AS EXPRESSLY STATED HEREIN, THIS UNDERTAKING IS NOT SUBJECT TO ANY AGREEMENT, CONDITION OR QUALIFICATION. THIS LETTER OF CREDIT DOES NOT INCORPORATE, AND SHALL NOT BE DEEMED MODIFIED OR AMENDED BY REFERENCE TO ANY DOCUMENT, INSTRUMENT OR AGREEMENT (A) THAT IS REFERRED TO HEREIN (EXCEPT FOR THE UNIFORM CUSTOMS, AS DEFINED BELOW), OR (B) IN WHICH THIS LETTER OF CREDIT IS REFERRED TO OR TO WHICH THIS LETTER OF CREDIT RELATES.

OUR OBLIGATION UNDER THIS LETTER OF CREDIT SHALL BE OUR INDIVIDUAL OBLIGATION AND IS IN NO WAY CONTINGENT UPON THE REIMBURSEMENT WITH RESPECT THERETO, OR UPON OUR ABILITY TO PERFECT ANY LIEN, SECURITY INTEREST OR ANY OTHER REIMBURSEMENT.

THIS LETTER OF CREDIT EXPIRES WITH OUR CLOSE OF BUSINESS ON [364 days from effective date]; HOWEVER, IT IS A CONDITION OF THIS LETTER OF CREDIT THAT IT SHALL BE DEEMED AUTOMATICALLY EXTENDED WITHOUT AMENDMENT FOR 364 DAYS FROM THE PRESENT OR ANY FUTURE EXPIRATION DATE HEREOF, UNLESS AT LEAST SIXTY (60) DAYS BEFORE ANY SUCH EXPIRATION DATE WE NOTIFY YOU BY REGISTERED MAIL ADDRESSED TO: [address of beneficiary, ATTN: _____], THAT WE ELECT NOT TO RENEW THIS LETTER FOR SUCH ADDITIONAL PERIOD.

THIS LETTER OF CREDIT IS SUBJECT TO THE UNIFORM CUSTOMS AND PRACTICE FOR DOCUMENTARY CREDITS (1993 REVISION) INTERNATIONAL CHAMBER OF COMMERCE, PUBLICATION NO. 500. IF THIS LETTER OF CREDIT EXPIRES DURING THE INTERRUPTION

OF BUSINESS AS DESCRIBED IN ARTICLE 17 THEREOF WE HEREBY SPECIFICALLY AGREE TO EFFECT PAYMENT IF THE LETTER OF CREDIT IS DRAWN AGAINST WITHIN 30 DAYS AFTER THE RESUMPTION OF BUSINESS.

ANNEX 1 TO [BANKNAME]
IRREVOCABLE LETTER OF CREDIT NO. _____

[INSERT DATE]

[BANK NAME]
[ATTENTION]
[BANK ADDRESS 1]
[BANK ADDRESS 2]

LADIES AND GENTLEMEN:

THE UNDERSIGNED _____, A DULY ELECTED AND ACTING OFFICER OF FITCHBURG GAS AND ELECTRIC LIGHT COMPANY (THE "BENEFICIARY"), HEREBY CERTIFIES TO [INSERT BANK NAME] (THE "BANK"), WITH REFERENCE TO IRREVOCABLE LETTER OF CREDIT NO. _____ DATED _____, ISSUED BY THE BANK IN FAVOR OF THE BENEFICIARY (THE "LETTER OF CREDIT"), AS FOLLOWS AS OF THE DATE THEREOF:

1. THE BENEFICIARY IS A PARTY TO THAT CERTAIN [INTERCONNECTION AGREEMENT], EFFECTIVE _____, BETWEEN THE BENEFICIARY AND [CUSTOMER NAME] (THE "AGREEMENT").

2. BENEFICIARY IS MAKING A DRAWING UNDER THE LETTER OF CREDIT IN THE AMOUNT OF $_____ BECAUSE [CHECK APPLICABLE PROVISION]:

[____] (A) THERE CURRENTLY EXIST ONE OR MORE UNPAID AMOUNTS WHICH [CUSTOMER NAME] IS OBLIGATED TO PAY PURSUANT TO THE TERMS OF THE AGREEMENT.

[____] (B) THE BENEFICIARY HAS RECEIVED NOTICE FROM THE BANK OF ITS INTENTION NOT TO RENEW THE LETTER OF CREDIT BEYOND THE CURRENT EXPIRATION DATE AND [CUSTOMER NAME] HAS FAILED, PRIOR TO THE CLOSE OF BUSINESS ON _____ [INSERT DATE WHICH IS NOT MORE THAN THIRTY (30) DAYS BEFORE

THE PRESENT EXPIRATION DATE], TO DELIVER TO BENEFICIARY A REPLACEMENT LETTER OF CREDIT SATISFYING THE REQUIREMENTS OF THE AGREEMENT.

3. BASED UPON THE FOREGOING, THE BENEFICIARY HEREBY MAKES DEMAND UNDER THE LETTER OF CREDIT FOR PAYMENT OF U.S. DOLLARS _____ AND _____/100THS (U.S. $_____).

4. FUNDS PAID PURSUANT TO THE PROVISIONS OF THE LETTER OF CREDIT SHALL BE WIRE TRANSFERRED TO THE BENEFICIARY IN ACCORDANCE WITH THE FOLLOWING INSTRUCTIONS:

_____

_____

_____

UNLESS OTHERWISE PROVIDED HEREIN, CAPITALIZED TERMS WHICH ARE USED AND NOT DEFINED HEREIN SHALL HAVE THE MEANING GIVEN EACH SUCH TERM IN THE LETTER OF CREDIT.

IN WITNESS WHEREOF, THIS CERTIFICATE HAS BEEN DULY EXECUTED AND DELIVERED ON BEHALF OF THE BENEFICIARY BY ITS DULY ELECTED AND ACTING OFFICER AS OF THIS _____ DAY OF _____, _____.

BENEFICIARY: FITCHBURG GAS AND ELECTRIC LIGHT COMPANY

_____

NAME:

_____

TITLE

**SCHEDULE 21 - FG&E**

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
LOCAL SERVICE SCHEDULE

# SCHEDULE 21-FG&E

## Fitchburg Gas and Electric Light Company Local Service Schedule

## I. COMMON SERVICE PROVISIONS

Fitchburg Gas and Electric Light Company ("FG&E") is a participant in the New England Control Area and has agreed to provide transmission and ancillary services over PTF pursuant to the Tariff. The services provided under this Schedule 21-FG&E apply only to Non-PTF, except in the case of service to Network Customers that have all or part of their Network Load directly connected to the PTF in the Local Network. These Network Customers shall pay for Local Network Service pursuant to Attachment H to this Schedule 21-FG&E. Provisions of this Schedule 21-FG&E shall have priority over any conflicting provisions in the Tariff.

### 1 Definitions

**1.0 Annual Transmission Costs**: The total annual cost of the Local Network for purposes of Local Network Service shall be the amount specified in Attachment H until amended by FG&E or modified by the Commission.

**1.1 Curtailment**: A reduction in firm or non-firm transmission service in response to a transmission capacity shortage as a result of system reliability conditions.

**1.2 Load Ratio Share**: Ratio of a Transmission Customer's Non-PTF Network Load to FG&E's total load computed in accordance with Sections II.10 and II.10(a) of this Schedule under Sections Supplementing Section 21 of the OATT and calculated on a rolling twelve month basis.

**1.3.1 Local Network**: The transmission facilities owned, controlled, or operated by FG&E that are used to provide transmission service under Schedule 21 of the OATT.

**1.4 Local Network Service**: The transmission service provided under Schedule 21 of the OATT and this Schedule.

**1.5 Network Load**: The load directly interconnected to the PTF or Non-PTF facilities of FG&E. A Network Customer may elect to designate less than its total load as Network Load but

may not designate only part of the load at a discrete Point of Delivery. Where a Eligible Customer has elected not to designate a particular load at discrete points of delivery as Network Load, the Eligible Customer is responsible for making separate arrangements under Schedule 21 of the OATT for any Local Point-to-Point Service that may be necessary for such non-designated load. For purposes of establishing rates and charges under this Tariff, the Network Load will be subdivided into one of two categories:

**A.** PTF Network Load shall be the load over FG&E's PTF facilities and shall equal the load of Network Customers directly interconnected with FG&E's PTF or indirectly utilizing FG&E's PTF through Non-PTF facilities of FG&E.

**B**. Non-PTF Network Load shall be the load over FG&E's Non-PTF directly interconnected with FG&E's Non-PTF facilities.

**1.6 Network Upgrades**: Modifications or additions to transmission-related facilities that are integrated with and support FG&E's overall Local Network for the general benefit of all users of such Local Network.

**1.7 Parties**: FG&E and the Transmission Customer receiving service under this Schedule and the OATT.

**SECTIONS SUPPLEMENTING THE BODY OF THE TARIFF**

**Preamble**

The following provisions supplement the provisions of the Tariff. Provisions of this Schedule 21-FG&E shall have priority over any conflicting provisions in the Tariff. The section numbers of this Schedule 21-FG&E correspond to or are consecutive to the section numbers in the body of the Tariff that are affected by the additional provisions herein.

**Sections Supplementing Section 1: General Terms and Conditions**

**1.7 Creditworthiness**: For the purpose of determining the ability of the Transmission Customer to meet its obligations related to service hereunder, FG&E may require reasonable credit review procedures in accordance with Attachment L to Schedule 21-FG&E.

**Sections Supplementing Section II of the Tariff: Open Access Transmission Tariff (OATT)**

## II.A. COMMON SERVICE PROVISIONS

### II.4 Ancillary Services

Ancillary Services are needed with transmission service to maintain reliability within and among the Control Areas affected by the transmission service. FG&E is required to provide (or offer to arrange with the ISO as discussed below), and the Transmission Customer is required to purchase Scheduling, System Control and Dispatch Service.

The following Ancillary Services are available pursuant to Section II.4 of the Tariff only to the Transmission Customer serving load within the New England Control Area: (i) Reactive Supply and Voltage Control Service, (ii) Regulation and Frequency Response , (iii) Energy Imbalance, (iv) Ten-Minute Spinning Reserve Service, (v) Ten-Minute Non-Spinning Reserve Service and (vi) Thirty-Minute Operating Reserve Service.

### II.8 Billing and Invoicing; Accounting

**8.2 Invoicing**: Within a reasonable time after the first day of each month, FG&E shall submit an invoice to the Transmission Customer for the charges for all services furnished under the OATT during the preceding month. The invoice shall be paid by the Transmission Customer within twenty (20) days of receipt. All payments shall be made in immediately available funds payable to FG&E, or by wire transfer to a bank named by FG&E.

**8.4 Customer Default**: In the event the Transmission Customer fails, for any reason other than a billing dispute as described below, to make payment to FG&E on or before the due date as described above, and such failure of payment is not corrected within thirty (30) calendar days after FG&E notifies the Transmission Customer to cure such failure, a default by the Transmission Customer shall be deemed to exist. Upon the occurrence of a default, FG&E may initiate a proceeding with the Commission to terminate service but shall not terminate service until the Commission so approves any such request. In the event of a billing dispute between FG&E and the Transmission Customer, FG&E will continue to provide service under the Service Agreement as long as the Transmission Customer (i) continues to make all payments not in dispute, and (ii) pays into an independent escrow account the portion of the invoice in dispute,

pending resolution of such dispute. If the Transmission Customer fails to meet these two requirements for continuation of service, then FG&E may provide notice to the Transmission Customer of its intention to suspend service in sixty (60) days, in accordance with Commission policy.

**II.10.2 Stranded Cost Recovery**

FG&E may seek to recover stranded costs from the Transmission Customer pursuant to this OATT in accordance with the terms, conditions and procedures set forth in FERC Order No. 888. However, FG&E must separately file any specific proposed stranded cost charge under Section 205 of the Federal Power Act.

## SECTIONS SUPPLEMENTING SCHEDULE 21 OF THE OATT

### I. Local Point-to-Point Service Over the Local Network Owned by FG&E

**Preamble**

In addition to the provisions set forth in Schedule 21 of the OATT, the provisions of this Schedule 21-FG&E shall govern Local Point-To-Point transactions using the Local Network owned by FG&E. Provisions of this Schedule 21-FG&E shall have priority over any conflicting provisions in the Tariff. The section numbers of this Schedule 21-FG&E correspond to or are consecutive to the sections of Schedule 21 of the OATT that are affected by the additional provisions herein.

To the extent not otherwise covered in the OATT, the then-current ISO New England Operating Documents, or the TOA, or the rules adopted thereunder, whenever FG&E implements least-cost redispatch procedures in response to a transmission constraint, FG&E and the Transmission Customer(s) taking Local Point-To-Point Service will each bear a proportionate share of the total redispatch cost.

**3) Service Availability**

**b) Determination of Available Transfer Capability (ATC)**: A description of FG&E's specific methodology for assessing ATC is contained in Attachment C of this Schedule. In the event sufficient transfer capability may not exist to accommodate a service request, FG&E will respond by performing a System Impact Study.

**g) Real Power Losses**: Real power losses are associated with all transmission service.

FG&E is not obligated to provide real power losses. The Transmission Customer is responsible for replacing losses associated with all transmission service as calculated by FG&E. The applicable real power loss factors tabulated below will be applied to metered loads and Reserved Capacity amounts to account for losses on FG&E's system. The applicable real power loss factors are as follows:

Firm Local Point-to-Point Service = 0.72% at 69 kV subtransmission.

Non-firm Local Point-to-Point Service = 0.72% at 69 kV subtransmission.

**6) Procedures for Arranging Non-Firm Local Point-To-Point Service**

**f) Determination of Available Transfer Capability**: Following receipt of a tendered schedule FG&E will make a determination on a non-discriminatory basis of ATC pursuant to Attachment C of this Schedule. Such determination shall be made as soon as reasonably practicable after receipt, but not later than the following time periods for the following terms of service (i) thirty (30) minutes for hourly service, (ii) thirty minutes for daily service, (iii) four (4) hours for weekly service, and (iv) two (2) days for monthly service (during FG&E's normal business hours of 8:00 a.m. to 4:30 p.m., Monday to Friday).

**11) Sale or Assignment of Local Point-to-Point Service**

**c) Information on Assignment or Transfer of Service**: FG&E currently has waiver from the obligations of FERC Order No. 889 to maintain an OASIS. In the future, upon implementation of any FG&E OASIS site, resellers may use FG&E's OASIS site to post transmission capacity available for resale.

## II. Local Network Service using Non-PTF Owned by FG&E

**Preamble**

In addition to the provisions set forth in Schedule 21 of the OATT, the provisions of this Schedule 21-FG&E shall govern Local Network Service using Non-PTF owned by FG&E. Provisions of this Schedule 21-FG&E shall have priority over any conflicting provision in the Tariff. The section numbers of this Schedule 21-FG&E correspond to the sections of Schedule 21 of the OATT that are affected by the additional provisions herein.

Local Network Service allows the Network Customer to integrate, economically dispatch, and regulate its current and planned Network Resources to serve its Network Load in a manner comparable to that in which FG&E utilizes its Non-PTF to serve its Native Load Customers. Local Network Service also may be used by the Network Customer to deliver economy energy purchases to its Network Load from non-designated resources on an as-available basis without additional charge. Transmission service for sales to non-designated loads will be provided pursuant to the applicable terms and conditions of Schedule 21 of the OATT.

**2) Availability of Local Network Service**

**f) Real Power Losses**: The Network Customer is responsible for replacing losses associated with all transmission service as calculated by FG&E. The applicable real power loss factors tabulated below will be applied to metered loads and Reserved Capacity amounts to account for losses on FG&E's system. The applicable real power loss factors are as follows:

Local Network Service = 0.72% at 69 kV subtransmission.

**8) Load Shedding and Curtailments**

**a) Procedures**: Prior to the Service Commencement Date, FG&E and the Network Customer shall establish Load Shedding and Curtailment procedures pursuant to Section II.20 of the Tariff, with the objective of responding to contingencies on the Non-PTF. The Parties will implement such programs during any period when the ISO, the Local Control Center or FG&E determines that a system contingency exists and such procedures are necessary to alleviate such contingency. FG&E will notify all affected Network Customers in a timely manner of any scheduled Curtailment.

**b) Transmission Constraints**: During any period when FG&E determines that a transmission constraint exists on the Local Network, and such constraint may impair the reliability of FG&E's system, FG&E will take whatever actions, consistent with then-current ISO New England Operating Documents or the TOA, and the rules adopted thereunder, and with Good Utility Practice, that are reasonably necessary to maintain the reliability of FG&E's system. To the extent ISO determines that the reliability of the ISO New England transmission system can be maintained by redispatching resources, FG&E will initiate procedures pursuant to the OATT,

the then-current ISO New England Operating Documents, or the TOA, and the rules adopted thereunder to redispatch all Network Resources and FG&E's own resources on a least-cost basis without regard to the ownership of such resources. Any redispatch under this section may not unduly discriminate between FG&E's use of the Local Network on behalf of its Native Load Customers and any Network Customer's use of the Local Network to serve its designated Network Load.

**c) Cost Responsibility for Relieving Transmission Constraints**: To the extent not otherwise covered in the OATT, the then-current ISO New England Operating Documents, or the TOA, or the rules adopted thereunder, whenever FG&E implements least-cost redispatch procedures in response to a transmission constraint, FG&E and the Network Customer(s) will each bear a proportionate share of the total redispatch cost based on their respective Load Ratio Shares.

**d) Curtailments of Scheduled Deliveries**: If a transmission constraint on FG&E's Local Network cannot be relieved through the implementation of least-cost redispatch procedures and FG&E determines that it is necessary to Curtail scheduled deliveries, the Parties shall Curtail such schedules in accordance with Section II.22 of the Tariff.

**e) Allocation of Curtailments**: The ISO, the Local Control Center or FG&E shall, on a non-discriminatory basis, Curtail the transaction(s) that effectively relieve the constraint. However, to the extent practicable and consistent with Good Utility Practice, any Curtailment will be shared by FG&E and Network Customers in proportion to their respective Load Ratio Shares. Neither the ISO, the Local Control Center, nor FG&E shall direct the Network Customer to Curtail schedules to an extent greater than either would Curtail FG&E's schedules under similar circumstances.

**f) Load Shedding**: To the extent that a system contingency exists on FG&E's Local Network and the ISO, the Local Control Center or FG&E determines that it is necessary for FG&E and the Network Customers to shed load, the Parties shall shed load in accordance with previously established procedures in accordance with Section II.22 of the Tariff, the then-current ISO New England Operating Documents, or the TOA, and the rules adopted thereunder.

**g) System Reliability**: Notwithstanding any other provisions of this Schedule, FG&E

reserves the right, consistent with Good Utility Practice and on a not unduly discriminatory basis, to Curtail Local Network Service without liability on the part of FG&E for the purpose of making necessary adjustments to, changes in, or repairs on FG&E's lines, substations, and facilities, and in cases where the continuance of Local Network Service would endanger persons or property. In the event of any adverse conditions or disturbances on FG&E's Local Network or on any other system(s) directly or indirectly interconnected with FG&E's Local Network, FG&E, consistent with Good Utility Practice, also may Curtail Local Network Service in order to (i) limit the extent or damage of the adverse condition(s) or disturbance(s), (ii) prevent damage to generating or transmission facilities, or (iii) expedite restoration of service. FG&E will give the Network Customer as much advance notice as is practicable in the event of such Curtailment. Any Curtailment of Local Network Service will not be unduly discriminatory relative to FG&E's use of its Local Network on behalf of its Native Load Customers. FG&E shall specify the rate treatment and all related terms and conditions applicable in the event that the Network Customer fails to respond to established Load Shedding and Curtailment procedures.

**9) Rates and Charges**

In addition to the above sections that correspond to sections in Schedule 21 of the OATT, the following additional provision shall apply to Local Network Service over FG&E's Local Network.

**a) Monthly Demand Charge**: The Network Customer shall pay a Monthly Demand Charge which shall be determined by multiplying its Load Ratio Share times one twelfth (1/12) of FG&E's Annual Transmission Revenue Requirement as specified in Attachment H to this Schedule 21-FG&E.

**10) Determination of Network Customer's Local Monthly Network Load**: The Network Customer's local monthly Network Load is its hourly load (including its designated Network Load not physically interconnected with FG&E under Section II.5(c) of Schedule 21 of the OATT) coincident with the FG&E's Monthly Local Network Peak. Monthly revenue requirements not otherwise paid for through charges to Eligible Customers for Local Point-to-Point Service will be allocated among FG&E's Network Customers receiving service under the tariff on the basis of their loads during the hour in the month in which the total connected load to the local network is at its maximum, without any adjustment for credits for generation.

In addition to the above sections that correspond to sections in Schedule 21 of the OATT, the following

three provisions shall apply to Local Network Service over FG&E's local network.

**10a) Determination of FG&E's Monthly Local Network Load**: FG&E's monthly Local Network Load is FG&E's Monthly Local Network Peak minus the coincident peak usage of all firm Local Point-To-Point Service customers pursuant to Schedule 21 of the OATT plus the Reserved Capacity of all firm Local Point-To-Point Service customers.

**10b) Recovery of PTF Transmission Revenue Requirements**: The portion of FG&E's annual transmission revenue requirements with respect to PTF which is not recovered through the distribution of revenues from Regional Network Service or Local Point-to-Point Service shall be recovered from Eligible Customers taking Regional Network Service or Local Point-to-Point Service pursuant to Section II.12.2(b) of the Tariff.

