

**Allison M. Sears**  
Direct Line: 403.298.3681  
e-mail: searsa@bennettjones.com  
Our File No.: 12276-92

November 13, 2013

**VIA EMAIL**

Yukon Public Utilities Board  
Box 31728  
Whitehorse, YK Y1A 6L3

**Attention: Ms. Deana Lemke, Executive Secretary**

Dear Ms. Lemke:

**Re: Yukon Electrical Company Limited 2013-2015 General Rate Application  
Responses to Undertakings**

---

Please find attached the Responses to Undertakings given by the Yukon Electrical Company Limited in the above referenced matter that remained outstanding at the close of the Hearing on November 7, 2013.

We trust the foregoing is satisfactory. Should you have any questions or concerns do not hesitate to contact the undersigned.

Yours truly,

**BENNETT JONES LLP**



Allison M. Sears

cc: Interested Parties

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #2**

November 4, 2013  
Transcript Volume 1

---

Undertaking: By Ms. Kellgren to Mr. Grattan

Page 81, Lines 16 - 18

To confirm the aid to cross is the most recent or current Plan 1 document  
for YECL DC.

**Yukon Electrical Response:**

Yukon Electrical cannot confirm that the copy of The Retirement Plan For Employees of Canadian Utilities Limited and Participating Companies Plan 1 (Exhibit C2-4) is the most recent Plan 1 document for Yukon Electrical staff who are members of the Defined Contribution Plan. Please refer to Attachment 1 for Amendment Number 36A to The Retirement Plan For Employees of Canadian Utilities Limited and Participating Companies Plan 1.

During cross examination by Ms. Kellgren, Yukon Electrical noted that it had inadvertently omitted filing a copy of The Retirement Plan For Employees of Canadian Utilities Limited and Participating Companies Plan 2 as part of its response to CW-YECL-7. Please refer to Attachment 2 for a copy of the Plan 2 documents that relate to Yukon Electrical staff who are members of the Defined Benefit Plan.

**AMENDMENT NUMBER 36A TO  
THE RETIREMENT PLAN FOR EMPLOYEES OF  
CANADIAN UTILITIES LIMITED AND  
PARTICIPATING COMPANIES  
PLAN 1**

**WHEREAS** Canadian Utilities Limited (the "Company") established The Retirement Plan for Employees of Canadian Utilities Limited and Participating Companies - Plan 1 effective January 2, 1962 (the "Plan");

**AND WHEREAS** the Company retained the right to amend the Plan from time to time;

**AND WHEREAS** it is desirable to the Company that the Plan be amended clarify the definition of Monthly Plan Year Earnings, to enhance the pre-retirement death benefit provided by the Plan, and to coordinate the maximum contribution provisions with the Company's new payroll system implemented effective January 1, 2010.

**NOW, THEREFORE, TAKE NOTICE THAT** the Defined Benefit Provisions of the Plan are hereby amended, in accordance with the following:

**Effective July 15, 2009:**

1. Subsection 9.1(a) is amended by deleting the first sentence of the first paragraph and replacing it with the following:  
*"If the Participant has a Spouse at the date of his death, and has completed at least two (2) years of membership in the Plan, or has completed at least two (2) years of Continuous Service in the case of a Participant who was last employed by the Employer in the province of Saskatchewan, then subject to Subsection 9.1(b) the Participant's Spouse shall be entitled to:"*
2. Subsection 9.1(b) and Subsection 9.1(c) are renamed 9.1(c) and 9.1(d), respectively.
3. The following Subsection 9.1(b) is inserted before Subsection 9.1(c):

**AMENDMENT NUMBER 36A TO  
THE RETIREMENT PLAN FOR EMPLOYEES OF  
CANADIAN UTILITIES LIMITED AND  
PARTICIPATING COMPANIES  
PLAN 1**

**(continued)**

*“(b) If the deceased Participant was eligible to request special early retirement under the provisions of Section 5.3 of Article V and is survived by his Spouse, then, in lieu of the lump sum benefit provided for in Subsection 9.1(a), the Spouse may elect to receive a monthly pension equal to the benefit that the Spouse would have been entitled to receive had the deceased Participant: (i) retired on the first day of the calendar month of the date of his death; and (ii) received Company consent in accordance with Section 5.3 of Article V. The benefit payable to his Spouse shall be calculated in accordance with the provisions of Article VI and Section 8.3 of Article VIII, which pension shall not have a Commuted Value less than the lump sum benefit set forth in Subsection 9.1(a).”*

