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June 30, 2016

British Columbia Utilities Commission 6<sup>th</sup> Floor, 900 Howe Street Vancouver, BC V6Z 2N3

Attention: Ms. Laurel Ross, Acting Commission Secretary and Director

Dear Ms. Ross:

### Re: FortisBC Energy Inc. (FEI or the Company) Application for 2017 and 2018 Revenue Requirements and Rates for the Fort Nelson Service Area (the Application)

Attached please find FEI's Application for 2017 and 2018 Revenue Requirements and Rates for the Fort Nelson Service Area.

If further information is required, please contact the undersigned.

Sincerely,

FORTISBC ENERGY INC.

Original signed:

Diane Roy

Attachments

cc (email only): Registered Parties to the Fort Nelson 2015-2016 RRA



# FortisBC Energy Inc. Fort Nelson Service Area

# Application for 2017 and 2018 Revenue Requirements and Rates

**Volume 1 - Application** 

June 30, 2016



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# 11.SUMMARY, BACKGROUND, APPROVALS SOUGHT AND2PROPOSED REGULATORY PROCESS

## 3 **1.1** *SUMMARY*

FortisBC Energy Inc. (FEI or the Company) is seeking approval of its rates for delivery service to customers on the natural gas distribution system in the Fort Nelson Service Area (FEFN) for 2017 and 2018 (the Test Period). As explained in this Application, the proposed rates over the Test Period and other approvals sought are required to ensure that the Company's rates recover the costs of serving its customers in FEFN, with rate increases driven primarily by decreases in energy demand over the Test Period.

FEFN's revenue requirements are determined by various business drivers including operating and maintenance expenses, taxes, capital additions, financing costs and return on equity. Detailed supporting material has been provided in Sections 2 through 8 of the Application which show the impact of these business drivers on the FEFN revenue requirements. Included in Section 9 are financial schedules providing a detailed account of FEI's revenue requirements and the proposed rates for the Test Period.

Based on the forecast energy demand for FEFN, FEFN's forecast revenue at 2016 Approved rates is not sufficient to recover FEFN's required revenue requirement over the Test Period. Specifically, there is a revenue deficiency of \$301 thousand in 2017 and an incremental revenue surplus of \$146 thousand in 2018, for a cumulative 2018 revenue deficiency of \$155 thousand compared to forecasted 2018 revenue at existing 2016 rates.

The largest driver of the revenue deficiency is the decrease in energy demand. As discussed in Section 3.2, 3.3 and 3.4 of the Application, FEFN is forecasting low customer growth and a declining use per customer, particularly amongst commercial customers. As a result, total energy demand is forecast to decline over the Test Period. The decrease in demand in the Test Period compared to 2016 Approved contributes \$311 thousand to the revenue deficiency.

26 Other contributing factors to the revenue deficiency are upward pressures on FEFN's revenue 27 requirement. In particular:

- Rate base growth due to capital expenditures required for system growth and
   maintenance contributes \$103 thousand to the revenue deficiency. Details on FEFN's
   required capital expenditures are provided in Section 7 of the Application.
- Compared to 2016 Approved, changes in O&M contribute \$38 thousand to the revenue deficiency over the Test Period. While the allocation of costs from FEI departments that support FEFN's operations is lower than the cost allocation approved for 2016, these reduced costs are offset by the inclusion of FEFN's communication and line heater costs starting in 2017 and minor increases in materials and contractors. Details on FEFN's required operating and maintenance costs are provided in Section 4 of the Application.



- 1 The upward pressures on rates due to capital expenditures and O&M noted above are more 2 than offset over the Test Period by the following:
- A reduction of \$116 thousand in depreciation and amortization expense,
- A reduction of \$118 thousand in financing costs due to decreases in the average shortterm and long-term interest rates, and
- A reduction of \$57 thousand in taxes.
- 7

8 Notably, in the absence of declining demand, FEFN would be in a revenue surplus position over9 the Test Period.

10 Without rate smoothing, the revenue deficiency over the test period would result in FEFN 11 delivery rate increases of approximately 13.50 percent in 2017 and an incremental decrease of 12 6.44 percent in 2018. To smooth the impact on rates over the two year Test Period, and 13 consistent with the approach taken in the 2015-2016 Test Period, FEFN is proposing to defer in 14 a non-rate base deferral account \$148 thousand (\$110 thousand after-tax) of the 2017 revenue 15 deficiency for recovery in 2018. This adjustment results in a revenue deficiency of \$153 16 thousand in 2017 and an incremental revenue deficiency of \$150 thousand in 2018, for a cumulative 2018 revenue deficiency of \$303 thousand<sup>1</sup> compared to forecasted 2018 revenue 17 18 at existing 2016 rates. These changes result in a delivery rate increase of approximately 6.86 19 percent in 2017 and an additional 6.94 percent increase in 2018.

20 Consistent with past practice, FEI is also seeking approval of deferral accounts to capture the 21 costs of regulatory applications, including this revenue requirement application and FEFN's 22 share of the costs of FEI's Cost of Capital and Rate Design applications.

The Company is not requesting approval of forecast gas costs with this Application. Instead, any rate changes related to the flow-through of gas costs are dealt with in separate applications to the Commission. Any variations between forecast and actual gas costs will continue to be returned or recovered from customers through the existing deferral account mechanisms approved by the Commission.

The approvals sought in this Application appropriately recover the costs of serving FEFN customers and the required capital improvements to continue service to FEFN customers. Although the proposed rates reflect a cumulative increase of 13.80 percent over the existing delivery rates (a cumulative increase of 10.56 percent on an average burner tip<sup>2</sup> basis), due to the relatively small customer base in Fort Nelson it is not uncommon for significant rate changes to occur. For example, in the last five years, the burner tip impacts in FEFN have fluctuated between a decrease of approximately 21 percent and to an increase of approximately 33

<sup>&</sup>lt;sup>1</sup> Compared to 2016 rates, \$153 thousand deficiency collected in 2017 and \$303 thousand deficiency collected in 2018 for a total of \$456 thousand.

<sup>&</sup>lt;sup>2</sup> Commodity plus delivery or total bill basis.



- 1 percent.<sup>3</sup> FEI believes that the proposed rates for FEFN are reasonable, allowing the Company
- 2 to recover its forecast costs of providing natural gas service to customers.

# 3 1.2 BACKGROUND

4 This section outlines the corporate history of FEI and FEFN and the applicable regulatory 5 context.

# 6 1.2.1 History of FEI

7 FEI is one of the largest natural gas distribution companies in Canada, based on number of customers and service area. With the amalgamation of FEI with FortisBC Energy (Vancouver 8 9 Island) Inc. (FEVI) and FortisBC Energy (Whistler) Inc. (FEW) as of January 1, 2015<sup>4</sup>, FEI's 10 customer base for the provision of natural gas transmission and distribution services includes 11 approximately one million residential, commercial and industrial customers located in the Inland, 12 Columbia, Fort Nelson, Lower Mainland, Vancouver Island and Whistler service areas. FEI, 13 through its parent company FortisBC Holdings Inc., is a wholly owned subsidiary of Fortis Inc., 14 the largest investor-owned distribution utility in Canada.

FEI is responsible for the procurement and supply of natural gas to the majority of its customers. For customers in all of its service areas, the Company purchases its supply of gas from a number of producers, aggregators and marketers. FEI also contracts with various providers for service on upstream pipelines, capacity in underground storage facilities and various types of peaking and gas supply cost mitigation arrangements.

The gas supply, transmission and distribution functions of FEI focus on activities that are integral to the safe, reliable and efficient running of utility operations. Beyond the front line activities such as responding to emergencies, and constructing, installing and operating the transmission and distribution system, there are a number of key support functions. These include planning and designing facilities, corrosion control, metering, meter reading, leak surveying, right of way management and materials management and distribution.

Also important are the systems and services that allow FEI to meet its responsibilities effectively
including Information Systems, Energy Supply and Resource Development, Customer Service,
Energy Solutions and External Relations, Engineering Services, Finance and Regulatory,
Operations Support, Governance, Human Resources, Environment, Health and Safety and
Corporate.

<sup>&</sup>lt;sup>3</sup> Specific burner tip impacts outlined are representative of Rate 1 (residential) customers. The approximate 33 percent burner tip increase references the Commission approved April 1, 2014 Gas Cost Recovery Charge increase from \$2.846 per GJ to \$4.775 per GJ. The approximate 21 percent burner tip decrease references the Commission approved April 1, 2015 Gas Cost Recovery Charge decrease from \$4.259 per GJ to \$2.579 per GJ.

<sup>&</sup>lt;sup>4</sup> Order G-21-14 in the FEU Application for Reconsideration and Variance on the FEI Common Rates, Amalgamation and Rate Design Application.



# 1 1.2.2 FEFN Background

FEI's operations in FEFN consist of a transmission lateral from the nearby Spectra Energy
processing plant to the town of Fort Nelson, together with a gas distribution system. Also
included in the service area is the distribution system in Prophet River.

5 The natural gas distribution system in the Fort Nelson area was acquired in 1985 through the 6 acquisition of Fort Nelson Gas Ltd. by Inland Natural Gas Co. Ltd. Fort Nelson Gas Ltd. was 7 amalgamated in 1989 with Inland Natural Gas and other companies and continued as BC Gas 8 Inc., later BC Gas Utility Ltd., then Terasen Gas Inc., and now FortisBC Energy Inc.

9 FEFN customers have benefited and continue to benefit in various ways from being served by
10 FEI, which is a much larger gas distribution company than FEFN would be on a standalone
11 basis. Some of these benefits include:

- Access to the necessary resources, expertise and training in all areas affecting gas distribution utilities;
- Access to low cost capital funding;
- Access to the buying power of a larger company, reducing the costs of pipe and other
   materials and supplies; and
- Access to the commodity-related benefits of being in a company that is a large regional buyer of natural gas and a significant holder of various natural gas storage, transportation, peaking and other gas supply arrangements designed to mitigate and optimize gas supply costs.
- 21

FEFN's gas supply has typically been obtained through one contract. For the past number of years, the Company has used a small portion of its contracted gas storage capacity at Aitken Creek to improve the load factor of the Fort Nelson load and to mitigate the impact of gas volatility for Fort Nelson customers. The diversity of FEI's overall gas supply portfolio has assisted over the years in providing favourable gas supply arrangements for FEFN.

### 27 **1.2.3 Regulatory Context**

Rates have been set separately for FEFN from the date the utility was acquired to the present.
FEI (as BC Gas Utility Ltd.) sought regulatory consolidation of FEFN with the remainder of the
Company in its 1992 Revenue Requirement Application, and again in its 2011 Common Rates,
Amalgamation and Rate Design Application, but these applications were not approved. As
such, FEFN is excluded from the common rates for the amalgamated utility.<sup>5</sup> Therefore, FEFN
has been excluded from the Company's general revenue requirement applications and
Performance Based Ratemaking (PBR) plans.

<sup>&</sup>lt;sup>5</sup> Order G-21-14 in the FEU Application for Reconsideration and Variance on the FEI Common Rates, Amalgamation and Rate Design Application.



The most recent revenue requirement change approved by the Commission was on June 10, 2015 by Order G-97-15. In that Order and the related Compliance Filing filed July 10, 2015, the Commission approved an increase in rates for FEFN customers effective January 1, 2015 to recover a revenue deficiency of \$325 thousand. A further revenue deficiency of \$216 thousand was recovered through an increase in rates for FEFN customers effective January 1, 2016.

# 6 1.3 APPROVALS SOUGHT

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7 The Company seeks the following approvals from the Commission, pursuant to Sections 58, 608 and 61 of the *Utilities Commission Act* (the Act):

- A delivery rate increase of 6.86 percent effective January 1, 2017, to recover the forecast revenue deficiency of \$153 thousand in 2017;
- An additional delivery rate increase of 6.94 percent in 2018 to recover the incremental forecast revenue deficiency of \$150 thousand in 2018<sup>6</sup>;
- The RSAM rider to be set to \$0.268 per GJ (an increase of \$0.190 per GJ compared to 2016) as set out in Section 2.4, Table 2-2 effective January 1, 2017;
- Adoption of the depreciation and net salvage rates proposed by FEI for approval starting in 2017, subject to any determination by the Commission with respect to those rates in the FEI Proposal for Depreciation and Net Salvage Rate Changes proceeding;
- The following deferral account requests as described in Section 7.4.1 and 7.4.2:
  - The creation of a rate base deferral account for the 2017-2018 Revenue Requirement Application costs with an amortization period of two years beginning 2017;
  - The creation of a rate base deferral account for the 2016 Cost of Capital Application costs with an amortization period of three years beginning 2017;
  - The creation of a rate base deferral account for the 2017 Rate Design Application costs;
- The creation of a non-rate deferral account to transfer a portion of the 2017
   revenue deficiency to 2018 to help smooth customer rates, and also to
   capture FEFN's 2016 revenue requirement impact of any variance between
   the equity thickness and ROE amounts approved in FEI's current Cost of
   Capital proceeding and its 2016 interim ROE and capital structure approved
   amounts;

<sup>&</sup>lt;sup>6</sup> FEI notes that the actual rate increases effective January 1, 2018 for each customer class may require adjustment if a decision is issued on FEI's Rate Design Application, which is anticipated to be filed prior to the end of 2016. If so, FEI will incorporate any such adjustment into its compliance filing for 2018 rates for FEFN.



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- To delay disposition of the non-rate base Fort Nelson First Nations Right-of-Way Agreement deferral account to the next revenue requirement proceeding.
- 5 A draft form of Order sought and a draft procedural Order are provided in Appendix D.

# 6 1.4 PROPOSED REGULATORY PROCESS

7 FEI is of the view that a written hearing process is appropriate for the review of this Application,

- 8 and proposes the following regulatory timetable:
- 9

### Table 1-1: Proposed Regulatory Timetable

ACTION	DATE (2016)
Intervener Registration	Wednesday, July 20
BCUC and Intervener Information Request No. 1	Wednesday, July 27
FEFN Response to Information Requests No. 1	Thursday, August 18
FEFN Final Argument Submissions	Thursday, September 8
Intervener Final Argument Submissions	Thursday, September 15
FEFN Reply Argument Submissions	Thursday, September 22

# 10 **1.5** ORGANIZATION OF THIS APPLICATION

11 The remainder of this Application is organized as follows:

12 13	•	<b>Section 2</b> Revenue Requirement and Rates – discusses the revenue requirement and the proposed rates the Company is requesting.
14 15 16	•	<b>Section 3</b> Gas Sales and Demand and Other Revenue – discusses the impact of use rates, customer additions and other factors affecting demand, revenue and margin in the Fort Nelson region.
17 18	•	Section 4 Cost of Gas – discusses the impact of gas costs on total revenue requirement changes.
19 20	•	<b>Section 5</b> Operating and Maintenance (O&M) Expenses-discusses the labour and non-labour costs required to continue to operate and maintain the business.
21	•	Section 6 Taxes – discusses Property and Income Tax
22 23 24	•	<b>Section 7</b> Rate Base and Capital Additions – discusses rate base overall, as well as each of its components including plant additions, deferral accounts and working capital.
25 26	•	<b>Section 8</b> Financing and Capital Structure –discusses the financing of rate base assets and the debt and equity components of financing.
27	•	Section 9 Financial Schedules.



# 1 2. REVENUE REQUIREMENTS AND RATES

# 2 **2.1** *INTRODUCTION*

The purpose of this section is to provide an overview of the total revenue requirements and
rates for the forecast periods of 2017 and 2018. The supporting discussion can be found in
Sections 3 through 8, with financial schedules provided in Section 9.

6 With the rate smoothing proposal as discussed in Section 7.4.1 below, FEFN's revenue 7 requirement is \$3.068 thousand (Section 9, Schedule 21, Line 11) in 2017 and \$3,172 thousand 8 in 2018 (Section 9, Schedule 22, Line 11). This results in an approximate 6.86 percent increase 9 to delivery rates in 2017 and an additional increase of 6.94 percent to delivery rates (cumulative increase of 13.80 percent) in 2018<sup>7</sup>. For a typical FEFN residential customer consuming an 10 average of 135 GJ per year, this equates to an increase of approximately \$59 annually (8.68 11 percent) in 2017<sup>8</sup> and an additional incremental increase of \$35 annually (4.70 percent) in 2018 12 to an annual bill. 13

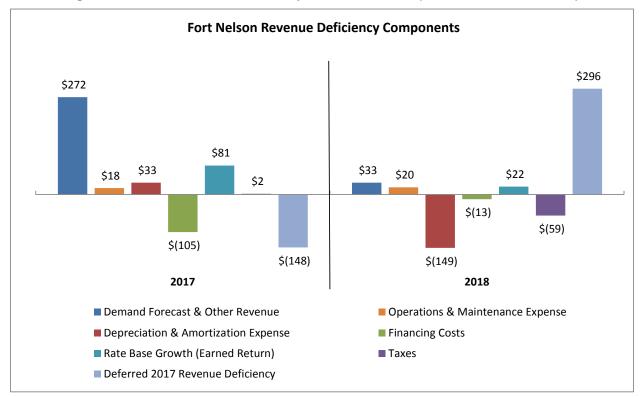
# 14 2.2 REVENUE DEFICIENCY

Taking into account the proposed rate smoothing, FEFN is forecasting a total revenue deficiency of \$153 thousand in 2017 (Section 9, Schedule 1, Line 32, Column 3) and an additional \$150 thousand in 2018 (Section 9, Schedule 1, Line 32, Column 5) for a cumulative deficiency of \$303 thousand (Section 9, Schedule 1, Line 32, Column 7). These deficiencies are summarized in Figure 2-1 below.

<sup>&</sup>lt;sup>7</sup> Without rate smoothing, the delivery rate increases are an approximate 13.50 percent increase to delivery rates in 2017 with an incremental decrease of 6.44 percent to delivery rates (cumulative increase of 7.06 percent) in 2018.

<sup>&</sup>lt;sup>8</sup> Including the additional \$0.190/GJ increase in the RSAM Rider 5 rate rider in 2017.





### Figure 2-1: FEFN Revenue Deficiency in 2017 and 2018 (amounts in \$ thousands)

2

1

As displayed in Figure 2-1 above, the largest contributor to the overall revenue deficiency is the reduction in the customer demand forecast and, to a lesser extent, rate base growth and increased operations and maintenance expenses. These cost pressures are partially offset by a reduction in depreciation and amortization expense, the decline in the forecasted average short-

7 term and long-term interest rates and a reduction in taxes.

# 8 2.2.1 Demand Forecast and Revenue at Existing Rates

9 The Demand Forecast discussed in Section 3 is used to determine the revenue surplus or 10 deficiency. Existing approved rates are applied to the demand forecast to determine the 11 variance (surplus or deficiency) between existing revenues and the revenue requirement for the 12 test years. The decrease in demand in 2017 is attributable to declines in the use rate per 13 customer, particularly in commercial Rate Schedule 2.1. This reduced demand contributes 14 approximately \$278 thousand to the revenue deficiency in 2017 and to an incremental revenue 15 deficiency of \$33 thousand in 2018. As noted above, the decrease in forecast demand is the 16 largest driver of the revenue deficiency over the Test Period.

# 17 **2.2.2 Operations and Maintenance Expense**

18 The impact of changes in O&M is an increase to the revenue requirement of \$18 thousand in

- 19 2017 and an incremental increase to the revenue requirement of \$20 thousand (cumulative \$38
- 20 thousand) in 2018, net of capitalized overhead. The items contributing to the O&M amounts are



discussed more fully in Section 5, and have been properly reflected in the calculation of the Company's revenue requirement. The main drivers contributing to the overall revenue deficiency are the inclusion of FEFN's communication and line heater costs now allocated from FEI to FEFN starting in 2017 and minor increases in materials and contractors. These increases are partially offset by a lower forecasted shared service fee allocation from FEI than approved for 2016.

# 7 2.2.3 Depreciation and Amortization Expense

8 The \$33 thousand revenue deficiency in 2017 is comprised of a \$93 thousand increase in 9 amortization expense (\$36 thousand of which relates to increased net salvage rates as a result 10 of the FEI Depreciation Study) partially offset by a \$60 thousand decrease in depreciation 11 expense (\$42 thousand of which relates to decreased depreciation rates as a result of the FEI 12 Depreciation Study).

The incremental \$149 thousand revenue surplus in 2018 is comprised of a \$154 thousand decrease in amortization expense mainly due to the Muskwa River Crossing Project Costs deferral account and Muskwa River Crossing Cost of Service deferral account fully amortizing by the end of 2017. These are partially offset by a decrease in depreciation expense of \$5 thousand.

### 18 **2.2.4 Taxes**

As discussed in Section 6, forecast levels of property taxes and changes in income tax rates,
 new taxes, and changes to capital cost allowances (CCA) rates all have an impact on the
 revenue requirement calculation.

The property tax increase of \$2 thousand in 2017 results in an increase to the revenue requirement, which is offset by a decrease of \$2 thousand in 2018, for no change over the Test Period.

Other changes to income tax rates and timing differences result in no change in revenue requirements in 2017, and an incremental decrease to the revenue requirement of \$57 thousand in 2018 (cumulative decrease of \$57 thousand over the Test Period). The tax impacts of the decrease in amortization expense are the most significant contributor to the decrease in income tax in 2018.

# 30 **2.2.5 Earned Return and Financing Costs**

Changes in the amount of rate base affect the amount of return on the rate base. The rate base has increased from \$10,997 thousand in 2016 to \$11,178 thousand in 2017 (Section 9, Schedule 2, Line 23) and to \$11,229 thousand in 2018 (Section 9, Schedule 3, Line 23). This contributes \$81 thousand to the revenue deficiency in 2017 and an additional \$22 thousand in

35 2018 (cumulative \$103 thousand over the Test Period).



The final component of the revenue requirement calculation is financing costs. Financing costs 1

- 2 are discussed in Section 8. The amount of financing required is determined by the rate base;
- 3 the financing costs themselves are determined by a combination of the amount of financing and
- 4 the forecast interest rates. Decreases in financing, mainly the result of lower interest rates.
- 5 result in a net decrease associated with financing costs of \$105 thousand in 2017, with an
- 6 additional decrease of \$13 thousand in 2018.

#### 2.3 7 RATES

8 Based on the net revenue deficiency over the Test Period, Fort Nelson is seeking an increase in its delivery rates of 6.86 percent in 2017, with an additional increase of 6.94 percent in 2018, for 9

a cumulative increase of 13.80 percent over the Test Period. The annual dollar and percentage

- 10
- 11 impacts to average annual bills are provided in Appendix C and summarized below in Table 2-1.

1	2

		2017		2018	
		Annual \$	% of Previous	Annual \$	% of Previous
Rate Category	GJ	Increase	Annual Bill	Increase	Annual Bill
Rate 1 - Domestic (Residential) Service	135	\$59	8.68%	\$35	4.70%
Rate 2.1 - General (Commercial) Service	440	\$215	8.60%	\$131	4.83%
Rate 2.2 - General (Commercial) Service	8,100	\$3,511	8.88%	\$1,964	4.56%
Rate 25 - Transportation Service	19,850	\$9,403	14.60%	\$5,532	7.50%

Table 2-1: Annual Dollar and Percentage Bill Impacts for Average Customers<sup>9 1011</sup>

13

14 FEFN does not have any customers served under Rate Schedules 2.3, 2.4, 3.1, 3.2 and 3.3.

#### 2.4 RSAM 15

Commission Order G-17-04, dated February 5, 2004, granted approval for the implementation 16 17 of the RSAM account for FEFN to capture variations in the delivery margin (Revenue less Cost 18 of Gas) for residential, commercial and industrial rate classes. Commission Order G-17-14 19 subsequently approved a change in the amortization period for the RSAM account from three 20 years to two years. The account accumulates the annual RSAM debits and credits with one half of the net balance being recovered or refunded in the following year via a rate rider. 21

22 The RSAM rate rider for 2017 has been calculated consistent with past practice and is 23 \$0.268/GJ effective January 1, 2017 as shown in Table 2-2 below (an increase of \$0.190/GJ 24 from the 2016 rider). In the fourth quarter of 2017, FEFN will recalculate the rate rider to reflect

<sup>9</sup> Please note that the average annual use rates for each rate category that are used to calculate the bill impacts have been updated to reflect current customer use rates. Please refer to Section 3.5 for more information.

<sup>&</sup>lt;sup>10</sup> Calculated using commodity rates effective January 1, 2016 as approved by Commission Order G-189-15. The annual bill impacts to Rate Schedule 25 appear higher than other rate schedules because this is a Transportation Service rate schedule, and therefore only the delivery portion of the annual bill is included in the calculation.

<sup>&</sup>lt;sup>11</sup> Please note that the bill impacts represented for 2017 are inclusive of the proposed 2017 RSAM Rider 5 rate rider (as outlined in Table 2-2 below), which represents a change from \$0.078 per GJ (the approved 2016 RSAM Rider 5 rate rider) to \$0.268 per GJ, which equates to a \$0.190 per GJ increase. The bill impacts represented for 2018 are inclusive of the proposed 2017 RSAM Rider 5 rate rider of \$0.268 per GJ; therefore the bill impacts represent no change in the RSAM rate rider.



- 1 2016 actual information as well as updated projections for 2017, and accordingly will file for
- 2 approval of a revised RSAM rate rider effective January 1, 2018 if necessary.
- 3

### Table 2-2: 2017 RSAM Rate Riders

2016 RSAM + Interest Closing Balance (\$000)	226
Amortization Period (years)	2
2017 Amortization post-tax (\$000)	113
Tax Rate	26%
2017 Amortization pre-tax (\$000)	153

RSAM (Rider 5) Calculation						
RSAM						
Amortization	2017 Volume	Rider				
(\$000)	(LT)	(\$/GJ)				
	261.8	0.268				
	211.9	0.268				
	56.6	0.268				
	39.7	0.268				
153	570.0	0.268				
	RSAM Amortization (\$000)	RSAM         2017 Volume           (\$000)         (TJ)           261.8         211.9           56.6         39.7				

# 1 3. GAS SALES AND DEMAND, AND OTHER REVENUE

# 2 **3.1** *INTRODUCTION*

This section responds to previous Commission directions to provide information on FEI's demand forecast for FEFN, describes the forecast demand from FEFN residential, commercial and industrial customers over the Test Period, calculates FEFN's forecast revenue at existing rates based on the forecast total energy demand, and the sets out the forecast of Other Revenue.

8 Consistent with the forecasting process followed by FEI for its other service areas, the forecast
9 demand is comprised of three main components:

- Customer additions (account) forecast;
- Average use per customer (UPC) forecast; and
- 12 Industrial Forecast.

13

The residential and commercial energy forecast, consisting of customers served under Rate Schedules 1, 2.1, and 2.2<sup>12</sup>, is driven by the respective account and use per customer forecasts. Consistent with the methodology used across the other service areas for FEI, the average use per customer is estimated for customers served under Rate Schedules 1, 2.1, and 2.2 and then is multiplied by the corresponding forecast of customers in each rate class to derive energy consumption.

The industrial energy forecast reflects the forecast demand based on survey results from the one remaining FEFN industrial customer under Rate Schedule 25.

Current approved rates (i.e. 2016 rates) are applied against the energy forecast to calculate the forecast revenue at existing rates. The cost of gas is subtracted from this forecast revenue to calculate the delivery margin (also referred to as gross margin), which is used as part of the calculation of the revenue deficiency for the Test Period.

26 Other Revenue is primarily comprised of connection charges and late payment charges.

The following subsections discuss the components of the demand forecast and the calculation of revenue at existing rates, the gross margin and Other Revenue.

# 29 3.2 Responses to Commission Directives re Demand Forecast

30 In Directive 6 of Order G-97-15 and Decision on FEI's 2015-2016 Revenue Requirements and

31 Rates for the Fort Nelson Service Area (at page 25), the Commission stated:

<sup>&</sup>lt;sup>12</sup> Rate Schedule 1 represents Residential customers. Rate Schedules 2.1 and 2.2 are both Commercial customer rate schedules (with the same applicable delivery rates) and the delineation between Rate Schedule 2.1 and 2.2 is based on an annual demand of 6,000 GJs. Rate Schedule 25 is for large volume firm transportation customers.



The Panel directs FEI to include the following information in its future revenue requirements
 applications for the Fort Nelson service area:

- Historical forecast and actual data broken down by customer classes, as provided in FEI's response to the BCUC IR 1.4 series of questions. FEI must include the most recent 10 years of historical data as part of its analysis; and
- Calculations and accompanying explanations showing how the residential and
   commercial UPC and customer additions forecasts are calculated
- 8 FEI has included the requested information in this Application as follows:
- Historical forecast and actual data broken down by customer classes, consolidated totals, and variance analysis is provided in Appendices A1 and A2.
- A detailed description of the demand forecast methodology utilized for FEFN is provided
   in Appendix A3.

# 13 **3.3** *TIMEFRAMES*

3

4

5

In the figures provided in the demand forecast sections, the following three time frames areshown:

- Actual Years: Actual years are those for which actual data exists for the full calendar year. The 2017 Annual Review is based on actual data up to and including 2015, the latest calendar year for which full actual data exists is the 2015 calendar year.
- Seed Year: The Seed Year is the year prior to the first forecast year. The Seed Year is forecast based on the latest years of actual data available, and will be different than the original forecast for that year in the previous filing. For example, for this Application the Seed Year is 2016 and the Seed Year forecast is based on the latest actual years, including 2015. As such, the 2016 Seed Year forecast in this Application will differ from the 2016 Forecast presented in the Annual Review for 2016 Delivery Rates, for which 2015 actual data was not available.
- Forecast Year(s): This is the year or years for which the forecast is being developed.
   This can be one year (in the case of the Annual Review) or a range of 2 or more years
   depending on the filing.

# 29 **3.4** CUSTOMER ADDITIONS

The forecast of customer accounts is the first component of determining the total energy demand.

The Conference Board of Canada (CBOC) housing starts forecast provides a proxy for Fort Nelson's residential customer additions. The year over year growth rate is calculated for 2016 to 2018 based on the CBOC Provincial Medium Term forecast as of November 3<sup>rd</sup>, 2015 Table 156.



1 The commercial additions forecast is based on the average of the actual additions over the last 2 3 years for which a full year of actual data is available (i.e. 2013 to 2015).

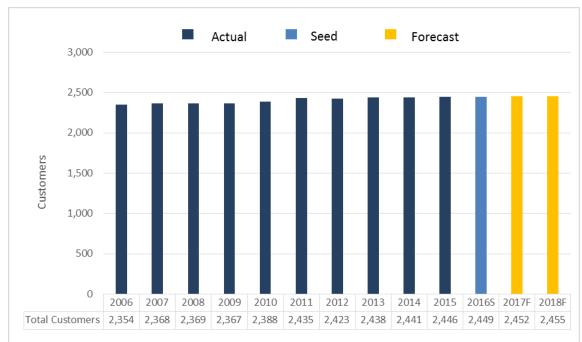
3 The industrial customer base in FEFN is limited to a single customer and that is not forecast to 4 change during the Test Period.

5 See Appendix A3 for a more detailed description of FEI's customer additions forecast methods.

6 As shown in Figures 3-1 to 3-3 below, the total number of customers has grown slowly in both

7 the residential and commercial segments<sup>13</sup>. Based on the forecast methods discussed above,

8 the low level of growth experienced recently is forecast to continue.



### Figure 3-1: Total Customers

10

9

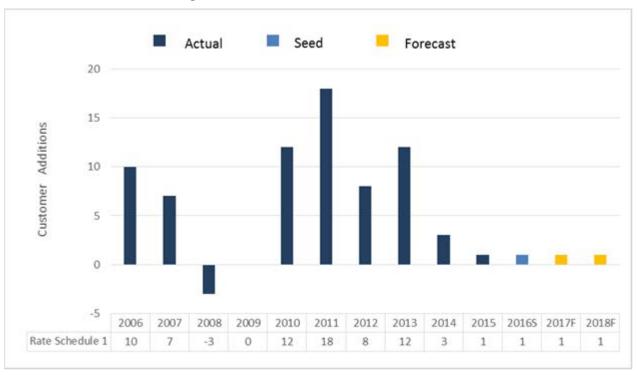
11 As shown in Figure 3-2 below, there have been limited residential customer additions in FEFN.

12 Based on the CBOC housing starts forecast, minimal additions are forecast for the Test Period.

<sup>&</sup>lt;sup>13</sup> 2016 data in the figures represents projected year end customers.



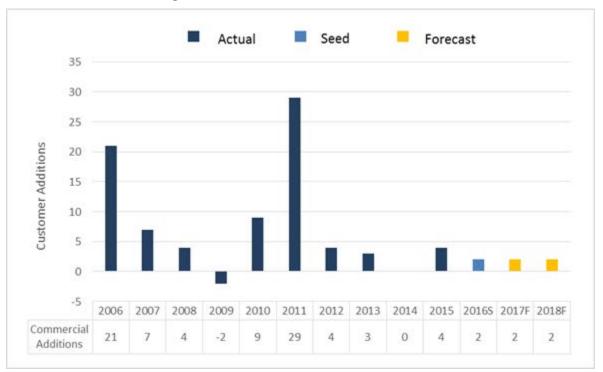
Figure 3-2: Residential Customer Additions



- 2
- 3 Small Commercial customer additions (Rate Schedules 2.1 and 2.2) since 2006 are shown in
- 4 Figure 3-3 below. The forecast commercial customer additions in Figure 3-3 are based on the
- 5 three-year historical average 2013 to 2015 and are forecast to occur in Rate Schedule 2.1.



Figure 3-3: Commercial Customer Additions



2

#### USE RATES (RESIDENTIAL AND COMMERCIAL CUSTOMERS) 3.5 3

4 Individual UPC forecasts are developed for each rate schedule by considering the recent (three 5 year) historical weather-normalized use per account. See Appendix A3 for a more detailed 6 description of FEI's UPC forecast methods.

7 The Rate Schedule 1 UPC is forecast to continue to decline through the Test Period as seen in Figure 3-4 below. 8

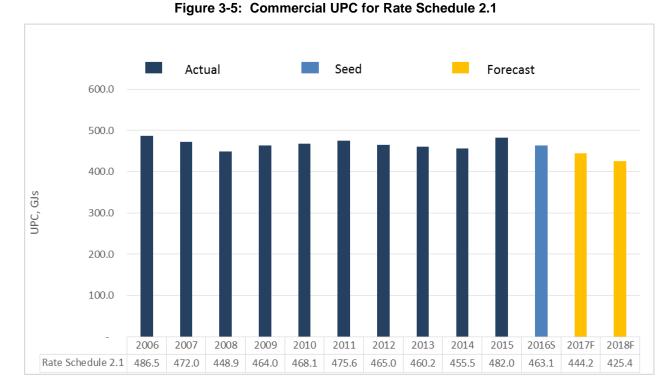


Figure 3-4: Residential UPC for Rate Schedule 1 Seed Forecast Actual 160.0 140.0 120.0 100.0 UPC, GJS 80.0 60.0 40.0 20.0 0.0 2015 2006 2007 2008 2009 2010 2011 2012 2013 2014 2016S 2017F 2018F Rate Schedule 1 141.5 141.9 139.6 138.4 140.9 137.8 138.8 138.6 136.5 135.5 134.4 133.4 132.3

2

For context, FEFN is forecasting an average of 477 Rate Schedule 2.1 customers in 2017 and seven Rate Schedule 2.2 customers in 2017. As shown below, Rate Schedule 2.1 UPC declined from 2011 through 2014. A one-time increase in UPC was recorded in 2015 as a result of 24 customers switching from Rate Schedule 2.2 to Rate Schedule 2.1 based on their volumes no longer being high enough to qualify for Rate Schedule 2.2. FEI is forecasting the declining UPC trend to continue throughout the Test Period, as seen in Figure 3-5 below.





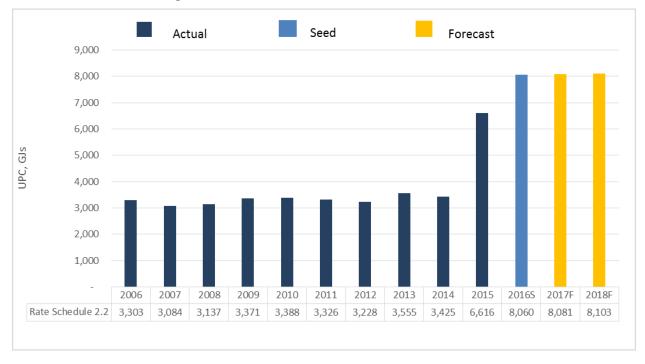
2

For Rate Schedule 2.2, the increase in UPC in 2015 over 2014 was due to 24 lower volume customers switching out of Rate Schedule 2.2 and into Rate Schedule 2.1 part way through the year, as noted above. FEI is forecasting the UPC to be stable based on the usage of the remaining Rate Schedule 2.2 customers, as seen in Figure 3-6 below.



2

Figure 3-6: Commercial UPC for Rate Schedule 2.2

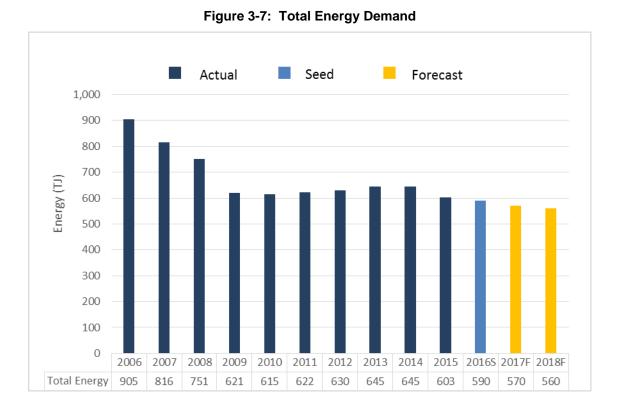


# 3 3.6 DEMAND FORECAST

The energy demand forecast for each residential and commercial rate schedule is derived by multiplying the total forecast customers, including customer additions, by the average UPC forecast for each rate schedule. As discussed below, the forecast of energy demand from FEFN's remaining industrial customer is based on its response to the annual industrial survey. The total forecast energy demand is the sum of the energy demand for the individual rate schedules.

The following Figure 3-7 illustrates the total historical and forecast normalized energy demand over the period 2006 to 2018. FEI is forecasting a decrease in FEFN's total energy demand for 2017 and 2018 as compared to 2016 seed demand, and an even more significant decrease as compared to the Approved 2016 total energy demand of 653 TJs (Schedule 23, Column 2, Line 9). The main driver of the difference between 2016 seed, 2017 forecasted and 2018 forecasted demand compared to 2016 approved demand is related to commercial Rate Schedule 2.1 customers, where the average UPC was lower than the approved amount.





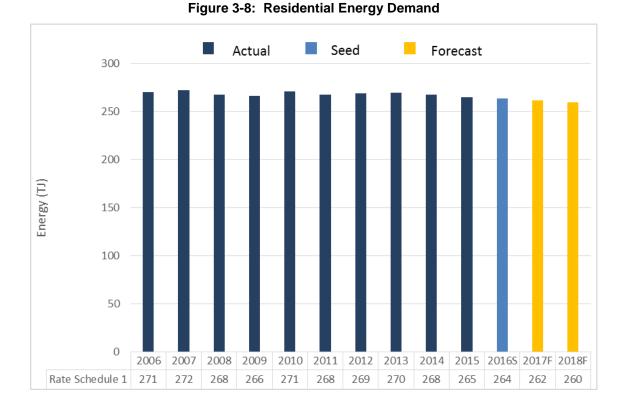
2

3 As seen in Figure 3-8 below FEI is forecasting a slight decrease in FEFN residential energy

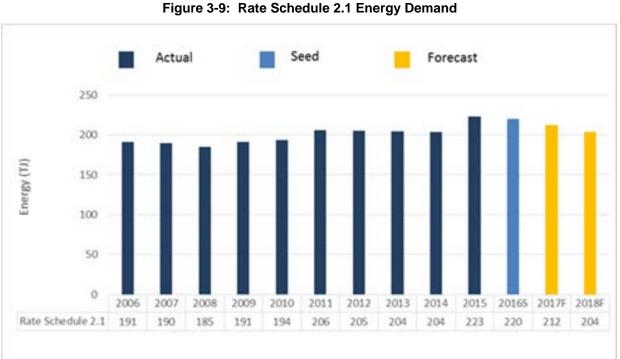
4 demand. The forecast increase of one Rate Schedule 1 customer as shown in Table 3-2 above,

5 is more than offset by the declining use rate shown in Table 3-4.





3 As seen in Figure 3-9 below, the forecast demand for Rate Schedule 2.1 is decreasing. This 4 decrease in demand is the result of declining use rates, which is partially offset by stable 5 customer growth.





- 1 The decrease in Rate Schedule 2.2 customer volumes in 2015 is a result of rate switching.
- 2 Customer volumes for the test period are forecast to remain stable.

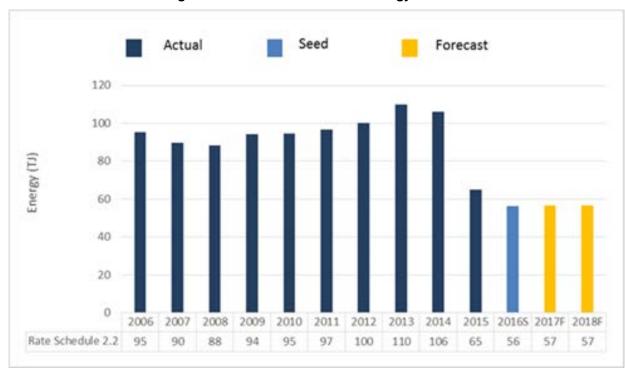


Figure 3-10: Rate Schedule 2.2 Energy Demand

4

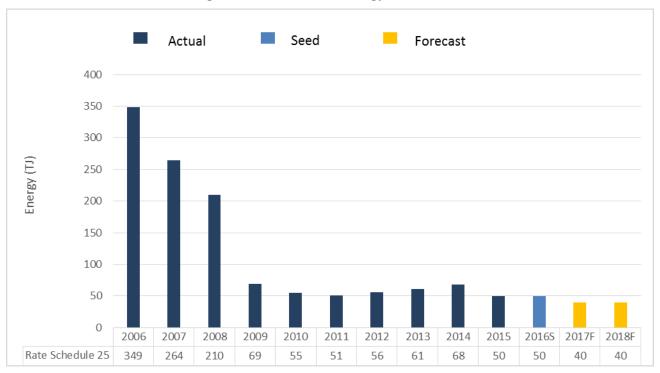
3

5 FEI only has one Industrial customer served under FEFN's Rate Schedule 25. In 2008, this 6 customer's two facilities in Fort Nelson were closed and the customer only consumed gas to 7 heat the facilities. The future forecast of energy demand is based on the industrial customer's 8 response to the annual industrial survey which indicates that only one plant will continue to 9 maintain space heat load consumption over the Test Period. The Industrial Energy Demand is

10 seen in Figure 3-10 below.



Figure 3-11: Industrial Energy Demand



3 3.7 REVENUE AND DELIVERY MARGIN FORECAST

Revenues are a function of both energy consumption and the rate applicable at the time the
energy is consumed. FEFN has developed its forecast of revenues by applying the total energy
forecast to the currently approved rates for each rate schedule.

Table 3-1 below summarizes the revenues projected for 2016 and forecast for 2017 and 2018,
based on the currently approved 2016 rates.

9

2

	Actual	Projected	Forecast	Forecast
Revenue (\$ thousands)	2015	2016	2017	2018
Residential <sup>1</sup>	1,755	1,311	1,303	1,295
Commercial <sup>2</sup>	2,028	1,496	1,459	1,421
Industrial <sup>3</sup>	164	176	153	153
Total	3,947	2,984	2,915	2,869

### Table 3-1: Forecast Sales Revenue<sup>14</sup>

<sup>&</sup>lt;sup>14</sup> The cost of gas was lower in 2016 as compared to 2015, and this is reflected in the decreased residential revenue in 2016.



- Notes:
- 1. Rate Schedule 1
- 2. Rate Schedules 2.1, 2.2
- 3. Rate Schedule 25

6 The delivery margin is the forecast of revenues at existing approved rates, minus the cost of 7 natural gas. Table 3-2 below summarizes the delivery margin projected for 2016 and forecast 8 for 2017 and 2018, by customer segment, at 2016 approved rates.

9

Table 3-2:	Forecast Delivery Margin	

	Actual	Projected	Forecast	Forecast
Margin (\$ thousands)	2015	2016	2017	2018
Residential <sup>1</sup>	876	970	964	959
Commercial <sup>2</sup>	1,158	1,139	1,112	1,084
Industrial <sup>3</sup>	181	175	153	153
Total	2,215	2,284	2,229	2,196

10

|--|

# 15 3.8 OTHER REVENUE

16 There are three components of Other Revenue, as shown in Section 9, Schedules 35-36, Lines17 1-3:

- Late Payment Charges;
- Connection Charges; and
- Other (primarily non-sufficient funds cheque administration fees).

21

The 2017 and 2018 Other Revenue forecast is entirely comprised of connection charges and late payment charges. Revenue for connection and late payment charges have been forecast based on 2015 actual data. The forecast for the Test Period is shown in Table 3-3.

### 25

### Table 3-3: 2015-2018 Other Revenue Components

Other Operating Revenue, (\$ thousands)											
	ApprovedActualApprovedProjectedForecastForecast201520152016201620172015										
Late Payment Charge	9	17	9	17	17	17					
Connection Charge	11	9	11	9	9	9					
Other Recoveries	-	-	-	-	-	-					
Total Other Operating Revenue	20	26	20	26	26	26					



# 1 **4. COST OF GAS**

This Application only seeks approval of FEFN delivery rates. The Company is not requesting approval of forecast gas costs with this Application; rate changes related to the flow-through of gas costs are dealt with in separate applications to the Commission. Any variations between forecast and actual gas costs will continue to be returned to or recovered from customers through the existing Gas Cost Reconciliation Account (GCRA) deferral account mechanism.

While FEI is not requesting approval of forecast gas costs with this Application, the forecast cost of gas, which includes the estimated cost of unaccounted for gas (UAF), is required in the determination of a number of revenue requirement line items that form part of the forecasts included in the Application. The forecast cost of gas sold is determined by multiplying forecast sales volumes by the existing (as of July 1, 2016) gas cost recovery charge for each rate schedule; for FEFN, the gas cost recovery charge is the same for all sales rate schedules.

The current gas cost recovery charge is \$1.294 per GJ, approved by Commission Order G-189-15, dated December 3, 2015 and became effective January 1, 2016. The 2016 First Quarter Gas Cost Report for Fort Nelson, filed on March 2, 2016, and the 2016 Second Quarter Gas Cost Report for Fort Nelson, filed on June 1, 2016, recommended the gas cost recovery rate remain unchanged at April 1, 2016 and at July 1, 2016, respectively. Commission Letter L-3-16, dated March 10, 2016, and Letter L-13-16, dated June 9, 2016, accepted the Company's recommendations to leave the gas cost recovery charge unchanged from \$1.294 per GJ.

20 Consistent with established Commission practice, FEI will continue to review and report on the 21 gas costs and the gas cost recovery rates for FEFN on a quarterly basis and, as necessary, will 22 make application for any rate changes to recover the cost of gas.

UAF refers to gas that is not specifically accounted for in gas energy balance of receipts, deliveries, and operations use; UAF includes measurement variances and cannot be projected with precision. Consistent with past practice, the forecast UAF is based on the historical fiveyear rolling average of the actual annual UAF for FEFN. The cost of UAF related to the Sales rate classes is included in the cost of gas and recovered via the gas cost recovery charge, whereas the cost of UAF related to the Transportation Service Rate Schedule 25 is included in the determination of the delivery rates.



# 1 5. OPERATING AND MAINTENANCE EXPENSES

# 2 **5.1** *INTRODUCTION*

FEFN has forecast its operating and maintenance expenses (O&M) for 2017 and 2018 as part
of determining its revenue requirements. The O&M expenses included in this Application are
required to continue to serve customers in a safe and efficient manner.

# 6 5.2 DETERMINATION OF O&M

7 To determine the FEFN-related total O&M costs, both actual and forecast, the following process8 is used:

- Determine the FEFN direct O&M costs. These costs consist of labour for the two employees
   noted below, vehicle usage, and materials and services used in direct system operations.
- Allocate O&M costs from those FEI departments that provide functional support to FEFN.
   These shared services costs include charges related to Information Systems, Energy Supply
   and Resource Development, Transmission, Customer Service, Energy Solutions and
   External Relations, Engineering Services, Finance and Regulatory, Operations Support,
   Governance, Human Resources, Environment, Health and Safety and Corporate (shown as
   "Fees and Administration Costs" in Table 5-1 below).
- Starting with 2008, the Commission approved the use of customers as the allocation factor
   to determine the Shared Services for FEFN, stating<sup>15</sup>:
- 19 "Shared Services received by TG Fort Nelson from TGI for 2008 are to be
  20 allocated to the Company on the basis of customers..."
- 21 Since that time, the Shared Services allocation has been based on FEFN's customers as a 22 percentage of FEI's customers.

Based on the 2017 forecast average number of customers for FEI and FEFN, the combined
customer total is 1,000,228 and the FEFN portion is 2,445 (Section 9, Schedule 27, Line
15). Therefore, the allocation factor is 0.244%, which has been used for 2017 and 2018
proposed rates.

The 2017 and 2018 O&M costs used in the allocation is consistent with the basis used in calculating the approved 2015 and 2016 shared services fee. The calculation uses the gross O&M FEI expects to forecast for 2017, taking into consideration the formula drivers approved under the PBR as well as the forecast of the O&M items that are excluded from the formula calculation. The amount is then escalated for inflation in 2018.

<sup>&</sup>lt;sup>15</sup> Order G-27-08



Apply an overhead capitalization rate to the sum of the direct and allocated O&M costs to
 calculate the net O&M costs. The currently approved overhead capitalization rate is 12
 percent.

# 4 **5.3** FORECAST **O&M**

5 Table 5-1 below provides a combined resource view of the direct and allocated O&M costs for 6 the years 2015 through 2018. The O&M forecasts for 2017 and 2018 were determined in 7 accordance with the methodology described above.

8

			•				•		,			
	2015		2015		2016		2016		2017		2018	
Particulars	Approved		Actual		Ар	proved	Pro	ojected	For	ecast	Forecast	
M&E Costs	\$	15	\$	5 18		15	\$	18	\$	19	\$	19
IBEW Costs		334		320	\$	345		326		330	•	339
Labour Costs		349		338		360		344	349			358
Vehicle Costs		43		38		44		44		44		45
Employee Expenses		29		18		29		29		29		30
Materials and Supplies		1	8		1		8		8			8
Fees and Administration Costs	545		521		553		517		533			543
Contractor Costs		5		31		5		20		21		21
Facilities	12		16		12		16		41			42
Recoveries & Revenue	(2)		(2)		(2)		(2)		(2)		(2)	
Non-Labour Costs		633		630		642		632		674		687
Total Gross O&M Expenses		982		968		1,002		976		1,023		1,045
Less: Capitalized Overhead		(118)		(118)		(120)		(117)		(123)		(125)
Total O&M Expenses	\$	864	\$	850	\$	882	\$	859	\$	900	\$	920

### Table 5-1: O&M Resources Required for FEFN (\$ thousands)

10 Major changes in Gross O&M line items are discussed below:

### 11 Facilities

9

12 These are costs to operate and maintain the local office including janitorial and telephone 13 services as well as line heater fuel for the distribution station. The increase in the 2017 and 14 2018 forecast costs reflect the inclusion of \$25 thousand of communication costs and line heater fuel costs which are direct FEFN costs, but were previously centralized in FEI and not 15 16 allocated to FEFN. FEI first identified this allocation issue in its Application for Approval of 2015-17 2016 Revenue Requirements and Rates for the Fort Nelson Service Area. In Order G-97-15 the 18 Commission disallowed the recovery of these costs in FEFN rates because, in short, the 19 increases need to be coordinated with a reduction to FEI's base O&M under its performance



1 based ratemaking plan. As proposed in FEI's Annual Review for 2016 Delivery Rates

- 2 Application in response to Direction 16 from Order G-97-15, FEI will remove the FEFN
- 3 communication and line heater costs from its base O&M beginning starting in 2017.<sup>16</sup> The direct
- 4 FEFN communication costs and line heater fuel costs are therefore appropriately included in the
- 5 FEFN O&M forecast beginning in 2017.

# 6 *Materials and Supplies*

7 Materials and supplies are forecast to be higher than approved due to materials used in various

8 distribution maintenance activities.

# 9 Fees and Administration Costs

- 10 The 2017 forecast includes \$528 thousand in the shared services fee which is an increase of
- 11 \$13 thousand from the 2016 Projection of \$515 thousand. The 2018 forecast includes \$538
- 12 thousand in the shared services fee, representing a further \$10 thousand increase in 2018.
- 13 The \$513 thousand projected shared services fee in 2016 is a decrease of \$38 thousand from
- 14 the \$551 approved shared services fee due to a decrease in allocation factor from 0.252% to
- 15 0.248% resulting from changes in the 2016 Projected average number of customers for FEI and
- 16 FEFN and 2016 Projected Gross O&M for FEI. The 2017 forecast O&M is also less than the
- 17 2016 Approved O&M due to the reduction in allocation factor from 0.252% to 0.244%.

# 18 Contractor Costs

19 These are contractor costs incurred mostly for corrective maintenance work. In 2014 and 2015, 20 actual costs were higher than approved mainly due to leak repairs, excavation, paving and 21 flagging costs required to fix the below ground leaks detected on the gas main. The contractor 22 costs are forecast to increase beginning 2016 onwards based on past history as one or two 23 leaks may have a major impact on the costs.

# 24 **5.4** *SUMMARY*

FEFN believes that the forecast amounts of O&M for the years 2017 and 2018 as included in this Application take into consideration the planned and required activities and appropriate forecasting methodologies for those years. They are required to continue to operate the FEFN natural gas distribution system and to meet the needs of customers.

<sup>29</sup> 

<sup>&</sup>lt;sup>16</sup> In response to Direction 16 in Order G-97-15, FEI described this proposal in its Annual Review for 2016 Delivery Rates Application.



# 1 **6. TAXES**

# 2 6.1 *INTRODUCTION*

In carrying out its mandate as an energy service provider, FEI incurs taxes that are imposed by
different government bodies. FEI manages these expenditures through the tax audit process
and various tax planning strategies, as well as ongoing compliance activities. The tax expenses
included in this Application reflect the current enacted tax legislation which was applied in
calculating the forecasted revenue requirement for the Company.

## 8 6.2 INCOME TAX

9 FEI is subject to corporate income taxes imposed by the Federal and BC governments, and as such appropriately includes these costs in calculating FEFN's revenue requirements. Income taxes have been calculated using the flow-through (taxes payable) method, consistent with Commission approved past practice, at the corporate tax rate of 26 percent. The corporate tax rates used in this Application are based on the Canada Income Tax Act and the BC Income Tax Act enacted legislation.

As approved by Commission Order G-53-94, deferred charges, to the extent they are tax deductible, and deferred credits, to the extent they are taxable, are treated on a net-of-tax basis. Under the net-of-tax method, the gross addition to a deferral account is offset by the tax savings

18 or tax cost (as the case may be) calculated at the prevailing income tax rate for the current year.

# 19 6.3 **PROPERTY TAX**

20 Details of 2015 and 2016 approved, actual and projected property tax expense, and the 21 forecasts for 2017 and 2018 can be found in Table 6-1 below.

In 2017 property taxes are forecast to remain relatively consistent with 2015 and 2016 levels.

2	2
2	J

24

### Table 6-1: Property Tax Expense (\$000)

Asset Type	Approved 2015 \$ 79.8 \$		Actual 2015		Approved 2016		Projected 2016		Forecast 2017		Forecast 2018	
Distribution Assets	\$	79.8	\$	77.8	\$	80.7	\$	78.6	\$	80.4	\$	82.5
Transmission Assets		0.4		0.4		0.4		0.4		0.4		0.4
General Assets		18.2		19.7		18.3		19.8		20.9		21.7
In-Lieu		37.9		39.1		38.4		39.3		37.7		33.2
OGC Fees		1.5		1.4		1.5		1.5		1.5		1.5
Total Property Taxes	\$	138	\$	138	\$	139	\$	140	\$	141	\$	139
Forecast Change from 2016 Approved										1.1%		0.0%
Forecast Change from 2016 Projected										0.9%		-0.2%



### 1 6.3.1 Property Tax Forecasts

- 2 Property taxes for 2017 and 2018 use Company forecasts of assessed values of taxable assets,
- 3 mill rates and taxes from revenues earned from gas consumed within the municipality.
- 4 Consistent with past practice, variances between the property tax amounts forecast in rates and
- 5 actual amounts paid are captured in the Property Tax Variance account and returned to or
- 6 recovered from customers over the following three years.

# 7 6.3.2 Assessment Policy

8 Assessment policy is set out in Provincial legislation under the Assessment Act and is primarily

9 concerned with valuation principles and methodologies as well as classification of properties for

10 taxation purposes. Valuations of utility properties are highly dependent on legislated manuals

- 11 and rates to determine market values.
- 12 FEI is required to report assessable additions annually to BC Assessment.
- 13 Property assessment values for the current tax year reflect the market value at July 1 of the 14 previous year based on the state and condition of the property at October 31 of that year.

# 15 6.3.3 Tax Policy

- 16 Tax policy is applied by various taxing authorities under their legislated authority and determines
- 17 how their budgets will be distributed to various classes of properties through the property tax.
- 18 Property tax payable by FEI on behalf of FEFN is categorized into five (5) general categories of
- 19 taxes as follows:
- <u>General Taxes</u>: These are typically levied directly by the primary taxation authority and include municipalities, First Nations and the Surveyor of Taxes for rural areas.
- 22 2. <u>School Taxes</u>: These are levied directly by the Province.
- <u>Other Taxes</u>: These include all taxes levied by other taxation authorities and include levies
   for BC Assessment, Municipal Finance Authority, Regional Districts, Hospital Districts, etc.
- Taxes Based on Revenues (In-Lieu Taxes): Section 644 of the Local Government Act requires "utility companies" to pay a portion (1.0 percent) of revenues in lieu of taxes that would otherwise be paid on improvements specified in legislation other than buildings. For FEFN, revenues only include those earned from gas consumed within the specific municipality.
- 30 5. <u>OGC Fees</u>: Are an annual levy charged by the Oil & Gas Commission based on the length
   31 and size of pipe on record at March 31 of the current year.

# 32 6.4 CARBON TAX

The Carbon Tax represents a cost to FEI on its own consumption of fuel to operate line heaters,
 motor vehicles and space heating for FEFN. The Carbon Tax rate applicable to natural gas
 since July 1, 2012 is \$1.49 per GJ. There are no further announced increases beyond this date.



1 The estimated cost to FEFN with respect to Carbon Tax on own-use fuel is embedded in O&M 2 and capital.

# 3 6.5 PROVINCIAL SALES TAX, INNOVATIVE CLEAN ENERGY (ICE) LEVY, AND 4 GOODS AND SERVICES TAX

5 Effective April 1, 2013, the Province of BC has returned to a commodity tax regime of BC 6 Provincial Sales Tax (PST) and federal Goods and Services Tax (GST).

7 The PST is a tax of 7 percent on purchases of tangible property and certain services that the 8 Company uses in its operations. The ICE Levy of 0.4 percent on purchases of energy, including 9 natural gas, was also reinstated effective April 1, 2013. PST and ICE Levy paid by FEI on behalf 10 of FEFN are not recoverable from the government and therefore represent a net cost to the 11 Company, which can vary widely based on the level of purchases and capital expenditures. 12 This cost is embedded in capital and O&M depending on the nature of the property or services 13 acquired.

14 The GST is a federal commodity tax exigible on goods and services at a rate of 5 percent. FEI,

as a GST registrant, is entitled to recover virtually all of the GST it pays on its taxable purchases

16 of goods and services from the government. As such, the tax does not represent a net cost to

17 the Company.

### 18 **6.6** *SUMMARY*

FEI will continue to incur income taxes, property taxes and other taxes that are imposed by different government bodies on behalf of FEFN. The Company manages these expenditures through ongoing compliance activities, as well as through the tax audit process and various tax planning strategies. The tax expenses included in this Application reflect the current enacted tax logiclation that has been applied in expension for EFEN.

23 tax legislation that has been applied in calculating forecasts for FEFN.



# 1 7. RATE BASE AND CAPITAL ADDITIONS

#### 2 **7.1** *INTRODUCTION*

3 The 2017 and 2018 rate base amounts of \$11,178 thousand and \$11,229 thousand 4 respectively, as determined in Section 9, Schedules 2 and 3, represents the mid-year average 5 rate base which reflects the investment by the Company in utility assets necessary to provide 6 service to customers in FEFN.

Table 7	7-1: Rate Ba	ase (amo	unts in \$00	0s)		
	Approved	Actual	Approved	Projected	Forecast	Forecast
	2015	2015	2016	2016	2017	2018
Net Plant in Service, Mid-Year	8,256	8,071	10,677	10,511	10,794	11,020
Adjustment to 13 - Month Average	2,105	1,965	-	-	-	-
Work in Progress, No AFUDC	35	222	35	35	35	35
Unamortized Deferred Charges	345	245	242	254	297	126
Cash Working Capital	23	31	29	38	38	34
Other Working Capital	14	18	14	14	14	14
Utility Rate Base	\$ 10,778	\$10,551	\$ 10,997	\$ 10,852	\$11,178	\$11,229

7 The table below sets out FEFN's 2015 through 2018 rate base.

9

10 The growth in rate base for the forecast period is largely attributable to capital additions. Each of

11 the main components of rate base (plant balances, deferral accounts, and working capital) is

12 discussed separately below.

# 13 7.2 NET PLANT IN-SERVICE (NPIS)

The mid-year NPIS balance of \$10,794 thousand in 2017 and \$11,020 thousand in 2018 per Table 7-1 above is the sum of the mid-year average of the gross plant in-service, contributions in aid of construction (CIAC), and accumulated depreciation and amortization related to these two items.

## 18 7.2.1 Gross Plant In-Service (GPIS)

19 The ending GPIS balance of \$15,423 thousand in 2016 (Section 9, Schedule 2, Line 1) is made

20 up of opening 2015 GPIS plus 2016 projected plant additions, less retirements. Plant additions

21 are comprised of capital expenditures adjusted for opening and closing work in progress (WIP),

- 22 plus allowance for funds used during construction and overheads capitalized, where applicable.
- A description of the major changes in plant additions over the years 2015 to 2018 follows.
- Table 7-2 below summarizes FEFN's plant additions for 2015 through 2018.

<sup>8</sup> 



	Approved	Actual	Approved	Projected	Forecast	Forecast
	2015	2015	2016	2016	2017	2018
Intangible Plant	-	11	-	-	46	46
Transmission Plant	399	288	60	165	75	15
Distribution Plant	356	241	117	334	307	388
General Plant	200	40	75	157	50	50
Total Gross Plant Additions	955	580	252	656	478	499

#### Table 7-2: Summary of Gross Plant Additions (\$000s)<sup>17</sup>

3 For 2015 and 2016 combined, capital additions were generally in line with approved (Approved

4 was \$1,207 thousand and Actual/Projected is \$1,236 thousand), although there were a number

5 of projects that were delayed from 2015 into 2016. The main driver of the cumulative higher

6 plant additions were timing differences for capital expenditures incurred prior to 2015 that were

7 added to rate base in 2015 or 2016.

8 The 2015 actual Intangible Plant addition of \$11 thousand related to the acquisition of 9 Transmission Land Rights in Fort Nelson, and does not relate to the allocation of Intangible 10 Plant costs from FEI discussed below.

11 A description of the major changes in plant additions for 2017 and 2018 follows.

#### 12 Intangible Plant

1

2

As discussed in the FEI Annual Review for 2016 Rates<sup>18</sup>, FEI will begin allocating Intangible Plant costs to FEFN beginning in 2017 and the costs will be removed from FEI's 2017 Base Capital in the FEI Annual Review of 2017 Rates. The amount of the allocation to FEFN's Intangible Plant in 2017 and 2018 is \$46 thousand, related to the purchase and sustainment of System Computer Software.

#### 18 Transmission Plant

19 The forecast additions to transmission plant in 2017 and 2018 will be less than prior years' 20 capital expenditures.

The 2015 and 2016 additions included several large projects related to the replacement of a complex valve assembly due to non-operable valves as a result of wear and age, the replacement of a pipeline across a road to ensure code compliance and to maintain the existing operating pressure in the pipeline, and the installation of protection over the pipeline within a creek as the pipeline was nearly exposed.<sup>19</sup>

<sup>&</sup>lt;sup>17</sup> Table excludes AFUDC and capitalized overhead.

<sup>&</sup>lt;sup>18</sup> Pages 51-52.

<sup>&</sup>lt;sup>19</sup> 2015-2016 Fort Nelson Revenue Requirement Application, Page 30.



1 In 2017 and 2018 there is only one large project, which relates to the replacement of two valves

- at one site due to ongoing leaks (\$75 thousand). In 2018 a minor project is forecast regarding
  the upgrade of equipment at the Spectra tap (\$15 thousand).

#### 4 Distribution Plant

5 The component of growth related distribution capital (new mains, new services, and new 6 meters) forecast for the Test Period is \$37 thousand in 2017 and \$38 thousand in 2018, 7 consistent with 2015 actual and 2016 projected amounts. Growth capital investments are 8 incurred to install gas mains, services and meters to attach new customers.

- 9 The other forecast additions to distribution plant in 2017 and 2018 are related to:
- The installation of a new line heater burner management system at the Fort Nelson Gate
   Station to add industry standard safety features to achieve regulatory compliance,
   improve reliability, and improve combustion efficiency (\$60 thousand in 2017);
- The replacement of steel distribution mains and services to address those that are prone to leaks, and due to their location in Fort Nelson, of greater risk to public safety due to longer periods of frozen ground and remoteness from emergency repair personnel (\$175 thousand in 2017 and \$275 thousand in 2018).

#### 17 General Plant

Additions in the General Plant category return to more normal levels after the replacement of
the septic system at FEI's Fort Nelson office in 2016. In 2017 & 2018, FEI is planning some
upgrades to the Fort Nelson office building including:

- the replacement of the roof which is at the end of its useful life; and
- the replacement of the HVAC units which need to be replaced to comply with the phasing out of hydro chlorofluorocarbons as required by the Federal Government.

## 24 **7.2.2** Contributions in Aid of Construction (CIAC)

Gross CIAC is composed of opening contributions plus additions and less retirements throughout the year. There are no CIAC additions forecast for 2017 and 2018, and as such the year end CIAC amounts of \$1.3 million in each of 2017 and 2018 (Section 9, Schedule 3, Line 11) are unchanged from the 2015 actual ending balance.<sup>20</sup>

#### 29 **7.2.3 Accumulated Depreciation**

The rate base of FEFN includes both the accumulated depreciation of plant in service, and accumulated amortization of CIAC. Both are increased through depreciation or amortization expense, and decreased through retirements. Depreciation for 2017 and 2018 has been

<sup>&</sup>lt;sup>20</sup> Historically, FEFN CIAC additions have been minimal in dollar value and are difficult to predict.



calculated starting January 1 of the year after the assets are placed in service, which is the
 currently accepted treatment for FEFN.

3 The depreciation and net salvage rates used for 2017 and 2018 are the same as the 4 depreciation and net salvage rates that were proposed by FEI in its Annual Review for 2016 5 Rates, based on the utility's most recent depreciation study. Historically, FEFN depreciation and net salvage rates have been equal to those of FEI. Given that FEFN's capital is included with 6 7 FEI's capital in the data used to prepare the depreciation studies and determine the resulting 8 depreciation and net salvage rates, the recommended depreciation and net salvage rates are 9 applicable to FEFN. While those rates were not approved for 2016 through Commission Order 10 G-193-15, FEI is awaiting a decision in the separate proceeding that was initiated by the 11 Commission to approve its depreciation and net salvage rates, where it has proposed that the 12 rates be approved starting in 2017. FEFN proposes to adopt these depreciation and net 13 salvage rates for 2017 and 2018 subject to any determination by the Commission in the FEI 14 proceeding affecting the proposed rates.

15 Adoption of the proposed depreciation and net salvage rates is necessary in order to properly 16 reflect the useful lives of FEI's assets and a fair allocation and recovery of depreciation expense 17 between current and future ratepayers. The Depreciation Study supporting the proposed 18 depreciation and net salvage rates was undertaken by Larry Kennedy of Gannett Fleming 19 Valuation and Rate Consultants Inc., a leading depreciation expert in Canada. The 20 Depreciation Study is attached as Appendix B. The evidence and argument filed in the 21 Commission proceeding considering the proposed depreciation and net salvage rates is 22 available on the Commission's website.<sup>21</sup>

The proposed changes to depreciation rates result in a decrease to depreciation expense of \$42 thousand in 2017 and a further \$2 thousand decrease in 2018. The proposed changes to net salvage rates result in a \$44 thousand increase to deferral and CIAC amortization expense in 2017 with no further change in 2018.

#### 27 7.3 WORK IN PROGRESS

28 Consistent with past practice, Work in Progress included in Rate Base represents construction 29 work in progress for projects that are shorter than three months in duration and less than \$100 30 thousand. Projects over this threshold attract AFUDC, and are not included in rate base until 31 they are available for use, at which time AFUDC is no longer charged to the capital project.

#### 32 7.4 DEFERRAL ACCOUNTS

The mid-year balances of the deferral accounts included in rate base are provided in Table 7-3below.

<sup>&</sup>lt;sup>21</sup> <u>http://www.bcuc.com/ApplicationView.aspx?ApplicationId=532</u>.



1

2

#### Table 7-3: Deferral Balances included in Rate Base (\$000s)

Margin Related	Approved 2015	Actual 2015	Approved 2016	Projection 2016	Forecast 2017	Forecast 2018
	8	2015 99	2010	2018	168	2018 56
Revenue Stabilization Adjustment Mechanism (RSAM) Interest on RSAM	ð	- 99	5	205	108	50
Gas Cost Reconciliation Account (GCRA)	- 2	- (199)	-	(288)	(87)	-
Energy Policy Deferral Accounts						
Energy Efficiency & Convservation (EEC)	17	22	16	35	54	71
Non-Controllable Items Deferral Accounts						
Property Tax Deferral	(30)	(30)	(12)	(12)	(1)	1
Interest Variance	(31)	(31)	(16)	(18)	(6)	(1)
Customer Service Variance Account	(58)	(58)	(42)	(42)	(27)	(11)
Application Costs Deferral Accounts						
Generic Cost of Capital Application	3	2	-	1	-	-
2017-2018 Revenue Requirement Application	-	-	-	28	42	14
2015-2016 Revenue Requirement Application	9	18	9	27	9	-
2017 Rate Design Application	-	-	-	22	69	93
2016 Cost of Capital Application	-	-	-	2	3	2
Other Deferral Accounts						
Gains and Losses on Asset Disposition	108	108	97	97	86	74
Negative Salvage Provision/Cost	(6)	(7)	(47)	(40)	(93)	(174)
Muskwa River Crossing COS	(289)	(289)	(173)	(174)	(58)	-
Muskwa River Crossing Project Costs	681	681	409	409	136	-
Fort Nelson Revenue Surplus/Deficit Account	(49)	(49)	-	-	-	-
Residual Deferred Accounts						
Depreciation Variance	(22)	(22)	-	-	-	-
Total Mid-Year Deferred Charges in Rate Base	345	245	242	254	297	126

3 In the following sections, FEFN requests approval of three new deferral accounts related to the

4 costs of various applications and one new deferral account to manage customer rates over the

5 Test Period. FEFN also requests approval for the recovery of one existing deferral account.

#### 6 7.4.1 New Deferral Accounts

7 FEFN is proposing to create the following new deferral accounts discussed below.

#### 8 2017-2018 Revenue Requirement Application

9 FEFN will incur costs in 2016 related to the 2017 and 2018 Revenue Requirements and Rates 10 Application of approximately \$75 thousand (on a pre-tax basis). Costs incurred will consist of 11 legal fees, intervener and participant funding costs, Commission costs, required public 12 notifications, miscellaneous facilities, stationery and supplies costs, and an allocation of 13 Depreciation Study costs from FEI based on the number of FEFN customers as a proportion of 14 the total number of FEI and FEFN customers. Consistent with past practice, FEFN requests 15 approval to capture the full costs of this Application in this rate base deferral account and to



- 1 amortize these costs over two years, in 2017 and 2018, which represents the period covered by
- 2 this Application. Any variances between the forecast account balances and the actual incurred
- 3 costs will be amortized in rates in 2019.

#### 4 2016 Cost of Capital Application

5 As part of Decision G-75-13 relating to the Generic Cost of Capital Stage 1 Proceeding, FEI was 6 directed to file an application for the review of its common equity component and ROE. FEI filed 7 the application in October of 2015 and the proceeding to review the application concluded in 8 April of 2016. As part of the proceeding, FEI incurred costs related to legal and consultant fees, 9 miscellaneous facilities, stationery and supplies, Commission costs and Participant Assistance/Cost Award (PACA) reimbursements. As approved by Commission Order G-86-15, 10 11 FEI has captured these costs related to the 2016 Cost of Capital proceeding in a rate base 12 deferral account.

13 In this Application, FEFN is seeking approval for a rate base deferral account to capture FEFN's 14 share of the costs related to the 2016 Cost of Capital proceeding of approximately \$3 thousand 15 (on a pre-tax basis), which represents 0.2 percent of the total estimated FEI costs of \$1.7 million 16 and is consistent with the method used to allocate the 2013 Generic Cost of Capital Application 17 costs from FEI to FEFN. The allocation percentage is based on the number of FEFN customers 18 as a proportion of the total number of FEI and FEFN customers. FEFN is also seeking approval 19 to amortize these costs over three years, beginning in 2017, consistent with the recovery period 20 FEI will request in the Annual Review of 2017 Rates.

## 21 2017 Rate Design Application

In accordance with Directive 5 of Order G-21-14, FEI will be filing a comprehensive Rate Design Application (RDA) in 2016. In addition to FEI rate design, this RDA will also address FEFN cost allocation, rate design and the inclusion of FEFN in common rates. As approved by Commission Order G-86-15, FEI is currently capturing all of the costs related to the Rate Design Application in a rate base deferral account.