## SCHEDULE 1

## Local Scheduling, System Control and Dispatch Service

This service is required to schedule the movement of power through, out of, within, or into FG&E's Local Network Control Area. Local Scheduling, System Control and Dispatch Service is to be provided directly by FG&E and the ISO. The Transmission Customer must purchase this service from FG&E. The charges for FG&E's Local Scheduling, System Control and Dispatch Service are to be based on the rates set forth below. To the extent that the ISO performs this service for FG&E, charges to the Transmission Customer are to reflect only a pass-through of the costs charged to FG&E by the ISO.

Each firm Local Point-To-Point Service Customer under this Tariff will be charged for Local Scheduling, System Control and Dispatch Services for the total Reserved Capacity specified in each reservation for firm Local Point-To-Point Service made under the Tariff at the rates set forth in Appendix A of this Schedule 1.

Each Network Customer under this Tariff will be charged a monthly Local Scheduling, System Control and Dispatch Service Demand Charge, which shall be determined by multiplying its Load Ratio Share times one twelfth (1/12) of the Formula Requirements specified in Appendix B of this Schedule 1.

Each Transmission Customer with generation within the ISO's Control Area shall be required also to provide for Scheduling, System Control and Dispatch Service for that generation. It is anticipated that the Transmission Customer will obtain these services by contracting with the ISO for these services on an unbundled basis. FG&E will make available Generation Scheduling, System Control and Dispatch Service at the rates set forth in Appendix C of this Schedule 1.

Each Transmission Customer with generation located outside of the ISO Control Area shall be required to provide for Scheduling, System Control and Dispatching Service for that generation. It is anticipated that the Transmission Customer will obtain these services by contracting for these services from the provider of these services within the Control Area where the generation is located. FG&E shall have the right, at any time, unilaterally to file for a change in any of the provisions of this Schedule 1 in accordance with Section 205 of the Federal Power Act and the Commission's implementing regulations.

**SCHEDULE 1**

**Appendix A**

**Determination Of**

**FG&E's Local Network Point-To-Point Formula Rate**

**For Local Scheduling, System Control And Dispatch Service**

FG&E's Formula Rate for Point-To-Point Local Scheduling, System Control and Dispatch Service ("Formula Rate") is an annual rate determined from the following formula.

$$\text{FORMULA RATE}_i = \frac{A_{i-1} - B_{i-1}}{C_{i-1}}$$

WHERE:

- i equals the calendar year during which service is being rendered ("Service Year").

- $A_{i-1}$ is the Annual Control Center Expenses (expressed in dollars) of FG&E for the calendar year prior to the Service Year. The Annual Control Center Expenses are determined pursuant to the formula specified in Exhibit 1 to this Appendix A of Schedule 1.

- $B_{i-1}$ is the actual local scheduling, system control and dispatch revenues (expressed in dollars) provided from the provision of transmission services to others. The actual local scheduling and dispatch revenues shall be those recorded on the books of FG&E in FERC Account No. 456 pertaining to Transmission of Electricity for Others and such other applicable FERC Account for the calendar year prior to the Service Year.

- $C_{i-1}$ is the single annual coincident peak transmission load (expressed in kilowatts) of FG&E for the calendar year prior to the Service Year, as reported in FERC Form No. 1.

**Schedule 1**

**Appendix A**

**Exhibit 1**

**Determination of Annual Control Center Expenses**

The rate formula for determination of the annual control center expenses revenue requirements for FG&E is determined as follows:

A. ANNUAL CONTROL CENTER EXPENSES = Sum of FG&E's (Account 556 System Control and Load Dispatching Expense) + (Account 557 Other Expense) X .50* for the calendar year prior to the Service Year.

* This factor reflects allocation to the transmission function of a portion (50 percent) of the costs recorded in Accounts 556 and 557 associated with dispatching transmission and generating facilities. This 50 percent allocation of control center costs is based on two functions performed by the control center (i) control of generation and (ii) control of transmission.

**SCHEDULE 1**

**Appendix B**

**Determination of FG&E's**
**Network Formula Requirements**
**For Local Scheduling, System Control**
**And Dispatch Service**

FG&E's formula requirements for Network Local Scheduling, System Control and Dispatch Service is determined from the following formula.

Formula Requirements$_i$ = $A_{i-1} - B_{i-1}$

WHERE:

- i equals the calendar year during which service is being rendered ("Service Year").

- $A_{i-1}$ is the Annual Control Center Expenses (expressed in dollars) of FG&E for the calendar year prior to the Service Year. The Annual Control Center Expenses are determined pursuant to the formula specified in Exhibit 1 to Appendix A of Schedule 1.

- $B_{i-1}$ is the actual local scheduling, system control and dispatch revenues (expressed in dollars) provided from the provision of transmission services to others. The actual local scheduling, system control and dispatch revenues shall be those recorded on the books of FG&E in FERC Account No. 456 pertaining to Transmission of Electricity for Others and such other applicable FERC Account for the calendar year prior to the Service Year.

**SCHEDULE 1**

**Appendix C**

**Determination Of FG&E's Formula Rate**

**For Generation Scheduling, System Control And Dispatch Service**

FG&E's Formula Rate for Generation Scheduling, System Control and Dispatch Service ("Formula Rate") shall be calculated using the Formula Rate for Point-to-Point Local Scheduling, System Control and Dispatch Service in Appendix A of Schedule 21 - FG&E.

## SCHEDULE 7

## Long-Term Firm Local and Short-Term Firm Local Point-to-Point Service

The Transmission Customer shall compensate FG&E each month for firm Reserved Capacity at the sum of the applicable charges set forth below:

**1) Yearly delivery**:

The Yearly Delivery Charge per kW shall be FG&E's Annual Transmission Revenue Requirement (determined in accordance with Attachment H of this Tariff) divided by FG&E's Total Peak Load for the corresponding calendar year. Total Peak Load, calculated based on the monthly average for the year, shall be FG&E's peak load, minus the coincident peak of all firm local point-to-point customers, plus the contract demand reservation for firm local point-to-point customers.

**2) Monthly delivery**:

The Monthly Delivery Charge per kW shall be determined by dividing the Yearly Delivery Charge by 12.

**3) Weekly delivery**:

The Weekly Delivery Charge per kW shall be determined by dividing the Yearly Delivery Charge by 52.

**4) Daily delivery**:

The Daily Delivery Charge per kW shall be determined by dividing the Yearly Delivery Charge by 365.

The total delivery charge in any week, pursuant to a reservation for daily delivery, shall not exceed the Weekly Delivery Charge specified in section (3) above times the highest amount in kilowatts of firm Reserved Capacity in any day during such week.

**5) Discounts**: Three principal requirements apply to discounts for transmission service as follows (1) any offer of a discount made by FG&E must be announced to all Eligible Customers solely by posting on Unitil.com, (2) any customer-initiated requests for discounts (including requests for use by one's wholesale merchant or an Affiliate's use) must occur solely by posting on Unitil.com, and (3) once a discount is negotiated, details must be immediately posted on Unitil.com. For any discount agreed upon for service on a path from point(s) of receipt to point(s) of delivery, FG&E must offer the same discounted transmission service rate for the same time period to all Eligible Customers on all

unconstrained transmission paths that go to the same point(s) of delivery on FG&E's Local Network.

**6)** **Resales**: The rates and rules governing charges and discounts stated above shall not apply to resales of transmission service, compensation for which shall be governed by section I.11 (a) of Schedule 21 of the OATT.

## SCHEDULE 8

## Non-Firm Local Point-to-Point Service

The Transmission Customer shall compensate FG&E for non-firm Local Point-To-Point Service for non-firm Reserved Capacity up to the sum of the applicable charges set forth below:

**1) Monthly delivery**:
The Monthly Delivery Charge shall be determined by multiplying the Monthly Delivery Charge as described on Schedule 7 by .75.

**2) Weekly delivery**:
The Weekly Delivery Charge shall be determined by multiplying the Weekly Delivery Charge as described on Schedule 7 by .75.

**3) Daily delivery**:
The Daily Delivery Charge shall be determined by multiplying the Daily Delivery Charge as described on Schedule 7 by .75.
The total delivery charge in any week, pursuant to a reservation for Daily delivery, shall not exceed the Weekly Delivery Charge specified in section (2) above times the highest amount in kilowatts of non-firm Reserved Capacity in any day during such week.

**4) Hourly delivery**: The basic charge shall be that agreed upon by the Parties at the time this service is reserved and in no event shall exceed the Daily Delivery Charge specified in section (3) above divided by 24. The total delivery charge in any day, pursuant to a reservation for Hourly delivery, shall not exceed the Daily Delivery Charge specified in section (3) above times the highest amount in kilowatts of non-firm Reserved Capacity in any hour during such day. In addition, the total delivery charge in any week, pursuant to a reservation for Hourly or Daily delivery, shall not exceed the Weekly Delivery Charge specified in section (2) above times the highest amount in kilowatts of non-firm Reserved Capacity in any hour during such week.

**5) Discounts**: Three principal requirements apply to discounts for transmission service as follows (1) any offer of a discount made by FG&E must be announced to all Eligible Customers solely by posting on Unitil.com, (2) any customer-initiated requests for discounts (including requests for use by one's wholesale merchant or an Affiliate's use) must occur solely by posting on Unitil.com, and (3) once a

discount is negotiated, details must be immediately posted on Unitil.com. For any discount agreed upon for service on a path from point(s) of receipt to point(s) of delivery, FG&E must offer the same discounted transmission service rate for the same time period to all Eligible Customers on all unconstrained transmission paths that go to the same point(s) of delivery on FG&E's Local Network.

**6)** **Resales**: The rates and rules governing charges and discounts stated above shall not apply to resales of transmission service, compensation for which shall be governed by section I.11 (a) of Schedule 21 of the OATT.

## SCHEDULE 9
## DISTRIBUTION ADDER UNDER TARIFF

In the case where distribution facilities of FG&E are employed in providing service under Schedule 21 of the OATT, the Transmission Customer shall compensate FG&E for the use of such facilities. In addition to the charges contained in this Tariff, the compensation for such distribution facilities will be determined on a case-by-case basis.

All such charges shall be subject to appropriate regulatory approval.

## ATTACHMENT C

## Methodology To Assess Available Transfer Capability

### 1. Introduction

ISO is the regional transmission organization (RTO) for the New England Control Area. The New England Control Area includes the transmission system located in the states of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont, but does not include the transmission system in northern Maine (i.e., Aroostook and parts of Penobscot and Washington Counties) that is radially connected to New Brunswick and administered by the Northern Maine Independent System Administrator. The New England Control Area is comprised of PTF, non-PTF, OTF, MTF, and is interconnected to three neighboring Balancing Authority Areas ("BAA") with various interface types.

As part of its RTO responsibilities, the ISO is registered with the North American Electric Reliability Corporation ("NERC") as several functional model entities that have responsibilities related to the calculation of ATC as defined in the following NERC Standards: MOD-001 – Available Transmission System Capability ("MOD-001"). MOD-004 – Capacity Benefit Margin ("MOD-004"), and MOD-008 – Transmission Reliability Margin Calculation Methodology ("MOD-008"). The extent of those responsibilities is based on various Commission approved transmission operating agreements and the provisions of the ISO New England Operating Documents.

While the ISO is the Transmission Service Provider for regional transmission service ("Regional Transmission Service") associated with Pool Transmission Facilities, the Participating Transmission Owners ("PTOs") provide local transmission service over Non-Pool Transmission Facilities within the RTOP footprint and are responsible for calculating TTC and ATC associated with Local Transmission Service provided under Schedule 21 pursuant to the Transmission Operating Agreement ("TOA"). Pursuant to CFR § 37.6(b)[1] of the FERC Regulations, Transmission Provider's are obligated to calculate and post TTC and ATC for each Posted Path. The ISO is not responsible for the calculation of these values.

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1 Section §37.6(b) Posting transfer capability. The available transfer capability on the Transmission Provider's system (ATC) and the total transfer capability (TTC) of that system shall be calculated and posted for each Posted Path as set out in this section.

Posted Path is defined as any control area to control area interconnection; any path for which service is denied, curtailed or interrupted for more than 24 hours in the past 12 months; and any path for which a customer requests to have ATC or TTC posted. For this last category, the posting must continue for 180 days and thereafter until 180 days have elapsed from the most recent request for service over the requested path. For purposes of this definition, an hour includes any part of any hour during which service was denied, curtailed or interrupted.[2]

FG&E does not currently have any Posted Paths based on the above definition. However, to the extent that FG&E does in the future have a Posted Path, FG&E will calculate TTC using the NERC Standard MOD-029 – Rated System Path Methodology ("MOD-029") as outlined below.

### 1.1 Scope of Document

The scope of this document is limited to those functions performed by FG&E as the Transmission Service Provider of Schedule 21-FG&E Point-to Point transmission service over Local Facilities pursuant to the PTOs' Transmission Operating Agreement and the ISO OATT:

- Methodology for calculating Total Transfer Capability (TTC)
- Methodology for calculating Available Transfer Capability (ATC)
- Existing Transmission Commitment (ETC)
- Use of Transmission Reliability Margin (TRM)
- Use of Capacity Benefit Margin (CBM)
- Use of Rollover Rights (ROR) in the calculation of ETC

TTC and ATC are required to be calculated only for certain non-PTF internal Posted Paths over which Local Point-to-Point transmission service is provided under Schedule 21-FG&E. TTC and ATC is not calculated by FG&E for Local Network Service because ISO employs a market model for economic, security constrained dispatch of generation, and FG&E does not require advance reservation for such network service.

## 2. Transmission Service in the New England Markets

Since the inception of the OATT for New England, the process by which generation located inside New

2 Section § 37.6(b)(1)(i).

England supplies energy to the bulk electric system has differed from the Commission pro forma OATT. The fundamental difference is that internal generation is dispatched in an economic, security constrained manner by the ISO rather than utilizing a system of physical rights, advance reservations and point-to-point transmission service. Through this process, internal generation provides offers that are utilized by the ISO in the Real-Time Energy Market dispatch software. This process provides the least-cost dispatch to satisfy Real-Time load on the system.

In addition to offers from generation within New England, entities may submit External Transactions to move energy into the New England Control Area, out of the New England Control Area or through the New England Control Area. The Real-Time Energy Market clears these External Transactions based on forecast Locational Marginal Pricing (LMPs) and the transfer capability of the associated external interfaces. With those External Transactions in place, the Real-Time Energy Market dispatches internal generation in an economic, security constrained manner to meet Real-Time load within the region.

The process for submitting External Transactions into the Real-Time Energy Market does not require an advance physical reservation for use of the PTF. In the event that the net of the economic External Transactions is greater than the transfer capability of the associated external interface, the External Transactions selected to flow are selected based on the rules specified in the Tariff. For any External Transactions that are confirmed to flow in Real-Time based on the economics of the system, a transmission reservation for RNS or Through or Out Service is created after-the-fact to satisfy the transparency needs of the market.

The process described above is applicable to the PTF within the ISO Area, and non-PTF Local Facilities where utilized for Local Network Service by generation or load. However, FG&E owns Local Facilities over which an advance transmission service reservation for firm or non-firm transmission service may be required. On those Local Facilities, the market participant may obtain a transmission service reservation from FG&E under Schedule 21-FG&E prior to delivery of energy into the Real-Time Energy Market.[3] This document addresses the calculation of ATC and TTC for these non-PTF internal paths.

## 3. Schedule 21-FG&E Total Transfer Capability (TTC)

The TTC on FG&E's non-PTF Local Facilities that require Point-to-Point transmission service reservations are relatively static values and are calculated using the NERC Standard MOD-029 – Rated

3 See n - 2, 3 and 6, supra.

System Path Methodology. TTC is the amount of electric power that can be moved or transferred reliably from one area to another area of the interconnected transmission systems by way of all transmission lines (or paths) between those areas under specified system conditions. FG&E calculates TTC according to this definition applying the process as described below.

### 3.1 Guidelines and Principles

When estimating TTC, FG&E will apply the following, as amended and/or adopted from time to time

- Good Utility Practice
- NERC criteria and guidelines
- ISO New England criteria, rules and reliability standards
- Northeast Power Coordinating Council (NPCC) criteria and guidelines
- Fitchburg Gas and Electric Light Company guides

### 3.2 Transmission System Model Representation

FG&E will estimate TTC using transmission system load flow models developed for FG&E's system. The models may include representations of other neighboring systems. FG&E will use system models that it deems appropriate for study of the request for firm transmission service. Additional system models and operating conditions, including assumptions specific to a particular analysis, may be developed for conditions not available in the library of load flow cases. The system models may be modified, if necessary, to include additional system information on load, transfers and configuration, as it becomes available.

### 3.3 Contingency Analysis

FG&E will perform, if necessary, power flow and transient stability analysis to ensure that the interface's physical limits will not be violated for credible system contingencies per NERC, NPCC and ISO reliability criteria. TTC, based on contingency analysis, is the incremental transfer capability of the transmission system following the loss of the most critical element while maintaining thermal, and stability performance of the system within acceptable regional practices and consistent with guidelines of Item 3.1 of this Attachment.

### 3.4 Posting TTCs

When necessary, FG&E will estimate TTC as outlined above and post on its website.

## 4. Capacity Benefit Margin (CBM)

CBM is defined as the amount of firm transmission transfer capability set aside by a TSP for use by the Load Serving Entities. The ISO does not set aside any CBM for use by the Load Serving Entities, because of the New England approach to capacity planning requirements in the ISO New England Operating Documents. Load Serving Entities operating within the New England Control Area are required to arrange for their Capacity Requirements prior to the beginning of any given month in accordance with ISO Tariff, Section III.13.7.3.1 (Calculation of Capacity Requirement and Capacity Load Obligation). Load Serving Entities do not utilize CBM to ensure that their capacity needs are met; therefore, CBM is not applicable within the New England market design. Accordingly, for purposes of ATC calculation, CBM for the New England Control Area is set to zero (0).

**Existing Transmission Commitments, Firm ($ETC_F$)**

The $ETC_F$ are those confirmed firm transmission reservations ($PTP_F$) plus any rollover rights for firm transmission reservations ($ROR_F$) that have been exercised. There are no allowances necessary for Native Load forecast commitments ($NL_F$), Network Integration Transmission Service ($NITS_F$), grandfathered Transmission Service ($GF_F$) and other service(s), contract(s) or agreement(s) ($OS_F$) to be considered in the $ETC_F$ calculation.

**Existing Transmission Commitments, Non-Firm($ETC_{NF}$)**

The ($ETC_{NF}$) are those confirmed non-firm transmission reservations ($PTP_{NF}$). There are no allowances necessary for non-firm Network Integration Transmission Service ($NITS_{NF}$), non-firm grandfathered Transmission Service ($GF_{NF}$) or other service(s), contract(s) or agreement(s) ($OS_{NF}$).

## 5. Transmission Reliability Margin (TRM)

TRM is the amount of transmission transfer capability set aside to provide reasonable assurance that the interconnected transmission network will be secure. TRM accounts for the inherent uncertainty in system conditions and the need for operating flexibility to ensure reliable system operation as system conditions change. It is used only for external interfaces under the New England market design. FG&E, under Schedule 21, does not have any external interfaces, and therefore, TRM for FG&E's non-PTF facilities is zero.

## 6. Calculation of ATC for FG&E's Local Facilities

**General Description**

This section defines the ATC calculations performed by FG&E pursuant to MOD-029 for its non-PTF internal interfaces. Consistent with the NERC definition, the equation for Available Transfer Capability is: ATC = (TTC – CBM – TRM – Existing Transmission Commitments + Postbacks + counterflows). As discussed above, the CBM and TRM for the PTF interfaces for which FG&E calculates ATC are zero (0). As consistent with the ISO calculation, the equations for firm and non-firm Available Transfer Capability are:

Firm ATC = (TTC – CBM – TRM – firm ETC)

Non-firm ATC = (TTC – CBM – TRM – firm and non-firm ETC)[4]

As discussed above, the TRM and CBM for FG&E's non-PTF paths are zero. The purpose of the Existing Transmission Commitments ("ETC") component of the ATC equation is for FG&E to reduce the amount of ATC by the amount of existing firm transmission commitments that are not otherwise included in CBM or TRM. There is no requirement to purchase transmission service in advance of flowing energy in Real-Time, and there is no MW amount set aside by FG&E on any interface. One such example is point-to-point service commitments. Point-to-point service commitments sharing common transmission paths would be combined through system modeling to calculate the net existing transmission capacity (ETC) impact. This ETC value is then used in the ATC calculation shown above. Therefore there are no Existing Transmission Commitments to be applied in the ATC equation. For this reason, ETC equals zero (0) for the purposes of ATC calculation. Because Postbacks and counterflows are related to ETC and ETC is zero (0), both Postbacks and counterflows also are equal to zero (0).

As described in Section 2, under Schedule 21-FG&E, FG&E requires the purchase of transmission service in advance of delivery of energy to the New England Wholesale Market over certain non-PTF paths, and those existing transmission commitments would be applied to the ATC equation for the specific posted path. As a practical matter, the ratings of the radial transmission paths are always higher than the transmission requirements of the Transmission Customers connected to that path. As such, transmission services over these posted paths are considered to be always available.