**Effective January 1, 2010:**

4. Article I “Monthly Plan Year Earnings” is amended by adding subsection (ix) and (x) at the end:
- “(ix) *Monthly Plan Year Earnings includes shift bonuses for permanent employees of ATCO Pipelines who are permanently classified as control centre operators or assistant control centre operators, who are working the twelve and one-half hour shift on a year round basis, and who work according to a two-shift schedule rotating both as to time of day and day of week.*
- (x) *Monthly Plan Year Earnings includes shift bonuses for permanent employees of ATCO Gas who are permanently classified as dispatchers, who are working the twelve hour shift on a year round basis, and who work according to a two-shift schedule rotating both as to time of day and day of week and who work an average of forty-two hours per week.”*

**AMENDMENT NUMBER 36A TO  
THE RETIREMENT PLAN FOR EMPLOYEES OF  
CANADIAN UTILITIES LIMITED AND  
PARTICIPATING COMPANIES  
PLAN 1**

**(continued)**

**Effective January 1, 2010:**

5. Subsection 4.1(a) is deleted and replaced with the following:

“(a) Except as otherwise provided in this Section 4.1, each Participant, throughout his Pensionable Service in the Plan after 31 December 2004, is required to contribute monthly (for Participants paid on a monthly basis) or bi-weekly (for Participants paid on a bi-weekly basis) to the Fund, through payroll deductions during each Plan Year the lesser of

(i) \$166.67 (for Participants paid on a monthly basis) or \$76.92 (for Participants paid on a bi-weekly basis), as applicable, and

(ii) 2.8% of the lesser of  
(A) his Monthly Plan Year Earnings and  
(B) his Monthly Maximum Pensionable Earnings

PLUS

4.0% of the amount, if any, by which his Monthly Plan Year Earnings exceeds his Monthly Maximum Pensionable Earnings,

with the result of this calculation multiplied by twelve and divided by the number of pay periods per year for Participants paid on other than a monthly basis.

For each Permanent Part Time Employee the required contribution calculated above will be multiplied by his Permanent Part Time Service Ratio.

It is hereby expressly provided that in no event shall the contributions required under this Section 4.1(a) exceed the amount permitted under the regulations issued under the Income Tax Act.”

**AMENDMENT NUMBER 36A TO  
THE RETIREMENT PLAN FOR EMPLOYEES OF  
CANADIAN UTILITIES LIMITED AND  
PARTICIPATING COMPANIES  
PLAN 1**

**(continued)**

**AND THEREFORE, TAKE NOTICE THAT** the Money Purchase Provisions of the Plan are hereby amended effective January 1, 2010, in accordance with the following:

Section 1, the definition of “Earnings” is amended by adding the following subsections:

- “(v) *Earnings includes shift bonuses for permanent employees of ATCO Pipelines who are permanently classified as control centre operators or assistant control centre operators, who are working the twelve and one-half hour shift on a year round basis, and who work according to a two-shift schedule rotating both as to time of day and day of week.*
- (vi) *Earnings includes shift bonuses for permanent employees of ATCO Gas who are permanently classified as dispatchers, who are working the twelve hour shift on a year round basis, and who work according to a two-shift schedule rotating both as to time of day and day of week and who work an average of forty-two hours per week.”*

**IN WITNESS WHEREOF** the Company has caused this instrument to be executed by its duly authorized officers this \_\_\_\_\_ day of \_\_\_\_\_, A.D. 2009.

**CANADIAN UTILITIES LIMITED**

\_\_\_\_\_  
\_\_\_\_\_

THE RETIREMENT PLAN FOR EMPLOYEES OF  
CANADIAN UTILITIES LIMITED  
AND  
PARTICIPATING COMPANIES  
PLAN 2

Certified a true and complete copy effective as of January 1, 2008:

Signed: \_\_\_\_\_

Date: \_\_\_\_\_

Revised January 1, 2008



## **Table of Contents**

---

|                                                                  |    |
|------------------------------------------------------------------|----|
| Article I - Definitions .....                                    | 1  |
| Article II - Establishment of the Plan.....                      | 13 |
| Article III - Participation in the Plan .....                    | 15 |
| Article IV - Contributions .....                                 | 19 |
| Article V - Retirement Date .....                                | 27 |
| Article VI - Retirement Benefits .....                           | 29 |
| Article VII - Normal Form of Retirement Benefit.....             | 41 |
| Article VIII - Optional Forms of Retirement Benefit .....        | 43 |
| Article IX - Benefits on Death Before Retirement .....           | 48 |
| Article X - Termination of Service .....                         | 50 |
| Article XI - Administration of the Plan .....                    | 53 |
| Article XII - Designation of Beneficiary.....                    | 54 |
| Article XIII - Establishment of the Fund .....                   | 55 |
| Article XIV - Amendment or Termination of the Plan .....         | 56 |
| Article XV - General Conditions .....                            | 58 |
| EXECUTION .....                                                  | 60 |
| Schedule I - Rates of Participants' Required Contributions ..... | 61 |