In this Application, FEFN is seeking approval for a rate base deferral account to capture FEFN's portion of the costs related to the RDA, estimated at approximately \$60 thousand (on a pre-tax basis) in 2016 and an additional \$65 thousand (on a pre-tax basis) in 2017. These costs consist of direct costs to Fort Nelson customers for administration, pre-application funding for stakeholder groups and Commission costs prior to filing the application, as well as an estimate of the allocated costs from FEI which represent legal and consultant fees, miscellaneous facilities, Commission costs and Participant Assistance/Cost Award (PACA) reimbursements.

FEFN will request an amortization period and a methodology for the allocation of costs from FEI
 for this account in a future application, once there is greater certainty over the process and
 forecast balance of this deferral account.



#### 1 **Revenue Deficiency**

As originally forecast in the financial schedules in Section 9, FEFN has calculated a revenue deficiency of \$301 thousand in 2017 and an incremental revenue surplus of \$146 thousand in 2018, for a cumulative 2018 revenue deficiency of \$155 thousand<sup>22</sup> compared to forecasted 2018 revenue at existing 2016 rates. If no deferral account is approved, these deficiencies would result in a delivery rate increase of approximately 13.50 percent in 2017 and an incremental delivery rate reduction of approximately 6.44 percent in 2018, for a cumulative 2018 delivery rate increase of approximately 7.06 percent compared to 2016 rates.

9 After reviewing these rate changes and the impact to customers, FEFN believes a more 10 appropriate approach is to smooth the impact of these changes over the two year test period. 11 Accordingly, as shown in the financial schedules in Section 9, FEFN is proposing an adjustment 12 to defer \$148 thousand (\$110 thousand after-tax) of the 2017 revenue deficiency to 2018. This 13 adjustment results in a revenue deficiency of \$153 thousand in 2017 and an incremental 14 revenue deficiency of \$150 thousand in 2018, for a cumulative 2018 revenue deficiency of \$303 thousand<sup>23</sup> compared to forecasted 2018 revenue at existing 2016 rates. These changes result 15 in a delivery rate increase of approximately 6.86 percent in 2017 and an additional 6.94 percent 16 17 increase in 2018, for a cumulative 2018 delivery rate increase of 13.80 percent compared to 18 2016 rates.

FEFN is requesting this non-rate base deferral account to capture the deferral of this 2017
deficiency amount of \$148 thousand before-tax and to recover it from customers through 2018
delivery rates.

Additionally, FEFN is also proposing to capture FEFN's 2016 revenue requirement impact of any variance between the equity thickness and ROE amounts approved in FEI's current Cost of Capital proceeding and its 2016 interim ROE and capital structure amounts as approved through Commission Order G-97-15 in the same deferral account. FEFN anticipates the amount will be known before this proceeding is completed and will include the amortization of this amount in updated financial schedules in this proceeding.

#### 28 **7.4.2 Existing Deferral Accounts**

29 FEFN is providing an update on the following deferral account.

#### 30 Fort Nelson First Nations Right-of-Way Agreement

31 As approved through Commission Order G-97-15, a non-rate base deferral account was created

32 to capture the actual costs incurred to complete the Fort Nelson First Nations Right-of-Way

<sup>&</sup>lt;sup>22</sup> Compared to 2016 rates, \$301 thousand deficiency collected in 2017 and \$155 thousand deficiency collected in 2018 for a total of \$456 thousand.

<sup>&</sup>lt;sup>23</sup> Compared to 2016 rates, \$153 thousand deficiency collected in 2017 and \$303 thousand deficiency collected in 2018 for a total of \$456 thousand.



- 1 Agreement. The Commission also stated that "*FEI is directed to apply for disposition of this* 2 *deferral account at FEFN's next revenue requirement proceeding.*"<sup>24</sup>
- In this Application, FEFN is proposing to continue to record the actual costs in a non-rate base
   deferral account attracting a weighted average cost of capital return and apply for disposition of
   this account in its next revenue requirement proceeding.
- To date, only approximately \$110 thousand of the projected \$410 thousand spending has been
  incurred with the remainder projected to be spent before the end of 2016. The delay in finalizing
  the agreement is due to ongoing negotiations. As there continues to be some uncertainty about
  the ultimate dollar value to be incurred, maintaining the non-rate base deferral account ensures
- 10 customers will only pay for the actual costs incurred.

# 11 7.5 CASH WORKING CAPITAL

- 12 Cash Working Capital is defined as the average amount of capital provided by investors in the 13 Company to bridge the gap between the time expenditures are required to provide service and 14 the time collections are received for that service. The periods are usually expressed in terms of 15 lead or lag days, and are supported by a Lead Lag Study. Cash working capital of \$75 thousand 16 (Section 9, Schedule 17, Line 2) in 2017 and \$71 thousand (Section 9, Schedule 18, Line 2) in 17
- 17 2018 has been added to rate base.
- 18 FEFN has utilized the lead/lag days as approved in Order G-138-14 for FEI.
- 19 The next and final step in the calculation of cash working capital is to adjust the cash working 20 capital for the reserve for bad debts and the withholdings from employees. The reserve for bad
- 21 debts has been forecast based on customer additions and customer deposit requirements, while
- 22 employee withholdings are calculated based on historical levels.

# 23 **7.6** OTHER WORKING CAPITAL

- 24 Other working capital consists of inventories of material and supplies.
- The forecast 2017 and 2018 costs for these items have been calculated based on historical levels for inventories. Please refer to Section 9, Schedules 17 and 18.

# 27 **7.7** *RATE BASE SUMMARY*

The rate base amounts that have been forecasted for 2017 and 2018 incorporate required expenditures to meet our customers' needs and make improvements related to system integrity and reliability.

31

<sup>&</sup>lt;sup>24</sup> Order G-97-15, Page 12,



# 1 8. FINANCING AND CAPITAL STRUCTURE

#### 2 8.1 *INTRODUCTION*

3 In this Application, FEFN has forecast its share of FEI's debt financing costs for 2017 and 2018 4 using the same method as has been accepted in the past. The Company finances its 5 investment in rate base assets with a mix of debt and equity, as approved by the Commission 6 from time to time. FEFN shares the same capital structure and ROE as FEI. FEFN has 7 prepared this Application using FEI's interim ROE of 8.75 percent and common equity percentage of 38.5 percent. FEI is awaiting a decision on its ROE and capital structure for 2016 8 9 and future years. As discussed above, FEFN has proposed that the 2016 impact of any 10 changes to the ROE or capital structure as a result of that decision will be captured in the Revenue Deficiency deferral account. The 2016, as well as the 2017 and 2018 impacts, will be 11 12 reflected in updated financial schedules in this proceeding.

#### 13 8.2 FINANCING COSTS

14 Debt financing costs include the interest expense on issued debt as well as interest expense on 15 new issuances that are forecast. Debt consists of both Long-term Debt and Short-term

16 (Unfunded) Debt.

#### 17 8.2.1 Long-Term Debt

FEFN receives an allocation of FEI's long term debt. FEI's long-term debt issues in 2016 will be discussed in FEI's Annual Review of 2017 Rates. FEI has not forecast any long-term debt issues or retirements in either 2017 or 2018. FEFN's share of FEI's long-term debt is \$6,187 thousand (Section 9, Schedule 43, Line 26) in 2017 and \$6,215 thousand (Section 9, Schedule 44, Line 26) in 2018.

#### 23 8.2.2 Short-Term Debt

FEFN's short-term debt represents the difference between its long-term debt allocation from FEI and 61.5% of rate base. Interest rate forecasts reflect FEI's methodology as discussed in the 26 2014 FEI PBR Application and repeated below.

27 FEI's short-term borrowing rate is based on the rate at which it issues commercial paper. Since 28 commercial paper issuance rates are not forecast by economists, a forecast needs to be 29 derived by FEI. The forecast is based on the historical differential between the Canadian 30 Deposit Overnight Rate (CDOR) and the rate obtained by FEI under its commercial paper 31 program. CDOR is used because FEI's short-term borrowings under its credit facility are priced 32 off of CDOR and so CDOR is tracked relative to FEI's commercial paper borrowings. CDOR is 33 not forecast by economists either; therefore, FEI must first obtain the 3-Month T-Bill rate 34 forecast then convert it to a CDOR forecast. FEI does this by taking the 3 year historical spread 35 between CDOR and the 3-month T-Bill rate. To then derive the short-term borrowing rate



- 1 forecast, FEI further adjusts the CDOR forecast with the 3-year historical spread between
- 2 CDOR and rates of issuances under its commercial paper program.
- 3
- The 3-month T-Bill rate is projected to increase from 0.49 percent in 2016 to approximately 1.39
- 5 percent in 2018. The short-term borrowing rate forecast is shown in Table 8-1 below.
- 6

	2016	2017	2018
3 Month T-Bill Rate <sup>1</sup>	0.49%	0.59%	1.39%
Spread to CDOR	0.35%	0.35%	0.35%
CDOR Rate	0.84%	0.94%	1.74%
Spread to CP	-0.18%	-0.18%	-0.18%
CP Dealer Commission	0.10%	0.10%	0.10%
Standby Fee on Undrawn Credit <sup>2</sup>	0.34%	0.45%	0.45%
Upfront Fee on Undrawn Credit	0.09%	0.12%	0.12%
FEFN Short-Term Rate (Rounded)	1.20%	1.40%	2.20%

#### Table 8-1: Short Term Interest Rate Forecasts

Note 1 - 3 month T-Bill rate for 2016 based on a composite of actual historical rates up to March 31, 2016 and forecasted rates for the remainder of the year.

Note 2 - A Standby fee of 16 bps is charged on undrawn credit facility amounts, and has been reflected into the short term rate as if the forecast amount payable had been converted to a rate applied to commercial paper borrowings.

7

- 8 Due to the uncontrollable nature and forecasting uncertainty associated with interest rates,
- 9 FEFN has an Interest Rate Variance deferral account that captures the impact on interest
- 10 expense of interest rate variances and variances in the amount of debt as compared to forecast.

## 11 8.3 SUMMARY OF FINANCING AND RETURN ON EQUITY

12 FEI continues to prudently manage its capital structure and address financing requirements in 13 an appropriate manner.

14



# 1 9. FINANCIAL SCHEDULES

2

#### SUMMARY OF RATE CHANGE

FOR THE YEARS ENDING DECEMBER 31, 2017 and 2018 (\$millions)

Line	9	2017		2018			
No.	Particulars	 Forecast		 Forecast		Cumulative	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	VOLUME/REVENUE RELATED						
2	Customer Growth and Volume	\$ 0.278		\$ 0.033	\$		
3 4	Change in Other Revenue	 (0.006)	0.272	 0.000	0.033	(0.006)	0.305
5	O&M CHANGES						
6	Gross O&M Change	0.021		0.022		0.043	
7	Capitalized Overhead Change	(0.003)	0.018	(0.002)	0.020	(0.005)	0.038
8	· · ·						
9	DEPRECIATION EXPENSE						
10	Depreciation Rate Change (Depr Study)	(0.042)		(0.002)		(0.044)	
11	Depreciation from Net Additions	 (0.018)		 0.007		(0.01)	
12	Plant Depreciation		(0.060)		0.005		(0.055)
13							
14	AMORTIZATION EXPENSE						
15	CIAC Rate Change (Depr Study)	0.008		0.000		0.008	
16	CIAC from Net Additions	 0.000		 0.000		0.000	
17	CIAC	0.008		0.000		0.008	
18	Net Salvage Rate Change (Depr Study)	0.036		0.000		0.036	
19	Deferrals	 0.049	0.093	 (0.154)	(0.154)	(0.11)	(0.061)
20							
21	FINANCING AND RETURN ON EQUITY						
22	Financing Rate Changes	(0.050)		0.006		(0.044)	
23	Financing Ratio Changes	(0.055)		(0.019)		(0.074)	
24	Rate Base Growth	 0.081	(0.024)	 0.022	0.009	0.103	(0.015)
25							
26	TAX EXPENSE						
27	Property and Other Taxes	0.002		(0.002)		0.000	
28	Other Income Taxes Changes	 0.000	0.002	 (0.057)	(0.059)	(0.057)	(0.057)
29							
30 31	DEFERRED 2017 REVENUE DEFICIENCY		(0.148)		0.296		0.148
32	Revenue Deficiency (Surplus)	\$	0.153	\$	0.150	-	\$ 0.303
33			0.000		(0.000)		o 100
34	Margin @ Existing Rates		2.229		(0.033)	-	2.196
35	Rate Change		6.86%			-	13.80%

Section 9

Schedule 1

	Cross Reference	
')	(8)	
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5		
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5)		
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,		
5		
;	Schedule 21 & 22, Line 11, Column 4	
<u>;</u>	Schedule 21 & 22, Line 15, Column 3	
6		

# FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line No.	Particulars		2016 Approved	2017 at Revised			Change	Cross Reference
	(1)		(2)	(3)		(4)		(5)
1	Plant in Service, Beginning	\$	15,180	\$	15,423	\$	243	Schedule 5.2, Line 29, Column 3
2	Net Additions		251		496		245	Schedule 5.2, Line 29, Column 4+5+6
3 4	Plant in Service, Ending		15,431		15,919		488	
5	Accumulated Depreciation Beginning	\$	(3,819)	\$	(4,114)	\$	(295)	Schedule 7.2, Line 29, Column 5
6	Net Additions		(345)		(307)		<b>`</b> 38 <sup>´</sup>	Schedule 7.2, Line 29, Column 6+7
7 8	Accumulated Depreciation Ending		(4,164)		(4,421)		(257)	
9	CIAC, Beginning	\$	(1,319)	\$	(1,326)	\$	(7)	Schedule 9, Line 4, Column 2
10	Net Additions		-		-		-	Schedule 9, Line 4, Column 5+6
11 12	CIAC, Ending		(1,319)		(1,326)		(7)	
13	Accumulated Amortization Beginning - CIAC	\$	664	\$	702	\$	38	Schedule 9, Line 9, Column 2
14	Net Additions		36		28		(8)	Schedule 9, Line 9, Column 5+6
15 16	Accumulated Amortization Ending - CIAC		700		730		30	
17	Net Plant in Service, Mid-Year	\$	10,677	\$	10,794	\$	117	
18		•	0.5	•		•		
19	Capital Work in Progress, No AFUDC	\$		\$	35	\$	-	
20	Unamortized Deferred Charges		242		297		55	Schedule 13.1, Line 15, Column 10
21 22	Working Capital		43		52		9	Schedule 17, Line 11, Column 3
23	Mid-Year Utility Rate Base	\$	10,997	\$	11,178	\$	181	

June 30, 2016

Schedule 2

# FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

Line No.	Particulars	2017 Forecast	2018 at Revised Rates	Change	Cross Reference
	(1)	 (2)	(3)	(4)	(5)
1	Plant in Service, Beginning	\$ 15,423	\$ 15,919	\$ 496	Schedule 6.2, Line 29, Column 3
2	Net Additions	496	464	(32)	Schedule 6.2, Line 29, Column 4+5+6
3 4	Plant in Service, Ending	 15,919	16,383	464	-
5	Accumulated Depreciation Beginning	\$ (4,114)	\$ (4,421)	\$ (307)	Schedule 8.2, Line 29, Column 5
6	Net Additions	(307)	(257)		Schedule 8.2, Line 29, Column 6+7
7 8	Accumulated Depreciation Ending	 (4,421)	(4,678)	(257)	
9	CIAC, Beginning	\$ (1,326)	\$ (1,326)	- \$	Schedule 10, Line 4, Column 2
10	Net Additions	-	-	-	Schedule 10, Line 4, Column 5+6
11 12	CIAC, Ending	 (1,326)	(1,326)	) –	-
13	Accumulated Amortization Beginning - CIAC	\$ 702	\$ 730	\$ 28	Schedule 10, Line 9, Column 2
14	Net Additions	28	28	-	Schedule 10, Line 9, Column 5+6
15 16	Accumulated Amortization Ending - CIAC	 730	758	28	-
17 18	Net Plant in Service, Mid-Year	\$ 10,794	\$ 11,020	\$ 226	-
19	Capital Work in Progress, No AFUDC	\$ 35	\$ 35	\$-	
20	Unamortized Deferred Charges	297	126	(171)	Schedule 14.1, Line 15, Column 10
21 22	Working Capital	52	48	(4)	
23	Mid-Year Utility Rate Base	\$ 11,178	\$ 11,229	\$ 51	-

June 30, 2016

Schedule 3

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June 30, 2016

Section 9

#### Schedule 4

#### CAPITAL EXPENDITURES TO PLANT RECONCILIATION FOR THE YEARS ENDING DECEMBER 31, 2017 and 2018 (\$000s)

Line		2017	2018	
No.	Particulars	Forecast	Forecast	Cross Reference
	(1)	(2)	(3)	(4)
1	CAPEX			
2				
3 4	Total Regular Capital Expenditures	\$ 478	\$ 499	
5	Total Special Projects and CPCNs	\$ -	\$ -	
6				
7	Total Capital Expenditures	\$ 478	\$ 499	
8				
9				
10	RECONCILIATION OF CAPITAL EXPENDITURES TO PLANT			
11				
12	Regular Capital Expenditures	\$ 478	\$ 499	
13	Add - Capitalized Overheads	123	125	Schedule 29, Line 22, Column 5 & 6
14	Add - AFUDC	 -	 -	
15	Gross Capital Expenditures	601	624	
16	Change in Work in Progress	-	 -	
17	Total Additions to Plant - Regular Capital	\$ 601	\$ 624	
18				
19	Special Projects and CPCNs	\$ -	\$ -	
20 21	Total Additions to Plant - CPCNs	\$ -	\$ -	
22	Grand Total Additions to Plant	\$ 601	\$ 624	

PLANT IN SERVICE CONTINUITY SCHEDULE FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line No.	Account	Particulars	12/3	31/2016	CPCN's	A	Additions	Retire	ements	12/31/2017	Cross Refere
	(1)	(2)		(3)	(4)		(5)	(	6)	(7)	(8)
1		INTANGIBLE PLANT									
2	117-00	Utility Plant Acquisition Adjustment	\$	-	\$ -	\$	-	\$	-	\$-	
3	175-10	Unamortized Conversion Expense		-	-		-		-	-	
4	178-00	Organization Expense		-	-		-		-	-	
5	179-01	Other Deferred Charges		-	-		-		-	-	
6	401-01	Franchise and Consents		-	-		-		-	-	
7	402-11	Utility Plant Acquisition Adjustment		-	-		-		-	-	
8	402-03	Other Intangible Plant		-	-		-		-	-	
9	431-01	Mfg'd Gas Land Rights		-	-		-		-	-	
10	461-01	Transmission Land Rights		78	-		-		-	78	
11	471-01	Distribution Land Rights		20	-		-		-	20	
12	402-01	Application Software - 12.5%		364	-		23		(11)	376	
13	402-02	Application Software - 20%		39	-		23		(31)	31	
14			\$	501	\$ -	\$	46	\$	(42)	\$ 505	-
15											-
16		MANUFACTURED GAS / LOCAL STORAGE									
17	430-00	Manufact'd Gas - Land	\$	-	\$ -	\$	-	\$	-	\$ -	
18	431-00	Manufact'd Gas - Land Rights		-	-		-		-	-	
19	432-00	Manufact'd Gas - Struct. & Improvements		-	-		-		-	-	
20	433-00	Manufact'd Gas - Equipment		-	-		-		-	-	
21	434-00	Manufact'd Gas - Gas Holders		-	-		-		-	-	
22	436-00	Manufact'd Gas - Compressor Equipment		-	-		-		-	-	
23	437-00	Manufact'd Gas - Measuring & Regulating Equipment		-	-		-		-	-	
24	443	Gas Holders - Storage (non-Tilbury, non-Mt. Hayes)		-	-		-		-	-	
25			\$	-	\$ _	\$	-	\$	_	\$ -	-

June 30, 2016

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Section 9

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PLANT IN SERVICE CONTINUITY SCHEDULE FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line No.	Account	Particulars	12/	31/2016		CPCN's	Ad	Iditions	Retirements	1	2/31/2017	Cross Referer
	(1)	(2)		(3)		(4)		(5)	(6)		(7)	(8)
1		TRANSMISSION PLANT										
2	460-00	Land in Fee Simple	\$	-	\$	-	\$	-	\$-	\$	-	
3	461-00	Transmission Land Rights		-	,	-		-	-	r	-	
4	462-00	Compressor Structures		-		-		-	-		-	
5	463-00	Measuring Structures		10		-		-	-		10	
6	464-00	Other Structures & Improvements		-		-		-	-		-	
7	465-00	Mains		5,619		-		99	-		5,718	
8	465-20	Mains - INSPECTION		-		-		-	-		-	
9	466-00	Compressor Equipment		-		-		-	-		-	
10	466-10	Compressor Equipment - OVERHAUL		-		-		-	-		-	
11	467-10	Measuring & Regulating Equipment		670		-		-	-		670	
12	467-20	Telemetering		6		-		-	-		6	
13	468-00	Communication Structures & Equipment		-		-		-	-		-	
14			\$	6,305	\$	-	\$	99	\$-	\$	6,404	
15											i	
16		DISTRIBUTION PLANT										
17	470-00	Land in Fee Simple	\$	-	\$	-	\$	- :	\$-	\$	-	
18	471-00	Distribution Land Rights		-		-		-	-		-	
19	472-00	Structures & Improvements		273		-		-	-		273	
20	473-00	Services		2,426		-		63	(	4)	2,485	
21	474-00	House Regulators & Meter Installations		518		-		-		5)	513	
22	474-02	Meters/Regulators Installations		116		-		-	-		116	
23	475-00	Mains		2,412		-		262	-		2,674	
24	476-00	Compressor Equipment		-		-		-	-		-	
25	477-10	Measuring & Regulating Equipment		1,556		-		81	-		1,637	
26	477-20	Telemetering		214		-		-	-		214	
27	478-10	Meters		13		-		-	-		13	
28	478-20	Instruments		-		-		-	-		-	
29	479-00	Other Distribution Equipment		-		-		-	-		-	
30			\$	7,528	\$	_	\$	406	\$ (	9) \$	7,925	

June 30, 2016

Schedule 5.1

Section 9

rence

PLANT IN SERVICE CONTINUITY SCHEDULE FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

No.	Account	Particulars	12/	31/2016	CPC	N's	Ad	ditions	Retiremen	ts	12/31/2017	Cross Referen
	(1)	(2)		(3)	(4	)		(5)	(6)		(7)	(8)
1		GENERAL PLANT & EQUIPMENT										
2	480-00	Land in Fee Simple	\$	1	\$	-	\$	- :	\$	- \$	1	
3	481-00	Land Rights		-		-		-		-	-	
4	482-10	Frame Buildings		250		-		-		-	250	
5	482-20	Masonry Buildings		553		-		-		-	553	
6	482-30	Leasehold Improvement		-		-		-		-	-	
7	483-30	GP Office Equipment		6		-		20		-	26	
8	483-40	GP Furniture		1		-		-		-	1	
9	483-10	GP Computer Hardware		163		-		20		(41)	142	
10	483-20	GP Computer Software		21		-		-		(4)	17	
11	483-21	GP Computer Software		-		-		-		-	-	
12	483-22	GP Computer Software		-		-		-		-	-	
13	484-00	Vehicles		29		-		10		-	39	
14	484-10	Vehicles - Leased		-		-		-		-	-	
15	485-10	Heavy Work Equipment		-		-		-		-	-	
16	485-20	Heavy Mobile Equipment		-		-		-		-	-	
17	486-00	Small Tools & Equipment		42		-		-		(9)	33	
18	487-20	Equipment on Customer's Premises		-		-		-		-	-	
19	487	VRA Compressor Installation Costs		-		-		-		-	-	
20	488-10	Telephone		23		-		-		-	23	
21	488-20	Radio		-		-		-		-	-	
22	489-00	Other General Equipment		-		-		-		-	-	
23			\$	1,089	\$	-	\$	50	\$	(54) \$	1,085	
24				,								
25		UNCLASSIFIED PLANT										
26	499-00	Plant Suspense		-		-		-		-	-	
27			\$	-	\$	-	\$	-	\$	- \$	-	
28			· ·						•			
29		Total Plant in Service	\$	15,423	\$	-	\$	601	\$	(105) \$	15,919	
30			- <del></del>	-,			T	'		\/ <del>+</del>	-,	
31		Cross Reference			Schedule	4 line	Schedu	ule 4, Line				
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Schedule 4, Line Schedule 4, Line 20, Column 2 17, Column 2

June 30, 2016

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Schedule 5.2

erence

PLANT IN SERVICE CONTINUITY SCHEDULE FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

Line No.	Account	Particulars	12/3	31/2017	CPCN's	A	Additions	Retire	ments	12/31/2018	Cross Refere
	(1)	(2)		(3)	(4)		(5)	(6	5)	(7)	(8)
1		INTANGIBLE PLANT									
2	117-00	Utility Plant Acquisition Adjustment	\$	-	\$ -	\$	-	\$	-	\$ -	
3	175-10	Unamortized Conversion Expense		-	-		-		-	-	
4	178-00	Organization Expense		-	-		-		-	-	
5	179-01	Other Deferred Charges		-	-		-		-	-	
6	401-01	Franchise and Consents		-	-		-		-	-	
7	402-11	Utility Plant Acquisition Adjustment		-	-		-		-	-	
8	402-03	Other Intangible Plant		-	-		-		-	-	
9	431-01	Mfg'd Gas Land Rights		-	-		-		-	-	
10	461-01	Transmission Land Rights		78	-		-		-	78	
11	471-01	Distribution Land Rights		20	-		-		-	20	
12	402-01	Application Software - 12.5%		376	-		23		(36)	363	
13	402-02	Application Software - 20%		31	-		23		(8)	46	
14			\$	505	\$ -	\$	46	\$	(44)	\$ 507	
15											
16		MANUFACTURED GAS / LOCAL STORAGE									
17	430-00	Manufact'd Gas - Land	\$	-	\$ -	\$	-	\$	-	\$ -	
18	431-00	Manufact'd Gas - Land Rights		-	-		-		-	-	
19	432-00	Manufact'd Gas - Struct. & Improvements		-	-		-		-	-	
20	433-00	Manufact'd Gas - Equipment		-	-		-		-	-	
21	434-00	Manufact'd Gas - Gas Holders		-	-		-		-	-	
22	436-00	Manufact'd Gas - Compressor Equipment		-	-		-		-	-	
23	437-00	Manufact'd Gas - Measuring & Regulating Equipment		-	-		-		-	-	
24	443	Gas Holders - Storage (non-Tilbury, non-Mt. Hayes)		-	-		-		-	-	
25			\$	-	\$ -	\$	-	\$	-	\$ -	

June 30, 2016

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Schedule 6

Section 9

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PLANT IN SERVICE CONTINUITY SCHEDULE FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

Line No.	Account	Particulars	12/	31/2017	CPCN's	Ad	Iditions	Retirem	ents	12	2/31/2018	Cross Referer
	(1)	(2)		(3)	(4)		(5)	(6)			(7)	(8)
1		TRANSMISSION PLANT										
2	460-00	Land in Fee Simple	\$	-	\$ -	\$	-	\$	-	\$	-	
3	461-00	Transmission Land Rights		-	-		-		-		-	
4	462-00	Compressor Structures		-	-		-		-		-	
5	463-00	Measuring Structures		10	-		-		-		10	
6	464-00	Other Structures & Improvements		-	-		-		-		-	
7	465-00	Mains		5,718	-		-		-		5,718	
8	465-20	Mains - INSPECTION		-	-		-		-		-	
9	466-00	Compressor Equipment		-	-		-		-		-	
10	466-10	Compressor Equipment - OVERHAUL		-	-		-		-		-	
11	467-10	Measuring & Regulating Equipment		670	-		-		-		670	
12	467-20	Telemetering		6	-		20		-		26	
13	468-00	Communication Structures & Equipment		-	-		-		-		-	
14			\$	6,404	\$ -	\$	20	\$	-	\$	6,424	
15												
16		DISTRIBUTION PLANT										
17	470-00	Land in Fee Simple	\$	-	\$ -	\$	-	\$	-	\$	-	
18	471-00	Distribution Land Rights		-	-		-		-		-	
19	472-00	Structures & Improvements		273	-		-		-		273	
20	473-00	Services		2,485	-		63		(4)	)	2,544	
21	474-00	House Regulators & Meter Installations		513	-		-		(21)		492	
22	474-02	Meters/Regulators Installations		116	-		-		-		116	
23	475-00	Mains		2,674	-		424		-		3,098	
24	476-00	Compressor Equipment		-	-		-		-		-	
25	477-10	Measuring & Regulating Equipment		1,637	-		21		-		1,658	
26	477-20	Telemetering		214	-		-		-		214	
27	478-10	Meters		13	-		-		-		13	
28	478-20	Instruments		-	-		-		-		-	
29	479-00	Other Distribution Equipment		-	-		-		-		-	
30			\$	7,925	\$ _	\$	508	\$	(25)	) \$	8,408	

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Schedule 6.1

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PLANT IN SERVICE CONTINUITY SCHEDULE FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

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Schedule 4, Line Schedule 4, Line 20, Column 3 17, Column 3

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Schedule 6.2

erence

ACCUMULATED DEPRECIATION CONTINUITY SCHEDULE FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line No.	Account	Particulars		Plant for D	epreciation Rate	11	2/31/2016		epreciation Expense	Ref	tirements		st of noval	۵di	ustments	13	2/31/2017	Cross Reference
110.	(1)	(2)	·	(3)	(4)		(5)		(6)	T(C)	(7)		8)	Auji	(9)	12	(10)	(11)
1		INTANGIBLE PLANT																
2	117-00	Utility Plant Acquisition Adjustment	\$	_	0.00%	\$	_	\$	_	\$	_	\$	_	\$	_	\$	_	
2	175-10	Unamortized Conversion Expense	Ψ	-	1.00%	Ψ	_	Ψ	_	Ψ	_	Ψ	_	Ψ		Ψ	_	
4	178-00	Organization Expense		_	1.00%		_		_		_		_				_	
5	179-00	Other Deferred Charges		_	0.00%		_		_		_						_	
6	401-01	Franchise and Consents		_	5.39%		_		_		_		_				_	
7	402-11	Utility Plant Acquisition Adjustment		_	0.00%		_		_		_						_	
8	402-03	Other Intangible Plant		_	2.01%		_		_		_		_				_	
9	431-01	Mfg'd Gas Land Rights		_	0.00%		_		_		_						_	
10	461-01	Transmission Land Rights		78	0.00%		_		_		_		_				_	
11	471-01	Distribution Land Rights		20	0.00%		_		_		_						_	
12	402-01	Application Software - 12.5%		364	12.50%		222		46		(11)		_				257	
13	402-01	Application Software - 20%		39	20.00%		33		-0 6		(31)		_				8	
14	402-02	Application Software - 2070	\$	501	20.0070	\$	255		52	\$	(42)	\$		\$		\$	265	
15			Ψ			Ψ	200	Ψ	52	Ψ	(44)	Ψ	_	Ψ	_	Ψ	200	
16		MANUFACTURED GAS / LOCAL STORAGE																
17	430-00	Manufact'd Gas - Land	\$	_	0.00%	\$	_	\$	_	\$	_	\$	_	\$	_	\$	_	
18	431-00	Manufact'd Gas - Land Rights	Ψ	_	0.00%	Ψ	_	Ψ	_	Ψ	_	Ψ	_	Ψ	-	Ψ	_	
19	432-00	Manufact'd Gas - Struct. & Improvements		_	2.82%		_		_		_		_		-		_	
20	433-00	Manufact'd Gas - Equipment		-	4.66%		-		-		_		_		-		_	
21	434-00	Manufact'd Gas - Gas Holders		-	2.45%		-		_		-		_		-		_	
22	436-00	Manufact'd Gas - Compressor Equipment		-	3.68%		-		-		_		_		-		_	
23	437-00	Manufact'd Gas - Measuring & Regulating Equipment		-	2.34%		-		_		-		_		-		_	
24	443	Gas Holders - Storage (non-Tilbury, non-Mt. Hayes)		-	0.00%		_		-		-		_		-		_	
25			\$		0.0070	\$		\$		\$	_	\$	_	\$	-	\$		

Section 9

#### Schedule 7

#### ACCUMULATED DEPRECIATION CONTINUITY SCHEDULE FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line No.		Derticulare	s Plant for D preciation	epreciation Rate	40/	04/0046	Depreciatio		tirements	Cos		۸diu	otmonto	4	2/31/2017	Cross Reference
INO.		Particulars			12/	31/2016	Expense	Re		Rem		,	istments	I.		
	(1)	(2)	(3)	(4)		(5)	(6)		(7)	(8	5)		(9)		(10)	(11)
1		TRANSMISSION PLANT														
2	460-00	Land in Fee Simple	\$ -	0.00%	\$	-	\$ -	\$	-	\$	-	\$	-	\$	-	
3	461-00	Transmission Land Rights	-	0.00%		-	-		-		-		-		-	
4	462-00	Compressor Structures	-	3.51%		-	-		-		-		-		-	
5	463-00	Measuring Structures	10	2.29%		1	-		-		-		-		1	
6	464-00	Other Structures & Improvements	-	3.66%		-	-		-		-		-		-	
7	465-00	Mains	5,619	1.47%		455	i	33	-		-		-		538	
8	465-20	Mains - INSPECTION	-	15.20%		-	-		-		-		-		-	
9	466-00	Compressor Equipment	-	2.89%		-	-		-		-		-		-	
10	466-10	Compressor Equipment - OVERHAUL	-	10.19%		-	-		-		-		-		-	
11	467-10	Measuring & Regulating Equipment	670	2.41%		264		16	-		-		-		280	
12	467-20	Telemetering	6	9.75%		6		1	-		-		-		7	
13	468-00	Communication Structures & Equipment	-	0.56%		-	-		-		-		-		-	
14			\$ 6,305		\$	726	\$ 10	00 \$	-	\$	-	\$	-	\$	826	
15			 													
16		DISTRIBUTION PLANT														
17	470-00	Land in Fee Simple	\$ -	0.00%	\$	-	\$ -	\$	-	\$	-	\$	-	\$	-	
18	471-00	Distribution Land Rights	-	0.00%		-	-		-		-		-		-	
19	472-00	Structures & Improvements	273	2.41%		113		7	-		-		-		120	
20	473-00	Services	2,426	2.45%		898	:	59	(4)		-		-		953	
21	474-00	House Regulators & Meter Installations	518	5.99%		367		31	(5)		-		-		393	
22	474-02	Meters/Regulators Installations	116	4.55%		11		5	-		-		-		16	
23	475-00	Mains	2,412	1.54%		674	:	37	-		-		-		711	
24	476-00	Compressor Equipment	-	0.00%		-	-		-		-		-		-	
25	477-10	Measuring & Regulating Equipment	1,556	3.05%		603		45	-		-		-		648	
26	477-20	Telemetering	214	2.82%		13		6	-		-		-		19	
27	478-10	Meters	13	7.09%		14		1	-		-		-		15	
28	478-20	Instruments	-	2.99%		-	-		-		-		-		-	
29	479-00	Other Distribution Equipment	-	0.00%		-	-		-		-		-		-	
30			\$ 7,528		\$	2,693	\$ 19	91 \$	(9)	\$	-	\$	-	\$	2,875	

#### Schedule 7.1

#### ACCUMULATED DEPRECIATION CONTINUITY SCHEDULE FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line No	Account	Particulars		Plant for D	epreciation Rate	12	2/31/2016		reciation	Reti	rements	ost of moval	Adi	ustments	. 1	2/31/20	17	Cross Reference
	(1)	(2)		(3)	(4)		(5)	Ľ/	(6)	1.01	(7)	(8)	7 (0)	(9)	, I	(10)	<u></u> -	(11)
	(')	(=)		(0)	(')		(0)		(0)		(')	(0)		(0)		(10)		('')
1		GENERAL PLANT & EQUIPMENT																
2	480-00	Land in Fee Simple	\$	1	0.00%	\$	-	\$	-	\$	-	\$ -	\$	-	\$		-	
3	481-00	Land Rights		-	0.00%		-		-		-	-		-			-	
4	482-10	Frame Buildings		250	6.04%		211		15		-	-		-			226	
5	482-20	Masonry Buildings		553	1.95%		70		11		-	-		-			81	
6	482-30	Leasehold Improvement		-	9.49%		-		-		-	-		-			-	
7	483-30	GP Office Equipment		6	6.67%		4		-		-	-		-			4	
8	483-40	GP Furniture		1	5.00%		1		-		-	-		-			1	
9	483-10	GP Computer Hardware		163	20.00%		84		33		(41)	-		-			76	
10	483-20	GP Computer Software		21	12.50%		11		3		(4)	-		-			10	
11	483-21	GP Computer Software		-	0.00%		-		-		-	-		-			-	
12	483-22	GP Computer Software		-	0.00%		-		-		-	-		-			-	
13	484-00	Vehicles		29	10.55%		9		3		-	-		-			12	
14	484-10	Vehicles - Leased		-	9.44%		-		-		-	-		-			-	
15	485-10	Heavy Work Equipment		-	6.38%		-		-		-	-		-			-	
16	485-20	Heavy Mobile Equipment		-	9.85%		-		-		-	-		-			-	
17	486-00	Small Tools & Equipment		42	5.00%		31		2		(9)	-		-			24	
18	487-20	Equipment on Customer's Premises		-	6.67%		-		-		-	-		-			-	
19	487	VRA Compressor Installation Costs		-	0.00%		-		-		-	-		-			-	
20	488-10	Telephone		23	6.67%		19		2		-	-		-			21	
21	488-20	Radio		-	6.67%		-		-		-	-		-			-	
22	489-00	Other General Equipment		-	0.00%		-		-		-	-		-			-	
23			\$	1,089		\$	440	\$	69	\$	(54)	\$ -	\$	-	\$		455	
24																		
25		UNCLASSIFIED PLANT																
26	499-00	Plant Suspense		-	0.00%		-		-		-	-		-			-	
27			\$	-		\$	-	\$	-	\$	-	\$ -	\$	-	\$		-	
28																		
29		Total	\$	15,423		\$	4,114	\$	412	\$	(105)	\$ -	\$	-	\$	4	,421	
30																		
31		Cross Reference	Sche	dule 5.2,														
				ne 29,														

Column 3+4

#### Schedule 7.2

ACCUMULATED DEPRECIATION CONTINUITY SCHEDULE FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

Line No.	Account	Particulars		Plant for D reciation	epreciation Rate	1:	2/31/2017	preciation xpense	Ret	irements	Cos Rem		Adju	ustments	12	2/31/2018	Cross Reference
	(1)	(2)	<u> </u>	(3)	(4)		(5)	(6)		(7)	(8	)		(9)		(10)	(11)
1		INTANGIBLE PLANT															
2	117-00	Utility Plant Acquisition Adjustment	\$	-	0.00%	\$	-	\$ -	\$	-	\$	-	\$	-	\$	-	
3	175-10	Unamortized Conversion Expense		-	1.00%		-	-		-		-		-		-	
4	178-00	Organization Expense		-	1.00%		-	-		-		-		-		-	
5	179-01	Other Deferred Charges		-	0.00%		-	-		-		-		-		-	
6	401-01	Franchise and Consents		-	5.39%		-	-		-		-		-		-	
7	402-11	Utility Plant Acquisition Adjustment		-	0.00%		-	-		-		-		-		-	
8	402-03	Other Intangible Plant		-	2.01%		-	-		-		-		-		-	
9	431-01	Mfg'd Gas Land Rights		-	0.00%		-	-		-		-		-		-	
10	461-01	Transmission Land Rights		78	0.00%		-	-		-		-		-		-	
11	471-01	Distribution Land Rights		20	0.00%		-	-		-		-		-		-	
12	402-01	Application Software - 12.5%		376	12.50%		257	47		(36)		-		-		268	
13	402-02	Application Software - 20%		31	20.00%		8	1		(8)		-		-		1	
14			\$	505		\$	265	\$ 48	\$	(44)	\$	-	\$	-	\$	269	
15										~ /							
16		MANUFACTURED GAS / LOCAL STORAGE															
17	430-00	Manufact'd Gas - Land	\$	-	0.00%	\$	-	\$ -	\$	-	\$	-	\$	-	\$	-	
18	431-00	Manufact'd Gas - Land Rights		-	0.00%		-	-		-		-		-		-	
19	432-00	Manufact'd Gas - Struct. & Improvements		-	2.82%		-	-		-		-		-		-	
20	433-00	Manufact'd Gas - Equipment		-	4.66%		-	-		-		-		-		-	
21	434-00	Manufact'd Gas - Gas Holders		-	2.45%		-	-		-		-		-		-	
22	436-00	Manufact'd Gas - Compressor Equipment		-	3.68%		-	-		-		-		-		-	
23	437-00	Manufact'd Gas - Measuring & Regulating Equipment		-	2.34%		-	-		-		-		-		-	
24	443	Gas Holders - Storage (non-Tilbury, non-Mt. Hayes)		-	0.00%		-	-		-		-		-		-	
25			\$	_		\$	-	\$ -	\$	-	\$	-	\$	-	\$	-	

Section 9

#### Schedule 8

#### ACCUMULATED DEPRECIATION CONTINUITY SCHEDULE FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Line No.		Particulars	s Plant for D	epreciation Rate	12/	21/2017	reciation	Retirements		ost of emoval	۸diu	istmonte	1	2/31/2018	Cross Reference
TRANSMISSION PLANT       \$       0.00%       \$ <td>110.</td> <td></td> <td></td> <td></td> <td></td> <td>12/</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Auju</td> <td></td> <td>L</td> <td></td> <td></td>	110.					12/						Auju		L		
2       460-00       Land in Fae Simple       \$       -       0.00%       \$       -       \$		(1)	(2)	(3)	(4)		(5)	(0)	(r)		(0)		(9)		(10)	(11)
3       461-00       Transmission Land Rights       -       0.00%       -	1		TRANSMISSION PLANT													
4       462-00       Compressor Structures       -       -       3.61%       -       <	2	460-00	Land in Fee Simple	\$ -	0.00%	\$	-	\$ - :	\$-	\$	-	\$	-	\$	-	
5       463-00       Measuring Structures       10       2.29%       1       -       -       -       -       1         6       464-00       Other Structures & Improvements       5,718       1.47%       538       84       -       -       -       6       622         7       465-00       Mains - INSPECTION       -       15.20%       -       -       -       -       6       622         9       466-00       Compressor Equipment       -       1.47%       538       84       -       -       -       622         10       466-10       Compressor Equipment       0.28%       - </td <td>3</td> <td>461-00</td> <td>Transmission Land Rights</td> <td>-</td> <td>0.00%</td> <td></td> <td>-</td> <td>-</td> <td>-</td> <td></td> <td>-</td> <td></td> <td>-</td> <td></td> <td>-</td> <td></td>	3	461-00	Transmission Land Rights	-	0.00%		-	-	-		-		-		-	
6       464-00       Other Structures & Improvements       -       3.66%       - <td>4</td> <td>462-00</td> <td>Compressor Structures</td> <td>-</td> <td>3.51%</td> <td></td> <td>-</td> <td>-</td> <td>-</td> <td></td> <td>-</td> <td></td> <td>-</td> <td></td> <td>-</td> <td></td>	4	462-00	Compressor Structures	-	3.51%		-	-	-		-		-		-	
7       465-00       Mains       Mains       5,718       1.47%       538       84       -       -       622         8       465-20       Mains       INSPECTION       -       15.20%       -       -       -       622         9       466-00       Compressor Equipment       -       2.89%       -	5	463-00	Measuring Structures	10	2.29%		1	-	-		-		-		1	
8       465-20       Mains - INSPECTION       -       15.20%       -       296       367       7       1       -       -       -       296       367       6       9.75%       7       1       -       -       -       -       296       36       101       \$       \$       \$       \$       5       6       6       9.76%       7       1       -       -       \$       -       5       5       \$       \$       \$       \$       \$       \$       \$       \$       \$       \$       \$       \$       \$       \$	6	464-00	Other Structures & Improvements	-	3.66%		-	-	-		-		-		-	
9       466-00       Compressor Equipment - OVERHAUL       -       10 </td <td>7</td> <td>465-00</td> <td>Mains</td> <td>5,718</td> <td>1.47%</td> <td></td> <td>538</td> <td>84</td> <td>-</td> <td></td> <td>-</td> <td></td> <td>-</td> <td></td> <td>622</td> <td></td>	7	465-00	Mains	5,718	1.47%		538	84	-		-		-		622	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	8	465-20	Mains - INSPECTION	-	15.20%		-	-	-		-		-		-	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	9	466-00	Compressor Equipment	-	2.89%		-	-	-		-		-		-	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	10	466-10	Compressor Equipment - OVERHAUL	-	10.19%		-	-	-		-		-		-	
13       468-00       Communication Structures & Equipment       -	11	467-10	Measuring & Regulating Equipment	670	2.41%		280	16	-		-		-		296	
14 $$ 6,404$ $$ 826 $ 101 $ - $ - $ - $ - $ 92715DISTRIBUTION PLANT16DISTRIBUTION PLANT17470-00Land in Fee Simple18471-00Distribution Land Rights2-0.00%18471-009472-00Structures & Improvements2732.41%12072473-00Services2.4852.4852.45%95361(4)-2474-02Meters/Regulators Installations5135.135.99%33331(21)-2476-00Mains2.6742.6741.54%711412-2477-10Measuring & Regulating Equipment1.6373.05%648502478-10Meters137.70%151-2478-2010132.4852.99%2.47202.527478-202.6741.54%7.102.6742.6742.6742.6742.6742.6742.6743.709%4.7502.6744.7504.7504.7504.7505.755.755.756.757.757.75<$	12	467-20	Telemetering	6	9.75%		7	1	-		-		-		8	
15       DISTRIBUTION PLANT         16       DISTRIBUTION PLANT         17       470-00       Land in Fee Simple       \$ -       0.00%       \$ - \$	13	468-00	Communication Structures & Equipment	-	0.56%		-	-	-		-		-		-	
16       DISTRIBUTION PLANT         17       470-00       Land in Fee Simple       \$       -       0.00%       \$       -       \$       -       \$       -       \$       -       \$       -       \$       -       \$       -       \$       -       \$       \$       -       \$       -       \$       \$       -       \$       -       \$       \$       -       \$       -       \$       -       \$       -       \$       -       \$       -       \$       -       \$       -       \$       -       \$       -       \$       -       \$       -       \$       -       \$       -       1010       -       -       1010       -       -       1010       -       -       -       4033       -       474-02       Meters/Regulators Installations       513       5.99%       -       16       5       -       -       -       -       403       -       -       26       474-02       Me	14			\$ 6,404		\$	826	\$ 101	\$-	\$	-	\$	-	\$	927	
17       470-00       Land in Fee Simple       \$       -       0.00%       \$       -       \$       127       \$       \$       -       \$       127       \$       \$       -       \$       1,010       \$       1,010       \$       \$       1,010       \$       \$       1,010       \$       \$       \$       \$       1,010       \$       \$       1,010       \$       \$       \$       \$       1,010       \$       \$       \$       \$       \$	15															
18       471-00       Distribution Land Rights       -       0.00%       -       127         19       473-00       Structures & Improvements       273       2.41%       120       7       -       -       -       127         20       473-00       Services       2.485       2.45%       953       61       (4)       -       -       1,010         21       474-00       House Regulators Meter Installations       513       5.99%       393       31       (21)       -       -       403         22       474-02       Meters/Regulators Installations       116       4.55%       16       5       -       -       21         23       475-00       Mains       2.674       1.54%       711       41       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -	16		DISTRIBUTION PLANT													
19 $472-00$ Structures & Improvements2732.41%120712720 $473-00$ Services2,4852.45%95361(4)1,01021 $474-00$ House Regulators & Meter Installations5135.99%39331(21)40322 $474-02$ Meters/Regulators Installations116 $4.55\%$ 1652123 $475-00$ Mains2,6741.54%7114175224 $476-00$ Compressor Equipment-0.00%69826 $477-20$ Telemetering1633.05%64850269826 $477-20$ Telemetering2142.82%196269826 $477-20$ Telemetering137.09%151269826 $477-20$ Telemetering137.09%151269827 $478-10$ Meters137.09%1511628 $478-20$ Instruments-2.99%29 $479-00$ Other Distribution Equipment-0.00%29 $479-00$ Other Distribution Equipment <td>17</td> <td>470-00</td> <td>Land in Fee Simple</td> <td>\$ -</td> <td>0.00%</td> <td>\$</td> <td>-</td> <td>\$ - :</td> <td>\$-</td> <td>\$</td> <td>-</td> <td>\$</td> <td>-</td> <td>\$</td> <td>-</td> <td></td>	17	470-00	Land in Fee Simple	\$ -	0.00%	\$	-	\$ - :	\$-	\$	-	\$	-	\$	-	
20473-00Services2,4852,4852,45%95361(4)1,01021474-00House Regulators & Meter Installations5135.99%39331(21)40322474-02Meters/Regulators Installations1164.55%1652123475-00Mains2,6741.54%7114175224476-00Compressor Equipment-0.00%69826477-20Telemetering2142.82%1962527478-10Meters137.09%1511628478-20Instruments-2.99%29479-00Other Distribution Equipment-0.00%29479-00Other Distribution Equipment-0.00%29479-00Other Distribution Equipment0.00%<	18	471-00	Distribution Land Rights	-	0.00%		-	-	-		-		-		-	
21       474-00       House Regulators & Meter Installations       513       5.99%       393       31       (21)       -       -       403         22       474-02       Meters/Regulators Installations       116       4.55%       16       5       -       -       -       21         23       475-00       Mains       2,674       1.54%       711       41       -       -       -       752         24       476-00       Compressor Equipment       -       0.00%       - </td <td>19</td> <td>472-00</td> <td>Structures &amp; Improvements</td> <td>273</td> <td>2.41%</td> <td></td> <td>120</td> <td>7</td> <td>-</td> <td></td> <td>-</td> <td></td> <td>-</td> <td></td> <td>127</td> <td></td>	19	472-00	Structures & Improvements	273	2.41%		120	7	-		-		-		127	
21474-00House Regulators & Meter Installations5135.99%39331(21)40322474-02Meters/Regulators Installations1164.55%1652123475-00Mains2,6741.54%7114175224476-00Compressor Equipment-0.00%69825477-10Measuring & Regulating Equipment1,6373.05%6485069826477-20Telemetering2142.82%196252527478-10Meters137.09%1511628478-20Instruments-2.99%29479-00Other Distribution Equipment-0.00%29479-00Other Distribution Equipment-0.00%	20	473-00	Services	2,485	2.45%		953	61	(	4)	-		-		1,010	
23475-00Mains2,6741.54%7114175224476-00Compressor Equipment-0.00%25477-10Measuring & Regulating Equipment1,6373.05%6485069826477-20Telemetering2142.82%1962527478-10Meters137.09%1511628478-20Instruments-2.99%29479-00Other Distribution Equipment-0.00%	21	474-00	House Regulators & Meter Installations	513	5.99%		393	31			-		-		403	
24       476-00       Compressor Equipment       -       0.00%       -       -       -       -       -         25       477-10       Measuring & Regulating Equipment       1,637       3.05%       648       50       -       -       -       698         26       477-20       Telemetering       214       2.82%       19       6       -       -       25         27       478-10       Meters       13       7.09%       15       1       -       -       16         28       478-20       Instruments       -       2.99%       -       -       -       -       -         29       479-00       Other Distribution Equipment       -       0.00%       -       -       -       -       -	22	474-02	Meters/Regulators Installations	116	4.55%		16	5	-		-		-		21	
25       477-10       Measuring & Regulating Equipment       1,637       3.05%       648       50       -       -       -       698         26       477-20       Telemetering       214       2.82%       19       6       -       -       25         27       478-10       Meters       13       7.09%       15       1       -       -       16         28       478-20       Instruments       -       2.99%       -       -       -       -       -         29       479-00       Other Distribution Equipment       -       0.00%       - <td>23</td> <td>475-00</td> <td>Mains</td> <td>2,674</td> <td>1.54%</td> <td></td> <td>711</td> <td>41</td> <td>-</td> <td></td> <td>-</td> <td></td> <td>-</td> <td></td> <td>752</td> <td></td>	23	475-00	Mains	2,674	1.54%		711	41	-		-		-		752	
26       477-20       Telemetering       214       2.82%       19       6       -       -       25         27       478-10       Meters       13       7.09%       15       1       -       -       16         28       478-20       Instruments       -       2.99%       -       -       -       -       -       -         29       479-00       Other Distribution Equipment       -       0.00%       -       -       -       -       -       -       -       -	24	476-00	Compressor Equipment	-	0.00%		-	-	-		-		-		-	
26       477-20       Telemetering       214       2.82%       19       6       -       -       25         27       478-10       Meters       13       7.09%       15       1       -       -       16         28       478-20       Instruments       -       2.99%       -       -       -       -       -       -         29       479-00       Other Distribution Equipment       -       0.00%       -       -       -       -       -       -       -       -	25	477-10		1,637	3.05%		648	50	-		-		-		698	
28       478-20       Instruments       -       2.99%       -	26	477-20	Telemetering	214	2.82%		19	6	-		-		-		25	
29 479-00 Other Distribution Equipment 0.00%	27	478-10	Meters	13	7.09%		15	1	-		-		-		16	
	28	478-20	Instruments	-	2.99%		-	-	-		-		-		-	
30 \$ 7.925 \$ 2.875 \$ 202 \$ (25) \$ - \$ - \$ 3.052	29	479-00	Other Distribution Equipment		0.00%		-	_	-				-			
$\psi$ i, $\partial z$ $\psi$ z, $\partial z$ $\psi$ z $\partial z$ $\psi$ (z) $\psi$ - $\psi$ - $\psi$ 0, $\partial z$	30			\$ 7,925		\$	2,875	\$ 202	\$ (2	5) \$	-	\$	-	\$	3,052	

#### Schedule 8.1

#### ACCUMULATED DEPRECIATION CONTINUITY SCHEDULE FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

Line No	e Account	t Particulars		s Plant for D preciation	epreciation Rate	12/	31/2017	Depreciation Expense		etirements	Cost of Remova	hA I	justments	12	/31/2018	Cross Reference
	(1)	(2)		(3)	(4)	12/	(5)	(6)		(7)	(8)	, , , , ,	(9)	14	(10)	(11)
	( )	( )		(-)			(-)			( )	(-)		(-)		( - )	
1		GENERAL PLANT & EQUIPMENT														
2	480-00	Land in Fee Simple	\$	1	0.00%	\$	-	\$-	\$	-	\$-	\$	-	\$	-	
3	481-00	Land Rights		-	0.00%		-	-		-	-		-		-	
4	482-10	Frame Buildings		250	6.04%		226	1		-	-		-		241	
5	482-20	Masonry Buildings		553	1.95%		81	1	1	-	-		-		92	
6	482-30	Leasehold Improvement		-	9.49%		-	-		-	-		-		-	
7	483-30	GP Office Equipment		26	6.67%		4		2	-	-		-		6	
8	483-40	GP Furniture		1	5.00%		1	-		-	-		-		1	
9	483-10	GP Computer Hardware		142	20.00%		76	2	8	(54)	-		-		50	
10	483-20	GP Computer Software		17	12.50%		10		2	-	-		-		12	
11	483-21	GP Computer Software		-	0.00%		-	-		-	-		-		-	
12	483-22	GP Computer Software		-	0.00%		-	-		-	-		-		-	
13	484-00	Vehicles		39	10.55%		12		4	-	-		-		16	
14	484-10	Vehicles - Leased		-	9.44%		-	-		-	-		-		-	
15	485-10	Heavy Work Equipment		-	6.38%		-	-		-	-		-		-	
16	485-20	Heavy Mobile Equipment		-	9.85%		-	-		-	-		-		-	
17	486-00	Small Tools & Equipment		33	5.00%		24		2	(19)	-		-		7	
18	487-20	Equipment on Customer's Premises		-	6.67%		-	-		-	-		-		-	
19	487	VRA Compressor Installation Costs		-	0.00%		-	-		-	-		-		-	
20	488-10	Telephone		23	6.67%		21		2	(18)	-		-		5	
21	488-20	Radio		-	6.67%		-	-		-	-		-		-	
22	489-00	Other General Equipment		-	0.00%		-	-		-	-		-		-	
23			\$	1,085		\$	455	\$ 6	6\$	(91)	\$-	\$	-	\$	430	
24																
25		UNCLASSIFIED PLANT														
26	499-00	Plant Suspense		-	0.00%		-	-		-	-		-		-	
27		•	\$	-		\$	-	\$ -	\$	-	\$ -	\$	-	\$	-	
28						<u> </u>		-								
29		Total	\$	15,919		\$	4,421	\$ 41	7 \$	(160)	\$ -	\$	-	\$	4,678	
30			<u> </u>	-,			, -		Ŧ	()		Ŧ		T	,	
31		Cross Reference	Sch	edule 6.2,												
01				ine 29,												
			_													

Column 3+4

#### Schedule 8.2

Section 9

Schedule 9

CONTRIBUTIONS IN AID OF CONSTRUCTION CONTINUITY SCHEDULE FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line No.	Particulars	12/3	31/2016	CPCN / en Bal Adjt	A	Adjustment	Additions	R	etirements	12	2/31/2017	Cross Reference
	(1)		(2)	(3)		(4)	(5)		(6)		(7)	(8)
1	CIAC											
2	Distribution Contributions	\$	1,161	\$ -	\$	-	\$ -	\$	-	\$	1,161	
3	Transmission Contributions		165	-		-	-		-		165	
4	Total	\$	1,326	\$ -	\$	-	\$ -	\$	-	\$	1,326	
5												
6	Amortization											
7	Distribution Contributions	\$	(675)	\$ -	\$	-	\$ (27)	\$	-	\$	(702)	
8	Transmission Contributions		(27)	-		-	(1)		-		(28)	
9	Total	\$	(702)	\$ -	\$	-	\$ (28)	\$	-	\$	(730)	
10												
11	Net CIAC	\$	624	\$ -	\$	-	\$ (28)	\$	-	\$	596	
12												

Section 9

Schedule 10

#### CONTRIBUTIONS IN AID OF CONSTRUCTION CONTINUITY SCHEDULE FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

Line No.	Particulars	12/3	31/2017	CPCN / en Bal Adjt	A	Adjustment	Additions	R	Retirements	12	2/31/2018	Cross Reference
	(1)		(2)	(3)		(4)	(5)		(6)		(7)	(8)
1	CIAC											
2	Distribution Contributions	\$	1,161	\$ -	\$	-	\$ -	\$	-	\$	1,161	
3	Transmission Contributions		165	-		-	-		-		165	
4	Total	\$	1,326	\$ -	\$	-	\$ -	\$	-	\$	1,326	
5												
6	Amortization											
7	Distribution Contributions	\$	(702)	\$ -	\$	-	\$ (26)	\$	-	\$	(728)	
8	Transmission Contributions		(28)	-		-	(2)		-		(30)	
9	Total	\$	(730)	\$ -	\$	-	\$ (28)	\$	-	\$	(758)	
10												
11	Net CIAC	\$	596	\$ _	\$	-	\$ (28)	\$	-	\$	568	
12												

# NET SALVAGE CONTINUITY SCHEDULE FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line	e Account	t Particulars		ss Plant for	Salvage Rate	12/31/2016	Net Salvage Provision		irement Costs / oceeds on Disp.	1	2/31/2017	Cross Reference
<u> </u>			De					FIU		L		
	(1)	(2)		(3)	(4)	(5)	(6)		(7)		(8)	(9)
1		TRANSMISSION PLANT										
2	463-00	Measuring Structures	\$	10	0.57%	\$ -	\$ -	\$	-	\$	-	
3	465-00	Mains		5,619	0.37%	12	21		-		33	
4	467-10	Measuring & Regulating Equipment		670	0.22%	3	1		-		4	
5			\$	6,299		\$ 15	\$ 22	\$	-	\$	37	
6												
7		DISTRIBUTION PLANT										
8	472-00	Structures & Improvements	\$	273	0.32%	\$ -	\$ 1	\$	-	\$	1	
9	473-00	Services		2,426	1.61%	10	39		(9	)	40	
10	474-00	House Regulators & Meter Installations		518	1.77%	10	9		(2	)	17	
11	474-02	Meters/Regulators Installations		116	0.00%	1	-		-		1	
12	475-00	Mains		2,412	0.43%	(3)	10		-		7	
13	477-10	Measuring & Regulating Equipment		1,556	0.46%	19	7		-		26	
14	477-20	Telemetering		214	0.42%	-	1		-		1	
15	478-10	Meters		13	-0.26%	-	-		-		-	
16			\$	7,528		\$ 37	\$ 67	\$	(11	) \$	93	
17									•			
18		GENERAL PLANT & EQUIPMENT										
19	482-20	Masonry Buildings	\$	553	0.25%	\$ -	\$ 1	\$	-	\$	1	
20		, 0										
21												
22		Total	\$	14,380		\$ 52	\$ 90	\$	(11	) \$	131	
23				,					<b>`</b>	, .		
24		Cross Reference	Sc	hedule 5-								
				2, Column								
			0.2	3+4								
				0.4								



#### Section 9

#### Schedule 11

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# NET SALVAGE CONTINUITY SCHEDULE FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

Line No	e Account	t Particulars		ss Plant for epreciation	Salvage Rate	12/31/2017	I	Net Salvage Provision	etirement Costs / roceeds on Disp.	1	12/31/2018	Cross Reference
	(1)	(2)		(3)	(4)	 (5)		(6)	 (7)		(8)	(9)
	( )			(-)								
1		TRANSMISSION PLANT										
2	463-00	Measuring Structures	\$	10	0.57%	\$ -	\$	-	\$ -	\$	-	
3	465-00	Mains		5,718	0.37%	33		21	-		54	
4	467-10	Measuring & Regulating Equipment		670	0.22%	 4		1	-		5	
5			\$	6,398	-	\$ 37	\$	22	\$ -	\$	59	
6												
7		DISTRIBUTION PLANT										
8	472-00	Structures & Improvements	\$	273	0.32%	\$ 1	\$	1	\$ -	\$	2	
9	473-00	Services		2,485	1.61%	40		40	(9)		71	
10	474-00	House Regulators & Meter Installations		513	1.77%	17		9	(2)		24	
11	474-02	Meters/Regulators Installations		116	0.00%	1		-	-		1	
12	475-00	Mains		2,674	0.43%	7		12	-		19	
13	477-10	Measuring & Regulating Equipment		1,637	0.46%	26		8	-		34	
14	477-20	Telemetering		214	0.42%	1		1	-		2	
15	478-10	Meters		13	-0.26%	 -		-	-			
16			\$	7,925		\$ 93	\$	71	\$ (11)	\$	153	
17												
18		GENERAL PLANT & EQUIPMENT										
19	482-20	Masonry Buildings	\$	553	0.25%	\$ 1	\$	1	\$ -	\$	2	
20												
21												
22		Total	\$	14,876	-	\$ 131	\$	94	\$ (11)	\$	214	
23												
24		Cross Reference	Sc	chedule 6-								
			6.2	2, Column								
				3+4								



#### Section 9

Schedule 12

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# UNAMORTIZED DEFERRED CHARGES AND AMORTIZATION - RATE BASE FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

	Rider 12/31/2017 (8) (9)	Average (10)
1 Margin Related Deferral Accounts		
2 Revenue Stabilization Adjustment Mechanism (RSAM) \$ 224 \$ - \$ - \$ - \$ - \$ (151) \$	39 \$ 112	\$ 168
3 Interest on RSAM 2 - 1 (2)	- 1	2
4 Gas Cost Reconciliation Account (GCRA) (174) - 235 (61)		(87)
5 \$ 52 \$ - \$ 236 \$ (61) \$ - \$ (153) \$	39 \$ 113	\$ 83
6		
7 Energy Policy Deferral Accounts		
8 Energy Efficiency & Conservation (EEC) \$ 45 \$ - \$ 30 \$ (8) \$ (4) \$ - \$	- \$ 63	\$ 54
9		
10 Non-Controllable Items Deferral Accounts		
11 Property Tax Deferral \$ (2) \$ - \$ - \$ - \$ 3 \$ - \$	- \$ 1	\$ (1)
12 Interest Variance (10) 9 -	- (1)	(6)
13 Customer Service Variance Account (34) 15 -	- (19)	(27)
14 \$ (46) \$ - \$ - \$ - \$ 27 \$ - \$	- \$ (19)	\$ (34)

Section 9

Schedule 13

Cross Reference
 (11)

(1) (6) (27) (34)

# UNAMORTIZED DEFERRED CHARGES AND AMORTIZATION - RATE BASE FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line No.	Particulars	12/2	31/2016	•	ening Bal./ ansfer/Adi.	-	Gross Iditions	 _ess axes		ortization xpense	Rider		ax on Rider	12/1	31/2017	d-Year /erage
110.	(1)		(2)	110	(3)	Au	(4)	(5)	L/	(6)	(7)		(8)	12/5	(9)	(10)
	(-)		(-)		(0)		(.)	(•)		(0)	(.)		(•)		(•)	()
1	Application Costs Deferral Accounts															
2	Generic Cost of Capital Application	\$	-	\$	-	\$	-	\$ -	\$	- 9	\$-	\$	-	\$	-	\$ -
3	2017-2018 Revenue Requirement Application		56		-		-	-		(28)	-		-		28	42
4	2015-2016 Revenue Requirement Application		17		-		-	-		(17)	-		-		-	9
5	2017 Rate Design Application		44		-		65	(16)		-	-		-		93	69
6	2016 Cost of Capital Application		3		-		-	-		(1)	-		-		2	3
7		\$	120	\$	-	\$	65	\$ (16)	\$	(46) \$	\$-	\$	-	\$	123	\$ 123
8	Other Deferral Accounts															
9	Gains and Losses on Asset Disposition	\$	91	\$	-	\$	-	\$ -	\$	(11) \$	\$-	\$	-	\$	80	\$ 86
10	Net Salvage Provision/Cost		(53)		-		11	-		(90)	-		-		(132)	(93)
11	Muskwa River Crossing COS		(116)		-		-	-		116	-		-		-	(58)
12	Muskwa River Crossing Project Costs		272		-		-	-		(272)	-		-		-	136
13		\$	194	\$	-	\$	11	\$ -	\$	(257) \$	\$-	\$	-	\$	(52)	\$ 71
14																
15	Total	\$	365	\$	-	\$	342	\$ (85)	\$	(280) \$	\$ (153)	)\$	39	\$	228	\$ 297
15	Total	\$	365	\$	-	\$	342	\$ (85)	\$	(280) \$	\$ (153)	)\$	39	\$	228	\$ 29

#### Section 9

#### Schedule 13.1

Cross Reference
(11)

- 42 9 69 3 123 86 (93) (58) 136 71 297

#### UNAMORTIZED DEFERRED CHARGES AND AMORTIZATION - RATE BASE FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

Line				Open	ing Bal./		ross	L	ess	Am	nortization			Тах	on			Mid-Year	
No.	Particulars	12/3	1/2017	Tran	sfer/Adj.	Add	ditions	Ta	axes	E	xpense		Rider	Ric	der	12	/31/2018	 Average	Cross Reference
	(1)		(2)		(3)		(4)		(5)		(6)		(7)	(8	3)		(9)	(10)	(11)
1	Margin Related Deferral Accounts																		
2	Revenue Stabilization Adjustment Mechanism (RSAM)	\$	112	\$	-	\$	-	\$	-	\$	-	\$	(151)	\$	39	\$	-	\$ 56	
3	Interest on RSAM		1		-		-		-		-		(1)		-		-	1	
4	Gas Cost Reconciliation Account (GCRA)		-		-		-		-		-		-		-		-	-	
5		\$	113	\$	-	\$	-	\$	-	\$	-	\$	(152)	\$	39	\$	-	\$ 57	
6																			
7	Energy Policy Deferral Accounts																		
8	Energy Efficiency & Conservation (EEC)	\$	63	\$	-	\$	30	\$	(8)	)\$	(7)	)\$	-	\$	-	\$	78	\$ 71	
9																			
10	Non-Controllable Items Deferral Accounts																		
11	Property Tax Deferral	\$	1	\$	-	\$	-	\$	-	\$	(1)	)\$	-	\$	-	\$	-	\$ 1	
12	Interest Variance		(1)		-		-		-		1		-		-		-	(1)	
13	Customer Service Variance Account		(19)		-		-		-		16		-		-		(3)	(11)	
14		\$	(19)	\$	-	\$	-	\$	-	\$	16	\$	-	\$	-	\$	(3)	\$ (11)	

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Section 9

Schedule 14

# UNAMORTIZED DEFERRED CHARGES AND AMORTIZATION - RATE BASE FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line		10/0		•	ening Bal./		Gross	 ess		ortization	<b>B</b> . 1		ax on	4.0.1		d-Year
No.	Particulars		81/2017	Ira	ansfer/Adj.	Ad	ditions	 axes	E	xpense	Rider		Rider	12/3	31/2018	verage
	(1)		(2)		(3)		(4)	(5)		(6)	(7)		(8)		(9)	(10)
1	Application Costs Deferral Accounts															
2	Generic Cost of Capital Application	\$	-	\$	-	\$	-	\$ -	\$	- 9	5 -	\$	-	\$	-	\$ -
3	2017-2018 Revenue Requirement Application		28		-		-	-		(28)	-		-		-	14
4	2015-2016 Revenue Requirement Application		-		-		-	-		-	-		-		-	-
5	2017 Rate Design Application		93		-		-	-		-	-		-		93	93
6	2016 Cost of Capital Application		2		-		-	-		(1)	-		-		1	2
7		\$	123	\$	-	\$	-	\$ -	\$	(29) \$	<u> </u>	\$	-	\$	94	\$ 109
8	Other Deferral Accounts															
9	Gains and Losses on Asset Disposition	\$	80	\$	-	\$	-	\$ -	\$	(12) \$	S -	\$	-	\$	68	\$ 74
10	Net Salvage Provision/Cost		(132)		-		11	-		(94)	-		-		(215)	(174)
11	Muskwa River Crossing COS		-		-		-	-		-	-		-		-	-
12	Muskwa River Crossing Project Costs		-		-		-	-		-	-		-		-	-
13		\$	(52)	\$	-	\$	11	\$ -	\$	(106) \$	6 -	\$	-	\$	(147)	\$ (100)
14																
15	Total	\$	228	\$	-	\$	41	\$ (8)	\$	(126) \$	6 (152	2)\$	39	\$	22	\$ 126

#### Section 9

#### Schedule 14.1

 Cross Reference
(11)

1	4
	•

#### UNAMORTIZED DEFERRED CHARGES AND AMORTIZATION - NON-RATE BASE FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line	9			Ope	ening Bal./	G	ross	L	ess	Am	ortization			Ta	ax on			
No.	Particulars	12/31	1/2016	Tra	nsfer/Adj.	Add	litions	Та	axes	E	xpense	F	Rider	R	ider	12/3	1/2017	
	(1)	 (	2)		(3)	(	(4)		(5)		(6)		(7)		(8)		(9)	
1	Non-Rate Base																	
2	FN Right-of-Way Agreement	\$	425	\$	-	\$	24	\$	-	\$	-	\$	-	\$	-	\$	449	5
3	Deferred 2017 Revenue Deficiency		-		-		148		(38)		-		-		-		110	
4	Total Non Rate Base Deferral Accounts	\$	425	\$	-	\$	172	\$	(38)	\$	-	\$	-	\$	-	\$	559	Ş

#### Section 9

#### Schedule 15

Mid-Year	/
Average	Cross Reference
(10)	(11)

\$ 437
55
\$ 492

#### UNAMORTIZED DEFERRED CHARGES AND AMORTIZATION - NON-RATE BASE FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

Line				Opening Bal.	/ G	ross	Less	Amo	ortization		Т	Tax on			Mid-Year	
No.	Particulars	12/31	/2017	Transfer/Adj	. Ado	ditions	Taxes	E	kpense	Ride	er 🛛	Rider	12/3	31/2018	 Average	Cross Reference
	(1)	(2	2)	(3)		(4)	(5)		(6)	(7)		(8)		(9)	 (10)	(11)
1	Non-Rate Base															
2	FN Right-of-Way Agreement	\$	449	\$-	\$	26	\$-	\$	-	\$-	- \$	-	\$	475	\$ 462	
3	Deferred 2017 Revenue Deficiency		110	-		(148)	38	3	-	-		-		-	55	
4	Total Non Rate Base Deferral Accounts	\$	559	\$-	\$	(122)	\$ 38	3\$	-	\$-	- \$	-	\$	475	\$ 517	

#### Section 9

WORKING CAPITAL ALLOWANCE FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line No.	Particulars	2016 proved	2017 Forecast	Change	Cross Reference
	(1)	(2)	(3)	(4)	(5)
1	Cash Working Capital				
2	Cash Working Capital	\$ 68 \$	75 \$	5 7	Schedule 19, Line 26, Column 5
3					
4	Less: Funds Available				
5	Reserve for bad debts	(14)	(12)	2	
6	Employee Withholdings	(25)	(25)	-	
7					
8	Other Working Capital Items				
9	Inventory - Materials and Supplied	14	14	-	
10					
11	Total	\$ 43 \$	52 \$	9	

WORKING CAPITAL ALLOWANCE FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

2017 2018 Line No. Particulars Forecast Forecast Change Cross Reference (2) (3) (4) (5) (1) **Cash Working Capital** 1 75 \$ Cash Working Capital \$ 71 \$ (4) Schedule 20, Line 26, Column 5 2 3 Less: Funds Available 4 (12) (12) 5 Reserve for bad debts \_ 6 Employee Withholdings (25) (25) \_ 7 **Other Working Capital Items** 8 9 Inventory - Materials and Supplied 14 14 \_ 10 11 \$ 52 \$ 48 \$ (4) Total