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4 Existing Transmission Commitments ("ETC")

Entities submit their bids and offers to move energy into, out of and through the Energy Market through External Transactions. As Real-Time approaches, the ISO determines which of the submitted External Transactions will be scheduled in the coming hour in accordance with the rules set forth in the ISO New England Operating Documents. Basically, the ATC of the non-PTF assets in the New England market is almost always positive. The ATC is equal to the amount of External Transactions that the ISO will schedule on an interface for the designated hour. With this simplified version of ATC, there is no detailed algorithm to be described or posted other than: ATC equals TTC. Thus, for those non-PTF facilities that serve as a path for the FG&E's Schedule 21-FG&E Point-to-Point Transmission Customers, FG&E would post the ATC as 9999, consistent with industry practice. ATC on these paths varies depending on the time of day. However, it would be posted with an ATC of "9999" to reflect the fact that there are no restrictions on these paths for commercial transactions.

## 6.1 Calculation of Schedule 21-FG&E Firm ATC ($ATC_F$)

### 6.1.1 Calculation of $ATC_F$ in the Planning Horizon (PH)

For purposes of this Attachment C, PH is any period before the Operating Horizon.

Consistent with the NERC definition, $ATC_F$ is the capability for firm transmission reservations that remain after allowing for TRM, CBM, $ETC_F$, $Postbacks_F$ and $counterflows_F$.

As discussed above, TRM and CBM are zero. Firm Transmission Service under Schedule 21-FG&E that is available in the Planning Horizon (PH) includes: Yearly, Monthly, Weekly, and Daily. $Postbacks_F$ and $counterflows_F$ of Schedule 21-FG&E transmission reservations are not considered in the ATC calculation. Therefore, $ATC_F$ in the PH is equal to the TTC minus $ETC_F$

### 6.1.2 Calculation of $ATC_F$ in the Schedule 21-FG&E Operating Horizon (OH)

For purposes of this Attachment C, OH is noon eastern prevailing time each day. At that time, the OH spans from noon through midnight of the next day for a total of 36 hours. As time progresses the total hours remaining in the OH decreases until noon the following day when the OH is once again reset to 36 hours.

Consistent with the NERC definition, $ATC_F$ is the capability for firm transmission reservations that

remain after allowing for $ETC_F$, CBM, TRM, $Postbacks_F$ and $counterflows_F$.

As discussed above, TRM and CBM is zero. Daily firm Transmission Service under Schedule 21-FG&E is the only firm service offered in the Operating Horizon (OH). $Postbacks_F$ and $counterflows_F$ of Schedule 21-FG&E transmission reservations are not considered in the $ATC_F$ calculation. Therefore, $ATC_F$ in the OH is equal to the TTC minus $ETC_F$.

**6.1.3** Because firm Schedule 21-FG&E transmission service is not offered in the Scheduling Horizon (SH): $ATC_F$ in the SH is zero.

## 6.2 Calculation of Schedule 21-FG&E Non-Firm ATC ($ATC_{NF}$)

### 6.2.1 Calculation of $ATC_{NF}$ in the PH

$ATC_{NF}$ is the capability for non-firm transmission reservations that remain after allowing for $ETC_F$, $ETC_{NF}$, scheduled CBM ($CBM_S$), unreleased TRM ($TRM_U$), non-firm Postbacks ($Postbacks_{NF}$) and non-firm counterflows ($counterflows_{NF}$).

As discussed above, the TRM and CBM for Schedule 21-FG&E are zero. Non-firm ATC available in the PH includes: Monthly, Weekly, Daily and Hourly. $TRM_U$, $Postbacks_{NF}$ and $counterflows_{NF}$ of Schedule 21-FG&E transmission reservations are not considered in this calculation. Therefore, $ATC_{NF}$ in the PH is equal to the TTC minus $ETC_F$ and $ETC_{NF}$.

### 6.2.2 Calculation of $ATC_{NF}$ in the OH

$ATC_{NF}$ available in the OH includes: Daily and Hourly.

As discussed above TRM and CBM for Schedule 21-FG&E are zero. $TRM_U$, counterflows and $ETC_{NF}$ are not considered in this calculation. Therefore, $ATC_{NF}$ in the OH is equal to the TTC minus $ETC_F$, plus postbacks of $PTP_F$ in OH as $PTP_{NF}$ ($Postbacks_{NF}$).

## 6.3 Negative ATC

As stated above, the ratings of the radial transmission paths are always higher than the transmission

requirements of the Transmission Customers connected to that path. As such, transmission services over these posted paths are considered to be always available.

As stated above, FG&E's non-PTF facilities are primarily radial paths that provide transmission service to directly interconnected generators. It is possible, in the future, that a particular radial path may interconnect more nameplate capacity generation than the path's TTC. However, due to the ISO's security constrained dispatch methodology, the ISO will only dispatch an amount of generation interconnected to such path so as not to incur a reliability or stability violation on the subject path. Therefore, ATC in the PH, OH and SH may become zero, but will not become negative.

**ATC Process Flow Diagram for Non-PTF Interfaces**

The process flow diagram illustrates the steps through which ATC is calculated both on an operating and planning horizon.

## 7. Posting of Schedule 21-FG&E ATC

### 7.1 Location of ATC Posting.

When necessary, FG&E will estimate ATC values for these internal paths as outlined above and post on its website, http://www.unitil.net/nepool/ma/pdf/atc_cbm_ttc_trm_fge.pdf.

### 7.2 Updates To ATC

When any of the variables in the ATC equations change, the ATC values are recalculated and immediately posted.

### 7.3 Coordination of ATC Calculations

Schedule 21-FG&E non-PTF has no external interfaces. Therefore it is not necessary to coordinate the values.

### 7.4 Mathematical Algorithms

A link to the actual mathematical algorithm for the calculation of ATC for FG&E's non-PTF internal interfaces is located at http://www.unitil.com/sites/default/files/pdfs/fge_atc_algorithms_3_11.pdf.

## ATTACHMENT D

## Methodology for Completing a System Impact Study

FG&E will perform System Impact Studies for the purpose of determining the feasibility of integrating Network Load and Network Resources into FG&E's Local Network under Schedule 21 of the OATT, or for the purpose of determining the feasibility of providing Local Point-To-Point Service under this Tariff. All System Impact Studies will be completed using the same method employed by FG&E to integrate into FG&E's Local Network (i) generation resources owned or acquired to serve its Native Load Customers, and (ii) its Native Load Customers' load. Specifically, System Impact Studies will be performed by applying the applicable criteria, rules, standards and operating procedures. In addition to applying the applicable criteria, rules, standards and operating procedures, to determine the feasibility of providing service to Network Load and/or Local Point-To-Point Service, System Impact Studies will also be performed by applying Unitil Service Corp.'s "Electric System Planning Guide".

**ATTACHMENT E**

**Index Of Local Point-To-Point Service Customers**

| Customer | Date of Service Agreement |
|---|---|
| Fitchburg Gas and Electric Light Company | September 10, 1996 |
| Pinetree Power Fitchburg Inc. | March 9, 1999 |

**ATTACHMENT H**

**Annual Transmission Revenue Requirement For Local Network Service**

The Transmission Revenue Requirement for FG&E will reflect FG&E's costs with respect to transmission facilities not related to PTF ("Non PTF"). Except as provided below for the transitional implementation of this formula rate, the Transmission Revenue Requirement will be an annual calculation, effective June 1, based on the previous year's calendar data as reported in FG&E's FERC Form 1 report for that year, or other reasonable documentation, using end-of-year balances for each rate base item, as set forth below. The initial Transmission Revenue Requirement shall be effective October 1, 2003 through May 31, 2004 based on calendar year 2002 data as adjusted, as approved by the Commission. Further, the Transmission Revenue Requirement to be effective June 1, 2004, based on calendar year 2003 data, shall include an adjustment to annualize the impact on 2003 depreciation expense of revised depreciation rates effective October 1, 2003, as approved by the Commission. Depreciation expense shall be calculated according to Appendix A of this attachment, as approved by the Commission.

Beginning July 31, 2004, FG&E shall make an annual informational filing on or before July 31 of each year showing the Transmission Revenue Requirement in effect for the period beginning June 1 of that year through May 31 of the subsequent year. If there are corrections made to the information reflected in the informational filing after it has been submitted, FG&E will file corrections to the informational filing.

I. FORMULA

A. The Transmission Revenue Requirement for FG&E's Non-PTF shall equal the sum of the following: (A) Non-PTF Return and Associated Income Taxes, plus (B) Non-PTF Depreciation Expense, plus (C) Non-PTF Amortization of Intangible Plant and Other Regulatory Assets/Liabilities, plus (D) Non-PTF Amortization of Rate Case Expense, plus (E) Non-PTF Amortization of Loss on Reacquired Debt, minus (F) Non-PTF Amortization of Investment Tax Credits, plus (G) Non-PTF Property Tax Expense, plus (H) Non-PTF Payroll Tax Expense, plus (I) Non-PTF Transmission Operation and Maintenance Expense, plus (J) Non-PTF Customer Accounting Bad Debts Expense, plus (K) Non-PTF Administrative and General Expense, plus (L) Non-PTF Transmission Related Taxes and Fees Charge, minus (M) Non-PTF Transmission Rents Received from Electric Property, minus (N) Non-PTF Revenue for Through or Out Service.

B. Each of the components of A. above shall be calculated by subtracting the related PTF costs and revenues from the same calendar year, as included in ISO-NE's OATT, from the total transmission costs and revenues as described in Section III. Support Expense included in PTF shall only be included in this computation to the extent these costs are included in the determination of total transmission costs.

## II. DEFINITIONS

### A. ALLOCATION FACTORS

1. Transmission Wages and Salaries Allocation Factor shall equal the ratio of Transmission–related direct wages and salaries to FG&E's total direct wages and salaries, excluding administrative and general wages and salaries.
2. Transmission Plant Allocation Factor shall equal the ratio of the sum of (1) Transmission Plant, (2) Transmission Related Intangible Plant, (3) Transmission Related General Plant, and (4) Transmission Related Common Plant, to Total Plant in Service.
3. Transmission Revenue Allocation Factor shall equal the ratio of Total Internal Transmission Revenue to Total Billed Revenue from Sales to Ultimate Customers.

### B. TERMS

Administrative and General Expense shall equal FG&E's expenses as recorded in FERC Account Nos. 920-935, excluding FERC Account Nos. 924, 928 and 930.1.

Amortization of Intangible Plant and Common Plant shall equal FG&E's expenses related to Intangible Plant and Common Plant as recorded in FERC Account No. 404.

Amortization of Investment Tax Credits shall equal FG&E's credits as recorded in FERC Account No. 411.4.

Amortization of Loss on Reacquired Debt shall equal FG&E's expenses as recorded in FERC Account No. 428.1.

Amortization of Other Regulatory Assets/Liabilities-FAS 109 shall equal FG&E's expenses related to Other Regulatory Assets/Liabilities–FAS 109 as recorded in FERC Account No. 407.

Amortization of Rate Case Expenses shall equal FG&E's expenses related to the deferred costs of regulatory rate proceedings related to transmission service as approved by FERC and as recorded in FERC Account No. 407.

Common Plant shall equal FG&E's gross balance of the plant common to both electric and gas operations as recorded in FERC Account Nos. 303, 310, 389-399, excluding capital leases.

Common Plant Amortization Reserve shall equal FG&E's Common Plant reserve balances as recorded in FERC Account No. 111.

Common Plant Depreciation Expense shall equal FG&E's Common Plant expenses as recorded in FERC Account No. 403.

Common Plant Depreciation Reserve shall equal FG&E's Common Plant reserve balance as recorded in FERC Account No. 108.

Customer Accounting Bad Debts Expense shall equal FG&E's expenses as recorded in FERC Account No. 904.

General Plant shall equal FG&E's gross plant balance as recorded in FERC Account Nos. 389-399.

General Plant Depreciation Expense shall equal FG&E's General Plant expenses as recorded in FERC Account No. 403.

General Plant Depreciation Reserve shall equal FG&E's General Plant reserve balance as recorded in FERC Account No. 108.

Intangible Plant shall equal FG&E's gross plant balance as recorded in FERC Account No. 303 (consisting of investments in computer systems and software).

Intangible Plant Amortization Reserve shall equal FG&E's Intangible Plant reserve balance as recorded in FERC Account No. 111.

Other Regulatory Assets/Liabilities–FAS 106 shall equal the net of FG&E's FAS 106 balance as recorded in FERC Account No. 182.3 and any FAS 106 balance as recorded in FG&E's FERC Account No. 254.

Other Regulatory Assets/Liabilities–FAS 109 shall equal the net of FG&E's FAS 109 balance as recorded in FERC Account No. 182.3 and any FAS 109 balance as recorded in FG&E's FERC Account No. 254.

Payroll Tax Expense shall equal those payroll tax expenses as recorded in FG&E's FERC Account Nos. 408.1 and 409.1.

Plant Held for Future Use shall equal FG&E's balance in FERC Account No. 105.

Prepayments shall equal FG&E's electric prepayment balance as recorded in FERC Account No. 165. The electric portion shall be determined by multiplying the balance in FERC Account No. 165 by the ratio of electric utility plant to total utility plant as reported in FG&E's FERC Form 1.

Property Insurance Expense shall equal FG&E's expenses as recorded in FERC Account No. 924.

Property Tax Expense shall equal FG&E's property tax expenses as recorded in FERC Account Nos. 408.1 and 409.1.

Support Expense shall equal Transmission Support Expense as defined in the OATT Attachment F.

Total Accumulated Deferred Income Taxes shall equal the net of the deferred tax balances as recorded in FERC Account Nos. 281-283 and FERC Account No. 190.

Total Billed Revenue from Sales to Ultimate Customers shall equal FG&E's total electric service revenues as recorded in FERC Account Nos. 440, 442, 444, 445, 446, 448, and 449.

Total Internal Transmission Revenue shall equal FG&E's internal transmission revenues as recorded in FERC Account Nos. 440, 442, 444, 445, 446, 448 and 449.

Total Loss on Reacquired Debt shall equal FG&E's expenses as recorded in FERC Account No. 189.

Total Plant in Service shall equal FG&E's total electric gross plant balance as recorded in FERC Account

Nos. 301-399 (inclusive of electric Common Plant).

Transmission Operation and Maintenance Expense shall equal FG&E's electric expenses as recorded in FERC Account Nos. 560-564 and 566-576.5 and shall exclude expenses already included in PTF Transmission Support Expense, costs billed to Select Energy, Inc. under a generation related entitlement sales agreement and Account Nos. 561.4 and 575.7.

Transmission Plant shall equal FG&E's gross plant balance as recorded in FERC Account Nos. 350-359 excluding joint owned unit costs.

Transmission Plant Depreciation Expense shall equal FG&E's Transmission Plant expenses as recorded in FERC Account No. 403 less joint owned unit costs.

Transmission Plant Depreciation Reserve shall equal FG&E's Transmission Plant reserve balance as recorded in FERC Account 108 less joint owned unit reserves.

Transmission Plant Held for Future Use shall equal the transmission-related balance of electric Plant Held for Future Use.

Transmission Plant Materials and Supplies shall equal FG&E's balance as assigned to transmission, as recorded in FERC Account No. 154.

Transmission Prepayments shall equal FG&E's Prepayments multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Accumulated Deferred Income Taxes shall equal FG&E's electric balance of Total Accumulated Deferred Income Taxes multiplied by the Transmission Plant Allocation Factor.

Transmission Related Administrative and General Expense shall equal the sum of (1) electric Administrative and General Expenses multiplied by the Transmission Wages and Salaries Allocation Factor, plus (2) electric Property Insurance Expense reduced by amounts billed to Select Energy Inc. under a generation related entitlement sales agreement and multiplied by the Transmission Plant Allocation Factor, plus (3) electric expenses included in FERC Account No. 928 related to FERC fees and assessments, plus (4) any other electric transmission related expenses included in FERC Account No. 928

plus (5) specific electric transmission related expenses included in FERC Account No. 930.1 and minus (6) any Administrative and General Expense amounts billed to Select Energy Inc. and not already deducted elsewhere, multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Amortization of Intangible Plant and Other Regulatory Assets/Liabilities shall equal the sum of (1) electric Amortization of Intangible Plant and Common Plant multiplied by the Transmission Wages and Salaries Allocation Factor and (2) electric Amortization of Other Regulatory Assets/Liabilities-FAS 109 multiplied by the Transmission Plant Allocation Factor. This component shall include additional regulatory assets/liabilities as established by regulatory authority and relevant to transmission services.

Transmission Related Amortization of Investment Tax Credits shall equal FG&E's electric Amortization of Investment Tax Credits multiplied by the Transmission Plant Allocation Factor.

Transmission Related Amortization of Loss on Reacquired Debt shall equal FG&E's electric Amortization of Loss on Reacquired Debt multiplied by the Transmission Plant Allocation Factor.

Transmission Related Cash Working Capital shall be 12.5% allowance (45 days/360 days) of the sum of Transmission Operation and Maintenance Expense, plus Transmission Related Customer Accounting Bad Debts Expense and plus Transmission Related Administrative and General Expense.

Transmission Related Common Plant shall equal FG&E's electric Common Plant multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Customer Accounting Bad Debts Expense shall equal FG&E's electric Customer Accounting Bad Debts Expense multiplied by the Transmission Revenue Allocation Factor.

Transmission Related Depreciation & Amortization Reserve shall equal the sum of (1) Transmission Plant Depreciation Reserve plus (2) electric Intangible Plant and electric Common Plant Amortization Reserves multiplied by the Transmission Wages and Salaries Allocation Factor and (3) electric General Plant and electric Common Plant Depreciation Reserves multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Depreciation Expense shall equal the sum of (1) Transmission Plant Depreciation

Expense, (2) electric General Plant Depreciation Expense multiplied by the Transmission Wages and Salaries Allocation Factor and (3) electric Common Plant Depreciation Expense multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related General Plant shall equal FG&E's electric General Plant multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Intangible Plant shall equal FG&E's electric Intangible Plant multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Loss on Reacquired Debt shall equal FG&E's electric balance of Total Loss on Reacquired Debt multiplied by the Transmission Plant Allocation Factor.

Transmission Related Other Regulatory Assets/Liabilities shall equal the sum of (1) FG&E's electric balance of Other Regulatory Assets/Liabilities-FAS 106 multiplied by the Transmission Wages and Salaries Allocation Factor, and (2) FG&E's electric balance of Other Regulatory Assets/Liabilities-FAS 109 multiplied by the Transmission Plant Allocation Factor. This component shall include additional regulatory assets/liabilities as established by regulatory authority and relevant to transmission services.

Transmission Related Payroll Tax shall equal FG&E's electric Payroll Tax Expense multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Property Tax shall equal FG&E's electric Property Tax Expense, reduced by amounts billed to Select Energy, Inc. under a generation related entitlement sales agreement, multiplied by the Transmission Plant Allocation Factor.

## III. CALCULATION OF TRANSMISSION REVENUE REQUIREMENT

This section describes the calculation of the components of the Transmission Revenue Requirement for FG&E's Non-PTF as provided in Section I.

A. Non-PTF Return and Associated Income Taxes shall equal the product of the Total Internal Transmission Investment Base and the Cost of Capital Rate, reduced by the amount recovered as PTF. For purposes of this computation, the PTF amount shall be calculated using the Cost of Capital Rate

defined in III.A.2 below.

1. Total Internal Transmission Investment Base

The Total Internal Transmission Investment Base shall be the sum of the year end balances of the following items as defined in Section II.: (a) Transmission Plant, plus (b) Transmission Related Intangible Plant, plus (c) Transmission Related General Plant, plus (d) Transmission Related Common Plant, plus (e) Transmission Plant Held for Future Use, minus (f) Transmission Related Depreciation & Amortization Reserve, minus (g) Transmission Related Accumulated Deferred Income Taxes, plus (h) Transmission Related Loss on Reacquired Debt, plus (i) Transmission Related Other Regulatory Assets/Liabilities, plus (j) Transmission Prepayments, plus (k) Transmission Plant Materials and Supplies, plus (l) Transmission Related Cash Working Capital.

2. Cost of Capital Rate

The Cost of Capital Rate will equal (a) FG&E's Weighted Cost of Capital, plus (b) Federal Income Tax plus (c) State Income Tax.

(a) The Weighted Cost of Capital will be calculated based upon the capital structure at the end of each year and will equal the sum of:

(i) the long-term debt component, which equals the product of the actual weighted average embedded cost to maturity of FG&E's long-term debt then outstanding and the ratio that long-term debt is to FG&E's total capital.

(ii) the preferred stock component, which equals the product of the actual weighted average embedded cost to maturity of FG&E's preferred stock then outstanding and the ratio that preferred stock is to FG&E's total capital.

(iii) the return on equity component, which equals the product of the cost of equity of 10.57% and the ratio that common equity is to FG&E's total capital.

(b) Federal Income Tax shall equal

$$\frac{(A+[(C+B)/])x\ FT}{1-FT}$$

Where FT is the Federal Income Tax Rate; A is the sum of the preferred stock component and the return on equity component, as determined in Sections III.A.2.(a)(ii) and (iii) above; B is Transmission Related Amortization of Investment Tax Credits, as defined in Section II above, C is the equity AFUDC

component of Transmission Related Depreciation Expense, as defined in Section II above, and D is Total Internal Transmission Investment Base, as determined in Section III.A.1., above.

(c) State Income Tax shall equal

$$\frac{(A+[(C+B)/D] + \text{Federal Income Tax}) \times ST}{1-ST}$$

Where ST is the State Income Tax Rate; A is the sum of the preferred stock component and return on equity component as determined in Sections III.A.2. (a)(ii) and (iii) above; B is the Transmission Related Amortization of Investment Tax Credits as defined in Section II. above; C is the equity AFUDC component of Transmission Related Depreciation Expense, as defined in Section II above; D is the Total Internal Transmission Investment Base, as determined in Section III.A.1. above; and Federal Income Tax is the rate determined in Section III.A.2.(b) above.

B. Non-PTF Depreciation Expense shall equal FG&E's Transmission Related Depreciation Expense reduced by the amount recovered as PTF.

C. Non-PTF Amortization of Intangible Plant and Other Regulatory Assets/Liabilities shall equal FG&E's Transmission Related Amortization of Intangible Plant and Other Regulatory Assets/Liabilities reduced by the amount recovered as PTF.

D. Non-PTF Amortization of Rate Case Expenses shall equal the Amortization of Rate Case Expenses reduced by the amount recovered as PTF.

E. Non-PTF Amortization of Loss on Reacquired Debt shall equal FG&E's Transmission Related Amortization of Loss on Reacquired Debt reduced by the amount recovered as PTF.

F. Non-PTF Amortization of Investment Tax Credits shall equal FG&E's Transmission Related Amortization of Investment Tax Credits reduced by the amount recovered as PTF.

G. Non-PTF Property Tax Expense shall equal FG&E's Transmission Related Property Tax Expense reduced by the amount recovered as PTF.

H. Non-PTF Payroll Tax Expense shall equal FG&E's Transmission Related Payroll Tax Expense

reduced by the amount recovered as PTF.

I. Non-PTF Transmission Operation and Maintenance Expense shall equal Transmission Operation and Maintenance Expenses reduced by the amount recovered as PTF.

J. Non-PTF Customer Accounting Bad Debts Expense shall equal the Transmission Related Customer Accounting Bad Debts Expense reduced by the amount recovered as PTF.

K. Non-PTF Administrative and General Expenses shall equal the Transmission Related Administrative and General Expenses reduced by the amount recovered as PTF.

L. Non-PTF Transmission Related Taxes and Fees Charge shall include any fee or assessment imposed by any governmental authority on service provided hereunder which is not specifically identified under any other section. This amount shall be reduced by the amount recovered as PTF.

M. Non-PTF Transmission Rents Received from Electric Property shall equal any amount in FERC Account No. 454, Rents from Electric Property, associated with Transmission Plant. This amount shall be reduced by the amount recovered as PTF.

N. Non-PTF Revenue for Through or Out Service shall equal distributions received by FG&E from ISO out of revenues paid for Through or Out Service (as defined in the OATT), pursuant to Section II.12.2(d) of the Tariff.

Appendix A

PTF and non-PTF Depreciation Rates

| Account | Description | Depreciation Rates (%) Eff. March 1, 2020~~January 1, 2011~~ | ~~Depreciation Rates (%)~~ | ~~Eff. May 1, 2016~~ |
|---|---|---|---|---|
| Transmission Plant | | | | |
| 351.00 | Clearing Land and Rights of Way | 1.27 | ~~1.27~~ | |
| 352.00 | Structures and Improvements | 2.12~~29~~ | ~~2.12~~ | |
| 353.00 | Station Equipment | 3.92~~4.11~~ | | ~~3.92~~ |
| 355.00 | Poles and Fixtures | 6.13~~5.38~~ | | ~~6.13~~ |
| 356.00 | Overhead Conductors and Devices | 3.51~~3.92~~ | | ~~3.51~~ |
| General Plant | | | | |
| 394.00 | Tools, Shop and Garage Equipment | 3.22~~11~~ | ~~3.22~~ | |
| 395.00 | Laboratory Equipment | 4.03~~29~~ | ~~4.03~~ | |
| 397.00 | Communication Equipment | 2.64~~10.38~~ | | ~~2.64~~ |
| 398.00 | Miscellaneous Equipment | 3.56~~4.75~~ | | ~~3.56~~ |
| Common Plant | | | | |
| 390.00 | Structures and Improvements | 1.98~~3.24~~ | | ~~2.64~~ |
| 391.00 | Office Furniture and Equipment | 6.67~~3.33~~ | | ~~4.59~~ |
| 393.00 | Stores Equipment | 4.00~~2.31~~ | | ~~2.36~~ |
| 394.00 | Tools, Shop and Garage Equipment | 5.00~~2.63~~ | | ~~2.76~~ |
| 396.00 | Power Operated Equipment | 0.16~~0.90~~ | | ~~1.63~~ |
| 397.00 | Communication Equipment | 6.67~~8.76~~ | | ~~10.02~~ |
| 398.00 | Miscellaneous Equipment | 5.00~~N/A~~ | | ~~N/A~~ |

**ATTACHMENT I**

**Index Of Local Network Service Customers**

| Customer | Date of Service Agreement |
| --- | --- |
| Fitchburg Gas and Electric Light Company | September 10, 1997 |
| Massachusetts Bay Transportation Company | April 17, 2000 |

## Attachment L

## Creditworthiness Policy

### 1. Introduction

This guide establishes creditworthiness standards for transmission service and/or interconnection service customers ("Customers") entering into new or amended service agreements with Fitchburg Gas and Electric Light Company ("FG&E") under the ISO New England Open Access Transmission Tariff ("ISO-NE OATT").[5] In accordance with the Federal Energy Regulatory Commission's Policy Statement on Credit-Related Issues for Electric OATT Transmission Providers, Independent System Operators and Regional Transmission Organizations ("Policy Statement"), this Creditworthiness Policy is intended to make FG&E's credit-related practices more transparent and comprehensive. The following describes FG&E credit review procedures and the types of security that are acceptable to FG&E to protect against the risk of non-payment.

### 2. Creditworthiness

FG&E will evaluate the creditworthiness of Customers entering into new or amended transmission or interconnection service agreements with FG&E in order to assess a Customer's credit risk relative to the exposure of "Total Outstanding Obligation" as defined in Section 2.1 below, created by the transaction or transactions that FG&E has with the Customer. For purposes of determining the ability of a Customer to meet its obligations, FG&E may require the Customer to submit financial information for the credit review, including credit ratings, credit reports and audited financial statements for the last five years, including audited quarterly reports for the prior two years, if available. Further, the Customer will be expected to provide calculations of the following: Current Total Capitalization Ratio, Including Short-Term Debt; Tangible Net Worth for a period within sixty days of a Customer's request; Earnings Before Interest, Taxes, Depreciation and Amortization for twelve of the last fifteen consecutive months; and additional calculations and other information deemed necessary for the evaluation credit. In completing its evaluation, FG&E may consider other factors including but not limited to past billing history or the characteristics of service being requested.

### 2.1 Total Outstanding Obligation

---

5 *See* ISO New England Inc., ISO New England Inc. Transmission, Markets and Services Tariff, Section II. This policy is applicable to transmission or interconnection service agreements established from time-to-time under Schedules 21 - FG&E of the ISO-NE OATT and to individually negotiated agreements for similar transmission or interconnection services.

The Customer's Total Outstanding Obligation to FG&E will be the sum total of the following components:

2.1.1 If the Customer is making payments to FG&E for ongoing expenses (including, but not limited to, O&M expenses related to interconnections or other monthly charges such as monthly transmission charges under Schedule 21 – FG&E) the Customer will be required to provide security pursuant to Section 2.2 below, for four months' worth of the Customer's average payment obligation for such charges.

2.1.2 In accordance with the provisions of the ISO-NE OATT, a Customer will pay a Contribution in Aid of Construction ("CIAC") or transfer ownership of facilities to FG&E for transmission or interconnection facilities that are to be constructed on behalf of a Customer at the Customer's sole expense. If FG&E determines in good faith that the receipt of CIAC payments or property from the Customer are non-taxable, FG&E will require a form of security from the customer pursuant to Section 2.2 below for the amount of the potential tax liability to FG&E that would occur if such facilities were deemed taxable.

2.1.3 In accordance with the provisions of Schedule 21 – FG&E to the ISO-NE OATT, a Customer will pay a formula rate over time for return of and on the cost of capital incurred by FG&E on behalf of a Customer at the Customer's sole expense. The Customer will also be required to provide security pursuant to Section 2.2 below, for the unamortized balance of plant in service reserved for the sole use of the Customer.

**2.2 Creditworthiness Requirements**

A Customer will be considered creditworthy upon satisfying at least one of the following conditions or a combination of those conditions at the time that the customer enters into a transmission or interconnection service agreement and for so long as the Customer maintains satisfaction of at least one of these conditions for any outstanding obligations thereunder:

2.2.1 The Customer maintains a minimum credit rating from Standard & Poor's Long-term Issuer Credit Rating of BBB- or better or Moody's Investors Service Long-term Issuer Credit Rating of Baa3 or better so long as the Customer's Total Outstanding Obligation plus any other unsecured obligations with FG&E does not exceed the Credit Limits discussed in Section 4 below. When FG&E reviews a Customer's rating from two or more rating agencies and a split

rating is present, the lower debt rating will apply. In the event that the Customer has no rating from either Standard & Poor's or Moody's Investors Service, a rating from Fitch may also be used with acceptable ratings equivalent to those from either Standard and Poor's or Moody's Investors Service. If unrated, the Customer's financial statements will be reviewed to determine an equivalent rating based on the Customer's unsecured credit limits and/or financial statements.

If, at any time, the Customer's rating falls below investment grade (BBB- from Standard and Poor's and/or Baa3 from Moody's or equivalent ratings from Fitch), the Customer will be required to (i) notify FG&E within 10 days and, (ii) within 30 days, provide another form of security reasonably acceptable to FG&E, as described in this Section 2.2.

2.2.2 The Customer provides and maintains in effect during the term of and until full and final payment and performance of the service agreement an unconditional and irrevocable standby letter of credit for the Total Outstanding Obligation in the form and substance and issued by a bank reasonably acceptable to FG&E. A draft, acceptable form letter of credit is attached. Any such bank must satisfy the creditworthiness criteria described in 2.2.1 above.

If, at any time, the bank's rating falls below investment grade (BBB- from Standard and Poor's and/or Baa3 from Moody's or equivalent ratings from Fitch), the Customer will be required to (i) notify FG&E within 10 days and, (ii) within 30 days, provide another form of security reasonably acceptable to FG&E, as described in this Section 2.2.

2.2.3 If the Customer's parent or an affiliate company satisfies the creditworthiness criteria described in 2.2.1 above and, subject to the Credit Limits stated in Section 4 below, such company submits to FG&E and maintains in effect a letter of guaranty reasonably acceptable to FG&E as to amount, form and substance for the term of and until full and final payment and performance of the service agreement.

If, at any time, the credit rating of the Customer's parent or affiliate providing the guaranty falls below investment grade (BBB- from Standard and Poor's and/or Baa3 from Moody's or equivalent ratings from Fitch), the Customer will be required to (i) notify FG&E within 10 days and, (ii) within 30 days, provide another form of security reasonably acceptable to FG&E, as described in this Section 2.

2.2.4 The Customer makes an advance payment to FG&E in immediately available funds for the Total Outstanding Obligation.

**3. Customer Costs Requiring Prepayment**

In accordance with the provisions of the ISO-NE OATT, a Customer will pay a Contribution in Aid of Construction ("CIAC") for transmission or interconnection facilities to be constructed by FG&E on behalf of a Customer at the Customer's sole expense. The Customer will have the option to (i) prepay the CIAC in immediately available funds to FG&E, or (ii) make periodic CIAC progress payments, as defined in the Customer's service agreement, to prepay in increments capital costs scheduled to be incurred by FG&E. If FG&E determines in good faith that such payments or property transfers made by the Customer should be reported as income subject to taxation, the Customer shall also prepay all costs associated with the cost consequences of the current tax liability imposed on FG&E by those facilities (the "Tax Gross- up").

**4. Determination of Credit Limits**

FG&E reserves the right to limit the total amount of unsecured credit extended to a Customer under 2.2.1 and 2.2.3 above such that the sum of all unsecured credit that such Customer has with FG&E, including the Total Outstanding Obligation, shall not exceed the Credit Limits defined below. Such limitations are based on an assessment of the Customer's or its Guarantor's credit rating and the net worth of the Customer's or its Guarantor's assets.

| Standard and Poor's (or Equivalent) Rating | Unsecured Credit Limit as Percent of Customer's or Guarantor's Tangible Net Worth |
|---|---|
| A and above | 1.0% |
| A- | 0.5% |
| BBB+ | 0.3% |
| BBB | 0.2% |
| BBB- | 0.1% |

Once FG&E has evaluated or reevaluated and determined the maximum Credit limits for each Customer, it will inform the prospective Customer of the amount of such credit limits. A customer may request in writing a reevaluation of the maximum Credit limits, within 14 days from the date that they were informed by FG&E of such limits. Justification for such a reevaluation should be contained in the

request.  All requests for reevaluation must be submitted directly to the FG&E Contract Administrator.

From time to time, principally due to unknown factors such as changing market, economic, banking or other financial conditions, but not solely limited to these factors, FG&E may find it necessary to modify or amend its creditworthiness policies and guidelines after a 15 day notice period and require that present and future Transmission Customers fulfill any additional conditions contained in the modified Creditworthiness Guide.  Transmission Customers will have 30 days after the notice period to cure any deficiency.

FORM LETTER OF CREDIT

_____ Bank

_____

(address)

IRREVOCABLE STANDBY LETTER OF CREDIT

DATE: _____

AMOUNT U.S. $_____

_____

FOR INTERNAL IDENTIFICATION PURPOSES ONLY

_____

Our Number:

Beneficiary: Applicant:

_____ _____

_____ _____

_____ _____

_____ _____

Attn: At the request of:

_____

Ref:_____

LADIES AND GENTLEMEN;

WE HEREBY ESTABLISH THIS IRREVOCABLE, AND UNCONDITIONAL, EXCEPT AS STATED HEREIN, LETTER OF CREDIT NUMBER _____ (LETTER OF CREDIT), BY ORDER OF, FOR THE ACCOUNT OF, AND ON BEHALF OF [CUSTOMER NAME] (ACCOUNT PARTY) IN FAVOR OF FITCHBURG GAS AND ELECTRIC LIGHT COMPANY (BENEFICIARY) FOR DRAWINGS, IN ONE OF MORE DRAFTS, UP TO AN AGGREGATE AMOUNT NOT EXCEEDING U.S. $_____ EFFECTIVE IMMEDIATELY. THE TERM 'BENEFICIARY' INCLUDES ANY SUCCESSOR OF THE NAMED BENEFICIARY.

THIS LETTER OF CREDIT CANNOT BE AMENDED, MODIFIED OR REVOKED WITHOUT THE PRIOR WRITTEN CONSENT OF BOTH THE BANK AND THE BENEFICIARY. THE BENEFICIARY SHALL NOT BE DEEMED TO HAVE WAIVED ANY RIGHTS UNDER THIS LETTER OF CREDIT, UNLESS AN OFFICER OF THE BENEFICIARY SHALL HAVE SIGNED A WRITTEN WAIVER EXPRESSLY REFERENCING THE RIGHT TO BE WAIVED. NO SUCH WAIVER SHALL BE EFFECTIVE AS TO ANY TRANSACTION THAT OCCURS SUBSEQUENT TO THE DATE OF THE WAIVER, NOT AS TO ANY CONTINUANCE OF A BREACH AFTER THE WAIVER.

WE HEREBY UNDERTAKE TO PROMPTLY HONOR YOUR DRAFT(S) DRAWN ON US, INDICATING OUR LETTER OF CREDIT NUMBER _____ IS ISSUED, PRESENTABLE AND PAYABLE AND WE GUARANTY TO THE DRAWERS, ENDORSERS, AND BONA FIDE HOLDERS OF THIS LETTER OF CREDIT, THAT DRAFTS UNDER AND IN COMPLIANCE WITH THE TERMS OF THIS LETTER OF CREDIT WILL BE HONORED. THIS LETTER OF CREDIT MAY NOT BE TRANSFERRED OR ASSIGNED BY US.

SUBJECT TO THE EXPRESS TERMS AND CONDITIONS HEREIN, FUNDS UNDER THIS LETTER OF CREDIT ARE AVAILABLE TO YOU BY PRESENTATION AT OUR OFFICES LOCATED AT [_____] OF BENEFICIARY'S DRAWING CERTIFICATE ISSUED SUBSTANTIALLY IN THE FORM OF ANNEX 1 ATTACHED HERETO AND WHICH FORMS AN INTEGRAL PART HEREOF, DULY COMPLETED AND PURPORTEDLY BEARING THE ORIGINAL SIGNATURE OF AN OFFICER OF THE BENEFICIARY. PRRESENTATION OF ANY DRAWING CERTIFICATE UNDER THIS LETTER OF CREDIT MAY BE MADE IN PERSON TO

US OR MAY BE SENT TO US BY TELEX TO [_____] OR BY FACSIMILE TRANSMISSION TO FACSIMILE TELEPHONE NUMBER [_____].

ALL COMMISSIONS AND CHARGES WILL BE BORNE BY THE ACCOUNT PARTY. IF DOCUMENTS, IN COMPLIANCE WITH THE TERMS OF THIS LETTER OF CREDIT, ARE RECEIVED BEFORE 10:00 AM (EASTERN TIME) ON A BUSINESS DAY, PAYMENT WILL BE EFFECTED ON OR BEFORE 5:00 PM (EASTERN TIME) ON THE NEXT BUSINESS DAY. IF DOCUMENTS, IN COMPLIANCE WITH THE TERMS OF THIS LETTER OF CREDIT ARE RECEIVED AFTER 10:00 AM ON A BUSINESS DAY, PAYMENT WILL BE EFFECTED ON OR BEFORE 5:00 PM ON THE SECOND BUSINESS DAY FOLLOWING SUCH DATE OF RECEIPT.

EXCEPT AS EXPRESSLY STATED HEREIN, THIS UNDERTAKING IS NOT SUBJECT TO ANY AGREEMENT, CONDITION OR QUALIFICATION. THIS LETTER OF CREDIT DOES NOT INCORPORATE, AND SHALL NOT BE DEEMED MODIFIED OR AMENDED BY REFERENCE TO ANY DOCUMENT, INSTRUMENT OR AGREEMENT (A) THAT IS REFERRED TO HEREIN (EXCEPT FOR THE UNIFORM CUSTOMS, AS DEFINED BELOW), OR (B) IN WHICH THIS LETTER OF CREDIT IS REFERRED TO OR TO WHICH THIS LETTER OF CREDIT RELATES.

OUR OBLIGATION UNDER THIS LETTER OF CREDIT SHALL BE OUR INDIVIDUAL OBLIGATION AND IS IN NO WAY CONTINGENT UPON THE REIMBURSEMENT WITH RESPECT THERETO, OR UPON OUR ABILITY TO PERFECT ANY LIEN, SECURITY INTEREST OR ANY OTHER REIMBURSEMENT.

THIS LETTER OF CREDIT EXPIRES WITH OUR CLOSE OF BUSINESS ON [364 days from effective date]; HOWEVER, IT IS A CONDITION OF THIS LETTER OF CREDIT THAT IT SHALL BE DEEMED AUTOMATICALLY EXTENDED WITHOUT AMENDMENT FOR 364 DAYS FROM THE PRESENT OR ANY FUTURE EXPIRATION DATE HEREOF, UNLESS AT LEAST SIXTY (60) DAYS BEFORE ANY SUCH EXPIRATION DATE WE NOTIFY YOU BY REGISTERED MAIL ADDRESSED TO: [address of beneficiary, ATTN: _____], THAT WE ELECT NOT TO RENEW THIS LETTER FOR SUCH ADDITIONAL PERIOD.

THIS LETTER OF CREDIT IS SUBJECT TO THE UNIFORM CUSTOMS AND PRACTICE FOR DOCUMENTARY CREDITS (1993 REVISION) INTERNATIONAL CHAMBER OF COMMERCE, PUBLICATION NO. 500. IF THIS LETTER OF CREDIT EXPIRES DURING THE INTERRUPTION

OF BUSINESS AS DESCRIBED IN ARTICLE 17 THEREOF WE HEREBY SPECIFICALLY AGREE TO EFFECT PAYMENT IF THE LETTER OF CREDIT IS DRAWN AGAINST WITHIN 30 DAYS AFTER THE RESUMPTION OF BUSINESS.

ANNEX 1 TO [BANKNAME]
IRREVOCABLE LETTER OF CREDIT NO. _____

[INSERT DATE]

[BANK NAME]
[ATTENTION]
[BANK ADDRESS 1]
[BANK ADDRESS 2]

LADIES AND GENTLEMEN:

THE UNDERSIGNED _____, A DULY ELECTED AND ACTING OFFICER OF FITCHBURG GAS AND ELECTRIC LIGHT COMPANY (THE "BENEFICIARY"), HEREBY CERTIFIES TO [INSERT BANK NAME] (THE "BANK"), WITH REFERENCE TO IRREVOCABLE LETTER OF CREDIT NO. _____ DATED _____, ISSUED BY THE BANK IN FAVOR OF THE BENEFICIARY (THE "LETTER OF CREDIT"), AS FOLLOWS AS OF THE DATE THEREOF:

1. THE BENEFICIARY IS A PARTY TO THAT CERTAIN [INTERCONNECTION AGREEMENT], EFFECTIVE _____, BETWEEN THE BENEFICIARY AND [CUSTOMER NAME] (THE "AGREEMENT").