#### CASH WORKING CAPITAL

FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line			2017	Lag (Lead)		A	/eighted verage	0 F (
No.	Particulars	at Rev	vised Rates	Days	Extended	Lag (	Lead) Days	Cross Reference
	(1)		(2)	(3)	(4)		(5)	(6)
1	REVENUE							
2	Sales Revenue							
3	Residential & Commercial Tariff Revenue	\$	2,904	38.5	\$ 111,869			
4	Industrial Tariff Revenue			45.2	7,413			
5					,			
6	Other Revenue							
7	Late Payment Charges		17	38.3	651			
8	Connection Charges		9	38.3	345			
9	Ũ							
10	Total	\$	3,094		\$ 120,278		38.9	
11								
12	EXPENSES							
13	Energy Purchases	\$	686	(40.2)	\$ (27,577)			
14	Operating and Maintenance		900	(25.5)	(22,950)			
15	Property Taxes		141	(2.0)	(282)			
16	Carbon Tax		790	(29.1)	(22,989)			
17	GST		26	(38.8)	(1,009)			
18	PST		18	(37.1)	(668)			
19	Income Tax		132	(15.2)	(2,006)			
20				· · · ·				
21	Total	\$	2,693		\$ (77,481)		(28.8)	
22					 , · · /		. ,	
23	Net Lag (Lead) Days						10.1	
24	Total Expenses					\$	2,693	
25						r	,	
26	Cash Working Capital					\$	75	

June 30, 2016

Section 9

#### CASH WORKING CAPITAL

FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

Line No.	Particulars	at Re	2018 vised Rates	Lag (Lead) Days		Extended	Weighted Average Lag (Lead) Days	Cross Reference
	(1)		(2)	(3)		(4)	(5)	(6)
1 2	REVENUE Sales Revenue							
3	Residential & Commercial Tariff Revenue	\$	2,998	38.5	\$	115,472		
4 5	Industrial Tariff Revenue		174	45.2		7,865		
5 6	Other Revenue							
7	Late Payment Charges		17	38.3		651		
8	Connection Charges		9	38.3		345		
9	5							
10	Total	\$	3,198		\$	124,333	38.9	
11								
12	EXPENSES							
13	Energy Purchases	\$	673	(40.2)	\$	(27,055)		
14	Operating and Maintenance		920	(25.5)		(23,460)		
15	Property Taxes		139	(2.0)		(278)		
16	Carbon Tax		775	(29.1)		(22,553)		
17 18	GST PST		27 19	(38.8)		(1,048)		
19	Income Tax		75	(37.1) (15.2)		(705) (1,140)		
20			75	(13.2)		(1,140)		
21	Total	\$	2,628		\$	(76,239)	(29.0)	
22		<b>•</b>	_,0_0	I	Ŧ	(10,200)	()	
23	Net Lag (Lead) Days						9.9	
24	Total Expenses						\$ 2,628	
25								
26	Cash Working Capital						\$ 71	

June 30, 2016

Section 9

#### UTILITY INCOME AND EARNED RETURN FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line			2016		2	017 FORECAST			
No.	Particulars	A	oproved	at Existing Rates	s R	evised Revenue	at Revised Rates	Change	Cross Reference
	(1)		(2)	(3)		(4)	(5)	(6)	(7)
1	ENERGY VOLUMES								
2	Sales Volume (TJ)		597	530	0		530	(67	)
3	Transportation Volume (TJ)		56	40			40	(16	
4			653	57(	0	-	570	(83	) Schedule 23, Line 9, Column 3
5									-
6	REVENUE AT EXISTING RATES								
7	Sales	\$	4,859	\$ 2,762	2 \$		\$ 2,762		
8	Deficiency (Surplus)					142	142	142	
9	Transportation		191	153	3	-	153	(38	)
10	Deficiency (Surplus)					11	11	11	_
11	Total		5,050	2,91	5	153	3,068	(1,982	) Schedule 27, Line 15, Column 8
12						-			
13	COST OF ENERGY		2,543	686	6	-	686	(1,857	) Schedule 25, Line 9, Column 3
14									_
15	MARGIN		2,507	2,229	9	153	2,382	(125	)
16									
17	EXPENSES								
18	O&M Expense (net)		882	900		-	900	18	, ,
19	Depreciation & Amortization		631	664		-	664	33	Schedule 31, Line 9, Column 3
20	Property Taxes		139	14		-	141	2	, ,
21	Deferred 2017 Revenue Deficiency		-	(148	,	-	(148)	•	
22	Other Revenue		(20)	(26		-	(26)		
23	Utility Income Before Income Taxes		875	698	8	153	851	(24	)
24									
25	Income Taxes		132	92	2	40	132	-	Schedule 37, Line 13, Column 3
26									_
27	EARNED RETURN	\$	743	\$ 600	6 \$	5 113	\$ 719	\$ (24	) Schedule 41, Line 5, Column 7
28									
29	UTILITY RATE BASE	\$	10,997				\$ 11,178	•	Schedule 2, Line 23, Column 3
30	RATE OF RETURN ON UTILITY RATE BASE		6.76%	5.42	%		6.43%	-0.32%	Schedule 41, Line 5, Column 6

June 30, 2016

Section 9

#### UTILITY INCOME AND EARNED RETURN FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

Line			2017		2018 FORECAST	-		
No.	Particulars	F	orecast	at Existing Rates	Revised Revenue	e at Revised Rates	Change	Cross Reference
	(1)		(2)	(3)	(4)	(5)	(6)	(7)
1	ENERGY VOLUMES							
2	Sales Volume (TJ)		530	520		520	(10)	
3	Transportation Volume (TJ)		40	40		40	(0)	
4			570	560	-	560	(10)	Schedule 24, Line 9, Column 3
5								
6	REVENUE AT EXISTING RATES							
7	Sales	\$	2,762	\$ 2,716		\$ 2,716	· · ·	
8	Deficiency (Surplus)		142		282		140	
9	Transportation		153	153		153	-	
10	Deficiency (Surplus)		11		21	21	10	
11	Total		3,068	2,869	303	3,172	104	Schedule 28, Line 15, Column 8
12					-			
13	COST OF ENERGY		686	673	-	673	(13)	Schedule 26, Line 9, Column 3
14				0.400				
15	MARGIN		2,382	2,196	303	2,499	117	
16								
17			000	000		000	00	Oshadula 00 Line 04 Oshurua 0
18	O&M Expense (net)		900	920		920	20	Schedule 29, Line 24, Column 6
19 20	Depreciation & Amortization		664 141	515 139		515	(149)	
20	Property Taxes			139		139 148	(2) 296	Schedule 34, Line 4, Column 3 Schedule 16, Line 3, Column 4
21 22	Deferred 2017 Revenue Deficiency Other Revenue		(148) (26)	(26)		(26)	- 290	Schedule 36, Line 5, Column 3
22	Utility Income Before Income Taxes		851	500				
23 24	Ounty income before income raxes		001	500	303	003	(48)	
24 25	Income Taxes		132	(4)	) 79	75	(57)	Schedule 38, Line 13, Column 3
25 26			152	(4)	, 19	75	(57)	
20	EARNED RETURN	\$	719	\$ 504	\$ 224	\$ 728	\$ 9	Schedule 42, Line 5, Column 7
28		Ψ	113	ψ 504	Ψ ΖΖΤ	ψ 120	ψ 3	
29	UTILITY RATE BASE	\$	11,178	\$ 11,224		\$ 11,229	\$ 51	Schedule 3, Line 23, Column 3
30	RATE OF RETURN ON UTILITY RATE BASE	Ψ	6.43%	φ 11,224 4.49%	,	φ 11,229 6.48%	0.05%	
50			0.4370	7.437		0.4078	0.0070	

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Section 9

#### VOLUME AND REVENUE

## FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line		2016		2017		
No.	Particulars	Approved		Forecast	Change	Cross Reference
	(1)	(2)		(3)	(4)	(5)
1	ENERGY VOLUME SOLD (TJ)					
2	Residential					
3	Rate Schedule 1	267.5	5	261.8	(5.7)	
4	Commercial					
5	Rate Schedule 2.1	208.6	3	211.9	3.3	
6	Rate Schedule 2.2	121.0	)	56.6	(64.4)	
7	Industrial					
8	Rate Schedule 25	55.8	3	39.7	(16.1)	
9	Total	652.9	)	570.0	(82.9)	
10						
11	REVENUE AT EXISTING RATES					
12	Residential					
13	Rate Schedule 1	\$ 2,122	2 \$	1,303	\$ (819)	
14	Commercial					
15	Rate Schedule 2.1	1,787	7	1,187	(600)	
16	Rate Schedule 2.2	950	)	272	(678)	
17	Industrial				· · · ·	
18	Rate Schedule 25	19 <sup>2</sup>		153	(38)	
19	Total	\$ 5,050	) \$	2,915	\$ (2,135)	

#### June 30, 2016

Section 9

#### VOLUME AND REVENUE

## FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

Line		2017			2018			
No.	Particulars	Forecas	st	Fc	orecast	Chan	ige	Cross Reference
	(1)	(2)			(3)	(4)	)	(5)
1	ENERGY VOLUME SOLD (TJ)							
2	Residential							
3	Rate Schedule 1		261.8		259.9		(1.9)	
4	Commercial							
5	Rate Schedule 2.1		211.9		203.7		(8.2)	
6	Rate Schedule 2.2		56.6		56.7		0.1	
7	Industrial							
8	Rate Schedule 25		39.7		39.5		(0.2)	
9	Total		570.0		559.8		(10.2)	
10								
11	REVENUE AT EXISTING RATES							
12	Residential							
13	Rate Schedule 1	\$	1,303	\$	1,295	\$	(8)	
14	Commercial							
15	Rate Schedule 2.1		1,187		1,148		(39)	
16	Rate Schedule 2.2		272		273		ົ 1	
17	Industrial							
18	Rate Schedule 25		153		153		-	
19	Total	\$	2,915	\$	2,869	\$	(46)	

June 30, 2016

Section 9

#### COST OF ENERGY

FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line No.	Particulars	2016 proved	2017 Forecast	Change	Cross Reference
	(1)	 (2)	(3)	(4)	(5)
1	COST OF GAS				
2	Residential				
3	Rate Schedule 1	\$ 1,139	\$ 339	\$ (800)	
4	Commercial				
5	Rate Schedule 2.1	889	274	(615)	
6	Rate Schedule 2.2	515	73	(442)	
7	Industrial				
8	Rate Schedule 25	-	-	-	
9	Total	\$ 2,543	\$ 686	\$ (1,857)	

June 30, 2016

Section 9

#### COST OF ENERGY

FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

Line No.	Particulars	2017 precast	2018 Forecast	C	hange	Cross Reference
110.	(1)	 (2)	 (3)	0	(4)	(5)
1	COST OF GAS	、 <i>,</i>	. /			
2	Residential					
3	Rate Schedule 1	\$ 339	\$ 336	\$	(3)	
4	Commercial					
5	Rate Schedule 2.1	274	264		(10)	
6	Rate Schedule 2.2	73	73		-	
7	Industrial					
8	Rate Schedule 25	-	-		-	
9	Total	\$ 686	\$ 673	\$	(13)	

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Section 9

#### MARGIN AND REVENUE AT EXISTING AND REVISED RATES FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

			2016		20	017 FOREC	CAST					201	7 FORECAST			Average		
Line			oproved		largin at	Effective			gin at		venue at		Effective	Revenu		Number of	- · ·	
No.	Particulars	í	Margin	EXIS	ting Rates	Increase	e		d Rates	Exist	ting Rates		Increase	Revised		Customers	Terajoules	Cross Reference
	(1)		(2)		(3)	(4)		(!	5)		(6)		(7)	(8)		(9)	(10)	(11)
1	NON - BYPASS																	
2	Residential																	
3	Rate Schedule 1	\$	983	\$	964 \$	6	65	\$	1,029	\$	1,303	\$	65	\$	1,368	1,959	261.8	
4	Commercial																	
5	Rate Schedule 2.1		898		913		63		976		1,187		63		1,250	477	211.9	
6	Rate Schedule 2.2		435		199		14		213		272		14		286	7	56.6	
7	Industrial																	
8	Rate Schedule 25		191		153		11		164		153		11		164	2	39.7	
9	Total Non-Bypass	\$	2,507	\$	2,229 \$	6	153	\$	2,382	\$	2,915	\$	153	\$	3,068	2,445	570.0	
10			· · · ·		· · ·	-			<u> </u>					·	<u> </u>			
11																		
12	Total Bypass & Special	\$	-	\$	- \$	6	-	\$	-	\$	-	\$	-	\$	-	-	-	
13																		
14																		
15	Total	\$	2,507	\$	2,229 \$	6	153	\$	2,382	\$	2,915	\$	153	\$	3,068	2,445	570.0	
16			· · ·		÷													
17	Effective Increase					6.	.86%						5.25%					

June 30, 2016

Section 9

#### MARGIN AND REVENUE AT EXISTING AND REVISED RATES FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

		2017	20	)18 FORECA	ST		2	2018	FORECAST		Average		
Line No.	Particulars	RECAST Margin	largin at ting Rates	Effective Increase	R	Margin at evised Rates	evenue at ting Rates		Effective Increase	Revenue at Revised Rates	Number of Customers	Terajoules	Cross Reference
	(1)	(2)	 (3)	(4)		(5)	 (6)		(7)	(8)	(9)	(10)	(11)
1	NON - BYPASS												
2	Residential												
3	Rate Schedule 1	\$ 1,029	\$ 959 \$	5 13	32 \$	1,091	\$ 1,295	\$	132	\$ 1,427	1,961	259.9	
4	Commercial												
5	Rate Schedule 2	976	884	12	22	1,006	1,148		122	1,270	479	203.7	
6	Rate Schedule 3	213	200		28	228	273		28	301	7	56.7	
7	Industrial												
8	Rate Schedule 25	164	153		21	174	153		21	174	2	39.5	
9	Total Non-Bypass	\$ 2,382	\$ 2,196 \$	30	)3 \$	2,499	\$ 2,869	\$	303	\$ 3,172	2,449	559.8	-
10		 											-
11													
12	Total Bypass & Special	\$ -	\$ - \$		\$	-	\$ -	\$	-	\$-	-	-	-
13		 											-
14													
15	Total	\$ 2,382	\$ 2,196 \$	30	)3 \$	2,499	\$ 2,869	\$	303	\$ 3,172	2,449	559.8	
16													
17	Effective Increase			13.80	)%				10.56%				
17				13.00	) /0		_		10.00%				

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Schedule 29

#### OPERATING AND MAINTENANCE EXPENSE - RESOURCE VIEW FOR THE YEARS ENDING DECEMBER 31, 2017 and 2018 (\$000s)

Line No.	Particulars		15 tual	2016 Approved	2016 Forecast	2017 Forecast	2018 Forecast	Cross Reference
	(1)		<u>2)</u>	(3)	(4)	(5)	(6)	(7)
4	M&E Costs				¢ 40	¢ 40	¢ 40	
1	M&E Costs	\$	18 \$	\$	\$18	\$ 19	\$ 19	
2	MoveUP Costs		-	-	-	-	-	
3	MoveUP Customer Services Costs		-	-	-	-	-	
4	IBEW Costs		320	345	326	330	339	
5	Lakaur Casta			200	244	2.40	250	
6	Labour Costs		338	360	344	349	358	
/	Vahiala Caata		20	4.4		4.4	45	
8	Vehicle Costs		38	44	44	44	45	
9	Employee Expenses		18	29	29	29	30	
10	Materials and Supplies		8	1	8	8	8	
11	Computer Costs		-	-	-	-	-	
12	Fees and Administration Costs		521	553	517	533	543	
13	Contractor Costs		31	5	20	21	21	
14	Facilities		16	12	16	41	42	
15	Recoveries & Revenue		(2)	(2)	(2)	(2)	(2)	
16								
17	Non-Labour Costs		630	642	632	674	687	
18								
19								
20	Total Gross O&M Expenses		968	1,002	976	1,023	1,045	
21								
22	Less: Capitalized Overhead		(118)	(120)	(117)	(123)	(125)	
23		·			•	•		Schedule 21, Line 18, Column 5
24	Total O&M Expenses	\$	850 \$	\$	\$859	\$ 900	\$ 920	Schedule 22, Line 18, Column 5

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Schedule 30

#### OPERATING AND MAINTENANCE EXPENSE - ACTIVITY VIEW FOR THE YEAR ENDING DECEMBER 31, 2017 and 2018 (\$000s)

Line No.	Particulars	Account		015 ctual	2016 Approved		2016 Forecast	2017 Forecast		2018 precast	Cross Reference
<u> </u>	(1)	(2)		(3)	(4)		(5)	(6)	10	(7)	(8)
1	Distribution Supervision	110-11	\$	116	\$ 10	2 \$	105	\$ 10	8 \$	112	
2	Distribution Supervision Total	110-10		116	10		105	10		112	
3				-				-	-		
4	Operation Centre - Distribution	110-21		95	9	2	94	9	6	99	
5	Preventative Maintenance - Distribution	110-22		21	2	2	23	2	4	24	
6	Operations - Distribution	110-23		57	6	0	60	7	8	80	
7	Emergency Management - Distribution	110-24		51	5	1	52	5	4	55	
8	Field Training - Distribution	110-25		23	3		31	3	2	33	
9	Meter Exchange - Distribution	110-26		24	2	2	23	2	4	24	
10	Distribution Operations Total	110-20		271	27		283	30		315	
11	•										
12	Corrective - Distribution	110-31		48	5	6	58	6	0	61	
13	Distribution Maintenance Total	110-30		48	5	6	58	6	0	61	
14											
15	Account Services - Distribution	110-41		11	1	0	11	1	1	11	
16	Bad Debt Management - Distribution	110-42		6		6	6		7	7	
17	Distribution Meter to Cash Total	110-40		17	1	6	17	1	8	18	
18											
19	Distribution Total	110		452	45	1	463	49	4	506	
20											
21	Operations Total	100		452	45	1	463	49	4	506	
22											
23	Administration & General	540-11		-	-		-	-		-	
24	Shared Services Agreement	540-12		516	55	1	513	52	9	539	
25	Retiree Benefits	540-16		-	-		-	-		-	
26	Corporate Total	540-10		516	55	1	513	52	9	539	
27											
28	Corporate Total	540		516	55	1	513	52	9	539	
29											
30	Corporate Services Total	500	_	516	55	1	513	52	9	539	
31											
32	Total Gross O&M Expenses			968	1,00	2	976	1,02	3	1,045	
33											
34	Less: Capitalized Overhead			(118)	(12	0)	(117)	(12	3)	(125)	
35											Schedule 21, Line 18, Column 5
36	Total O&M Expenses		\$	850	\$88	2\$	859	\$ 90	0\$	920	Schedule 22, Line 18, Column 5

Section 9

Schedule 31

#### DEPRECIATION AND AMORTIZATION EXPENSE FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line No.	Particulars	)16 roved	017 recast	Change	Cross Reference
	(1)	 2)	(3)	(4)	(5)
1	Depreciation				
2	Depreciation Expense	\$ 472 \$	\$ 412	\$ (60)	Schedule 7.2, Line 29, Column 6
3					
4	Amortization				
5	Rate Base deferrals	\$ 195 \$	\$ 280	\$85	Schedule 13.1, Line 15, Column 6
6	CIAC	 (36)	(28)	8	Schedule 9, Line 9, Column 5
7		159	252	93	
8					
9	Total	\$ 631 \$	\$ 664	\$ 33	

Section 9

Schedule 32

#### DEPRECIATION AND AMORTIZATION EXPENSE FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

Line No.	Particulars	017 recast	2018 Forecast		Change	Cross Reference	
	(1)	 (2)		(3)	(4)	(5)	
1	Depreciation						
2	Depreciation Expense	\$ 412 \$	5	417 \$	\$5	Schedule 8.2, Line 29, Column 6	
3							
4	Amortization						
5	Rate Base deferrals	\$ 280 \$	5	126 \$	\$ (154)	Schedule 14.1, Line 15, Column 6	
6	CIAC	 (28)		(28)	-	Schedule 10, Line 9, Column 5	
7		252		98	(154)		
8							
9	Total	\$ 664 \$	\$	515 \$	\$ (149)		

#### PROPERTY AND SUNDRY TAXES FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line No.	Particulars	AP	2016 PROVED	F	2017 ORECAST	Change	Cross Reference
	(1)		(2)		(3)	(4)	(5)
	General School and Other 1% In-Lieu of Municipal Taxes	\$	101 38	\$	103 38	\$ _ 2	
3 4	Total	\$	139	\$	141	\$ 2	

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#### PROPERTY AND SUNDRY TAXES FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

Line No.	Particulars	2017 Forecast	2018 Forecast	Change	Cross Reference
	(1)	(2)	(3)	(4)	(5)
1 2 3	General School and Other 1% In-Lieu of Municipal Taxes	\$ 103 38	\$ 106 33	\$ 3 (5)	
4	Total	\$ 141	\$ 139	\$ (2)	

June 30, 2016

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Schedule 35

#### **OTHER REVENUE**

FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line No.	Particulars	2016 2017 Particulars Approved Forecast			Change		Cross Reference		
	(1)		(2)		(3)		(4)		(5)
1	Late Payment Charge	\$		9	\$	17	\$	8	
2	Connection Charge			11		9		(2)	
3 4	Other Recoveries				-	-	-		
5	Total	\$		20	\$	26	\$	6	

Schedule 36

#### **OTHER REVENUE**

FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

Line		2017		2018		
No.	Particulars	 Forecast		Forecast	Change	Cross Reference
	(1)	 (2)		(3)	(4)	(5)
1	Late Payment Charge	\$	17	\$ 17	\$ -	
2	Connection Charge		9	9	-	
3 4	Other Recoveries		-	-	-	
5	Total	\$	26	\$ 26	\$ -	

#### **INCOME TAXES**

FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line No.	Particulars		2016 Approved		2017 Forecast		Change	Cross Reference
	(1)		(2)		(3)		(4)	(5)
1	EARNED RETURN	\$	743	\$	719	\$	(24)	Schedule 21, Line 27, Column 5
2	Deduct: Interest on Debt		(373)		(342)		31	Schedule 41, Line 1+2, Column 7
3	Adjustments to Taxable Income	_	5		(1)		(6)	Schedule 37, Line 31
4	Accounting Income After Tax	\$	375	\$	376	\$	1	
5								
6	1 - Current Income Tax Rate		74.00%		74.00%	<u> </u>	0.00%	
7	Taxable Income	\$	507	\$	508	\$	1	
8					~~~~~		0.000/	
9	Current Income Tax Rate		26.00%	<b>_</b>	26.00%		0.00%	
10	Income Tax - Current	\$	132	\$	132	\$	-	
11 12	Draviaua Vaar Adjustmant							
12	Previous Year Adjustment Total Income Tax	\$	- 132	¢	- 132	¢	-	
13		φ	132	φ	152	φ	-	
14								
16	ADJUSTMENTS TO TAXABLE INCOME							
10	Addbacks:							
18	Depreciation	\$	472	\$	412	\$	(60)	Schedule 31, Line 2, Column 3
19	Amortization of Deferred Charges	Ψ	195	Ψ	280	Ψ	85	Schedule 31, Line 5, Column 3
20	Amortization of Debt Issue Expenses		2		2		-	
21	Pension Expense		81		55		(26)	
22	OPEB Expense		47		34		(13)	
23							ζ,	
24	Deductions:							
25	Capital Cost Allowance		(628)		(619)		9	Schedule 39, Line 12, Column 6
26	CIAC Amortization		(36)		(28)		8	Schedule 31, Line 6, Column 3
27	Pension Contributions		(61)		(70)		(9)	
28	OPEB Contributions		(16)		(15)		1	
29	Overheads Capitalized Expensed for Tax Purposes		(40)		(41)		(1)	
30	Removal Costs		(11)		(11)		-	Schedule 13.1, Line 10, Column 4
31	Total	\$	5	\$	(1)	\$	(6)	

Section 9

#### **INCOME TAXES**

FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

Line No.	Particulars		2017 Forecast		2018 Forecast		Change	Cross Reference
	(1)		(2)		(3)		(4)	(5)
1	EARNED RETURN	\$	719	\$	728	\$	9	Schedule 22, Line 27, Column 5
2	Deduct: Interest on Debt		(342)		(350)		(8)	Schedule 42, Line 1+2, Column 7
3	Adjustments to Taxable Income		(1)		(166)		(165)	Schedule 38, Line 31
4	Accounting Income After Tax	\$	376	\$	212	\$	(164)	
5								
6	1 - Current Income Tax Rate		74.00%		74.00%	-	74.00%	
7	Taxable Income	\$	508	\$	287	\$	(221)	
8			00.000/		00.000/		00.000/	
9	Current Income Tax Rate		26.00%	<b>_</b>	26.00%	<u>^</u>	26.00%	
10	Income Tax - Current	\$	132	\$	75	\$	(57)	
11	Draviewe Veren Adjusterent							
12	Previous Year Adjustment Total Income Tax	<b>•</b>	- 132	¢	- 75	\$	-	
13		\$	132	þ	75	Þ	(57)	
14								
15								
16 17								
	Addbacks:	¢	412	¢	447	¢	F	Cabadula 22 Lina 2 Caluma 2
18	Depreciation	\$		Ф	417	Ф	5	Schedule 32, Line 2, Column 3
19 20	Amortization of Deferred Charges		280 2		126		(154)	Schedule 32, Line 5, Column 3
20	Amortization of Debt Issue Expenses Pension Expense		2 55		2 55		-	
21	OPEB Expense		55 34		55 34		-	
22	OFED Expense		54		54		-	
23 24	Deductions:							
24	Capital Cost Allowance		(619)		(634)		(15)	Schedule 40, Line 12, Column 6
26	CIAC Amortization		(28)		(28)		(13)	Schedule 32, Line 6, Column 3
20	Pension Contributions		(20)		(70)			Schedule 52, Line 6, Column 5
28	OPEB Contributions		(15)		(15)		_	
20	Overheads Capitalized Expensed for Tax Purposes		(41)		(13)		(1)	
30	Removal Costs		(11)		(11)		- (1)	Schedule 14.1, Line 10, Column 4
31	Total	\$	(1)	\$	(166)	\$	(165)	
01		Ψ	(י)	Ψ	(100)	Ψ	(100)	

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Section 9

#### CAPITAL COST ALLOWANCE FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

Line No.	Class	CCA Rate	12/31/2016 UCC Balance	Adjustments	2017 Additior	S	2017 CCA	12/31/2017 UCC Balance
	(1)	(2)	(3)	(4)	(5)		(6)	(7)
1	1(a)	4% \$	2,090	Б –	\$	- \$	(84) \$	2,006
2	1(b)	6%	542	-		-	(33)	509
3	2	6%	212	-		-	(13)	199
4	3	5%	11	-		-	(1)	10
5	8	20%	7	-		20	(3)	24
6	10	30%	11	-		10	(5)	16
7	12	100%	-	-		46	(23)	23
8	49	8%	4,099	-		91	(332)	3,858
9	50	55%	33	-		20	(23)	30
10	51	6%	1,511	-		371	(102)	1,780
11								
12	Total	\$	8,516	<b>6</b> -	\$	558 \$	(619) \$	8,455

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Section 9

Schedule 40

#### CAPITAL COST ALLOWANCE FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

Line	Class	CCA	12/31/2017	A divertmente	2018	2018		2/31/2018
No.	Class	Rate	UCC Balance	Adjustments	Additions	CCA		CC Balance
	(1)	(2)	(3)	(4)	(5)	(6)		(7)
1	1(a)	4% \$	2,006	\$ -	\$ -	\$	(80) \$	1,926
2	1(b)	6%	509	-	-		(31)	478
3	2	6%	199	-	-		(12)	187
4	3	5%	10	-	-		(1)	9
5	8	20%	24	-	2	20	(7)	37
6	10	30%	16	-	1	0	(6)	20
7	12	100%	23	-	4	6	(46)	23
8	49	8%	3,858	-	1	8	(308)	3,568
9	50	55%	30	-	2	20	(22)	28
10	51	6%	1,780	-	46	57	(121)	2,126
11								
12	Total	\$	8,455	\$-	\$ 58	31 \$	(634) \$	8,402

## RETURN ON CAPITAL

FOR THE YEAR ENDING DECEMBER 31, 2017 (\$000s)

,	20	116				2017			ſ	Fornod	
							Cost	Earned			
Particulars			A	Amount	Ratio	Cost	Component	Return			Cross Reference
(1)	(	2)		(3)	(4)	(5)	(6)	(7)		(8)	(9)
Term Debt	\$	354	\$	6,187	55.35%	5.40%	2.99% \$	334	\$	(20)	Schedule 43, Line 26&28, Column 5&6&7
Term Debt		19		687	6.15%	1.20%	0.07%	8		(11)	
non Equity		370		4,304	38.50%	8.75%	3.37%	377		7	
						-					
	\$	743	\$	11,178	100.00%	-	6.43% \$	719	\$	(24)	
Reference			L	ine 23,							
	Particulars (1) Term Debt Term Debt non Equity	20 App Particulars Earned (1) ( Term Debt Term Debt non Equity \$	2016 Approved Earned Return(1)(2)Term Debt non Equity\$ 354 19 370\$ 743	Particulars     2016       Particulars     Earned Return       (1)     (2)       Term Debt     \$ 354       Term Debt     19       non Equity     370       \$ 743     \$       S Reference     Sc	2016       Approved         Particulars       Amount         (1)       (2)       (3)         Term Debt       (2)       (3)         Term Debt       19       687         non Equity       370       4,304         \$       743       \$ 11,178	$\begin{array}{c cccccc} 2016 \\ Approved \\ Earned Return \\ \hline (1) \\ \hline (1) \\ \hline (2) \\ \hline (2) \\ \hline (3) \\ \hline (4) \\ \hline (4) \\ \hline (4) \\ \hline (2) \\ \hline (3) \\ \hline (4) \\ \hline (4) \\ \hline (3) \\ \hline (4) \\ \hline (4) \\ \hline (5) \\ \hline (5) \\ \hline (5) \\ \hline (5) \\ \hline (6) \hline (6) \\ \hline (6) \hline (6) \\ \hline (6) \hline $	2016 Approved       2017 Average         Particulars       Earned Return       Amount       Ratio       Cost         (1)       (2)       (3)       (4)       (5)         Term Debt Term Debt non Equity       \$ 354 19 687       \$ 6,187 6.15%       55.35% 5.40%       5.40% 1.20%         \$ 743       \$ 11,178       100.00%       8.75%         \$ Reference       Schedule 2, Line 23,       Schedule 2,	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	2016 Approved Earned Return         2017 Average Embedded         2017 Average Cost         Earned         Fearned           (1)         (2)         (3)         (4)         (5)         (6)         (7)         (7)           Term Debt Term Debt non Equity         \$ 354 19 370         \$ 6,187 687 4,304         55.35% 3.50%         5.40% 1.20%         2.99% 0.07%         \$ 334 8 8         \$ 6.43%         \$ 719         \$ 5           Reference         Schedule 2, Line 23,         Schedule 2, Line 23,         \$         \$         \$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $

June 30, 2016

Section 9

## RETURN ON CAPITAL

FOR THE YEAR ENDING DECEMBER 31, 2018 (\$000s)

						2018					
		2	2017			Average			Ea	rned	
Line	•	Fo	recast			Embedded	Cost	Earned	Re	eturn	
No.	Particulars	Earne	ed Return	 Amount	Ratio	Cost	Component	Return	Ch	ange	Cross Reference
	(1)		(2)	(3)	(4)	(5)	(6)	(7)	(	8)	(9)
1	Long Term Debt	\$	334	\$ 6,215	55.35%	5.39%	2.98% \$	335	\$	1	Schedule 44, Line 26&28, Column 5&6&7
2	Short Term Debt		8	691	6.15%	2.10%	0.13%	15		7	
3 4	Common Equity		377	4,323	38.50%	8.75%	3.37%	378		1	
5	Total	\$	719	\$ 11,229	100.00%	•	6.48% \$	728	\$	9	
6											
7	Cross Reference			hedule 3, _ine 23,							

Line 23, Column 3 June 30, 2016

Section 9

## EMBEDDED COST OF LONG TERM DEBT FOR THE YEAR ENDING DECEMBER 31, 2017

(\$000s)

					Average			
Line		Issue	Maturity	Net Proceeds	Principal	Interest *	Interest	
No.	Particulars	Date	Date	of Issue	Outstanding	Rate	Expense	Cross Reference
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Medium Term Note - Series 11	September 21, 1999	September 21, 2029	147,710	150,000	7.073%	10,610	
2	2004 Long Term Debt Issue - Series 18	April 29, 2004	May 1, 2034	148,085	150,000	6.598%	9,897	
3	2005 Long Term Debt Issue - Series 19	February 25, 2005	February 25, 2035	148,337	150,000	5.980%	8,970	
4	2006 Long Term Debt Issue - Series 21	September 25, 2006	September 25, 2036	119,216	120,000	5.595%	6,714	
5	2007 Medium Term Debt Issue - Series 22	October 2, 2007	October 2, 2037	247,697	250,000	6.067%	15,168	
6	2008 Medium Term Debt Issue - Series 23	May 13, 2008	May 13, 2038	247,588	250,000	5.869%	14,673	
7	2009 Med.Term Debt Issue- Series 24	February 24, 2009	February 24, 2039	98,766	100,000	6.645%	6,645	
8	2011 Medium Term Debt Issue - Series 25	December 9, 2011	December 9, 2041	98,590	100,000	4.334%	4,334	
9	2015 Medium Term Debt Issue - Series 26 (Series A Renewal)	April 13, 2015	April 13, 2045	148,938	150,000	3.413%	5,120	
10	2016 Medium Term Debt Issue - Series 27 (Series B Renewal)	April 8, 2016	April 8, 2026	117,344	118,529	2.695%	3,194	
11	2016 Medium Term Debt Issue - Series 28	April 8, 2016	April 9, 2046	148,500	150,000	3.726%	5,589	
12	2016 Medium Term Debt Issue - Series 29	November 1, 2016	November 1, 2046	198,000	200,000	3.957%	7,914	
13								
14	FEVI L/T Debt Issue - 2008	February 16, 2008	February 15, 2038	247,999	250,000	6.109%	15,273	
15	FEVI L/T Debt Issue - 2010	December 6, 2010	December 6, 2040	98,836	100,000	5.278%	5,278	
16								
17	LILO Obligations - Kelowna				18,177	6.536%	1,188	
18	LILO Obligations - Nelson				2,971	8.381%	249	
19	LILO Obligations - Vernon				8,752	9.735%	852	
20	LILO Obligations - Prince George				22,971	8.589%	1,973	
21	LILO Obligations - Creston				2,200	7.682%	169	
22								
23	Vehicle Lease Obligation				4,295	4.866%	209	
24				_				
25	Sub-Total			-	\$ 2,297,895		\$ 124,019	
26	Fort Nelson Division Portion of Long Term				\$ 6,187		\$ 334	
27						E 4004		
28	Average Embedded Cost				_	5.40%		
29								

30 \* Interest Rate is Effective interest rate as it includes amortization of debt issue costs

June 30, 2016

### EMBEDDED COST OF LONG TERM DEBT FOR THE YEAR ENDING DECEMBER 31, 2018

(\$000s)

					Average			
_ine		Issue	Maturity	Net Proceeds	Principal	Interest *	Interest	
No.	Particulars	Date	Date	of Issue	Outstanding	Rate	Expense	Cross Reference
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	Medium Term Note - Series 11	September 21, 1999	September 21, 2029	147,710	150,000	7.073%	10,610	
2	2004 Long Term Debt Issue - Series 18	April 29, 2004	May 1, 2034	148,085	150,000	6.598%	9,897	
3	2005 Long Term Debt Issue - Series 19	February 25, 2005	February 25, 2035	148,337	150,000	5.980%	8,970	
4	2006 Long Term Debt Issue - Series 21	September 25, 2006	September 25, 2036	119,216	120,000	5.595%	6,714	
5	2007 Medium Term Debt Issue - Series 22	October 2, 2007	October 2, 2037	247,697	250,000	6.067%	15,168	
3	2008 Medium Term Debt Issue - Series 23	May 13, 2008	May 13, 2038	247,588	250,000	5.869%	14,673	
7	2009 Med.Term Debt Issue- Series 24	February 24, 2009	February 24, 2039	98,766	100,000	6.645%	6,645	
3	2011 Medium Term Debt Issue - Series 25	December 9, 2011	December 9, 2041	98,590	100,000	4.334%	4,334	
9	2015 Medium Term Debt Issue - Series 26 (Series A Renewal)	April 13, 2015	April 13, 2045	148,938	150,000	3.413%	5,120	
0	2016 Medium Term Debt Issue - Series 27 (Series B Renewal)	April 8, 2016	April 8, 2026	120,950	122,172	2.695%	3,194	
1	2016 Medium Term Debt Issue - Series 28	April 8, 2016	April 9, 2046		150,000	3.726%	5,589	
2	2016 Medium Term Debt Issue - Series 29	November 1, 2016	November 1, 2046	198,000	200,000	3.957%	7,914	
3								
4	FEVI L/T Debt Issue - 2008	February 16, 2008	February 15, 2038	247,999	250,000	6.109%	15,273	
5	FEVI L/T Debt Issue - 2010	December 6, 2010	December 6, 2040		100,000	5.278%	5,278	
6				,	,		-, -	
7	LILO Obligations - Kelowna				17,248	6.563%	1,132	
8	LILO Obligations - Nelson				2,834	8.539%	242	
9	LILO Obligations - Vernon				8,323	9.912%	825	
20	LILO Obligations - Prince George				21,942	8.750%	1,920	
21	LILO Obligations - Creston				2,106	7.835%	165	
22	0 0 0 gallon 0 0.0000				_,			
23	Vehicle Lease Obligation				2,515	5.765%	145	
24					2,010	0.1.0070		
25	Sub-Total				\$ 2,297,140	_	\$ 123,808	
26 27	Fort Nelson Division Portion of Long Term				\$ 6,215		\$ 335	
28 29	Average Embedded Cost				-	5.39%		
-		<b>•</b> • • • • • • •						

30 \* Interest Rate is Effective interest rate as it includes amortization of debt issue costs

June 30, 2016

Section 9

Appendix A FORECASTING

Appendix A1 CBOC REPORT



#### 1

#### Table A1-1: Conference Board of Canada Report

**November 3, 2015** Provincial Medium Term Forecast: 20153 Run: 16

Table 156 and 157

BRITISH COLUMBIA	2010	2011	2012	2013	2014	2015	2016	2017
Forecasted Single-Family Housing Starts (Units)	11,462	8,867	8,333	8,522	9,569	10,499	9,808	9,188
Forecast Percent Change	45.2	(22.6)	(6.0)	2.3	12.3	9.7	(6.6)	(6.3)
Forecasted Mult-Family Housing Starts (Units)	15,017	17,533	19,132	18,532	18,787	22,565	23,102	23,064
Forecast Percent Change	83.5	16.8	9.1	(3.1)	1.4	20.1	2.4	(0.2)
Forecast Housing Starts Total	26,479	26,400	27,465	27,054	28,356	33,064	32,910	32,252

Appendix A2 HISTORICAL FORECAST AND CONSOLIDATED TABLES



# **Appendix A-2**

# Historical Forecast and Consolidated Tables

June 30, 2016



### 1 **1. INTRODUCTION**

- 2 This appendix presents two data sets as follows:
- 3 1. Historical and Forecast Data
- 4 a. 2005-2015 actual data
- 5 b. 2016 seed year data
- 6 c. 2017-2018 forecast data
- 7 2. Percent Error
  - a. 2006-2015 forecast, actual and percent error

## 9 2. HISTORICAL AND FORECAST DATA TABLES

#### 10 Table A2-1: FEFN Customer Counts, Customer Additions, Use per Customer and Energy

FORT NELSON	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016S	2017F	2018F
Customers													
Rate Schedule 1	1,921	1,928	1,925	1,925	1,937	1,955	1,947	1,959	1,962	1,963	1,964	1,965	1,966
Rate Schedule 2.1	402	408	414	412	421	447	443	446	446	474	476	478	480
Rate Schedule 2.2	29	30	28	28	28	31	31	31	31	7	7	7	7
Rate Schedule 25	2	2	2	2	2	2	2	2	2	2	2	2	2
Customer Additions													
Rate Schedule 1	10	7	(3)	-	12	18	8	12	3	1	1	1	1
Rate Schedule 2.1	21	6	6	(2)	9	26	4	3	-	28	2	2	2
Rate Schedule 2.2	(0)	1	(2)	-	-	3	-	-	-	(24)	-	-	-
Rate Schedule 25	-	-	-	-	-	-	-	-	-	-	-	-	•
Energy (TJs)													
Rate Schedule 1	271	272	268	266	271	268	269	270	268	265	264	262	260
Rate Schedule 2.1	191	190	185	191	194	206	205	204	204	223	220	212	204
Rate Schedule 2.2	95	90	88	94	95	97	100	110	106	65	56	57	57
Rate Schedule 25	349	264	210	69	55	51	56	61	68	50	50	40	40
Use Rate (GJ)													
Rate Schedule 1	142	142	140	138	141	138	139	139	136	136	134	133	132
Rate Schedule 2.1	486	472	449	464	468	476	465	460	456	482	463	444	425
Rate Schedule 2.2	3,303	3,084	3,137	3,371	3,388	3,326	3,228	3,555	3,425	6,616	8,060	8,081	8,103

11

8

## 12 3. PERCENT ERROR DATA TABLES

- 13 The following two tables are key to evaluating the performance of the demand forecast.
- 14 As shown in the following table the 10 year mean absolute percent error (MAPE) of the FEFN
- residential forecast is 4.4%, while the 5 year MAPE is 1.7%. The 2015 percent error was -1.2%.



1

2

#### Table A2-2: Residential Demand Forecast Performance

Rate Schedule 1 - Residential	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	10 Yr MAPE	5 Yr MAPE
Forecast	301,892	300,135	291,154	272,606	263,045	258,951	273,297	274,309	270,571	268,635		
Actual	270,733	272,246	268,169	266,370	271,367	267,722	269,235	270,062	267,589	265,419		
Error = (ACT-FCST)	(31,159)	(27,889)	(22,985)	(6,236)	8,322	8,771	(4,063)	(4,247)	(2,982)	(3,216)		
Percent Error = (Error/ACT)	-11.5%	-10.2%	-8.6%	-2.3%	3.1%	3.3%	-1.5%	-1.6%	-1.1%	-1.2%	4.4%	1.7%

#### 3 As shown in the following table the 10 year MAPE of the consolidated FEFN commercial

4 demand forecast is 6.0%, while the 5 year MAPE is 5.0%. The 2015 percent error was -12.6%

5 and is mainly the result of declining use rates within the commercial customer group.

6

#### Table A2-3: Commercial Demand Forecast Performance

Commercial	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	10 Yr MAPE	5 Yr MAPE
Forecast	288,660	319,713	305,952	274,269	276,415	277,547	304,309	312,247	318,658	323,972		
Actual	285,866	279,569	272,813	285,721	288,278	302,734	305,089	314,309	309,685	287,621		
Error = (ACT-FCST)	(2,794)	(40,144)	(33,139)	11,452	11,863	25,187	780	2,062	(8,973)	(36,351)		
Percent Error = (Error/ACT)	-1.0%	-14.4%	-12.1%	4.0%	4.1%	8.3%	0.3%	0.7%	-2.9%	-12.6%	6.0%	5.0%

#### 8 The following tables provided more granular error information regarding the forecast.

-15.6%

-32.6%

-31.5%

-247.6%

9

#### Table A2-4: FEFN Demand Variances

			Energ	y, TJs						
Rate Schedule 1 - Residential	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Forecast	301,892	300,135	291,154	272,606	263,045	258,951	273,297	274,309	270,571	268,635
Actual	270,733	272,246	268,169	266,370	271,367	267,722	269,235	270,062	267,589	265,419
Error = (ACT-FCST)	(31,159)	(27,889)	(22,985)	(6,236)	8,322	8,771	(4,063)	(4,247)	(2,982)	(3,216)
Percent Error = (Error/ACT)	-11.5%	-10.2%	-8.6%	-2.3%	3.1%	3.3%	-1.5%	-1.6%	-1.1%	-1.2%
Rate Schedule 2.1 - Small Commercial	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Forecast	195,025	212,715	209,910	186,312	181,641	182,772	203,246	207,927	208,999	208,315
Actual	190,721	189,805	184,532	191,342	193,609	205,891	205,024	204,488	203,517	222,697
Error = (ACT-FCST)	(4,304)	(22,910)	(25,378)	5,030	11,968	23,119	1,778	(3,440)	(5,482)	14,382
Percent Error = (Error/ACT)	-2.3%	-12.1%	-13.8%	2.6%	6.2%	11.2%	0.9%	-1.7%	-2.7%	6.5%
Rate Schedule 2.2 - Small Commercial	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Forecast	93,635	106,998	96,042	87,957	94,774	94,774	101,063	104,320	109,660	115,656
Actual	95,145	89,764	88,281	94,378	94,669	96,842	100,065	109,821	106,168	64,924
Error = (ACT-FCST)	1,510	(17,234)	(7,761)	6,421	(105)	2,068	(998)	5,502	(3,492)	(50,732)
Percent Error = (Error/ACT)	1.6%	-19.2%	-8.8%	6.8%	-0.1%	2.1%	-1.0%	5.0%	-3.3%	-78.1%
Rate Schedule 25 - General Firm Transport		2007	2008	2009	2010	2011	2012	2013	2014	2015
Forecast	402,824	350,307	276,063	239,795	58,492	58,492	54,995	54,995	67,084	55,832
Actual	348,604	264,133	209,955	68,982	54,995	51,354	55,832	60,756	67,598	49,790
Error = (ACT-FCST)	(54,220)	(86,174)	(66,108)	(170,813)	(3,496)	(7,138)	837	5,761	515	(6,042

-6.4%

-13.9%

9.5%

0.8%

-12.1%

1.5%

10

Percent Error = (Error/ACT)



1

#### Table A2-5: FEFN UPC Variances

			UPC,	,GJs						
Rate Schedule 1 - Residential	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Forecast	160	154	149	140	136	133	140	140	138	136
Actual	142	142	140	138	141	138	139	139	137	136
Error = (ACT-FCST)	(19)	(12)	(9)	(2)	5	5	(1)	(1)	(1)	(1)
Percent Error = (Error/ACT)	-13.4%	-8.7%	-6.6%	-1.2%	3.6%	3.5%	-1.1%	-1.0%	-0.8%	-0.5%
Rate Schedule 2.1 - Small Commercial	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Forecast	550	521	503	474	435	435	466	465	463	453
Actual	487	472	449	464	468	476	465	460	456	482
Error = (ACT-FCST)	(63)	(49)	(54)	(10)	34	41	(1)	(5)	(7)	29
Percent Error = (Error/ACT)	-13.0%	-10.4%	-12.0%	-2.1%	7.2%	8.6%	-0.3%	-1.1%	-1.6%	6.1%
Rate Schedule 2.2 - Small Commercial	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Forecast	3,344	3,690	3,312	3,157	3,385	3,385	3,609	3,726	3,487	3,535
Actual	3,303	3,084	3,137	3,371	3,388	3,326	3,228	3,555	3,425	6,616
Error = (ACT-FCST)	(41)	(606)	(175)	214	3	(59)	(381)	(171)	(62)	3,081
Percent Error = (Error/ACT)	-1.2%	-19.6%	-5.6%	6.3%	0.1%	-1.8%	-11.8%	-4.8%	-1.8%	46.6%

2 3

#### Table A2-6: FEFN Total Customer Variances

			Custo	mers						
Rate Schedule 1 - Residential	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Forecast	1,928	1,975	1,973	1,985	1,945	1,955	1,960	1,973	1,971	1,984
Actual	1,921	1,928	1,925	1,925	1,937	1,955	1,947	1,959	1,962	1,963
Error = (ACT-FCST)	(7)	(47)	(48)	(60)	(8)	0	(13)	(14)	(9)	(21)
Percent Error = (Error/ACT)	-0.4%	-2.4%	-2.5%	-3.1%	-0.4%	0.0%	-0.7%	-0.7%	-0.5%	-1.1%

Rate Schedule 2.1 - Small Commercial	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Forecast	389	415	421	426	420	422	443	454	457	468
Actual	402	408	414	412	421	447	443	446	446	474
Error = (ACT-FCST)	13	(7)	(7)	(14)	1	25	-	(8)	(11)	6
Percent Error = (Error/ACT)	3.2%	-1.7%	-1.7%	-3.4%	0.2%	5.6%	0.0%	-1.8%	-2.5%	1.3%

Rate Schedule 2.2 - Small Commercial	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Forecast	30	29	29	29	28	28	28	28	32	33
Actual	29	30	28	28	28	31	31	31	31	7
Error = (ACT-FCST)	(1)	1	(1)	(1)	-	3	3	3	(1)	(26)
Percent Error = (Error/ACT)	-3.4%	3.3%	-3.6%	-3.6%	0.0%	9.7%	9.7%	9.7%	-3.2%	-371.4%

4 5

#### Table A2-7: FEFN Customer Additions Variances

			Customer	Additions						
Rate Schedule 1 - Residential	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Forecast	17	54	45	9	10	10	11	13	12	13
Actual	10	7	(3)	-	12	18	8	12	3	1
Error = (ACT-FCST)	(7)	(47)	(48)	(9)	2	8	(3)	(1)	(9)	(12)
Percent Error = (Error/ACT)	-74.1%	-671.4%	1600.0%		16.7%	44.4%	-37.5%	-8.3%	-300.0%	-1200.0%
Rate Schedule 2.1 - Small Commercial	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Forecast	8	13	13	3	3	2	11	11	11	11
Actual	21	6	6	(2)	9	26	4	3	-	28
Error = (ACT-FCST)	13	(7)	(7)	(5)	6	24	(7)	(8)	(11)	17
Percent Error = (Error/ACT)	61.9%	-116.7%	-116.7%	250.0%	66.7%	92.3%	-175.0%	-266.7%		60.7%
Rate Schedule 2.2 - Large Commercial	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Forecast	1	-	(1)	-	-	-	-	-	1	1
Actual	-	1	(2)	-	-	3	-	-	-	(24)
Error = (ACT-FCST)	(1)	1	(1)	-	-	3	-	-	(1)	(25)
Percent Error = (Error/ACT)			50.0%			100.0%				104.2%

# Appendix A3 DEMAND FORECAST METHODOLOGY



## **Appendix A3**

## **Demand Forecast Methodology**

June 30, 2016



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#### 1 1. INTRODUCTION

2 The following table shows the high level methodology used for each component of FEI's

3 demand forecast.

4

Rate Group	Customer Additions	Customers	Use Rate	Demand
Residential	CBOC forecast by dwelling type	Prior year customers + customer adds	Time series, normalized historic UPC	Product of Customers and Use Rates
Commercial	3 Yr. Avg, historical additions	Prior year customers + customer adds	Time series, normalized historic UPC	Product of Customers and Use Rates
Industrial				Annual survey of industrial customers

5

In the following sections, FEI provides background information, including a description of FEI's
regions and rate classes, the time periods used in the forecast, and the weather normalization
process, and then describes each of FEI's forecast methods used to derive the demand
forecast, in the following order:

- 10 Residential Customer Additions
- 11 Commercial Customer Additions
- 12 Residential Use Rate
- 13 Commercial Use Rate
- 14 Residential and Commercial Demand Forecast
- 15 Industrial Demand Forecast



#### 1 2. BACKGROUND INFORMATION

#### 2 2.1 ACTUAL, SEED AND FORECAST YEARS

- 3 FEI's demand forecasts contain data from three time frames:
- Actual Years: Actual years are those for which actual data exists for the full calendar year.
- Forecast Year(s): This is the year or years for which the forecast is being developed.
   This can be one year (in the case of the Annual Review) or a range of 2 or more years depending on the filing.
- Seed Year: The Seed Year is the year prior to the first forecast year. The Seed Year is
   forecast based on the latest years of actual data available, and will be different than the
   original forecast for that year in the previous filing.

#### 12 2.2 RATE CLASSES

The following residential, commercial and industrial rate classes are included in the annualdemand forecast:

Residential	
Rate Schedule 1 - Residential	This rate schedule is applicable to firm gas supplied at one premise for use in approved appliances for all residential applications in single-family residences, separately metered single family townhouses, row houses, condominiums, duplexes and apartments and single metered apartment blocks with four or less apartments.
Commercial	
Rate Schedule 2.1 - Small Commercial	This rate schedule is applicable to customers with a normalized annual consumption at one premise of less than 2,000 Gigajoules of firm gas, for use in approved appliances in commercial, institutional or small industrial operations.
Rate Schedule 2.2 - Large Commercial	This rate schedule is applicable to customers with a normalized annual consumption at one premise of greater than 2,000 gigajoules of firm gas, for use in approved appliances in commercial, institutional or small industrial operations.
Rate Schedule 25 - General Firm Transportation	This rate schedule applies to the provision of firm transportation service through the FEI system and through one meter station to one shipper.



#### 1 2.3 WEATHER NORMALIZATION OF RESIDENTIAL AND COMMERCIAL USE RATES

Residential and commercial rate schedules (Rate Schedules 1, 2.1 and 2.2) are weather
sensitive. A weather normalization process is applied to all actual use rates for these rate
schedules as described in this section.

5 Actual UPC is weather normalized on a monthly basis for each rate class by multiplying the 6 actual UPC by a normalization factor. The normalization factor is derived from a non-linear 7 regression model that estimates the impact of the monthly weather variation on the load. As the 8 relationship between weather and the usage is not linear, FEI considers three non-linear models 9 that are often used when modeling weather impact. One is based on the Gompertz distribution 10 (the "Gompertz" model). The other two methods are variants based on the logit formulation with 11 one (Logit-4) allowing for an additional parameter for optimal fitting. The models are:

12 • Gompertz

Estimated Monthly UPC = 
$$A \times e^{(-e^{-B \times (Avg.MonthlyTemp.-C)})}$$

13 • Logit-3

Estimated Monthly UPC = 
$$\frac{A}{1 + B \times e^{(-C \times Temp)}}$$

14 • Logit-4

Estimated Monthly UPC = 
$$\frac{(D + (A - D))}{1 + B \times e^{(-C \times Temp)}}$$

15 The A/B/C/D parameters are estimated through a least square method to minimize the sum of 16 squared error (SSE). The optimization process to minimize the SSE is done using the Solver 17 tool in Microsoft Excel.

18 The three non-linear models are tested to see which provides the best fit for each rate class by 19 region. The heat sensitivity estimated from the model assumes that the sensitivity varies not 20 only depending on the weather but also on the rate class. For example, the residential rate 21 schedule shows higher sensitivity to weather compared to the commercial rate schedules, and 22 FEI's normalization factors account for the difference.



#### 1 3. RESIDENTIAL CUSTOMER ADDITIONS

#### 2 **3.1** *INTRODUCTION*

As shown in Table A3-1 above, the residential demand forecast is the product of the number of customers and the use rate. The forecast number of customers is determined by using the actual customer additions<sup>1</sup> from the most recent year, and applying a forecast growth rate for customer additions.

7 This section describes the residential customer additions forecast methodology, beginning with
8 a general description and followed by a step-by-step discussion of the forecast.

#### 9 3.2 DESCRIPTION OF THE METHOD

FEI's forecast of annual net customer additions is based on the correlation between FEI's net customer additions and the Conference Board of Canada (CBOC) forecast of housing starts. FEI begins with the most recent year of recorded FEI actual customer additions by rate schedule, region and housing type. FEI then calculates the annual customer growth rate from the CBOC forecast for single-family and mufti-family dwellings. FEI's forecast net customer additions are then calculated by applying the growth rates to the most recent actual customer counts.

- Forecasting is completed at the annual level. Based on historical seasonality, the annual forecast is distributed to create the monthly forecast that is then entered into FEI's Forecast Information System (FIS).
- FEI uses the most recent Provincial Medium Term Housing Starts Forecast from the (CBOC) to develop growth rates by housing type.
- The CBOC forecast is also used because it provides a forecast for both single family dwellings (SFD) and multi-family dwellings (MFD).
- With the known actual additions by housing type and the forecast growth rates by housing type,
  the net additions forecast can be calculated by multiplying the actual SFD and MFD additions by
  the applicable growth rate:
- Customers are not added at the same rate throughout the year. As a result, the regional annualforecasts calculated above are seasonalized to calculate forecast monthly customer additions.
- The residential additions are then added to the prior year actual customer count to calculate the customer forecast.

<sup>&</sup>lt;sup>1</sup> Customer additions or "net" customer additions is the year-over-year change in the total number of customers.



#### 1 4. COMMERCIAL CUSTOMER ADDITIONS

- 2 Commercial customer additions are calculated using a three-year average of prior actuals3 additions at the region and rate class level.
- 4 The starting point for the customer additions forecast is the actual month-end customer counts 5 as recorded in FEI's billing system for each commercial rate schedule.
- 6 The month-end customer totals are used to determine the monthly net additions for three years 7 by calculating the difference between consecutive months. For example, January 2012 8 additions are calculated as the January 2012 month end less the December 2011 month end as 9 follows:
- 10 This process is repeated for 2012, 2013 and 2014 by month, for Rate Schedules 2.1 and 2.2.
- 11 Once the regional and monthly additions have been calculated, three-year average seasonality 12 factors can be calculated.
- The actual customer additions discussed above are used to develop three-year averagecustomer additions.
- The three-year average is used as the annual forecast commercial customer additions for boththe seed and forecast years.
- The three-year average annual forecast is then converted into a monthly forecast using theseasonality factors above.
- 19 The month end forecast as entered into FIS starts with the 2014 December actual customer
- 20 count and adds the monthly additions.
- 21



#### 1 5. RESIDENTIAL USE RATE

#### 2 **5.1** *INTRODUCTION*

As indicated in Table A3-1 above, the Residential Demand Forecast is the product of the number of residential customers and the residential use rate. This section describes the method for forecasting the residential use rate.

#### 6 5.2 MONTHLY WEATHER-NORMALIZED ACTUAL UPCs

FEI develops its residential use rate forecast based on four years of monthly use rates. The
 monthly UPC values are weather-normalized using the process set out in section 2.4 above.

9 The four years of monthly data is used to calculate 36, 12-month rolling UPC sums. These 12-10 month rolling UPC sums are then plotted and a regression analysis is conducted. If the 11 resulting  $R^2$  value is greater than 50%, then the slope of the regression equation is used to 12 forecast the use rate for the Forecast Year. If the resulting  $R^2$  value is 50% or less a trend is

13 assumed to be absent and a three-year average of annual growth rates is used for the forecast

Once the annual UPC forecasts are complete they must be loaded into FIS to develop the load forecast by region. Because the FIS inputs are monthly, the annual forecasts must be "seasonalized". Seasonalization is the calculation that determines the proportion of demand consumed by month. The 12 seasonalization factors sum up to 100%. The seasonalization factors are developed from the prior three years actual data.



#### 1 6. COMMERCIAL USE RATE

#### 2 **6.1** *INTRODUCTION*

3 The following section describes how the use rate methodology works for the commercial 4 forecast. The following methodology applies to Rate Schedules 2 and 2.2.

#### 5 6.2 MONTHLY WEATHER-NORMALIZED ACTUAL UPCS

6 FEI's commercial use rate forecast is developed in the same manner as the residential use rate 7 forecast discussed above. The method is based on four years of monthly use rates by rate 8 class. The monthly UPC values are weather-normalized using the process described above. 9 As with the residential forecast discussed above, the four years of monthly data is used to calculate 36, 12-month rolling UPC sums. These 12-month rolling UPC sums are then plotted 10 and a regression analysis is conducted. If the resulting R<sup>2</sup> value is greater than 50%, then the 11 12 slope of the regression equation is used to forecast the use rate for the Forecast Year. If the 13 resulting R<sup>2</sup> value is 50% or less, then a three-year average of annual growth rates is used for 14 the forecast.

15 Once the annual UPC forecasts for each region are complete they must be loaded into FIS to

16 develop the load forecast by region and are seasonalized as described above.



#### 1 7. RESIDENTIAL AND COMMERCIAL DEMAND FORECAST

- 2 The residential and commercial demand forecasts are the simple products of the monthly
- 3 customer forecast and the matching monthly use rates forecast.



#### 8. INDUSTRIAL DEMAND FORECAST 1

#### 8.1 INTRODUCTION 2

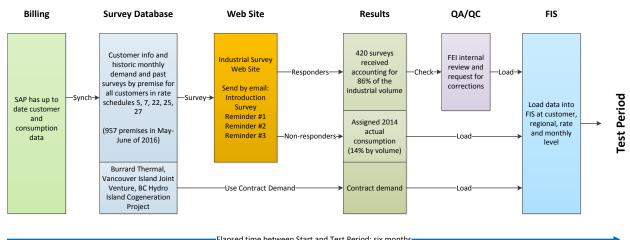
3 The industrial demand is forecast using a web-based survey system. The following diagram

4 shows the main steps of process.

5

#### Figure A3-1: Industrial Forecast Process

Industrial Survey Process (May-June 2015)



6

Elapsed time between Start and Test Period: six months

Each customer in each industrial class receives a customized email message with a secure link 7 to their individual survey. The customer then uses the web based survey to complete their 8 9 forecast of demand for the next five years and submits it to FEI. Once the survey is closed

10 (typically after six weeks duration) the survey responses are checked and then the data is

11 loaded into the FIS system. The following sections describe the process in detail.

#### 8.2 CREATE THE SURVEY 12

13 Prior to the start of the survey FEI creates a new survey using a web-based application. For the annual survey all industrial classes are selected. Commercial and residential customers are not 14 15 surveyed.

#### SEND OUT THE INTRODUCTION EMAIL 16 8.3

17 The customer is introduced to the survey several days before the actual surveys are sent out. 18 This allows the customer time to update their contact information and possibly to assign the 19 survey to a different employee if there have been staffing changes. FEI has found this to be an important step and contributes to the high success rate because a minimal number of surveys 20 21 are sent to the wrong person.



- 1 The survey web site creates the above form letters and manages the send out. The following is
- 2 an example of the introductory email.
- 3

#### Figure A3-2: Survey Introductory Email Example

🖂   📙 🔊 😈 🛧 🗇   🗧 2015 FortisBC Industrial Survey - Message (HTML)	- o x
File Message	۵ (?)
Image: Specific term       Image: Specific term <td< td=""><td>Affind Related + Select + Zoom</td></td<>	Affind Related + Select + Zoom
	Editing Zoom
From:       2015 FortisBC Industrial Survey         To:          Bailey, David         Cc:          Subject:         2015 FortisBC Industrial Survey	Sent: Wed 8/5/2015 8:55 AM
Test Canada Ltd.,	
Starting this week FortisBC will be asking our large volume customers to complete their annual Consumption Survey	
As a result of changes to our regulatory timetable we will now be completing the annual survey in the spring.	
You are set to receive the survey for	
This message simply allows us to confirm your email address and to introduce the survey.	
Why do we Survey?	
The results of the survey will be used to set your rates in 2016. Your participation will insure that we have the b set those rates.	est data with which to
The confidentiality of your data is our primary concern and industry standard steps have been taken to keep your da financial information in this survey and your results will only be used to develop a portion of our upcoming forecast.	ta secure. There is no
You will receive a second email later this week that will contain a link to your web based survey.	
The survey is very short and only takes a few minutes to complete.	
Next Steps	
Please reply to this message if your survey should be sent to a different email address or if you have any questions	or concerns.
We encourage and appreciate your cooperation in providing FortisBC with this information.	
Yours truly,	
Kevin Hodgins	
Manager, Industrial Accounts, FortisBC	
Industrial Survey	22 ^

4

5 Replies to these emails are used to update the contact and other information in the survey web6 site.

#### 7 8.4 SEND OUT THE SURVEY EMAIL

8 An email with a customized link to the survey is sent out several days after the reminder. The 9 survey is not sent until all the changes that resulted from the introductory email have been



- 1 processed. As in the following sample email, each customer is sent an HTML link to the survey.
- 2 An encrypted globally unique identifier in the link insures that customers cannot access surveys
- 3 from other customers.

4

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File	Message									0
ि Ignore S Junk ▼ [	Delete Rep	ly Reply I All	Forward	🕸 - 🗟	HR , To Manager ) Team E-mail	→ ▼ ■ Move	Rules *	Aark Unread Categorize ▼ ▼ Follow Up ▼	a abo and a second sec	Zoom
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					ate setting pro		ur participatio	n will insure that	t we have the l	hest
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The resu data with You can You can Click to c Please co subsequ Most im The file c Next Ste We would be conta Thank you	ults of the multiplication which to a rivey easily access open your 2 complete the ent years. portantly: can be oper ps d appreciat citing you t but for your for you any que	survey w et those r ss your for <u>016 Fortis</u> e form by Upon com ed in mar e this info o follow up	rm by clic s <u>BC Indu</u> entering npletion y ny softwa rmation f p.	ed to se rticipatio cking th <u>ustrial Su</u> your ex you will are appli to be se viding Fo	et your rates on last year ex e follow <u>invey</u> epected consu have the option cations include ent back prome ortisBC with the	in 2016. Yo cceeded 90% link. umption for a on of downlo ling Excel. aptly. A Comm	all of 2016, an ading you his mercial & Indu	ur best year even d your best estir toric and forecas ustrial Energy So	r. mate for the st consumptior	n file.
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#### 1 8.5 SURVEY FORM

2 The following web form is displayed to the user after the link in the email has been clicked.

Figure A3-4: Survey (Web) Form Example

	FOR	TIS	BC <sup>~</sup> I	NDUSTR	IAL SUR	VEY							
dus	trial S	urvey -											
ccou	int Numbe	er											
remi	se Numbe	r			10000								
tate C	lass				RATE22								
remi	se Addres	s			121.055								
Cont	act Forr	n											
ame				J	Test Car	nada Ltd.							
mail					david.ba	iley@fortisl	oc.com						
hone													
lay w rogra	e contact y ms?	ou about (	our rebate		⊖ Yes ⊖ No								
listo	oric Con	sumptio	n Chart		FortisBC I	ias a numbe	r of Energy I	Efficiency and					I customers.
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2500	2000							-					2012
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							Monti	ns					
listo	oric Con	sumptio	n Data	(3									
'ear	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
012	183,224	197,179	131,229	139,014	113,237	130,493	148,388	148,009	128,623	123,241	143,119	180,882	1,760,617
013 014	140,695 250,577	181,148	138,550	140,829	42,888	67,318 220,935	172,458	222,891	122,738	171,559	208,720	206,100	1,813,870 2,623,641
015	171,272	144,832	91,253	0	0	0	0	0	0	0	0	0	407,357
016	0	0	0	0	0	0	0	0	0	0	0	0	0
roje	ected Mo	onthly Co	onsumpt	tion Data	(Plea	<b>4</b> )es	timated i	monthly G	J's belov	V)		Same	as Last Yea
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	ected An												
Proje	ected An			2019			2020				2021		
Proje	ected An			2019			2020				2021		
	ected An			2019			2020				2021		



1 Notes:

- The user can change the contact name (normally a person's name), email and phone
   number. It is saved and will be used in subsequent years. This allows the recipient to
   redirect next year's survey.
- 5 2) A line chart showing the customers actual historic consumption is shown for the prior 5 6 years. The customer can use the pick list to show a chart that shows last year's actual 7 consumption and last year's survey. This allows the customer to see any variance in 8 their survey from last year.
- 3) A table of historical consumption is show for the prior five years. Zeroes are shown in
  this example because the survey database is not updated until the start of a real survey.
  The last update was in April of 2015. This will be updated again in April of 2016 in
  preparation for the 2016 survey.
- 4) The customer is asked for monthly consumption for the coming year. The total at the right side is automatically updated to reduce typing errors. If the customer believes that its consumption is not changing they can use the "Same as last year" button as a fast alternative to typing in the same values.
- 5) Annual forecasts are requested for the remaining 4 years of the survey.
- 6) Once the data has been entered the user clicks the Submit button to save the survey.
  Upon submitting the survey the user will be able to download a Microsoft Excel file
  containing the data from Step 3 above.

#### 21 8.6 Non Responders and the Reminder Email

Once the survey is started responses start coming in within the hour. A steady response rate normally continues for several days, but eventually slows. The survey system tracks the status of each survey and at all times FEI knows the response rate. Until the target response rate is reached FEI sends out a weekly reminder email to those customers that have not yet responded. The reminder email contains the same link to the survey. The reminder step enhances the response rate of the survey. A sample is shown below:



4 ت (* 🛃   🗠	▶ 🧇   🚽			2015	FortisBC Ind	ustrial Sun	ey - Mes	sage (HTML)					
File Messa	ge												۵
Garage Ignore Sounk → Delete Delete	Reply	Reply Fo All Respor	Щ.	¢- 6	HR To Manage Team E-ma Quick Ste	-	Move	🔊 OneNote	Categ	gorize * w Up *	Translat Edit	3-	Zoom
	01E EasticP(			- industria	al.survey@for		-	more	Tugs		ent: We	-	
	ailey, David		a ou vey s	<inuusuik< td=""><td>a.survey@ror</td><td>isbe.com&gt;</td><td></td><td></td><td></td><td>د</td><td>ent. we</td><td>u 0/3/201</td><td></td></inuusuik<>	a.survey@ror	isbe.com>				د	ent. we	u 0/3/201	
Cc:													
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Wednesday,	August 0	5, 2015	5										
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Test Canada	Ltd.,												
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#### 3 8.7 CLOSING OFF THE SURVEY AND LOADING FIS

Once the target response rate has been achieved the survey is closed and no further responses are solicited. The data in the survey web site is then transferred automatically to the current forecast in FIS. Industrial rate classes are forecast by individual customer so the data for each customer is copied. Checks are completed to make sure that that data was copied properly and that the survey web site and that the current FIS forecast are in sync.



#### 1 9. DEMAND FORECAST

- 2 Once the customer additions, use rates and industrial demand calculations and data have been
- 3 completed, they are entered into FIS. FIS then aggregates the demand by month and rate class
- 4 to prepare the overall forecast of demand.

### Appendix B DEPRECIATION STUDY



## **2014 DEPRECIATION STUDY**

### CALCULATED ANNUAL DEPRECIATION ACCRUALSRELATED TO GAS PLANT AS AT DECEMBER 31, 2014

Prepared by:



FORTISBC ENERGY INC. Surrey, British Columbia

#### 2014 DEPRECIATION STUDY

#### CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO GAS PLANT AS AT DECEMBER 31, 2014

#### GANNETT FLEMING CANADA ULC

Calgary, Alberta

🎽 Gannett Fleming



August 21, 2015

FortisBC Energy Inc. 16705 Fraser Highway Surrey, British Columbia V4N 0E8

Attention: Mr. James Wong Director, Finance and Planning

Ladies and Gentlemen:

Pursuant to your request, we have conducted a depreciation study related to the gas utility plant of FortisBC Energy Inc. as of December 31, 2014. The depreciation study has developed depreciation rates for the FortisBC Energy Inc. systems. Our report presents a description of the methods used in the estimation of depreciation, the statistical analyses of service life and net salvage, and the summary and detailed tabulations of annual and accrued depreciation.

The calculated annual depreciation accrual rates presented in the report are applicable to plant in service as of December 31, 2014. The depreciation rates are based on the straight-line method, the remaining life basis, using the average service life group procedure. A periodic review of the depreciation rates using the same estimates and methods is recommended.

Respectfully submitted,

GANNETT FLEMING CANADA ULC

LARRY E. KENNEDY Vice President

LEK/hac Project #059460

Gannett Fleming Canada ULC

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### FORTISBC ENERGY INC. DEPRECIATION STUDY

#### **EXECUTIVE SUMMARY**

Pursuant to FortisBC Energy Inc.'s ("FortisBC") request, Gannett Fleming Canada ULC ("Gannett Fleming") conducted a depreciation study related to the surviving plant of natural gas utility plant as of December 31, 2014. The purpose of this study was to determine the annual depreciation accrual rates and amounts for book and ratemaking objectives.

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 forecasting net salvage characteristic for each depreciable group of assets.

The last depreciation study conducted by Gannett Fleming provided separate annual accrual rates developed for the provision applicable to the average service life and net salvage components of depreciation expense for each of the FortisBC Energy Inc., FortisBC Energy Inc. (Vancouver Island) Inc., and FortisBC (Whistler) Inc. systems. The current depreciation study has provided annual accrual rates for the combined FortisBC natural gas system<sup>1</sup>. As such, Table 1A, as presented in the Results section of this report, provides for the recovery of the original cost of assets in service. Table 1B provides for the recovery of the estimated costs of retirement.

Gannett Fleming recommends the calculated annual depreciation accrual rates set forth herein apply specifically to gas plant in service as of 2014 as summarized by Tables 1A and 1B of the study by account detail. Supporting data and calculations are provided as well within the study.

Finally, this study results in an annual depreciation expense accrual of \$185.4 million when applied to depreciable plant balances as of December 31, 2014. The report study results are summarized at an aggregate functional group level as follows:

<sup>&</sup>lt;sup>1</sup> Please note that all references through this document to the previous study relate to the amalgamated results of all three utilities.

	ORIGINAL COST	ANNUAL ACCRUAL				
PLANT GROUP	\$'s	%'s	\$'s			
(1)	(2)	(3)	(4)			
INTANGIBLE	142,411,398	13.64	19,420,920			
MANUFACTURING	5,905,997	2.74	162,068			
LNG	258,855,336	3.09	8,003,282			
TRANSMISSION	1,496,578,392	2.09	31,293,227			
DISTRIBUTION	2,997,226,526	3.57	107,068,511			
BIOGAS	10,789,808	4.36	470,649			
NG FOR TRANSPORTATION	11,811,679	5.03	593,716			
GENERAL	275,696,133	6.69	18,432,566			
TOTAL PLANT IN SERVICE	5,199,275,269	3.57	185,444,939			

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

PART I. INTRODUCTION

### FORTISBC ENERGY INC. DEPRECIATION STUDY PART I. INTRODUCTION

#### SCOPE

This report sets forth the results of the depreciation study for FortisBC Energy Inc. to determine the annual depreciation accrual rates and amounts for book purposes applicable to the original cost of gas plant at December 31, 2014. The rates and amounts are based on the straight line remaining life method of depreciation. This report also describes the concepts, methods and judgments which underlie the recommended annual depreciation accrual rates related to gas plant in service as of December 31, 2014.

The service life and net salvage estimates resulting from the study were based on: informed engineering judgment which incorporated analyses of historical plant retirement data as recorded through 2014; a review of Company practice and outlook as they relate to plant operation and retirement; and consideration of current practice in the gas industry, including knowledge of service lives and net salvage estimates used for other gas companies.