2. BENEFICIARY IS MAKING A DRAWING UNDER THE LETTER OF CREDIT IN THE AMOUNT OF $_____ BECAUSE [CHECK APPLICABLE PROVISION]:

[____] (A) THERE CURRENTLY EXIST ONE OR MORE UNPAID AMOUNTS WHICH [CUSTOMER NAME] IS OBLIGATED TO PAY PURSUANT TO THE TERMS OF THE AGREEMENT.

[____] (B) THE BENEFICIARY HAS RECEIVED NOTICE FROM THE BANK OF ITS INTENTION NOT TO RENEW THE LETTER OF CREDIT BEYOND THE CURRENT EXPIRATION DATE AND [CUSTOMER NAME] HAS FAILED, PRIOR TO THE CLOSE OF BUSINESS ON _____ [INSERT DATE WHICH IS NOT MORE THAN THIRTY (30) DAYS BEFORE

THE PRESENT EXPIRATION DATE], TO DELIVER TO BENEFICIARY A REPLACEMENT LETTER OF CREDIT SATISFYING THE REQUIREMENTS OF THE AGREEMENT.

3. BASED UPON THE FOREGOING, THE BENEFICIARY HEREBY MAKES DEMAND UNDER THE LETTER OF CREDIT FOR PAYMENT OF U.S. DOLLARS _____ AND _____/100THS (U.S. $_____).

4. FUNDS PAID PURSUANT TO THE PROVISIONS OF THE LETTER OF CREDIT SHALL BE WIRE TRANSFERRED TO THE BENEFICIARY IN ACCORDANCE WITH THE FOLLOWING INSTRUCTIONS:

_____

_____

_____

UNLESS OTHERWISE PROVIDED HEREIN, CAPITALIZED TERMS WHICH ARE USED AND NOT DEFINED HEREIN SHALL HAVE THE MEANING GIVEN EACH SUCH TERM IN THE LETTER OF CREDIT.

IN WITNESS WHEREOF, THIS CERTIFICATE HAS BEEN DULY EXECUTED AND DELIVERED ON BEHALF OF THE BENEFICIARY BY ITS DULY ELECTED AND ACTING OFFICER AS OF THIS _____ DAY OF _____, _____.

BENEFICIARY: FITCHBURG GAS AND ELECTRIC LIGHT COMPANY

_____

NAME:

_____

TITLE

**SCHEDULE 21 - FG&E**

FITCHBURG GAS AND ELECTRIC LIGHT COMPANY
LOCAL SERVICE SCHEDULE

# SCHEDULE 21-FG&E

## Fitchburg Gas and Electric Light Company Local Service Schedule

## I. COMMON SERVICE PROVISIONS

Fitchburg Gas and Electric Light Company ("FG&E") is a participant in the New England Control Area and has agreed to provide transmission and ancillary services over PTF pursuant to the Tariff. The services provided under this Schedule 21-FG&E apply only to Non-PTF, except in the case of service to Network Customers that have all or part of their Network Load directly connected to the PTF in the Local Network. These Network Customers shall pay for Local Network Service pursuant to Attachment H to this Schedule 21-FG&E. Provisions of this Schedule 21-FG&E shall have priority over any conflicting provisions in the Tariff.

### 1 Definitions

**1.0 Annual Transmission Costs**: The total annual cost of the Local Network for purposes of Local Network Service shall be the amount specified in Attachment H until amended by FG&E or modified by the Commission.

**1.1 Curtailment**: A reduction in firm or non-firm transmission service in response to a transmission capacity shortage as a result of system reliability conditions.

**1.2 Load Ratio Share**: Ratio of a Transmission Customer's Non-PTF Network Load to FG&E's total load computed in accordance with Sections II.10 and II.10(a) of this Schedule under Sections Supplementing Section 21 of the OATT and calculated on a rolling twelve month basis.

**1.3.1 Local Network**: The transmission facilities owned, controlled, or operated by FG&E that are used to provide transmission service under Schedule 21 of the OATT.

**1.4 Local Network Service**: The transmission service provided under Schedule 21 of the OATT and this Schedule.

**1.5 Network Load**: The load directly interconnected to the PTF or Non-PTF facilities of FG&E. A Network Customer may elect to designate less than its total load as Network Load but

may not designate only part of the load at a discrete Point of Delivery. Where a Eligible Customer has elected not to designate a particular load at discrete points of delivery as Network Load, the Eligible Customer is responsible for making separate arrangements under Schedule 21 of the OATT for any Local Point-to-Point Service that may be necessary for such non-designated load. For purposes of establishing rates and charges under this Tariff, the Network Load will be subdivided into one of two categories:

**A.** PTF Network Load shall be the load over FG&E's PTF facilities and shall equal the load of Network Customers directly interconnected with FG&E's PTF or indirectly utilizing FG&E's PTF through Non-PTF facilities of FG&E.

**B**. Non-PTF Network Load shall be the load over FG&E's Non-PTF directly interconnected with FG&E's Non-PTF facilities.

**1.6 Network Upgrades**: Modifications or additions to transmission-related facilities that are integrated with and support FG&E's overall Local Network for the general benefit of all users of such Local Network.

**1.7 Parties**: FG&E and the Transmission Customer receiving service under this Schedule and the OATT.

**SECTIONS SUPPLEMENTING THE BODY OF THE TARIFF**

**Preamble**

The following provisions supplement the provisions of the Tariff. Provisions of this Schedule 21-FG&E shall have priority over any conflicting provisions in the Tariff. The section numbers of this Schedule 21-FG&E correspond to or are consecutive to the section numbers in the body of the Tariff that are affected by the additional provisions herein.

**Sections Supplementing Section 1: General Terms and Conditions**

**1.7 Creditworthiness**: For the purpose of determining the ability of the Transmission Customer to meet its obligations related to service hereunder, FG&E may require reasonable credit review procedures in accordance with Attachment L to Schedule 21-FG&E.

**Sections Supplementing Section II of the Tariff: Open Access Transmission Tariff (OATT)**

## II.A. COMMON SERVICE PROVISIONS

### II.4 Ancillary Services

Ancillary Services are needed with transmission service to maintain reliability within and among the Control Areas affected by the transmission service. FG&E is required to provide (or offer to arrange with the ISO as discussed below), and the Transmission Customer is required to purchase Scheduling, System Control and Dispatch Service.

The following Ancillary Services are available pursuant to Section II.4 of the Tariff only to the Transmission Customer serving load within the New England Control Area: (i) Reactive Supply and Voltage Control Service, (ii) Regulation and Frequency Response , (iii) Energy Imbalance, (iv) Ten-Minute Spinning Reserve Service, (v) Ten-Minute Non-Spinning Reserve Service and (vi) Thirty-Minute Operating Reserve Service.

### II.8 Billing and Invoicing; Accounting

**8.2 Invoicing**: Within a reasonable time after the first day of each month, FG&E shall submit an invoice to the Transmission Customer for the charges for all services furnished under the OATT during the preceding month. The invoice shall be paid by the Transmission Customer within twenty (20) days of receipt. All payments shall be made in immediately available funds payable to FG&E, or by wire transfer to a bank named by FG&E.

**8.4 Customer Default**: In the event the Transmission Customer fails, for any reason other than a billing dispute as described below, to make payment to FG&E on or before the due date as described above, and such failure of payment is not corrected within thirty (30) calendar days after FG&E notifies the Transmission Customer to cure such failure, a default by the Transmission Customer shall be deemed to exist. Upon the occurrence of a default, FG&E may initiate a proceeding with the Commission to terminate service but shall not terminate service until the Commission so approves any such request. In the event of a billing dispute between FG&E and the Transmission Customer, FG&E will continue to provide service under the Service Agreement as long as the Transmission Customer (i) continues to make all payments not in dispute, and (ii) pays into an independent escrow account the portion of the invoice in dispute,

pending resolution of such dispute. If the Transmission Customer fails to meet these two requirements for continuation of service, then FG&E may provide notice to the Transmission Customer of its intention to suspend service in sixty (60) days, in accordance with Commission policy.

**II.10.2 Stranded Cost Recovery**

FG&E may seek to recover stranded costs from the Transmission Customer pursuant to this OATT in accordance with the terms, conditions and procedures set forth in FERC Order No. 888. However, FG&E must separately file any specific proposed stranded cost charge under Section 205 of the Federal Power Act.

## SECTIONS SUPPLEMENTING SCHEDULE 21 OF THE OATT

### I. Local Point-to-Point Service Over the Local Network Owned by FG&E

**Preamble**

In addition to the provisions set forth in Schedule 21 of the OATT, the provisions of this Schedule 21-FG&E shall govern Local Point-To-Point transactions using the Local Network owned by FG&E. Provisions of this Schedule 21-FG&E shall have priority over any conflicting provisions in the Tariff. The section numbers of this Schedule 21-FG&E correspond to or are consecutive to the sections of Schedule 21 of the OATT that are affected by the additional provisions herein.

To the extent not otherwise covered in the OATT, the then-current ISO New England Operating Documents, or the TOA, or the rules adopted thereunder, whenever FG&E implements least-cost redispatch procedures in response to a transmission constraint, FG&E and the Transmission Customer(s) taking Local Point-To-Point Service will each bear a proportionate share of the total redispatch cost.

**3) Service Availability**

**b) Determination of Available Transfer Capability (ATC)**: A description of FG&E's specific methodology for assessing ATC is contained in Attachment C of this Schedule. In the event sufficient transfer capability may not exist to accommodate a service request, FG&E will respond by performing a System Impact Study.

**g) Real Power Losses**: Real power losses are associated with all transmission service.

FG&E is not obligated to provide real power losses. The Transmission Customer is responsible for replacing losses associated with all transmission service as calculated by FG&E. The applicable real power loss factors tabulated below will be applied to metered loads and Reserved Capacity amounts to account for losses on FG&E's system. The applicable real power loss factors are as follows:

Firm Local Point-to-Point Service = 0.72% at 69 kV subtransmission.

Non-firm Local Point-to-Point Service = 0.72% at 69 kV subtransmission.

**6) Procedures for Arranging Non-Firm Local Point-To-Point Service**

**f) Determination of Available Transfer Capability**: Following receipt of a tendered schedule FG&E will make a determination on a non-discriminatory basis of ATC pursuant to Attachment C of this Schedule. Such determination shall be made as soon as reasonably practicable after receipt, but not later than the following time periods for the following terms of service (i) thirty (30) minutes for hourly service, (ii) thirty minutes for daily service, (iii) four (4) hours for weekly service, and (iv) two (2) days for monthly service (during FG&E's normal business hours of 8:00 a.m. to 4:30 p.m., Monday to Friday).

**11) Sale or Assignment of Local Point-to-Point Service**

**c) Information on Assignment or Transfer of Service**: FG&E currently has waiver from the obligations of FERC Order No. 889 to maintain an OASIS. In the future, upon implementation of any FG&E OASIS site, resellers may use FG&E's OASIS site to post transmission capacity available for resale.

## II. Local Network Service using Non-PTF Owned by FG&E

**Preamble**

In addition to the provisions set forth in Schedule 21 of the OATT, the provisions of this Schedule 21-FG&E shall govern Local Network Service using Non-PTF owned by FG&E. Provisions of this Schedule 21-FG&E shall have priority over any conflicting provision in the Tariff. The section numbers of this Schedule 21-FG&E correspond to the sections of Schedule 21 of the OATT that are affected by the additional provisions herein.

Local Network Service allows the Network Customer to integrate, economically dispatch, and regulate its current and planned Network Resources to serve its Network Load in a manner comparable to that in which FG&E utilizes its Non-PTF to serve its Native Load Customers. Local Network Service also may be used by the Network Customer to deliver economy energy purchases to its Network Load from non-designated resources on an as-available basis without additional charge. Transmission service for sales to non-designated loads will be provided pursuant to the applicable terms and conditions of Schedule 21 of the OATT.

**2) Availability of Local Network Service**

**f) Real Power Losses**: The Network Customer is responsible for replacing losses associated with all transmission service as calculated by FG&E. The applicable real power loss factors tabulated below will be applied to metered loads and Reserved Capacity amounts to account for losses on FG&E's system. The applicable real power loss factors are as follows:

Local Network Service = 0.72% at 69 kV subtransmission.

**8) Load Shedding and Curtailments**

**a) Procedures**: Prior to the Service Commencement Date, FG&E and the Network Customer shall establish Load Shedding and Curtailment procedures pursuant to Section II.20 of the Tariff, with the objective of responding to contingencies on the Non-PTF. The Parties will implement such programs during any period when the ISO, the Local Control Center or FG&E determines that a system contingency exists and such procedures are necessary to alleviate such contingency. FG&E will notify all affected Network Customers in a timely manner of any scheduled Curtailment.

**b) Transmission Constraints**: During any period when FG&E determines that a transmission constraint exists on the Local Network, and such constraint may impair the reliability of FG&E's system, FG&E will take whatever actions, consistent with then-current ISO New England Operating Documents or the TOA, and the rules adopted thereunder, and with Good Utility Practice, that are reasonably necessary to maintain the reliability of FG&E's system. To the extent ISO determines that the reliability of the ISO New England transmission system can be maintained by redispatching resources, FG&E will initiate procedures pursuant to the OATT,

the then-current ISO New England Operating Documents, or the TOA, and the rules adopted thereunder to redispatch all Network Resources and FG&E's own resources on a least-cost basis without regard to the ownership of such resources. Any redispatch under this section may not unduly discriminate between FG&E's use of the Local Network on behalf of its Native Load Customers and any Network Customer's use of the Local Network to serve its designated Network Load.

**c) Cost Responsibility for Relieving Transmission Constraints**: To the extent not otherwise covered in the OATT, the then-current ISO New England Operating Documents, or the TOA, or the rules adopted thereunder, whenever FG&E implements least-cost redispatch procedures in response to a transmission constraint, FG&E and the Network Customer(s) will each bear a proportionate share of the total redispatch cost based on their respective Load Ratio Shares.

**d) Curtailments of Scheduled Deliveries**: If a transmission constraint on FG&E's Local Network cannot be relieved through the implementation of least-cost redispatch procedures and FG&E determines that it is necessary to Curtail scheduled deliveries, the Parties shall Curtail such schedules in accordance with Section II.22 of the Tariff.

**e) Allocation of Curtailments**: The ISO, the Local Control Center or FG&E shall, on a non-discriminatory basis, Curtail the transaction(s) that effectively relieve the constraint. However, to the extent practicable and consistent with Good Utility Practice, any Curtailment will be shared by FG&E and Network Customers in proportion to their respective Load Ratio Shares. Neither the ISO, the Local Control Center, nor FG&E shall direct the Network Customer to Curtail schedules to an extent greater than either would Curtail FG&E's schedules under similar circumstances.

**f) Load Shedding**: To the extent that a system contingency exists on FG&E's Local Network and the ISO, the Local Control Center or FG&E determines that it is necessary for FG&E and the Network Customers to shed load, the Parties shall shed load in accordance with previously established procedures in accordance with Section II.22 of the Tariff, the then-current ISO New England Operating Documents, or the TOA, and the rules adopted thereunder.

**g) System Reliability**: Notwithstanding any other provisions of this Schedule, FG&E

reserves the right, consistent with Good Utility Practice and on a not unduly discriminatory basis, to Curtail Local Network Service without liability on the part of FG&E for the purpose of making necessary adjustments to, changes in, or repairs on FG&E's lines, substations, and facilities, and in cases where the continuance of Local Network Service would endanger persons or property. In the event of any adverse conditions or disturbances on FG&E's Local Network or on any other system(s) directly or indirectly interconnected with FG&E's Local Network, FG&E, consistent with Good Utility Practice, also may Curtail Local Network Service in order to (i) limit the extent or damage of the adverse condition(s) or disturbance(s), (ii) prevent damage to generating or transmission facilities, or (iii) expedite restoration of service. FG&E will give the Network Customer as much advance notice as is practicable in the event of such Curtailment. Any Curtailment of Local Network Service will not be unduly discriminatory relative to FG&E's use of its Local Network on behalf of its Native Load Customers. FG&E shall specify the rate treatment and all related terms and conditions applicable in the event that the Network Customer fails to respond to established Load Shedding and Curtailment procedures.

**9) Rates and Charges**

In addition to the above sections that correspond to sections in Schedule 21 of the OATT, the following additional provision shall apply to Local Network Service over FG&E's Local Network.

**a) Monthly Demand Charge**: The Network Customer shall pay a Monthly Demand Charge which shall be determined by multiplying its Load Ratio Share times one twelfth (1/12) of FG&E's Annual Transmission Revenue Requirement as specified in Attachment H to this Schedule 21-FG&E.

**10) Determination of Network Customer's Local Monthly Network Load**: The Network Customer's local monthly Network Load is its hourly load (including its designated Network Load not physically interconnected with FG&E under Section II.5(c) of Schedule 21 of the OATT) coincident with the FG&E's Monthly Local Network Peak. Monthly revenue requirements not otherwise paid for through charges to Eligible Customers for Local Point-to-Point Service will be allocated among FG&E's Network Customers receiving service under the tariff on the basis of their loads during the hour in the month in which the total connected load to the local network is at its maximum, without any adjustment for credits for generation.

In addition to the above sections that correspond to sections in Schedule 21 of the OATT, the following

three provisions shall apply to Local Network Service over FG&E's local network.

**10a) Determination of FG&E's Monthly Local Network Load**: FG&E's monthly Local Network Load is FG&E's Monthly Local Network Peak minus the coincident peak usage of all firm Local Point-To-Point Service customers pursuant to Schedule 21 of the OATT plus the Reserved Capacity of all firm Local Point-To-Point Service customers.

**10b) Recovery of PTF Transmission Revenue Requirements**: The portion of FG&E's annual transmission revenue requirements with respect to PTF which is not recovered through the distribution of revenues from Regional Network Service or Local Point-to-Point Service shall be recovered from Eligible Customers taking Regional Network Service or Local Point-to-Point Service pursuant to Section II.12.2(b) of the Tariff.

## SCHEDULE 1

## Local Scheduling, System Control and Dispatch Service

This service is required to schedule the movement of power through, out of, within, or into FG&E's Local Network Control Area. Local Scheduling, System Control and Dispatch Service is to be provided directly by FG&E and the ISO. The Transmission Customer must purchase this service from FG&E. The charges for FG&E's Local Scheduling, System Control and Dispatch Service are to be based on the rates set forth below. To the extent that the ISO performs this service for FG&E, charges to the Transmission Customer are to reflect only a pass-through of the costs charged to FG&E by the ISO.

Each firm Local Point-To-Point Service Customer under this Tariff will be charged for Local Scheduling, System Control and Dispatch Services for the total Reserved Capacity specified in each reservation for firm Local Point-To-Point Service made under the Tariff at the rates set forth in Appendix A of this Schedule 1.

Each Network Customer under this Tariff will be charged a monthly Local Scheduling, System Control and Dispatch Service Demand Charge, which shall be determined by multiplying its Load Ratio Share times one twelfth (1/12) of the Formula Requirements specified in Appendix B of this Schedule 1.

Each Transmission Customer with generation within the ISO's Control Area shall be required also to provide for Scheduling, System Control and Dispatch Service for that generation. It is anticipated that the Transmission Customer will obtain these services by contracting with the ISO for these services on an unbundled basis. FG&E will make available Generation Scheduling, System Control and Dispatch Service at the rates set forth in Appendix C of this Schedule 1.

Each Transmission Customer with generation located outside of the ISO Control Area shall be required to provide for Scheduling, System Control and Dispatching Service for that generation. It is anticipated that the Transmission Customer will obtain these services by contracting for these services from the provider of these services within the Control Area where the generation is located. FG&E shall have the right, at any time, unilaterally to file for a change in any of the provisions of this Schedule 1 in accordance with Section 205 of the Federal Power Act and the Commission's implementing regulations.

**SCHEDULE 1**

**Appendix A**

**Determination Of**

**FG&E's Local Network Point-To-Point Formula Rate**

**For Local Scheduling, System Control And Dispatch Service**

FG&E's Formula Rate for Point-To-Point Local Scheduling, System Control and Dispatch Service ("Formula Rate") is an annual rate determined from the following formula.

$$\text{FORMULA RATE}_i = \frac{A_{i-1} - B_{i-1}}{C_{i-1}}$$

WHERE:

- i equals the calendar year during which service is being rendered ("Service Year").

- $A_{i-1}$ is the Annual Control Center Expenses (expressed in dollars) of FG&E for the calendar year prior to the Service Year. The Annual Control Center Expenses are determined pursuant to the formula specified in Exhibit 1 to this Appendix A of Schedule 1.

- $B_{i-1}$ is the actual local scheduling, system control and dispatch revenues (expressed in dollars) provided from the provision of transmission services to others. The actual local scheduling and dispatch revenues shall be those recorded on the books of FG&E in FERC Account No. 456 pertaining to Transmission of Electricity for Others and such other applicable FERC Account for the calendar year prior to the Service Year.

- $C_{i-1}$ is the single annual coincident peak transmission load (expressed in kilowatts) of FG&E for the calendar year prior to the Service Year, as reported in FERC Form No. 1.