#### PLAN OF REPORT

Part I. Introduction, contains statements with respect to the plan of the report, and the basis of the study. Part II. Development of Depreciation Parameters, presents descriptions of the methods used and factors considered in the service life and net salvage studies. Part III. Calculation of Annual and Accrued Depreciation presents the methods and procedures used in the calculation of depreciation. Part IV. Results of Study, presents summaries by depreciable group of annual and accrued depreciation. Part V presents the results of the Retirement Rate and Service Life Statistics and Part VI presents Net Salvage Analysis. Detailed tabulations of annual and accrued depreciation are presented in Part VII of this report. An overview of Iowa curves and the Retirement Rate Analysis are set forth in Appendix A of the report. An overview of the net salvage analysis is presented in Appendix B of this report.

#### **BASIS OF THE STUDY**

#### **Depreciation**

For most accounts, the annual and accrued depreciation were calculated by the straight line method using the average service life procedure and applied on a remaining life basis. For certain General Plant and other accounts, the annual and accrued depreciation are based on amortization accounting. Both types of calculations were based on original cost, attained ages, and estimates of service lives and 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 continued use. 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. Many gas utilities in North America have received approval to adopt amortization accounting for these accounts.

#### Service Life and Net Salvage Estimates

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

The procedure for estimating service lives consisted of compiling historical data for the plant accounts or depreciable groups, analyzing this history through the use of widely accepted techniques, and forecasting the survivor characteristics for each depreciable group on the basis of interpretations of the historical data analyses and the probable future. The combination of the historical experience and the estimated future yielded estimated survivor curves from which the average service lives were derived. The depreciation rates should be reviewed periodically to reflect the changes that result from plant and reserve account activity.

## PART II. DEVELOPMENT OF DEPRECIATIONS PARAMETERS



#### PART II. DEVELOPMENT OF DEPRECIATION PARAMETERS

#### 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 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 natural gas utility service. Normally, the period of time over which the fixed capital cost is allocated to the cost of service is equal to the period of time over which an item renders service, that is, the item's service life. The most prevalent method of allocation is to distribute an equal amount of cost to each year of service life. This method is known as the straight-line method of depreciation.

The calculation of annual and accrued depreciation based on the straight line method requires the estimation of survivor curves and is described in the following sections of this report. The development of the proposed depreciation rates also requires the selection of group depreciation procedures, as discussed in Part III of this report.

#### **ESTIMATION OF SURVIVOR CURVES**

#### 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 using the retirement rate method of analysis. The range of survivor characteristics usually experienced by utility and industrial properties is encompassed by a system of generalized survivor curves known as the lowa type curves. There are four families in the lowa system, labeled in accordance with the location of the modes of the retirements in relationship to the average life and relative height of the modes. The left-moded curves are those in which the greatest frequency of retirement occurs to the left of, or prior to, average service life. The symmetrical-moded curves are those in which the greatest frequency occurs to the right of, or after, the average service life. The origin-moded curves are those in which the greatest frequency occurs to the right of, or after, the average service life. The origin-moded curves are those in which the greatest frequency of retirement occurs at the origin, or immediately after age 0. The letter designation of each family of curves (L, S, R or O) represents the mode of the associated frequency curve with respect to the average service life. The numerical subscripts represent the relative heights of the modes of the frequency curves within each family.

A discussion of the general concept of survivor curves and retirement rate method is presented in Appendix A of this report.

#### Survivor Curve and Net Salvage Judgments

The survivor curve estimates were based on judgment which considered a number of factors. The primary factors were the statistical analysis of data; current policies and outlook as determined during conversations with management personnel and on the knowledge Gannett Fleming developed through the completion of numerous gas utility studies.

The estimates of net salvage were based in part on historical data related to actual retirement activity for the years 1959 through 2014 for most accounts. Gross salvage and cost of removal as recorded to the depreciation reserve account and related to experienced retirements were used. Percentages of the cost of plant retired were calculated for each component of net salvage on both annual and five-year moving average bases. The net salvage estimates are expressed as percentages of the original cost of plant. A detailed discussion of the methods and procedures followed in the net salvage study is presented in Appendix B to this report. The following discussion, dealing with a number of accounts which comprise the majority of the investment analyzed, presents an overview of the factors considered by Gannett Fleming in the determination of the average service life and net salvage estimates. The survivor curve estimates for the remainder of the accounts not discussed in the following sections were based on similar considerations.

<u>Account 475.00 – Distribution - Systems - Mains</u>, is the largest account studied and represents 25% of FortisBC's depreciable plant. The retirements, additions and other plant transactions for the period 1924 through 2014 were analyzed by the retirement rate method. The original and smooth survivor curve is plotted on page V-37. Typical service lives for distribution mains range from 50 to 66 years.

In previous studies Gannett Fleming recommended the Iowa 64-R2. The statistical analysis of this account has indicated a best fit of historic retirements consistent with the 64-R2.5 Iowa curve. Since the last study, this account has continued to incur retirements at a consistent rate which provide for a reliable statistical indication of average service life characteristics. To date, this account has experienced nearly \$46 million of retirement activity. Discussions with operating and engineering staff have not indicated any specific reasons to believe that the future retirement trends in this account will be significantly different than the historic indications. Furthermore, operations staff has indicated that it would be expected that the life of the FortisBC distribution mains would be in the range of other industry peers and with the FortisBC Transmission mains.

The retirement rate analysis indicates a significant rate of retirement activity as plant reaches 50 years of age, with large retirement rates through to age 75 resulting in a slightly more rectangular retirement dispersion pattern. In order to better fit to this retirement pattern, Gannett Fleming has recommended a slightly higher moded lowa 64-R2.5 survivor curve to better reflect the experienced retirement rates as compared to the previous estimate of the 64-R2. This minor increase in the mode of the lowa curve combined with a small increase in the average service life expectation provides a reasonable interpretation of the original survivor curve, and falls within the range of typical service lives for this account and is therefore recommended for this account.

This account has witnessed a significant amount of net salvage (i.e. cost of

removal) activity since 2002, ranging from 0 percent to over negative 86 percent with a full depth band (i.e. cumulative from 2002 to 2014) value of negative 24 percent. A three-year moving average indicates a range from negative 1 percent to over negative 69 percent with the most recent five-year average being negative 46 percent. In the last depreciation study, Gannett Fleming recommended negative 20 percent to represent the net salvage expectation. The discussions held with the company operations and engineering staff indicated that the historical indications would be reasonable future expectations for the equipment in this account. Considering the historical results and the comments from the operations and engineering staff, Gannett Fleming recommends that a small modification to negative 25 percent would best represent the future net salvage expectations for the equipment in this account. It is noted that the change to negative 25 percent is considered by Gannett Fleming to moderate and conservative, but within the range of the peer comparison analysis.

<u>Account 465.00 – Transmission - Pipeline</u>, represents approximately 22% of the depreciable plant studied. The retirements, additions and other plant transactions for the period 1957 through 2014 were studied. The original survivor curve as plotted on page V-16 indicates only a modest level of retirements through age 45. Typical service lives for transmission mains of Canadian peer utilities range from 60 to 65 years. Previous depreciation studies have indicated a 65-R3 lowa curve for this account.

The Retirement Rate Analysis as presented at pages V-17 and V-18 of this report and discussions with the operations and engineering staff have indicated that to date the pipe has experienced only a limited level of retirement activity. However, the retirement activity to date of over \$19 Million of originally installed cost, has provided some data upon which a life analysis can be made, particularly when combined with the experience of the operations staff.

The company has indicated that there are no major replacements expected during the immediate planning horizon and that the historical indications are indicative of the future. In the last depreciation study Gannett Fleming recommended an Iowa 65-R3 curve. This dispersion pattern is judged to still represent the historic retirement activity. The Iowa 65-R3 survivor curve, selected in this study to represent the life characteristics for this account, is within the typical range of lives used for transmission mains in the industry, and conforms to the expectations of management.

This account has witnessed a significant amount of net salvage (i.e. cost of removal) activity since 2002, ranging from 0% to over negative 100% with a full depth band (i.e. cumulative from 2002 to 2014) value of negative 24 percent. A three-year moving average indicates a range from negative 0 percent to negative 94 percent with the most recent five year average being negative 32 percent. All the bands indicate a higher level of negative net salvage in the more recent years compared to the earlier years. In the last depreciation study, Gannett Fleming recommended negative 10 percent to represent the net salvage expectation. The discussions held with the company operations and engineering staff indicated that the historical indications would be reasonable future expectations for the equipment in this account. Based upon the historical results and the comments from the operations and engineering staff, Gannett Fleming recommends that a moderate and conservative change to negative 20 percent would best represent the future net salvage expectations for the equipment in this account, and is within the range of the peer comparison analysis.

<u>Account 473.00 – Distribution - Services</u>, represents 20% of FortisBC's depreciable plant. The retirements, additions and other plant transactions for the period 1900 through 2014 were analyzed by the retirement rate method. The original and smooth survivor curves are plotted on page V-30.

In the last depreciation study Gannett Fleming recommended the Iowa 50-R1. Since the last study, this account has continued to incur retirements due to a number of retirement programs, which provides for a reliable statistical indication of average service life characteristics. To date, this account has experienced over \$93 million of retirement activity. Discussions with operating and engineering staff have not indicated any specific reasons to believe that the future retirement trends in this account will be significantly different than historic patterns. Furthermore, operations staff has indicated that it would be expected that the life of the FortisBC distribution services would be in the range of other industry peers. Typical service lives for peer Canadian distribution services range from 40 to 57 years.

The retirement rate analysis indicates a significant rate of retirement activity as plant reaches 35 years of age, with large retirement rates through to age 75. In order to fit this retirement pattern, Gannett Fleming has recommended the Iowa 45-R1 survivor. This combination of the R1 Iowa curve and a 45 year average service life expectation provides a reasonable interpretation of the original survivor curve, and falls within the range of typical service lives for this account and is, therefore recommended for this account.

This account has witnessed a significant amount of net salvage (i.e. cost of removal) activity since 2002, ranging from 0% to over negative 200 percent with a full depth band (i.e. cumulative from 2002 to 2014) value of negative 102 percent. A threeyear moving average indicates a range from negative 11 percent to over negative 200 percent with the most recent five year average being negative 179 percent. All the bands indicate a higher level of negative net salvage in the more recent years compared to the earlier years. In the last depreciation study, Gannett Fleming recommended negative 50 percent to represent the net salvage expectation. The discussions held with the company operations and engineering staff indicated that the historical indications would be reasonable future expectations for the equipment in this account. To reflect the increased historical indications, Gannett Fleming views that a moderate and conservative increase to the recommended net value is appropriate. Considering the historical results and the comments from the operations and engineering staff, Gannett Fleming recommends that a moderate and conservative negative 60 percent would best represent the future net salvage expectations for the equipment in this account. The negative 60 percent net salvage recommendation is within the range of the peer comparison analysis. However, it is noted that if the recent trend continues, increased amounts of net negative salvage will be required in future reviews.

<u>Account 478.10 – Distribution - Meters</u>, represents 4% of FortisBC's depreciable plant. The retirements, additions and other plant transactions for the period 1963 through 2014 were analyzed by the retirement rate method. The original and smooth survivor curves are plotted on page V-43. Typical service lives for gas distribution meters range from 20 to 32 years. In recent years, the gas distribution industry has been moving toward increased use of digital metering and Automated Meter Reading (AMR) technology. Additionally, in early 2010, Measurement Canada has announced more stringent metering testing guidelines. The new testing guidelines place increasingly strict criteria on the test results as the age of the meters increase.

Interviews with the operational metering staff have indicated that the implementation of the new Measurement Canada requirements will result in residential meters being retired before they reach 20 years of age. In the experience of Gannett Fleming, this assumption is consistent with the metering experts across Canada, all of whom have indicated that residential meters will no longer be tested when they reach 15 to 20 years of age. Operations staff did indicate that the meters related to commercial and industrial customers are expected to last beyond 20 years, and would likely be refurbished when removed for testing. It is estimated that these larger commercial and industrial meters comprise approximately five percent of the investment in this account.

Since the previous Gannett Fleming study, which recommended an Iowa 20-R2.5 curve to represent the retirement characteristics for this account, FortisBC has continued the program to replace older electro-mechanical meters with newer technology digital metering equipment. This account is experiencing significant change in the technology associated with the assets within this account. Therefore, given the future expectation that residential meters will be retired prior to reaching an age of 20 years, Gannett Fleming is recommending a small reduction in the average service from the Iowa 20-R2.5 to the Iowa 18-R2.5 to represent the future life expectations for the equipment in this account. This account will be closely monitored over the next few years to determine if a further shortening of the average service life estimate becomes necessary.

<u>Account 474.00 – Distribution - Meters/Regulator Installations</u>, represents 4% of FortisBC's depreciable plant. The retirements, additions and other plant transactions for the period 1959 through 2014 were analyzed by the retirement rate method. The original and smooth survivor curves are plotted on page V-34.

In the last depreciation study Gannett Fleming recommended the lowa 22-R2.5. Since the last study, this account has continued to incur retirements due to a number of retirement programs, which provides for a reliable statistical indication of average service life characteristics. To date, this account has experienced over \$76 million of retirement activity. Discussions with operating and engineering staff have not indicated any specific reasons to believe that the future retirement trends in this account will be significantly different than historic patterns.

The retirement rate analysis indicates a consistent rate of retirement activity throughout the plant's 40-year life. In order to fit this retirement pattern, Gannett Fleming has recommended the Iowa 20-S0 survivor curve. This combination of the S0 Iowa curve and a 20-year average service life expectation provides a reasonable interpretation of the original survivor curve, and is consistent with management's expectations and is, therefore recommended for this account.

This account has witnessed a significant amount of net salvage (i.e. cost of removal) activity since 2002, ranging from 0% to over negative 200 percent with a full depth band (i.e. cumulative from 2002 to 2014) value of negative 25 percent. A threeyear moving average indicates a range from negative 1 percent to over negative 400 percent with the most recent five year average being negative 75 percent. All the bands indicate a higher level of negative net salvage in the more recent years compared to the earlier years. In the last depreciation study, Gannett Fleming recommended negative 10 percent to represent the net salvage expectation. The discussions held with the company operations and engineering staff indicated that the historical indications would be reasonable future expectations for the equipment in this account. Based upon the historical results and the comments from the operations and engineering staff, Gannett Fleming recommends that negative 20 percent would best represent the future net salvage expectations for the equipment in this account. The negative 20 percent net salvage recommendation is within the range of the peer comparison analysis. However, it is noted that if the recent trend continues, increased amounts of net negative salvage will be required.

<u>Account 466.00 - Transmission - Compressor Equipment</u>, represents approximately 3% of the depreciable plant studied. The retirements, additions and other plant transactions for the period 1965 through 2014 were analyzed by the retirement rate method. The original survivor curve as plotted on page V-19 indicates only a reasonable level of historical retirements through age 22, and a smaller rate of retirement from ages 22 through 40.

In previous depreciation studies, Gannett Fleming has recommended a 35-R3 lowa curve. Typical service lives for compression equipment range from 32 to 42 years. The compression units, utilized by FortisBC are Solar units which have proven to be reliable both at FortisBC and within the industry as a whole. As such, it is expected that these units would perform at the longer end of the range of average service lives. However, the high rate of retirement ratios beginning at approximately age 15, need to be recognized. Gannett Fleming recommends a slight increase in the mode from an R3 to an R4. This combined with the previous 35-year average service life provides a good fit to the historical indications. As such, an adjustment to the lowa 35-R4, selected in this study, provides a reasonable interpretation of the historical data, and is within the range of lives used in the industry and anticipated by management.

<u>Account 477.10 – Distribution – Measuring and Regulating Equipment</u>, represents approximately 2% of the depreciable plant studied. The retirements, additions and other plant transactions for the period 1957 through 2014 were analyzed by the retirement rate method. The original survivor curve as plotted on page V-40 indicates a consistent rate of retirement activity throughout the plant's 57-year life.

In previous depreciation studies, Gannett Fleming has recommended a 26-R2 lowa curve. With the significant amount of retirement activity and the results from the survivor curve fit, Gannett Fleming is recommending an increase in the average service from 26 years to 30 years while maintaining the previous R2 lowa curve. The discussions held with the company operations and engineering staff indicated that the historical indications would be reasonable future expectations for the equipment in this account. The resultant 30-R2 lowa curve provides an excellent interpretation of the original survivor curve for this account.

This account has witnessed a significant amount of net salvage (i.e. cost of removal) activity since 2000, ranging from 0% to over negative 200 percent with a full depth band (i.e. cumulative from 2000 to 2014) value of negative 9 percent. A three-year moving average indicates a range from negative 1 percent to negative 29 percent with the most recent five year average being negative 7 percent. In the last

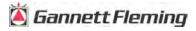
depreciation study, Gannett Fleming recommended 0 percent to represent the net salvage expectation. The discussions held with the company operations and engineering staff indicated that the historical indications would be reasonable future expectations for the equipment in this account. Based upon the historical results and the comments from the operations and engineering staff, Gannett Fleming recommends that negative 10 percent would best represent the future net salvage expectations for the equipment in this account. The negative 10 percent net salvage recommendation is within the range of the peer comparison analysis.

<u>Account 467.20 – Transmission – Telemetry Equipment</u>, represents less than 1% of the depreciable plant studied. In previous depreciation studies, Gannett Fleming has recommended a 15-L1 lowa curve. The discussions held with the company operations and engineering staff indicated that the previous life parameter selection was not reasonable for the current equipment in this account. The company's expectations were that approximately one half of the previous life parameter would be more applicable for Telemetry Equipment. As such, based on the company's expectations, the 8-L1 lowa curve is recommended for the expected life parameters for this account.

# Other Accounts

The above analysis provides the consideration relating to almost 81% of the depreciable plant. The accounts related to the remaining 19% of the depreciable plant studied as of December 31, 2014 were analyzed using similar methods and considered similar factors including review of operational comments, peer reviews and experience of Gannett Fleming.

# PART III. CALCULATION OF ANNUAL AND ACCRUED DEPRECIATION



# PART III. CALCULATION OF ANNUAL AND ACCRUED DEPRECIATION

# CALCULATION OF ANNUAL AND ACCRUED DEPRECIATION Group Depreciation Procedures

When more than a single item of property is under consideration, a group procedure for depreciation is appropriate because normally all of the items within a group do not have identical service lives, but have lives that are dispersed over a range of time. There are two primary group procedures, namely, the average service life and equal life group procedures.

In the average service life procedure, the rate of annual depreciation is based on the average service life of the group, and this rate is applied to the surviving balances of the group's cost. 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 the 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.

In the equal life group procedure, also known as the unit summation procedure, the property group is subdivided according to service life. That is, each equal life group includes that portion of the property which experiences the life of that specific group. The relative size of each equal life group is determined from the property's life dispersion curve. The calculated depreciation for the property group is the summation of the calculated depreciation based on the service life of each equal life unit.

In the determination of the depreciation rates in this study, the use of the average service life procedure has been continued. While the equal life group procedure provides an enhanced matching of depreciation expense to the consumption of service value, the average service life procedure is widely used throughout North America and was used in order to conform to past Company practices and approvals by the British Columbia Utilities Commission.

## 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 continues to be appropriate for a certain number of accounts that represent numerous units of property, but a very small portion of depreciable gas plant in service. The accounts and their amortization periods are as follows:

		AMORTIZATION
		PERIOD,
<u>ACCOUNT</u>	TITLE	<u>YEARS</u>
402.01	Computer Software Application 8 Years	8
402.02	Computer Software Application 5 Years	5
483.10	Computer Hardware	5
483.20	Computer Software (12.5%)	8
483.30	Office Equipment	15
483.40	Furniture	20
486.00	Small Tools/Equipment	20
487.20	NGV Cylinders	15
488.10	Telephone Equipment	15
488.20	Radio Equipment	15
474.02	New Meter Installations	22

For the purpose of calculating annual amortization amounts as of December 31, 2014, 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 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 IV. RESULTS OF STUDY



## PART IV. 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 and the accrued depreciation were calculated in accordance with the straight line method, using the average life group procedure based on estimates which reflect considerations of current historical evidence and expected future conditions.

## **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 natural gas utilities. The results of the statistical analysis of service life are presented in the section beginning on page V-2 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 tables of the calculated annual depreciation applicable to depreciable assets as of December 31, 2014 are presented in account sequence starting on page VII-2 of the supporting documents. The tables indicate the estimated average survivor curves used in the calculations. The tables set forth, for each installation year, the original cost, calculated accrued depreciation, and the calculated annual accrual.

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# TABLE 1A. ESTIMATED SURVIVOR CURVE, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2014 DEPRECIATION RELATED TO LIFE

ACCOUNT	DEPRECIARI E WORK	SURVIVOR	NET SALVAGE	ORIGINAL COST AT DECEMBER 31, 2014	BOOK DEPRECIATION RESERVE	FUTURE ACCRUALS	CALCULATED ANNUAL ACCRUAL ACCRUAL AMOLINT RATE	ANNUAL ACCRUAL RATF	COMPOSITE REMAINING LIFF
		(2)	(3)	(4)	(5)	(9)	(1)	(8)=(7)(4)	(2)=(6)
	INTANGIBLE PLANT								
401.01	FRANCHISES AND CONSENTS	40-SQ	0	297,252	193,752	103,500	16,036	5.39	6.5
402.01	COMPUTER SOFTWARE APPLICATION 8 YRS	8-SQ	0	115,499,934	48,704,636	66,795,298	14,437,492	12.50	4.8
402.02	COMPUTER SOFTWARE APPLICATION 5 YRS	5-SQ	0	24,645,164	10,911,469	13,733,695	4,929,033	20.00	3.1
402.03	INTANGIBLE PLANT	40-SQ	0	1,906,591	957,282	949,309	38,359	2.01	24.7
402.11	INTANGIBLE PLANT	40-SQ	0	62,457	62,457				
	TOTAL INTANGIBLE PLANT			142,411,398	60,829,596	81,581,802	19,420,920		
	MANUFACTURING PLANT								
432.00	STRUCTURES	40-SQ	0	991,630	213,529	778,101	28,002	2.82	27.8
433.00	EQUIPMENT	20-SQ	0	459,212	148,367	310,845	21,404	4.66	14.5
434.00	HOLDERS	40-SQ	0	2,954,850	373,534	2,581,317	72,347	2.45	35.7
436.00	COMPRE SSOR E QUIPMENT	25-SQ	0	366,583	75,325	291,258	13,475	3.68	21.6
437.00	MEASURING AND REGULATING EQUIPMENT	20-SQ	0	1,133,722	625,531	508,191	26,562	2.34	19.1
	TOTAL MANUFCTURING PLANT			5,905,997	1,436,285	4,469,712	161,790		
	LNG PLANT								
442.00	STRUCTURES	25-12	C	5.165.898	2.938.220	2.227.678	156.291	3.03	14.3
442.01	STRUCTURES - MT. HAYES	25-R3	C	17,309,159	2.474.617	14.834.542	671.944	3.88	22.1
443.00	EQUIPMENT	40-L4	0	16.498.616	9.794.114	6.704.502	310.378	1.88	21.6
443.05	EQUIPMENT - MT. HAYES	60-R5	0	60,112,269	3,595,459	56,516,810	991,523	1.65	57.0
448.10	PIPING	40-R3	0	11,488,418	1.028,667	10,459,751	282.238	2.46	37.1
448.20	PRE-TREATMENT	25-R3	0	28,713,520	4,113,590	24,599,929	1,114,632	3.88	22.1
448.30	LIQUEFACTION EQUIPMENT	40-R3	0	28,713,520	2,570,994	26,142,526	705,411	2.46	37.1
448.40	SEND OUT EQUIPMENT	40-R2	0	22,960,238	2,055,848	20,904,391	560,289	2.44	37.3
448.50	SUBSTATION AND ELECTRICAL	40-R2	0	21,643,950	1,938,069	19,705,881	528,166	2.44	37.3
448.60	CONTROL ROOM	15-R3	0	5,900,055	1,409,478	4,490,578	371,429	6.30	12.1
449.00	OTHER EQUIPMENT	27-R3	0	25,130,604	12,106,576	13,024,029	962,034	3.83	13.5
449.01	OTHER EQUIPMENT - MT. HAYES	35-R3	0	3,578,672	4,883	3,573,789	102,183	2.86	35.0
465.30	MAINS - MT. HAYES	65-SQ	0	6,298,635	404,332	5,894,303	95,069	1.51	62.0
467.00	MEASURING AND REGULATING EQUIPMENT - MT. HAYES	36-S0.5	0	5,341,781	779,900	4,561,881	137,572	2.58	33.2
	TOTAL LNG PLANT			258,855,336	45,214,747	213,640,590	6,989,159		
	TRANSMISSION PLANT								
462.00	COMPRESSOR STRUCTURES	30-R4	0	29,554,186	13,019,368	16,534,818	1,036,254	3.51	16.0
463.00	MEASURING AND REGULATING STRUCTURES	38-S2	0	14,207,228	5,797,342	8,409,887	324,803	2.29	25.9
464.00	OTHER STRUCTURES	30-R4	0	6,502,692	2,209,322	4,293,370	238,318	3.66	18.0
465.00		65-R3	0	1,161,935,514	322,414,348	839,521,166	17,116,585	1.47	49.0
465.11	INTERMEDIATE PIPE - WHISTLER	65-R3	0	42,284,799	3,277,836	39,006,963	648,863	1.53	60.1
466.00	COMPRESSOR EQUIPMENT	35-K4	0 0	174,208,157	69,489,527	104,718,629	5,032,207	2.89	20.8
467.10	MEASURING AND REGULATING EQUIPMENT	30-50.5	0 0	50,624,840	19,039,117	31,585,724	1,221,686	2.41	20.9
467.20	IELEMETR'E EQUIPMENT NITEDMEDIATE DRESSIIDE : MEASIIDING AND REGITATING EQUIDMENT : WHISTLED	36-C0 F		12,102,118	0,4/ 1,39/ 62 660	0,231,381 250.675	7 083	9.70	0.0
468.00		19-R3	• c	4.244.853	3.843.012	401.841	23.852	0.56	16.8
	TOTAL TRANSMISSION PLANT			1,496,578,392	445,623,938	1,050,954,454	26,889,443		
	DISTRIBUTION PLANT								
472.00	STRUCTURES	36-R1.5	0	22,265,444	7,111,780	15,153,664	537,668	2.41	28.2
473.00	SERVICES	45-R1	0	1,031,930,810	169,209,225	862,721,585	25,324,443	2.45	34.1
474.00	METER/REGULATOR INSTALLATIONS	20-S0	0	199,417,979	54,152,817	145,265,162	11,937,714	5.99	12.2
474.02	NEW METER INSTALLATIONS	22-SQ	0	68,254,951	3,662,213	64,592,738	3,102,498	4.55	21.0
475.00	SYSTEMS - MAINS	64-R2.5	0	1,315,124,578	362,120,024	953,004,554	20,242,413	1.54	47.1
476.00	NGV FUEL EQUIPMENT	2-F0	0	1,110,125	1,551,790	(441,666)		•	
477.10	MEASURING AND REGULATING ADDITIONS	30-R2	0	108,110,154	39,203,485	68,906,669	3,297,227	3.05	20.9
477.20		16-L1 15 D2 5	0 0	10,186,273	5,945,244	4,241,030	281,311	2.82	14.8
47.1.30	MEASURING ANU REGULATING EQUIPMENT METERS	13-R2.5		163,151 228,519,730	219,911 100 812 295	(56,760) 127 707 435	- 16 196 705	- 7 09	- 7 9
478.20	METERS INSTRUMENTS	35-R5	0 0	12.143.331	4,865,036	7.278.295	362.679	2.99	20.1
		2	,	2,997,226,526	748,853,820	2,248,372,706	81,288,724		
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FortisBC Energy Inc. 2014 Depreciation Study

# TABLE 1A. ESTIMATED SURVIVOR CURVE, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2014 DEPRECIATION RELATED TO LIFE

COMPOSITE REMAINING LIFE	(2)/(9)=(6)	35.2	18.6	64.1 20.1	15.3	20.0	19.7						18.4	19.91	18.5	19.9 9.0	18.4		+ + +	41.4	3.2	5.9 F 9	10.5	4.8	8.9	6.4	2.7	3.2	12.1																					
UAL	(8)=(7)/(4)	2.72	5.24	1.55	5.02	5.00				6.67 **	4.78 **		* 00 4	5.00 *	5.00 *	5.00 * *	5.00 *		6 04	1.95	20.00 *	12.50 *	5.00 *	10.55	6.38	9.85	6.67 *	6.67 *	6.67 *																					
CALCULATED ANNUAL ACCRUAL ACCRI AMOUNT RAT	(1)	15,094	9,331	21,507	549	1,021	343,434					443,450	282 E46	206,010	41,357	44,873 6.263	12,666	593,716	1 136 550	2,121,584	8,261,664	719,728	200,07.3 950.961	1,061,432	57,202	415,429 2,445,007	1.611	403,583	586,773 <b>18,392,499</b>	154.179.706	001/011/101																			
FUTURE	(9)	530,872	173,685	1,379,057	8.416	20,423	6,753,846					070,050,01	1 000 161	3,912,580	749,238	844,865 50 628	230,611	10,778,383	12 644 126	87,825,862	24,585,761	3,676,488	9,009,555	5,080,079	506,885	2,661,663 26 404 202	9.419	2,397,931	5,987,556 182,928,922	3.803.122.095	2001 121 10000																			
BOOK DEPRECIATION RESERVE	(2)	23,734	4,544	8,974	2.509		263,370					394,281	GEO AFO	207,626	77,902	52,598 12 005	22,716	1,033,296	R 165 550	20,696,465	16,722,561	2,081,336	10,009,665	4,983,838	390,373	1,557,354 24 822 726	14.748	3,655,815	2,814,037 92,767,210	1.396.153.173	011,001,000,1											10,431	10 105	10,100				20,616	1,396,173,788	
ORIGINAL COST AT DECEMBER 31, 2014	(4)	554,606	178,229	1,388,032	10.926	20,423	7,017,216					10,789,808	5 850 010	4,120,206	827,141	897,463 62 632	253,327	11,811,679	18 800 676	108,522,328	41,308,322	5,757,824 3 001 127	3,301,127	10,063,916	897,258	4,219,017	24.167	6,053,746	8,801,592 275,696,133	5 199 275 270	0110010010		885,988	31.008	16,247,087	10,626,627	610,017	23,738 1,354,756	18,172,540	52,191,190 16.166	3,856,349	38,716	4,207,335 3 200 032	1,140	114,963	29,362,820 4 949 376	28,133,835	1/4,/09,/99	5,374,035,068	
	(3)	0	0	0 0	00	0	0	0 0	- -	0	0		c	00	0	0 0	0		c	0	0	00		0 0	0	00		0	0	I	I																ļ			
SURVIVOR CURVE	1	36-R1.5	19-S0	65-R2.5 30 B2	30-FK2 18-R2.5	20-SQ	20-SQ	36-R1.5	19-SU 65-R25	30-R2	18-R2.5		02-06	20-SQ	20-SQ	20-50	20-SQ		20-R2 5	50-R2.5	5-SQ	8-SQ	08-02	6-L0.5	12-L0.5	8-L2 20 SO	15-SO	15-SQ	15-SQ																					
DEPRECIABLE WORK		BIO GAS BIO GAS - STRUCTURES AND IMPROVEMENTS	BIO GAS - METER/REGULATOR INSTALLATIONS		BIO GAS - METERS	BIO GAS - PURIFICATION OVERHAUL	BIO GAS - PURIFICATION UPGRADER	BIO GAS - STRUCTURES AND IMPROVEMENTS - POST 2013	BIO GAS - REGULATING AND METER INSTALLATIONS - POST 2013 BIO GAS - MAINS - LAND - POST 2013	BIO GAS - MEASURING AND REGULATING - POST 2013	BIO GAS - METERS - POST 2013	IDIAL BIO GAS			CNG FOUNDATION	LNG FOUNDATION I NG PLIMPS	CNG DEHYDRATOR	TOTAL NG FOR TRANSPORTATION	GENERAL PLANT STRIJCTLIRES (FRAME)	STRUCTURES (MASONRY)	COMPUTER HARDWARE	COMPUTER SOFTWARE (12.5%) CEEICE ELIBNITLIDE AND ECHIDMENT		VEHICLES	HEAVY WORK EQUIPMENT	HEAVY MOBILE EQUIPMENT	NGV CYI INDERS	TELEPHONE EQUIPMENT	RADIO EQUIPMENT TOTAL GENERAL PLANT	TOTAL DEPRECIABLE PLANT		PLANT NOT STUDIED	UNAMORTIZED CONVERSION/EXPENSE ORGANIZATIONAL COSTS	MANIFACTURING PLANT - LAND	LNG GAS PLANT - LAND	TRANSMISSION PLANT - LAND	MT. HAYES - LAND RIGHTS	IF - LAND RIGHTS - WHISTLER TRANSMISSION PIPELINE - BYRON CREEK	TRANSMISSION PLANT - INSPECTION	TRANSMISSION PLANT - LAND RIGHTS TRANSMISSION PLANT - LAND RIGHTS - BYRON CREEK	TRANSMISSION PLANT - COMPRESSOR OVERHAUL	TRANSMISSION PLANT - MEASURING AND REGULATING EQUIPMENT - BYRON CREEK	DISTRIBUTION SYSTEMS - LAND	DISTRIBUTION SYSTEMS - LAND RIGHTS - BYRON CREEK	DISTRIBUTION SYSTEMS - STRUCTURES - BYRON CREEK	GENERAL PLANT - LAND GENERAL PLANT - STRLICTLIRES - LEASED		IUIAL PLANI NOI SIUDIED	TOTAL PLANT	
ACCOUNT		472.20	474.10	475.10	478.30	418.10	418.20	418.30	418.40 418.50	418.60	418.70		476.10	476.20	476.30	476.40 476.50	476.60		482.10	482.20	483.10	483.20	483.40	484.00	485.10	485.20	487.20	488.10	488.20				175.00	430.00	440.00	460.00	461.02	461.13	465.20	466.01 461.12	466.10	467.30	470.00	471.11	472.10	480.00	484.10			

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FortisBC Energy Inc. 2014 Depreciation Study Notes: • Rates determined as reciprocal of Average Service Life. • Rates based on current vintage theoretical values.

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# TABLE 1B. ESTIMATED SURVIVOR CURVE, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2014 DEPRECIATION RELATED TO NET SALVAGE

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-	RECIATION RELATED TO NET SALVAGE	

ACCOUNT	DEPRECIABLE WORK	SURVIVOR CURVE	NET SALVAGE	ORIGINAL COST AT DECEMBER 31. 2014	BOOK DEPRECIATION RESERVE	FUTURE	CALCULATED ANNUAL ACCRUAL ACCRUAL AMOUNT RATE	ANNUAL ACCRUAL RATE	COMPOSITE REMAINING LIFE
	(1)	(2)	(3)	(4)	(5)	(9)	(1)	(8)=(7)(4)	(2)=(6)(7)
	INTANGIBLE PLANT								
401.01	FRANCHISES AND CONSENTS	40-SQ	0	297,252	•				6.5
402.01	COMPUTER SOFTWARE APPLICATION 8 YRS	8-SQ	0	115,499,934				'	4.8
402.02	COMPUTER SOFTWARE APPLICATION 5 YRS	5-SQ	0	24,645,164					3.1
402.03	INTANGIRI E DI ANT	40-50	c	1 906 591					747
10.44			o c	50,000,1					0.0
407.1		00-0+	Þ	104,20					0.0
	IOLAL INLANGIBLE PLANI			142,411,398	•	•			
432.00	STRUCTURES	40-SQ	0	991,630			•		27.8
433.00	EQUIPMENT	20-SQ	0	459,212					14.5
434.00	HOLDERS	40-SQ	0	2,954,850		,		•	35.7
436.00	COMPRESSOR EQUIPMENT	25-SQ	0	366,583					21.6
437.00	MEASURING AND REGULATING FOUIDMENT	20-SO	C	1,133,722	(4.903)	4.903	278	0.03	19.1
	TOTAL MANUFCTURING PLANT		<b>)</b>	5,905,997	(4,903)	4,903	278	2	
00 011	CTD I CTI I DE C	0 1 20	1010	E 465 000	268.218	0E0 074	10 222	90.0	C 7 7
142.00	STRUCTURES STRUCTURES - MT HAVES	20-LZ	000	3, 103,030	017007	1 72,002	10,000	0.30	4.t- 7
10.244		57-62	() () ()	11,309,139		1,130,310	70,407	0.40 140	- 77 - 1 54 - 1
443.00		40-L4	(07)	10,496,010	1,702,020	190,100,1	7.3,444	0.45	0.12
443.05	EQUIPMENT - MT. HATES	67-09	(nz)	607'117'708		12,022,434	210,920	65.0 10	0.76
448.10		40-K3	() () ()	11,488,418		1,148,841	31,000	0.27	37.1
448.20		25-62	() L)	28,713,520		2,02,1,352	130,102	0.40	1.22
448.30	LIQUEFACTION EQUIPMENT	40-R3	(20)	28,713,520		5,742,704	154,957	0.54	37.1
448.40	SEND OUT EQUIPMENT	40-R2	(10)	22,960,238		2,296,023	61,539	0.27	37.3
448.50	SUBSTATION AND ELECTRICAL	40-R2	(20)	21,643,950	•	4,328,790	116,022	0.54	37.3
448.60	CONTROL ROOM	15-R3	0	5,900,055					12.1
449.00	OTHER EQUIPMENT	27-R3	(10)	25,130,604	1,201,644	1,311,416	97,238	0.39	13.5
449.01	OTHER EQUIPMENT - MT. HAYES	35-R3	(10)	3,578,672		357,867	10,233	0.28	35.0
465.30	MAINS - MT. HAYES	65-SQ	(20)	6,298,635	0	1,259,727	20,319	0.32	62.0
467.00	MEASURING AND REGULATING EQUIPMENT - MT. HAYES	36-S0.5	6	5,341,781	0	373,924	11,276	0.21	33.2
	TOTAL LNG PLANT			258,855,336	3,221,889	35,240,082	1,014,123		
	TRANSMISSION PLANT								
462.00	COMPRESSOR STRUCTURES	30-R4	(3)	29,554,186	793,577	93,048	(2,499)	(0.02)	16.1
463.00	MEASURING AND REGULATING STRUCTURES	38-S2	(15)	14,207,228	190,652	1,940,432	82,123	0.57	25.4
464.00	OTHER STRUCTURES	30-R4	(5)	6,502,692	202'62	245,429	13,927	0.22	18.0
465.00	PIPELINE	65-R3	(20)	1,161,935,514	27,853,454	204,533,649	4,290,255	0.37	48.8
465.11	INTERMEDIATE PIPE - WHISTLER	65-R3	(20)	42,284,799		8,456,960	140,680	0.34	60.1
466.00	COMPRESSOR EQUIPMENT	35-R4	(2)	174,208,157	6,400,575	(2,916,412)	(212,780)	(0.12)	21.1
467.10	MEASURING AND REGULATING EQUIPMENT	36-S0.5	6	50,624,840	780,557	2,763,181	110,841	0.22	25.8
467.20	TELEMETRY EQUIPMENT	8-L1	0	12,702,778	230	(231)	(109)		5.0
467.31	INTERMEDIATE PRESSURE - MEASURING AND REGULATING EQUIPMENT - WHISTLER	36-S0.5	Ē	313,344	•	21,934	669	0.22	31.4
468.00		19-R3	0	4,244,853	266,711	(266,710)	(16,353)	(0.38)	18.0
	TOTAL TRANSMISSION PLANT			1,496,578,392	36,365,462	214,871,280	4,403,784		
	DISTRIBUTION PLANT								
472.00	STRUCTURES	36-R1.5	(10)	22,265,444	338,363	1,888,182	69,939	0.32	28.0
473.00	SERVICES	45-R1	(09)	1,031,930,810	62,944,276	556,214,210	16,554,263	1.61	33.9
474.00	METER/REGULATOR INSTALLATIONS	20-S0	(20)	199,417,979	241,779	39,641,817	3,533,573	1.77	12.0
474.02	NEW METER INSTALLATIONS	22-SQ	0	68,254,951	(284,719)	284,719		,	21.0
475.00	SYSTEMS - MAINS	64-R2.5	(25)	1,315,124,578	66,562,998	262,218,147	5,674,023	0.43	46.9
476.00	NGV FUEL EQUIPMENT	2-L0	0	1,110,125	457,383	(457,383)	•		0.0
477.10	MEASURING AND REGULATING ADDITIONS	30-R2	(10)	108,110,154	1,357,574	9,453,442	499,186	0.46	20.6
477.20	TELEMETRY	16-L1	(2)	10,186,273	(11,548)	520,861	42,797	0.42	14.4
477.30	MEASURING AND REGULATING EQUIPMENT	15-R2.5	0	163,151	•	•	•		0.0
478.10	METERS	18-R2.5	0	228,519,730	2,435,172	(2,435,172)	(593,994)	(0.26)	8.0
478.20	INSTRUMENTS	35-R5	0	12,143,331					20.1
	TOTAL DISTRIBUTION PLANT			2,997,226,526	134,041,278	867,328,823	25,779,787		

# TABLE 1B. ESTIMATED SURVIVOR CURVE, ORIGINAL COST, BOOK DEPRECIATION RESERVE AND CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO UTILITY PLANT AS OF DECEMBER 31, 2014 DEPRECIATION RELATED TO NET SALVAGE

COMPOSITE REMAINING LIFE	6)	9 35.2 5 18.6			20.0 6 19.7	*		· ·	**		* 18.4 * 19.9	* * 18.5	* * 19.9 9.0	* 18.4		*	3.2 5.9	* 5.3 * 10.5		8) 9.0 6.9	*	* 7.2 * 3.2	* 12.1			
CALCULATED ANNUAL ACCRUAL ACCRUAL AMOUNT RATE	(8)=(7)/(4)		-	(0.21) (0.21)	0.26		1.32		~	2				, ],	,	0			(1.00)		_			- I	а <b>I</b>	
CALCULAT ACCRUAL AMOUNT	(2)	1,573 2,406	5,375	(23)	- 17 863	-			- 27 103						,	268,776			(100,758)	(6,094) (121 857)	-		- 40.067	4n'na	31,265,232	
FUTURE ACCRUALS	(9)	55,196 44,557	344,604 (F41)	(323)	- 350 861	-	•		-		1,447 -			- 1,447		10,852,735			(402,557)	(44,863) (632 853)	-		6,800 6,770 262	9,119,202	1,128,020,641	
BOOK DEPRECIATION RESERVE	(5)	265	2,405 51	323					3.045		(1,447) -			- (1,447)		(502)							(6,800)	(202,1)	173,618,021	173,618,021
ORIGINAL COST AT DECEMBER 31. 2014	(4)	554,606 178,229	1,388,032	10,926	20,423 7 017 216	2	•		- 10 780 808		5,650,910 4 120 206	827,141	897,463 62,632	253,327 11,811,679	18.809.676	108,522,328	41,308,322 5,757,824	3,901,127 19.019.220	10,063,916	897,258 4 219 017	48,317,938	24,167 6 053 746	8,801,592 775 606 133	2/ 3,090,133	5,199,275,270	885,988 728,114 728,114 16,227,087 10,628,627 10,658,627 10,658,627 11,12,540 5,373 11,12,540 5,374 11,190 11,190 5,374,035,068 5,374,035,068
NET SALVAGE	(3)	(10) (25)	(25)	0	0 (5)	(10)	(25)	(c7)	0		00	000	00	0	0	(10)	00	0 0	9 4	12 2 12	0	0 0	0	•	-	
SURVIVOR CURVE	(2)	36-R1.5 19-S0	65-R2.5 30-P2	18-R2.5	20-SQ	36-R1.5	19-S0 65 P2 5	85-K2.5 30-R2	18-R2.5		20-SQ	20-SO	20-SQ 10-SQ	20-SQ	20-R2.5	50-R2.5	n N N N N N N N N N N N N N N N N N N N	15-SQ 20-SQ	6-L0.5	12-L0.5 8-1 2	20-SQ	15-SQ 15-SO	15-SQ			
DEPRECIABLE WORK		BIO GAS BIO GAS - STRUCTURES AND IMPROVEMENTS BIO GAS - METERREGULATOR INSTALLATIONS	BIO GAS - MAINS BIO GAS - MEASI IPING AND BEGI II ATING	BIO GAS - METERS	BIO GAS - PURIFICATION OVERHAUL BIO GAS - PURIFICATION UPGRADER	BIO GAS - STRUCTURES AND IMPROVEMENTS - POST 2013	BIO GAS - REGULATING AND METER INSTALLATIONS - POST 2013	BIO GAS - MAINS - LAND - POST 2013 BIO GAS - MEASURING AND REGULATING - POST 2013	BIO GAS - METERS - POST 2013	NG FOR TRANSPORTATION	CNG DISP EQUIPMENT		LNG FOUNDATION LNG PUMPS	CNG DEHYDRATOR TOTAL NG FOR TRANSPORTATION	GENERAL PLANT STRUCTURES (FRAME)		COMPUTER HARDWARE COMPUTER SOFTWARE (12.5%)	OFFICE FURNITURE AND EQUIPMENT FURNITURF	VEHICLES	HEAVY WORK EQUIPMENT HEAVY MOBILE FOLIIPMENT	SMALL TOOLS/EQUIPMENT	NGV CYLINDERS TEI EPHONE FOLIIBMENT	RADIO EQUIPMENT TOTAL CENEDAL DI ANT		TOTAL DEPRECIABLE PLANT	PLANT NOT STUDIED UNAMORTIZED CONVERSIONE XPENSE ORGANIZATTONAL COSTS MANUFACTURING PLANT - LAND MANUFACTURING PLANT - LAND MANUFACTURING PLANT - LAND MANUFACTURING PLANT - LAND MATHES - LAND RIGHTS MATHES - LAND RIGHTS PPELANE RIGHTS MANISSION PLANT - LAND RIGHTS RANSMISSION PLANT - LAND RIGHTS DISTRIBUTION SYSTEMS - LAND R
ACCOUNT		472.20 474.10	475.10 477 40	478.30	418.10 418.20	418.30	418.40	418.50	418.70		476.10 476.20	476.30	476.40 476.50	476.60	482.10	482.20	483.10 483.20	483.30 483.40	484.00	485.10 485.20	486.00	487.20 488.10	488.20			175,00 178,00 430,000 461,02 461,02 465,10 465,10 465,10 465,10 465,10 465,10 465,10 467,10 467,10 477,00 477,00 487,100 487,1000 487,10000000000000000000000000

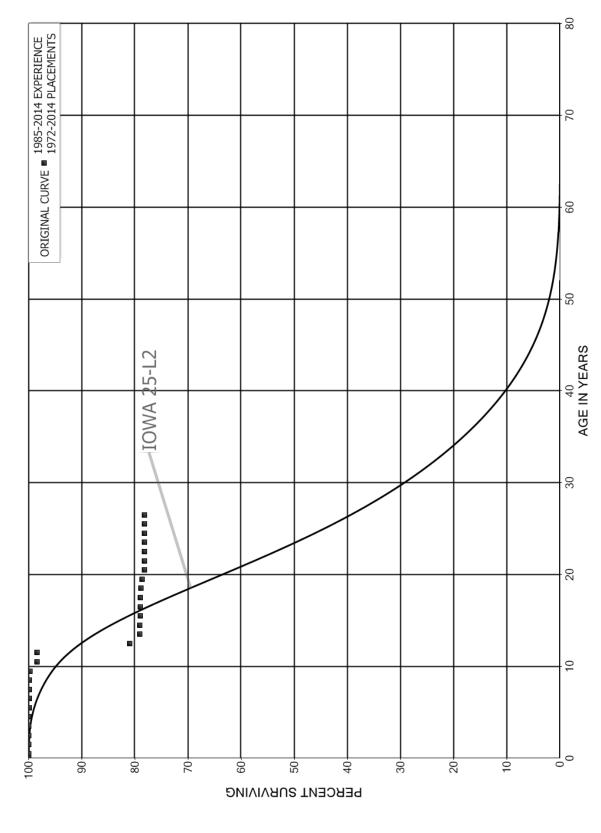
🎽 Gannett Fleming

IV-7

# PART V. SERVICE LIFE STATISTICS



FORTISBC ENERGY INC. ACCOUNT 442.00 - LNG PLANT - STRUCTURES ORIGINAL AND SMOOTH SURVIVOR CURVES



🎽 Gannett Fleming

ACCOUNT 442.00 - LNG PLANT - STRUCTURES

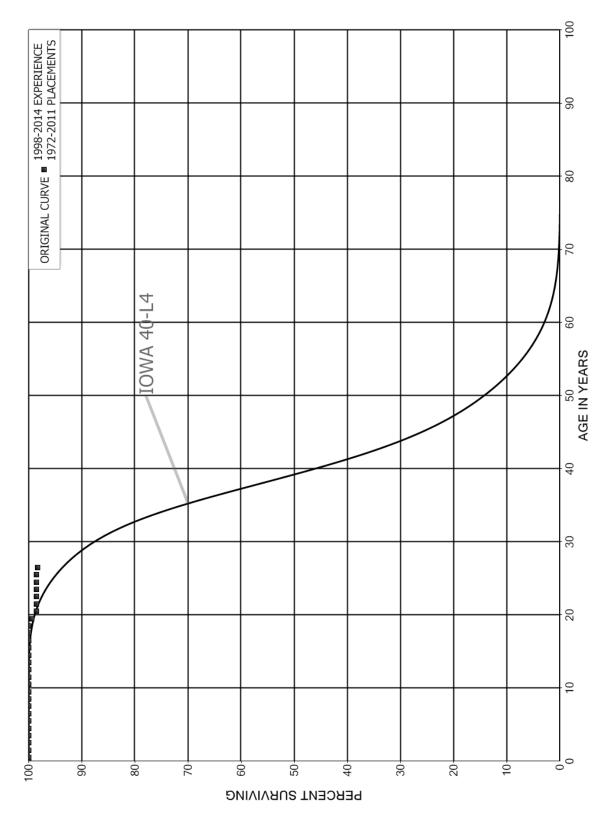
### ORIGINAL LIFE TABLE

PLACEMENT BAND 1972-2014

EXPERIENCE BAND 1985-2014

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	23,259,293	INIERVAL	0.0000	1.0000	100.00
0.5	23,027,358		0.0000	1.0000	100.00
1.5	23,004,742		0.0000	1.0000	100.00
2.5	23,004,742		0.0000	1.0000	100.00
3.5	5,743,699		0.0000	1.0000	100.00
4.5	5,668,816	11,458	0.0020	0.9980	100.00
5.5	5,657,358		0.0000	1.0000	99.80
6.5	5,631,369		0.0000	1.0000	99.80
7.5	5,360,767		0.0000	1.0000	99.80
8.5	5,347,155	1,000	0.0002	0.9998	99.80
9.5	4,557,697	61,358	0.0135	0.9865	99.78
10.5	4,479,343		0.0000	1.0000	98.44
11.5	3,775,087	669,121	0.1772	0.8228	98.44
12.5	3,119,523	74,954	0.0240	0.9760	80.99
13.5	2,949,750		0.0000	1.0000	79.04
14.5	2,631,001	2,477	0.0009	0.9991	79.04
15.5	2,494,631		0.0000	1.0000	78.97
16.5	2,097,885		0.0000	1.0000	78.97
17.5	1,851,772	1,959	0.0011	0.9989	78.97
18.5	1,807,033	6,000	0.0033	0.9967	78.88
19.5	1,668,452	10,373	0.0062	0.9938	78.62
20.5	1,573,517		0.0000	1.0000	78.13
21.5	1,565,423		0.0000	1.0000	78.13
22.5	1,454,996		0.0000	1.0000	78.13
23.5	1,453,071		0.0000	1.0000	78.13
24.5	1,453,071		0.0000	1.0000	78.13
25.5	1,453,071		0.0000	1.0000	78.13
26.5					78.13

FORTISBC ENERGY INC. ACCOUNT 443.00 - LNG PLANT - EQUIPMENT ORIGINAL AND SMOOTH SURVIVOR CURVES



ACCOUNT 443.00 - LNG PLANT - EQUIPMENT

### ORIGINAL LIFE TABLE

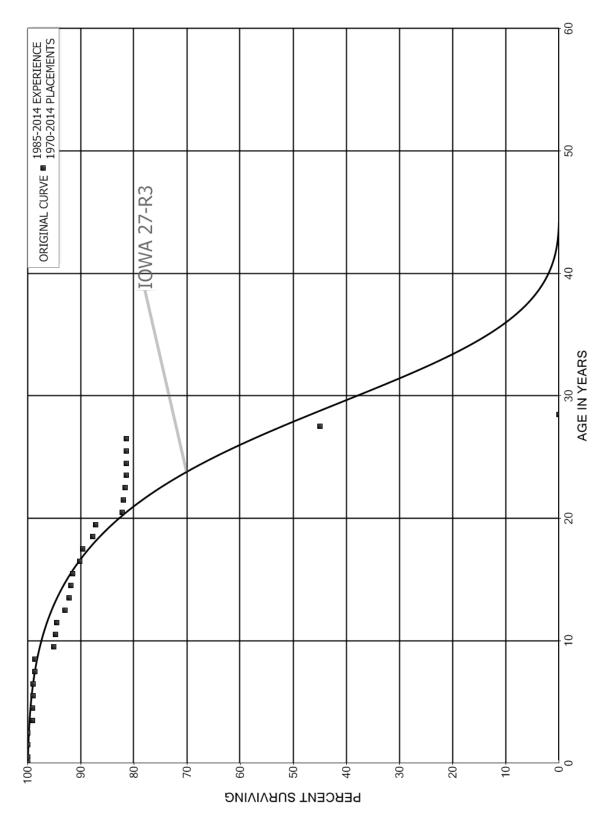
PLACEMENT BAND 1972-2011

					2 1770 101
AGE AT BEGIN OF	EXPOSURES AT BEGINNING OF	RETIREMENTS DURING AGE	RETMT	SURV	PCT SURV BEGIN OF
INTERVAL	AGE INTERVAL	INTERVAL	RATIO	RATIO	INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5	66,889,390 67,073,994 67,467,467 67,467,467 7,350,598 7,425,758 7,426,492 7,456,439 7,456,178	1,000	0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 0.9999 1.0000 1.0000 1.0000	100.00 100.00 100.00 100.00 100.00 99.99 99.99 99.99
8.5	7,404,680		0.0000	1.0000	99.99
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	16,456,701 16,369,548 16,186,007 10,881,937 10,779,642 10,697,721 9,950,987 9,846,829 9,662,224 9,268,752	12,708 1,734 44,685	0.0008 0.0000 0.0000 0.0000 0.0000 0.0000 0.0002 0.0000 0.0000 0.0048	0.9992 1.0000 1.0000 1.0000 1.0000 0.9998 1.0000 1.0000 0.9952	99.99 99.91 99.91 99.91 99.91 99.91 99.91 99.89 99.89 99.89
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5	9,224,067 9,144,419 9,081,967 9,081,967 9,052,020 9,052,020 9,079,360	79,648 27,340	0.0086 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	0.9914 1.0000 1.0000 1.0000 1.0000 1.0000 0.9970	99.41 98.55 98.55 98.55 98.55 98.55 98.55 98.55 98.26

### EXPERIENCE BAND 1998-2014

🎽 Gannett Fleming

FORTISBC ENERGY INC. ACCOUNT 449.00 - LNG PLANT - OTHER EQUIPMENT ORIGINAL AND SMOOTH SURVIVOR CURVES



🎽 Gannett Fleming

### ACCOUNT 449.00 - LNG PLANT - OTHER EQUIPMENT

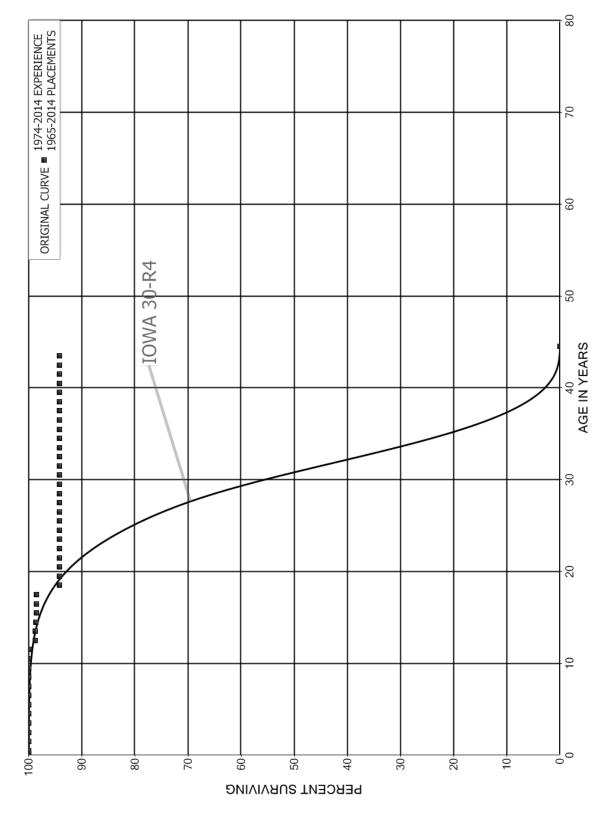
### ORIGINAL LIFE TABLE

PLACEMENT BAND 1970-2014

EXPERIENCE BAND 1985-2014

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5 8.5	31,328,897 27,714,740 27,688,089 27,019,945 26,711,841 26,087,355 24,292,786 20,114,372 19,698,704 19,383,729	500 1 258,133 48 10,802 21,004 56,589 9,223 698,665	0.0000 0.0000 0.0096 0.0000 0.0004 0.0009 0.0028 0.0005 0.0360	1.0000 1.0000 0.9904 1.0000 0.9996 0.9991 0.9972 0.9995 0.9640	100.00 100.00 100.00 99.04 99.04 99.00 98.92 98.64 98.59
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	18,486,077 18,383,094 16,561,107 16,149,403 16,058,920 15,093,401 14,402,176 14,168,321 14,001,515 12,899,295	70,887 25,930 286,493 123,449 67,845 41,927 215,295 85,676 300,308 71,537	0.0038 0.0014 0.0173 0.0076 0.0042 0.0028 0.0149 0.0060 0.0214 0.0055	0.99640 0.9962 0.9986 0.9827 0.9924 0.9958 0.9972 0.9851 0.9940 0.9786 0.9945	95.04 94.67 94.54 92.90 92.19 91.81 91.55 90.18 89.64 87.71
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	9,956,240 9,182,328 6,817,686 6,233,044 5,658,581 5,658,581 5,658,581 121,635 67,164	578,265 27,751 21,715 20,000 9 54,471 67,164	0.0581 0.0030 0.0032 0.0032 0.0000 0.0000 0.0000 0.4478 1.0000	0.9419 0.9970 0.9968 0.9968 1.0000 1.0000 1.0000 0.5522	87.23 82.16 81.91 81.65 81.39 81.39 81.39 81.39 44.94

FORTISBC ENERGY INC. ACCOUNT 462.00 - TRANSMISSION PLANT - COMPRESSOR STRUCTURES ORIGINAL AND SMOOTH SURVIVOR CURVES



### ACCOUNT 462.00 - TRANSMISSION PLANT - COMPRESSOR STRUCTURES

### ORIGINAL LIFE TABLE

PLACEMENT BAND 1965-2014

EXPERIENCE BAND 1974-2014

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5 8.5	30,150,474 30,214,336 29,552,263 27,619,186 27,052,666 26,826,124 26,368,475 26,185,296 24,521,618 24,495,861	1,338 1,225 7,893 6,379 2,414 659 3,363	0.0000 0.0000 0.0000 0.0000 0.0003 0.0003 0.0002 0.0001 0.0000 0.0001	1.0000 1.0000 1.0000 1.0000 0.9997 0.9998 0.9999 1.0000 0.9999	100.00 100.00 100.00 100.00 100.00 99.99 99.96 99.94 99.93 99.93
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	24,492,498 24,321,397 24,203,583 21,987,109 21,200,269 16,836,519 14,272,215 10,941,205 10,543,133 9,652,000	3,380 6,438 288,000 1,162 15,868 14,083 1,961 3,140 458,159	0.0001 0.0003 0.0119 0.0001 0.0007 0.0008 0.0001 0.0003 0.0435 0.0000	0.9999 0.9997 0.9881 0.9999 0.9993 0.9992 0.9999 0.9997 0.9565 1.0000	99.91 99.90 99.87 98.68 98.68 98.60 98.52 98.51 98.48 94.20
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	5,027,371 3,580,341 2,397,634 2,146,598 293,960 262,661 260,102 257,546 257,546		0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	94.20 94.20 94.20 94.20 94.20 94.20 94.20 94.20 94.20 94.20 94.20
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	257,546 256,651 255,405 255,405 254,790 254,790 248,874 248,807 248,807		$\begin{array}{c} 0.0000\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.0000\end{array}$	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	94.20 94.20 94.20 94.20 94.20 94.20 94.20 94.20 94.20 94.20

### ACCOUNT 462.00 - TRANSMISSION PLANT - COMPRESSOR STRUCTURES

### ORIGINAL LIFE TABLE, CONT.

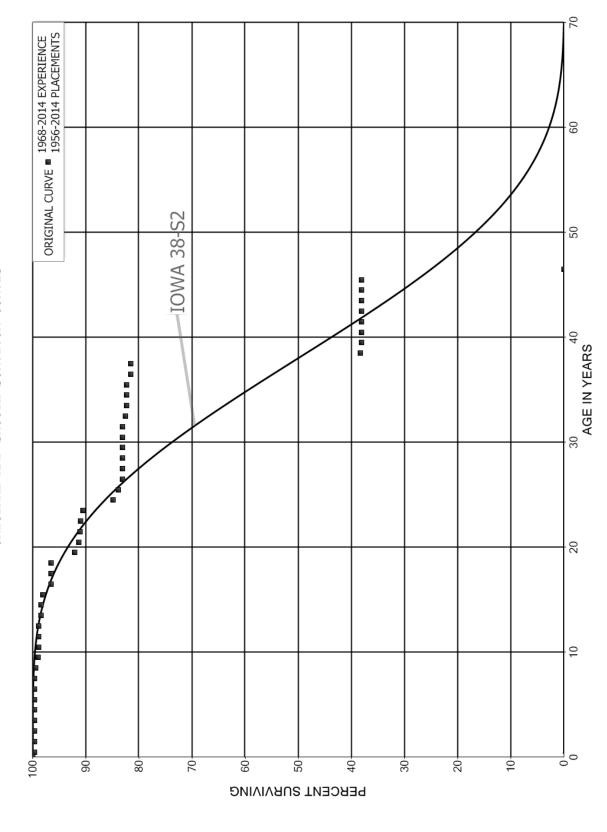
PLACEMENT BAND 1965-2014

EXPERIENCE BAND 1974-2014

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5	242,648 242,648 27,247 27,247 27,247 27,247	27,247	0.0000 0.0000 0.0000 0.0000 1.0000	1.0000 1.0000 1.0000 1.0000	94.20 94.20 94.20 94.20 94.20 94.20



ACCOUNT 463.00 - TRANSMISSION PLANT - MEASURING AND REGULATING STRUCTURES ORIGINAL AND SMOOTH SURVIVOR CURVES FORTISBC ENERGY INC.



ACCOUNT 463.00 - TRANSMISSION PLANT - MEASURING AND REGULATING STRUCTURES

### ORIGINAL LIFE TABLE

PLACEMENT BAND 1956-2014

AGE AT EXPOSURES AT RETIREMENTS PCT SURV BEGIN OF BEGINNING OF DURING AGE RETMT SURV BEGIN OF AGE INTERVAL INTERVAL INTERVAL RATIO INTERVAL RATIO 0.0 14,793,570 53,753 0.0036 0.9964 100.00 0.0000 0.5 14,614,071 3 1.0000 99.64 0.0000 13,715,698 1.0000 99.64 1.5 23 2.5 13,581,501 142 0.0000 1.0000 99.64 13,447,099 0.0000 1.0000 99.64 3.5 167 4.5 13,173,975 617 0.0000 1.0000 99.63 0.0000 5.5 12,879,146 244 1.0000 99.63 6.5 12,770,244 6,386 0.0005 0.9995 99.63 7.5 11,006,412 17,727 0.0016 0.9984 99.58 9,204,188 48,726 0.9947 99.42 8.5 0.0053 4,013 9.5 9,005,595 0.0004 0.9996 98.89 10.5 0.0001 8,635,319 544 0.9999 98.85 11.5 8,485,093 437 0.0001 0.9999 98.84 12.5 7,674,196 36,190 0.0047 0.9953 98.84 13.5 7,532,145 0.0001 98.37 955 0.9999 14.5 7,131,884 22,233 0.0031 0.9969 98.36 15.5 0.0154 98.05 6,489,462 100,090 0.9846 96.54 16.5 6,268,840 113 0.0000 1.0000 17.5 6,047,093 59 0.0000 1.0000 96.54 18.5 5,695,553 265,851 0.0467 0.9533 96.54 19.5 4,957,264 0.0085 92.03 41,956 0.9915 20.5 4,844,112 10,287 0.0021 0.9979 91.25 4,659,769 0.0013 21.5 6,227 0.9987 91.06 22.5 4,391,888 18,950 0.0043 0.9957 90.94 23.5 352,209 22,385 0.0636 0.9364 90.54 24.5 324,575 3,756 0.0116 0.9884 84.79 25.5 318,916 3,000 0.0094 0.9906 83.81 26.5 128,940 0.0000 1.0000 83.02 27.5 120,536 0.0000 1.0000 83.02 1.0000 28.5 119,171 0.0000 83.02 29.5 116,128 0.0000 1.0000 83.02 30.5 107,212 0.0000 1.0000 83.02 107,212 31.5 622 0.0058 0.9942 83.02 32.5 105,343 322 0.0031 0.9969 82.54 33.5 105,021 0.0000 1.0000 82.28 34.5 103,359 0.0000 1.0000 82.28 35.5 103,359 1,000 0.0097 0.9903 82.28 1.0000 36.5 102,359 0.0000 81.49 37.5 102,359 54,267 81.49 0.5302 0.4698 38.5 48,092 230 0.0048 0.9952 38.29



EXPERIENCE BAND 1968-2014

ACCOUNT 463.00 - TRANSMISSION PLANT - MEASURING AND REGULATING STRUCTURES

### ORIGINAL LIFE TABLE, CONT.

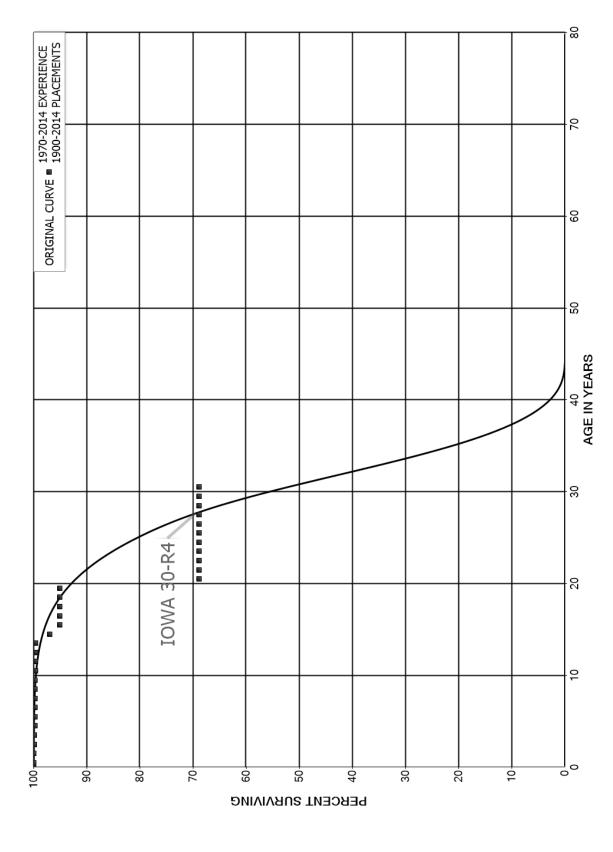
PLACEMENT BAND 1956-2014

EXPERIENCE BAND 1968-2014

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5	47,862 35,325		0.0000 0.0000	1.0000 1.0000	38.10 38.10
41.5	35,325		0.0000	1.0000	38.10
42.5	4,697		0.0000	1.0000	38.10
43.5	4,697		0.0000	1.0000	38.10
44.5	4,697		0.0000	1.0000	38.10
45.5	4,697	4,697	1.0000		38.10
46.5					



FORTISBC ENERGY INC. ACCOUNT 464.00 - TRANSMISSION PLANT - OTHER STRUCTURES ORIGINAL AND SMOOTH SURVIVOR CURVES



🎽 Gannett Fleming

### ACCOUNT 464.00 - TRANSMISSION PLANT - OTHER STRUCTURES

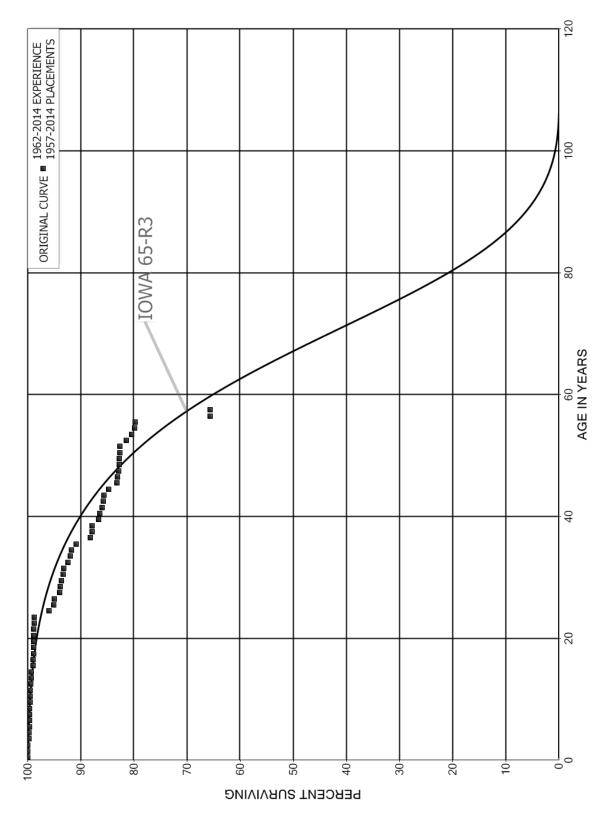
### ORIGINAL LIFE TABLE

PLACEMENT BAND 1900-2014

EXPERIENCE BAND 1970-2014

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5 8.5	6,247,192 6,228,556 5,915,565 5,900,915 5,896,860 5,889,407 5,866,415 5,866,252 5,761,871 5,523,670	7,358 4,055 7,453	0.0000 0.0012 0.0017 0.0013 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 0.9988 0.9993 0.9987 1.0000 1.0000 1.0000 1.0000 1.0000	100.00 100.00 99.88 99.81 99.68 99.68 99.68 99.68 99.68 99.68
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	5,235,256 4,679,818 4,668,989 4,131,212 297,923 184,481 39,406 36,396 28,263 24,455	643 70 8,017 3,713	$\begin{array}{c} 0.0001 \\ 0.0000 \\ 0.0000 \\ 0.0269 \\ 0.0201 \\ 0.0000 \\ 0.0000 \\ 0.0000 \\ 0.0000 \\ 0.0000 \\ 0.0000 \\ 0.0000 \end{array}$	0.9999 1.0000 1.0000 0.9731 0.9799 1.0000 1.0000 1.0000 1.0000	99.68 99.67 99.67 99.67 99.67 96.99 95.03 95.03 95.03 95.03
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5 29.5	24,455 17,709 8,154 8,154 8,154 6,584 3,011 3,011 2,004 2,004 2,004	6,746	0.2759 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	0.7241 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	95.03 68.82 68.82 68.82 68.82 68.82 68.82 68.82 68.82 68.82 68.82 68.82 68.82 68.82

FORTISBC ENERGY INC. ACCOUNT 465.00 - TRANSMSSION PLANT - PIPELINE ORIGINAL AND SMOOTH SURVIVOR CURVES



🎽 Gannett Fleming

### ACCOUNT 465.00 - TRANSMSSION PLANT - PIPELINE

### ORIGINAL LIFE TABLE

PLACEMENT BAND 1957-2014

EXPERIENCE BAND 1962-2014

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5	1,097,806,178 1,075,023,210 1,054,117,930 1,040,838,900 995,938,572 985,415,405 975,829,679 963,825,360 955,025,546	120,950 240,793 211,413 2,231,944 342,123 377,896 68,177 235,985 232,832	0.0001 0.0002 0.0021 0.0003 0.0004 0.0001 0.0002 0.0002	0.9999 0.9998 0.9998 0.9979 0.9997 0.9996 0.9999 0.9998 0.9998	100.00 99.99 99.97 99.95 99.73 99.70 99.66 99.65 99.63
8.5 9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5	942,261,770 930,398,144 916,621,080 898,403,489 871,818,495 824,569,833 504,687,842 490,452,702 476,628,488 468,326,148	533,029 183,645 253,603 706,802 926,792 224,700 1,759,132 119,753 208,308 198,990	0.0006 0.0002 0.0003 0.0008 0.0011 0.0003 0.0035 0.0002 0.0004 0.0004	0.9994 0.9998 0.9997 0.9992 0.9989 0.9997 0.9965 0.9998 0.9996 0.9996	99.60 99.55 99.53 99.50 99.42 99.32 99.29 98.94 98.92 98.88
18.5 19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	457,990,301 453,081,606 450,825,512 444,019,605 386,862,205 82,346,369 73,845,132 72,609,655 37,479,155 35,464,667 31,769,985	117,708 53,544 16,452 62,329 194,019 2,360,277 627,492 147,230 388,747 44,757 69,768	0.0003 0.0001 0.0000 0.0005 0.0287 0.0085 0.0020 0.0104 0.0013 0.0022	0.9997 0.9999 1.0000 0.9999 0.9995 0.9713 0.9915 0.9980 0.9896 0.987 0.9978	98.83 98.81 98.80 98.79 98.78 98.73 95.90 95.09 94.89 93.91 93.79
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5	30,943,512 30,755,353 30,228,918 29,346,389 28,127,306 27,386,014 27,121,762 25,979,176 25,664,627 24,781,537	83,697 36,110 270,170 156,744 57,463 254,438 793,901 118,234 325,708	0.0027 0.0012 0.0089 0.0053 0.0020 0.0093 0.0293 0.0046 0.0000 0.0131	0.9973 0.9988 0.9911 0.9947 0.9980 0.9907 0.9707 0.9707 0.9954 1.0000 0.9869	93.58 93.33 93.22 92.39 91.89 91.71 90.85 88.20 87.79 87.79



### ACCOUNT 465.00 - TRANSMSSION PLANT - PIPELINE

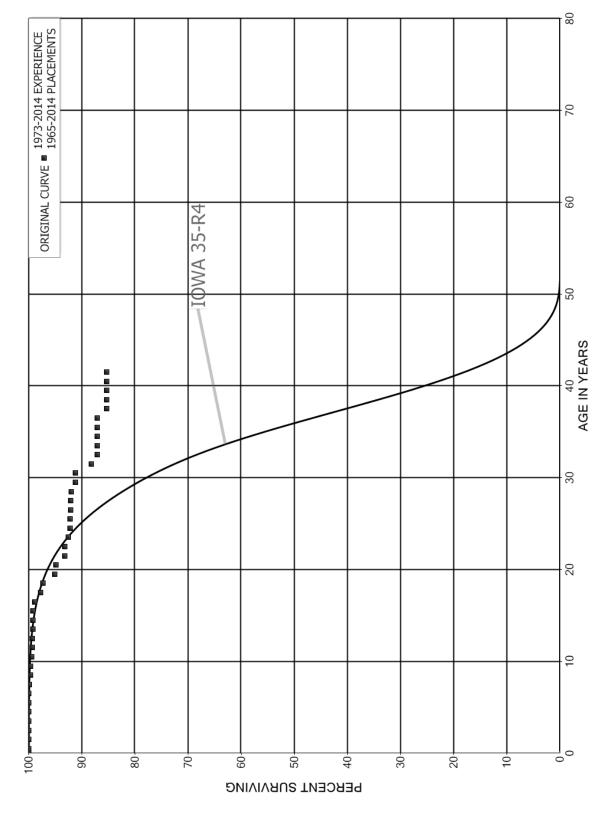
### ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1957-2014

EXPERIENCE BAND 1962-2014

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 47.5	24,400,090 24,301,099 23,805,626 23,104,169 20,773,629 20,208,342 18,227,340 17,915,232 17,386,477	81,120 98,214 62,472 47,236 201,380 385,898 19,368 53,471 15,361	0.0033 0.0040 0.0026 0.0020 0.0097 0.0191 0.0011 0.0030 0.0009	0.9967 0.9960 0.9974 0.9980 0.9903 0.9809 0.9889 0.9989 0.9970 0.9991	86.64 86.35 86.00 85.78 85.60 84.77 83.15 83.06 82.82
48.5 49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5	17,162,795 17,092,728 16,989,423 14,817,004 14,511,057 14,394,055 13,838,137 14,547	22,300 10,775 246,592 182,361 99,394 26,670 2,441,010	0.0000 0.0013 0.0006 0.0145 0.0123 0.0068 0.0019 0.1764 0.0000	1.0000 0.9987 0.9994 0.9855 0.9877 0.9932 0.9981 0.8236 1.0000	82.74 82.64 82.58 81.39 80.38 79.83 79.69 65.63 65.63

FORTISBC ENERGY INC. ACCOUNT 466.00 - TRANSMISSION PLANT - COMPRESSOR EQUIPMENT ORIGINAL AND SMOOTH SURVIVOR CURVES



🎽 Gannett Fleming

### ACCOUNT 466.00 - TRANSMISSION PLANT - COMPRESSOR EQUIPMENT

#### ORIGINAL LIFE TABLE

PLACEMENT BAND 1965-2014

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5	178,391,790 177,589,792 176,169,287 173,272,896 169,452,321 165,846,566 164,747,254 161,427,053	35 556 758 2,978 1,513 16,949 23,569 206,181	0.0000 0.0000 0.0000 0.0000 0.0000 0.0001 0.0001 0.0013	1.0000 1.0000 1.0000 1.0000 0.9999 0.9999 0.9987	100.00 100.00 100.00 100.00 100.00 100.00 99.99 99.97
7.5 8.5	143,092,078 142,391,501	260,667 62,334	0.0018	0.9982	99.84 99.66
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5 19.5 20.5 21.5 22.5 23.5	140, 461, 486 137, 818, 136 137, 017, 573 130, 518, 636 124, 745, 155 74, 006, 894 66, 928, 985 60, 632, 820 56, 482, 976 54, 187, 630 48, 130, 286 28, 569, 734 23, 003, 888 20, 223, 516 2, 672, 235	305,855 101,825 11,150 139,310 6,869 37,088 187,037 677,697 285,588 1,220,411 135,051 480,963 510 160,085 9,084	0.0022 0.0007 0.0001 0.0011 0.0005 0.0028 0.0112 0.0051 0.0225 0.0028 0.0168 0.0168 0.0000 0.0079 0.0034	0.9978 0.9993 0.9999 0.9989 0.9999 0.9995 0.9972 0.9888 0.9949 0.9775 0.9975 0.9972 0.9832 1.0000 0.9921 0.9966	99.62 99.40 99.33 99.32 99.21 99.16 98.88 97.78 97.28 95.09 94.82 93.23 93.23 92.49
24.5 25.5 26.5 27.5 28.5	2,632,677 2,612,221 2,597,279 2,509,029 2,497,371	374 1,436 655 4,049 22,073	0.0001 0.0005 0.0003 0.0016 0.0088	0.9999 0.9995 0.9997 0.9984 0.9912	92.17 92.16 92.11 92.09 91.94
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5	2,474,010 2,470,536 2,360,119 2,330,142 2,327,132 2,327,132 2,324,291 1,546,218 1,464,608	79,374 29,977 32,582	$\begin{array}{c} 0.0000\\ 0.0321\\ 0.0127\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.0000\\ 0.0211\\ 0.0000\end{array}$	1.0000 0.9679 0.9873 1.0000 1.0000 1.0000 1.0000 0.9789	91.13 91.13 88.20 87.08 87.08 87.08 87.08 87.08 87.08
37.5 38.5	1,464,608		0.0000 0.0000	1.0000 1.0000	85.24 85.24

### ACCOUNT 466.00 - TRANSMISSION PLANT - COMPRESSOR EQUIPMENT

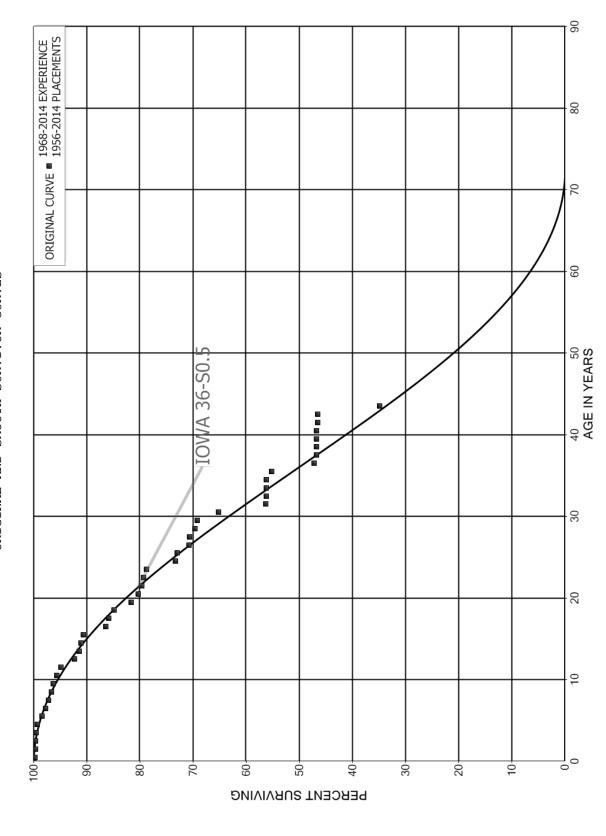
### ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1965-2014

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5	1,449,467 1,161,436		0.0000 0.0000	1.0000 1.0000	85.24 85.24 85.24



ACCOUNT 467.10 - TRANSMISSION PLANT - MEASURING AND REGULATING EQUIPMENT ORIGINAL AND SMOOTH SURVIVOR CURVES FORTISBC ENERGY INC.



ACCOUNT 467.10 - TRANSMISSION PLANT - MEASURING AND REGULATING EQUIPMENT

### ORIGINAL LIFE TABLE

PLACEMENT BAND 1956-2014

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	57,133,490	178,113	0.0031	0.9969	100.00
0.5	55,691,486	12,133	0.0002	0.9998	99.69
1.5	53,349,155	29,770	0.0006	0.9994	99.67
2.5	49,913,893	68,444	0.0014	0.9986	99.61
3.5	48,525,901	109,969	0.0023	0.9977	99.47
4.5	48,045,361	405,247	0.0084	0.9916	99.25
5.5	46,979,952	321,108	0.0068	0.9932	98.41
6.5	45,225,663	272,673	0.0060	0.9940	97.74
7.5	43,934,414	219,247	0.0050	0.9950	97.15
8.5	41,673,123	151,312	0.0036	0.9964	96.67
9.5	40,980,927	275,322	0.0067	0.9933	96.31
10.5	39,562,693	323,216	0.0082	0.9918	95.67
11.5	35,039,924	962,947	0.0275	0.9725	94.89
12.5	31,737,421	307,634	0.0097	0.9903	92.28
13.5	30,437,566	98,887	0.0032	0.9968	91.38
14.5	26,359,941	125,050	0.0047	0.9953	91.09
15.5	24,348,339	1,134,478	0.0466	0.9534	90.65
16.5	21,999,544	143,250	0.0065	0.9935	86.43
17.5	18,729,309	229,302	0.0122	0.9878	85.87
18.5	17,525,757	668,138	0.0381	0.9619	84.82
19.5	15,531,166	247,356	0.0159	0.9841	81.58
20.5	14,308,869	111,890	0.0078	0.9922	80.28
21.5	12,703,716	58,490	0.0046	0.9954	79.66
22.5	10,960,457	72,098	0.0066	0.9934	79.29
23.5	1,907,789	133,595	0.0700	0.9300	78.77
24.5	1,774,194	8,317	0.0047	0.9953	73.25
25.5	1,708,715	50,354	0.0295	0.9705	72.91
26.5	541,805	1,249	0.0023	0.9977	70.76
27.5	528,937	7,442	0.0141	0.9859	70.60
28.5	483,685	3,232	0.0067	0.9933	69.60
29.5 30.5 31.5 32.5	373,024 323,881 279,653 263,664	21,090 44,228 800	0.0565 0.1366 0.0029 0.0000	0.9435 0.8634 0.9971 1.0000	69.14 65.23 56.32 56.16
33.5 34.5 35.5 36.5 37.5 38.5	261,830 261,830 257,380 216,342 213,179 213,179	4,450 37,550 2,124	0.0000 0.0170 0.1459 0.0098 0.0000 0.0000	1.0000 0.9830 0.8541 0.9902 1.0000 1.0000	56.16 56.16 55.21 47.15 46.69 46.69

ACCOUNT 467.10 - TRANSMISSION PLANT - MEASURING AND REGULATING EQUIPMENT

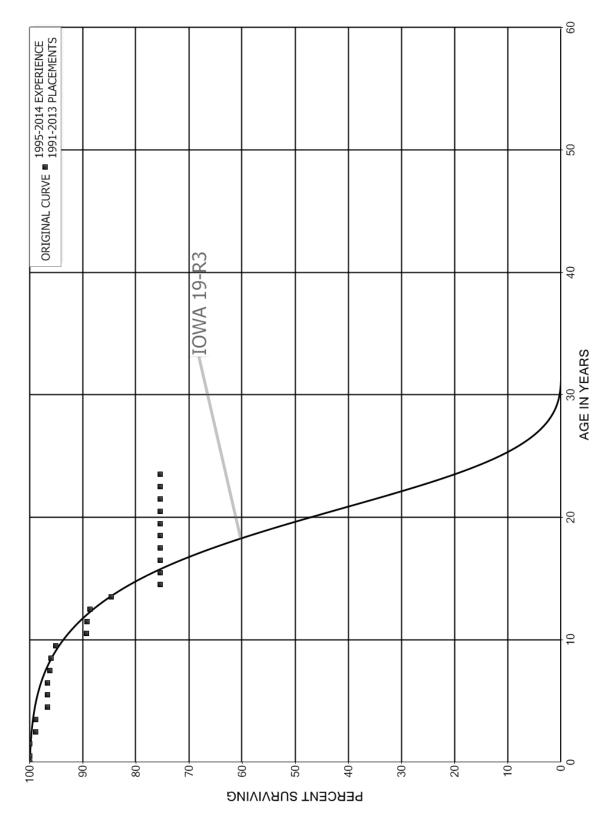
### ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1956-2014

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5	212,181 195,591 194,921 69,896	670 17,501	0.0000 0.0034 0.0000 0.2504	1.0000 0.9966 1.0000 0.7496	46.69 46.69 46.53 46.53 34.88



FORTISBC ENERGY INC. ACCOUNT 468.00 - TRANSMISSION PLANT - COMMUNICATIONS EQUIPMENT ORIGINAL AND SMOOTH SURVIVOR CURVES



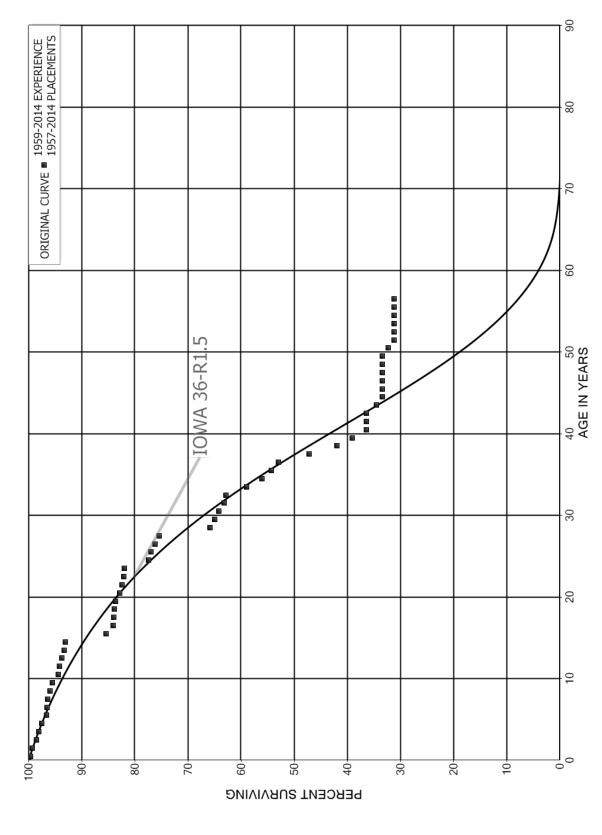
ACCOUNT 468.00 - TRANSMISSION PLANT - COMMUNICATIONS EQUIPMENT

#### ORIGINAL LIFE TABLE

PLACEMENT BAND 1991-2013

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5 8.5	2,750,344 2,766,364 2,725,292 2,701,269 4,483,903 4,381,680 4,120,915 4,077,933 3,800,568 3,777,338	30,284 106 101,196 849 19,877 6,274 37,644	0.0000 0.0111 0.0000 0.0226 0.0000 0.0002 0.0049 0.0017 0.0100	1.0000 1.0000 0.9889 1.0000 0.9774 1.0000 0.9998 0.9951 0.9983 0.9900	100.00 100.00 98.89 98.88 96.65 96.65 96.65 96.63 96.16 96.00
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	3,739,693 3,509,386 2,894,582 2,711,120 2,389,435 2,124,192 2,121,179 2,078,098 2,016,481 2,012,674	225,386 4,902 17,333 122,320 262,835	0.0603 0.0014 0.0060 0.0451 0.1100 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	0.9397 0.9986 0.9940 0.9549 0.8900 1.0000 1.0000 1.0000 1.0000 1.0000	95.05 89.32 89.19 88.66 84.66 75.35 75.35 75.35 75.35 75.35 75.35
19.5 20.5 21.5 22.5 23.5	1,987,661 1,975,584 1,963,378 1,958,059		0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000	75.35 75.35 75.35 75.35 75.35 75.35

FORTISBC ENERGY INC. ACCOUNT 472.00 - DISTRIBUTION PLANT - STRUCTURES ORIGINAL AND SMOOTH SURVIVOR CURVES



#### ACCOUNT 472.00 - DISTRIBUTION PLANT - STRUCTURES

#### ORIGINAL LIFE TABLE

PLACEMENT BAND 1957-2014

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	24,571,854	90,918	0.0037	0.9963	100.00
0.5	24,099,857	75,898	0.0031	0.9969	99.63
1.5	23,149,369	184,496	0.0080	0.9920	99.32
2.5	21,967,449	109,637	0.0050	0.9950	98.52
3.5	19,820,539	113,207	0.0057	0.9943	98.03
4.5	19,230,625	173,283	0.0090	0.9910	97.47
5.5	18,505,872	24,271	0.0013	0.9987	96.59
6.5	17,427,393	22,560	0.0013	0.9987	96.47
7.5	16,457,881	57,852	0.0035	0.9985	96.34
8.5	13,937,224	78,003	0.0056	0.9965	96.00
9.5	11,622,331	130,422	0.0112	0.9888	95.47
10.5	10,238,138	21,341	0.0021	0.9979	94.40
11.5	9,888,102	49,907	0.0050	0.9950	94.20
12.5	9,615,848	41,035	0.0043	0.9957	93.72
13.5	8,982,705	21,584	0.0024	0.9976	93.32
14.5	8,426,857	700,750	0.0832	0.9168	93.10
15.5	7,276,963	105,820	0.0145	0.9855	85.36
16.5	6,697,512	14,283	0.0021	0.9979	84.12
17.5	5,751,305	10,401	0.0018	0.9982	83.94
18.5	4,734,100	9,211	0.0019	0.9981	83.79
19.5	3,802,000	33,860	0.0089	0.9911	83.62
20.5	3,001,042	15,987	0.0053	0.9947	82.88
21.5	2,754,088	10,791	0.0039	0.9961	82.44
22.5	2,005,876	4,553	0.0023	0.9977	82.11
23.5	990,194	55,398	0.0559	0.9441	81.93
24.5	890,733	3,875	0.0044	0.9956	77.34
25.5	860,006	8,894	0.0103	0.9897	77.01
26.5	833,676	9,489	0.0114	0.9886	76.21
27.5	678,404	85,832	0.1265	0.8735	75.34
28.5	475,904	6,623	0.0139	0.9861	65.81
29.5	453,497	5,032	0.0111	0.9889	64.89
30.5	421,755	6,871	0.0163	0.9837	64.17
31.5	373,650	1,676	0.0045	0.9955	63.13
32.5	346,565	21,189	0.0611	0.9389	62.85
33.5	248,944	12,262	0.0493	0.9507	59.00
34.5	229,486	7,637	0.0333	0.9667	56.10
35.5	218,475	5,185	0.0237	0.9763	54.23
36.5	213,275	23,097	0.1083	0.8917	52.94
37.5	190,178	21,057	0.1107	0.8893	47.21
38.5	166,933	11,575	0.0693	0.9307	41.98

#### ACCOUNT 472.00 - DISTRIBUTION PLANT - STRUCTURES

### ORIGINAL LIFE TABLE, CONT.

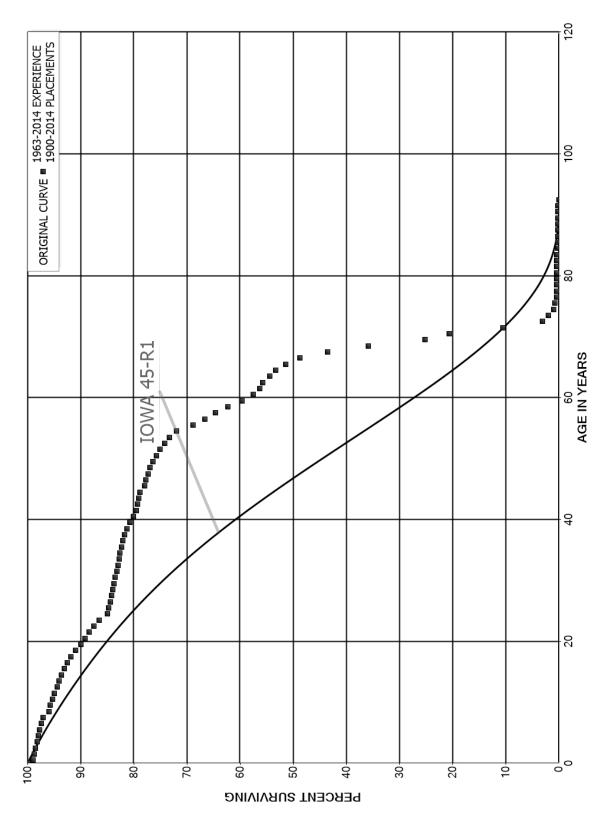
EXPERIENCE BAND 1959-2014

#### PLACEMENT BAND 1957-2014

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 47.5 48.5	148,619 124,199 110,219 106,164 99,308 80,944 79,110 63,621 63,621 63,621	10,276 5,444 3,313	0.0691 0.0000 0.0513 0.0334 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	0.9309 1.0000 0.9487 0.9666 1.0000 1.0000 1.0000 1.0000 1.0000	39.07 36.37 36.37 36.37 34.50 33.35 33.35 33.35 33.35 33.35 33.35
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5	63,062 61,038 58,937 43,528 21,818 21,818 21,818	2,024 2,101	0.0321 0.0344 0.0000 0.0000 0.0000 0.0000 0.0000	0.9679 0.9656 1.0000 1.0000 1.0000 1.0000 1.0000	33.35 32.28 31.17 31.17 31.17 31.17 31.17 31.17 31.17



FORTISBC ENERGY INC. ACCOUNT 473.00 - DISTRIBUTION PLANT - SERVICES ORIGINAL AND SMOOTH SURVIVOR CURVES



#### ACCOUNT 473.00 - DISTRIBUTION PLANT - SERVICES

#### ORIGINAL LIFE TABLE

PLACEMENT BAND 1900-2014

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	1,121,418,402	11,950,824	0.0107	0.9893	100.00
0.5	1,065,054,208	2,328,163	0.0022	0.9978	98.93
1.5	1,019,082,289	2,721,309	0.0027	0.9973	98.72
2.5	974,234,202	2,467,567	0.0025	0.9975	98.45
3.5	937,222,392	2,421,170	0.0026	0.9974	98.21
4.5	900,064,681	2,499,615	0.0028	0.9972	97.95
5.5	864,655,203	2,717,044	0.0031	0.9969	97.68
6.5	816,488,187	2,438,486	0.0030	0.9970	97.37
7.5	770,723,395	8,537,181	0.0111	0.9889	97.08
8.5	726,156,433	2,185,569	0.0030	0.9970	96.01
9.5	689,613,294	2,982,848	0.0043	0.9957	95.72
10.5	658,193,354	2,818,382	0.0043	0.9957	95.30
11.5	630,536,880	3,242,865	0.0051	0.9949	94.90
12.5	603,342,020	2,106,851	0.0035	0.9965	94.41
13.5	579,395,632	3,161,759	0.0055	0.9945	94.08
14.5	547,717,287	3,047,421	0.0056	0.9944	93.56
15.5	519,440,105	3,055,160	0.0059	0.9941	93.04
16.5	487,376,644	3,766,841	0.0077	0.9923	92.50
17.5	449,640,349	4,210,418	0.0094	0.9906	91.78
18.5	408,891,378	4,479,528	0.0110	0.9890	90.92
19.5	366,722,505	2,853,485	0.0078	0.9922	89.93
20.5	325,584,121	3,010,212	0.0092	0.9908	89.23
21.5	281,439,240	2,853,606	0.0101	0.9899	88.40
22.5	240,233,867	2,652,860	0.0110	0.9890	87.50
23.5	212,399,192	3,932,200	0.0185	0.9815	86.54
24.5	190,416,303	447,529	0.0024	0.9976	84.94
25.5	173,088,426	614,514	0.0036	0.9964	84.74
26.5	161,382,961	449,450	0.0028	0.9972	84.44
27.5	137,917,549	356,835	0.0026	0.9974	84.20
28.5	127,734,113	345,908	0.0027	0.9973	83.98
29.5	104,703,721	367,241	0.0035	0.9965	83.76
30.5	91,319,676	277,535	0.0030	0.9970	83.46
31.5	76,792,520	221,962	0.0029	0.9971	83.21
32.5	65,148,118	149,835	0.0023	0.9977	82.97
33.5	52,981,395	129,557	0.0024	0.9976	82.78
34.5	44,861,256	139,615	0.0031	0.9969	82.57
35.5	39,079,008	124,570	0.0032	0.9968	82.32
36.5	33,554,158	131,615	0.0039	0.9961	82.06
37.5	28,857,652	160,028	0.0055	0.9945	81.73
38.5	23,656,526	163,108	0.0069	0.9931	81.28

#### ACCOUNT 473.00 - DISTRIBUTION PLANT - SERVICES

### ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1900-2014

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 47.5 48.5	20,019,388 16,138,792 13,127,237 11,010,806 9,365,410 7,755,770 6,939,648 6,201,657 5,472,666 4,769,697	166,472 103,870 41,197 29,320 27,306 88,452 22,236 29,934 26,289 33,072	$\begin{array}{c} 0.0083 \\ 0.0064 \\ 0.0031 \\ 0.0027 \\ 0.0029 \\ 0.0114 \\ 0.0032 \\ 0.0048 \\ 0.0048 \\ 0.0069 \end{array}$	0.9917 0.9936 0.9969 0.9973 0.9971 0.9886 0.9968 0.9952 0.9952 0.9931	80.72 80.05 79.53 79.28 79.07 78.84 77.94 77.69 77.32 76.95
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5 59.5	4,073,348 3,264,930 2,420,965 1,798,762 1,776,425 1,394,636 88,461 85,661 82,972 80,034 76,662	36,504 29,981 28,438 22,338 30,602 60,664 2,800 2,689 2,938 3,372 2,777	0.0090 0.0092 0.0117 0.0124 0.0172 0.0435 0.0317 0.0314 0.0354 0.0421 0.0362	0.9910 0.9908 0.9883 0.9876 0.9828 0.9565 0.9683 0.9686 0.9646 0.9579 0.9638	76.41 75.73 75.03 74.15 73.23 71.97 68.84 66.66 64.57 62.28 59.66
60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5 68.5	73,885 72,385 71,874 70,188 68,708 66,331 62,787 56,152 46,151	1,500 777 1,686 1,480 2,377 3,544 6,635 10,001 13,679	0.0302 0.0203 0.0107 0.0235 0.0211 0.0346 0.0534 0.1057 0.1781 0.2964	0.9038 0.9797 0.9893 0.9765 0.9789 0.9654 0.9466 0.8943 0.8219 0.7036	57.50 56.33 55.72 54.42 53.27 51.43 48.68 43.53 35.78
69.5 70.5 71.5 72.5 73.5 74.5 75.5 76.5 77.5 78.5	32,472 26,606 13,519 3,953 2,453 1,253 966 566 566 566	5,866 13,087 9,566 1,500 1,200 287 400	0.1806 0.4919 0.7076 0.3795 0.4892 0.2291 0.4141 0.0000 0.0000 0.0000	0.8194 0.5081 0.2924 0.6205 0.5108 0.7709 0.5859 1.0000 1.0000 1.0000	25.18 20.63 10.48 3.06 1.90 0.97 0.75 0.44 0.44



#### ACCOUNT 473.00 - DISTRIBUTION PLANT - SERVICES

#### ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1900-2014

266

266

266

AGE AT BEGIN OF INTERVAL 79.5 80.5 81.5 82.5 83.5 84.5 85.5 86.5 87.5 88.5

89.5

90.5

91.5

92.5

EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
566		0.0000	1.0000	0.44
566		0.0000	1.0000	0.44
566		0.0000	1.0000	0.44
566		0.0000	1.0000	0.44
566	300	0.5300	0.4700	0.44
266		0.0000	1.0000	0.21
266		0.0000	1.0000	0.21
266		0.0000	1.0000	0.21
266		0.0000	1.0000	0.21
266		0.0000	1.0000	0.21

0.0000

0.0000

266 1.0000

1.0000

1.0000

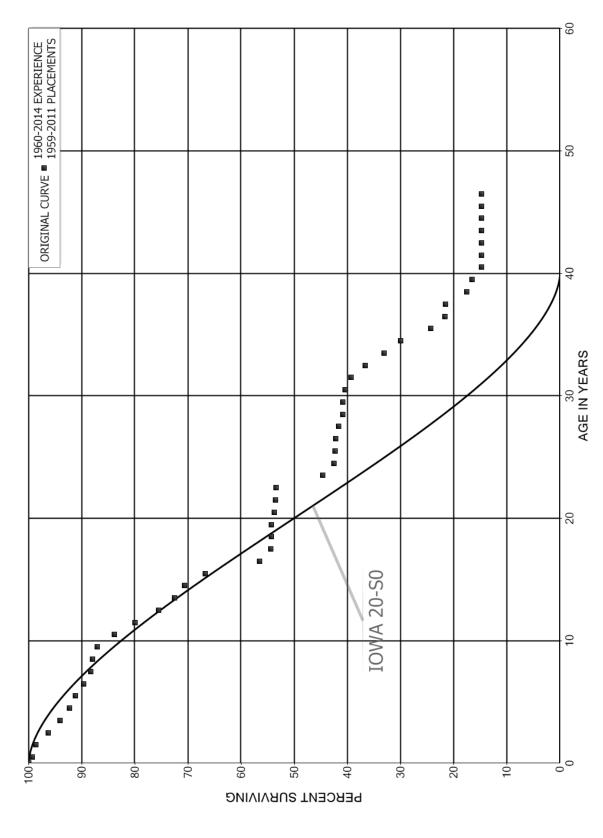
0.21

0.21

0.21



FORTISBC ENERGY INC. ACCOUNT 474.00 - METER/REGULATOR INSTALLATIONS ORIGINAL AND SMOOTH SURVIVOR CURVES



🎽 Gannett Fleming

### ACCOUNT 474.00 - METER/REGULATOR INSTALLATIONS

#### ORIGINAL LIFE TABLE

PLACEMENT BAND 1959-2011

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0	275,639,063	1,890,773	0.0069	0.9931	100.00
0.5	273,760,542	1,776,458	0.0065	0.9935	99.31
1.5	271,984,085	6,574,329	0.0242	0.9758	98.67
2.5	265,409,756	6,058,122	0.0228	0.9772	96.28
3.5	233,499,551	4,395,621	0.0188	0.9812	94.09
4.5	211,340,558	2,704,925	0.0128	0.9872	92.32
5.5	194,688,348	3,258,844	0.0167	0.9833	91.13
6.5	181,328,398	2,767,517	0.0153	0.9847	89.61
7.5	166,534,310	607,692	0.0036	0.9964	88.24
8.5	154,789,467	1,522,028	0.0098	0.9902	87.92
9.5	143,018,043	5,364,996	0.0375	0.9625	87.05
10.5	128,598,286	5,839,509	0.0454	0.9546	83.79
11.5	116,045,932	6,547,133	0.0564	0.9436	79.98
12.5	102,471,991	3,990,006	0.0389	0.9611	75.47
13.5	91,175,731	2,350,255	0.0258	0.9742	72.53
14.5	82,394,349	4,571,511	0.0555	0.9445	70.66
15.5	69,400,328	10,597,012	0.1527	0.8473	66.74
16.5	54,333,525	2,109,391	0.0388	0.9612	56.55
17.5	44,887,547	29,371	0.0007	0.9993	54.36
18.5	38,416,281	33,063	0.0009	0.9991	54.32
19.5	23,633,200	231,412	0.0098	0.9902	54.27
20.5	15,214,509	62,396	0.0041	0.9959	53.74
21.5	12,301,102	35,479	0.0029	0.9971	53.52
22.5	10,126,408	1,669,785	0.1649	0.8351	53.37
23.5	8,243,546	382,938	0.0465	0.9535	44.57
24.5	7,569,169	33,335	0.0044	0.9956	42.50
25.5	7,144,052	23,350	0.0033	0.9967	42.31
26.5	6,853,814	87,773	0.0128	0.9872	42.17
27.5	6,607,263	122,778	0.0186	0.9814	41.63
28.5	6,269,751	1,578	0.0003	0.9997	40.86
29.5	6,088,603	60,073	0.0099	0.9901	40.85
30.5	1,207,419	34,080	0.0282	0.9718	40.44
31.5	1,148,484	79,302	0.0690	0.9310	39.30
32.5	885,661	85,243	0.0962	0.9038	36.59
33.5	668,613	62,990	0.0942	0.9058	33.07
34.5	605,107	113,769	0.1880	0.8120	29.95
35.5	490,432	54,147	0.1104	0.8896	24.32
36.5	336,344	2,875	0.0085	0.9915	21.64
37.5	324,482	59,587	0.1836	0.8164	21.45
38.5	264,895	14,522	0.0548	0.9452	17.51

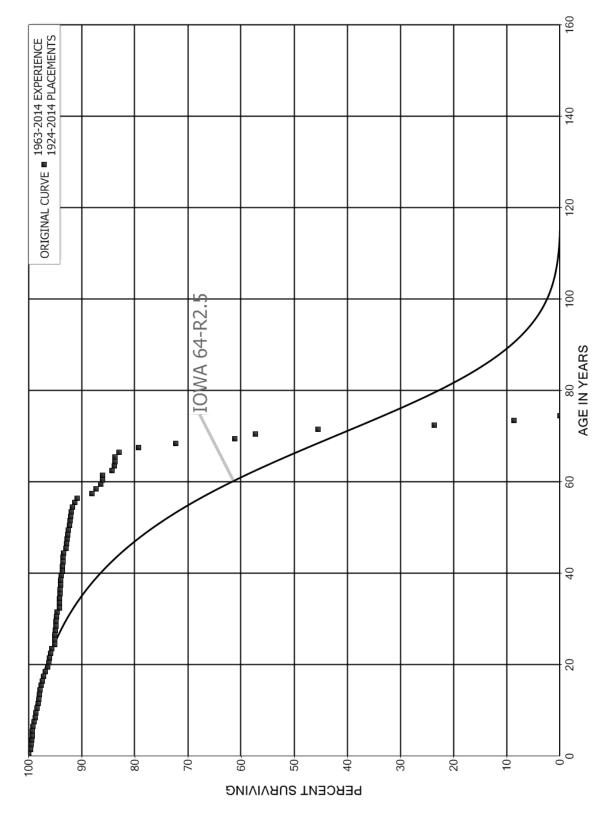
#### ACCOUNT 474.00 - METER/REGULATOR INSTALLATIONS

### ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1959-2011

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5	247,673 205,775 178,630 148,099 148,099 101,120 101,120	27,369	0.1105 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	0.8895 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	16.55 14.72 14.72 14.72 14.72 14.72 14.72 14.72 14.72 14.72

FORTISBC ENERGY INC. ACCOUNT 475.00 - DISTRIBUTION PLANT - SYSTEMS - MAINS ORIGINAL AND SMOOTH SURVIVOR CURVES



🎽 Gannett Fleming

### ACCOUNT 475.00 - DISTRIBUTION PLANT - SYSTEMS - MAINS

#### ORIGINAL LIFE TABLE

PLACEMENT BAND 1924-2014

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	1,353,142,596	494,414	0.0004	0.9996	100.00
0.5	1,317,359,022	4,582,589	0.0035	0.9965	99.96
1.5	1,278,078,295	1,594,996	0.0012	0.9988	99.62
2.5	1,251,181,333	1,095,812	0.0009	0.9991	99.49
3.5	1,230,144,474	1,088,900	0.0009	0.9991	99.40
4.5	1,204,931,250	984,990	0.0008	0.9992	99.32
5.5	1,168,053,275	1,202,220	0.0010	0.9990	99.24
6.5	1,127,280,101	2,684,114	0.0024	0.9976	99.13
7.5	1,087,583,178	2,011,481	0.0018	0.9982	98.90
8.5	1,052,374,233	881,750	0.0008	0.9992	98.71
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5 19.5	1,023,220,090 994,189,964 961,052,940 931,860,558 896,637,766 863,294,240 821,653,611 780,554,611 735,165,908 688,469,569 634,666,673	2,466,759 1,847,253 1,676,979 1,058,051 1,166,121 1,225,261 1,821,951 1,931,609 2,967,929 3,332,692 1,024,386	0.0024 0.0019 0.0017 0.0011 0.0013 0.0014 0.0022 0.0025 0.0040 0.0048 0.0016	0.9976 0.9981 0.9983 0.9989 0.9987 0.9986 0.9978 0.9975 0.9975 0.9960 0.9952 0.9984	98.63 98.39 98.21 98.04 97.93 97.80 97.66 97.45 97.20 96.81 96.34
20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	584,270,672 539,733,119 459,913,334 405,714,188 373,724,365 356,873,525 343,736,008 316,852,291 297,543,145	809,107 988,244 1,207,582 2,183,305 152,662 133,022 179,012 385,846 287,489	0.0014 0.0018 0.0026 0.0054 0.0004 0.0004 0.0005 0.0012 0.0010	0.9986 0.9982 0.9974 0.9946 0.9996 0.9996 0.9995 0.9995 0.9988 0.9990	96.19 96.05 95.88 95.63 95.11 95.07 95.04 94.99 94.87
29.5	279,249,080	240,769	0.0009	0.9991	94.78
30.5	253,310,976	226,112	0.0009	0.9991	94.70
31.5	199,362,198	820,472	0.0041	0.9959	94.61
32.5	164,380,932	55,050	0.0003	0.9997	94.23
33.5	144,991,512	95,915	0.0007	0.9993	94.19
34.5	126,647,243	70,582	0.0006	0.9994	94.13
35.5	109,238,941	38,970	0.0004	0.9996	94.08
36.5	99,267,660	61,394	0.0006	0.9994	94.05
37.5	90,459,974	69,841	0.0008	0.9992	93.99
38.5	80,612,902	45,109	0.0006	0.9994	93.91

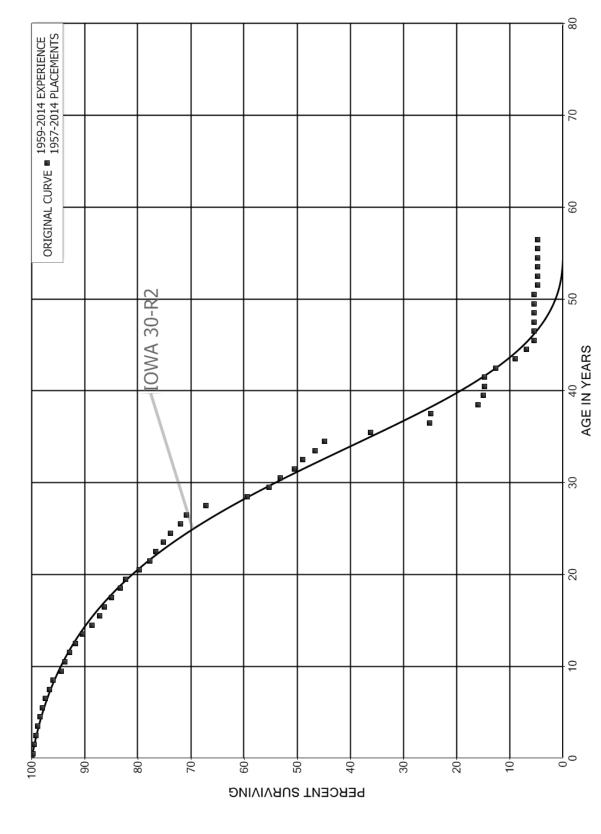
#### ACCOUNT 475.00 - DISTRIBUTION PLANT - SYSTEMS - MAINS

### ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1924-2014

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 47.5 48.5	74,190,766 64,534,527 57,131,501 49,976,910 45,418,712 35,190,157 27,202,686 23,780,700 20,897,218 16,307,811	164,004 48,025 41,068 28,286 9,816 187,558 43,951 15,875 29,610 18,356	0.0022 0.0007 0.0007 0.0006 0.0002 0.0053 0.0016 0.0007 0.0014 0.0011	0.9978 0.9993 0.9993 0.9994 0.9998 0.9947 0.9984 0.9993 0.9986 0.9989	93.86 93.65 93.59 93.52 93.46 93.44 92.95 92.80 92.73 92.60
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5 57.5 58.5	13,716,678 10,440,229 7,083,271 5,287,233 4,688,762 4,258,375 125,508 124,887 121,203 120,071	28,242 10,590 9,614 5,979 11,985 23,898 621 3,684 1,132 1,196	0.0021 0.0010 0.0014 0.0011 0.0026 0.0056 0.0049 0.0295 0.0093 0.0100	0.9979 0.9990 0.9986 0.9989 0.9974 0.9944 0.9951 0.9705 0.9907 0.9900	92.50 92.31 92.21 92.09 91.99 91.75 91.24 90.78 88.11 87.28
59.5 60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5 68.5	118,875 118,391 118,391 115,991 115,259 115,155 115,155 114,104 109,007 99,388	484 2,400 732 104 1,051 5,097 9,619 15,233	0.0041 0.0000 0.0203 0.0063 0.0009 0.0000 0.0091 0.0447 0.0882 0.1533	0.9959 1.0000 0.9797 0.9937 0.9991 1.0000 0.9909 0.9553 0.9118 0.8467	86.41 86.06 86.06 84.32 83.79 83.71 83.71 82.95 79.24 72.25
69.5 70.5 71.5 72.5 73.5 74.5	84,155 78,784 62,645 32,546 11,817	5,371 16,139 30,099 20,729 11,817	0.0638 0.2049 0.4805 0.6369 1.0000	0.9362 0.7951 0.5195 0.3631	61.17 57.27 45.54 23.66 8.59

ACCOUNT 477.10 - DISTRIBUTION PLANT - MEASURING AND REGULATING ADDITIONS ORIGINAL AND SMOOTH SURVIVOR CURVES FORTISBC ENERGY INC.



ACCOUNT 477.10 - DISTRIBUTION PLANT - MEASURING AND REGULATING ADDITIONS

#### ORIGINAL LIFE TABLE

PLACEMENT BAND 1957-2014

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	123,705,320	343,490	0.0028	0.9972	100.00
0.5	121,410,247	269,898	0.0022	0.9978	99.72
1.5	113,775,946	393,510	0.0035	0.9965	99.50
2.5	108,211,533	338,454	0.0031	0.9969	99.16
3.5 4.5	103,802,145 99,780,731	476,311 417,339	0.0046	0.9954	98.85 98.39
5.5	94,375,838 90,352,814	526,394 739,624	0.0056	0.9944	97.98 97.43
7.5 8.5	84,070,202 75,531,369	647,560 1,216,992	0.0077	0.9923	96.64 95.89
9.5	69,462,356	449,480	0.0065	0.9935	94.35
10.5	65,252,582	641,097	0.0098	0.9902	93.74
11.5	57,160,246	686,480	0.0120	0.9880	92.82
12.5	53,305,946	747,586	0.0140	0.9860	91.70
13.5	47,980,830	964,910	0.0201	0.9799	90.42
14.5	43,708,868	722,837	0.0165	0.9835	88.60
15.5	40,701,506 37,883,269	409,411 575,422	0.0101	0.9899	87.13 86.26
17.5	33,884,888	681,072	0.0201	0.9799	84.95
18.5	29,978,946	331,524	0.0111	0.9889	83.24
19.5	24,835,553	798,520	0.0322	0.9678	82.32
20.5	20,881,563	517,260	0.0248	0.9752	79.67
20.3 21.5 22.5	18,483,311 15,440,374	261,005 286,923	0.0141	0.9859	77.70 76.60
23.5 24.5	11,970,417 11,634,644	221,275 287,066	0.0185	0.9815	75.18 73.79
25.5	11,014,380	166,930	0.0152	0.9848	71.97
26.5	3,800,526	199,367	0.0525	0.9475	70.88
27.5	3,116,215	358,985	0.1152	0.8848	67.16
28.5	2,137,274	148,270	0.0694	0.9306	59.42
29.5	1,896,890	74,532	0.0393	0.9607	55.30
30.5	1,684,038	81,643	0.0485	0.9515	53.13
31.5	1,403,210	45,452	0.0324	0.9676	50.55
32.5	1,170,385	53,729		0.9541	48.91
33.5	1,100,994	43,097	0.0391	0.9609	46.67
34.5	978,960	188,195	0.1922	0.8078	44.84
35.5	718,763	222,123	0.3090	0.6910	36.22
36.5	492,299	2,938	0.0060	0.9940	25.03
37.5	480,874	171,715	0.3571	0.6429	24.88
38.5	282,914	19,357	0.0684	0.9316	15.99

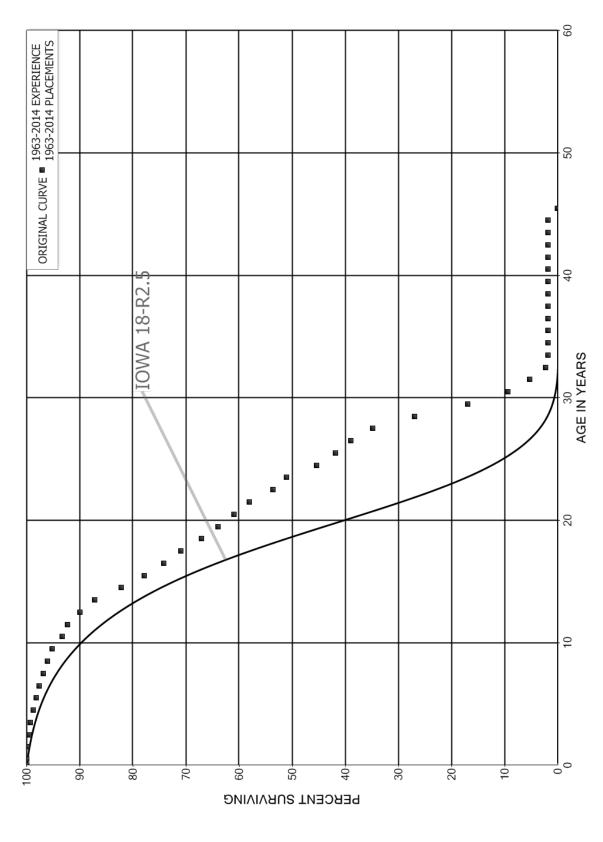
ACCOUNT 477.10 - DISTRIBUTION PLANT - MEASURING AND REGULATING ADDITIONS

### ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1957-2014

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 47.5 48.5	261,006 249,130 162,238 139,405 93,633 65,095 49,595 49,595 49,595 49,595	3,088 300 22,833 40,318 22,263 13,855	0.0118 0.0012 0.1407 0.2892 0.2378 0.2128 0.0000 0.0000 0.0000 0.0000	0.9882 0.9988 0.8593 0.7108 0.7622 0.7872 1.0000 1.0000 1.0000 1.0000	$14.90 \\ 14.72 \\ 14.71 \\ 12.64 \\ 8.98 \\ 6.85 \\ 5.39 \\ 5.3$
49.5 50.5 51.5 52.5 53.5 54.5 55.5 56.5	48,270 48,056 40,513 40,513 40,513 40,513 40,513	6,204	0.0000 0.1291 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 0.8709 1.0000 1.0000 1.0000 1.0000 1.0000	5.39 5.39 4.69 4.69 4.69 4.69 4.69 4.69 4.69 4.69

FORTISBC ENERGY INC. ACCOUNT 478.10 - DISTRIBUTION PLANT - METERS ORIGINAL AND SMOOTH SURVIVOR CURVES



#### ACCOUNT 478.10 - DISTRIBUTION PLANT - METERS

### ORIGINAL LIFE TABLE

PLACEMENT BAND 1963-2014

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	308,482,710	194,470	0.0006	0.9994	100.00
0.5	298,068,520	377,804	0.0013	0.9987	99.94
1.5	286,192,414	765,002	0.0027	0.9973	99.81
2.5	274,672,278	779,377	0.0028	0.9972	99.54
3.5	263,494,340	1,340,233	0.0051	0.9949	99.26
4.5	253,914,494	1,632,320	0.0064	0.9936	98.76
5.5	244,482,037	1,139,911	0.0047	0.9953	98.12
6.5	236,100,390	1,921,972	0.0081	0.9919	97.66
7.5	225,057,689	1,953,727	0.0087	0.9913	96.87
8.5	215,172,690	1,888,625	0.0088	0.9912	96.03
9.5	204,989,246	4,070,418	0.0199	0.9801	95.18
10.5	187,765,372	2,024,796	0.0108	0.9892	93.29
11.5	169,348,527	4,349,632	0.0257	0.9743	92.29
12.5	153,773,751	4,655,876	0.0303	0.9697	89.92
13.5	142,796,837	8,280,008	0.0580	0.9420	87.20
14.5	127,335,681	6,703,332	0.0526	0.9474	82.14
15.5	111,371,786	5,252,767	0.0472	0.9528	77.82
16.5	99,966,132	4,382,608	0.0438	0.9562	74.15
17.5	87,171,097	4,648,400	0.0533	0.9467	70.90
18.5	73,518,226	3,501,413	0.0476	0.9524	67.11
19.5	62,674,540	2,868,367	0.0458	0.9542	63.92
20.5	55,838,640	2,718,480	0.0487	0.9513	60.99
21.5	49,488,641	3,729,816	0.0754	0.9246	58.02
22.5	43,017,463	2,111,575	0.0491	0.9509	53.65
23.5	38,436,667	4,265,465	0.1110	0.8890	51.02
24.5	22,414,305	1,752,781	0.0782	0.9218	45.36
25.5	15,593,836	1,057,989	0.0678	0.9322	41.81
26.5	1,793,825	187,992	0.1048	0.8952	38.97
27.5	1,537,999	348,232	0.2264	0.7736	34.89
28.5	1,127,122	421,739	0.3742	0.6258	26.99
29.5	644,387	287,219	0.4457	0.5543	16.89
30.5	355,269	152,679	0.4298	0.5702	9.36
31.5 32.5 33.5 34.5	202,439 87,667 69,144 69,144	114,772 18,397	0.5669 0.2099 0.0000 0.0000	0.4331 0.7901 1.0000 1.0000	5.34 2.31 1.83 1.83
35.5	69,144		0.0000	1.0000	1.83
36.5	69,144		0.0000	1.0000	1.83
37.5	69,144		0.0000	1.0000	1.83
38.5	69,144		0.0000	1.0000	1.83

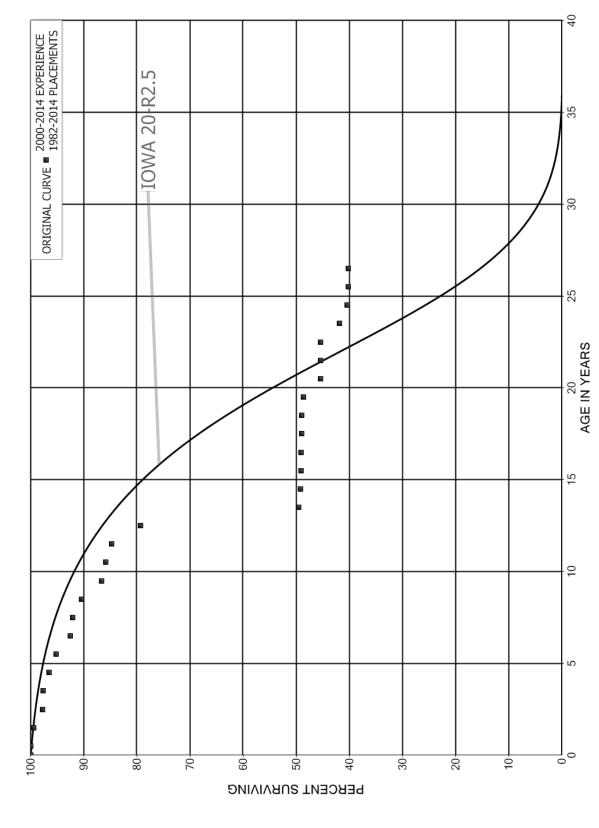
#### ACCOUNT 478.10 - DISTRIBUTION PLANT - METERS

### ORIGINAL LIFE TABLE, CONT.

#### PLACEMENT BAND 1963-2014

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
39.5 40.5 41.5 42.5 43.5 44.5 45.5	68,282 68,282 68,282 66,972 65,289 65,206	64,789	0.0000 0.0000 0.0000 0.0000 0.0000 0.9936	1.0000 1.0000 1.0000 1.0000 1.0000 0.0064	1.83 1.83 1.83 1.83 1.83 1.83 1.83 0.01

FORTISBC ENERGY INC. ACCOUNT 482.10 - GENERAL PLANT - STRUCTURES (FRAME) ORIGINAL AND SMOOTH SURVIVOR CURVES



🎽 Gannett Fleming

ACCOUNT 482.10 - GENERAL PLANT - STRUCTURES (FRAME)

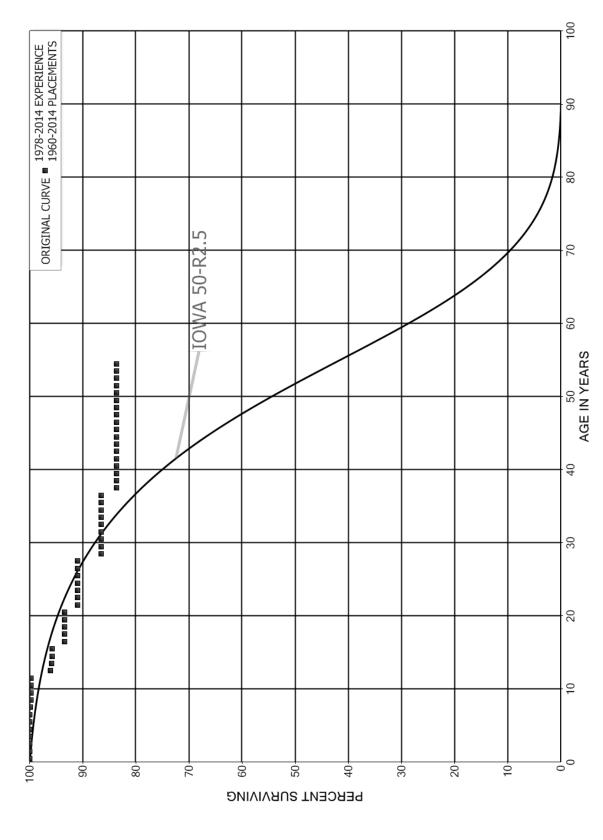
#### ORIGINAL LIFE TABLE

PLACEMENT BAND 1982-2014

EXPERIENCE BAND 2000-2014

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5 8.5	12,787,264 12,355,432 10,821,042 9,869,266 8,201,961 8,690,620 8,598,421 8,361,418 8,680,764 8,892,623	1,593 74,690 177,885 19,013 84,405 128,651 234,553 39,255 156,358 370,654	0.0001 0.0060 0.0164 0.0019 0.0103 0.0148 0.0273 0.0047 0.0180 0.0417	0.9999 0.9940 0.9836 0.9981 0.9897 0.9852 0.9727 0.9953 0.9820 0.9583	100.00 99.99 99.38 97.75 97.56 96.56 95.13 92.53 92.10 90.44
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	8,287,798 8,130,291 14,251,014 12,358,495 6,693,017 6,418,760 6,264,854 5,803,316 5,740,762 4,776,082	75,021 113,876 911,273 4,636,905 50,650 14,372 12,595 3,408 28,873	0.0091 0.0140 0.0639 0.3752 0.0076 0.0022 0.0000 0.0022 0.0006 0.0060	0.9909 0.9860 0.9361 0.6248 0.9924 0.9978 1.0000 0.9978 0.9994 0.9940	86.67 85.89 84.68 79.27 49.53 49.15 49.04 49.04 48.93 48.91
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5	2,312,325 1,233,993 1,225,808 1,141,376 755,712 730,608 727,292	23,873 150,670 1,909 90,309 24,783 3,316	0.0652 0.0015 0.0000 0.0791 0.0328 0.0045 0.0000	0.9348 0.9985 1.0000 0.9209 0.9672 0.9955 1.0000	48.61 45.44 45.37 45.37 41.78 40.41 40.23 40.23

FORTISBC ENERGY INC. ACCOUNT 482.20 - GENERAL PLANT - STRUCTURES (MASONRY) ORIGINAL AND SMOOTH SURVIVOR CURVES



🎽 Gannett Fleming

ACCOUNT 482.20 - GENERAL PLANT - STRUCTURES (MASONRY)

### ORIGINAL LIFE TABLE

PLACEMENT BAND 1960-2014

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5	109,925,971 109,881,752 108,952,609 95,427,086 86,561,044	12,000 40,054 396 6,229	0.0001 0.0004 0.0000 0.0000 0.0001	0.9999 0.9996 1.0000 1.0000 0.9999	100.00 99.99 99.95 99.95 99.95
4.5 5.5 6.5 7.5 8.5	85,567,787 83,433,677 82,403,010 79,198,012 78,032,820	32,473 4,411 85,556 34,252 38,626	0.0004 0.0001 0.0010 0.0004 0.0005	0.9996 0.9999 0.9990 0.9996 0.9995	99.95 99.91 99.90 99.80 99.75
9.5 10.5 11.5 12.5 13.5 14.5	26,332,200 25,322,586 23,825,188 22,452,661 21,140,485	1,840 6,520 856,492 67,312 20,937	0.0001 0.0003 0.0359 0.0030 0.0010	0.9999 0.9997 0.9641 0.9970 0.9990	99.71 99.70 99.67 96.09 95.80
15.5 16.5 17.5 18.5	20,468,761 20,241,621 18,387,395 18,016,399 13,650,780	477,881 10,000	0.0000 0.0236 0.0005 0.0000 0.0000	1.0000 0.9764 0.9995 1.0000 1.0000	95.71 95.71 93.45 93.40 93.40
19.5 20.5 21.5 22.5 23.5 24.5 25.5	9,386,923 5,622,958 5,330,943 2,017,938 1,990,314 1,875,474 1,422,800	150,222	0.0000 0.0267 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 0.9733 1.0000 1.0000 1.0000 1.0000 1.0000	93.40 93.40 90.90 90.90 90.90 90.90 90.90 90.90
26.5 27.5 28.5 29.5	895,606 892,256 849,226 848,139	42,784	0.0000 0.0480 0.0000 0.0000	1.0000 0.9520 1.0000 1.0000	90.90 90.90 86.54 86.54
30.5 31.5 32.5 33.5 34.5 35.5	802,601 791,560 783,805 774,836 769,915 464,087	15 000	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	86.54 86.54 86.54 86.54 86.54 86.54 86.54
36.5 37.5 38.5	443,730 419,803 171,033	15,000	0.0338 0.0000 0.0000	0.9662 1.0000 1.0000	86.54 83.62 83.62

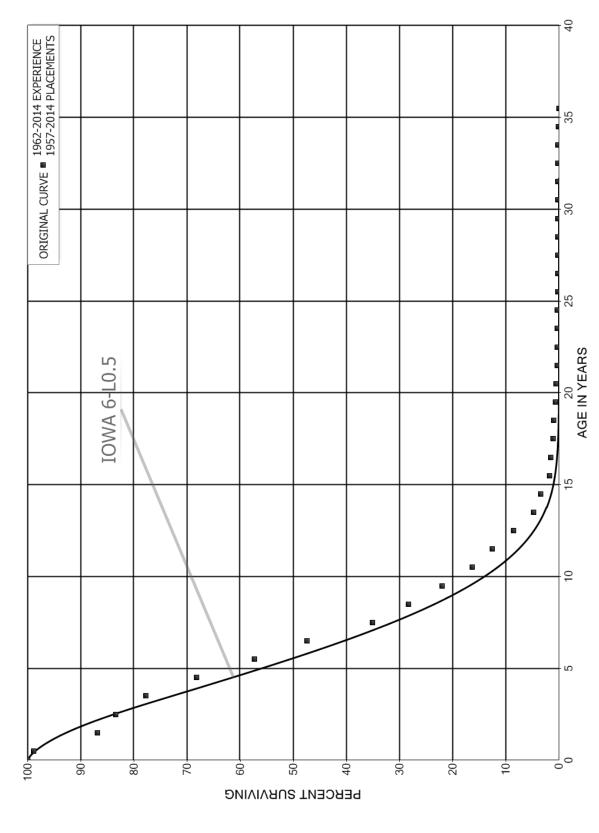
ACCOUNT 482.20 - GENERAL PLANT - STRUCTURES (MASONRY)

### ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1960-2014

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	170,852		0.0000	1.0000	83.62
40.5	170,163		0.0000	1.0000	83.62
41.5	170,163		0.0000	1.0000	83.62
42.5	170,163		0.0000	1.0000	83.62
43.5	170,163		0.0000	1.0000	83.62
44.5	156,331		0.0000	1.0000	83.62
45.5	156,331		0.0000	1.0000	83.62
46.5	156,331		0.0000	1.0000	83.62
47.5	85,734		0.0000	1.0000	83.62
48.5	85,734		0.0000	1.0000	83.62
49.5	85,734		0.0000	1.0000	83.62
50.5	85,734		0.0000	1.0000	83.62
51.5	85,734		0.0000	1.0000	83.62
52.5	85,734		0.0000	1.0000	83.62
53.5	85,734		0.0000	1.0000	83.62
54.5					83.62

FORTISBC ENERGY INC. ACCOUNT 484.00 - GENERAL PLANT - VEHICLES ORIGINAL AND SMOOTH SURVIVOR CURVES



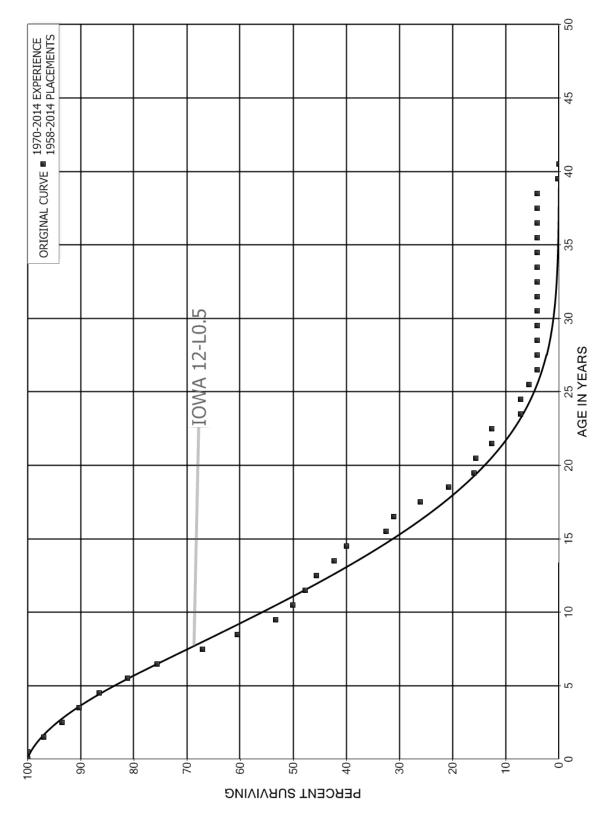
#### ACCOUNT 484.00 - GENERAL PLANT - VEHICLES

### ORIGINAL LIFE TABLE

PLACEMENT BAND 1957-2014

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5 8.5	30,572,991 28,312,508 23,554,439 21,826,858 19,378,523 15,788,704 12,394,003 9,481,864 6,754,665 4,617,757	339,619 3,452,073 930,789 1,480,989 2,397,699 2,505,126 2,155,080 2,461,152 1,303,598 1,034,784	0.0111 0.1219 0.0395 0.0679 0.1237 0.1587 0.1739 0.2596 0.1930 0.2241	0.9889 0.8781 0.9605 0.9321 0.8763 0.8413 0.8261 0.7404 0.8070 0.7759	100.00 98.89 86.83 83.40 77.74 68.12 57.31 47.35 35.06 28.29
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	3,234,264 2,268,366 1,563,227 869,479 479,246 332,642 172,020 144,684 108,141 97,552	831,886 521,792 508,987 383,570 139,605 160,622 27,336 36,543 10,589 41,165	0.2572 0.2300 0.3256 0.4411 0.2913 0.4829 0.1589 0.2526 0.0979 0.4220	0.7428 0.7700 0.6744 0.5589 0.7087 0.5171 0.8411 0.7474 0.9021 0.5780	21.9516.3112.568.474.733.351.731.461.090.98
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	56,387 45,467 26,215 24,961 24,594 20,873 20,873 20,873 20,873 20,873	10,920 19,252 1,254 367 3,721 384	0.1937 0.4234 0.0478 0.0147 0.0000 0.1513 0.0000 0.0000 0.0184 0.0000	0.8063 0.5766 0.9522 0.9853 1.0000 0.8487 1.0000 1.0000 0.9816 1.0000	$\begin{array}{c} 0.57 \\ 0.46 \\ 0.26 \\ 0.25 \\ 0.25 \\ 0.21 \\ 0.21 \\ 0.21 \\ 0.21 \\ 0.21 \end{array}$
29.5 30.5 31.5 32.5 33.5 34.5 35.5	20,489 20,489 17,048 17,048 16,663 8,840	3,441 385 7,823 8,840	0.0000 0.1679 0.0000 0.0226 0.4695 1.0000	1.0000 0.8321 1.0000 0.9774 0.5305	0.21 0.21 0.17 0.17 0.17 0.09

FORTISBC ENERGY INC. ACCOUNT 485.10 - GENERAL PLANT - HEAVY WORK EQUIPMENT ORIGINAL AND SMOOTH SURVIVOR CURVES



🎽 Gannett Fleming

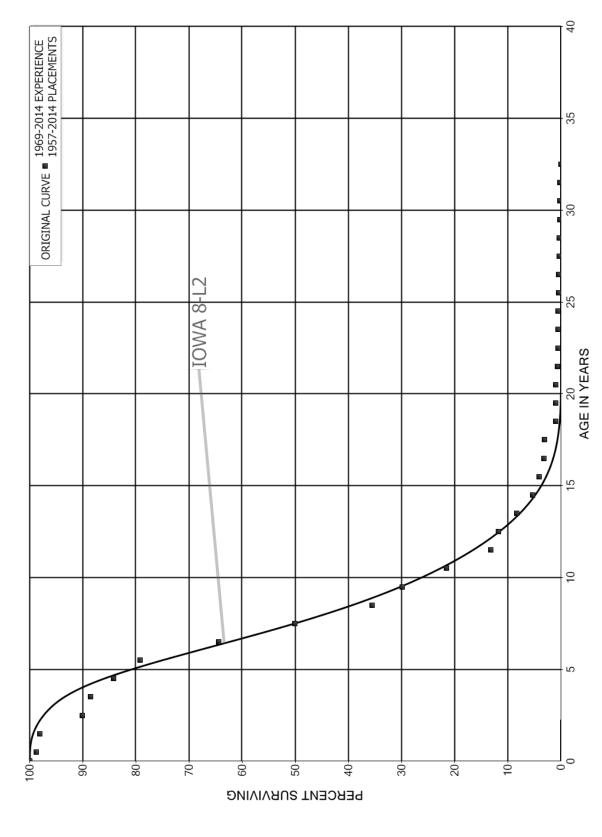
ACCOUNT 485.10 - GENERAL PLANT - HEAVY WORK EQUIPMENT

### ORIGINAL LIFE TABLE

PLACEMENT BAND 1958-2014

AGE AT BEGIN OF INTERVAL	EXPOSURES AT BEGINNING OF AGE INTERVAL	RETIREMENTS DURING AGE INTERVAL	RETMT RATIO	SURV RATIO	PCT SURV BEGIN OF INTERVAL
0.0 0.5 1.5 2.5 3.5 4.5 5.5 6.5 7.5 8.5	2,141,576 2,196,259 2,125,691 1,798,357 1,654,721 1,504,504 1,411,667 1,283,120 1,125,555 974,863	325 67,465 74,412 61,430 70,598 92,838 95,878 146,019 109,889 116,540	0.0002 0.0307 0.0350 0.0342 0.0427 0.0617 0.0679 0.1138 0.0976 0.1195	0.9998 0.9693 0.9650 0.9658 0.9573 0.9383 0.9321 0.8862 0.9024 0.8805	100.00 99.98 96.91 93.52 90.33 86.47 81.14 75.63 67.02 60.48
9.5 10.5 11.5 12.5 13.5 14.5 15.5 16.5 17.5 18.5	824,375 786,591 686,395 632,340 570,227 526,373 411,448 340,373 253,457 180,989	49,894 36,511 30,434 45,607 30,871 98,676 18,288 54,188 51,939 41,845	0.0605 0.0464 0.0443 0.0721 0.0541 0.1875 0.0444 0.1592 0.2049 0.2312	0.9395 0.9536 0.9557 0.9279 0.9459 0.8125 0.9556 0.8408 0.7951 0.7688	53.25 50.02 47.70 45.59 42.30 40.01 32.51 31.06 26.12 20.77
19.5 20.5 21.5 22.5 23.5 24.5 25.5 26.5 27.5 28.5	119,901 117,408 45,161 38,761 22,055 22,055 17,402 12,602 12,602 12,602	2,493 22,597 16,706 4,653 4,800	0.0208 0.1925 0.0000 0.4310 0.0000 0.2110 0.2758 0.0000 0.0000 0.0000	0.9792 0.8075 1.0000 0.5690 1.0000 0.7890 0.7242 1.0000 1.0000 1.0000	15.9715.6312.6212.627.187.185.674.104.104.10
29.5 30.5 31.5 32.5 33.5 34.5 35.5 36.5 37.5 38.5 39.5	12,602 12,602 12,602 12,602 12,602 12,602 12,602 12,602 12,602 12,602 12,602	12,109 493	0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.9609 1.0000	1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 0.0391	$\begin{array}{c} 4.10\\ 4.10\\ 4.10\\ 4.10\\ 4.10\\ 4.10\\ 4.10\\ 4.10\\ 4.10\\ 4.10\\ 4.10\\ 4.10\\ 0.16\end{array}$
40.5	473	423	T.0000		0.10

FORTISBC ENERGY INC. ACCOUNT 485.20 - GENERAL PLANT - HEAVY MOBILE EQUIPMENT ORIGINAL AND SMOOTH SURVIVOR CURVES



🎽 Gannett Fleming

ACCOUNT 485.20 - GENERAL PLANT - HEAVY MOBILE EQUIPMENT

## ORIGINAL LIFE TABLE

PLACEMENT BAND 1957-2014

EXPERIENCE BAND 1969-2014

AGE AT BEGIN OF	EXPOSURES AT BEGINNING OF	RETIREMENTS DURING AGE	RETMT	SURV	PCT SURV BEGIN OF
INTERVAL	AGE INTERVAL	INTERVAL	RATIO	RATIO	INTERVAL
0.0	7,389,226	95,257	0.0129	0.9871	100.00
0.5	5,593,961	33,718	0.0060	0.9940	98.71
1.5	5,470,018	450,545	0.0824	0.9176	98.12
2.5	4,809,154	84,272	0.0175	0.9825	90.03
3.5	4,495,975	220,140	0.0490	0.9510	88.46
4.5	3,638,981	214,821	0.0590	0.9410	84.13
5.5	2,958,246	551,801	0.1865	0.8135	79.16
6.5	2,234,403	498,677	0.2232	0.7768	64.39
7.5	1,599,333	464,735	0.2906	0.7094	50.02
8.5	1,069,932	170,918	0.1597	0.8403	35.49
9.5	811,287	225,652	0.2781	0.7219	29.82
10.5	423,848	164,262	0.3875	0.6125	21.52
11.5	228,136	24,538	0.1076	0.8924	13.18
12.5	203,598	60,683	0.2981	0.7019	11.76
13.5	113,451	41,190	0.3631	0.6369	8.26
14.5	72,261	16,144	0.2234	0.7766	5.26
15.5	56,117	11,951	0.2130	0.7870	4.08
16.5	44,166	1,419	0.0321	0.9679	3.21
17.5	42,747	29,983	0.7014	0.2986	3.11
18.5	12,764		0.0000	1.0000	0.93
19.5	12,764	1	0.0001	0.9999	0.93
20.5	12,763	4,280	0.3353	0.6647	0.93
21.5	8,483	1,812	0.2136	0.7864	0.62
22.5	6,671		0.0000	1.0000	0.49
23.5	6,671	323	0.0484	0.9516	0.49
24.5	6,348	1,079	0.1700	0.8300	0.46
25.5	5,269	74	0.0140	0.9860	0.38
26.5	5,195	1,509	0.2905	0.7095	0.38
27.5	3,686		0.0000	1.0000	0.27
28.5	3,686	729	0.1978	0.8022	0.27
29.5	2,957		0.0000	1.0000	0.22
30.5	2,957		0.0000	1.0000	0.22
31.5	2,957	2,957	1.0000		0.22
32.5					

# PART VI. NET SALVAGE STATISTICS



## ACCOUNT 432.00 - MANUFACTURING - STRUCTURES

	REGULAR	COST OF REMOVAL	J	REUSE	ALVAGE FINAL	NET SALVAGE
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT PCT	AMOUNT PCT	AMOUNT PCT
2004		13,473				13,473-
2005		583				583-
2006	14,056		0	0	0	0
2007						
2008						
2009						
2010		86,809				86,809-
2011		86,320-				86,320
2012						
2013	c 075					<u>,</u>
2014	6,075		0	0	0	0
TOTAL	20,130	14,544	72	0	0	14,544- 72-
THREE-Y	EAR MOVING AVE	RAGES				
04-06	4,685	4,685	100	0	0	4,685-100-
05-07	4,685	194	4	0	0	194- 4-
06-08	4,685		0	0	0	0
07-09						
08-10		28,936				28,936-
09-11		163				163-
10-12		163				163-
11-13		28,773-				28,773
12-14	2,025		0	0	0	0
FIVE-YE	LAR AVERAGE					
10-14	1,215	98	8	0	0	98- 8-