**Schedule 1**

**Appendix A**

**Exhibit 1**

**Determination of Annual Control Center Expenses**

The rate formula for determination of the annual control center expenses revenue requirements for FG&E is determined as follows:

A. ANNUAL CONTROL CENTER EXPENSES = Sum of FG&E's (Account 556 System Control and Load Dispatching Expense) + (Account 557 Other Expense) X .50* for the calendar year prior to the Service Year.

* This factor reflects allocation to the transmission function of a portion (50 percent) of the costs recorded in Accounts 556 and 557 associated with dispatching transmission and generating facilities. This 50 percent allocation of control center costs is based on two functions performed by the control center (i) control of generation and (ii) control of transmission.

**SCHEDULE 1**

**Appendix B**

**Determination of FG&E's**
**Network Formula Requirements**
**For Local Scheduling, System Control**
**And Dispatch Service**

FG&E's formula requirements for Network Local Scheduling, System Control and Dispatch Service is determined from the following formula.

Formula Requirements$_i$ = $A_{i-1} - B_{i-1}$

WHERE:

- i equals the calendar year during which service is being rendered ("Service Year").

- $A_{i-1}$ is the Annual Control Center Expenses (expressed in dollars) of FG&E for the calendar year prior to the Service Year. The Annual Control Center Expenses are determined pursuant to the formula specified in Exhibit 1 to Appendix A of Schedule 1.

- $B_{i-1}$ is the actual local scheduling, system control and dispatch revenues (expressed in dollars) provided from the provision of transmission services to others. The actual local scheduling, system control and dispatch revenues shall be those recorded on the books of FG&E in FERC Account No. 456 pertaining to Transmission of Electricity for Others and such other applicable FERC Account for the calendar year prior to the Service Year.

**SCHEDULE 1**

**Appendix C**

**Determination Of FG&E's Formula Rate**

**For Generation Scheduling, System Control And Dispatch Service**

FG&E's Formula Rate for Generation Scheduling, System Control and Dispatch Service ("Formula Rate") shall be calculated using the Formula Rate for Point-to-Point Local Scheduling, System Control and Dispatch Service in Appendix A of Schedule 21 - FG&E.

## SCHEDULE 7

## Long-Term Firm Local and Short-Term Firm Local Point-to-Point Service

The Transmission Customer shall compensate FG&E each month for firm Reserved Capacity at the sum of the applicable charges set forth below:

**1) Yearly delivery**:

The Yearly Delivery Charge per kW shall be FG&E's Annual Transmission Revenue Requirement (determined in accordance with Attachment H of this Tariff) divided by FG&E's Total Peak Load for the corresponding calendar year. Total Peak Load, calculated based on the monthly average for the year, shall be FG&E's peak load, minus the coincident peak of all firm local point-to-point customers, plus the contract demand reservation for firm local point-to-point customers.

**2) Monthly delivery**:

The Monthly Delivery Charge per kW shall be determined by dividing the Yearly Delivery Charge by 12.

**3) Weekly delivery**:

The Weekly Delivery Charge per kW shall be determined by dividing the Yearly Delivery Charge by 52.

**4) Daily delivery**:

The Daily Delivery Charge per kW shall be determined by dividing the Yearly Delivery Charge by 365.

The total delivery charge in any week, pursuant to a reservation for daily delivery, shall not exceed the Weekly Delivery Charge specified in section (3) above times the highest amount in kilowatts of firm Reserved Capacity in any day during such week.

**5) Discounts**: Three principal requirements apply to discounts for transmission service as follows (1) any offer of a discount made by FG&E must be announced to all Eligible Customers solely by posting on Unitil.com, (2) any customer-initiated requests for discounts (including requests for use by one's wholesale merchant or an Affiliate's use) must occur solely by posting on Unitil.com, and (3) once a discount is negotiated, details must be immediately posted on Unitil.com. For any discount agreed upon for service on a path from point(s) of receipt to point(s) of delivery, FG&E must offer the same discounted transmission service rate for the same time period to all Eligible Customers on all

unconstrained transmission paths that go to the same point(s) of delivery on FG&E's Local Network.

**6)** **Resales**: The rates and rules governing charges and discounts stated above shall not apply to resales of transmission service, compensation for which shall be governed by section I.11 (a) of Schedule 21 of the OATT.

## SCHEDULE 8

## Non-Firm Local Point-to-Point Service

The Transmission Customer shall compensate FG&E for non-firm Local Point-To-Point Service for non-firm Reserved Capacity up to the sum of the applicable charges set forth below:

**1) Monthly delivery**:
The Monthly Delivery Charge shall be determined by multiplying the Monthly Delivery Charge as described on Schedule 7 by .75.

**2) Weekly delivery**:
The Weekly Delivery Charge shall be determined by multiplying the Weekly Delivery Charge as described on Schedule 7 by .75.

**3) Daily delivery**:
The Daily Delivery Charge shall be determined by multiplying the Daily Delivery Charge as described on Schedule 7 by .75.
The total delivery charge in any week, pursuant to a reservation for Daily delivery, shall not exceed the Weekly Delivery Charge specified in section (2) above times the highest amount in kilowatts of non-firm Reserved Capacity in any day during such week.

**4) Hourly delivery**: The basic charge shall be that agreed upon by the Parties at the time this service is reserved and in no event shall exceed the Daily Delivery Charge specified in section (3) above divided by 24. The total delivery charge in any day, pursuant to a reservation for Hourly delivery, shall not exceed the Daily Delivery Charge specified in section (3) above times the highest amount in kilowatts of non-firm Reserved Capacity in any hour during such day. In addition, the total delivery charge in any week, pursuant to a reservation for Hourly or Daily delivery, shall not exceed the Weekly Delivery Charge specified in section (2) above times the highest amount in kilowatts of non-firm Reserved Capacity in any hour during such week.

**5) Discounts**: Three principal requirements apply to discounts for transmission service as follows (1) any offer of a discount made by FG&E must be announced to all Eligible Customers solely by posting on Unitil.com, (2) any customer-initiated requests for discounts (including requests for use by one's wholesale merchant or an Affiliate's use) must occur solely by posting on Unitil.com, and (3) once a

discount is negotiated, details must be immediately posted on Unitil.com. For any discount agreed upon for service on a path from point(s) of receipt to point(s) of delivery, FG&E must offer the same discounted transmission service rate for the same time period to all Eligible Customers on all unconstrained transmission paths that go to the same point(s) of delivery on FG&E's Local Network.

**6)** **Resales**: The rates and rules governing charges and discounts stated above shall not apply to resales of transmission service, compensation for which shall be governed by section I.11 (a) of Schedule 21 of the OATT.

## SCHEDULE 9
## DISTRIBUTION ADDER UNDER TARIFF

In the case where distribution facilities of FG&E are employed in providing service under Schedule 21 of the OATT, the Transmission Customer shall compensate FG&E for the use of such facilities. In addition to the charges contained in this Tariff, the compensation for such distribution facilities will be determined on a case-by-case basis.

All such charges shall be subject to appropriate regulatory approval.

## ATTACHMENT C

## Methodology To Assess Available Transfer Capability

### 1. Introduction

ISO is the regional transmission organization (RTO) for the New England Control Area. The New England Control Area includes the transmission system located in the states of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont, but does not include the transmission system in northern Maine (i.e., Aroostook and parts of Penobscot and Washington Counties) that is radially connected to New Brunswick and administered by the Northern Maine Independent System Administrator. The New England Control Area is comprised of PTF, non-PTF, OTF, MTF, and is interconnected to three neighboring Balancing Authority Areas ("BAA") with various interface types.

As part of its RTO responsibilities, the ISO is registered with the North American Electric Reliability Corporation ("NERC") as several functional model entities that have responsibilities related to the calculation of ATC as defined in the following NERC Standards: MOD-001 – Available Transmission System Capability ("MOD-001"). MOD-004 – Capacity Benefit Margin ("MOD-004"), and MOD-008 – Transmission Reliability Margin Calculation Methodology ("MOD-008"). The extent of those responsibilities is based on various Commission approved transmission operating agreements and the provisions of the ISO New England Operating Documents.

While the ISO is the Transmission Service Provider for regional transmission service ("Regional Transmission Service") associated with Pool Transmission Facilities, the Participating Transmission Owners ("PTOs") provide local transmission service over Non-Pool Transmission Facilities within the RTOP footprint and are responsible for calculating TTC and ATC associated with Local Transmission Service provided under Schedule 21 pursuant to the Transmission Operating Agreement ("TOA"). Pursuant to CFR § 37.6(b)[1] of the FERC Regulations, Transmission Provider's are obligated to calculate and post TTC and ATC for each Posted Path. The ISO is not responsible for the calculation of these values.

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1 Section §37.6(b) Posting transfer capability. The available transfer capability on the Transmission Provider's system (ATC) and the total transfer capability (TTC) of that system shall be calculated and posted for each Posted Path as set out in this section.

Posted Path is defined as any control area to control area interconnection; any path for which service is denied, curtailed or interrupted for more than 24 hours in the past 12 months; and any path for which a customer requests to have ATC or TTC posted. For this last category, the posting must continue for 180 days and thereafter until 180 days have elapsed from the most recent request for service over the requested path. For purposes of this definition, an hour includes any part of any hour during which service was denied, curtailed or interrupted.[2]

FG&E does not currently have any Posted Paths based on the above definition. However, to the extent that FG&E does in the future have a Posted Path, FG&E will calculate TTC using the NERC Standard MOD-029 – Rated System Path Methodology ("MOD-029") as outlined below.

### 1.1 Scope of Document

The scope of this document is limited to those functions performed by FG&E as the Transmission Service Provider of Schedule 21-FG&E Point-to Point transmission service over Local Facilities pursuant to the PTOs' Transmission Operating Agreement and the ISO OATT:

- Methodology for calculating Total Transfer Capability (TTC)
- Methodology for calculating Available Transfer Capability (ATC)
- Existing Transmission Commitment (ETC)
- Use of Transmission Reliability Margin (TRM)
- Use of Capacity Benefit Margin (CBM)
- Use of Rollover Rights (ROR) in the calculation of ETC

TTC and ATC are required to be calculated only for certain non-PTF internal Posted Paths over which Local Point-to-Point transmission service is provided under Schedule 21-FG&E. TTC and ATC is not calculated by FG&E for Local Network Service because ISO employs a market model for economic, security constrained dispatch of generation, and FG&E does not require advance reservation for such network service.

## 2. Transmission Service in the New England Markets

Since the inception of the OATT for New England, the process by which generation located inside New

2 Section § 37.6(b)(1)(i).

England supplies energy to the bulk electric system has differed from the Commission pro forma OATT. The fundamental difference is that internal generation is dispatched in an economic, security constrained manner by the ISO rather than utilizing a system of physical rights, advance reservations and point-to-point transmission service. Through this process, internal generation provides offers that are utilized by the ISO in the Real-Time Energy Market dispatch software. This process provides the least-cost dispatch to satisfy Real-Time load on the system.

In addition to offers from generation within New England, entities may submit External Transactions to move energy into the New England Control Area, out of the New England Control Area or through the New England Control Area. The Real-Time Energy Market clears these External Transactions based on forecast Locational Marginal Pricing (LMPs) and the transfer capability of the associated external interfaces. With those External Transactions in place, the Real-Time Energy Market dispatches internal generation in an economic, security constrained manner to meet Real-Time load within the region.

The process for submitting External Transactions into the Real-Time Energy Market does not require an advance physical reservation for use of the PTF. In the event that the net of the economic External Transactions is greater than the transfer capability of the associated external interface, the External Transactions selected to flow are selected based on the rules specified in the Tariff. For any External Transactions that are confirmed to flow in Real-Time based on the economics of the system, a transmission reservation for RNS or Through or Out Service is created after-the-fact to satisfy the transparency needs of the market.

The process described above is applicable to the PTF within the ISO Area, and non-PTF Local Facilities where utilized for Local Network Service by generation or load. However, FG&E owns Local Facilities over which an advance transmission service reservation for firm or non-firm transmission service may be required. On those Local Facilities, the market participant may obtain a transmission service reservation from FG&E under Schedule 21-FG&E prior to delivery of energy into the Real-Time Energy Market.[3] This document addresses the calculation of ATC and TTC for these non-PTF internal paths.

## 3. Schedule 21-FG&E Total Transfer Capability (TTC)

The TTC on FG&E's non-PTF Local Facilities that require Point-to-Point transmission service reservations are relatively static values and are calculated using the NERC Standard MOD-029 – Rated

3 See n - 2, 3 and 6, supra.

System Path Methodology. TTC is the amount of electric power that can be moved or transferred reliably from one area to another area of the interconnected transmission systems by way of all transmission lines (or paths) between those areas under specified system conditions. FG&E calculates TTC according to this definition applying the process as described below.

### 3.1 Guidelines and Principles

When estimating TTC, FG&E will apply the following, as amended and/or adopted from time to time

- Good Utility Practice
- NERC criteria and guidelines
- ISO New England criteria, rules and reliability standards
- Northeast Power Coordinating Council (NPCC) criteria and guidelines
- Fitchburg Gas and Electric Light Company guides

### 3.2 Transmission System Model Representation

FG&E will estimate TTC using transmission system load flow models developed for FG&E's system. The models may include representations of other neighboring systems. FG&E will use system models that it deems appropriate for study of the request for firm transmission service. Additional system models and operating conditions, including assumptions specific to a particular analysis, may be developed for conditions not available in the library of load flow cases. The system models may be modified, if necessary, to include additional system information on load, transfers and configuration, as it becomes available.

### 3.3 Contingency Analysis

FG&E will perform, if necessary, power flow and transient stability analysis to ensure that the interface's physical limits will not be violated for credible system contingencies per NERC, NPCC and ISO reliability criteria. TTC, based on contingency analysis, is the incremental transfer capability of the transmission system following the loss of the most critical element while maintaining thermal, and stability performance of the system within acceptable regional practices and consistent with guidelines of Item 3.1 of this Attachment.

### 3.4 Posting TTCs

When necessary, FG&E will estimate TTC as outlined above and post on its website.

## 4. Capacity Benefit Margin (CBM)

CBM is defined as the amount of firm transmission transfer capability set aside by a TSP for use by the Load Serving Entities. The ISO does not set aside any CBM for use by the Load Serving Entities, because of the New England approach to capacity planning requirements in the ISO New England Operating Documents. Load Serving Entities operating within the New England Control Area are required to arrange for their Capacity Requirements prior to the beginning of any given month in accordance with ISO Tariff, Section III.13.7.3.1 (Calculation of Capacity Requirement and Capacity Load Obligation). Load Serving Entities do not utilize CBM to ensure that their capacity needs are met; therefore, CBM is not applicable within the New England market design. Accordingly, for purposes of ATC calculation, CBM for the New England Control Area is set to zero (0).

**Existing Transmission Commitments, Firm ($ETC_F$)**

The $ETC_F$ are those confirmed firm transmission reservations ($PTP_F$) plus any rollover rights for firm transmission reservations ($ROR_F$) that have been exercised. There are no allowances necessary for Native Load forecast commitments ($NL_F$), Network Integration Transmission Service ($NITS_F$), grandfathered Transmission Service ($GF_F$) and other service(s), contract(s) or agreement(s) ($OS_F$) to be considered in the $ETC_F$ calculation.

**Existing Transmission Commitments, Non-Firm($ETC_{NF}$)**

The ($ETC_{NF}$) are those confirmed non-firm transmission reservations ($PTP_{NF}$). There are no allowances necessary for non-firm Network Integration Transmission Service ($NITS_{NF}$), non-firm grandfathered Transmission Service ($GF_{NF}$) or other service(s), contract(s) or agreement(s) ($OS_{NF}$).

## 5. Transmission Reliability Margin (TRM)

TRM is the amount of transmission transfer capability set aside to provide reasonable assurance that the interconnected transmission network will be secure. TRM accounts for the inherent uncertainty in system conditions and the need for operating flexibility to ensure reliable system operation as system conditions change. It is used only for external interfaces under the New England market design. FG&E, under Schedule 21, does not have any external interfaces, and therefore, TRM for FG&E's non-PTF facilities is zero.

## 6. Calculation of ATC for FG&E's Local Facilities

**General Description**

This section defines the ATC calculations performed by FG&E pursuant to MOD-029 for its non-PTF internal interfaces. Consistent with the NERC definition, the equation for Available Transfer Capability is: ATC = (TTC – CBM – TRM – Existing Transmission Commitments + Postbacks + counterflows). As discussed above, the CBM and TRM for the PTF interfaces for which FG&E calculates ATC are zero (0). As consistent with the ISO calculation, the equations for firm and non-firm Available Transfer Capability are:

Firm ATC = (TTC – CBM – TRM – firm ETC)

Non-firm ATC = (TTC – CBM – TRM – firm and non-firm ETC)[4]

As discussed above, the TRM and CBM for FG&E's non-PTF paths are zero. The purpose of the Existing Transmission Commitments ("ETC") component of the ATC equation is for FG&E to reduce the amount of ATC by the amount of existing firm transmission commitments that are not otherwise included in CBM or TRM. There is no requirement to purchase transmission service in advance of flowing energy in Real-Time, and there is no MW amount set aside by FG&E on any interface. One such example is point-to-point service commitments. Point-to-point service commitments sharing common transmission paths would be combined through system modeling to calculate the net existing transmission capacity (ETC) impact. This ETC value is then used in the ATC calculation shown above. Therefore there are no Existing Transmission Commitments to be applied in the ATC equation. For this reason, ETC equals zero (0) for the purposes of ATC calculation. Because Postbacks and counterflows are related to ETC and ETC is zero (0), both Postbacks and counterflows also are equal to zero (0).

As described in Section 2, under Schedule 21-FG&E, FG&E requires the purchase of transmission service in advance of delivery of energy to the New England Wholesale Market over certain non-PTF paths, and those existing transmission commitments would be applied to the ATC equation for the specific posted path. As a practical matter, the ratings of the radial transmission paths are always higher than the transmission requirements of the Transmission Customers connected to that path. As such, transmission services over these posted paths are considered to be always available.

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4 Existing Transmission Commitments ("ETC")

Entities submit their bids and offers to move energy into, out of and through the Energy Market through External Transactions. As Real-Time approaches, the ISO determines which of the submitted External Transactions will be scheduled in the coming hour in accordance with the rules set forth in the ISO New England Operating Documents. Basically, the ATC of the non-PTF assets in the New England market is almost always positive. The ATC is equal to the amount of External Transactions that the ISO will schedule on an interface for the designated hour. With this simplified version of ATC, there is no detailed algorithm to be described or posted other than: ATC equals TTC. Thus, for those non-PTF facilities that serve as a path for the FG&E's Schedule 21-FG&E Point-to-Point Transmission Customers, FG&E would post the ATC as 9999, consistent with industry practice. ATC on these paths varies depending on the time of day. However, it would be posted with an ATC of "9999" to reflect the fact that there are no restrictions on these paths for commercial transactions.

## 6.1 Calculation of Schedule 21-FG&E Firm ATC ($ATC_F$)

### 6.1.1 Calculation of $ATC_F$ in the Planning Horizon (PH)

For purposes of this Attachment C, PH is any period before the Operating Horizon.

Consistent with the NERC definition, $ATC_F$ is the capability for firm transmission reservations that remain after allowing for TRM, CBM, $ETC_F$, $Postbacks_F$ and $counterflows_F$.

As discussed above, TRM and CBM are zero. Firm Transmission Service under Schedule 21-FG&E that is available in the Planning Horizon (PH) includes: Yearly, Monthly, Weekly, and Daily. $Postbacks_F$ and $counterflows_F$ of Schedule 21-FG&E transmission reservations are not considered in the ATC calculation. Therefore, $ATC_F$ in the PH is equal to the TTC minus $ETC_F$

### 6.1.2 Calculation of $ATC_F$ in the Schedule 21-FG&E Operating Horizon (OH)

For purposes of this Attachment C, OH is noon eastern prevailing time each day. At that time, the OH spans from noon through midnight of the next day for a total of 36 hours. As time progresses the total hours remaining in the OH decreases until noon the following day when the OH is once again reset to 36 hours.

Consistent with the NERC definition, $ATC_F$ is the capability for firm transmission reservations that

remain after allowing for $ETC_F$, CBM, TRM, $Postbacks_F$ and $counterflows_F$.

As discussed above, TRM and CBM is zero. Daily firm Transmission Service under Schedule 21-FG&E is the only firm service offered in the Operating Horizon (OH). $Postbacks_F$ and $counterflows_F$ of Schedule 21-FG&E transmission reservations are not considered in the $ATC_F$ calculation. Therefore, $ATC_F$ in the OH is equal to the TTC minus $ETC_F$.

**6.1.3** Because firm Schedule 21-FG&E transmission service is not offered in the Scheduling Horizon (SH): $ATC_F$ in the SH is zero.

## 6.2 Calculation of Schedule 21-FG&E Non-Firm ATC ($ATC_{NF}$)

### 6.2.1 Calculation of $ATC_{NF}$ in the PH

$ATC_{NF}$ is the capability for non-firm transmission reservations that remain after allowing for $ETC_F$, $ETC_{NF}$, scheduled CBM ($CBM_S$), unreleased TRM ($TRM_U$), non-firm Postbacks ($Postbacks_{NF}$) and non-firm counterflows ($counterflows_{NF}$).