## ACCOUNT 433.00 - MANUFACTURING - EQUIPMENT

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCI	GROSS REUSE AMOUNT PC	SALVAGE FINAL T AMOUNT F	NET SALVAGE PCT AMOUNT PCT
2010		50,733			50,733-
2011		50,478-			50,478
2012					
2013					
2014					
TOTAL		255			255-
THREE-Y	YEAR MOVING AVE	RAGES			
10-12		85			85-
		16,826-			16,826
11-13		10,020-			10,020
12-14					
FIVE-YI	EAR AVERAGE				
10-14		51			51-

## ACCOUNT 434.00 - MANUFACTURING - HOLDERS

	REGULAR	COST OF REMOVAL		GROSS SA REUSE	ALVAGE FINAL	NET SALVAGE
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT PCT	AMOUNT PCT	AMOUNT PCT
2010		82,642				82,642-
2011		82,173-				82,173
2012						
2013						
2014	1,000		0	0	0	0
TOTAL	1,000	469	47	0	0	469- 47-
THREE-	YEAR MOVING AVE	RAGES				
10-12		156				156-
11-13		27,391-				27,391
12-14	333		0	0	0	0
	EAR AVERAGE					
FIVE-1	LAK AVERAGE					
10-14	200	94	47	0	0	94- 47-

# ACCOUNT 436.00 - MANUFACTURING - COMPRESSOR EQUIPMENT

	REGULAR	COST OF REMOVAL	L	G R O S REUSE		A L V A G FINAI	L	NET SALVAG	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2010		1,097						1,097	_
2011		1,086-						1,086	
2012									
2013									
2014									
TOTAL		11						11	-
THREE-Y	YEAR MOVING AVE	RAGES							
10-12		4						4	-
11-13		362-						362	
12-14									
FIVE-YI	EAR AVERAGE								
10-14		2						2	-

## ACCOUNT 437.00 - MANUFACTURING - MEASURING AND REGULATING EQUIPMENT

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT PCT	GROSS S REUSE AMOUNT PCT	ALVAGE FINAL AMOUNT PCT	NET SALVAGE AMOUNT PCT
2001	27,548	0	0	0	0
2002					
2003					
2004					
2005					
2006					
2007					
2008					
2009					
2010		11,574			11,574-
2011		11,476-			11,476
2012					
2013	4 010	4 002 100	0	0	4 002 100
2014	4,012	4,903 122	0	0	4,903-122-
TOTAL	31,559	5,000 16	0	0	5,000- 16-
THREE-Y	YEAR MOVING AVEF	RAGES			
01-03	9,183	0	0	0	0
02-04					
03-05					
04-06					
05-07					
06-08					
07-09					
08-10		3,858			3,858-
09-11		32			32-
10-12		32			32-
11-13		3,825-			3,825
12-14	1,337	1,634 122	0	0	1,634-122-
FIVE-YE	EAR AVERAGE				
10-14	802	1,000 125	0	0	1,000-125-
TO TI	002	1,000 123	0	0	1,000 123

## ACCOUNT 442.00 - LNG - STRUCTURES

### SUMMARY OF BOOK SALVAGE

REGULAR RETIREMENTS	REMOVAI		REUSE	FINAL	NET SALVAGE AMOUNT PCT
1 050					
					0
					0
6,000	2,000	33	0	0	2,000- 33-
25,417	2,000	8	0	0	2,000- 8-
YEAR MOVING AVER	RAGES				
8,472	667	8	0	0	667- 8-
7,819	667	9	0	0	667- 9-
2,000	667	33	0	0	667- 33-
	RETIREMENTS 1,959 17,458 6,000 25,417 YEAR MOVING AVEF 8,472 7,819	REGULAR       REMOVAL         RETIREMENTS       AMOUNT         1,959       17,458         6,000       2,000         25,417       2,000         YEAR MOVING AVERAGES       8,472       667         7,819       667	RETIREMENTS       AMOUNT       PCT         1,959       0         17,458       0         6,000       2,000       33         25,417       2,000       8         YEAR MOVING AVERAGES       8,472       667       8         8,472       667       8       7,819       667       9	REGULAR         REMOVAL         REUSE           RETIREMENTS         AMOUNT         PCT         AMOUNT         PCT           1,959         0         0         0         0           17,458         0         0         0         0           6,000         2,000         33         0         0           25,417         2,000         8         0         0           YEAR MOVING AVERAGES         8,472         667         8         0           8,472         667         9         0         0	REGULAR         REMOVAL         REUSE         FINAL           RETIREMENTS         AMOUNT         PCT         AMOUNT         PCT         AMOUNT         PCT           1,959         0         0         0         0         0         0         0           17,458         0         0         0         0         0         0         0           6,000         2,000         33         0         0         0         0           25,417         2,000         8         0         0         0         0           YEAR MOVING AVERAGES         8,472         667         8         0         0         0           8,472         667         8         0         0         0         0         0

### FIVE-YEAR AVERAGE

10-14

# ACCOUNT 443.00 - LNG - EQUIPMENT

#### SUMMARY OF BOOK SALVAGE

	REGULAR	COST OF REMOVAL		G R O S REUSE	SSS	A L V A G FINAL		NET SALVAGE	
YEAR	RETIREMENTS		PCT	AMOUNT	PCT	AMOUNT	PCT		PCT
2002		3,000						3,000-	
2003	12,708		0		0		0		0
2004									
2005									
2006	44,685		0		0		0		0
2007	80,648		0		0		0		0
2008	1,734		0		0		0		0
2009									
2010									
2011									
2012									
2013									
2014									
TOTAL	139,775	3,000	2		0		0	3,000-	2-
THREE-Y	YEAR MOVING AVE	RAGES							
02-04	4,236	1,000	24		0		0	1,000-	24-
03-05	4,236		0		0		0		0
04-06	14,895		0		0		0		0
05-07	41,778		0		0		0		0
06-08	42,356		0		0		0		0
07-09	27,461		0		0		0		0
08-10	578		0		0		0		0
09-11									
10-12									
11-13									
12-14									

FIVE-YEAR AVERAGE 10-14



## ACCOUNT 449.00 - LNG - OTHER EQUIPMENT

	REGULAR	COST OF REMOVAL		G R O REUSE		A L V A G FINAL	E	NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT		PCT
2001	30,000		0		0		0		0
2002									
2003	96,616		0		0		0		0
2004									
2005	214,983		0		0		0		0
2006	111,600		0		0		0		0
2007	196,414		0		0		0		0
2008	1,297,755	283,859	22		0	79,166	6	204,693-	16-
2009	82,431		0		0		0		0
2010		552						552-	
2011		8,558						8,558-	
2012									
2013		1,802						1,802-	
2014									
TOTAL	2,029,799	294,771	15		0	79,166	4	215,605-	11-
THREE-Y	ZEAR MOVING AVE	RAGES							
01-03	42,205		0		0		0		0
02-04	32,205		0		0		0		0
03-05	103,866		0		0		0		0
04-06	108,861		0		0		0		0
05-07	174,332		0		0		0		0
06-08	535,256	94,620	18		0	26,389	5	68,231-	13-
07-09	525,534	94,620	18		0	26,389	5	68,231-	
08-10	460,062	94,804	21		0	26,389	б	68,415-	15-
09-11	27,477	3,037	11		0		0	3,037-	11-
10-12		3,037						3,037-	
11-13		3,453						3,453-	
12-14		601						601-	
	CAR AVERAGE								
10-14		2,182						2,182-	



## ACCOUNT 462.00 - TRANSMISSION - COMPRESSOR STRUCTURES

	REGULAR	COST OF REMOVAI		G R O S REUSE	SSS.	ALVAG FINAL	—	NET SALVAGE	2
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2008	13,400		0		0		0		0
2009	40,138		0		0		0		0
2010									
2011		173						173-	
2012	349,500	8,368	2		0		0	8,368-	2-
2013		1,391						1,391-	
2014									
TOTAL	403,038	9,932	2		0		0	9,932-	2-
THREE-Y	YEAR MOVING AVE	RAGES							
08-10	17,846		0		0		0		0
09-11	13,379	58	0		0		0	58-	0
10-12	116,500	2,847	2		0		0	2,847-	2-
11-13	116,500	3,311	3		0		0	3,311-	3 –
12-14	116,500	3,253	3		0		0	3,253-	3 –
FIVE-YE	CAR AVERAGE								
10-14	69,900	1,986	3		0		0	1,986-	3-

## ACCOUNT 463.00 - TRANSMISSION - MEASURING AND REGULATING STRUCTURES

	REGULAR	COST OF REMOVAI		G R O S REUSE	SS S	A L V A G FINAL		NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT		СТ
2001	26,672		0		0		0		0
2002									
2003	75,177		0		0		0		0
2004	86,997	15,037	17		0		0	15,037-	17-
2005									
2006	50,237		0		0		0		0
2007	40,820		0		0		0		0
2008									
2009	4,405		0		0		0		0
2010	219,500	181,034	82		0		0		82-
2011	10,000	4,137-			0		0	•	41
2012	7,325	7,669	105		0		0	7,669-1	05-
2013	4,641		0		0		0		0
2014									
TOTAL	525,774	199,602	38		0		0	199,602-	38-
THREE-Y	YEAR MOVING AVE	RAGES							
01-03	33,950		0		0		0		0
02-04	54,058	5,012	9		0		0	5,012-	9-
03-05	54,058	5,012	9		0		0	5,012-	- 9
04-06	45,745	5,012	11		0		0		11-
05-07	30,352		0		0		0		0
06-08	30,352		0		0		0		0
07-09	15,075		0		0		0		0
08-10	74,635	60,345	81		0		0	60,345-	81-
09-11	77,968	58,966	76		0		0	58,966-	76-
10-12	78,942	61,522	78		0		0	61,522-	78-
11-13	7,322	1,177	16		0		0	1,177-	16-
12-14	3,989	2,556	64		0		0	2,556-	64-
F. T A F. – A F	EAR AVERAGE								
10-14	48,293	36,913	76		0		0	36,913-	76-

## ACCOUNT 464.00 - TRANSMISSION - OTHER STRUCTURES

	REGULAR	COST OF REMOVAL	REUSE	S A L V A G E FINAL	NET SALVAGE
YEAR	RETIREMENTS	AMOUNT PCT	AMOUNT PCT	AMOUNT PCT	AMOUNT PCT
2001	70	0	0	0	0
2002					
2003		15,490			15,490-
2004					
2005					
2006					
2007	6,746	0	0	0	0
2008					
2009	11,730	0	0	0	0
2010					
2011					
2012					
2013		14,534			14,534-
2014	643	0	0	0	0
TOTAL	19,190	30,025 156	0	0	30,025-156-
THREE-Y	EAR MOVING AVE	RAGES			
01-03	23	5,163	0	0	5,163-
02-04		5,163			5,163-
03-05		5,163			5,163-
04-06					
05-07	2,249	0	0	0	0
06-08	2,249	0	0	0	0
07-09	6,159	0	0	0	0
08-10	3,910	0	0	0	0
09-11	3,910	0	0	0	0
10-12					
11-13		4,845			4,845-
12-14	214	4,845	0	0	4,845-
FIVE-YE	LAR AVERAGE				
10-14	129	2,907	0	0	2,907-

## ACCOUNT 465.00 - TRANSMSSION - PIPELINE

	REGULAR	COST OF REMOVAI		GROSS SA REUSE	LVAGE FINAL	NET SALVAGE
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT PCT	AMOUNT PCT	AMOUNT PCT
2000	719		0	0	0	0
2001	1,219,906		0	0	0	0
2002	657,746	5,259	1	0	0	5,259- 1-
2003	1,850,075		0	0	0	0
2004	682,967	80,507	12	0	0	80,507- 12-
2005	749,466	36,935	5	0	0	36,935- 5-
2006	576,912	7,635	1	0	0	7,635- 1-
2007	124,402		0	0	0	0
2008	67,495	47,528	70	0	0	47,528- 70-
2009	703,198	752,187	107	0	0	752,187-107-
2010	321,324	171,010	53	0	0	171,010- 53-
2011	861,075	845,270	98	0	0	845,270- 98-
2012	3,131,294	154,110	5	0	0	154,110- 5-
2013	488,034	129,806	27	0	0	129,806- 27-
2014	4,026,900	1,486,283	37	0	0	1,486,283- 37-
TOTAL	15,461,515	3,716,529	24	0	0	3,716,529- 24-
THREE-Y	YEAR MOVING AV	ERAGES				
00-02	626,124	1,753	0	0	0	1,753- 0
01-03	1,242,576	1,753	0	0	0	1,753- 0
02-04	1,063,596	28,589	3	0	0	28,589- 3-
03-05	1,094,169	39,147	4	0	0	39,147- 4-
04-06	669,782	41,692	6	0	0	41,692- 6-
05-07	483,593	14,857	3	0	0	14,857- 3-
06-08	256,270	18,388	7	0	0	18,388- 7-
07-09	298,365	266,572	89	0	0	266,572- 89-
08-10	364,006	323,575	89	0	0	323,575- 89-
09-11	628,532	589,489	94	0	0	589,489- 94-
10-12	1,437,898	390,130	27	0	0	390,130- 27-
11-13	1,493,468	376,395	25	0	0	376,395- 25-
12-14	2,548,743	590,066	23	0	0	590,066- 23-
ᢑ᠇ᠭᢑ᠆ᢦᡆ	EAR AVERAGE					
10-14	1,765,725	557,296	32	0	0	557,296- 32-

## ACCOUNT 466.00 - TRANSMSSION - COMPRESSOR EQUIPMENT

	REGULAR	COST OF REMOVAI		G R O REUSE		ALVAG FINAI		NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2001	10,826		0		0		0		0
2002									
2003	57,131	12,923	23		0		0	12,923-	23-
2004		2,000						2,000-	
2005	67,044		0		0		0		0
2006									
2007									
2008	62,641	3,523	6		0		0	3,523-	6-
2009		19,228						19,228-	
2010	449,859	2,280	1		0		0	2,280-	1-
2011	714,672	19,452	3		0		0	19,452-	3–
2012	94,949	5,542	6		0		0	5,542-	6–
2013	1,329,229	1,566	0		0		0	1,566-	0
2014	160,000		0		0		0		0
TOTAL	2,946,351	66,514	2		0		0	66,514-	2-
THREE-Y	YEAR MOVING AVE	RAGES							
01-03	22,652	4,308	19		0		0	4,308-	19-
02-04	19,044	4,974	26		0		0	4,974-	26-
03-05	41,392	4,974	12		0		0	4,974-	12-
04-06	22,348	667	3		0		0	667-	3-
05-07	22,348		0		0		0		0
06-08	20,880	1,174	6		0		0	1,174-	б-
07-09	20,880	7,584	36		0		0	7,584-	36-
08-10	170,833	8,344	5		0		0	8,344-	5-
09-11	388,177	13,654	4		0		0	13,654-	4-
10-12	419,827	9,091	2		0		0	9,091-	2-
11-13	712,950	8,853	1		0		0	8,853-	1-
12-14	528,059	2,369	0		0		0	2,369-	0
FIVE-YE	AR AVERAGE								
10-14	549,742	5,768	1		0		0	5,768-	1-

## ACCOUNT 467.10 - TRANSMSSION - MEASURING AND REGULATING EQUIPMENT

	REGULAR	COST OF REMOVAI		G R O REUSE		A L V A G FINAL		NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2001	251,311		0		0		0		0
2002	178,402		0		0		0		0
2003	309,532		0		0		0		0
2004	1,928,908	77,340	4		0		0	77,340-	4-
2005	139,586	9,763	7		0		0	9,763-	7-
2006	206,490	47,392	23		0		0	47,392-	23-
2007	275,309		0		0		0		0
2008	26,600	6,720	25		0		0	6,720-	25-
2009	231,628	2,015	1		0		0	2,015-	1-
2010	737,851	4,685	1		0		0	4,685-	1-
2011	127,225	1,442	1		0		0	1,442-	1-
2012	283,137	32,994	12		0		0	32,994-	12-
2013	214,307	102,828	48		0		0	102,828-	48-
2014	75,754	43,173	57		0		0	43,173-	57-
TOTAL	4,986,041	328,353	7		0		0	328,353-	7-
THREE-	YEAR MOVING AVE	RAGES							
01-03	246,415		0		0		0		0
02-04	805,614	25,780	3		0		0	25,780-	3-
03-05	792,675	29,034	4		0		0	29,034-	4-
04-06	758,328	44,831	6		0		0	44,831-	6-
05-07	207,129	19,052	9		0		0	19,052-	9 –
06-08	169,466	18,037	11		0		0	18,037-	11-
07-09	177,846	2,912	2		0		0	2,912-	2-
08-10	332,026	4,473	1		0		0	4,473-	1-
09-11	365,568	2,714	1		0		0	2,714-	1-
10-12	382,737	13,040	3		0		0	13,040-	3-
11-13	208,223	45,755	22		0		0	45,755-	22-
12-14	191,066	59,665	31		0		0	59,665-	31-
FIVE-YI	EAR AVERAGE								
10-14	287,655	37,025	13		0		0	37,025-	12_
10-14	201,000	57,025	т 2		U		U	57,025-	т 2 –

# ACCOUNT 467.20 - TRANSMSSION - TELEMETRY EQUIPMENT

	REGULAR	COST O REMOVA		GROSS SZ REUSE	A L V A G E FINAL	NET SALVAGE
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT PCT	AMOUNT PCT	AMOUNT PCT
2000	121,625		0	0	0	0
2001	1,877,759		0	0	0	0
2002						
2003	72,642		0	0	0	0
2004	47,359		0	0	0	0
2005	57,476		0	0	0	0
2006	1,337,511		0	0	0	0
2007	300		0	0	0	0
2008						
2009	7,104		0	0	0	0
2010						
2011	7,903	500	6	0	0	500- 6-
2012	5,000		0	0	0	0
2013	37,706		0	0	0	0
2014						
TOTAL	3,572,385	500	0	0	0	500- 0
THREE-Y	YEAR MOVING AVE	RAGES				
00-02	666,461		0	0	0	0
01-03	650,134		0	0	0	0
02-04	40,000		0	0	0	0
03-05	59,159		0	0	0	0
04-06	480,782		0	0	0	0
05-07	465,096		0	0	0	0
06-08	445,937		0	0	0	0
07-09	2,468		0	0	0	0
08-10	2,368		0	0	0	0
09-11	5,002	167	3	0	0	167- 3-
10-12	4,301	167	4	0	0	167- 4-
11-13	16,870	167	1	0	0	167- 1-
12-14	14,235		0	0	0	0
ᡏ᠋᠊ᠮᢉᢑ᠆ᡐ	EAR AVERAGE					
10-14	10,122	100	1	0	0	100- 1-

# ACCOUNT 468.00 - TRANSMSSION - COMMUNICATIONS EQUIPMENT

YEAR	REGULAR RETIREMENTS	COST OF REMOVAL AMOUNT		G R O S REUSE AMOUNT	S S . PCT	A L V A G I FINAL AMOUNT	e PCT	NET SALVAGE AMOUNT	PCT
2001	13,824		0		0	9,443	68	9,443	68
2002	- , -					- , -		- , -	
2003	211,562		0		0		0		0
2004									
2005									
2006	8,844		0		0		0		0
2007									
2008									
2009									
2010	33,038		0		0		0		0
2011	229,969	13,103	6		0		0	13,103-	б-
2012									
2013	225,244		0		0		0		0
2014									
TOTAL	722,481	13,103	2		0	9,443	1	3,660-	1-
THREE-Y	YEAR MOVING AVE	RAGES							
01-03	75,129		0		0	3,148	4	3,148	4
02-04	70,521		0		0	-,	0	-,	0
03-05	70,521		0		0		0		0
04-06	2,948		0		0		0		0
05-07	2,948		0		0		0		0
06-08	2,948		0		0		0		0
07-09									
08-10	11,013		0		0		0		0
09-11	87,669	4,368	5		0		0	4,368-	5-
10-12	87,669	4,368	5		0		0	4,368-	5-
11-13	151,738	4,368	3		0		0	4,368-	3-
12-14	75,081		0		0		0		0
FIVE-YF	CAR AVERAGE								
10-14	97,650	2,621	3		0		0	2,621-	3-
	2 . , 0 0 0	-,	0				÷	2,011	-

## ACCOUNT 472.00 - DISTRIBUTION - STRUCTURES

	REGULAR	COST OI REMOVAI		GROSS SA REUSE	ALVAGE FINAL	NET SALVAGE
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT PCT	AMOUNT PCT	AMOUNT PCT
2000	13,168		0	0	0	0
2001	104,190		0	0	0	0
2002	40,060		0	0	0	0
2003	78,668		0	0	0	0
2004	953		0	0	0	0
2005		3,678				3,678-
2006	50,994	4,276	8	0	0	4,276- 8-
2007	54,535		0	0	0	0
2008	80,293	26,516	33	0	0	26,516- 33-
2009	35,094	39,152	112	0	0	39,152-112-
2010	3,308	243	7	0	0	243- 7-
2011	18,154	4,133	23	0	0	4,133- 23-
2012		187				187-
2013	92,192	2,400	3	0	0	2,400- 3-
2014	66,668		0	0	0	0
TOTAL	638,277	80,584	13	0	0	80,584- 13-
THREE-	YEAR MOVING AVE	ERAGES				
00-02	52,473		0	0	0	0
01-03	74,306		0	0	0	0
02-04	39,894		0	0	0	0
03-05	26,540	1,226	5	0	0	1,226- 5-
04-06	17,316	2,652	15	0	0	2,652- 15-
05-07	35,176	2,652	8	0	0	2,652- 8-
06-08	61,941	10,264	17	0	0	10,264- 17-
07-09	56,641	21,889	39	0	0	21,889- 39-
08-10	39,565	21,970	56	0	0	21,970- 56-
09-11	18,852	14,509	77	0	0	14,509- 77-
10-12	7,154	1,521	21	0	0	1,521- 21-
11-13	36,782	2,240	6	0	0	2,240- 6-
12-14	52,953	862	2	0	0	862- 2-
FIVE-YI	EAR AVERAGE					
10-14	36,064	1,392	4	0	0	1,392- 4-



## ACCOUNT 473.00 - DISTRIBUTION - SERVICES

	REGULAR	COST OI REMOVAI		GROSS SA REUSE	ALVAGE FINAL	NET SALVAGE
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT PCT	AMOUNT PCT	AMOUNT PCT
2000	1,800,475		0	0	0	0
2001	1,098,971		0	0	0	0
2002	2,474,792	588,456	24	0	0	588,456- 24-
2003	343,211	211,987	62	0	0	211,987- 62-
2004	2,332,842	3,531,097	151	0	0	3,531,097-151-
2005	2,485,696	3,551,042	143	0	0	3,551,042-143-
2006	13,164,951	1,630,153	12	0	0	1,630,153- 12-
2007	9,140,075		0	0	0	0
2008	3,702,055	5,404,860	146	0	0	5,404,860-146-
2009	4,319,221	5,440,566	126	0	0	5,440,566-126-
2010	3,171,509	7,393,063	233	0	0	7,393,063-233-
2011	4,414,701	12,179,045	276	0	0	12,179,045-276-
2012	5,320,515	11,036,649	207	0	0	11,036,649-207-
2013	5,105,091	10,120,174	198	0	0	10,120,174-198-
2014	9,452,463	8,438,368	89	0	0	8,438,368- 89-
TOTAL	68,326,569	69,525,461	102	0	0	69,525,461-102-
THREE-Y	EAR MOVING AV	/ERAGES				
00-02	1,791,413	196,152	11	0	0	196,152- 11-
01-03	1,305,658	266,814	20	0	0	266,814- 20-
02-04	1,716,948	1,443,847	84	0	0	1,443,847- 84-
03-05	1,720,583	2,431,375	141	0	0	2,431,375-141-
04-06	5,994,497	2,904,098	48	0	0	2,904,098- 48-
05-07	8,263,574	1,727,065	21	0	0	1,727,065- 21-
06-08	8,669,027	2,345,004	27	0	0	2,345,004- 27-
07-09	5,720,450	3,615,142	63	0	0	3,615,142- 63-
08-10	3,730,928	6,079,496	163	0	0	6,079,496-163-
09-11	3,968,477	8,337,558	210	0	0	8,337,558-210-
10-12	4,302,242	10,202,919	237	0	0	10,202,919-237-
11-13	4,946,769	11,111,956	225	0	0	11,111,956-225-
12-14	6,626,023	9,865,064	149	0	0	9,865,064-149-
FTVR-VF	EAR AVERAGE					
		0 000 155	1	<u>^</u>	-	0 000 450 555
10-14	5,492,856	9,833,460	179	0	0	9,833,460-179-

## ACCOUNT 474.00 - DISTRIBUTION - METER/REGULATOR INSTALLATIONS

	REGULAR	COST OI REMOVAI		GROSS SA REUSE	L V A G I FINAL	E	NET SALVAGE
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT PCT	AMOUNT	PCT	AMOUNT PCT
2000	95,683		0	0		0	0
2001	2,428,481		0	0		0	0
2002	6,270,257	53,023	1	0		0	53,023- 1-
2003	3,267,469	14,989	0	0		0	14,989- 0
2004	4,930,968	247,468	5	0		0	247,468- 5-
2005	6,813,560	217,139	3	0		0	217,139- 3-
2006	8,240,670	211,256	3	0		0	211,256- 3-
2007	5,860,519		0	0		0	0
2008	7,010,448	900,663	13	0		0	900,663- 13-
2009	7,349,546	1,320,731	18	0	12,236	0	1,308,495- 18-
2010	17,660,406	2,490,045	14	0		0	2,490,045- 14-
2011	68,245	2,717,111		0		0	2,717,111-
2012	1,078,773	2,994,079	278	0		0	2,994,079-278-
2013	851,997	3,478,502	408	0		0	3,478,502-408-
2014	899,228	3,679,458	409	0		0	3,679,458-409-
TOTAL	72,826,251	18,324,463	25	0	12,236	0	18,312,227- 25-
THREE-Y	EAR MOVING AV	VERAGES					
00-02	2,931,474	17,674	1	0		0	17,674- 1-
01-03	3,988,736	22,671	1	0		0	22,671- 1-
02-04	4,822,898	105,160	2	0		0	105,160- 2-
03-05	5,003,999	159,865	3	0		0	159,865- 3-
04-06	6,661,733	225,288	3	0		0	225,288- 3-
05-07	6,971,583	142,798	2	0		0	142,798- 2-
06-08	7,037,212	370,640	5	0		0	370,640- 5-
07-09	6,740,171	740,464	11	0	4,079	0	736,386- 11-
08-10	10,673,467	1,570,479	15	0	4,079	0	1,566,401- 15-
09-11	8,359,399	2,175,962	26	0	4,079	0	2,171,884- 26-
10-12	6,269,142	2,733,745	44	0		0	2,733,745- 44-
11-13	666,339	3,063,231	460	0		0	3,063,231-460-
12-14	943,333	3,384,013	359	0		0	3,384,013-359-
Ъ.Т Λ F: − X F	AR AVERAGE						
10-14	4,111,730	3,071,839	75	0		0	3,071,839- 75-



## ACCOUNT 475.00 - DISTRIBUTION - SYSTEMS - MAINS

	REGULAR	COST OF REMOVAI		G R O S S REUSE	SALV	V A G E FINAL	]	NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT		CT AMO		PCT		PCT
2000	4,430,340		0		0		0		0
2001	485,250		0		0		0		0
2002	1,000,236	63,210	6		0		0	63,210-	б-
2003	96,226	23,024	24		0		0	23,024-	24-
2004	424,865	364,611	86		0		0	364,611-	86-
2005	816,133	532,849	65		0		0	532,849-	65-
2006	2,701,842	139,634	5		0		0	139,634-	5-
2007	2,163,435		0		0		0		0
2008	2,444,452	474,834	19		0		0	474,834-	19-
2009	3,350,956	592,027	18		0		0	592,027-	18-
2010	1,212,065	531,511	44		0		0	531,511-	44-
2011	1,414,525	766,407	54		0		0	766,407-	
2012	1,563,776	1,311,699	84		0		0	1,311,699-	84-
2013	1,683,240	620,950	37		0		0	620,950-	37-
2014	4,103,990	1,357,998	33		0		0	1,357,998-	33-
TOTAL	27,891,330	6,778,753	24		0		0	6,778,753-	24-
THREE-	YEAR MOVING AV	ERAGES							
00-02	1,971,942	21,070	1		0		0	21,070-	1-
01-03	527,237	28,745	5		0		0	28,745-	5-
02-04	507,109	150,282	30		0		0	150,282-	30-
03-05	445,742	306,828	69		0		0	306,828-	69-
04-06	1,314,280	345,698	26		0		0	345,698-	26-
05-07	1,893,803	224,161	12		0		0	224,161-	12-
06-08	2,436,576	204,823	8		0		0	204,823-	8-
07-09	2,652,948	355,620	13		0		0	355,620-	13-
08-10	2,335,824	532,791	23		0		0	532,791-	23-
09-11	1,992,515	629,981	32		0		0	629,981-	32-
10-12	1,396,788	869,872	62		0		0	869,872-	62-
11-13	1,553,847	899,685	58		0		0	899,685-	58-
12-14	2,450,335	1,096,882	45		0		0	1,096,882-	45-
стог-ті	EAR AVERAGE								
10-14	1,995,519	917,713	46		0		0	917,713-	46-

## ACCOUNT 477.10 - DISTRIBUTION - MEASURING AND REGULATING ADDITIONS

	REGULAR	COST OI REMOVAI		GROSS SA REUSE	L V A G E FINAL	NET SALVAGE
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT PCT	AMOUNT PCT	AMOUNT PCT
2000	346,633		0	0	0	0
2001	2,262,537		0	0	0	0
2002	799,436	43,803	5	0	0	43,803- 5-
2003	977,723	45,686	5	0	0	45,686- 5-
2004	63,872	158,470	248	0	0	158,470-248-
2005	503,761	40,275	8	0	0	40,275- 8-
2006	986,927	34,302	3	0	0	34,302- 3-
2007	563,389		0	0	0	0
2008	882,542	356,214	40	0	0	356,214- 40-
2009	521,037	104,228	20	0	0	104,228- 20-
2010	277,280	23,126	8	0	0	23,126- 8-
2011	392,040	42,042	11	0	0	42,042- 11-
2012	1,101,785	59,878	5	0	0	59,878- 5-
2013	422,122	50,946	12	0	0	50,946- 12-
2014	483,083	21,385	4	0	0	21,385- 4-
TOTAL	10,584,166	980,355	9	0	0	980,355- 9-
THREE-	YEAR MOVING AV	ERAGES				
00-02	1,136,202	14,601	1	0	0	14,601- 1-
01-03	1,346,565	29,830	2	0	0	29,830- 2-
02-04	613,677	82,653	13	0	0	82,653- 13-
03-05	515,119	81,477	16	0	0	81,477- 16-
04-06	518,187	77,682	15	0	0	77,682- 15-
05-07	684,692	24,859	4	0	0	24,859- 4-
06-08	810,953	130,172	16	0	0	130,172- 16-
07-09	655,656	153,480	23	0	0	153,480- 23-
08-10	560,286	161,189	29	0	0	161,189- 29-
09-11	396,786	56,465	14	0	0	56,465- 14-
10-12	590,368	41,682	7	0	0	41,682- 7-
11-13	638,649	50,955	8	0	0	50,955- 8-
12-14	668,997	44,070	7	0	0	44,070- 7-
FIVE-Y	EAR AVERAGE					
10-14	535,262	39,475	7	0	0	39,475- 7-

## ACCOUNT 477.20 - DISTRIBUTION - TELEMETRY

	REGULAR	COST OI REMOVAI		G R O S S REUSE	SALV	/ A G E FINAL	1	NET SALVAGE	1
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT PO	CT AMO	DUNT	PCT	AMOUNT	PCT
2000	17,499		0		0		0		0
2001	80,431		0		0		0		0
2002	251,623		0		0		0		0
2003	68,932		0		0		0		0
2004		227						227-	
2005									
2006	1,008	2,382	236		0		0	2,382-	236-
2007	32,413		0		0		0		0
2008	5,000		0		0		0		0
2009	54,840		0		0		0		0
2010	3,222		0		0		0		0
2011	149,241	831	1		0		0	831-	1-
2012	85,025	15	0		0		0	15-	0
2013	9,941	11,533	116		0		0	11,533-	116-
2014	108,594		0		0		0		0
TOTAL	867,771	14,987	2		0		0	14,987-	2-
THREE-	YEAR MOVING AVI	ERAGES							
00-02	116,518		0		0		0		0
01-03	133,662		0		0		0		0
02-04	106,852	76	0		0		0	76-	0
03-05	22,977	76	0		0		0	76-	0
04-06	336	870	259		0		0	870-	259-
05-07	11,141	794	7		0		0	794-	7-
06-08	12,807	794	6		0		0	794-	6-
07-09	30,751		0		0		0		0
08-10	21,021		0		0		0		0
09-11	69,101	277	0		0		0	277-	0
10-12	79,163	282	0		0		0	282-	0
11-13	81,403	4,126	5		0		0	4,126-	5-
12-14	67,853	3,849	6		0		0	3,849-	б-
FIVE-Y	EAR AVERAGE								
10-14	71,205	2,476	3		0		0	2,476-	3-

## ACCOUNT 478.10 - DISTRIBUTION - METERS

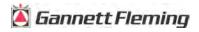
	REGULAR	COST OF REMOVAL		GROSS S REUSE	ALVAGI FINAL	Ξ	NET SALVAGE	
YEAR	RETIREMENTS		PCT	AMOUNT PCT	AMOUNT	PCT		PCT
2000	418,424		0	0		0		0
2001	2,284,414		0	0		0		0
2002	3,531,074		0	0		0		0
2003	2,018,918		0	0		0		0
2004	2,729,515		0	0	78,811	3	78,811	3
2005	4,879,690		0	0		0		0
2006	3,916,552		0	0		0		0
2007	3,022,852		0	0		0		0
2008	4,782,171	69,432-	1-	0	284,774	6	354,206	7
2009	4,143,930	71,292	2	0	66,136	2	5,156-	0
2010	6,433,600	147,607	2	0	136,306	2	11,301-	0
2011	4,759,675	135,914	3	0	241,924	5	106,011	2
2012	8,509,300	117,023	1	0	172,166	2	55,143	1
2013	8,250,035	211,511	3	0	360,326	4	148,815	2
2014	6,633,512	153,078	2	0	329,250	5	176,172	3
TOTAL	66,313,661	766,993	1	0	1,669,693	3	902,700	1
THREE-	YEAR MOVING AVE	ERAGES						
00-02	2,077,971		0	0		0		0
01-03	2,611,469		0	0		0		0
02-04	2,759,836		0	0	26,270	1	26,270	1
03-05	3,209,374		0	0	26,270	1	26,270	1
04-06	3,841,919		0	0	26,270	1	26,270	1
05-07	3,939,698		0	0		0		0
06-08	3,907,192	23,144-	1-	0	94,925	2	118,069	3
07-09	3,982,984	620	0	0	116,970	3	116,350	3
08-10	5,119,900	49,822	1	0	162,405	3	112,583	2
09-11	5,112,402	118,271	2	0	148,122	3	29,851	1
10-12	6,567,525	133,514	2	0	183,465	3	49,951	1
11-13	7,173,003	154,816	2	0	258,139	4	103,323	1
12-14	7,797,615	160,537	2	0	287,247	4	126,710	2
FIVE-Y	EAR AVERAGE							
10-14	6,917,224	153,027	2	0	247,994	4	94,968	1

# ACCOUNT 482.10 - GENERAL PLANT - STRUCTURES (FRAME)

	REGULAR	COST OI REMOVAI		G R O REUSE		ALVAG FINAL		NET SALVAGE	
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2000	1,255,720		0		0		0		0
2001	5,462,958		0		0		0		0
2002	143,025	613	0		0		0	613-	0
2003	86,535		0		0		0		0
2004						800		800	
2005	1,200		0		0		0		0
2006	28,711		0		0		0		0
2007	6,655		0		0		0		0
2008	258,882	11,410	4		0		0	11,410-	4-
2009	1,909	450	24		0		0	450-	24-
2010	4,888		0		0		0		0
2011	154,534		0		0		0		0
2012									
2013									
2014									
TOTAL	7,405,016	12,474	0		0	800	0	11,674-	0
THREE-	YEAR MOVING AVE	RAGES							
00-02	2,287,234	204	0		0		0	204-	0
01-03	1,897,506	204	0		0		0	204-	0
02-04	76,520	204	0		0	267	0	62	0
03-05	29,245		0		0	267	1	267	1
04-06	9,970		0		0	267	3	267	3
05-07	12,189		0		0		0		0
06-08	98,083	3,803	4		0		0	3,803-	4-
07-09	89,149	3,953	4		0		0	3,953-	4-
08-10	88,560	3,953	4		0		0	3,953-	4-
09-11	53,777	150	0		0		0	150-	0
10-12	53,140		0		0		0		0
11-13	51,511		0		0		0		0
12-14									
ᢑ᠊᠇ᢉᢧᢑ᠆ᢦ᠈	EAR AVERAGE								
10-14	31,884		0		0		0		0
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## ACCOUNT 482.20 - GENERAL PLANT - STRUCTURES (MASONRY)

	REGULAR	COST OI REMOVAI		G R O REUSE		A L V A G FINAL		NET SALVAGE	7
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2000	876,365		0		0		0		0
2001	213,291		0		0		0		0
2002	5,545		0		0		0		0
2003	60,624		0		0		0		0
2004									
2005									
2006	106,637		0		0		0		0
2007	26,804		0		0		0		0
2008	511,877	134,252	26		0		0	134,252-	26-
2009	40,000	100,978	252		0		0	100,978-	252-
2010									
2011									
2012		45-	-					45	
2013		547						547-	
2014									
TOTAL	1,841,144	235,732	13		0		0	235,732-	13-
THREE-Y	YEAR MOVING AVE	RAGES							
00-02	365,067		0		0		0		0
01-03	93,153		0		0		0		0
02-04	22,056		0		0		0		0
03-05	20,208		0		0		0		0
04-06	35,546		0		0		0		0
05-07	44,480		0		0		0		0
06-08	215,106	44,751	21		0		0	44,751-	21-
07-09	192,894	78,410	41		0		0	78,410-	41-
08-10	183,959	78,410	43		0		0	78,410-	43-
09-11	13,333	33,659	252		0		0	33,659-	
10-12		15-	-					15	
11-13		167						167-	
12-14		167						167-	
<b>57775</b> 375									
	CAR AVERAGE								
10-14		100						100-	



## ACCOUNT 484.00 - GENERAL PLANT - VEHICLES

REGULAR REMOVAL REUSE FINAL	PCT	SALVAGI	5
YEAR RETIREMENTS AMOUNT PCT AMOUNT PCT AMOUNT	FCI	AMOUNT	PCT
2000 1,582,820 0 0	0		0
2001 34,001 0 0	0		0
2002 239,632 0 0	0		0
2003 30,578 0 0	0		0
2004 260,925 0 0	0		0
2005 14,890 0 0	0		0
2006 7,381 0 0	0		0
2007 93,297 0 0	0		0
2008 40,268 7,617-19- 0 4,000	10	11,617	29
2009 32,635 1,081 3 0 13,825	42	12,744	39
2010 169,164 0 0 29,791	18	29,791	18
2011 872,023 0 0	0		0
2012 580,467 0 0	0		0
2013 300,515 0 0	0		0
2014 376,446 0 0 145,085	39	145,085	39
TOTAL 4,635,042 6,536- 0 0 192,701	4	199,237	4
THREE-YEAR MOVING AVERAGES			
00-02 618,818 0 0	0		0
01-03 101,404 0 0	0		0
02-04 177,045 0 0	0		0
03-05 102,131 0 0	0		0
04-06 94,399 0 0	0		0
05-07 38,523 0 0	0		0
06-08 46,982 2,539- 5- 0 1,333	3	3,872	8
07-09 55,400 2,179- 4- 0 5,942	11	8,120	15
08-10 80,689 2,179- 3- 0 15,872	20	18,050	22
09-11 357,941 360 0 14,539	4	14,178	4
10-12 540,551 0 0 9,930	2	9,930	2
11-13 584,335 0 0	0		0
12-14 419,143 0 0 48,362	12	48,362	12
FIVE-YEAR AVERAGE			
10-14459,7230034,975	8	34,975	8

# ACCOUNT 485.10 - HEAVY WORK EQUIPMENT

	REGULAR	COST C REMOVA		G R O REUSE		ALVAGI FINAL	Ξ	NET SALVAG	E
YEAR	RETIREMENTS	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT	AMOUNT	PCT
2000	13,523		0		0		0		0
2001									
2002	6,318		0		0		0		0
2003									
2004									
2005									
2006	26,600		0		0		0		0
2007									
2008									
2009									
2010	12,429		0		0		0		0
2011	45,146		0		0		0		0
2012	46,290		0		0		0		0
2013	66,482		0		0		0		0
2014	24,491		0		0		0		0
TOTAL	241,280		0		0		0		0
THREE-Y	EAR MOVING AVER	AGES							
00-02	6,614		0		0		0		0
01-03	2,106		0		0		0		0
02-04	2,106		0		0		0		0
03-05									
04-06	8,867		0		0		0		0
05-07	8,867		0		0		0		0
06-08	8,867		0		0		0		0
07-09									
08-10	4,143		0		0		0		0
09-11	19,192		0		0		0		0
10-12	34,622		0		0		0		0
11-13	52,640		0		0		0		0
12-14	45,755		0		0		0		0
FIVE-YE.	AR AVERAGE								
10-14	38,968		0		0		0		0

# ACCOUNT 485.20 - GENERAL PLANT - HEAVY MOBILE EQUIPMENT

	REGULAR	COST OF REMOVAL	GROSS SA REUSE	ALVAGE FINAL	NET SALVAGE
YEAR	RETIREMENTS	AMOUNT PCT	AMOUNT PCT	AMOUNT PCT	AMOUNT PCT
2005	4,280	0	0	0	0
2006	35,407	0	0	0	0
2007	1	0	0	0	0
2008					
2009					
2010					
2011	5,699	0	0	0	0
2012	19,035	0	0	0	0
2013	79,630	0	0	0	0
2014					
TOTAL	144,053	0	0	0	0
THREE-Y	YEAR MOVING AVE	RAGES			
05-07	13,229	0	0	0	0
06-08	11,803	0	0	0	0
07-09		0	0	0	0
08-10					
09-11	1,900	0	0	0	0
10-12	8,245	0	0	0	0
11-13	34,788	0	0	0	0
12-14	32,888	0	0	0	0
FIVE-YE	EAR AVERAGE				
10-14	20,873	0	0	0	0

# PART VII. DETAILED DEPRECIATION CALCULATIONS



## ACCOUNT 401.01 - INTANGIBLE - FRANCHISES AND CONSENTS

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST OF INVESTMENT AS OF DECEMBER 31, 2014

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	CURVE 40-SQU AGE PERCENT (					
1959	2,931.00	2,858	2,620	311	1.00	311
1960	88,488.40	86,276	79,080	9,408	1.00	9,408
1962	4,804.00	4,684	4,293	511	1.00	511
1963	230.00	224	205	25	1.00	25
1964	50.00	49	45	5	1.00	5
1969	848.00	827	758	90	1.00	90
1970	452.00	441	404	48	1.00	48
1971	260.00	254	233	27	1.00	27
1972	300.00	292	268	32	1.00	32
1973	50.00	49	45	5	1.00	5
1976	823.00	782	717	106	2.00	53
1987	8,238.78	5,561	5,097	3,142	13.00	242
1990	1,082.17	649	595	487	16.00	30
1991	186,139.77	107,030	98,104	88,036	17.00	5,179
1992	2,554.74	1,405	1,288	1,267	18.00	70
	297,251.86	211,381	193,752	103,500		16,036

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 6.5 5.39

### ACCOUNT 402.01 - COMPUTER SOFTWARE APPLICATION - 8 YRS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST OF INVESTMENT AS OF DECEMBER 31, 2014

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVI	VOR CURVE 8-SQ	UARE				
2004	545,668.16	477,460	487,617	58,051	1.00	58,051
2005	1,448,029.28	1,267,026	1,293,979	154,050	1.00	154,050
2006	7,468,830.51	6,535,227	6,674,248	794,583	1.00	794,583
2007	2,085,588.81	1,824,890	1,863,710	221,879	1.00	221,879
2008	9,786,375.74	7,339,782	7,495,918	2,290,458	2.00	1,145,229
2009	7,527,396.47	4,704,623	4,804,702	2,722,694	3.00	907,565
2010	3,963,669.03	1,981,835	2,023,994	1,939,675	4.00	484,919
2011	55,797,399.35	20,924,025	21,369,131	34,428,268	5.00	6,885,654
2012	5,293,418.31	1,323,355	1,351,506	3,941,912	6.00	656,985
2013	10,495,385.62	1,311,923	1,339,831	9,155,555	7.00	1,307,936
2014	11,088,172.76		0	11,088,173	8.00	1,386,022
	115,499,934.04	47,690,146	48,704,636	66,795,298		14,002,873

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 4.8 12.12



#### ACCOUNT 402.02 - COMPUTER SOFTWARE APPLICATION - 5 YRS

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST OF INVESTMENT AS OF DECEMBER 31, 2014

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVI	VOR CURVE 5-SQ	UARE				
2009 2010 2011 2012 2013 2014	997,726.40 3,271,915.11 7,273,572.92 3,924,245.09 3,611,701.59 5,566,003.14	798,181 2,617,532 4,364,144 1,569,698 722,340	864,716 2,835,725 4,727,930 1,700,545 782,553 0	133,010 436,190 2,545,643 2,223,700 2,829,149 5,566,003	1.00 1.00 2.00 3.00 4.00 5.00	133,010 436,190 1,272,822 741,233 707,287 1,113,201
	24,645,164.25	10,071,895	10,911,469	13,733,695		4,403,743
	COMPOSITE REMAIN	ING LIFE AND	ANNUAL ACCRUAL	RATE, PERCENT	3.1	17.87

### ACCOUNT 402.03 - INTANGIBLE PLANT

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST OF INVESTMENT AS OF DECEMBER 31, 2014

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVI	VOR CURVE 40-SQUA	RE				
NET S.	ALVAGE PERCENT 0					
1991	694,036.53	399,071	500,587	193,450	17.00	11,379
2001	687,554.78	223,455	280,298	407,257	27.00	15,084
2001	500,000.00	137,500	172,477	327,523	27.00	11,294
		- /	,	- ,		, -
2009	25,000.00	3,125	3,920	21,080	35.00	602
	1,906,591.31	763,151	957,282	949,309		38,359
	COMPOSITE REMAINING	LIFE AND A	ANNUAL ACCRUAL R	ATE, PERCENT .	. 24.7	2.01

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#### ACCOUNT 402.11 - INTANGIBLE PLANT

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST OF INVESTMENT AS OF DECEMBER 31, 2014

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	CURVE 40-SQ AGE PERCENT					
1970	62,456.53	60,895	62,457			
	62,456.53	60,895	62,457			

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



### ACCOUNT 432.00 - MANUFACTURING - STRUCTURES

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST OF INVESTMENT AS OF DECEMBER 31, 2014

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE 40-SQU ALVAGE PERCENT 0					
1990	358,775.13	215,265	169,834	188,941	16.00	11,809
1992	1,967.78	1,082	854	1,114	18.00	62
1996	899.39	405	320	579	22.00	26
1997	797.53	339	267	531	23.00	23
1998	2,668.96	1,068	843	1,826	24.00	76
1999	6,436.48	2,414	1,905	4,531	25.00	181
2000	13,624.40	4,769	3,762	9,862	26.00	379
2001	1,019.52	331	261	759	27.00	28
2002	44,609.77	13,383	10,559	34,051	28.00	1,216
2004	437.00	109	86	351	30.00	12
2005	11,641.25	2,619	2,066	9,575	31.00	309
2006	1,293.03	259	204	1,089	32.00	34
2007	666.81	117	92	575	33.00	17
2008	12,598.31	1,890	1,491	11,107	34.00	327
2011	20,591.32	1,544	1,218	19,373	37.00	524
2012	•	24,436	19,279	469,432	38.00	12,353
2013	24,703.50	618	488	24,216	39.00	621
2014	188.62		0	189	40.00	5
	991,629.94	270,648	213,529	778,101		28,002
	COMPOSITE REMAINI	NG LIFE AND A	NNUAL ACCRUAL	RATE, PERCENT .	. 27.8	2.82

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 27.8 2.82

### ACCOUNT 433.00 - MANUFACTURING - EQUIPMENT

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVI	VOR CURVE 20-SQUA	RE				
NET S	ALVAGE PERCENT 0					
1994	5,018.55	4,768	5,019			
1996	3,868.62	3,482	3,666	203	2.00	102
1997	13,895.12	11,811	12,434	1,461	3.00	487
1999	108,001.17	81,001	85,271	22,730	5.00	4,546
2000	5,687.97	3,982	4,192	1,496	6.00	249
2002	3,008.60	1,805	1,900	1,109	8.00	139
2005	6,458.40	2,906	3,059	3,399	11.00	309
2012	310,358.83	31,036	32,672	277,687	18.00	15,427
2013	2,914.86	146	154	2,761	19.00	145
	459,212.12	140,937	148,367	310,845		21,404
	COMPOSITE REMAINING	LIFE AND AN	NNUAL ACCRUAL R	ATE, PERCENT .	. 14.5	4.66

## ACCOUNT 434.00 - MANUFACTURING - HOLDERS

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST OF INVESTMENT AS OF DECEMBER 31, 2014

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE 40-SQUA	RE				
NET S.	ALVAGE PERCENT 0					
1990	239,942.82	143,966	157,766	82,177	16.00	5,136
1992	102,238.92	56,231	61,621	40,618	18.00	2,257
1996	860.87	387	424	437	22.00	20
1997	763.37	324	355	408	23.00	18
1998	680.66	272	298	383	24.00	16
1999	681.40	256	281	400	25.00	16
2000	544.40	191	209	335	26.00	13
2001	10,282.20	3,342	3,662	6,620	27.00	245
2002	590.33	177	194	396	28.00	14
2011	330,932.50	24,820	27,199	303,734	37.00	8,209
2012	2,172,248.27	108,612	119,025	2,053,223	38.00	54,032
2013	91,239.63	2,281	2,500	88,740	39.00	2,275
2014	3,845.12		0	3,846	40.00	96
	2,954,850.49	340,859	373,534	2,581,317		72,347
	COMPOSITE REMAINING	G LIFE AND A	ANNUAL ACCRUAL	RATE, PERCENT .	. 35.7	2.45

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### ACCOUNT 436.00 - MANUFACTURING - COMPRESSOR EQUIPMENT

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST OF INVESTMENT AS OF DECEMBER 31, 2014

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVI	VOR CURVE 25-SQUA	RE				
NET SA	ALVAGE PERCENT 0					
1992	1,382.72	1,217	1,383			
1995	51,926.19	39,464	45,304	6,622	6.00	1,104
2012	310,358.83	24,829	28,503	281,856	23.00	12,255
2013	2,914.86	117	135	2,780	24.00	116
	366,582.60	65,627	75,325	291,258		13,475
	COMPOSITE REMAINING	LIFE AND A	NNUAL ACCRUAL F	RATE, PERCENT .	. 21.6	3.68

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ACCOUNT 437.00 - MANUFACTURING - MEASURING AND REGULATING EQUIPMENT

YEAR	ORIGINAL ( COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUTURE BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVI	VOR CURVE 20-SQUAR	RE				
NET S	ALVAGE PERCENT 0					
1992	290,389.70	275,870	290,390			
1992	789.15	2/3,8/0	· ·			
1997	699.77	595				
1998	623.95	499	624			
1999	624.63	468	625			
2000	499.05	349	499			
2001	1,086.26	706	1,086			
2002	541.14	325	541			
2003	10,181.08	5,600	10,181			
2011	124,082.62	18,612	104,269	19,814	17.00	1,166
2012	310,357.95	31,036	173,871	136,487	18.00	7,583
2013	132,273.32	6,614	37,053	95,220	19.00	5,012
2014	261,573.61		0	261,574	20.00	13,079
	1,133,722.23	341,384	620,628	513,094		26,840
	COMPOSITE REMAINING	LIFE AND	ANNUAL ACCRUAL	RATE, PERCENT .	. 19.1	2.37

### ACCOUNT 442.00 - LNG - STRUCTURES

# CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST OF INVESTMENT AS OF DECEMBER 31, 2014

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA					
1988	1,453,071.43	991,634	1,227,264	371,115	9.49	39,106
1991	1,924.79	1,252	1,549	568	10.22	56
1992	110,426.95	70,598	87,373	34,097	10.47	3,257
1993	8,093.70	5,082	6,290	2,613	10.73	244
1994	84,561.94	52,016	64,376	28,642	11.02	2,599
1995	132,581.49	79,803	98,766	47,074	11.32	4,158
1996	42,779.92	25,129	31,100	15,958	11.65	1,370
1997	246,113.24	140,560	173,960	96,765	12.02	8,050
1998	396,745.70	219,607	271,790	164,630	12.42	13,255
1999	133,892.83	71,461	88,441	58,841	12.87	4,572
2000	318,749.06	162,970	201,695	148,929	13.38	11,131
2001	94,819.16	46,185	57,159	47,142	13.93	3,384
2002	36,534.09	16,798	20,790	19,397	14.55	1,333
2003	704,255.73	302,745	374,683	399,998	15.23	26,264
2004	16,996.28	6,760	8,366	10,330	15.96	647
2005	788,457.87	286,557	354,648	512,656	16.74	30,625
2006	13,612.01	4,456	5,515	9,458	17.56	539
2007	270,602.22	78,583	97,256	200,406	18.40	10,892
2008	30,362.10	7,655	9,474	23,924	19.27	1,242
2010	74,883.19	12,883	15,944	66,428	21.09	3,150
2014	206,434.58		0	227,078	25.00	9,083
	5,165,898.28	2,582,734	3,196,439	2,486,049		174,957
		אר דדבים אאם או		סאידי סדסמידאידי	1/ 2	2 20

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 14.2 3.39

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ACCOUNT 442.01 - LNG - STRUCTURES - MT. HAYES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST OF INVESTMENT AS OF DECEMBER 31, 2014

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 2 ALVAGE PERCENT					
2011 2013 2014	17,261,042.79 22,616.08 25,499.99	2,225,294 975	2,473,533 1,084	16,513,614 23,794 28,050	22.07 24.02 25.00	748,238 991 1,122
	17,309,158.86	2,226,269	2,474,617	16,565,458		750,351
	COMPOSITE REMAININ	NG LIFE AND A	NNUAL ACCRUAL	RATE, PERCENT .	. 22.1	4.33

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### ACCOUNT 443.00 - LNG - EQUIPMENT

## CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST OF INVESTMENT AS OF DECEMBER 31, 2014

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 4 ALVAGE PERCENT					
1988	9,052,020.29	6,767,290	8,118,935	2,743,489	15.08	181,929
1991	29,946.64	20,142	24,165	11,771	17.58	670
1993	62,452.26	38,708	46,439	28,504	19.34	1,474
1996	393,472.04	211,058	253,213	218,953	22.12	9,898
1997	184,604.19	93,705	112,421	109,104	23.08	4,727
1998	102,424.92	49,010	58,799	64,111	24.05	2,666
1999	746,733.77	335,582	402,609	493,472	25.02	19,723
2000	81,921.07	34,382	41,249	57,056	26.01	2,194
2001	102,295.11	39,895	47,863	74,891	27.00	2,774
2002	5,304,069.89	1,909,465	2,290,847	4,074,037	28.00	145,501
2003	183,540.37	60,568	72,665	147,583	29.00	5,089
2004	198,778.25	59,633	71,544	166,990	30.00	5,566
2006	51,498.10	12,360	14,829	46,969	32.00	1,468
2007	260.44	55	66	247	33.00	7
2011	4,599.00	414	497	5,022	37.00	136
	16,498,616.34	9,632,267	11,556,141	8,242,199		383,822
	COMPOSITE DEMAINT	אר דד היה אור או		האתים הביטעת	21 E	0 00

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 21.5 2.33

ACCOUNT 443.05 - LNG - EQUIPMENT - MT. HAYES

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA CALVAGE PERCENT					
2011	60,112,269.35	3,606,736	3,595,459	68,539,264	57.00	1,202,443
	60,112,269.35	3,606,736	3,595,459	68,539,264		1,202,443
	COMPOSITE REMAIN	ING LIFE AND	ANNUAL ACCRUAL	RATE, PERCENT	57.0	2.00



#### ACCOUNT 448.10 - LNG - PIPING

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA					
2011	11,488,418.05	928,839	1,028,667	11,608,592	37.06	313,238
	11,488,418.05	928,839	1,028,667	11,608,592		313,238
	COMPOSITE REMAINI	NG LIFE AND A	NNUAL ACCRUAL	RATE, PERCENT .	. 37.1	2.73



#### ACCOUNT 448.20 - LNG - PRE-TREATMENT

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 25 ALVAGE PERCENT1	-				
2011	28,713,519.62	3,701,747	4,113,590	27,471,281	22.07	1,244,734
	28,713,519.62	3,701,747	4,113,590	27,471,281		1,244,734
	COMPOSITE REMAINING	G LIFE AND AN	NNUAL ACCRUAL F	RATE, PERCENT	22.1	4.34



#### ACCOUNT 448.30 - LNG - LIQUEFACTION EQUIPMENT

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 40 ALVAGE PERCENT2					
2011	28,713,519.62	2,532,532	2,570,994	31,885,230	37.06	860,368
	28,713,519.62	2,532,532	2,570,994	31,885,230		860,368
	COMPOSITE REMAININ	G LIFE AND AN	NNUAL ACCRUAL H	RATE, PERCENT .	37.1	3.00



ACCOUNT 448.40 - LNG - SEND OUT EQUIPMENT

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 4 ALVAGE PERCENT					
2011	22,960,238.37	1,698,484	2,055,848	23,200,414	37.31	621,828
	22,960,238.37	1,698,484	2,055,848	23,200,414		621,828
	COMPOSITE REMAINI	NG LIFE AND AN	NNUAL ACCRUAL I	RATE, PERCENT .	. 37.3	2.71



#### ACCOUNT 448.50 - LNG - SUBSTATION AND ELECTRICAL

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 4 ALVAGE PERCENT					
2011	21,643,950.36	1,746,667	1,938,069	24,034,671	37.31	644,188
	21,643,950.36	1,746,667	1,938,069	24,034,671		644,188
	COMPOSITE REMAININ	NG LIFE AND AN	NNUAL ACCRUAL 1	RATE, PERCENT .	. 37.3	2.98



#### ACCOUNT 448.60 - LNG - CONTROL ROOM

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 1 ALVAGE PERCENT 0	5-R3				
2011	5,900,055.25	1,144,611	1,409,478	4,490,578	12.09	371,429
	5,900,055.25	1,144,611	1,409,478	4,490,578		371,429
	COMPOSITE REMAININ	G LIFE AND AN	NNUAL ACCRUAL H	RATE, PERCENT .	. 12.1	6.30



## ACCOUNT 449.00 - LNG - OTHER EQUIPMENT

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA ALVAGE PERCENT					
1988	5,536,937.17	4,752,946	4,645,520	1,445,111	5.93	243,695
1991	554,462.83	438,232	428,327	181,582	7.60	23,892
1992	562,926.89	430,475	420,745	198,475	8.23	24,116
1993	2,336,891.81	1,725,143	1,686,152	884,429	8.88	99,598
1994	195,647.09	139,091	135,947	79,265	9.55	8,300
1995	2,871,517.51	1,958,375	1,914,112	1,244,557	10.26	121,302
1996	801,912.30	523,052	511,230	370,874	10.99	33,746
1997	81,130.05	50,439	49,299	39,944	11.74	3,402
1998	18,560.60	10,957	10,709	9,708	12.51	776
1999	649,297.54	362,406	354,215	360,012	13.30	27,069
2000	964,847.19	506,690	495,238	566,094	14.11	40,120
2001	21,505.53	10,566	10,327	13,329	14.94	892
2002	357,001.87	163,046	159,361	233,341	15.79	14,778
2003	1,799,856.75	758,933	741,780	1,238,062	16.65	74,358
2004	32,356.13	12,483	12,201	23,391	17.53	1,334
2005	198,987.18	69,477	67,907	150,979	18.43	8,192
2006	305,886.62	95,458	93,300	243,175	19.34	12,574
2007	359,087.89	98,603	96,374	298,623	20.26	14,740
2008	4,157,417.12	982,360	960,158	3,613,001	21.20	170,425
2009	1,849,724.98	365,493	357,232	1,677,465	22.15	75,732
2010	627,350.21	99,676	97,423	592,662	23.10	25,656
2011	64,069.35	7,648	7,475	63,001	24.07	2,617
2012	668,179.44	53,353	52,147	682,850	25.04	27,270
2013	26,659.00	1,064	1,040	28,285	26.02	1,087
2014	88,391.34		0	97,230	27.00	3,601
	25,130,604.39	13,615,966	13,308,219	14,335,445		1,059,272
	COMPOSITE REMAIN	ING LIFE AND A	NNUAL ACCRUAL	RATE, PERCENT .	. 13.5	4.22



ACCOUNT 449.01 - LNG - OTHER EQUIPMENT - MT. HAYES

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 3 ALVAGE PERCENT					
2011 2014	33,247.62 3,545,424.12	3,072	4,883	31,689 3,899,967	32.06 35.00	988 111,428
	3,578,671.74	3,072	4,883	3,931,656		112,416
	COMPOSITE REMAININ	NG LIFE AND ANI	NUAL ACCRUAL	RATE, PERCENT .	. 35.0	3.14



#### ACCOUNT 465.30 - LNG - MAINS - MT. HAYES

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE 65-SQU ALVAGE PERCENT					
2011	6,298,635.39	348,818	404,332	7,154,030	62.00	115,388
	6,298,635.39	348,818	404,332	7,154,030		115,388
	COMPOSITE REMAININ	NG LIFE AND AN	NUAL ACCRUAL	RATE, PERCENT .	. 62.0	1.83



ACCOUNT 467.00 - LNG - MEASURING AND REGULATING EQUIPMENT - MT. HAYES

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA ALVAGE PERCENT					
2011	5,341,780.82	450,912	779,900	4,935,805	33.16	148,848
	5,341,780.82	450,912	779,900	4,935,805		148,848
	COMPOSITE REMAIN	ING LIFE AND AN	NUAL ACCRUAL	RATE, PERCENT .	. 33.2	2.79



### ACCOUNT 462.00 - TRANSMISSION - COMPRESSOR STRUCTURES

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
CTID1/T	VOR CURVE IOWA	20-01				
	ALVAGE PERCENT					
NET D	ADVAGE PERCENT.	5				
1973	215,401.10	214,393	211,683	10,180	1.01	10,079
1975	6,158.28	6,024	5,948	395	1.51	262
1977	67.03	64	63	6	2.03	3
1978	5,916.53	5,627	5,556	538	2.30	234
1980	614.64	572	565	68	2.88	24
1982	1,246.15	1,131	1,117	167	3.56	47
1984	895.28	787	777	145	4.39	33
1988	2,555.92	2,047	2,021	612	6.67	92
1989	2,559.08	1,991	1,966	670	7.34	91
1990	31,298.71	23,609	23,311	8,927	8.03	1,112
1991	1,852,637.56	1,351,647	1,334,560	573,657	8.75	65,561
1992	251,036.89	176,775	174,540	84,028	9.49	8,854
1993	1,182,706.65	801,568	791,435	426,753	10.26	41,594
1994	1,447,030.17	941,467	929,565	560,876	11.05	50,758
1995	4,624,628.27	2,878,646	2,842,256	1,921,111	11.87	161,846
1996	432,974.21	257,022	253,773	192,190	12.71	15,121
1997	394,931.89	222,781	219,965	186,815	13.57	13,767
1998	3,329,048.96	1,776,181	1,753,727	1,675,193	14.46	115,850
1999	2,550,221.28	1,281,843	1,265,639	1,361,089	15.36	88,613
2000	4,347,881.76	2,048,069	2,022,178	2,456,140	16.28	150,869
2001	785,677.98	345,007	340,646	468,602	17.21	27,228
2002	1,928,474.22	783,944	774,033	1,212,295	18.16	66,756
2003	111,375.93	41,604	41,078	73,639	19.12	3,851
2004	167,721.21	57,065	56,344	116,409	20.09	5,794
2006	52,844.97	14,442	14,259	40,171	22.04	1,823
2007	1,661,264.19	397,540	392,515	1,318,587	23.03	57,255
2008	176,799.50	36,299	35,840	146,263	24.02	6,089
2009	449,756.30	77,052	76,078	387,171	25.01	15,481
2010	225,317.46	30,866	30,476	201,601	26.01	7,751
2011	566,520.02	58,352	57,614	525,902	27.00	19,478
2012	1,931,739.12	132,653	130,976	1,858,715	28.00	66,383
2013	662,072.62	22,729	22,442	659,493	29.00	22,741
2014	154,812.60		0	159,457	30.00	5,315
	29,554,186.48	13,989,797	13,812,946	16,627,866		1,030,755
	COMPOSITE REMAIN	ING LIFE AND A	NNUAL ACCRUAL	RATE, PERCENT .	. 16.1	3.49

ACCOUNT 463.00 - TRANSMISSION - MEASURING AND REGULATING STRUCTURES

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST OF INVESTMENT AS OF DECEMBER 31, 2014

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVT	VOR CURVE IOWA	38-52				
	ALVAGE PERCENT					
		10				
1972	30,628.34	27,678	30,025	5,198	8.14	639
1974		11,055	11,992	2,425	8.86	274
1980	1,662.26	1,342	1,456	456	11.33	40
1982	1,246.15	970	1,052	381	12.27	31
1984		6,670	7,236	3,018	13.28	227
1985	3,043.26	2,228	2,417	1,083	13.81	78
1986		976	1,059	510	14.36	36
1987		5,867	6,364	3,301	14.93	221
1988		127,148	137,929	77,094	15.53	4,964
1989	1,902.24	1,258	1,365	823	16.14	51
1990	•	3,371	3,657	2,379	16.78	142
1991	4,020,729.51	2,501,728	2,713,859	1,909,980	17.44	109,517
1992		157,420	170,768	130,134	18.12	7,182
1993	•	100,977	109,539	90,625	18.83	4,813
1994		39,731	43,100	38,775	19.56	1,982
1995	-	252,778	274,212	269,092	20.32	13,243
1996	351,481.11	179,765	195,008	209,195	21.10	9,914
1997		107,987	117,144	137,735	21.90	6,289
1998		55,700	60,423	78,188	22.73	3,440
1999	•	270,645	293,594	419,624	23.58	17,796
2000		163,742	177,626	281,576	24.45	11,516
2001		40,559	43,998	77,742	25.34	3,068
2002	-	288,193	312,630	619,399	26.25	23,596
2003	•	66,783	72,446	162,095	27.18	5,964
2004		109,513	118,799	302,403	28.12	10,754
2005		41,725	45,263	132,486	29.08	4,556
2006	1,785,497.10	429,575	466,000	1,587,322	30.05	52,823
2007		370,703	402,137	1,618,926	31.03	52,173
2008	-	19,814	21,494	104,207	32.01	3,255
2009	294,211.30	44,431	48,198	290,145	33.01	8,790
2010		40,629	44,074	341,913	34.00	10,056
2011		13,646	14,803	158,046	35.00	4,516
2012		8,138	8,828	145,799	36.00	4,050
2013	-	27,192	29,498	1,003,637	37.00	27,125
2014	125,746.51		0	144,608	38.00	3,805
	14,207,228.08	5,519,937	5,987,993	10,350,319		406,926
	CONDOCTOR DEMAIN				0E 4	2.96

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 25.4 2.86



#### ACCOUNT 464.00 - TRANSMISSION - OTHER STRUCTURES

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA ALVAGE PERCENT					
1973	7,845.44	7,960	6,832	1,406	1.01	1,392
1975	1,992.26	1,987	1,706	386	1.51	256
1978	6,315.00	6,122	5,255	1,376	2.30	598
1979	10,826.17	10,390	8,918	2,449	2.58	949
1983	8,868.78	8,086	6,941	2,371	3.95	600
1984	3,199.30	2,868	2,462	897	4.39	204
1987	18,636.05	15,635	13,420	6,148	6.03	1,020
1988	12,898.76	10,533	9,041	4,503	6.67	675
1989	5,246.07	4,161	3,572	1,936	7.34	264
1990	4,177.22	3,212	2,757	1,629	8.03	203
1991	26,130.83	19,435	16,682	10,755	8.75	1,229
1993	9,555.00	6,602	5,667	4,366	10.26	426
1994	43,742.33	29,012	24,902	21,027	11.05	1,903
1995	565.90	359	308	286	11.87	24
1996	76,883.05	46,526	39,935	40,792	12.71	3,209
1997	17,012.33	9,783	8,397	9,466	13.57	698
1998	3,010.54	1,637	1,405	1,756	14.46	121
1999	191,806.97	98,282	84,360	117,037	15.36	7,620
2000	105,424.54	50,624	43,453	67,243	16.28	4,130
2001	3,833,288.66	1,715,958	1,472,881	2,552,072	17.21	148,290
2002	537,707.52	222,828	191,263	373,330	18.16	20,558
2003	10,828.76	4,124	3,540	7,830	19.12	410
2004	554,794.63	192,429	165,170	417,364	20.09	20,775
2005	288,414.54	90,245	77,461	225,374	21.06	10,702
2006	238,200.38	66,362	56,962	193,148	22.04	8,764
2007	104,381.11	25,463	21,856	87,744	23.03	3,810
2008	163.42	34	29	143	24.02	6
2009	22,991.57	4,015	3,446	20,695	25.01	827
2012	7,291.71	510	438	7,218	28.00	258
2013	331,857.79	11,614	9,969	338,482	29.00	11,672
2014	18,635.78		0	19,568	30.00	652
	6,502,692.41	2,666,796	2,289,028	4,538,799		252,245
	COMPOSITE REMAIN	ING LIFE AND A	NNUAL ACCRUAL	RATE, PERCENT .	. 18.0	3.88

## ACCOUNT 465.00 - TRANSMISSION - PIPELINE

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	OR CURVE IOWA					
NET SA	LVAGE PERCENT	-20				
1057		10 000	10.000	4 500	17 24	
1957 1958	14,547.23 11,921,221.63	12,800 10,359,303	12,869 10,414,869	4,588 3,890,597	17.34 17.93	265 216,988
1958	1,238,599.27	1,062,599	1,068,299	418,020	18.53	22,559
1959	17,607.69	14,904	14,984	6,145	19.15	321
1961	127,805.46	106,696	107,268	46,099	19.78	2,331
1962	2,269,197.45	1,867,595	1,877,613	845,424	20.42	41,402
1963	92,529.62	75,026	75,428	35,608	21.08	1,689
1964	47,767.60	38,149	38,354	18,967	21.74	872
1966	208,320.66	161,105	161,969	88,016	23.11	3,809
1967	475,284.04	361,511	363,450	206,891	23.80	8,693
1968	768,609.24	574,538	577,620	344,711	24.51	14,064
1969	1,602,701.87	1,176,736	1,183,048	740,194	25.23	29,338
1970	363,907.47	262,284	263,691	172,998	25.96	6,664
1971	2,283,303.02	1,614,469	1,623,129	1,116,835	26.70	41,829
1972	7,701,102.16	5,340,098	5,368,742	3,872,581	27.44	141,129
1973	409,455.57	278,176	279,668	211,679	28.20	7,506
1974	32,703.80	21,760	21,877	17,368	28.96	600
1975	64,059.91	41,700	41,924	34,948	29.74	1,175
1976	17,356,855.61	11,048,541	11,107,804	9,720,423	30.52	318,494
1977	282,686.47	175,823	176,766	162,458	31.31	5,189
1978	350,257.34	212,676	213,817	206,492	32.11	6,431
1979	47,298.96	28,021	28,171	28,588	32.91	869
1980	730,273.32	421,584	423,845	452,483	33.73	13,415
1981	1,380,365.89	775,975	780,137	876,302	34.55	25,363
1982	650,988.73	355,979	357,888	423,298	35.38	11,964
1983	511,904.99	271,987	273,446	340,840	36.22	9,410
1984	484,286.28	249,805	251,145	329,999	37.06	8,904
1985	1,077,972.54	538,926	541,817	751,750	37.92	19,825
1986	3,699,334.06	1,791,395	1,801,004	2,638,197	38.77	68,047
1987	1,848,467.17	865,415	870,057	1,348,104	39.64	34,009
1988	35,533,910.57 692,963.11	16,065,734	16,151,909	26,488,784	40.51	653,883
1989		302,046 2,792,094	303,666	527,890 5 180 840	41.39	12,754
1990 1991	6,656,592.02 305,665,995.25	123,189,509	2,807,070 123,850,284	5,180,840 242,948,910	42.28 43.17	122,536 5,627,726
1991	57,405,074.66	22,181,321	22,300,299	46,585,791	44.07	1,057,086
1993	6,910,030.80	2,555,191	2,568,897	5,723,140	44.97	127,266
1994	2,899,855.51	1,023,591	1,029,081	2,450,746	45.88	53,416
1995	33,238,405.82	11,168,104	11,228,009	28,658,078	46.80	612,352
1996	12,779,412.24	4,076,888	4,098,756	11,236,539	47.72	235,468
1997	9,998,296.55	3,017,966	3,034,154	8,963,802	48.65	184,251
1998	16,475,216.40	4,690,099	4,715,256	15,055,004	49.58	303,651
1999	12,476,008.49	3,335,136	3,353,025	11,618,185	50.52	229,972
2000	319,657,291.07	79,905,372	80,333,977	303,254,772	51.46	5,893,019
2001	46,350,958.97	10,782,160	10,839,994	44,781,157	52.40	854,602
2002	25,952,974.89	5,581,862	5,611,803	25,531,767	53.35	478,571



## ACCOUNT 465.00 - TRANSMISSION - PIPELINE

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA ( ALVAGE PERCENT					
2003	17,982,986.90	3,548,978	3,568,014	18,011,570	54.31	331,644
2004	13,593,419.67	2,444,369	2,457,480	13,854,624	55.26	250,717
2005	11,330,597.83	1,836,645	1,846,497	11,750,220	56.22	209,004
2006	12,530,943.72	1,806,711	1,816,402	13,220,730	57.19	231,172
2007	8,563,828.53	1,081,406	1,087,207	9,189,387	58.16	158,002
2008	11,936,142.82	1,293,544	1,300,482	13,022,889	59.13	220,242
2009	9,207,830.20	832,903	837,371	10,212,025	60.10	169,917
2010	10,322,595.21	748,925	752,942	11,634,172	61.07	190,506
2011	57,045,049.41	3,106,445	3,123,108	65,330,951	62.05	1,052,876
2012	15,181,008.03	552,164	555,125	17,662,085	63.03	280,217
2013	20,683,396.40	374,287	376,295	24,443,781	64.02	381,815
2014	22,805,314.36		0	27,366,377	65.00	421,021
	1,161,935,514.48	348,399,026	350,267,802	1,044,054,815		21,406,840
	COMPOSITE REMAINI	NG LIFE AND AN	INUAL ACCRUAL	RATE, PERCENT	48.8	1.84

## ACCOUNT 465.11 - TRANSMISSION - INTERMEDIATE PIPE - WHISTLER

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)				
SURVI	SURVIVOR CURVE IOWA 65-R3									
NET S	ALVAGE PERCENT2	20								
2008	8,227.20	892	767	9,106	59.13	154				
2009	42,030,839.72	3,801,942	3,268,721	47,168,287	60.10	784,830				
2010	133,828.28	9,710	8,348	152,246	61.07	2,493				
2014	111,904.24			134,285	65.00	2,066				
	42,284,799.44	3,812,544	3,277,836	47,463,923		789,543				
	COMPOSITE REMAININ	G LIFE AND A	NNUAL ACCRUAL	RATE, PERCENT .	. 60.1	1.87				



### ACCOUNT 466.00 - TRANSMISSION - COMPRESSOR EQUIPMENT

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)		
	VOR CURVE IOWA	25_D/						
	ALVAGE PERCENT							
NEI SI	ALVAGE PERCENT	-2						
1973	1,161,436.28	1,084,134	1,146,318	38,347	2.97	12,911		
1974	288,030.63	266,428	281,710	12,081	3.26	3,706		
1975	2,752.84	2,521	2,666	142	3.57	40		
1976	12,388.65	11,225	11,869	767	3.91	196		
1977	49,027.94	43,893	46,411	3,597	4.28	840		
1978	778,072.63	687,517	726,952	66,682	4.68	14,248		
1979	2,841.36	2,474	2,616	282	5.12	55		
1981	3,009.83	2,531	2,676	394	6.15	64		
1983	31,042.02	25,014	26,449	5,214	7.35	709		
1984	3,474.57	2,734	2,891	653	8.00	82		
1985	1,287.81	988	1,045	269	8.68	31		
1986	7,609.26	5,684	6,010	1,751	9.37	187		
1987	87,594.98	63,589	67,236	22,111	10.09	2,191		
1988	13,505.80	9,513	10,059	3,717	10.83	343		
1989	20,082.21	13,707	14,493	5,991	11.58	517		
1990	30,473.35	20,106	21,259	9,824	12.36	795		
1991	17,391,196.01	11,069,148	11,704,059	6,034,961	13.16	458,584		
1992	2,779,861.98	1,702,098	1,799,728	1,035,731	13.99	74,034		
1993	5,084,883.10	2,988,975	3,160,419	2,026,162	14.83	136,626		
1994	19,425,500.80	10,931,588	11,558,609	8,255,402	15.69	526,157		
1995	4,836,932.85	2,597,923	2,746,936	2,186,736	16.57	131,970		
1996	2,009,758.55	1,026,740	1,085,632	964,322	17.47	55,199		
1997	3,472,147.04	1,681,759	1,778,222	1,763,368	18.38	95,939		
1998	6,109,127.88	2,795,179	2,955,507	3,275,803	19.30	169,731		
1999	7,040,821.35	3,028,568	3,202,283	3,979,355	20.24	196,608		
2000	50,731,392.07	20,417,427	21,588,543	30,157,477	21.19	1,423,194		
2001	5,634,170.57	2,109,900	2,230,921	3,515,933	22.15	158,733		
2002	6,487,787.69	2,248,046	2,376,991	4,240,552	23.11	183,494		
2003	698,737.94	222,160	234,903	477,810	24.09	19,834		
2004	2,337,494.41	677,125	715,964	1,668,280	25.06	66,571		
2005	1,867,681.49	487,137	515,078	1,389,957	26.05	53,357		
2006	439,909.79	102,175	108,036	340,672	27.03	12,603		
2007	18,414,661.89	3,745,885	3,960,743	14,822,212	28.02	528,987		
2008	3,315,847.99	577,877	611,023	2,771,142	29.02	95,491		
2009	1,082,920.40	157,480	166,513	938,066	30.01	31,258		
2010	3,606,902.77	419,411	443,468	3,235,573	31.01	104,340		
2011	3,817,924.42	333,779	352,924	3,541,359	32.00	110,667		
2012	2,907,689.35	169,468	179,188	2,786,655	33.00	84,444		
2013	1,419,948.95	41,379	43,753	1,404,595	34.00	41,312		
2014	802,227.23		0	818,272	35.00	23,379		
	174,208,156.68	71,773,285	75,890,103	101,802,217		4,819,427		
	174,208,156.68       71,773,285       75,890,103       101,802,217       4,819,427         COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT 21.1       2.77							

## ACCOUNT 467.10 - TRANSMISSION - MEASURING AND REGULATING EQUIPMENT

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
SURVI	VOR CURVE IOWA	36-50.5				
	ALVAGE PERCENT					
1971	52,395.12	40,303	49,720	6,343	10.12	627
1972	125,024.32	94,758	116,898	16,878	10.50	1,607
1974	16,590.56	12,185	15,032	2,720	11.29	241
1975	998.36	721	889	179	11.69	15
1977		725	894	217	12.51	17
1978	3,487.48	2,390	2,948	784	12.94	61
1981	1,834.03	1,186	1,463	499	14.24	35
1982		9,620	11,868	4,384	14.69	298
1984		17,001	20,973	9,044	15.61	579
1985	107,429.56	63,574	78,428	36,522	16.09	2,270
1986		21,835	26,937	13,520	16.57	816
1987		6,537	8,064	4,368	17.07	256
1988	1,116,555.43	611,622	754,528	440,186	17.57	25,053
1989	57,162.09	30,446	37,560	23,603	18.08	1,305
1991	8,980,570.24	4,497,687	5,548,572	4,060,638	19.15	212,044
1992		816,733	1,007,563	795,140	19.69	40,383
1993		698,586	861,811	735,981	20.26	36,327
1994		439,589	542,299	500,888	20.83	24,046
1995		574,818	709,124	710,180	21.42	33,155
1996		404,814	499,399	543,050	22.02	24,662
1997		1,242,624	1,532,963	1,812,911	22.63	80,111
1998	1,214,316.37	459,452	566,803	732,516	23.27	31,479
1999	1,886,551.70	677,910	836,304	1,182,306	23.91	49,448
2000	3,978,738.51	1,350,485	1,666,026	2,591,224	24.58	105,420
2001	992,221.07	316,730	390,734	670,943	25.26	26,561
2002		698,152	861,275	1,642,050	25.96	63,253
2003		1,164,586	1,436,691	3,056,830	26.67	114,617
2004		291,800	359,979	862,937	27.41	31,483
2005	540,884.04	125,877	155,288	423,458	28.17	15,032
2006		436,377 190,347	538,336	1,686,829	28.94	58,287
2007		231,728	234,822 285,871	859,816	29.74 30.56	28,911
2008	1,433,181.46 668,341.23			1,247,633		40,826
2009 2010		91,379	112,730	602,395 520,681	31.40	19,185
	557,931.90	61,854	76,306	520,681	32.27	16,135
2011 2012		118,098 194,931	145,692 240,476	1,351,310 3,414,702	33.16 34.08	40,751 100,197
2012		68,421	84,408		35.02	69,367
2013		00,421	04,408	1,356,019	36.00	37,667
2014	1,207,307.27		0	1,330,019	50.00	57,007
	50,624,840.17	16,065,881	19,819,674	34,348,905		1,332,527
	COMPOSITE REMAIN	ING LIFE AND A	NNUAL ACCRUAL	RATE, PERCENT .	. 25.8	2.63



#### ACCOUNT 467.20 - TRANSMISSION - TELEMETRY EQUIPMENT

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)		
	VOR CURVE IOWA CALVAGE PERCENT							
		-						
1972	20,657.58	18,075	20,516	142	1.00	142		
1974	2,092.39	1,831	2,078	14	1.00	14		
1976	8,260.32	7,228	8,204	56	1.00	56		
1978	-	12,319	13,983	96	1.00	96		
1979		1,260	1,430	10	1.00	10		
1980		24,356	27,645	190	1.00	190		
1981		1,447	1,642	12	1.00	12		
1982		7,357	8,350	58	1.00	58		
1984		7,590	8,615	59	1.00	59		
1985		30,544	34,669	239	1.00	239		
1986		11,988	13,607	94	1.00	94		
1987		7,000	7,945	55	1.00	55		
1988		6,820	7,741	53	1.00	53		
1989		840	953	7	1.00	7		
1991		102,658	116,521	803	1.00	803		
1992		80,605	91,490	630	1.00	630		
1993		107,303	121,793	839	1.00	839		
1994		132,770	150,699	1,038	1.00	1,038		
1995		248,541	282,103	7,741	1.14	6,790		
1996 1997		100,675	114,270 188,640	6,298	1.32 1.52	4,771 10,883		
1997		166,197 77,294	87,731	16,542	1.52 1.72	6,240		
1998		1,415,673	1,606,840	10,733 258,956	1.93	134,174		
2000		272,608	309,420	63,377	2.15	29,478		
2000		336,760	382,235	97,139	2.15	40,815		
2001		104,996	119,174	37,244	2.63	14,161		
2002		67,155	76,223	28,706	2.88	9,967		
2003		266,338	302,303	137,017	3.15	43,497		
2005		12,755	14,477	7,900	3.44	2,297		
2006		605,160	686,878	452,246	3.75	120,599		
2007		51,811	58,807	46,660	4.07	11,464		
2008		79,132	89,818	87,012	4.42	19,686		
2009		54,467	61,822	73,921	4.79	15,432		
2010		41,183	46,744	70,923	5.20	13,639		
2011		943,171	1,070,534	2,195,860	5.69	385,916		
2012		136,744	155,209	495,951	6.32	78,473		
2013		159,042	180,519	1,233,192	7.10	173,689		
2014			0	899,336	8.00	112,417		
	12,702,777.99	5,701,693	6,471,628	6,231,150		1,238,783		
	COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT 5.0 9.75							



# ACCOUNT 467.31 - TRANSMISSION - INTERMEDIATE PRESSURE - MEASURING AND REGULATING EQUIPMENT - WHISTLER

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 3 ALVAGE PERCENT					
2009	313,343.70	42,842	62,669	272,609	31.40	8,682
	313,343.70	42,842	62,669	272,609		8,682
	COMPOSITE REMAININ	IG LIFE AND AN	INUAL ACCRUAL	RATE, PERCENT .	. 31.4	2.77



### ACCOUNT 468.00 - TRANSMISSION - COMMUNICATION EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST OF INVESTMENT AS OF DECEMBER 31, 2014

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	R CURVE IOWA 1 VAGE PERCENT 0					
1991	1,958,059.29	1,717,942	1,958,059			
1992	5,318.92	4,580	5,319			
1993	12,206.04	10,285	12,206			
1994	12,077.12	9,922	12,077			
1995	25,012.13	19,970	25,012			
1996	3,807.61	2,940	3,808			
1997	61,617.36	45,824	61,617			
1998	43,080.18	30,700	43,080			
1999	3,013.81	2,046	3,014			
2000	2,407.88	1,549	2,408			
2001	199,364.98	120,773	199,365			
2002	166,128.70	94,168	166,129			
2003	609,903.24	320,681	609,903			
2004	4,920.95	2,380	4,921			
2006	16,956.15	6,702	16,956			
2007	257,488.01	89,850	257,488			
2008	42,132.78	12,706	42,133			
2009	260,764.97	66,015	260,765			
2010	1,027.09	209	1,027			
2011	294,713.93	45,292	294,714			
2012	12.65	1	9	4	17.04	
2013	264,839.14	13,660	129,712	135,127	18.02	7,499
	4,244,852.93	2,618,195	4,109,722	135,131		7,499

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 18.0 0.18



### ACCOUNT 472.00 - DISTRIBUTION - STRUCTURES

	ORIGINAL	CALCULATED	ALLOC. BOOK	FUTURE BOOK	REM.	ANNUAL
YEAR	COST	ACCRUED	RESERVE	ACCRUALS	LIFE	ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVO	R CURVE IOWA	36-R1.5				
	VAGE PERCENT					
1958	21,817.93	20,960	24,000			
1961	21,710.46	20,306	23,882			
1962	15,408.41	14,275	16,949			
1965	559.36	503	615			
1968	15,488.52	13,455	17,037			
1969	1,834.27	1,574	2,017	1	7.91	
1970	15,051.61	12,753	16,341	216	8.27	26
1971	1,411.99	1,181	1,513	40	8.63	5
1972	4,054.62	3,344	4,285	175	9.01	19
1973	13,979.73	11,362	14,558	820	9.40	87
1974	14,144.35	11,319	14,503	1,056	9.81	108
1975	6,738.60	5,306	6,799	613	10.23	60
1976	2,188.00	1,694	2,171	236	10.66	22
1978	15.33	11	14	3	11.57	
1979	3,374.00	2,469	3,164	547	12.05	45
1980	7,195.67	5,158	6,609	1,306	12.54	104
1981	76,431.46	53,598	68,676	15,399	13.05	1,180
1982	25,409.62	17,415	22,314	5,637	13.57	415
1983	41,233.93	27,592	35,354	10,003	14.10	709
1984	26,710.02	17,425	22,327	7,054	14.65	482
1985	15,784.38	10,027	12,848	4,515	15.21	297
1986	116,667.82	72,046	92,314	36,021	15.79	2,281
1987	145,783.14	87,397	111,983	48,378	16.38	2,953
1988	17,436.24	10,133	12,984	6,196	16.98	365
1989	26,851.43	15,096	19,343	10,194	17.60	579
1990	44,063.07	23,939	30,673	17,796	18.22	977
1991	1,011,128.36	529,549	678,521	433,720	18.86	22,997
1992	737,421.65	371,562	476,089	335,075	19.51	17,175
1993	230,966.97	111,646	143,054	111,010	20.18	5,501
1994	767,097.82	355,100	454,996	388,812	20.85	18,648
1995	922,888.65	408,040	522,829	492,349	21.53	22,868
1996	1,006,804.44	423,923	543,180	564,305	22.22	25,396
1997	931,923.87	372,179	476,880	548,236	22.93	23,909
1998	473,631.84	178,873	229,193	291,802	23.64	12,344
1999	449,144.12	159,744	204,683	289,376	24.36	11,879
2000	534,263.30	178,264	228,413	359,277	25.08	14,325
2001	592,107.88	184,180	235,993	415,326	25.82	16,085
2002	222,346.98	64,134	82,176	162,406	26.56	6,115
2003	328,695.14	87,278	111,831	249,734	27.31	9,144
2004	1,253,770.52	303,799	389,263	989,885	28.07	35,265
2005	2,236,890.90	490,074	627,940	1,832,640	28.83	63,567
2006	2,462,803.99	481,621	617,110	2,091,974	29.60	70,675
2007	946,952.02	162,612	208,358	833,289	30.38	27,429
2008	1,054,207.72	155,900	199,757	959,871	31.16	30,805
2009	551,470.55	68,244	87,442	519,176	31.95	16,250



### ACCOUNT 472.00 - DISTRIBUTION - STRUCTURES

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 3 ALVAGE PERCENT					
2010	476,707.19	47,341	60,659	463,719	32.75	14,159
2011	2,037,272.74	152,522	195,429	2,045,571	33.55	60,971
2012	997,424.53	49,987	64,049	1,033,118	34.36	30,067
2013	903,998.80	22,652	29,025	965,374	35.18	27,441
2014	454,180.42		0	499,599	36.00	13,878
	22,265,444.36	5,819,562	7,450,143	17,041,846		607,607
	COMPOSITE REMAINI	NG LIFE AND A	NNUAL ACCRUAL	RATE, PERCENT .	. 28.0	2.73



## ACCOUNT 473.00 - DISTRIBUTION - SERVICES

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUTURE BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SURVIVO	DR CURVE IOWA 4	15-R1				
	JVAGE PERCENT					
1959	1,245,510.94	1,460,078	893,491	1,099,327	12.03	91,382
1960	351,186.54	406,438	248,719	313,179	12.45	25,155
1962	593,764.29	669,234	409,536	540,487	13.30	40,638
1963	813,984.13	904,721	553,642	748,733	13.74	54,493
1964 1065	771,914.07	845,610	517,469	717,594	14.19	50,570
1965 1966	663,576.26	716,312	438,345 440,224	623,377	14.64 15.10	42,580
1960	676,680.24 699,055.87	719,381 731,492	440,224 447,635	642,464 670,854	15.10	42,547 43,086
1968	715,754.95	737,010	451,012	694,196	16.04	43,000
1969	727,669.76	736,600	450,761	713,511	16.53	43,165
1970	1,582,334.36	1,574,182	963,317	1,568,418	17.02	92,151
1971	1,616,362.93	1,579,872	966,799	1,619,382	17.51	92,483
1972	2,075,233.62	1,990,763	1,218,243	2,102,131	18.02	116,655
1973	2,908,085.45	2,736,950	1,674,870	2,978,067	18.53	160,716
1974	3,714,124.19	3,426,918	2,097,094	3,845,505	19.05	201,864
1975	3,474,030.41	3,139,912	1,921,462	3,636,987	19.58	185,750
1976	5,042,597.21	4,460,803	2,729,778	5,338,378	20.12	265,327
1977	4,572,457.25	3,957,114	2,421,547	4,894,385	20.66	236,902
1978	5,412,567.45	4,578,339	2,801,704	5,858,404	21.21	276,210
1979	5,650,599.34	4,667,124	2,856,036	6,184,923	21.77	284,103
1980	8,004,960.72	6,449,565	3,946,796	8,861,141	22.34	396,649
1981	12,026,588.68	9,445,971	5,780,440	13,462,102	22.91	587,608
1982	11,429,774.61	8,741,492	5,349,336	12,938,303	23.49	550,800
1983	14,253,565.56	10,602,144	6,487,957	16,317,748	24.08	677,647
1984	13,019,180.77	9,406,306	5,756,167	15,074,522	24.68	610,799
1985	22,686,363.25	15,906,589	9,734,000	26,564,181	25.28	1,050,798
1986	9,827,887.94	6,674,158	4,084,235	11,640,386	25.90	449,436
1987	23,017,138.58	15,132,019	9,260,004	27,567,418	26.51	1,039,888
1988	11,091,651.40	7,043,465	4,310,232	13,436,410	27.14	495,078
1989	16,883,124.87	10,343,007	6,329,379	20,683,621	27.77	744,819
1990 1991	18,054,461.39	10,656,176	6,521,022 8,740,204	22,366,116	28.40	787,539
1991	25,185,152.86 38,353,355.88	14,282,601 20,864,226	12,767,814	31,556,041 48,597,555	29.05 29.70	1,086,266 1,636,281
1992	41,138,169.99	21,428,708	13,113,248	52,707,824	30.35	1,736,666
1994	38,287,157.36	19,044,951	11,654,513	49,604,939	31.01	1,599,643
1995	37,690,934.44	17,863,694	10,931,646	49,373,849	31.67	1,559,010
1996	36,538,942.07	16,447,201	10,064,826	48,397,481	32.34	1,496,521
1997	33,971,223.51	14,482,068	8,862,268	45,491,690	33.01	1,378,118
1998	29,010,101.02	11,676,450	7,145,376	39,270,786	33.68	1,165,997
1999	25,233,973.59	9,546,113	5,841,721	34,532,637	34.36	1,005,024
2000	28,519,617.62	10,099,595	6,180,424	39,450,964	35.04	1,125,884
2001	21,848,413.89	7,201,237	4,406,780	30,550,682	35.73	855,043
2002	23,960,865.01	7,309,789	4,473,208	33,864,176	36.42	929,824
2003	24,843,052.10	6,969,172	4,264,769	35,484,114	37.11	956,187
2004	28,443,156.73	7,271,436	4,449,738	41,059,313	37.81	1,085,938



### ACCOUNT 473.00 - DISTRIBUTION - SERVICES

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-R1									
NET S	ALVAGE PERCENT	-60							
2005	34,365,670.24	7,929,947	4,852,713	50,132,359	38.51	1,301,801			
2006	36,032,844.27	7,418,154	4,539,522	53,113,029	39.21	1,354,579			
2007	43,329,960.57	7,826,431	4,789,366	64,538,571	39.92	1,616,698			
2008	45,507,836.90	7,070,826	4,326,975	68,485,564	40.63	1,685,591			
2009	33,096,959.87	4,295,191	2,628,432	50,326,704	41.35	1,217,091			
2010	34,894,445.87	3,635,164	2,224,530	53,606,583	42.07	1,274,224			
2011	36,541,765.82	2,871,306	1,757,089	56,709,736	42.79	1,325,303			
2012	42,641,881.91	2,243,986	1,373,202	66,853,809	43.52	1,536,163			
2013	43,728,605.30	1,150,237	703,885	69,261,883	44.26	1,564,887			
2014	45,164,535.88			72,263,257	45.00	1,605,850			
	1,031,930,809.73	379,368,228	232,153,501	1,418,935,795		41,878,706			
	COMPOSITE REMAINI	NG LIFE AND AN	NNUAL ACCRUAL	RATE, PERCENT	33.9	4.06			



## ACCOUNT 474.00 - DISTRIBUTION - METER/REGULATOR INSTALLATIONS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST OF INVESTMENT AS OF DECEMBER 31, 2014

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA	20-50				
	ALVAGE PERCENT					
NET DI	ADVAGE PERCENT	20				
1968	101,120.35	115,277	72,248	49,096	1.00	49,096
1970	46,978.65	53,556	33,566	22,808	1.00	22,808
1972	30,530.56	34,805	21,814	14,823	1.00	14,823
1973	27,145.72	30,946	19,395	13,180	1.00	13,180
1974	14,528.69	16,563	10,381	7,053	1.00	7,053
1975	2,700.12	3,078	1,929	1,311	1.00	1,311
1977	8,986.39	10,191	6,387	4,397	1.10	3,997
1978	99,941.85	111,055	69,602	50,328	1.48	34,005
1979	906.16	987	619	468	1.85	253
1980	515.70	550	345	274	2.23	123
1981	131,804.92	137,525	86,192	71,974	2.61	27,576
1982	183,521.08	187,192	117,320	102,905	3.00	34,302
1983	24,854.31	24,785	15,534	14,291	3.38	4,228
1984	4,821,110.90	4,691,905	2,940,589	2,844,744	3.78	752,578
1985	179,569.86	170,555	106,893	108,591	4.17	26,041
1986	214,733.50	198,800	124,595	133,085	4.57	29,121
1987	158,778.06	143,091	89,680	100,854	4.98	20,252
1988	266,888.54	234,115	146,728	173,538	5.38	32,256
1989	391,782.11	333,798	209,203	260,936	5.80	44,989
1990	291,438.74	240,962	151,020	198,706	6.22	31,946
1991	213,076.97	170,802	107,048	148,644	6.64	22,386
1992	2,139,214.12	1,659,602	1,040,133	1,526,924	7.07	215,972
1993	2,851,011.86	2,136,548	1,339,053	2,082,161	7.51	277,252
1994	8,187,278.94	5,919,403	3,709,907	6,114,828	7.95	769,161
1995	14,750,018.00	10,266,013	6,434,087	11,265,935	8.40	1,341,183
1996	6,441,895.46	4,305,763	2,698,580	5,031,695	8.86	567,911
1997	7,336,587.75	4,696,883	2,943,709	5,860,196	9.33	628,102
1998	4,469,790.49	2,732,830	1,712,765	3,650,984	9.81	372,170
1999	8,422,509.53	4,906,954	3,075,368	7,031,643	10.29	683,347
2000	6,431,127.21	3,553,841 3,813,865	2,227,322	5,490,031	10.79 11.30	508,807
2001 2002	7,306,254.07 7,026,807.38	3,448,757	2,390,289 2,161,462	6,377,216 6,270,707	11.82	564,355 530,517
2002	6,712,845.17	3,448,757	1,928,574	6,126,840	12.36	495,699
2003	9,054,760.93	3,851,895	2,414,124	8,451,589	12.91	654,654
2004	10,249,396.16	4,009,564	2,512,941	9,786,334	13.48	725,989
2005	11,137,151.05	3,962,598	2,483,505	10,881,076	14.07	773,353
2000	12,026,571.23	3,831,666	2,401,445	12,030,440	14.69	818,954
2008	10,101,106.55	2,836,391	1,777,670	10,343,658	15.32	675,173
2009	13,947,284.80	3,355,717	2,103,151	14,633,591	15.99	915,171
2010	17,763,372.02	3,527,806	2,211,005	19,105,041	16.69	1,144,700
2010	25,852,082.89	3,986,391	2,498,418	28,524,081	17.43	1,636,493
	.,,	-,,	,,	-,,		, ,
	199,417,978.79	86,790,193	54,394,596	184,906,979		15,471,287
	COMPOSITE REMAIN	ING LIFE AND A	NNUAL ACCRUAL	RATE, PERCENT .	. 12.0	7.76

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#### ACCOUNT 475.00 - DISTRIBUTION - SYSTEMS - MAINS

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
			( ),	( - )		
	OR CURVE IOWA (					
NET SAL	VAGE PERCENT	-25				
1959	1 100 060 02	2 524 220	2 161 627	1 674 574	19.96	02 006
1959	4,108,969.02 418,402.47	3,534,330 355,072	3,461,637 347,769	1,674,574 175,234	20.55	83,896 8,527
1961	592,493.13	495,983	485,782	254,834	20.33	12,055
1962	1,786,423.46	1,474,157	1,443,837	789,192	21.75	36,285
1963	3,346,368.30	2,721,518	2,665,542	1,517,418	22.36	67,863
1964	3,248,206.90	2,601,733	2,548,221	1,512,038	22.99	65,769
1965	2,572,776.92	2,028,570	1,986,847	1,229,124	23.63	52,015
1966	4,559,797.29	3,537,377	3,464,621	2,235,126	24.28	92,056
1967	2,867,607.68	2,187,662	2,142,667	1,441,843	24.94	57,812
1968	3,378,034.31	2,532,850	2,480,755	1,741,788	25.61	68,012
1969	7,799,912.83	5,744,831	5,626,672	4,123,219	26.29	156,836
1970	10,218,738.80	7,390,575	7,238,567	5,534,856	26.97	205,223
1971	4,529,912.00	3,214,312	3,148,201	2,514,189	27.67	90,863
1972	7,113,523.23	4,948,878	4,847,090	4,044,814	28.38	142,523
1973	7,355,000.75	5,014,915	4,911,769	4,281,982	29.09	147,198
1974	9,492,234.68	6,338,677	6,208,304	5,656,989	29.81	189,768
1975	6,377,026.81	4,167,467	4,081,751	3,889,533	30.54	127,359
1976	9,789,048.07	6,255,814	6,127,146	6,109,164	31.28	195,306
1977	8,767,021.54	5,474,238	5,361,645	5,597,132	32.03	174,747
1978	9,970,234.37	6,079,475	5,954,434	6,508,359	32.78	198,547
1979	17,349,313.30	10,321,540	10,109,249	11,577,393	33.54	345,182
1980	18,263,838.77	10,590,972	10,373,139	12,456,659	34.31	363,062
1981	19,344,617.16	10,922,938	10,698,277	13,482,494	35.09	384,226
1982	34,166,283.28	18,771,383	18,385,297	24,322,557	35.87	678,075
1983	53,724,300.37	28,677,360	28,087,530	39,067,845	36.67	1,065,390
1984	25,697,571.28	13,320,657	13,046,680	19,075,284	37.46	509,217
1985	18,006,679.42	9,049,032	8,862,913	13,645,436	38.27	356,557
1986	18,924,032.65	9,210,800	9,021,354	14,633,687	39.08	374,455
1987	26,704,705.28	12,569,905	12,311,370	21,069,512	39.90	528,058
1988	13,006,895.03	5,911,471	5,789,885	10,468,734	40.73	257,028
1989 1990	16,698,661.07 29,807,420.12	7,318,606	7,168,078	13,705,248 24,937,071	41.56 42.39	329,770
1990 1991	52,991,982.28	12,580,967	12,322,204		42.39	588,277
1991	78,833,387.31	21,486,924 30,655,348	21,044,985 30,024,835	45,194,993 68,516,899	43.24	1,045,213 1,554,024
1993	43,731,291.42	16,279,520	15,944,686	38,719,428	44.94	861,581
1994	49,372,235.12	17,550,595	17,189,618	44,525,676	45.80	972,176
1995	50,470,204.36	17,082,902	16,731,544	46,356,211	46.67	993,276
1996	43,728,464.25	14,058,155	13,769,010	40,891,570	47.54	860,151
1997	43,457,093.19	13,223,993	12,952,005	41,369,361	48.42	854,386
1998	39,287,020.19	11,279,795	11,047,794	38,060,981	49.30	772,028
1999	40,630,057.78	10,958,942	10,733,541	40,054,031	50.19	798,048
2000	32,177,951.87	8,120,106	7,953,093	32,269,347	51.08	631,741
2001	34,188,151.98	8,026,096	7,861,017	34,874,173	51.98	670,915
2002	27,517,757.94	5,976,513	5,853,589	28,543,608	52.88	539,781
2003	31,289,771.15	6,239,571	6,111,237	33,000,977	53.79	613,515

ACCOUNT 475.00 - DISTRIBUTION - SYSTEMS - MAINS

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 6 ALVAGE PERCENT					
2004	26,583,872.43	4,828,628	4,729,314	28,500,527	54.70	521,033
2005	28,273,291.17	4,632,932	4,537,643	30,803,971	55.61	553,929
2006	33,197,464.15	4,843,510	4,743,890	36,752,940	56.53	650,149
2007	37,035,103.34	4,737,716	4,640,271	41,653,608	57.45	725,041
2008	39,601,724.56	4,346,784	4,257,380	45,244,776	58.38	775,005
2009	35,989,915.42	3,296,676	3,228,871	41,758,523	59.31	704,072
2010	24,139,275.32	1,772,728	1,736,267	28,437,827	60.24	472,075
2011	24,375,540.34	1,342,483	1,314,871	29,154,554	61.18	476,537
2012	25,811,733.88	952,776	933,179	31,331,488	62.11	504,452
2013	35,315,810.82	648,487	635,149	43,509,615	63.06	689,972
2014	37,139,427.50			46,424,284	64.00	725,379
	1,315,124,578.06	437,685,245	428,683,022	1,215,222,701		25,916,436
	COMPOSITE REMAINI	NG LIFE AND AN	NNUAL ACCRUAL	RATE, PERCENT	46.9	1.97



#### ACCOUNT 476.00 - DISTRIBUTION - NGV FUEL EQUIPMENT

	ORIGINAL	CALCULATED	ALLOC. BOOK	FUTURE BOOK	REM.	ANNUAL
YEAR	COST	ACCRUED	RESERVE	ACCRUALS	LIFE	ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	VOR CURVE IOWA ALVAGE PERCENT					
1996	63,432.30	48,481	63,432			
1997	56,248.13	41,624	56,248			
1998	50,153.69	35,895	50,154			
1999	50,208.17	34,715	50,208			
2000	266,663.32	177,142	266,663			
2001	40,654.46	25,844	40,654			
2002	43,497.59	26,347	43,498			
2010	143,508.79	40,798	143,509			
2011	394,542.76	90,745	394,543			
2012	1,215.46	207	900,264	899,049-		
	1,110,124.67	521,798	2,009,173	899,049-		
	COMPOSITE REMAIN	ING LIFE AND AN	NNUAL ACCRUAL	RATE, PERCENT	0.0	0.00

#### ACCOUNT 477.10 - DISTRIBUTION - MEASURING AND REGULATING ADDITIONS

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUTURE BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
SUBVIVO	R CURVE IOWA	30-22				
	VAGE PERCENT					
		10				
1958	40,513.10	43,079	44,564			
1963	1,338.85	1,412	1,473			
1964	214.27	224	236			
1965	784.71	811	863			
1966	540.28	553	590	4	2.08	2
1969	1,644.28	1,631	1,739	70	2.95	24
1970	6,275.03	6,157	6,564	339	3.24	105
1971	5,454.34	5,292	5,642	358	3.54	101
1973	86,591.83	82,138	87,564	7,687	4.13	1,861
1974	8,788.62	8,237	8,781	886	4.44	200
1975	2,550.61	2,360	2,516	290	4.76	61
1976	26,245.35	23,972	25,556	3,314	5.09	651
1977	8,487.30	7,646	8,151	1,185	5.43	218
1978	4,340.83	3,853	4,108	667	5.79	115
1979	72,002.42	62,940	67,098	12,105	6.16	1,965
1980	78,936.45	67,872	72,356	14,474	6.55	2,210
1981	15,662.48	13,232	14,106	3,123	6.96	449
1982	187,372.91	155,339	165,601	40,509	7.39	5,482
1983	199,185.61	161,918	172,614	46,490	7.83	5,937
1984	138,319.42	110,056	117,326	34,825	8.30	4,196
1985	92,113.15	71,670	76,405	24,919	8.78	2,838
1986	619,955.84	470,772	501,871	180,080	9.29	19,384
1987	484,944.22	358,828	382,532	150,907	9.82	15,367
1988	7,046,924.67	5,074,751	5,409,988	2,341,629	10.36	226,026
1989	333,198.16	233,105	248,504	118,014	10.92	10,807
1990	114,497.94	77,625	82,753	43,195	11.51	3,753
1991	3,183,033.50	2,087,952	2,225,882	1,275,455	12.11	105,322
1992	2,781,931.65	1,761,622	1,877,994	1,182,131	12.73	92,862
1993	1,880,992.26	1,146,959	1,222,727	846,364	13.37	63,303
1994	3,155,470.69	1,848,907	1,971,045	1,499,973	14.02	106,988
1995	4,811,868.90	2,701,205	2,879,646	2,413,410	14.69	164,289
1996	3,224,869.89	1,728,733	1,842,933	1,704,424	15.38	110,821
1997	3,422,959.24	1,747,078	1,862,489	1,902,766	16.08	118,331
1998	2,408,826.07	1,165,872	1,242,889	1,406,820	16.80	83,739
1999	2,284,524.46	1,043,715	1,112,663	1,400,314	17.54	79,835
2000	3,307,052.58	1,421,163	1,515,045	2,122,713	18.28	116,122
2001	4,577,529.65	1,839,540	1,961,059	3,074,224	19.04	161,461
2002	3,167,820.12	1,182,430	1,260,541	2,224,061	19.82	112,213
2003	7,451,239.00	2,565,462	2,734,936	5,461,427	20.61	264,989
2004	3,760,294.38	1,185,760	1,264,091	2,872,233	21.40	134,216
2005	4,852,021.02	1,384,102	1,475,535	3,861,688	22.22	173,793
2006	7,891,272.84	2,013,853	2,146,888	6,533,512	23.04	283,573
2007	5,542,987.97	1,245,859	1,328,160	4,769,127	23.87	199,796
2008	3,496,630.79	676,948	721,667	3,124,627	24.72	126,401
2009	4,987,553.67	808,298	861,694	4,624,615	25.58	180,790



#### ACCOUNT 477.10 - DISTRIBUTION - MEASURING AND REGULATING ADDITIONS

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA					
NET S	ALVAGE PERCENT	-10				
2010	3,545,102.21	462,767	493,337	3,406,275	26.44	128,830
2011	4,070,933.77	400,022	426,447	4,051,580	27.32	148,301
2012	5,170,903.09	341,280	363,825	5,324,168	28.20	188,800
2013	7,392,410.34	243,950	260,065	7,871,586	29.10	270,501
2014	2,165,043.49		0	2,381,548	30.00	79,385
	108,110,154.25	38,048,950	40,561,059	78,360,111		3,796,413
	COMPOSITE REMAIN	ING LIFE AND A	NNUAL ACCRUAL	RATE, PERCENT .	. 20.6	3.51



#### ACCOUNT 477.20 - DISTRIBUTION - TELEMETRY

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA					
1959	202.89	200	213			
1969		9,285	9,950			
1971		135	148			
1973	2,713.40	2,539	2,849			
1976	195.90	177	206			
1979		12,417	15,097			
1982	17,668.21	14,563	18,552			
1983		39,764	51,516			
1984		1,885	2,484			
1985		29,594	39,723			
1986		55,058	75,293			
1987		457	637			
1988		36,371	51,773			
1989		6,453	9,386			
1990		9,912	14,752			
1991		32,656	49,761			
1992		45,333	70,833			
1993 1994		62,957	101,035 231,477			
1994		140,187 165,998	282,251			
1995		800,694	1,404,726			
1997		321,516	583,249			
1998		169,580	318,830			
1999		150,151	293,333			
2000		140,377	277,964	7,790	8.14	957
2001		188,493	373,240	28,339	8.49	3,338
2002		69,224	137,072	17,618	8.84	1,993
2003		166,325	329,345	62,007	9.20	6,740
2004	110,303.11	46,472	92,020	23,798	9.58	2,484
2005	31,141.55	12,303	24,362	8,337	9.98	835
2006	189,560.91	69,664	137,944	61,095	10.40	5,875
2007	47,814.20	16,128	31,935	18,270	10.86	1,682
2008	,	57,904	114,657	86,313	11.39	7,578
2009	108,270.60	28,563	56,558	57,126	11.98	4,768
2010	443,077.92	97,410	192,884	272,348	12.65	21,529
2011		58,515	115,867	242,860	13.39	18,137
2012		125,945	249,388	870,125	14.20	61,276
2013		87,058	172,386	1,341,674	15.08	88,970
2014	1,584,942.07		0	1,664,189	16.00	104,012
	10,186,273.32	3,272,263	5,933,696	4,761,891		330,174
	COMPOSITE REMAINI	ING LIFE AND A	NNUAL ACCRUAL	RATE, PERCENT .	. 14.4	3.24

#### ACCOUNT 477.30 - DISTRIBUTION - MEASURING AND REGULATING EQUIPMENT

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST OF INVESTMENT AS OF DECEMBER 31, 2014

YEAR	ORIGINAL COST	CALCULATED ACCRUED	ALLOC. BOOK RESERVE	FUTURE BOOK ACCRUALS	REM. LIFE	ANNUAL ACCRUAL
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	CURVE IOWA AGE PERCENT					
1989	50,316.16	46,962	50,316			
1991	253.68	233	254			
1995	12,447.44	10,647	12,447			
1999	5,185.29	3,948	5,185			
2000	1,661.74	1,211	1,662			
2001	44,063.55	30,492	44,064			
2003	49,223.00	29,993	105,983	56,760-		
	163,150.86	123,486	219,911	56,760-		

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



#### ACCOUNT 478.10 - DISTRIBUTION - METERS

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA ALVAGE PERCENT					
1969	416.84	394	353	64	1.00	64
1970	83.78	79	71	13	1.00	13
1971	1,682.65	1,589	1,425	258	1.00	258
1972	1,310.33	1,238	1,110	200	1.00	200
1975	861.69	814	730	132	1.00	132
1981	126.00	119	107	19	1.00	19
1983	150.97	143	128	23	1.00	23
1984	1,898.90	1,793	1,607	292	1.00	292
1985	60,995.50	57,031	51,129	9,866	1.17	8,432
1986	62,645.44	57,808	51,826	10,819	1.39	7,783
1987	67,834.10	61,767	55,375	12,459	1.61	7,739
1988	12,742,021.60	11,446,540	10,261,957	2,480,065	1.83	1,355,227
1989	5,067,688.13	4,487,742	4,023,313	1,044,375	2.06	506,978
1990		10,254,601	9,193,369	2,563,529	2.30	1,114,578
1991	2,469,220.69	2,118,048	1,898,855	570,366	2.56	222,799
1992		2,310,365	2,071,269	670,093	2.83	236,782
1993	3,631,519.29	2,998,037	2,687,775	943,744	3.14	300,555
1994	3,967,532.85	3,200,490	2,869,277	1,098,256	3.48	315,591
1995	7,342,274.03	5,763,685	5,167,211	2,175,063	3.87	562,032
1996	9,004,470.70	6,853,393	6,144,147	2,860,324	4.30	665,192
1997	8,412,425.85	6,178,422	5,539,027	2,873,399	4.78	601,129
1998	6,152,888.07	4,337,786	3,888,876	2,264,012	5.31	426,368
1999	9,260,562.96	6,230,322	5,585,556	3,675,007	5.89	623,940
2000	7,181,147.24	4,583,942	4,109,558	3,071,589	6.51	471,826
2001	6,321,039.16	3,806,656	3,412,712	2,908,327	7.16	406,191
2002	11,225,143.63	6,329,746	5,674,691	5,550,453	7.85	707,064
2003	16,392,048.63	8,587,630	7,698,910	8,693,139	8.57	1,014,369
2004	13,153,456.15	6,342,860	5,686,448	7,467,008	9.32	801,181
2005	8,294,819.30	3,645,075	3,267,852	5,026,967	10.09	498,213
2006	7,931,272.17	3,132,853	2,808,639	5,122,633	10.89	470,398
2007	9,120,729.24	3,187,148	2,857,316	6,263,413	11.71	534,877
2008	7,241,735.78	2,188,597	1,962,103	5,279,633	12.56	420,353
2009	7,800,137.57	1,980,377	1,775,431	6,024,707	13.43	448,601
2010	8,239,613.69	1,689,121	1,514,317	6,725,297	14.31	469,972
2011	10,398,560.84	1,611,777	1,444,977	8,953,584	15.21	588,664
2012		1,117,351	1,001,718	9,753,416	16.13	604,676
2013		600,441	538,302	10,960,000	17.06	642,438
2014	10,219,720.48			10,219,720	18.00	567,762
	228,519,729.82	115,165,780	103,247,467	125,272,263		15,602,711
	COMPOSITE REMAIN	ING LIFE AND A	NNUAL ACCRUAL	RATE, PERCENT .	. 8.0	6.83



#### ACCOUNT 478.20 - DISTRIBUTION - INSTRUMENTS

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
			(1)		(0)	( / )
	VOR CURVE IOWA					
NET S	ALVAGE PERCENT	0				
1983	361,761.94	303,052	289,239	72,523	5.68	12,768
1984	,	2,400	2,291	642	6.36	101
1985	5,631.05	4,490	4,285	1,346	7.09	190
1986	23,355.78	18,117	17,291	6,065	7.85	773
1987		72,854	69,533	27,275	8.66	3,150
1988	115,160.76	83,903	80,079	35,082	9.50	3,693
1989	93,986.33	66,113	63,100	30,886	10.38	2,976
1990	165,438.23	112,167	107,054	58,384	11.27	5,180
1991	344,502.95	224,516	214,283	130,220	12.19	10,683
1992	754,659.62	471,557	450,063	304,597	13.13	23,199
1993	835,661.00	499,483	476,717	358,944	14.08	25,493
1994	901,190.00	513,678	490,265	410,925	15.05	27,304
1995	785,627.00	425,810	406,401	379,226	16.03	23,657
1996	655,670.92	337,015	321,654	334,017	17.01	19,637
1997		197,779	188,764	218,668	18.01	12,141
1998	53,827.57	24,607	23,485	30,343	19.00	1,597
1999	354,932.07	152,113	145,180	209,752	20.00	10,488
2000	253,791.63	101,517	96,890	156,902	21.00	7,472
2001	375,867.06	139,608	133,245	242,622	22.00	11,028
2002	,	122,265	116,692	239,912	23.00	10,431
2003		437,071	417,149	973,513	24.00	40,563
2004		389,530	371,775	991,602	25.00	39,664
2005	288,290.84	74,131	70,752	217,539	26.00	8,367
2006	,	116,127	110,834	397,223	27.00	14,712
2007		89,543	85,462	362,251	28.00	12,938
2008	308,436.81	52,875	50,465	257,972	29.00	8,896
2009	53,796.50	7,685	7,335	46,462	30.00	1,549
2010	174,068.52	19,894	18,987	155,082	31.00	5,003
2011	291,813.18	25,011	23,871	267,942	32.00	8,373
2012		6,756	б,448	111,780	33.00	3,387
2013		5,707	5,447	194,291	34.00	5,714
2014	54,309.85		0	54,310	35.00	1,552
	12,143,331.07	5,097,374	4,865,036	7,278,295		362,679
	COMPOSITE REMAINI	ING LIFE AND A	NNUAL ACCRUAL	RATE, PERCENT .	. 20.1	2.99

ACCOUNT 472.20 - BIO GAS - STRUCTURES AND IMPROVEMENTS

CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST OF INVESTMENT AS OF DECEMBER 31, 2014

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	CURVE IOWA AGE PERCENT					
2010	136,986.21	13,604	22,051	128,634	32.75	3,928
2013	47,985.30	1,202	1,948	50,836	35.18	1,445
2014	369,634.57		0	406,598	36.00	11,294
	554,606.08	14,806	23,999	586,068		16,667

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 35.2 3.01



#### ACCOUNT 474.10 - BIO GAS - METER/REGULATOR INSTALLATIONS

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 1 ALVAGE PERCENT					
2010 2014	21,779.73 156,449.24	4,714	4,544 0	22,681 195,561	15.71 19.00	1,444 10,293
	178,228.97	4,714	4,544	218,242		11,737
	COMPOSITE REMAINI	NG LIFE AND ANI	NUAL ACCRUAL I	RATE, PERCENT .	. 18.6	6.59



#### ACCOUNT 475.10 - BIO GAS - MAINS

## CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST OF INVESTMENT AS OF DECEMBER 31, 2014

YEAR (1)	ORIGINAL COST (2)		LOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)			
SURVIVOR CURVE IOWA 65-R2.5 NET SALVAGE PERCENT25									
NEI S	ALVAGE PERCENT2	.5							
2010	73,652.86	5,326	2,615	89,451	61.24	1,461			
2011	45,881.36	2,497	1,226	56,126	62.17	903			
2012	422,265.80	15,349	7,538	520,294	63.11	8,244			
2014	846,231.62			1,057,790	65.00	16,274			
	1,388,031.64	23,172	11,379	1,723,661		26,882			
					C A 1	1 0 4			

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 64.1 1.94



#### ACCOUNT 477.40 - BIO GAS - MEASURING AND REGULATING EQUIPMENT

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 30 ALVAGE PERCENT 0	-R2				
2010	275,549.82	32,699	59,135	216,415	26.44	8,185
2011	4,049.98	362	655	3,395	27.32	124
2012	316.05	19	34	282	28.20	10
2013	578,338.21	17,350	31,377	546,961	29.10	18,796
2014	762,122.57		0	762,123	30.00	25,404
	1,620,376.63	50,430	91,201	1,529,176		52,519
	COMPOSITE REMAINING	LIFE AND A	NNUAL ACCRUAL	RATE, PERCENT .	. 29.1	3.24



#### ACCOUNT 478.30 - BIO GAS - METERS

## CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST OF INVESTMENT AS OF DECEMBER 31, 2014

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	18-R2.5				
NET SALV	AGE PERCENT	0				
2010	7,334.33	1,504	2,568	4,766	14.31	333
2013	2,963.75	155	264	2,700	17.06	158
2014	627.52		0	627	18.00	35
	10,925.60	1,659	2,832	8,093		526

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 15.4 4.81



#### ACCOUNT 418.10 - BIO GAS - PURIFICATION OVERHAUL

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	JOR CURVE 20-SQ ALVAGE PERCENT					
2014	20,423.22			20,423	20.00	1,021
	20,423.22			20,423		1,021
	COMPOSITE REMAINI	ING LIFE AND A	ANNUAL ACCRUAL	RATE, PERCENT .	. 20.0	5.00



#### ACCOUNT 418.20 - BIO GAS - PURIFICATION UPGRADER

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE 20-SQU ALVAGE PERCENT					
2013 2014	2,444,884.49 4,572,331.59	128,356	263,370 0	2,303,759 4,800,948	19.00 20.00	121,250 240,047
	7,017,216.08	128,356	263,370	7,104,707		361,297
	COMPOSITE REMAININ	IG LIFE AND AN	NNUAL ACCRUAL	RATE, PERCENT .	. 19.7	5.15



#### ACCOUNT 482.10 - GENERAL PLANT - STRUCTURES (FRAME)

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA ALVAGE PERCENT					
1988	727,292.32	628,017	527,292	200,000	2.73	73,260
1990	321.21	269	226	. 95	3.28	29
1991	295,355.52	242,339	203,471	91,885	3.59	25,595
1992	84,431.17	67,756	56,889	27,542	3.95	6,973
1993	6,275.90	4,914	4,126	2,150	4.34	495
1994	927,662.45	705,951	592,726	334,936	4.78	70,070
1995	2,434,883.71	1,794,509	1,506,695	928,189	5.26	176,462
1996	961,272.12	683,464	573,846	387,426	5.78	67,029
1997	106,930.77	72,980	61,275	45,656	6.35	7,190
1998	461,537.95	301,154	252,853	208,685	6.95	30,027
1999	139,534.49	86,581	72,695	66,839	7.59	8,806
2000	223,606.97	131,257	110,205	113,402	8.26	13,729
2001	1,028,572.60	567,772	476,709	551,864	8.96	61,592
2002	981,245.96	506,323	425,116	556,130	9.68	57,451
2003	229,116.44	109,632	92,049	137,067	10.43	13,142
2004	82,486.33	36,253	30,439	52,047	11.21	4,643
2005	234,491.77	93,679	78,654	155,838	12.01	12,976
2006	159,826.07	57,298	48,108	111,718	12.83	8,708
2007	115,250.00	36,477	30,627	84,623	13.67	6,190
2008	104,998.31	28,717	24,111	80,887	14.53	5,567
2009	1,023,089.86	234,799	197,140	825,950	15.41	53,598
2010	2,055,035.13	380,181	319,205	1,735,830	16.30	106,493
2011	2,770,368.16	386,466	324,483	2,445,885	17.21	142,120
2012	986,553.97	92,243	77,448	909,106	18.13	50,144
2013	2,006,047.99	94,284	79,162	1,926,886	19.06	101,096
2014	663,489.16		0	663,489	20.00	33,174
	18,809,676.33	7,343,315	6,165,550	12,644,126		1,136,559
	COMPOSITE REMAINI	ING LIFE AND A	NNUAL ACCRUAL	RATE, PERCENT .	. 11.1	6.04

ACCOUNT 482.20 - GENERAL PLANT - STRUCTURES (MASONRY)

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	DR CURVE IOWA LVAGE PERCENT					
1960	85,734.03	74,974	74,596	19,711	10.25	1,923
1967	70,596.50	56,844	56,557	21,099	13.40	1,575
1970	13,832.70	10,648	10,594	4,622	15.01	308
1974	688.62	494	492	265	17.37	15
1975	181.34	128	127	72	18.00	4
1976	248,769.72	171,631	170,765	102,882	18.64	5,519
1977	8,927.00	6,029	5,999	3,821	19.30	198
1978	20,357.44	13,454	13,386	9,007	19.96	451
1979	305,827.48	197,540	196,544	139,866	20.64	6,776
1980	4,921.37	3,104	3,088	2,326	21.33	109
1981	8,968.67	5,517	5,489	4,377	22.04	199
1982	7,755.47	4,649	4,626	3,905	22.75	172
1983	11,041.06	6,444	6,412	5,733	23.47	244
1984	45,537.81	25,837	25,707	24,385	24.21	1,007
1985	1,086.55	599	596	599	24.95	24
1986	246.00	131	130	141	25.71	5
1987	3,350.06	1,734	1,725	1,960	26.47	74
1988	527,194.04	263,977	262,646	317,267	27.24	11,647
1989	452,674.55	218,796	217,693	280,249	28.03	9,998
1990	114,839.26	53,511	53,241	73,082	28.82	2,536
1991	27,623.86	12,385	12,323	18,063	29.62	610
1992	3,313,005.15	1,426,381	1,419,188	2,225,118	30.43	73,123
1993	141,792.70	58,489	58,194	97,778	31.25	3,129
1994	3,763,964.63	1,483,905	1,476,421	2,663,940	32.08	83,041
1995	4,263,857.08	1,603,125	1,595,040	3,095,203	32.91	94,051
1996	4,365,619.35	1,560,709	1,552,838	3,249,343	33.75	96,277
1997	446,730.18	151,352	150,589	340,814	34.60	9,850
1998	1,376,344.34	440,265	438,045	1,075,934	35.46	30,342
1999	227,140.28	68,310	67,966	181,888	36.33	5,007
2000	650,787.40	183,262	182,338	533,528	37.20	14,342
2001	1,244,864.63	326,453	324,807	1,044,544	38.08	27,430
2002	516,034.79	125,335	124,703	442,935	38.96	11,369
2003	1,490,878.55	332,913	331,234	1,308,732	39.85	32,841
2004	1,078,369.99	219,448	218,341	967,866	40.75	23,751
2005	51,661,993.90	9,490,308	9,442,446	47,385,747	41.65	1,137,713
2006	1,130,939.61	185,112	184,178	1,059,856	42.56	24,903
2007	3,203,886.93	459,566	457,248	3,067,028	43.48	70,539
2008	1,026,255.73	126,660	126,021	1,002,860	44.39	22,592
2009	2,101,637.06	216,385	215,294	2,096,507	45.32	46,260
2010	987,028.26	81,430	81,019	1,004,712	46.25	21,724
2011	8,866,730.99	550,092	547,318	9,206,086	47.18	195,127

ACCOUNT 482.20 - GENERAL PLANT - STRUCTURES (MASONRY)

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA ALVAGE PERCENT	50-R2.5 -10				
2012 2013 2014	13,525,308.54 1,137,858.01 41,146.01	559,407 23,531	556,587 23,412 0	14,321,252 1,228,232 45,260	48.12 49.06 50.00	297,615 25,035 905
	108,522,327.64	20,800,864	20,695,963	98,678,597		2,390,360
	COMPOSITE REMAINI	ING LIFE AND A	NNUAL ACCRUAL	RATE, PERCENT .	. 41.3	2.20



#### ACCOUNT 484.00 - GENERAL PLANT - VEHICLES

## CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST OF INVESTMENT AS OF DECEMBER 31, 2014

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA					
NET S.	ALVAGE PERCENT	+4				
2000	7,000.00	5,062	6,720			
2001	6,661.85	4,679	6,395			
2002	184,761.50	125,343	177,371			
2003	183,346.57	119,395	176,013			
2004	134,011.79	82,980	128,651			
2005	348,708.62	204,204	334,760			
2006	833,310.02	455,987	787,316	12,662	2.58	4,908
2007	266,047.78	134,515	232,256	23,150	2.84	8,151
2008	757,058.34	348,852	602,334	124,442	3.12	39,885
2009	889,575.48	364,373	629,133	224,859	3.44	65,366
2010	1,198,613.82	425,748	735,105	415,564	3.78	109,938
2011	977,188.41	287,687	496,726	441,375	4.16	106,100
2012	1,039,062.77	227,759	393,253	604,247	4.63	130,507
2013	1,305,996.58	160,895	277,805	975,952	5.23	186,607
2014	1,932,572.58		0	1,855,270	6.00	309,212
	10,063,916.11	2,947,479	4,983,838	4,677,522		960,674
					1 0 0	

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 4.9 9.55

#### ACCOUNT 485.10 - GENERAL PLANT - HEAVY WORK EQUIPMENT

## CALCULATED REMAINING LIFE DEPRECIATION ACCRUAL RELATED TO ORIGINAL COST OF INVESTMENT AS OF DECEMBER 31, 2014

YEAR (1)	ORIGINAL COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	OR CURVE IOWA					
NET SAI	JVAGE PERCENT	+5				
1992	6,400.00	4,124	5,961	119	3.86	31
1993	49,650.75	31,249	45,168	2,000	4.05	494
1995	19,242.50	11,486	16,602	1,678	4.46	376
1996	20,529.03	11,897	17,196	2,307	4.68	493
1997	32,729.25	18,371	26,554	4,539	4.91	924
1998	52,786.37	28,584	41,316	8,831	5.16	1,711
1999	16,249.22	8,477	12,253	3,184	5.41	589
2000	12,982.28	6,496	9,389	2,944	5.68	518
2001	16,506.95	7,893	11,409	4,273	5.96	717
2002	23,621.28	10,753	15,543	6,897	6.25	1,104
2003	63,686.00	27,427	39,644	20,858	6.56	3,180
2005	33,948.14	12,874	18,608	13,643	7.21	1,892
2006	40,804.49	14,311	20,685	18,079	7.57	2,388
2007	12,040.27	3,880	5,608	5,830	7.93	735
2008	32,668.31	9,491	13,719	17,316	8.33	2,079
2010	79,618.56	17,334	25,055	50,583	9.25	5,468
2011	82,206.26	14,188	20,508	57,588	9.82	5,864
2012	252,922.43	31,036	44,860	195,416	10.45	18,700
2013	3,103.00	204	295	2,653	11.17	238
2014	45,562.75		0	43,285	12.00	3,607
	897,257.84	270,075	390,373	462,022		51,108
_						

COMPOSITE REMAINING LIFE AND ANNUAL ACCRUAL RATE, PERCENT .. 9.0 5.70



#### ACCOUNT 485.20 - GENERAL PLANT - HEAVY MOBILE EQUIPMENT

YEAR (1)	ORIGINAL ( COST (2)	CALCULATED ACCRUED (3)	ALLOC. BOOK RESERVE (4)	FUTURE BOOK ACCRUALS (5)	REM. LIFE (6)	ANNUAL ACCRUAL (7)
	VOR CURVE IOWA 8-1 ALVAGE PERCENT +15					
2001	29,463.87	19,128	25,044			
2003	38,786.72	23,202				
2004	186,443.66	106,378	158,477			
2005	148,469.18	80,925	126,199			
2006	66,492.85	34,547	56,390	129	3.11	41
2007	136,392.75	67,242	109,758	6,176	3.36	1,838
2008	175,242.84	80,995	132,206	16,750	3.65	4,589
2009	472,973.65	199,506	325,649	76,379	4.03	18,953
2010	648,963.18	237,196	387,170	164,449	4.56	36,063
2011	242,682.55	70,651	115,322	90,958	5.26	17,292
2012	221,039.84	44,622	72,835	115,049	6.10	18,860
2013	90,225.29	9,395	15,335	61,356	7.02	8,740
2014	1,761,840.78		0	1,497,564	8.00	187,196
	4,219,017.16	973,787	1,557,354	2,028,810		293,572
	COMPOSITE REMAINING	LIFE AND	ANNUAL ACCRUAL	RATE, PERCENT .	. 6.9 (	5.96

# APPENDIX A ESTIMATION OF SURIVOR CURVES



### **ESTIMATION OF SURVIVOR CURVES**

### Average Service Life

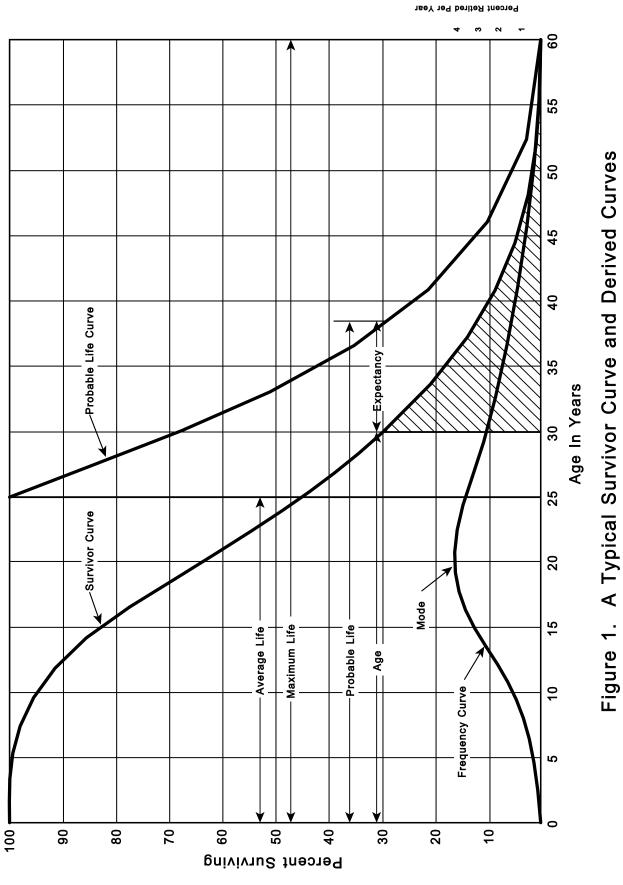
The use of an average service life for a property group implies that the various units in the group have different lives. Thus, the average life may be obtained by determining the separate lives of each of the units, or by constructing a survivor curve by plotting the number of units which survive at successive ages. A discussion of the general concept of survivor curves is presented. Also, the lowa type survivor curves are reviewed.

### SURVIVOR CURVES

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.

### lowa Type Curves

The range of survivor characteristics usually experienced by utility and industrial properties is encompassed by a system of generalized survivor curves known as the



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

The lowa curves were developed at the lowa State College Engineering Experiment Station through an extensive process of observation and classification of the ages at which industrial property had been retired. A report of the study which resulted in the classification of property survivor characteristics into 18 type curves, which constitute three of the four families, was published in 1935 in the form of the Experiment Station's Bulletin 125.<sup>1</sup> These curve types have also been presented in subsequent Experiment Station bulletins and in the text, "Engineering Valuation and Depreciation."<sup>2</sup> In 1957, Frank V. B. Couch, Jr., an Iowa State College graduate student, submitted a thesis<sup>3</sup> presenting his development of the fourth family consisting of the four O type survivor curves.

<sup>&</sup>lt;sup>1</sup> Winfrey, Robley. <u>Statistical Analyses of Industrial Property Retirements</u>. Iowa State College, Engineering Experiment Station, Bulletin 125. 1935.

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

<sup>&</sup>lt;sup>3</sup>Couch, Frank V. B., Jr. "Classification of Type O Retirement Characteristics of Industrial Property." Unpublished M.S. thesis (Engineering Valuation). Library, Iowa State College, Ames, Iowa. 1957.

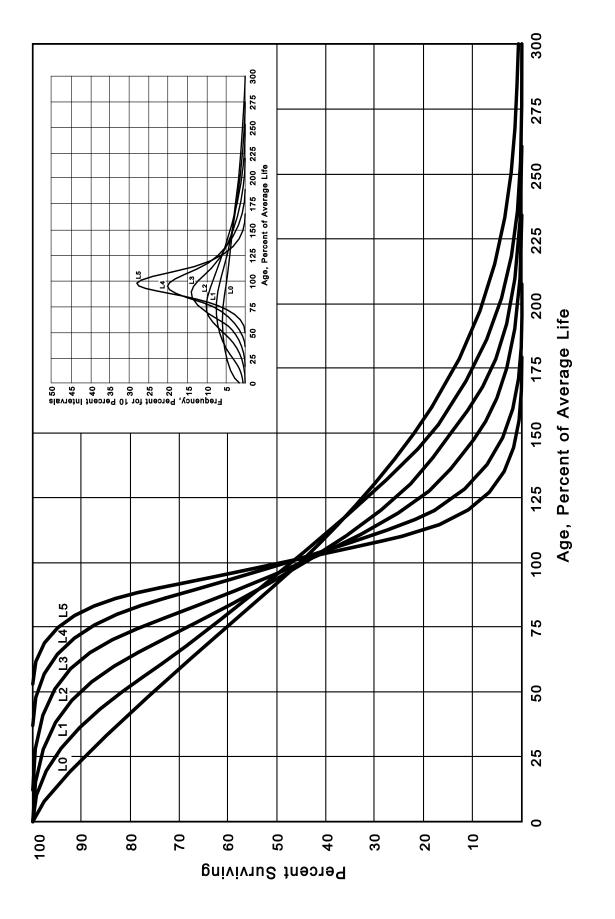
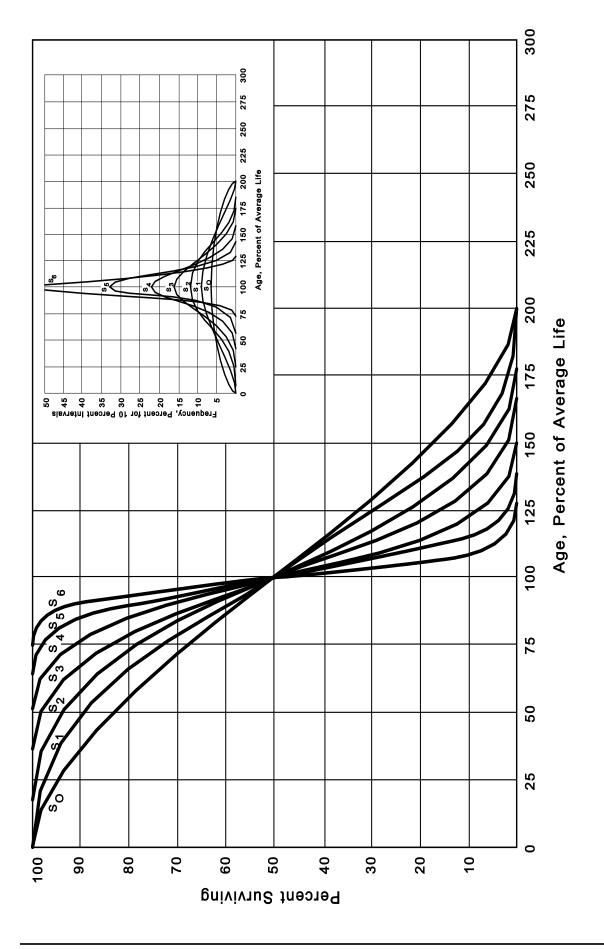
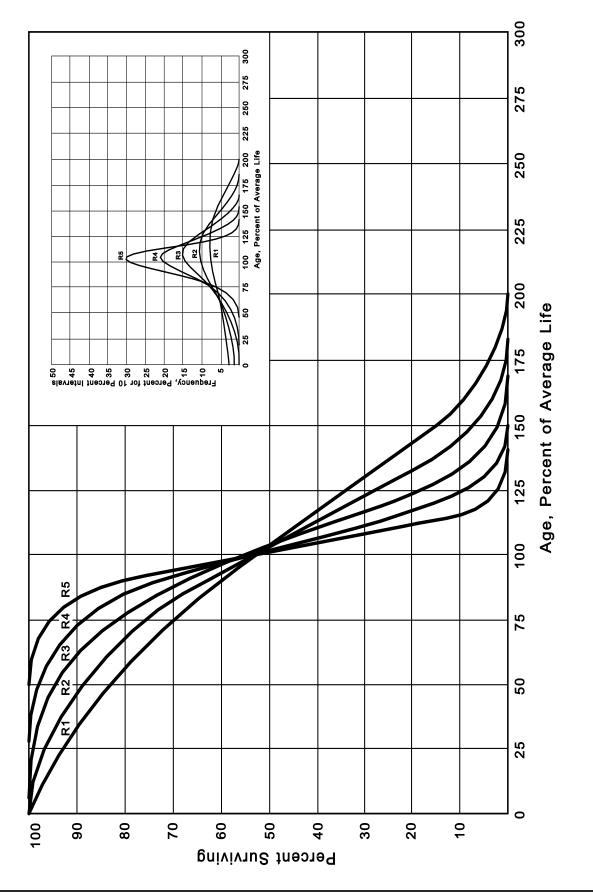


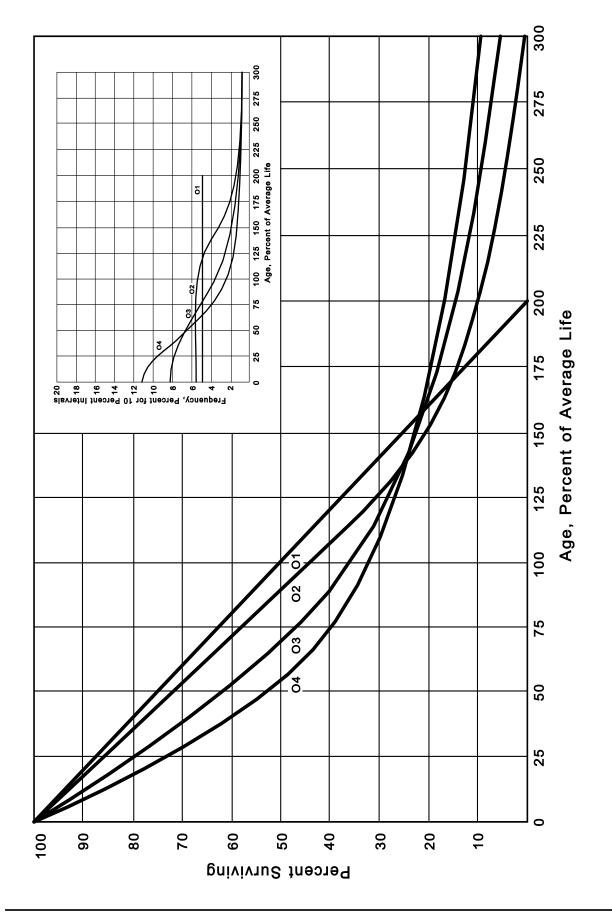
Figure 2. Left Modal or "L" lowa Type Survivor Curves



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



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



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

### **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,"<sup>4</sup> "Engineering Valuation and Depreciation,"<sup>5</sup> and "Depreciation Systems."<sup>6</sup>

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

### **Schedules of Annual Transactions in Plant Records**

The property group used to illustrate the retirement rate method is observed for the experience band 2005-2014 during which there were placements during the years 2000-2014. 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 the following pages. 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 2000 were

<sup>&</sup>lt;sup>4</sup>Winfrey, Robley, Supra Note 1.

<sup>&</sup>lt;sup>5</sup>Marston, Anson, Robley Winfrey, and Jean C. Hempstead, Supra Note 2.

<sup>&</sup>lt;sup>6</sup>Wolf, Frank K. and W. Chester Fitch. <u>Depreciation Systems</u>. Iowa State University Press. 1994.

2000-2014	Age Interval	(13)	13½-14½ 12½-13½	11½-12½	10½-11½	9½-10½	81⁄2-91⁄2	71⁄2-81⁄2	61/2-71/2	5%-6%	41⁄2-51⁄2	3½-4½	2½-3½	11⁄2-21⁄2	1/2-11/2	0-1⁄2	
Placement Band 2000-2014	Total During Age Interval	(12)	26 44	64	83	93	105	113	124	131	143	146	150	151	153	80	1,606
۵.		<u>2014</u> (11)	26 19	18	17	20	20	20	19	19	20	23	25	25	24	13	308
		<u>2013</u> (10)	25 22	22	16	19	16	18	19	19	19	22	22	23	11		273
		<u>2012</u> (9)	24 21	21	15	17	15	16	17	17	17	20	20	1			231
	ollars	<u>2011</u> (8)	23 20	19	14	16	14	15	16	16	16	18	<b>б</b>				196
	sands of D Year	<u>2010</u> (7)	16 18	17	13	14	13	14	15	15	14	8					157
	Retirements, Thousands of Dollars During Year	<u>2009</u> (6)	14 16	16	11	13	12	13	13	13	7						128
	Retirem	<u>2008</u> (5)	13 15	14	11	12	1	12	12	9							106
<del></del>		<u>2007</u> (4)	12	13	10	5	10	11	9								86
Experience Band 2005-2014		<u>2006</u> (3)	11	12	6	10	6	S									68
ence Band		<u>2005</u> (2)	10		8	ი	4										53
Experie	Year Placed	(1)	1999 2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total

SCHEDULE 1. RETIREMENTS FOR EACH YEAR 2005-2014 SUMMARIZED BY AGE INTERVAL

### FortisBC Energy Inc. 2014 Depreciation Study

SCHEDULE 2. OTHER TRANSACTIONS FOR EACH YEAR 2005-2014 SUMMARIZED BY AGE INTERVAL	
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Placement Band 2000-2014

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Experience Band 2005-2014

		Interval (13)	13½-14½	12½-13½	11½-12½	10½-11½	9½-10½	8½-9½	7½-8½	61/2-71/2	5½-6½	4½-5½	3½-4½	2% - 3%	11⁄2-21⁄2	111/2	0-½		
	Total During	Age Interval (12)		·	·	60		(5)					10	·	(121)			(50)	
		<u>2014</u> (11)		•			ı		•	•			ı		(102) <sup>c</sup>			(102)	
	During Year	<u>2013</u> (10)			,		ı					22 <sup>a</sup>	ı	,				22	
f Dollars		<u>2012</u> (9)		ı		(5) <sup>b</sup>	6 <sup>a</sup>		·	ı	(12) <sup>b</sup>	ı	(19) <sup>b</sup>		ı			(30)	
ousands o		<u>2011</u> (8)	60 <sup>a</sup>	·	·	ı	ı		ı	ı	ı	ı	ı	·				60	
Sales, Tho		<u>2010</u> (7)		ı		ı	ı		·	ı	ı	ı	ı						
Acquisitions, Transfers and Sales, Thousands of Dollars		<u>2009</u> (6)			,		ı		ı									,	
ons, Tran:		<u>2008</u> (5)			,		ı												
Acquisiti		<u>2007</u> (4)			,		ı												
		<u>2006</u> (3)			,		ı												
		<u>2005</u> (2)		ı	,		I												
	Vear	Placed (1)	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total	

<sup>a</sup> Transfer Affecting Exposures at Beginning of Year  $^{\rm b}$  Transfer Affecting Exposures at End of Year

 $^{\circ}$  Sale with Continued Use

Parentheses Denote Credit Amount.

retired in 2005. The \$10,000 retirement occurred during the age interval between 4½ and 5½ years on the basis that approximately one-half of the amount of property was installed prior to and subsequent to July 1 of each year. That is, on the average, property installed during a year is placed in service at the midpoint of the year for the purpose of the analysis. All retirements also are stated as occurring at the midpoint of a one-year age interval of time, except the first age interval which encompasses only one-half year.