As discussed above, the TRM and CBM for Schedule 21-FG&E are zero. Non-firm ATC available in the PH includes: Monthly, Weekly, Daily and Hourly. $TRM_U$, $Postbacks_{NF}$ and $counterflows_{NF}$ of Schedule 21-FG&E transmission reservations are not considered in this calculation. Therefore, $ATC_{NF}$ in the PH is equal to the TTC minus $ETC_F$ and $ETC_{NF}$.

### 6.2.2 Calculation of $ATC_{NF}$ in the OH

$ATC_{NF}$ available in the OH includes: Daily and Hourly.

As discussed above TRM and CBM for Schedule 21-FG&E are zero. $TRM_U$, counterflows and $ETC_{NF}$ are not considered in this calculation. Therefore, $ATC_{NF}$ in the OH is equal to the TTC minus $ETC_F$, plus postbacks of $PTP_F$ in OH as $PTP_{NF}$ ($Postbacks_{NF}$).

## 6.3 Negative ATC

As stated above, the ratings of the radial transmission paths are always higher than the transmission

requirements of the Transmission Customers connected to that path. As such, transmission services over these posted paths are considered to be always available.

As stated above, FG&E's non-PTF facilities are primarily radial paths that provide transmission service to directly interconnected generators. It is possible, in the future, that a particular radial path may interconnect more nameplate capacity generation than the path's TTC. However, due to the ISO's security constrained dispatch methodology, the ISO will only dispatch an amount of generation interconnected to such path so as not to incur a reliability or stability violation on the subject path. Therefore, ATC in the PH, OH and SH may become zero, but will not become negative.

**ATC Process Flow Diagram for Non-PTF Interfaces**

The process flow diagram illustrates the steps through which ATC is calculated both on an operating and planning horizon.

## 7. Posting of Schedule 21-FG&E ATC

### 7.1 Location of ATC Posting.

When necessary, FG&E will estimate ATC values for these internal paths as outlined above and post on its website, http://www.unitil.net/nepool/ma/pdf/atc_cbm_ttc_trm_fge.pdf.

### 7.2 Updates To ATC

When any of the variables in the ATC equations change, the ATC values are recalculated and immediately posted.

### 7.3 Coordination of ATC Calculations

Schedule 21-FG&E non-PTF has no external interfaces. Therefore it is not necessary to coordinate the values.

### 7.4 Mathematical Algorithms

A link to the actual mathematical algorithm for the calculation of ATC for FG&E's non-PTF internal interfaces is located at http://www.unitil.com/sites/default/files/pdfs/fge_atc_algorithms_3_11.pdf.

## ATTACHMENT D

## Methodology for Completing a System Impact Study

FG&E will perform System Impact Studies for the purpose of determining the feasibility of integrating Network Load and Network Resources into FG&E's Local Network under Schedule 21 of the OATT, or for the purpose of determining the feasibility of providing Local Point-To-Point Service under this Tariff. All System Impact Studies will be completed using the same method employed by FG&E to integrate into FG&E's Local Network (i) generation resources owned or acquired to serve its Native Load Customers, and (ii) its Native Load Customers' load. Specifically, System Impact Studies will be performed by applying the applicable criteria, rules, standards and operating procedures. In addition to applying the applicable criteria, rules, standards and operating procedures, to determine the feasibility of providing service to Network Load and/or Local Point-To-Point Service, System Impact Studies will also be performed by applying Unitil Service Corp.'s "Electric System Planning Guide".

**ATTACHMENT E**

**Index Of Local Point-To-Point Service Customers**

| Customer | Date of Service Agreement |
|---|---|
| Fitchburg Gas and Electric Light Company | September 10, 1996 |
| Pinetree Power Fitchburg Inc. | March 9, 1999 |

**ATTACHMENT H**

**Annual Transmission Revenue Requirement For Local Network Service**

The Transmission Revenue Requirement for FG&E will reflect FG&E's costs with respect to transmission facilities not related to PTF ("Non PTF"). Except as provided below for the transitional implementation of this formula rate, the Transmission Revenue Requirement will be an annual calculation, effective June 1, based on the previous year's calendar data as reported in FG&E's FERC Form 1 report for that year, or other reasonable documentation, using end-of-year balances for each rate base item, as set forth below. The initial Transmission Revenue Requirement shall be effective October 1, 2003 through May 31, 2004 based on calendar year 2002 data as adjusted, as approved by the Commission. Further, the Transmission Revenue Requirement to be effective June 1, 2004, based on calendar year 2003 data, shall include an adjustment to annualize the impact on 2003 depreciation expense of revised depreciation rates effective October 1, 2003, as approved by the Commission. Depreciation expense shall be calculated according to Appendix A of this attachment, as approved by the Commission.

Beginning July 31, 2004, FG&E shall make an annual informational filing on or before July 31 of each year showing the Transmission Revenue Requirement in effect for the period beginning June 1 of that year through May 31 of the subsequent year. If there are corrections made to the information reflected in the informational filing after it has been submitted, FG&E will file corrections to the informational filing.

I. FORMULA

A. The Transmission Revenue Requirement for FG&E's Non-PTF shall equal the sum of the following: (A) Non-PTF Return and Associated Income Taxes, plus (B) Non-PTF Depreciation Expense, plus (C) Non-PTF Amortization of Intangible Plant and Other Regulatory Assets/Liabilities, plus (D) Non-PTF Amortization of Rate Case Expense, plus (E) Non-PTF Amortization of Loss on Reacquired Debt, minus (F) Non-PTF Amortization of Investment Tax Credits, plus (G) Non-PTF Property Tax Expense, plus (H) Non-PTF Payroll Tax Expense, plus (I) Non-PTF Transmission Operation and Maintenance Expense, plus (J) Non-PTF Customer Accounting Bad Debts Expense, plus (K) Non-PTF Administrative and General Expense, plus (L) Non-PTF Transmission Related Taxes and Fees Charge, minus (M) Non-PTF Transmission Rents Received from Electric Property, minus (N) Non-PTF Revenue for Through or Out Service.

B. Each of the components of A. above shall be calculated by subtracting the related PTF costs and revenues from the same calendar year, as included in ISO-NE's OATT, from the total transmission costs and revenues as described in Section III. Support Expense included in PTF shall only be included in this computation to the extent these costs are included in the determination of total transmission costs.

## II. DEFINITIONS

### A. ALLOCATION FACTORS

1. Transmission Wages and Salaries Allocation Factor shall equal the ratio of Transmission–related direct wages and salaries to FG&E's total direct wages and salaries, excluding administrative and general wages and salaries.
2. Transmission Plant Allocation Factor shall equal the ratio of the sum of (1) Transmission Plant, (2) Transmission Related Intangible Plant, (3) Transmission Related General Plant, and (4) Transmission Related Common Plant, to Total Plant in Service.
3. Transmission Revenue Allocation Factor shall equal the ratio of Total Internal Transmission Revenue to Total Billed Revenue from Sales to Ultimate Customers.

### B. TERMS

Administrative and General Expense shall equal FG&E's expenses as recorded in FERC Account Nos. 920-935, excluding FERC Account Nos. 924, 928 and 930.1.

Amortization of Intangible Plant and Common Plant shall equal FG&E's expenses related to Intangible Plant and Common Plant as recorded in FERC Account No. 404.

Amortization of Investment Tax Credits shall equal FG&E's credits as recorded in FERC Account No. 411.4.

Amortization of Loss on Reacquired Debt shall equal FG&E's expenses as recorded in FERC Account No. 428.1.

Amortization of Other Regulatory Assets/Liabilities-FAS 109 shall equal FG&E's expenses related to Other Regulatory Assets/Liabilities–FAS 109 as recorded in FERC Account No. 407.

Amortization of Rate Case Expenses shall equal FG&E's expenses related to the deferred costs of regulatory rate proceedings related to transmission service as approved by FERC and as recorded in FERC Account No. 407.

Common Plant shall equal FG&E's gross balance of the plant common to both electric and gas operations as recorded in FERC Account Nos. 303, 310, 389-399, excluding capital leases.

Common Plant Amortization Reserve shall equal FG&E's Common Plant reserve balances as recorded in FERC Account No. 111.

Common Plant Depreciation Expense shall equal FG&E's Common Plant expenses as recorded in FERC Account No. 403.

Common Plant Depreciation Reserve shall equal FG&E's Common Plant reserve balance as recorded in FERC Account No. 108.

Customer Accounting Bad Debts Expense shall equal FG&E's expenses as recorded in FERC Account No. 904.

General Plant shall equal FG&E's gross plant balance as recorded in FERC Account Nos. 389-399.

General Plant Depreciation Expense shall equal FG&E's General Plant expenses as recorded in FERC Account No. 403.

General Plant Depreciation Reserve shall equal FG&E's General Plant reserve balance as recorded in FERC Account No. 108.

Intangible Plant shall equal FG&E's gross plant balance as recorded in FERC Account No. 303 (consisting of investments in computer systems and software).

Intangible Plant Amortization Reserve shall equal FG&E's Intangible Plant reserve balance as recorded in FERC Account No. 111.

Other Regulatory Assets/Liabilities–FAS 106 shall equal the net of FG&E's FAS 106 balance as recorded in FERC Account No. 182.3 and any FAS 106 balance as recorded in FG&E's FERC Account No. 254.

Other Regulatory Assets/Liabilities–FAS 109 shall equal the net of FG&E's FAS 109 balance as recorded in FERC Account No. 182.3 and any FAS 109 balance as recorded in FG&E's FERC Account No. 254.

Payroll Tax Expense shall equal those payroll tax expenses as recorded in FG&E's FERC Account Nos. 408.1 and 409.1.

Plant Held for Future Use shall equal FG&E's balance in FERC Account No. 105.

Prepayments shall equal FG&E's electric prepayment balance as recorded in FERC Account No. 165. The electric portion shall be determined by multiplying the balance in FERC Account No. 165 by the ratio of electric utility plant to total utility plant as reported in FG&E's FERC Form 1.

Property Insurance Expense shall equal FG&E's expenses as recorded in FERC Account No. 924.

Property Tax Expense shall equal FG&E's property tax expenses as recorded in FERC Account Nos. 408.1 and 409.1.

Support Expense shall equal Transmission Support Expense as defined in the OATT Attachment F.

Total Accumulated Deferred Income Taxes shall equal the net of the deferred tax balances as recorded in FERC Account Nos. 281-283 and FERC Account No. 190.

Total Billed Revenue from Sales to Ultimate Customers shall equal FG&E's total electric service revenues as recorded in FERC Account Nos. 440, 442, 444, 445, 446, 448, and 449.

Total Internal Transmission Revenue shall equal FG&E's internal transmission revenues as recorded in FERC Account Nos. 440, 442, 444, 445, 446, 448 and 449.

Total Loss on Reacquired Debt shall equal FG&E's expenses as recorded in FERC Account No. 189.

Total Plant in Service shall equal FG&E's total electric gross plant balance as recorded in FERC Account

Nos. 301-399 (inclusive of electric Common Plant).

Transmission Operation and Maintenance Expense shall equal FG&E's electric expenses as recorded in FERC Account Nos. 560-564 and 566-576.5 and shall exclude expenses already included in PTF Transmission Support Expense, costs billed to Select Energy, Inc. under a generation related entitlement sales agreement and Account Nos. 561.4 and 575.7.

Transmission Plant shall equal FG&E's gross plant balance as recorded in FERC Account Nos. 350-359 excluding joint owned unit costs.

Transmission Plant Depreciation Expense shall equal FG&E's Transmission Plant expenses as recorded in FERC Account No. 403 less joint owned unit costs.

Transmission Plant Depreciation Reserve shall equal FG&E's Transmission Plant reserve balance as recorded in FERC Account 108 less joint owned unit reserves.

Transmission Plant Held for Future Use shall equal the transmission-related balance of electric Plant Held for Future Use.

Transmission Plant Materials and Supplies shall equal FG&E's balance as assigned to transmission, as recorded in FERC Account No. 154.

Transmission Prepayments shall equal FG&E's Prepayments multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Accumulated Deferred Income Taxes shall equal FG&E's electric balance of Total Accumulated Deferred Income Taxes multiplied by the Transmission Plant Allocation Factor.

Transmission Related Administrative and General Expense shall equal the sum of (1) electric Administrative and General Expenses multiplied by the Transmission Wages and Salaries Allocation Factor, plus (2) electric Property Insurance Expense reduced by amounts billed to Select Energy Inc. under a generation related entitlement sales agreement and multiplied by the Transmission Plant Allocation Factor, plus (3) electric expenses included in FERC Account No. 928 related to FERC fees and assessments, plus (4) any other electric transmission related expenses included in FERC Account No. 928

plus (5) specific electric transmission related expenses included in FERC Account No. 930.1 and minus (6) any Administrative and General Expense amounts billed to Select Energy Inc. and not already deducted elsewhere, multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Amortization of Intangible Plant and Other Regulatory Assets/Liabilities shall equal the sum of (1) electric Amortization of Intangible Plant and Common Plant multiplied by the Transmission Wages and Salaries Allocation Factor and (2) electric Amortization of Other Regulatory Assets/Liabilities-FAS 109 multiplied by the Transmission Plant Allocation Factor. This component shall include additional regulatory assets/liabilities as established by regulatory authority and relevant to transmission services.

Transmission Related Amortization of Investment Tax Credits shall equal FG&E's electric Amortization of Investment Tax Credits multiplied by the Transmission Plant Allocation Factor.

Transmission Related Amortization of Loss on Reacquired Debt shall equal FG&E's electric Amortization of Loss on Reacquired Debt multiplied by the Transmission Plant Allocation Factor.

Transmission Related Cash Working Capital shall be 12.5% allowance (45 days/360 days) of the sum of Transmission Operation and Maintenance Expense, plus Transmission Related Customer Accounting Bad Debts Expense and plus Transmission Related Administrative and General Expense.

Transmission Related Common Plant shall equal FG&E's electric Common Plant multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Customer Accounting Bad Debts Expense shall equal FG&E's electric Customer Accounting Bad Debts Expense multiplied by the Transmission Revenue Allocation Factor.

Transmission Related Depreciation & Amortization Reserve shall equal the sum of (1) Transmission Plant Depreciation Reserve plus (2) electric Intangible Plant and electric Common Plant Amortization Reserves multiplied by the Transmission Wages and Salaries Allocation Factor and (3) electric General Plant and electric Common Plant Depreciation Reserves multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Depreciation Expense shall equal the sum of (1) Transmission Plant Depreciation

Expense, (2) electric General Plant Depreciation Expense multiplied by the Transmission Wages and Salaries Allocation Factor and (3) electric Common Plant Depreciation Expense multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related General Plant shall equal FG&E's electric General Plant multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Intangible Plant shall equal FG&E's electric Intangible Plant multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Loss on Reacquired Debt shall equal FG&E's electric balance of Total Loss on Reacquired Debt multiplied by the Transmission Plant Allocation Factor.

Transmission Related Other Regulatory Assets/Liabilities shall equal the sum of (1) FG&E's electric balance of Other Regulatory Assets/Liabilities-FAS 106 multiplied by the Transmission Wages and Salaries Allocation Factor, and (2) FG&E's electric balance of Other Regulatory Assets/Liabilities-FAS 109 multiplied by the Transmission Plant Allocation Factor. This component shall include additional regulatory assets/liabilities as established by regulatory authority and relevant to transmission services.

Transmission Related Payroll Tax shall equal FG&E's electric Payroll Tax Expense multiplied by the Transmission Wages and Salaries Allocation Factor.

Transmission Related Property Tax shall equal FG&E's electric Property Tax Expense, reduced by amounts billed to Select Energy, Inc. under a generation related entitlement sales agreement, multiplied by the Transmission Plant Allocation Factor.

## III. CALCULATION OF TRANSMISSION REVENUE REQUIREMENT

This section describes the calculation of the components of the Transmission Revenue Requirement for FG&E's Non-PTF as provided in Section I.

A. Non-PTF Return and Associated Income Taxes shall equal the product of the Total Internal Transmission Investment Base and the Cost of Capital Rate, reduced by the amount recovered as PTF. For purposes of this computation, the PTF amount shall be calculated using the Cost of Capital Rate

defined in III.A.2 below.

1. Total Internal Transmission Investment Base

The Total Internal Transmission Investment Base shall be the sum of the year end balances of the following items as defined in Section II.: (a) Transmission Plant, plus (b) Transmission Related Intangible Plant, plus (c) Transmission Related General Plant, plus (d) Transmission Related Common Plant, plus (e) Transmission Plant Held for Future Use, minus (f) Transmission Related Depreciation & Amortization Reserve, minus (g) Transmission Related Accumulated Deferred Income Taxes, plus (h) Transmission Related Loss on Reacquired Debt, plus (i) Transmission Related Other Regulatory Assets/Liabilities, plus (j) Transmission Prepayments, plus (k) Transmission Plant Materials and Supplies, plus (l) Transmission Related Cash Working Capital.

2. Cost of Capital Rate

The Cost of Capital Rate will equal (a) FG&E's Weighted Cost of Capital, plus (b) Federal Income Tax plus (c) State Income Tax.

(a) The Weighted Cost of Capital will be calculated based upon the capital structure at the end of each year and will equal the sum of:

(i) the long-term debt component, which equals the product of the actual weighted average embedded cost to maturity of FG&E's long-term debt then outstanding and the ratio that long-term debt is to FG&E's total capital.

(ii) the preferred stock component, which equals the product of the actual weighted average embedded cost to maturity of FG&E's preferred stock then outstanding and the ratio that preferred stock is to FG&E's total capital.

(iii) the return on equity component, which equals the product of the cost of equity of 10.57% and the ratio that common equity is to FG&E's total capital.

(b) Federal Income Tax shall equal

$$\frac{(A+[(C+B)/])x\ FT}{1-FT}$$

Where FT is the Federal Income Tax Rate; A is the sum of the preferred stock component and the return on equity component, as determined in Sections III.A.2.(a)(ii) and (iii) above; B is Transmission Related Amortization of Investment Tax Credits, as defined in Section II above, C is the equity AFUDC

component of Transmission Related Depreciation Expense, as defined in Section II above, and D is Total Internal Transmission Investment Base, as determined in Section III.A.1., above.

(c) State Income Tax shall equal

$$\frac{(A+[(C+B)/D] + \text{Federal Income Tax}) \times ST}{1-ST}$$

Where ST is the State Income Tax Rate; A is the sum of the preferred stock component and return on equity component as determined in Sections III.A.2. (a)(ii) and (iii) above; B is the Transmission Related Amortization of Investment Tax Credits as defined in Section II. above; C is the equity AFUDC component of Transmission Related Depreciation Expense, as defined in Section II above; D is the Total Internal Transmission Investment Base, as determined in Section III.A.1. above; and Federal Income Tax is the rate determined in Section III.A.2.(b) above.

B. Non-PTF Depreciation Expense shall equal FG&E's Transmission Related Depreciation Expense reduced by the amount recovered as PTF.

C. Non-PTF Amortization of Intangible Plant and Other Regulatory Assets/Liabilities shall equal FG&E's Transmission Related Amortization of Intangible Plant and Other Regulatory Assets/Liabilities reduced by the amount recovered as PTF.

D. Non-PTF Amortization of Rate Case Expenses shall equal the Amortization of Rate Case Expenses reduced by the amount recovered as PTF.

E. Non-PTF Amortization of Loss on Reacquired Debt shall equal FG&E's Transmission Related Amortization of Loss on Reacquired Debt reduced by the amount recovered as PTF.

F. Non-PTF Amortization of Investment Tax Credits shall equal FG&E's Transmission Related Amortization of Investment Tax Credits reduced by the amount recovered as PTF.

G. Non-PTF Property Tax Expense shall equal FG&E's Transmission Related Property Tax Expense reduced by the amount recovered as PTF.

H. Non-PTF Payroll Tax Expense shall equal FG&E's Transmission Related Payroll Tax Expense

reduced by the amount recovered as PTF.

I. Non-PTF Transmission Operation and Maintenance Expense shall equal Transmission Operation and Maintenance Expenses reduced by the amount recovered as PTF.

J. Non-PTF Customer Accounting Bad Debts Expense shall equal the Transmission Related Customer Accounting Bad Debts Expense reduced by the amount recovered as PTF.

K. Non-PTF Administrative and General Expenses shall equal the Transmission Related Administrative and General Expenses reduced by the amount recovered as PTF.

L. Non-PTF Transmission Related Taxes and Fees Charge shall include any fee or assessment imposed by any governmental authority on service provided hereunder which is not specifically identified under any other section. This amount shall be reduced by the amount recovered as PTF.

M. Non-PTF Transmission Rents Received from Electric Property shall equal any amount in FERC Account No. 454, Rents from Electric Property, associated with Transmission Plant. This amount shall be reduced by the amount recovered as PTF.

N. Non-PTF Revenue for Through or Out Service shall equal distributions received by FG&E from ISO out of revenues paid for Through or Out Service (as defined in the OATT), pursuant to Section II.12.2(d) of the Tariff.

Appendix A

PTF and non-PTF Depreciation Rates

| Account | Description | Depreciation Rates (%) Eff. March 1, 2020 | Depreciation Rates (%) Eff. November 1, 2020~~May 1,~~ |
|---|---|---|---|
| Transmission Plant | | | |
| 351.00 | Clearing Land and Rights of Way | 1.27 | 1.27 |
| 352.00 | Structures and Improvements | 2.12 | 2.12 |
| 353.00 | Station Equipment | 3.92 | 3.92 |
| 355.00 | Poles and Fixtures | 6.13 | 6.13 |
| 356.00 | Overhead Conductors and Devices | 3.51 | 3.51 |
| General Plant | | | |
| 394.00 | Tools, Shop and Garage Equipment | 3.22 | 4.00~~3.22~~ |
| 395.00 | Laboratory Equipment | 4.03 | 5.00~~4.03~~ |
| 397.00 | Communication Equipment | 2.64 | 6.67~~2.64~~ |
| 398.00 | Miscellaneous Equipment | 3.56 | 5.00~~3.56~~ |
| Common Plant | | | |
| 390.00 | Structures and Improvements | 1.98 | 1.98~~2.64~~ |
| 391.00 | Office Furniture and Equipment | 6.67 | 6.67~~4.59~~ |
| 393.00 | Stores Equipment | 4.00 | 4.00~~2.36~~ |
| 394.00 | Tools, Shop and Garage Equipment | 5.00 | 5.00~~2.76~~ |
| 396.00 | Power Operated Equipment | 0.16 | 0.16~~1.63~~ |
| 397.00 | Communication Equipment | 6.67 | 6.67~~10.02~~ |
| 398.00 | Miscellaneous Equipment | 5.00 | 5.00~~N/A~~ |

**ATTACHMENT I**

**Index Of Local Network Service Customers**

| Customer | Date of Service Agreement |
| --- | --- |
| Fitchburg Gas and Electric Light Company | September 10, 1997 |
| Massachusetts Bay Transportation Company | April 17, 2000 |

## Attachment L

## Creditworthiness Policy

### 1. Introduction

This guide establishes creditworthiness standards for transmission service and/or interconnection service customers ("Customers") entering into new or amended service agreements with Fitchburg Gas and Electric Light Company ("FG&E") under the ISO New England Open Access Transmission Tariff ("ISO-NE OATT").[5] In accordance with the Federal Energy Regulatory Commission's Policy Statement on Credit-Related Issues for Electric OATT Transmission Providers, Independent System Operators and Regional Transmission Organizations ("Policy Statement"), this Creditworthiness Policy is intended to make FG&E's credit-related practices more transparent and comprehensive. The following describes FG&E credit review procedures and the types of security that are acceptable to FG&E to protect against the risk of non-payment.

### 2. Creditworthiness

FG&E will evaluate the creditworthiness of Customers entering into new or amended transmission or interconnection service agreements with FG&E in order to assess a Customer's credit risk relative to the exposure of "Total Outstanding Obligation" as defined in Section 2.1 below, created by the transaction or transactions that FG&E has with the Customer. For purposes of determining the ability of a Customer to meet its obligations, FG&E may require the Customer to submit financial information for the credit review, including credit ratings, credit reports and audited financial statements for the last five years, including audited quarterly reports for the prior two years, if available. Further, the Customer will be expected to provide calculations of the following: Current Total Capitalization Ratio, Including Short-Term Debt; Tangible Net Worth for a period within sixty days of a Customer's request; Earnings Before Interest, Taxes, Depreciation and Amortization for twelve of the last fifteen consecutive months; and additional calculations and other information deemed necessary for the evaluation credit. In completing its evaluation, FG&E may consider other factors including but not limited to past billing history or the characteristics of service being requested.

### 2.1 Total Outstanding Obligation

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5 *See* ISO New England Inc., ISO New England Inc. Transmission, Markets and Services Tariff, Section II. This policy is applicable to transmission or interconnection service agreements established from time-to-time under Schedules 21 - FG&E of the ISO-NE OATT and to individually negotiated agreements for similar transmission or interconnection services.

The Customer's Total Outstanding Obligation to FG&E will be the sum total of the following components:

2.1.1 If the Customer is making payments to FG&E for ongoing expenses (including, but not limited to, O&M expenses related to interconnections or other monthly charges such as monthly transmission charges under Schedule 21 – FG&E) the Customer will be required to provide security pursuant to Section 2.2 below, for four months' worth of the Customer's average payment obligation for such charges.

2.1.2 In accordance with the provisions of the ISO-NE OATT, a Customer will pay a Contribution in Aid of Construction ("CIAC") or transfer ownership of facilities to FG&E for transmission or interconnection facilities that are to be constructed on behalf of a Customer at the Customer's sole expense. If FG&E determines in good faith that the receipt of CIAC payments or property from the Customer are non-taxable, FG&E will require a form of security from the customer pursuant to Section 2.2 below for the amount of the potential tax liability to FG&E that would occur if such facilities were deemed taxable.

2.1.3 In accordance with the provisions of Schedule 21 – FG&E to the ISO-NE OATT, a Customer will pay a formula rate over time for return of and on the cost of capital incurred by FG&E on behalf of a Customer at the Customer's sole expense. The Customer will also be required to provide security pursuant to Section 2.2 below, for the unamortized balance of plant in service reserved for the sole use of the Customer.

**2.2 Creditworthiness Requirements**

A Customer will be considered creditworthy upon satisfying at least one of the following conditions or a combination of those conditions at the time that the customer enters into a transmission or interconnection service agreement and for so long as the Customer maintains satisfaction of at least one of these conditions for any outstanding obligations thereunder:

2.2.1 The Customer maintains a minimum credit rating from Standard & Poor's Long-term Issuer Credit Rating of BBB- or better or Moody's Investors Service Long-term Issuer Credit Rating of Baa3 or better so long as the Customer's Total Outstanding Obligation plus any other unsecured obligations with FG&E does not exceed the Credit Limits discussed in Section 4 below. When FG&E reviews a Customer's rating from two or more rating agencies and a split

rating is present, the lower debt rating will apply. In the event that the Customer has no rating from either Standard & Poor's or Moody's Investors Service, a rating from Fitch may also be used with acceptable ratings equivalent to those from either Standard and Poor's or Moody's Investors Service. If unrated, the Customer's financial statements will be reviewed to determine an equivalent rating based on the Customer's unsecured credit limits and/or financial statements.

If, at any time, the Customer's rating falls below investment grade (BBB- from Standard and Poor's and/or Baa3 from Moody's or equivalent ratings from Fitch), the Customer will be required to (i) notify FG&E within 10 days and, (ii) within 30 days, provide another form of security reasonably acceptable to FG&E, as described in this Section 2.2.

2.2.2 The Customer provides and maintains in effect during the term of and until full and final payment and performance of the service agreement an unconditional and irrevocable standby letter of credit for the Total Outstanding Obligation in the form and substance and issued by a bank reasonably acceptable to FG&E. A draft, acceptable form letter of credit is attached. Any such bank must satisfy the creditworthiness criteria described in 2.2.1 above.

If, at any time, the bank's rating falls below investment grade (BBB- from Standard and Poor's and/or Baa3 from Moody's or equivalent ratings from Fitch), the Customer will be required to (i) notify FG&E within 10 days and, (ii) within 30 days, provide another form of security reasonably acceptable to FG&E, as described in this Section 2.2.

2.2.3 If the Customer's parent or an affiliate company satisfies the creditworthiness criteria described in 2.2.1 above and, subject to the Credit Limits stated in Section 4 below, such company submits to FG&E and maintains in effect a letter of guaranty reasonably acceptable to FG&E as to amount, form and substance for the term of and until full and final payment and performance of the service agreement.

If, at any time, the credit rating of the Customer's parent or affiliate providing the guaranty falls below investment grade (BBB- from Standard and Poor's and/or Baa3 from Moody's or equivalent ratings from Fitch), the Customer will be required to (i) notify FG&E within 10 days and, (ii) within 30 days, provide another form of security reasonably acceptable to FG&E, as described in this Section 2.

2.2.4 The Customer makes an advance payment to FG&E in immediately available funds for the Total Outstanding Obligation.

**3. Customer Costs Requiring Prepayment**

In accordance with the provisions of the ISO-NE OATT, a Customer will pay a Contribution in Aid of Construction ("CIAC") for transmission or interconnection facilities to be constructed by FG&E on behalf of a Customer at the Customer's sole expense. The Customer will have the option to (i) prepay the CIAC in immediately available funds to FG&E, or (ii) make periodic CIAC progress payments, as defined in the Customer's service agreement, to prepay in increments capital costs scheduled to be incurred by FG&E. If FG&E determines in good faith that such payments or property transfers made by the Customer should be reported as income subject to taxation, the Customer shall also prepay all costs associated with the cost consequences of the current tax liability imposed on FG&E by those facilities (the "Tax Gross- up").

**4. Determination of Credit Limits**

FG&E reserves the right to limit the total amount of unsecured credit extended to a Customer under 2.2.1 and 2.2.3 above such that the sum of all unsecured credit that such Customer has with FG&E, including the Total Outstanding Obligation, shall not exceed the Credit Limits defined below. Such limitations are based on an assessment of the Customer's or its Guarantor's credit rating and the net worth of the Customer's or its Guarantor's assets.

| Standard and Poor's (or Equivalent) Rating | Unsecured Credit Limit as Percent of Customer's or Guarantor's Tangible Net Worth |
|---|---|
| A and above | 1.0% |
| A- | 0.5% |
| BBB+ | 0.3% |
| BBB | 0.2% |
| BBB- | 0.1% |

Once FG&E has evaluated or reevaluated and determined the maximum Credit limits for each Customer, it will inform the prospective Customer of the amount of such credit limits. A customer may request in writing a reevaluation of the maximum Credit limits, within 14 days from the date that they were informed by FG&E of such limits. Justification for such a reevaluation should be contained in the

request.  All requests for reevaluation must be submitted directly to the FG&E Contract Administrator.

From time to time, principally due to unknown factors such as changing market, economic, banking or other financial conditions, but not solely limited to these factors, FG&E may find it necessary to modify or amend its creditworthiness policies and guidelines after a 15 day notice period and require that present and future Transmission Customers fulfill any additional conditions contained in the modified Creditworthiness Guide.  Transmission Customers will have 30 days after the notice period to cure any deficiency.

FORM LETTER OF CREDIT

_____ Bank

_____

(address)

IRREVOCABLE STANDBY LETTER OF CREDIT

DATE: _____

AMOUNT U.S. $_____

_____

FOR INTERNAL IDENTIFICATION PURPOSES ONLY

_____

Our Number:

Beneficiary: Applicant:

_____ _____

_____ _____

_____ _____

_____ _____

Attn: At the request of:

_____

Ref:_____

LADIES AND GENTLEMEN;

WE HEREBY ESTABLISH THIS IRREVOCABLE, AND UNCONDITIONAL, EXCEPT AS STATED HEREIN, LETTER OF CREDIT NUMBER _____ (LETTER OF CREDIT), BY ORDER OF, FOR THE ACCOUNT OF, AND ON BEHALF OF [CUSTOMER NAME] (ACCOUNT PARTY) IN FAVOR OF FITCHBURG GAS AND ELECTRIC LIGHT COMPANY (BENEFICIARY) FOR DRAWINGS, IN ONE OF MORE DRAFTS, UP TO AN AGGREGATE AMOUNT NOT EXCEEDING U.S. $_____ EFFECTIVE IMMEDIATELY. THE TERM 'BENEFICIARY' INCLUDES ANY SUCCESSOR OF THE NAMED BENEFICIARY.

THIS LETTER OF CREDIT CANNOT BE AMENDED, MODIFIED OR REVOKED WITHOUT THE PRIOR WRITTEN CONSENT OF BOTH THE BANK AND THE BENEFICIARY. THE BENEFICIARY SHALL NOT BE DEEMED TO HAVE WAIVED ANY RIGHTS UNDER THIS LETTER OF CREDIT, UNLESS AN OFFICER OF THE BENEFICIARY SHALL HAVE SIGNED A WRITTEN WAIVER EXPRESSLY REFERENCING THE RIGHT TO BE WAIVED. NO SUCH WAIVER SHALL BE EFFECTIVE AS TO ANY TRANSACTION THAT OCCURS SUBSEQUENT TO THE DATE OF THE WAIVER, NOT AS TO ANY CONTINUANCE OF A BREACH AFTER THE WAIVER.

WE HEREBY UNDERTAKE TO PROMPTLY HONOR YOUR DRAFT(S) DRAWN ON US, INDICATING OUR LETTER OF CREDIT NUMBER _____ IS ISSUED, PRESENTABLE AND PAYABLE AND WE GUARANTY TO THE DRAWERS, ENDORSERS, AND BONA FIDE HOLDERS OF THIS LETTER OF CREDIT, THAT DRAFTS UNDER AND IN COMPLIANCE WITH THE TERMS OF THIS LETTER OF CREDIT WILL BE HONORED. THIS LETTER OF CREDIT MAY NOT BE TRANSFERRED OR ASSIGNED BY US.

SUBJECT TO THE EXPRESS TERMS AND CONDITIONS HEREIN, FUNDS UNDER THIS LETTER OF CREDIT ARE AVAILABLE TO YOU BY PRESENTATION AT OUR OFFICES LOCATED AT [_____] OF BENEFICIARY'S DRAWING CERTIFICATE ISSUED SUBSTANTIALLY IN THE FORM OF ANNEX 1 ATTACHED HERETO AND WHICH FORMS AN INTEGRAL PART HEREOF, DULY COMPLETED AND PURPORTEDLY BEARING THE ORIGINAL SIGNATURE OF AN OFFICER OF THE BENEFICIARY. PRRESENTATION OF ANY DRAWING CERTIFICATE UNDER THIS LETTER OF CREDIT MAY BE MADE IN PERSON TO

US OR MAY BE SENT TO US BY TELEX TO [_____] OR BY FACSIMILE TRANSMISSION TO FACSIMILE TELEPHONE NUMBER [_____].

ALL COMMISSIONS AND CHARGES WILL BE BORNE BY THE ACCOUNT PARTY. IF DOCUMENTS, IN COMPLIANCE WITH THE TERMS OF THIS LETTER OF CREDIT, ARE RECEIVED BEFORE 10:00 AM (EASTERN TIME) ON A BUSINESS DAY, PAYMENT WILL BE EFFECTED ON OR BEFORE 5:00 PM (EASTERN TIME) ON THE NEXT BUSINESS DAY. IF DOCUMENTS, IN COMPLIANCE WITH THE TERMS OF THIS LETTER OF CREDIT ARE RECEIVED AFTER 10:00 AM ON A BUSINESS DAY, PAYMENT WILL BE EFFECTED ON OR BEFORE 5:00 PM ON THE SECOND BUSINESS DAY FOLLOWING SUCH DATE OF RECEIPT.

EXCEPT AS EXPRESSLY STATED HEREIN, THIS UNDERTAKING IS NOT SUBJECT TO ANY AGREEMENT, CONDITION OR QUALIFICATION. THIS LETTER OF CREDIT DOES NOT INCORPORATE, AND SHALL NOT BE DEEMED MODIFIED OR AMENDED BY REFERENCE TO ANY DOCUMENT, INSTRUMENT OR AGREEMENT (A) THAT IS REFERRED TO HEREIN (EXCEPT FOR THE UNIFORM CUSTOMS, AS DEFINED BELOW), OR (B) IN WHICH THIS LETTER OF CREDIT IS REFERRED TO OR TO WHICH THIS LETTER OF CREDIT RELATES.

OUR OBLIGATION UNDER THIS LETTER OF CREDIT SHALL BE OUR INDIVIDUAL OBLIGATION AND IS IN NO WAY CONTINGENT UPON THE REIMBURSEMENT WITH RESPECT THERETO, OR UPON OUR ABILITY TO PERFECT ANY LIEN, SECURITY INTEREST OR ANY OTHER REIMBURSEMENT.

THIS LETTER OF CREDIT EXPIRES WITH OUR CLOSE OF BUSINESS ON [364 days from effective date]; HOWEVER, IT IS A CONDITION OF THIS LETTER OF CREDIT THAT IT SHALL BE DEEMED AUTOMATICALLY EXTENDED WITHOUT AMENDMENT FOR 364 DAYS FROM THE PRESENT OR ANY FUTURE EXPIRATION DATE HEREOF, UNLESS AT LEAST SIXTY (60) DAYS BEFORE ANY SUCH EXPIRATION DATE WE NOTIFY YOU BY REGISTERED MAIL ADDRESSED TO: [address of beneficiary, ATTN: _____], THAT WE ELECT NOT TO RENEW THIS LETTER FOR SUCH ADDITIONAL PERIOD.

THIS LETTER OF CREDIT IS SUBJECT TO THE UNIFORM CUSTOMS AND PRACTICE FOR DOCUMENTARY CREDITS (1993 REVISION) INTERNATIONAL CHAMBER OF COMMERCE, PUBLICATION NO. 500. IF THIS LETTER OF CREDIT EXPIRES DURING THE INTERRUPTION

OF BUSINESS AS DESCRIBED IN ARTICLE 17 THEREOF WE HEREBY SPECIFICALLY AGREE TO EFFECT PAYMENT IF THE LETTER OF CREDIT IS DRAWN AGAINST WITHIN 30 DAYS AFTER THE RESUMPTION OF BUSINESS.

ANNEX 1 TO [BANKNAME]
IRREVOCABLE LETTER OF CREDIT NO. _____

[INSERT DATE]

[BANK NAME]
[ATTENTION]
[BANK ADDRESS 1]
[BANK ADDRESS 2]

LADIES AND GENTLEMEN:

THE UNDERSIGNED _____, A DULY ELECTED AND ACTING OFFICER OF FITCHBURG GAS AND ELECTRIC LIGHT COMPANY (THE "BENEFICIARY"), HEREBY CERTIFIES TO [INSERT BANK NAME] (THE "BANK"), WITH REFERENCE TO IRREVOCABLE LETTER OF CREDIT NO. _____ DATED _____, ISSUED BY THE BANK IN FAVOR OF THE BENEFICIARY (THE "LETTER OF CREDIT"), AS FOLLOWS AS OF THE DATE THEREOF:

1. THE BENEFICIARY IS A PARTY TO THAT CERTAIN [INTERCONNECTION AGREEMENT], EFFECTIVE _____, BETWEEN THE BENEFICIARY AND [CUSTOMER NAME] (THE "AGREEMENT").

2. BENEFICIARY IS MAKING A DRAWING UNDER THE LETTER OF CREDIT IN THE AMOUNT OF $_____ BECAUSE [CHECK APPLICABLE PROVISION]:

[____] (A) THERE CURRENTLY EXIST ONE OR MORE UNPAID AMOUNTS WHICH [CUSTOMER NAME] IS OBLIGATED TO PAY PURSUANT TO THE TERMS OF THE AGREEMENT.

[____] (B) THE BENEFICIARY HAS RECEIVED NOTICE FROM THE BANK OF ITS INTENTION NOT TO RENEW THE LETTER OF CREDIT BEYOND THE CURRENT EXPIRATION DATE AND [CUSTOMER NAME] HAS FAILED, PRIOR TO THE CLOSE OF BUSINESS ON _____ [INSERT DATE WHICH IS NOT MORE THAN THIRTY (30) DAYS BEFORE

THE PRESENT EXPIRATION DATE], TO DELIVER TO BENEFICIARY A REPLACEMENT LETTER OF CREDIT SATISFYING THE REQUIREMENTS OF THE AGREEMENT.

3. BASED UPON THE FOREGOING, THE BENEFICIARY HEREBY MAKES DEMAND UNDER THE LETTER OF CREDIT FOR PAYMENT OF U.S. DOLLARS _____ AND _____/100THS (U.S. $_____).

4. FUNDS PAID PURSUANT TO THE PROVISIONS OF THE LETTER OF CREDIT SHALL BE WIRE TRANSFERRED TO THE BENEFICIARY IN ACCORDANCE WITH THE FOLLOWING INSTRUCTIONS:

_____

_____

_____

UNLESS OTHERWISE PROVIDED HEREIN, CAPITALIZED TERMS WHICH ARE USED AND NOT DEFINED HEREIN SHALL HAVE THE MEANING GIVEN EACH SUCH TERM IN THE LETTER OF CREDIT.

IN WITNESS WHEREOF, THIS CERTIFICATE HAS BEEN DULY EXECUTED AND DELIVERED ON BEHALF OF THE BENEFICIARY BY ITS DULY ELECTED AND ACTING OFFICER AS OF THIS _____ DAY OF _____, _____.

BENEFICIARY: FITCHBURG GAS AND ELECTRIC LIGHT COMPANY

_____

NAME:

_____

TITLE

Attachment 3
Fitchburg Gas and Electric Light Company
List of Filing Recipients

Customers

Mr. Benjamin Vautrin
Chief Financial Officer
Keolis Commuter Services
470 Atlantic Avenue, 3rd Floor
Boston, MA 02110
617-849-7968
benjamin.vautrin@keoliscs.com

Mike Fields
VP Operations
GDF SUEZ Energy Generation, NA
1990 Post Oak Boulevard, Suite 900
Houston, TX 77056
Phone: 713-636-1747
Michael.Fields@na.engie.com

Darin Hawkins
Director – Asset Management
1990 Post Oak Boulevard, Suite 900
Houston, TX 77056
Phone: 713-636-1151
Darin.hawkins@na.engie.com

Steven.cedroni@na.engie.com via
email

Regulators

Mr. Mark D. Marini
Secretary - Department of Public
Utilities
One South Station, 5th Floor
Boston, MA 02110