The total retirements occurring in each age interval in a band are determined by summing the amounts for each transaction year-installation year combination for that age interval. For example, the total of \$143,000 retired for age interval  $4\frac{1}{2}-5\frac{1}{2}$  is the sum of the retirements entered on Schedule 1 immediately above the stair step line drawn on the table beginning with the 2005 retirements of 2000 installations and ending with the 2014 retirements of the 2009 installations. Thus, the total amount of 143 for age interval  $4\frac{1}{2}-5\frac{1}{2}$  equals the sum of:

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

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

### Schedule of Plant Exposed to Retirement

The development of the amount of plant exposed to retirement at the beginning of each age interval is illustrated in Schedule 3 on the following page. The surviving plant at the beginning of each year from 2005 through 2014 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



Placement Band 2000-2014

Experience Band 2005-2014

of Dollars

SCHEDULE 3. PLANT EXPOSED TO RETIREMENT JANUARY 1 OF EACH YEAR 2005-2014 SUMMARIZED BY AGE INTERVAL

		Age	Interval	(13)	13½-14½	12½-13½	11½-12½	10½-11½	9½-10½	8½-9½	7½-8½	61/2-71/2	51⁄2-61⁄2	4½-5½	3½-4½	2½-3½	11/2-21/2	1/2-11/2	0-½		
Total at	Beginning	of Age	Interval	(12)	167	323	531	823	1,097	1,503	1,952	2,463	3,057	3,789	4,332	4,955	5,719	6,579	7,490	44,780	
			2014	(11)	167	131	162	226	261	316	356	412	482	609	663	299	923	1,069	1,220 <sup>a</sup>	7,799	
			2013	(10)	192	153	184	242	280	332	374	431	501	628	685	821	949	1,080 <sup>a</sup>		6,852	
	ar		2012	(6)	216	174	205	262	267	347	390	448	530	623	724	841	960 <sup>a</sup>			6,017	
ollars	Annual Survivors at the Beginning of the Year		2011	(8)	239	194	224	276	307	361	405	464	546	639	742	850 <sup>a</sup>				5,247	
Exposures, Thousands of Dollars			2010	(2)	195	212	241	289	321	374	419	479	561	653	750 <sup>a</sup>					4,494	
ures, Thou			2009	(9)	209	228	257	300	334	386	432	492	574	660 <sup>a</sup>						3,872	
Expos			2008	(5)	222	243	271	311	346	397	444	504	$580^{a}$							3,318	
				2007	(4)	234	256	284	321	257	407	455	$510^{a}$								2,824
			2006	(3)	245	268	296	330	367	416	460 <sup>a</sup>									2,382	
					255															1,975	
		Year	Placed	(1)	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total	

<sup>a</sup> Additions during the year.

shown on Schedules 1 and 2. For the purpose of determining the plant exposed to retirement, transfers-in are considered as being <u>exposed</u> to retirement in this group <u>at</u> 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 <u>beginning of</u> 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 2006 are calculated in the following manner:

Exposures at age $0 =$ amount of addition	= \$750,000
Exposures at age $\frac{1}{2}$ = \$750,000 - \$8,000	= \$742,000
Exposures at age 1 <sup>1</sup> / <sub>2</sub> = \$742,000 - \$18,000	= \$724,000
Exposures at age 2 <sup>1</sup> / <sub>2</sub> = \$724,000 - \$20,000 - \$19,000	= \$685,000
Exposures at age 31/2 = \$685,000 - \$22,000	= \$663,000

For the entire experience band 2005-2014, the total exposures at the beginning of an age interval are obtained by summing diagonally in a manner similar to the summing of the retirements during an age interval (Schedule 1). For example, the figure of 3,789, shown as the total exposures at the beginning of age interval  $4\frac{1}{2}-5\frac{1}{2}$ , is obtained by summing:

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

### **Original Life Table**

The original life table, illustrated in Schedule 4 on the following page, 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



# SCHEDULE 4. ORIGINAL LIFE TABLE

# CALCULATED BY THE RETIREMENT RATE METHOD

# Experience Band 2005-2014

## Placement Band 2000-2014

# (Exposure and Retirement Amounts are in Thousands of Dollars)

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

Column 2 from Schedule 3, Column 12, Plant Exposed to Retirement. Column 3 from Schedule 1, Column 12, Retirements for Each Year. Column 4 = Column 3 divided by Column 2. Column 5 = 1.0000 minus Column 4. Column 6 = Column 5 multiplied by Column 6 as of the Preceding Age Interval. surviving at the beginning of each interval by the survivor ratio, i.e., one minus the retirement ratio for that age interval. The calculations necessary to determine the percent surviving at age 5<sup>1</sup>/<sub>2</sub> are as follows:

Percent surviving at age 41/2	=	88.15		
Exposures at age 4 <sup>1</sup> / <sub>2</sub>	=	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 51/2	=	(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. The original survivor curve is plotted from the original life table (column 6, Schedule 4). When the curve terminates at a percent surviving greater than zero, it is called a stub survivor curve. Survivor curves developed from retirement rate studies generally are stub curves.

# Smoothing the Original Survivor Curve

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

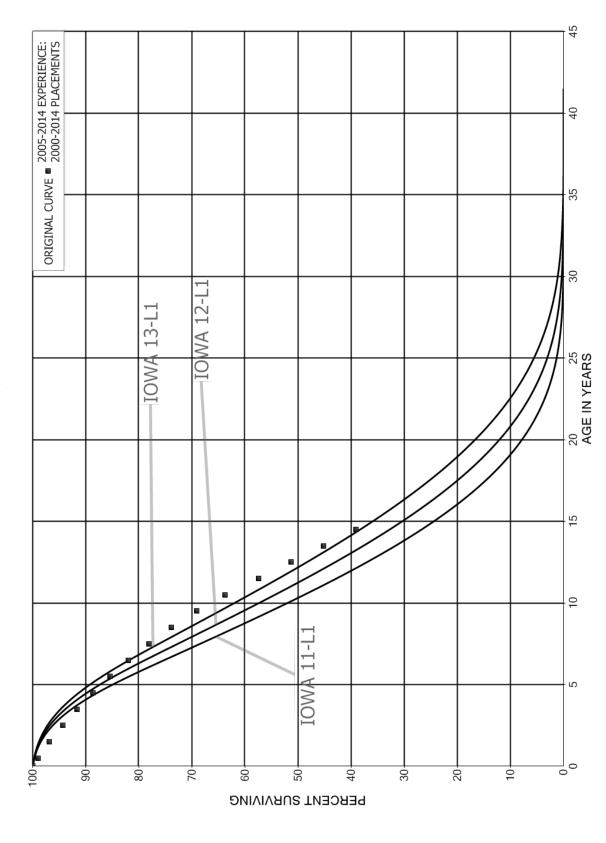
The lowa type curves are used in this study to smooth those original stub curves which are expressed as percents surviving at ages in years. Each original survivor curve was compared to the lowa curves using visual and mathematical matching in order to determine the better fitting smooth curves. In Figures 6, 7, and 8, the original curve developed in Schedule 4 is compared with the L, S, and R lowa type curves which most nearly fit the original survivor curve. In Figure 6, the L1 curve with an

average life between 12 and 13 years appears to be the best fit. In Figure 7, the S0 type curve with a 12-year average life appears to be the best fit and appears to be better than the L1 fitting. In Figure 8, the R1 type curve with a 12-year average life appears to be the best fit and appears to be better than either the L1 or the S0.

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



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



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

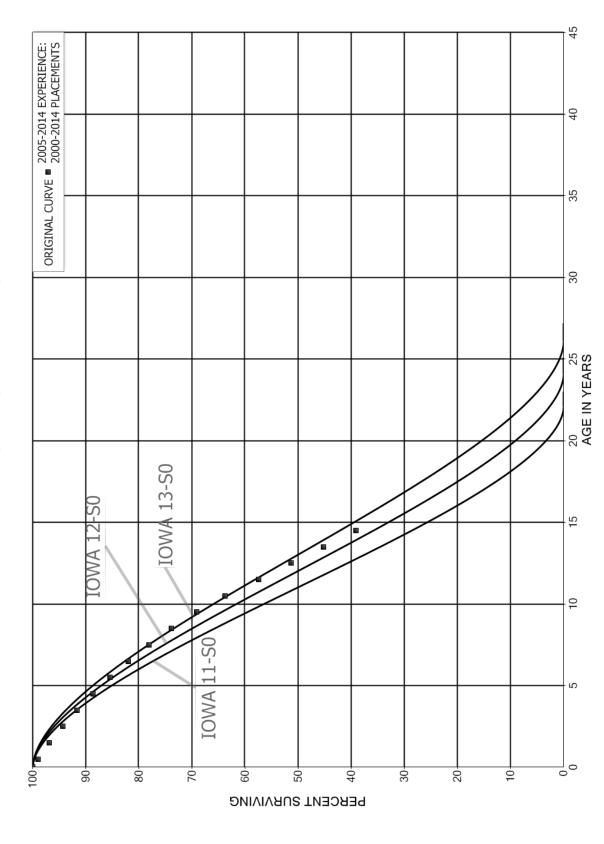


FIGURE 8. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN R1 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES

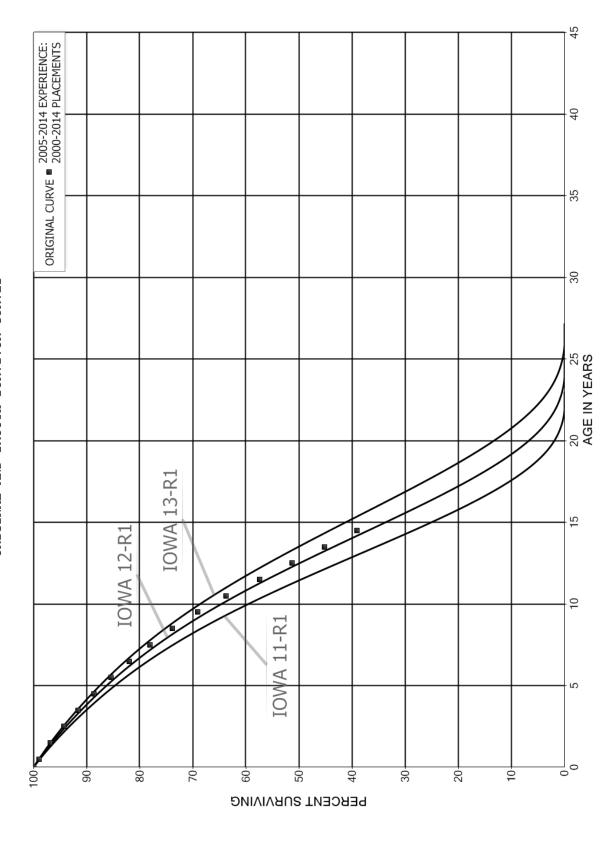
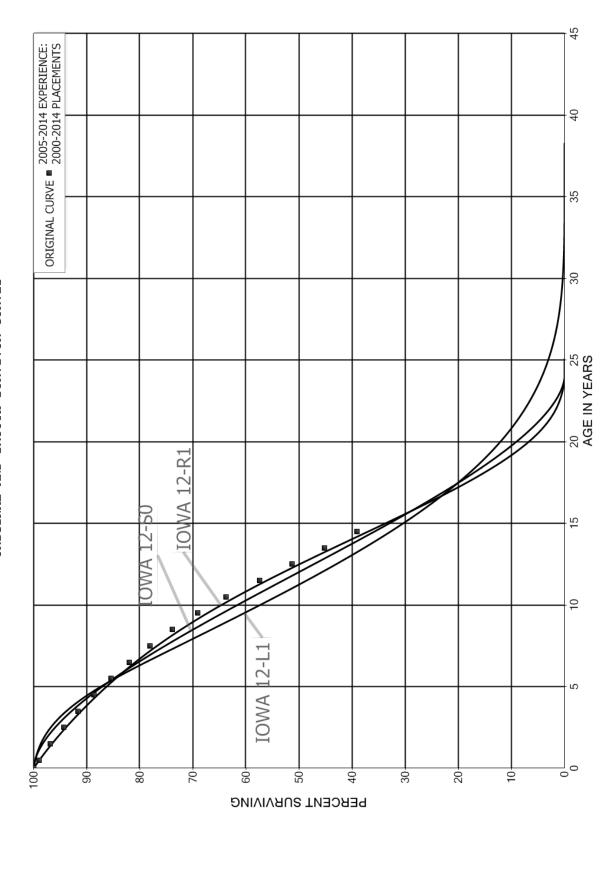


FIGURE 9. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN L1, S0 AND R1 IOWA TYPE CURVE ORIGINAL AND SMOOTH SURVIVOR CURVES



APPENDIX B ESTIMATION OF NET SALVAGE

# **ESTIMATION OF NET SALVAGE**

The estimates of net salvage were based primarily on the professional judgment of Gannett Fleming, in part on historical data, and in part through a comparison to peer companies. Gross salvage and cost of removal as recorded to the depreciation reserve account and related to experienced retirements are used. Percentages of the cost of plant retired are calculated for each component of net salvage on both annual and three-year moving average bases.

The net salvage percentages estimated is usually determined using the "Traditional Approach" for net salvage estimation. When a utility retires plant, the plant may be: (1) sold to a third party; (2) reused by the utility for additional service; (3) abandoned in place; or (4) physically removed. In the circumstances where the plant is sold or re-used, a salvage proceed (or positive salvage amount) is normally recognized. In circumstances where the plant is abandoned in place or physically removed, a cost of removal expenditure (or negative salvage) is incurred. The net of these estimated gross salvage proceeds and the estimated costs of removal are expressed as a percentage of the account's original cost to determine a net salvage percentage. In the circumstances where the salvage proceeds exceed the costs of removal expenditive salvage percentage exists. In the circumstances where the costs of removal exceed the salvage proceeds, a net negative salvage percentage results.

The estimation of the net salvage percentages developed using the traditional approach, includes the following steps:

- 1. The annual retirement, gross salvage and cost of removal transactions for the period of analysis are extracted from the plant accounting systems.
- 2. A net salvage amount (gross salvage proceeds less cost of retirement) is calculated for each historic year. Additionally, a net salvage amount is also calculated for each historic three-year rolling band and the most recent five-year rolling band.
- 3. The net salvage amount determined above is compared to the original booked costs retired for each period in the manner described, which results in a net salvage percentage of original costs retired for each year, in addition to three-year rolling bands and the most recent five-year rolling band.

- 4. The annual, the three-year rolling average, and the most recent five-year rolling average net salvage percentages are analyzed to determine a reasonable estimated net salvage percentage. At this point the net salvage percentage is based purely upon statistical analysis.
- 5. Each account is then compared to the net salvage percentage currently approved, compared to peer companies, and discussed with company engineering staff. Based on the statistical analysis, the review of current and peer company net salvage percentages, and with the professional judgment of Gannett Fleming, a net salvage percentage is determined for each account.
- 6. The net salvage percentage is then used in the depreciation rate calculations in the technical update.





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Suite 277 • 200 Rivercrest Drive S.E. • Calgary, AB T2C 2X5 • Canada t: 403.257.5946 • f: 403.257.5947 www.gannettfleming.com www.gfvrd.com Appendix C TARIFF CONTINUITY AND BILL IMPACT SCHEDULES

#### FORTISBC ENERGY INC. - FORT NELSON SERVICE AREA CALCULATION OF CUSTOMERS' RATES AND TARIFF CONTINUITY FOR RATE 1 DOMESTIC SERVICE EFFECTIVE January 1, 2017 RATES BCUC ORDER NO. G-XX-16

Line No.	Schedule	Tariff Page	Particulars	January 1, 2016 Existing Rates	Proposed Changes	January 1, 2017 Proposed Rates
	(1)	(2)	(3)	(4)	(5)	(6)
1 2	Rate 1	No. 1	Option A			
3			Minimum Daily Charge			
4			plus \$0.0391 times			
5			the amount of the promotional			
6			incentive divided by \$100			
7			(includes the first 2 Gigajoules per month prorated to daily basis)			
8				<b>A0 10 10</b>	<b>*</b> 0.00 <b>7</b> 0	<b>A</b> A 4004
9			Delivery Charge per Day	\$0.4048	\$0.0273	\$0.4321
10			Revenue Stabilization Adjustment Amount per Day	\$0.0051	\$0.0125	\$0.0176
11 12			Gas Cost Recovery Charge Prorated to Daily Basis Minimum Daily Charge (includes first 2 gigajoules)	\$0.0850 \$0.4949	\$0.0000 <b>\$0.0398</b>	\$0.0850 <b>\$0.5347</b>
12			minimum Dany Charge (includes hist 2 gigajoules)	\$0.4949	\$0.0390	\$U.3347
13			Delivery Charge per GJ	\$3.138	\$0.212	\$3.350
15			Revenue Stabilization Adjustment Amount per GJ	\$0.078	\$0.190	\$0.268
16			Gas Cost Recovery Charge per GJ	\$1.294	\$0.000	\$1.294
17			Next 28 Gigajoules in any month	\$4.510	\$0.402	\$4.912
18						· · · · ·
19			Delivery Charge per GJ	\$3.048	\$0.206	\$3.254
20			Revenue Stabilization Adjustment Amount per GJ	\$0.078	\$0.190	\$0.268
21			Gas Cost Recovery Charge per GJ	\$1.294	\$0.000	\$1.294
22			Excess of 30 Gigajoules in any month	\$4.420	\$0.396	\$4.816
23						
24						
25	Rate 1	No. 1.1	Option B			
26				•• •••	• • • • • •	• • • • • •
27			Delivery Charge per Day	\$0.4048	\$0.0273	\$0.4321
28			Revenue Stabilization Adjustment Amount per Day	\$0.0051	\$0.0125	\$0.0176
29 30			Gas Cost Recovery Charge Prorated to Daily Basis Minimum Daily Charge (includes first 2 gigajoules)	\$0.0850 <b>\$0.4949</b>	\$0.0000 <b>\$0.0398</b>	\$0.0850 <b>\$0.5347</b>
30			Minimum Dany Charge (includes hist 2 gigajoules)	\$0.4949	\$0.0390	\$0.5347
32			Delivery Charge per GJ	\$3.138	\$0.212	\$3.350
33			Revenue Stabilization Adjustment Amount per GJ	\$0.078	\$0.212	\$0.268
34			Gas Cost Recovery Charge per GJ	\$1.294	\$0.000	\$1.294
35			Next 28 Gigajoules in any month	\$4.510	\$0.402	\$4.912
36					+++++++++++++++++++++++++++++++++++++++	<u> </u>
37			Delivery Charge per GJ	\$3.048	\$0.206	\$3.254
38			Revenue Stabilization Adjustment Amount per GJ	\$0.078	\$0.190	\$0.268
39			Gas Cost Recovery Charge per GJ	\$1.294	\$0.000	\$1.294
40			Excess of 30 Gigajoules in any month	\$4.420	\$0.396	\$4.816

#### FORTISBC ENERGY INC. - FORT NELSON SERVICE AREA CALCULATION OF CUSTOMERS' RATES AND TARIFF CONTINUITY FOR RATES 2.1, 2.2 & 2.3 GENERAL SERVICE EFFECTIVE January 1, 2017 RATES BCUC ORDER NO. G-XX-16

Line No.	Schedule	Tariff Page	Particulars	January 1, 2016 Existing Rates	Proposed Changes	January 1, 2017 Proposed Rates
	(1)	(2)	(3)	(4)	(5)	(6)
1	Rate 2.1	No. 2	Delivery Charge per Day	\$1.1782	\$0.0816	\$1.2598
2			Revenue Stabilization Adjustment Amount per Day	\$0.0051	\$0.0125	\$0.0176
3			Gas Cost Recovery Charge Prorated to Daily Basis	\$0.0850	\$0.0000	\$0.0850
4			Minimum Daily Charge (includes first 2 gigajoules)	\$1.2683	\$0.0941	\$1.3624
5						
6			Delivery Charge per GJ	\$3.531	\$0.245	\$3.776
7			Revenue Stabilization Adjustment Amount per GJ	\$0.078	\$0.190	\$0.268
8			Gas Cost Recovery Charge per GJ	\$1.294	\$0.000	\$1.294
9			Next 298 Gigajoules in any month	\$4.903	\$0.435	\$5.338
10						
11			Delivery Charge per GJ	\$3.421	\$0.237	\$3.658
12			Revenue Stabilization Adjustment Amount per GJ	\$0.078	\$0.190	\$0.268
13			Gas Cost Recovery Charge per GJ	\$1.294	\$0.000	\$1.294
14			Excess of 300 Gigajoules in any month	\$4.793	\$0.427	\$5.220
15						
16	Rate 2.2	No. 2	Delivery Charge per Day	\$1.1782	\$0.0816	\$1.2598
17			Revenue Stabilization Adjustment Amount per Day	\$0.0051	\$0.0125	\$0.0176
18			Gas Cost Recovery Charge Prorated to Daily Basis	\$0.0850	\$0.0000	\$0.0850
19			Minimum Daily Charge (includes first 2 gigajoules)	\$1.2683	\$0.0941	\$1.3624
20						
21			Delivery Charge per GJ	\$3.531	\$0.245	\$3.776
22			Revenue Stabilization Adjustment Amount per GJ	\$0.078	\$0.190	\$0.268
23			Gas Cost Recovery Charge per GJ	\$1.294	\$0.000	\$1.294
24			Next 298 Gigajoules in any month	\$4.903	\$0.435	\$5.338
25						
26			Delivery Charge per GJ	\$3.421	\$0.237	\$3.658
27			Revenue Stabilization Adjustment Amount per GJ	\$0.078	\$0.190	\$0.268
28			Gas Cost Recovery Charge per GJ	\$1.294	\$0.000	\$1.294
29			Excess of 300 Gigajoules in any month	\$4.793	\$0.427	\$5.220
30						
31	Rate 2.3	No. 2.1	Delivery Charge per Month	\$36.480	\$2.530	\$39.010
32			Gas Cost Recovery Charge per Month	\$2.588	\$0.000	\$2.588
33			Minimum Monthly Charge (includes first 2 gigajoules)	\$39.07	\$2.530	\$41.60
34						
35			Delivery Charge per GJ	\$4.483	\$0.311	\$4.794
36			Gas Cost Recovery Charge per GJ	\$1.294	\$0.000	\$1.294
37			Next 298 Gigajoules in any month	\$5.777	\$0.311	\$6.088
38						
39			Delivery Charge per GJ	\$4.368	\$0.303	\$4.671
40			Gas Cost Recovery Charge per GJ	\$1.294	\$0.000	\$1.294
41			Excess of 300 Gigajoules in any month	\$5.662	\$0.303	\$5.965

#### FORTISBC ENERGY INC. - FORT NELSON SERVICE AREA CALCULATION OF CUSTOMERS' RATES AND TARIFF CONTINUITY FOR RATES 3.1, 3.2 & 3.3 INDUSTRIAL SERVICE EFFECTIVE January 1, 2017 RATES BCUC ORDER NO. G-XX-16

Line No.	Schedule	Tariff Page	Particulars	January 1, 2016 Existing Rates	Proposed Changes	January 1, 2017 Proposed Rates
	(1)	(2)	(3)	(4)	(5)	(6)
1 2	Rate 3.1	No. 3	Delivery Charge			
3			First 20 Gigajoules in any month	\$3.873	\$0.346	\$4.219
4			Next 260 Gigajoules in any month	\$3.590	\$0.325	\$3.915
5 6			Excess over 280 Gigajoules in any month	\$2.929	\$0.275	\$3.204
7			Rider 5 - Revenue Stabilization Adjustment Charge per GJ	\$0.078	\$0.190	\$0.268
8			Gas Cost Recovery Charge per Gigajoule	\$1.294	\$0.000	\$1.294
9 10 11			Minimum Monthly Delivery Charge	\$1,826.00	\$0.00	\$1,826.00
12 13 14	Rate 3.2	No. 3	Delivery Charge			
14			First 20 Gigajoules in any month	\$3.873	\$0.346	\$4.219
16			Next 260 Gigajoules in any month	\$3.590	\$0.325	\$3.915
17			Excess over 280 Gigajoules in any month	\$2.929	\$0.275	\$3.204
18 19			Rider 5 - Revenue Stabilization Adjustment Charge per GJ	\$0.078	\$0.190	\$0.268
20			Gas Cost Recovery Charge per Gigajoule	\$1.294	\$0.000	\$1.294
21 22 23			Minimum Monthly Delivery Charge	\$1,826.00	\$0.00	\$1,826.00
24 25 26	Rate 3.3	No. 3.1	Delivery Charge			
27			First 20 Gigajoules in any month	\$3.873	\$0.346	\$4.219
28			Next 260 Gigajoules in any month	\$3.590	\$0.325	\$3.915
29 30			Excess over 280 Gigajoules in any month	\$2.929	\$0.275	\$3.204
30			Rider 5 - Revenue Stabilization Adjustment Charge per GJ	\$0.078	\$0.190	\$0.268
32			Gas Cost Recovery Charge per Gigajoule	\$1.294	\$0.000	\$1.294
33 34			Minimum Monthly Delivery Charge	\$1,826.00	\$0.00	\$1,826.00

#### FORTISBC ENERGY INC. - FORT NELSON SERVICE AREA CALCULATION OF CUSTOMERS' RATES AND TARIFF CONTINUITY FOR RATE 25 TRANSPORTATION SERVICE EFFECTIVE January 1, 2017 RATES BCUC ORDER NO. G-XX-16

Line		Tariff		January 1, 2016	Proposed	January 1, 2017
No.	Schedule	Page	Particulars	Existing Rates	Changes	Proposed Rates
	(1)	(2)	(3)	(4)	(5)	(6)
1	Rate 25	No. 4.21	Transportation Delivery Charge			
2						
3			First 20 Gigajoules in any month	\$3.873	\$0.346	\$4.219
4			Next 260 Gigajoules in any month	\$3.590	\$0.325	\$3.915
5			Excess over 280 Gigajoules in any month	\$2.929	\$0.275	\$3.204
6						
7			Minimum Monthly Delivery Charge	\$1,826.00	\$0.00	\$1,826.00
8						
9			Administration Charge per Month	\$202.00	\$0.00	\$202.00
10						
11			Delivery Margin Related Rider			
12			Rider 5: RSAM per GJ	\$0.078	\$0.190	\$0.268

#### RATE 1 - DOMESTIC (RESIDENTIAL) SERVICE - OPTION B

Line No.			Existing Jan	uary 1, 2016	Rates	J	anuary 1, 20	)17 Proposed	Annual Increase/(Decrease)			
				5.								% of Previous
1	Rate 1 Domestic Service Option B	Volu	ime	Rate	Annual \$	Volu	ume	Rate	Annual \$	Rate	Annual \$	Annual Bill
2												
3	Monthly Charge											
4	Delivery Charge per Day	365.25	days x	\$0.4048	\$147.8532	365.25	days x	\$0.4321	\$157.8245	\$0.0273	\$9.9713	1.46%
5	Rider 5 - RSAM per Day	365.25	days x	\$0.0051	1.8628	365.25	days x	\$0.0176	6.4284	\$0.0125	\$4.5656	0.67%
6	Gas Cost Recovery Charge Prorated to Daily Basis	365.25	days x	\$0.0850	31.0463	365.25	days x	\$0.0850	31.0463	\$0.0000	\$0.0000	0.00%
7	Minimum Monthly Charge (includes the first 2 gigajoules)			\$0.4949	\$180.76			\$0.5347	\$195.30	\$0.0398	\$14.54	2.13%
8												
9	Next 28 Gigajoules in any month											
10	Delivery Charge per GJ	111	GJ x	\$3.138	\$348.3180	111	GJ x	\$3.350	\$371.8500	\$0.212	\$23.532	3.45%
11	Rider 5 - RSAM per GJ	111	GJ x	0.078	8.6580	111	GJ x	0.268	29.7480	0.190	21.090	3.10%
12	Gas Cost Recovery Charge per GJ	111	GJ x	1.294	143.6340	111	GJ x	1.294	143.6340	0.000	0.000	0.00%
13	Total Charges per GJ			\$4.510	\$500.61		_	\$4.912	\$545.23	\$0.402	\$44.62	6.55%
14												
15	Excess of 30 Gigajoules in any month											
16	Delivery Charge per GJ	0	GJ x	\$3.048	\$0.0000	0	GJ x	\$3.254	\$0.0000	\$0.206	\$0.000	0.00%
17	Rider 5 - RSAM per GJ	0	GJ x	0.078	0.0000	0	GJ x	0.268	0.0000	0.190	0.000	0.00%
18	Gas Cost Recovery Charge per GJ	0	GJ x	1.294	0.0000	0	GJ x	1.294	0.0000	0.000	0.000	0.00%
19	Total Charges per GJ			\$4.420	\$0.00			\$4.816	\$0.00	\$0.396	\$0.00	0.00%
20												
21	Total	135	GJ		\$681.37	135	GJ		\$740.53		\$59.16	8.68%
22												
23	Summary of Annual Delivery and Commodity Charges											
24	Delivery Charge (including RSAM)				\$506.6920				\$565.8509		\$59.1590	8.68%
25	Commodity Charge				174.6803				174.6803		0.0000	0.00%
26	Total				\$681.37				\$740.53		\$59.16	8.68%

Tariff rate schedule per GJ charges are set at 3 decimals. Individual tariff components are calculated and shown to 4 decimals; subtotal amounts, equivalent to the line items on customer bills, are rounded and shown to 2 decimals, consistent with actual invoice calculations. Slight differences in totals due to rounding

#### RATE 2.1 - GENERAL (COMMERCIAL) SERVICE

Line No.			Existing Jan	uary 1, 2016 I	Rates	J	anuary 1, 20	)17 Proposed	Annual Increase/(Decrease)			
												% of Previous
1	Rate 2.1 General Service	Volu	ime	Rate	Annual \$	Volu	ume	Rate	Annual \$	Rate	Annual \$	Annual Bill
2												
3	Monthly Charge											
4	Delivery Charge per Day	365.25	days x	\$1.1782 =	\$430.3376	365.25	days x	\$1.2598 =	\$460.1420	\$0.0816	\$29.8044	1.19%
5	Rider 5 - RSAM per Day	365.25	days x	\$0.0051 =	1.8628	365.25	days x	\$0.0176 =	6.4284	\$0.0125	\$4.5656	0.18%
6	Gas Cost Recovery Charge Prorated to Daily Basis	365.25	days x	\$0.0850 =	31.0463	365.25	days x	\$0.0850 =	31.0463	\$0.0000	\$0.0000	0.00%
7	Minimum Monthly Charge (includes the first 2 gigajoules)			\$1.2683	\$463.25			\$1.3624	\$497.62	\$0.0941	\$34.37	1.37%
8												
9	Next 298 Gigajoules in any month											
10	Delivery Charge per GJ	416	GJ x	\$3.531 =	\$1,468.8960	416	GJ x	\$3.776 =	\$1,570.8160	\$0.245	\$101.920	4.07%
11	Rider 5 - RSAM per GJ	416	GJ x	0.078 =	32.4480	416	GJ x	0.268 =	111.4880	0.190	79.040	3.16%
12	Gas Cost Recovery Charge per GJ	416	GJ x	1.294 =	538.3040	416	GJ x	1.294 =	538.3040	0.000	0.000	0.00%
13	Total Charges per GJ			\$4.903	\$2,039.65			\$5.338	\$2,220.61	\$0.435	\$180.96	7.23%
14												
15	Excess of 300 Gigajoules in any month											
16	Delivery Charge per GJ	0	GJ x	\$3.421 =	+	0	GJ x	\$3.658 =	+	\$0.237	\$0.000	0.00%
17	Rider 5 - RSAM per GJ	0	GJ x	0.078 =	0.0000	0	GJ x	0.268 =	0.0000	0.190	0.000	0.00%
18	Gas Cost Recovery Charge per GJ	0	GJ x _	1.294 =	0.0000	0	GJ x _	1.294 =	0.0000	0.000	0.000	0.00%
19	Total Charges per GJ			\$4.793	\$0.00			\$5.220	\$0.00	\$0.427	\$0.00	0.00%
20												
21	Total	440	GJ		\$2,502.90	440	GJ		\$2,718.23		\$215.33	8.60%
22												
23	Summary of Annual Delivery and Commodity Charges											
24	Delivery Charge (including RSAM)				\$1,933.5443				\$2,148.8744		\$215.3300	8.60%
25	Commodity Charge				569.3503				569.3503		0.0000	0.00%
26	Total				\$2,502.89				\$2,718.22		\$215.33	8.60%

Tariff rate schedule per GJ charges are set at 3 decimals. Individual tariff components are calculated and shown to 4 decimals; subtotal amounts, equivalent to the line items on customer bills, are rounded and shown to 2 decimals, consistent with actual invoice calculations. Slight differences in totals due to rounding

#### RATE 2.2 - GENERAL (COMMERCIAL) SERVICE

Line No.			Existing Jan	uary 1, 2016	Rates	J	lanuary 1, 20	)17 Proposed	Rates	Annu	ual Increase/(Dec	crease)
												% of Previous
1	Rate 2.2 General Service	Volu	ime	Rate	Annual \$	Volu	ume	Rate	Annual \$	Rate	Annual \$	Annual Bill
2												
3	Monthly Charge											
4	Delivery Charge per Day	365.25	days x	\$1.1782	= \$430.3376	365.25	days x	\$1.2598	\$460.1420	\$0.0816	\$29.8044	0.08%
5	Rider 5 - RSAM per Day	365.25	days x	\$0.0051	= 1.8628	365.25	days x	\$0.0176	6.4284	\$0.0125	\$4.5656	0.01%
6	Gas Cost Recovery Charge Prorated to Daily Basis	365.25	days x _	\$0.0850	= 31.0463	365.25	days x	\$0.0850	31.0463	\$0.0000	\$0.0000	0.00%
7	Minimum Monthly Charge (includes the first 2 gigajoules)			\$1.2683	\$463.25			\$1.3624	\$497.62	\$0.0941	\$34.37	0.09%
8												
9	Next 298 Gigajoules in any month											
10	Delivery Charge per GJ	3,576	GJ x	\$3.531	= \$12,626.8560	3,576	GJ x	\$3.776	= \$13,502.9760	\$0.245	\$876.120	2.21%
11	Rider 5 - RSAM per GJ	3,576	GJ x	0.078 =	= 278.9280	3,576	GJ x	0.268 =	958.3680	0.190	679.440	1.72%
12	Gas Cost Recovery Charge per GJ	3,576	GJ x	1.294 =	4,627.3440	3,576	GJ x	1.294 =	4,627.3440	0.000	0.000	0.00%
13	Total Charges per GJ			\$4.903	\$17,533.13			\$5.338	\$19,088.69	\$0.435	\$1,555.56	3.93%
14												
15	Excess of 300 Gigajoules in any month											
16	Delivery Charge per GJ	4,500	GJ x	\$3.421	= \$15,394.5000	4,500	GJ x	\$3.658	= \$16,461.0000	\$0.237	\$1,066.500	2.70%
17	Rider 5 - RSAM per GJ	4,500	GJ x	0.078 =	= 351.0000	4,500	GJ x	0.268 =	1,206.0000	0.190	855.000	2.16%
18	Gas Cost Recovery Charge per GJ	4,500	GJ x	1.294 =	= 5,823.0000	4,500	GJ x	1.294 =	5,823.0000	0.000	0.000	0.00%
19	Total Charges per GJ			\$4.793	\$21,568.50			\$5.220	\$23,490.00	\$0.427	\$1,921.50	4.86%
20												
21	Total	8,100	GJ		\$39,564.88	8,100	GJ		\$43,076.31		\$3,511.43	8.88%
22												
23	Summary of Annual Delivery and Commodity Charges											
24	Delivery Charge (including RSAM)				\$29,083.4843				\$32,594.9144		\$3,511.4300	8.88%
25	Commodity Charge				10,481.3903				10,481.3903		0.0000	0.00%
26	Total				\$39,564.87				\$43,076.30		\$3,511.43	8.88%

Tariff rate schedule per GJ charges are set at 3 decimals. Individual tariff components are calculated and shown to 4 decimals; subtotal amounts, equivalent to the line items on customer bills, are rounded and shown to 2 decimals, consistent with actual invoice calculations. Slight differences in totals due to rounding

#### **RATE 25 - TRANSPORTATION SERVICE**

Line
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No.			es		January 1	, 2017 Propo	Annual Increase/(Decrease)							
1 2	Rate 25 Transportation Service	Volur	me	Rate		Annual \$	Volur	ne	Rate	-	Annual \$	Rate	Annual \$	% of Previous Annual Bil
3 4	Transportation Delivery Charges													
5	Delivery Charge per Gigajoule													
6	i) First 20 Gigajoules	240	GJ x	\$3.873	=	\$929.5200	240	GJ x	\$4.219	=	\$1,012.5600	\$0.346	\$83.0400	0.13%
7	ii) Next 260 Gigajoules	3,120	GJ x	\$3.590	=	11,200.8000	3,120	GJ x	\$3.915	=	12,214.8000	\$0.325	1,014.0000	1.57%
8	iii) Excess over 280 Gigajoules	16,490	GJ x	\$2.929	=	48,299.2100	16,490	GJ x	\$3.204	=	52,833.9600	\$0.275	4,534.7500	7.04%
9	iv) Minimum Delivery Charge per month	12 n	nonths x	\$1,826.00		-	12 n	nonths x	\$1,826.00		-	\$0.00	\$0.00	0.00%
10														
11	Administration Charge per month	12 n	nonths x	\$202.00	=	\$2,424.00	12 n	nonths x	\$202.00	=	\$2,424.00	\$0.00	\$0.00	0.00%
12														
13	Rider 5: RSAM per GJ	19,850	GJ x	\$0.078	=	\$1,548.3000	19,850	GJ x	\$0.268	=	\$5,319.8000	\$0.190	\$3,771.5000	5.86%
14					_									
15	Total Transportation Delivery & Administration Charges	19,850	GJ x	\$3.244	-	\$64,401.83	19,850	GJ x	\$3.718	_	\$73,805.12	\$0.474	\$9,403.29	14.60%
16														
17 18	Summary of Annual Delivery, Administration and Commodity Charges													
19	Delivery & Administration Charge (including RSAM)	19,850	GJ x	\$3.244	=	\$64,401.8300	19,850	GJ x	\$3.718	=	\$73,805.1200	\$0.474	\$9,403.2900	14.60%
20	Commodity Charge (no sales from Authorized/Unauthorized Overrun Gas)	0	GJ	0.000	=	0.0000	0	GJ	0.000	=	0.0000	0.000	0.0000	0.00%
21	Total	19,850	GJ x	\$3.244		\$64,401.83	19,850	GJ x	\$3.718		\$73,805.12	\$0.474	\$9,403.29	14.60%

Tariff rate schedule per GJ charges are set at 3 decimals. Individual tariff components are calculated and shown to 4 decimals; subtotal amounts, equivalent to the line items on customer bills, are rounded and shown to 2 decimals, consistent with actual invoice calculations. Slight differences in totals due to rounding

#### FORTISBC ENERGY INC. - FORT NELSON SERVICE AREA CALCULATION OF CUSTOMERS' RATES AND TARIFF CONTINUITY FOR RATE 1 DOMESTIC SERVICE EFFECTIVE January 1, 2018 RATES BCUC ORDER NO. G-XX-16

Line No.	Schedule	Tariff Page	Particulars	January 1, 2017 Proposed Rates	Proposed Changes	January 1, 2018 Proposed Rates
	(1)	(2)	(3)	(4)	(5)	(6)
1 2	Rate 1	No. 1	Option A			
2			Minimum Daily Charge			
4			plus \$0.0391 times			
5			the amount of the promotional			
6			incentive divided by \$100			
7			(includes the first 2 Gigajoules per month prorated to daily basis)			
8						
9			Delivery Charge per Day	\$0.4321	\$0.0284	\$0.4605
10			Revenue Stabilization Adjustment Amount per Day	\$0.0176	\$0.0000	\$0.0176
11			Gas Cost Recovery Charge Prorated to Daily Basis	\$0.0850	\$0.0000	\$0.0850
12			Minimum Daily Charge (includes first 2 gigajoules)	\$0.5347	\$0.0284	\$0.5631
13			Delivery Charge and C I	<b>\$2.250</b>	<b>\$</b> 0,000	¢0.570
14			Delivery Charge per GJ	\$3.350 \$0.268	\$0.220	\$3.570 \$0.268
15			Revenue Stabilization Adjustment Amount per GJ Gas Cost Recovery Charge per GJ	\$0.268 \$1.294	\$0.000 \$0.000	\$0.268 \$1.294
16 17			Next 28 Gigajoules in any month	\$1.294 \$4.912	\$0.000	\$5.132
18			Next 20 Olgajoues in any month		<b>\$0.220</b>	40.102
10			Delivery Charge per GJ	\$3.254	\$0.214	\$3.468
20			Revenue Stabilization Adjustment Amount per GJ	\$0.268	\$0.000	\$0.268
21			Gas Cost Recovery Charge per GJ	\$1.294	\$0.000	\$1.294
22			Excess of 30 Gigajoules in any month	\$4.816	\$0.214	\$5.030
23						
24						
25	Rate 1	No. 1.1	Option B			
26						
27			Delivery Charge per Day	\$0.4321	\$0.0284	\$0.4605
28			Revenue Stabilization Adjustment Amount per Day	\$0.0176	\$0.0000	\$0.0176
29			Gas Cost Recovery Charge Prorated to Daily Basis	\$0.0850	\$0.0000	\$0.0850
30			Minimum Daily Charge (includes first 2 gigajoules)	\$0.5347	\$0.0284	\$0.5631
31				<b>Aa a a a</b>	<b>AA AAA</b>	<b>Aa --a</b>
32			Delivery Charge per GJ	\$3.350	\$0.220	\$3.570
33			Revenue Stabilization Adjustment Amount per GJ	\$0.268	\$0.000	\$0.268
34 35			Gas Cost Recovery Charge per GJ Next 28 Gigajoules in any month	\$1.294 <b>\$4.912</b>	\$0.000 \$0.220	\$1.294 <b>\$5.132</b>
35 36			NEXT 20 GIGAJOURS III ANY MONTH		φ0.220	ąj.132
36 37			Delivery Charge per GJ	\$3.254	\$0.214	\$3.468
37			Revenue Stabilization Adjustment Amount per GJ	\$3.254 \$0.268	\$0.214	\$3.466 \$0.268
38			Gas Cost Recovery Charge per GJ	\$0.208 \$1.294	\$0.000	\$1.294
40			Excess of 30 Gigajoules in any month	\$4.816	\$0.214	\$5.030
					÷0.=11	\$51000

#### FORTISBC ENERGY INC. - FORT NELSON SERVICE AREA CALCULATION OF CUSTOMERS' RATES AND TARIFF CONTINUITY FOR RATES 2.1, 2.2 & 2.3 GENERAL SERVICE EFFECTIVE January 1, 2018 RATES BCUC ORDER NO. G-XX-16

Line No.	Schedule	Tariff Page	Particulars	January 1, 2017 Proposed Rates	Proposed Changes	January 1, 2018 Proposed Rates
	(1)	(2)	(3)	(4)	(5)	(6)
1	Rate 2.1	No. 2	Delivery Charge per Day	\$1.2598	\$0.0814	\$1.3412
2			Revenue Stabilization Adjustment Amount per Day	\$0.0176	\$0.0000	\$0.0176
3			Gas Cost Recovery Charge Prorated to Daily Basis	\$0.0850	\$0.0000	\$0.0850
4			Minimum Daily Charge (includes first 2 gigajoules)	\$1.3624	\$0.0814	\$1.4438
5					·	
6			Delivery Charge per GJ	\$3.776	\$0.244	\$4.020
7			Revenue Stabilization Adjustment Amount per GJ	\$0.268	\$0.000	\$0.268
8			Gas Cost Recovery Charge per GJ	\$1.294	\$0.000	\$1.294
9			Next 298 Gigajoules in any month	\$5.338	\$0.244	\$5.582
10						
11			Delivery Charge per GJ	\$3.658	\$0.236	\$3.894
12			Revenue Stabilization Adjustment Amount per GJ	\$0.268	\$0.000	\$0.268
13			Gas Cost Recovery Charge per GJ	\$1.294	\$0.000	\$1.294
14			Excess of 300 Gigajoules in any month	\$5.220	\$0.236	\$5.456
15						
16	Rate 2.2	No. 2	Delivery Charge per Day	\$1.2598	\$0.0814	\$1.3412
17			Revenue Stabilization Adjustment Amount per Day	\$0.0176	\$0.0000	\$0.0176
18			Gas Cost Recovery Charge Prorated to Daily Basis	\$0.0850	\$0.0000	\$0.0850
19			Minimum Daily Charge (includes first 2 gigajoules)	\$1.3624	\$0.0814	\$1.4438
20						
21			Delivery Charge per GJ	\$3.776	\$0.244	\$4.020
22			Revenue Stabilization Adjustment Amount per GJ	\$0.268	\$0.000	\$0.268
23			Gas Cost Recovery Charge per GJ	\$1.294	\$0.000	\$1.294
24			Next 298 Gigajoules in any month	\$5.338	\$0.244	\$5.582
25				• • • • •		•
26			Delivery Charge per GJ	\$3.658	\$0.236	\$3.894
27			Revenue Stabilization Adjustment Amount per GJ	\$0.268	\$0.000	\$0.268
28			Gas Cost Recovery Charge per GJ	\$1.294	\$0.000	\$1.294
29			Excess of 300 Gigajoules in any month	\$5.220	\$0.236	\$5.456
30 _						<u> </u>
31	Rate 2.3	No. 2.1	Delivery Charge per Month	\$39.010	\$2.520	\$41.530
32			Gas Cost Recovery Charge per Month	\$2.588	\$0.000	\$2.588
33			Minimum Monthly Charge (includes first 2 gigajoules)	\$41.60	\$2.520	\$44.12
34				<b>*</b> 4 <b>-</b> 7 <b>-</b> 4	<b>AA A A</b>	
35			Delivery Charge per GJ	\$4.794	\$0.310	\$5.104
36			Gas Cost Recovery Charge per GJ	\$1.294	\$0.000	\$1.294
37			Next 298 Gigajoules in any month	\$6.088	\$0.310	\$6.398
38			Delivery Charge and C I	¢4.074	<b>¢</b> 0.004	¢4.070
39			Delivery Charge per GJ	\$4.671	\$0.301	\$4.972
40			Gas Cost Recovery Charge per GJ	\$1.294	\$0.000	\$1.294
41			Excess of 300 Gigajoules in any month	\$5.965	\$0.301	\$6.266

#### FORTISBC ENERGY INC. - FORT NELSON SERVICE AREA CALCULATION OF CUSTOMERS' RATES AND TARIFF CONTINUITY FOR RATES 3.1, 3.2 & 3.3 INDUSTRIAL SERVICE EFFECTIVE January 1, 2018 RATES BCUC ORDER NO. G-XX-16

Line No.	Schedule	Tariff Page	Particulars	January 1, 2017 Proposed Rates	Proposed Changes	January 1, 2018 Proposed Rates
	(1)	(2)	(3)	(4)	(5)	(6)
1 2	Rate 3.1	No. 3	Delivery Charge			
3			First 20 Gigajoules in any month	\$4.219	\$0.334	\$4.553
4			Next 260 Gigajoules in any month	\$3.915	\$0.315	\$4.230
5 6			Excess over 280 Gigajoules in any month	\$3.204	\$0.271	\$3.475
7			Rider 5 - Revenue Stabilization Adjustment Charge per GJ	\$0.268	\$0.000	\$0.268
8			Gas Cost Recovery Charge per Gigajoule	\$1.294	\$0.000	\$1.294
9						
10			Minimum Monthly Delivery Charge	\$1,826.00	\$0.00	\$1,826.00
11 12						
12	Rate 3.2	No. 3	Delivery Charge			
14						
15			First 20 Gigajoules in any month	\$4.219	\$0.334	\$4.553
16			Next 260 Gigajoules in any month	\$3.915	\$0.315	\$4.230
17			Excess over 280 Gigajoules in any month	\$3.204	\$0.271	\$3.475
18				<b>A A A A A A A A A A</b>	<b>Aa a a a</b>	<b>AA AAA</b>
19			Rider 5 - Revenue Stabilization Adjustment Charge per GJ	\$0.268	\$0.000	\$0.268
20			Gas Cost Recovery Charge per Gigajoule	\$1.294	\$0.000	\$1.294
21 22 23			Minimum Monthly Delivery Charge	\$1,826.00	\$0.00	\$1,826.00
24 25 26	Rate 3.3	No. 3.1	Delivery Charge			
27			First 20 Gigajoules in any month	\$4.219	\$0.334	\$4.553
28			Next 260 Gigajoules in any month	\$3.915	\$0.315	\$4.230
29			Excess over 280 Gigajoules in any month	\$3.204	\$0.271	\$3.475
30						
31			Rider 5 - Revenue Stabilization Adjustment Charge per GJ	\$0.268	\$0.000	\$0.268
32			Gas Cost Recovery Charge per Gigajoule	\$1.294	\$0.000	\$1.294
33			Minimum Manthly Daliyan Channa	¢4,000,00	<b>\$</b> 0.00	¢4,000,00
34			Minimum Monthly Delivery Charge	\$1,826.00	\$0.00	\$1,826.00

#### FORTISBC ENERGY INC. - FORT NELSON SERVICE AREA CALCULATION OF CUSTOMERS' RATES AND TARIFF CONTINUITY FOR RATE 25 TRANSPORTATION SERVICE EFFECTIVE January 1, 2018 RATES BCUC ORDER NO. G-XX-16

Line		Tariff		January 1, 2017	Proposed	January 1, 2018
No.	Schedule	Page	Particulars	Proposed Rates	Changes	Proposed Rates
	(1)	(2)	(3)	(4)	(5)	(6)
1	Rate 25	No. 4.21	Transportation Delivery Charge			
2						
3			First 20 Gigajoules in any month	\$4.219	\$0.334	\$4.553
4			Next 260 Gigajoules in any month	\$3.915	\$0.315	\$4.230
5			Excess over 280 Gigajoules in any month	\$3.204	\$0.271	\$3.475
6						
7			Minimum Monthly Delivery Charge	\$1,826.00	\$0.00	\$1,826.00
8						
9			Administration Charge per Month	\$202.00	\$0.00	\$202.00
10						
11			Delivery Margin Related Rider			
12			Rider 5: RSAM per GJ	\$0.268	\$0.000	\$0.268

#### RATE 1 - DOMESTIC (RESIDENTIAL) SERVICE - OPTION B

Line No.	Line No.		Proposed January 1, 2017 Rates					18 Proposed	Annual Increase/(Decrease)			
										_		% of Previous
1	Rate 1 Domestic Service Option B	Volu	ime	Rate	Annual \$	Volu	ume	Rate	Annual \$	Rate	Annual \$	Annual Bill
2												
3	Monthly Charge											
4	Delivery Charge per Day	365.25	days x	\$0.4321	\$157.8245	365.25	days x	\$0.4605	\$168.1976	\$0.0284	\$10.3731	1.40%
5	Rider 5 - RSAM per Day	365.25	days x	\$0.0176	6.4284	365.25	days x	\$0.0176	6.4284	\$0.0000	\$0.0000	0.00%
6	Gas Cost Recovery Charge Prorated to Daily Basis	365.25	days x	\$0.0850	31.0463	365.25	days x	\$0.0850	31.0463	\$0.0000	\$0.0000	0.00%
7	Minimum Monthly Charge (includes the first 2 gigajoules)			\$0.5347	\$195.30			\$0.5631	\$205.67	\$0.0284	\$10.37	1.40%
8												
9	Next 28 Gigajoules in any month											
10	Delivery Charge per GJ	111	GJ x	\$3.350	\$371.8500	111	GJ x	\$3.570	\$396.2700	\$0.220	\$24.420	3.30%
11	Rider 5 - RSAM per GJ	111	GJ x	0.268	29.7480	111	GJ x	0.268	29.7480	0.000	0.000	0.00%
12	Gas Cost Recovery Charge per GJ	111	GJ x	1.294	143.6340	111	GJ x	1.294	143.6340	0.000	0.000	0.00%
13	Total Charges per GJ		_	\$4.912	\$545.23			\$5.132	\$569.65	\$0.220	\$24.42	3.30%
14												
15	Excess of 30 Gigajoules in any month											
16	Delivery Charge per GJ	0	GJ x	\$3.254	\$0.0000	0	GJ x	\$3.468	\$0.0000	\$0.214	\$0.000	0.00%
17	Rider 5 - RSAM per GJ	0	GJ x	0.268	0.0000	0	GJ x	0.268	0.0000	0.000	0.000	0.00%
18	Gas Cost Recovery Charge per GJ	0	GJ x	1.294	0.0000	0	GJ x	1.294	0.0000	0.000	0.000	0.00%
19	Total Charges per GJ		_	\$4.816	\$0.00			\$5.030	\$0.00	\$0.214	\$0.00	0.00%
20												
21	Total	135	GJ		\$740.53	135	GJ		\$775.32		\$34.79	4.70%
22												
23	Summary of Annual Delivery and Commodity Charges											
24	Delivery Charge (including RSAM)				\$565.8509				\$600.6440		\$34.7931	4.70%
25	Commodity Charge				174.6803				174.6803		0.0000	0.00%
26	Total				\$740.53				\$775.32		\$34.79	4.70%

Tariff rate schedule per GJ charges are set at 3 decimals. Individual tariff components are calculated and shown to 4 decimals; subtotal amounts, equivalent to the line items on customer bills, are rounded and shown to 2 decimals, consistent with actual invoice calculations. Slight differences in totals due to rounding

#### RATE 2.1 - GENERAL (COMMERCIAL) SERVICE

Line No.	ne No.		Proposed January 1, 2017 Rates					)18 Proposed	Annual Increase/(Decrease)			
												% of Previous
1	Rate 2.1 General Service		me	Rate	Annual \$	Volu	ume	Rate	Annual \$	Rate	Annual \$	Annual Bill
2												
3	Monthly Charge											
4	Delivery Charge per Day	365.25	days x	\$1.2598 =	\$460.1420	365.25	days x	\$1.3412 =	\$489.8733	\$0.0814	\$29.7314	1.09%
5	Rider 5 - RSAM per Day	365.25	days x	\$0.0176 =	6.4284	365.25	days x	\$0.0176 =	6.4284	\$0.0000	\$0.0000	0.00%
6	Gas Cost Recovery Charge Prorated to Daily Basis	365.25	days x	\$0.0850 =	31.0463	365.25	days x	\$0.0850 =	31.0463	\$0.0000	\$0.0000	0.00%
7	Minimum Monthly Charge (includes the first 2 gigajoules)			\$1.3624	\$497.62			\$1.4438	\$527.35	\$0.0814	\$29.73	1.09%
8												
9	Next 298 Gigajoules in any month											
10	Delivery Charge per GJ	416	GJ x	\$3.776 =	\$1,570.8160	416	GJ x	\$4.020 =	\$1,672.3200	\$0.244	\$101.504	3.73%
11	Rider 5 - RSAM per GJ	416	GJ x	0.268 =	111.4880	416	GJ x	0.268 =	111.4880	0.000	0.000	0.00%
12	Gas Cost Recovery Charge per GJ	416	GJ x	1.294 =	538.3040	416	GJ x	1.294 =	538.3040	0.000	0.000	0.00%
13	Total Charges per GJ			\$5.338	\$2,220.61			\$5.582	\$2,322.11	\$0.244	\$101.50	3.73%
14												
15	Excess of 300 Gigajoules in any month											
16	Delivery Charge per GJ	0	GJ x	\$3.658 =		0	GJ x	\$3.894 =	+	\$0.236	\$0.000	0.00%
17	Rider 5 - RSAM per GJ	0	GJ x	0.268 =		0	GJ x	0.268 =	0.0000	0.000	0.000	0.00%
18	Gas Cost Recovery Charge per GJ	0	GJ x _	1.294 =	0.0000	0	GJ x _	1.294 =	0.0000	0.000	0.000	0.00%
19	Total Charges per GJ			\$5.220	\$0.00			\$5.456	\$0.00	\$0.236	\$0.00	0.00%
20												
21	Total	440	GJ	:	\$2,718.23	440	GJ		\$2,849.46	:	\$131.23	4.83%
22												
23	Summary of Annual Delivery and Commodity Charges											
24	Delivery Charge (including RSAM)				\$2,148.8744				\$2,280.1097		\$131.2354	4.83%
25	Commodity Charge				569.3503				569.3503	-	0.0000	0.00%
26	Total				\$2,718.22				\$2,849.46		\$131.24	4.83%

Tariff rate schedule per GJ charges are set at 3 decimals. Individual tariff components are calculated and shown to 4 decimals; subtotal amounts, equivalent to the line items on customer bills, are rounded and shown to 2 decimals, consistent with actual invoice calculations. Slight differences in totals due to rounding

#### RATE 2.2 - GENERAL (COMMERCIAL) SERVICE

Line No.	Line No.		Proposed January 1, 2017 Rates					18 Proposed	Annual Increase/(Decrease)			
												% of Previous
1	Rate 2.2 General Service	Volu	ime	Rate	Annual \$	Volu	ume	Rate	Annual \$	Rate	Annual \$	Annual Bill
2												
3	Monthly Charge											
4	Delivery Charge per Day	365.25	days x	\$1.2598	= \$460.1420	365.25	days x	\$1.3412	= \$489.8733	\$0.0814	\$29.7314	0.07%
5	Rider 5 - RSAM per Day	365.25	days x	\$0.0176	= 6.4284	365.25	days x	\$0.0176	= 6.4284	\$0.0000	\$0.0000	0.00%
6	Gas Cost Recovery Charge Prorated to Daily Basis	365.25	days x	\$0.0850	= 31.0463	365.25	days x	\$0.0850	= 31.0463	\$0.0000	\$0.0000	0.00%
7	Minimum Monthly Charge (includes the first 2 gigajoules)			\$1.3624	\$497.62			\$1.4438	\$527.35	\$0.0814	\$29.73	0.07%
8												
9	Next 298 Gigajoules in any month											
10	Delivery Charge per GJ	3,576	GJ x	\$3.776	= \$13,502.9760	3,576	GJ x	\$4.020	= \$14,375.5200	\$0.244	\$872.544	2.03%
11	Rider 5 - RSAM per GJ	3,576	GJ x	0.268 =	= 958.3680	3,576	GJ x	0.268 =	958.3680	0.000	0.000	0.00%
12	Gas Cost Recovery Charge per GJ	3,576	GJ x	1.294 =	4,627.3440	3,576	GJ x	1.294 =	4,627.3440	0.000	0.000	0.00%
13	Total Charges per GJ			\$5.338	\$19,088.69			\$5.582	\$19,961.23	\$0.244	\$872.54	2.03%
14												
15	Excess of 300 Gigajoules in any month											
16	Delivery Charge per GJ	4,500	GJ x		= \$16,461.0000	4,500	GJ x		= \$17,523.0000	\$0.236	\$1,062.000	2.47%
17	Rider 5 - RSAM per GJ	4,500	GJ x	0.268 =	.,	4,500	GJ x	0.268 =	.,	0.000	0.000	0.00%
18	Gas Cost Recovery Charge per GJ	4,500	GJ x _	11201	= 5,823.0000	4,500	GJ x	1.294 =	0,020.0000	0.000	0.000	0.00%
19	Total Charges per GJ			\$5.220	\$23,490.00			\$5.456	\$24,552.00	\$0.236	\$1,062.00	2.47%
20												
21	Total	8,100	GJ		\$43,076.31	8,100	GJ		\$45,040.58		\$1,964.27	4.56%
22												
23	Summary of Annual Delivery and Commodity Charges											
24	Delivery Charge (including RSAM)				\$32,594.9144				\$34,559.1897		\$1,964.2754	4.56%
25	Commodity Charge				10,481.3903				10,481.3903		0.0000	0.00%
26	Total				\$43,076.30				\$45,040.58		\$1,964.28	4.56%

Tariff rate schedule per GJ charges are set at 3 decimals. Individual tariff components are calculated and shown to 4 decimals; subtotal amounts, equivalent to the line items on customer bills, are rounded and shown to 2 decimals, consistent with actual invoice calculations. Slight differences in totals due to rounding

#### **RATE 25 - TRANSPORTATION SERVICE**

Line

No.			Proposed	January 1, 201	7 Ra	tes		January 1	, 2018 Propo	sed R	ates	Annu	al Increase/(Dec	rease)
1 2	Rate 25 Transportation Service	Volu	ime	Rate		Annual \$	Volur	me	Rate	-	Annual \$	Rate	Annual \$	% of Previous Annual Bil
3 4	Transportation Delivery Charges													
5	Delivery Charge per Gigajoule													
6	i) First 20 Gigajoules	240	GJ x	\$4.219	=	\$1,012.5600	240	GJ x	\$4.553	=	\$1,092.7200	\$0.334	\$80.1600	0.11%
7	ii) Next 260 Gigajoules	3,120	GJ x	\$3.915	=	12,214.8000	3,120	GJ x	\$4.230	=	13,197.6000	\$0.315	982.8000	1.33%
8	iii) Excess over 280 Gigajoules	16,490	GJ x	\$3.204	=	52,833.9600	16,490	GJ x	\$3.475	=	57,302.7500	\$0.271	4,468.7900	6.05%
9	iv) Minimum Delivery Charge per month	12	months x	\$1,826.00		-	12 r	nonths x	\$1,826.00		-	\$0.00	\$0.00	0.00%
10														
11	Administration Charge per month	12	months x	\$202.00	=	\$2,424.00	12 r	nonths x	\$202.00	=	\$2,424.00	\$0.00	\$0.00	0.00%
12														
13	Rider 5: RSAM per GJ	19,850	GJ x	\$0.268	=	\$5,319.8000	19,850	GJ x	\$0.268	=	\$5,319.8000	\$0.000	\$0.0000	0.00%
14														
15	Total Transportation Delivery & Administration Charges	19,850	GJ x	\$3.718	-	\$73,805.12	19,850	GJ x	\$3.997	_	\$79,336.87	\$0.279	\$5,531.75	7.50%
16														
17	Summary of Annual Dalivary Administration and Commodity Charges													
18 19	Summary of Annual Delivery, Administration and Commodity Charges Delivery & Administration Charge (including RSAM)	19,850	GJ x	\$3.718	=	\$73,805.1200	19,850	GJ x	\$3.997	_	\$79,336.8700	\$0.279	\$5,531.7500	7.50%
20	Commodity Charge (no sales from Authorized/Unauthorized Overrun Gas)	19,000	GJ	0.000	_	0.0000	19,000	GJ	0.000	_	0.0000	0.000	0.0000	0.00%
21	Total	19,850	GJ x	\$3.718		\$73,805.12	19,850	GJx	\$3.997		\$79,336.87	\$0.279	\$5,531.75	7.50%
					=					-	·			1

Tariff rate schedule per GJ charges are set at 3 decimals. Individual tariff components are calculated and shown to 4 decimals; subtotal amounts, equivalent to the line items on customer bills, are rounded and shown to 2 decimals, consistent with actual invoice calculations. Slight differences in totals due to rounding

Appendix D DRAFT ORDERS



Sixth floor, 900 Howe Street Vancouver, BC Canada V6Z 2N3 TEL: (604) 660-4700 BC Toll Free: 1-800-663-1385 FAX: (604) 660-1102

### **ORDER NUMBER**

G-<mark>xx-xx</mark>

### IN THE MATTER OF the Utilities Commission Act, RSBC 1996, Chapter 473

and

FortisBC Energy Inc. Application for Approval of 2017-2018 Revenue Requirements and Rates for the Fort Nelson Service Area

> BEFORE: Panel Chair/Commissioner Commissioner Commissioner

> > on <mark>Date</mark>

ORDER

### WHEREAS:

- A. On June 30, 2016, FortisBC Energy Inc. (FEI) submitted its 2017-2018 Revenue Requirements and Rates Application for the Fort Nelson Service Area (Application) with the British Columbia Utilities Commission (Commission) pursuant to sections 59 to 61 of the Utilities Commission Act, seeking, among other things, Commission approval of delivery rates for the 2017 and 2018 (Test Period);
- B. Based on the forecast energy demand in the Fort Nelson Service Area, the forecast revenue at 2016 approved rates is not sufficient to recover the cost to serve the Fort Nelson Service Area over the Test Period;
- C. FEI has calculated a revenue deficiency of \$301 thousand in 2017 and an incremental revenue surplus of \$146 thousand in 2018, which, without rate smoothing, would result in a delivery rate increase of approximately 13.50 percent in 2017 and an incremental delivery rate reduction of approximately 6.44 percent in 2018;
- D. FEI proposes to smooth the impact on rates over the two year Test Period by recording \$148 thousand (\$110 thousand after-tax) of the 2017 revenue deficiency in a non-rate base deferral account for recovery in 2018, resulting in a revenue deficiency of \$153 thousand in 2017 and an incremental revenue deficiency of \$150 thousand in 2018, and delivery rate increases of 6.86 percent in 2017 and an additional 6.94 percent in 2018;
- E. FEI requests approval of a delivery rate increase of 6.86 percent effective January 1, 2017, to recover the forecast revenue deficiency of \$153 thousand in 2017, and a delivery rate increase of an additional 6.94 percent effective January 1, 2018;

- F. FEI also seeks approval of the following:
  - the setting of the Revenue Stabilization Adjustment Mechanism (RSAM) rate rider to \$0.268 per GJ (an increase of \$0.190 per GJ compared to 2016) on a permanent basis, effective January 1, 2017, as set out in Section 2.4, Table 2-2;
  - 2. the depreciation and net salvage rates proposed by FEI for approval starting in 2017, subject to any determination by the Commission with respect to those rates in the FEI Proposal for Depreciation and Net Salvage Rate Changes proceeding; and
  - 3. the creation of four deferral accounts and the delay of the disposition of the non-rate base Fort Nelson First Nations Right-of-Way Agreement deferral account, all as described in Section 7.4 of the Application.
- G. The Commission has reviewed and considered the Application and determines that the Application should be approved.

**NOW THEREFORE** pursuant to sections 59-61 of the *Utilities Commission Act*, the British Columbia Utilities Commission orders as follows:

- 1. FortisBC Energy Inc.'s requested delivery rate increases of 6.86 percent effective January 1, 2017 and 6.94 percent effective January 1, 2018 for the Fort Nelson Service Area are approved.
- 2. The Rate Stabilization Adjustment Mechanism rate rider is approved on a permanent basis at \$0.268 per GJ effective January 1, 2017.
- 3. The adoption of the depreciation and net salvage rates proposed by FEI for approval starting in 2017, subject to any determination by the Commission with respect to those rates in the FEI Proposal for Depreciation and Net Salvage Rate Changes proceeding, is approved.
- 4. The following deferral account requests are approved, as described in Section 7.4:
  - a. The creation of a rate base deferral account for the 2017-2018 Revenue Requirement Application costs with an amortization period of two years beginning 2017;
  - b. The creation of a rate base deferral account for the 2016 Cost of Capital Application costs with an amortization period of three years beginning 2017;
  - c. The creation of a rate base deferral account for the 2017 Rate Design Application costs;
  - d. The creation of a non-rate deferral account to transfer a portion of the 2017 revenue deficiency to 2018 to help smooth delivery rates in the Fort Nelson Service Area, and also to capture the 2016 revenue requirement impact of any variance between the equity thickness and return on equity amounts approved in FEI's current Cost of Capital proceeding and its 2016 interim return on equity and capital structure approved amounts;
  - e. To delay disposition of the non-rate base Fort Nelson First Nations Right-of-Way Agreement deferral account to the next revenue requirement proceeding.

**DATED** at the City of Vancouver, in the Province of British Columbia, this (XX) day of (Month Year).

Order G-xx-xx Page 3 of 3

BY ORDER

(X. X. last name) Commissioner



# ORDER NUMBER

G-<mark>xx-xx</mark>

### IN THE MATTER OF the Utilities Commission Act, RSBC 1996, Chapter 473

and

FortisBC Energy Inc. Application for Approval of 2017-2018 Revenue Requirements and Rates for the Fort Nelson Service Area

### BEFORE: Panel Chair/Commissioner Commissioner Commissioner

on Date

### ORDER

### WHEREAS:

- A. On June 30, 2016, FortisBC Energy Inc. (FEI) submitted its 2017-2018 Revenue Requirements and Rates Application for the Fort Nelson Service Area (Application) with the British Columbia Utilities Commission (Commission) pursuant to sections 59 to 61 of the Utilities Commission Act, seeking, among other things, Commission approval of delivery rates for the 2017 and 2018 (Test Period);
- B. Based on the forecast energy demand in the Fort Nelson Service Area, the forecast revenue at 2016 approved rates is not sufficient to recover the cost to serve the Fort Nelson Service Area over the Test Period;
- C. FEI has calculated a revenue deficiency of \$301 thousand in 2017 and an incremental revenue surplus of \$146 thousand in 2018, which, without rate smoothing, would result in a delivery rate increase of approximately 13.50 percent in 2017 and an incremental delivery rate reduction of approximately 6.44 percent in 2018;
- D. FEI proposes to smooth the impact on rates over the two year Test Period by recording \$148 thousand (\$110 thousand after-tax) of the 2017 revenue deficiency in a non-rate base deferral account for recovery in 2018, resulting in a revenue deficiency of \$153 thousand in 2017 and an incremental revenue deficiency of \$150 thousand in 2018, and delivery rate increases of 6.86 percent in 2017 and an additional 6.94 percent in 2018;
- E. FEI requests approval of a delivery rate increase of 6.86 percent effective January 1, 2017, to recover the forecast revenue deficiency of \$153 thousand in 2017, and a delivery rate increase of an additional 6.94 percent effective January 1, 2018;

- F. FEI also seeks approval of the following:
  - the setting of the Revenue Stabilization Adjustment Mechanism (RSAM) rate rider to \$0.268 per GJ (an increase of \$0.190 per GJ compared to 2016) on a permanent basis, effective January 1, 2017, as set out in Section 2.4, Table 2-2;
  - the depreciation and net salvage rates proposed by FEI for approval starting in 2017, subject to any determination by the Commission with respect to those rates in the FEI Proposal for Depreciation and Net Salvage Rate Changes proceeding; and
  - 3. the creation of four deferral accounts and the delay of the disposition of the non-rate base Fort Nelson First Nations Right-of-Way Agreement deferral account, all as described in Section 7.4 of the Application.
- G. FEI has proposed a written hearing process for review of the Application.
- H. The Commission considers that establishment of a regulatory timetable is warranted.

**NOW THEREFORE** the British Columbia Utilities Commission orders as follows:

- 1. A written public hearing process shall proceed according to the Regulatory Timetable attached as Appendix A to this Order.
- 2. FEI is to publish, as soon as possible, the Public Notice, attached as Appendix B to this Order, in such local and community newspapers as to provide adequate notice to those parties who may have an interest in or be affected by the Application.
- 3. The Application, together with any supporting materials, will be available for inspection at FEI Office, 16705 Fraser Highway, Surrey, BC, V4N 0E8. The Application and supporting materials will also be available on the FortisBC Utilities' website at <u>www.fortisbc.com</u>.
- 4. Interveners and interested parties must register with the Commission, in writing or by electronic submission, by Wednesday, July 20, 2016 in accordance with the Commission's Rules of Practice and Procedure made effective January 15, 2016.

**DATED** at the City of Vancouver, in the Province of British Columbia, this (XX) day of (Month Year).

BY ORDER

(X. X. last name) Commissioner

Attachments

### FortisBC Energy Inc. Application for Approval of 2017-2018 Revenue Requirements and Rates for the Fort Nelson Service Area

### **REGULATORY TIMETABLE**

ACTION	DATE (2016)
Intervener Registration	Wednesday, July 20
Commission and Intervener Information Request No. 1	Wednesday, July 27
FEFN Response to Information Requests No. 1	Thursday, August 18
FEFN Final Argument Submissions	Thursday, September 8
Intervener Final Argument Submissions	Thursday, September 15
FEFN Reply Argument Submissions	Thursday, September 22



# Public Notice of Application by FortisBC Energy Inc. for Approval of 2017-2018 Revenue Requirements and Rates for the Fort Nelson Service Area

On June 30, 2016, FortisBC Energy Inc. (FEI) applied to the British Columbia Utilities Commission (Commission) for approval of its 2017 and 2018 revenue requirements and rates application for the Fort Nelson Service Area (FEFN) pursuant to sections 59 to 61 of the *Utilities Commission Act* (UCA), seeking, among other things, Commission approval to increase delivery rates. FEI is seeking for the Fort Nelson Service Area a delivery rate increase of 6.86 percent effective January 1, 2017, and a further delivery rate increase of 6.94 percent effective January 1, 2018 (Application).

### How to get involved

Persons who are directly or sufficiently affected by the Commission's decision or have relevant information, or expertise and who wish to actively participate in the proceeding can request intervener status by submitting a completed Request to Intervene Form by Wednesday, July 20, 2016. Forms are available on the Commission's website at www.bcuc.com. Interveners will receive notification of all non-confidential correspondence and filed documentation, and should provide an email address if available.

Persons not expecting to participate, but who have an interest in the proceeding, should register as interested parties through the Commission's website. Interested parties receive electronic notice of submissions and the decision when it is released.

Letters of comment may also be submitted using the Letter of Comment Form found online at www.bcuc.com. By participating and/or providing comment on the application, you agree to your comments being placed on the public record and posted on the Commission's website. All submissions and/or correspondence received, including letters of comment are placed on the public record, posted on the Commission's website, and provided to the Panel and all participants in the proceeding.

For more information about participating in a Commission proceeding please see the Rules of Practice and Procedure available at www.bcuc.com. Alternatively, persons can request a copy of the Rules of Practice and Procedure in writing. All forms are available on the Commission's website or can be requested in writing.

### View the application

The application and all supporting documentation are available on the Commission's website on the "Current Applications" page. If you would like to review the material in hard copy, it is available to be viewed at the locations below:

British Columbia Utilities Commission	FortisBC Energy Inc.
Sixth Floor, 900 Howe Street	16705 Fraser Highway
Vancouver, BC V6Z 2N3	Surrey, BC V4N 0E8
Commission.Secretary@bcuc.com	www.fortisbc.com
Telephone: 604-660-4700	
Toll Free: 1-800-663-1385	

For more information please contact Laurel Ross, Acting Commission Secretary using the contact information above.