## **Table of Contents**

---

## Article I - Definitions

---

- 1.1 For the purposes of this Plan, including this Article, subject to the requirements of the context in which they appear, the expressions set out below shall have the following meanings regardless of any definition at variance therewith in any other document:

**"Actuarial Equivalent Value"** means equal value computed on the basis of the rate of interest and the mortality table last adopted by the Company on the advice of the Actuary for such purpose, provided that wherever used in a situation for which an actuarial basis has been prescribed under the Pension Benefits Act, such prescribed actuarial basis shall be used;

**"Actuary"** means a Fellow of the Canadian Institute of Actuaries who has been designated by the Company to be the Actuary of the Plan. The Company may designate the Actuary either directly as a named individual, or indirectly by designating the firm or corporation of which the Actuary is a member;

**"Affiliated Company"** is any company affiliated with the Company and with which the Company has concluded an Agreement of Reciprocity. As of 1 January 1994, ATCO Ltd. and its subsidiaries held directly or indirectly otherwise than through the Company, ATCOR Ltd., ATCOR Resources Ltd., CU Power Generation Limited, Frontec Logistics Corporation, and Narwhal Arctic Services, A Division Of Frontec Limited are each an Affiliated Company;

**"Affiliated Service"** means, in respect of a Participant who has transferred from the Employer to an Affiliated Company, or vice versa, under the terms of an Agreement of Reciprocity, any period of continuous employment with an Affiliated Company which is not Pensionable Service, but which is contiguous with a period of Continuous Service, provided that the continuity of such employment shall be determined under the same rules as apply to Continuous Service;

**"Agreement of Reciprocity"** means an agreement between the Company and an Affiliated Company under which an employee of one party who transfers to the employment of the other party will have his service with both parties recognized by the pension plans of each for such matters as eligibility and vested rights, and which is intended to generally facilitate the movement of employees among the family of companies without loss of pension opportunities;

**"Amendment Date"** means 2 January 1966;

**"Annual Final Average Earnings"** means, in respect of a Participant, the greatest sum of sixty (60) consecutive calendar months of Monthly Plan Year Earnings, divided by five (5). Months in which the Participant's Monthly Plan Year Earnings are zero (0)

## Article I - Definitions

---

shall be excluded from the calculation, and shall be deemed not to interrupt the consecutiveness of the months of non-zero Monthly Plan Year Earnings. If the Participant has less than sixty (60) complete months of non-zero Monthly Plan Year Earnings, his Annual Final Average Earnings shall be the sum of all of his Monthly Plan Year Earnings multiplied by twelve (12) and divided by the number of months of non-zero Monthly Plan Year Earnings;

**"Average Wage"** for a calendar year has the meaning ascribed thereto in section 147.1 of the Income Tax Act;

**"Average Y.M.P.E."** means,

- (i) for a Participant who retires at or after his normal retirement date or a Participant whose membership in the Plan terminates in the same calendar year as his normal retirement date, one third of the sum of the Y.M.P.E. in effect in his year of retirement or termination and the Y.M.P.E. in effect in the two (2) calendar years prior to his retirement or termination,

OR

- (ii) for a Participant whose membership in the Plan terminates in the calendar year preceding the year of his normal retirement date, one third of the sum of twice the Y.M.P.E. in effect in his year of retirement or termination and the Y.M.P.E. in effect in the calendar year prior to his retirement or termination,

OR

- (iii) for a Participant whose membership in the Plan terminates more than one (1) calendar year prior to his normal retirement date, the Y.M.P.E. in effect in the year of his retirement or termination;

**"Board"** means the Board of Directors of the Company;

**"Canada Pension Plan"** means the Canada Pension Plan established under R.S.C. 1985, c. C-8, and all regulations issued pursuant thereto, both as amended from time to time;

**"Commuted Value"** of a benefit means the actuarial present value of such benefit computed on the basis of the applicable actuarial assumptions prescribed for such purpose under the Pension Benefits Act, and acceptable under the Income Tax Act, and calculated in accordance with generally accepted actuarial principles;

## **Article I - Definitions**

---

**"Company"** means Canadian Utilities Limited acting through its Board of Directors;

**"Continuous Service"** means the period of uninterrupted employment rendered in Canada on a regular full time basis by an Employee or on a regular part time basis by a Permanent Part Time Employee commencing with the date of employment and terminating with the date of his termination of service, death, or retirement, whichever occurs first, subject to the following:

- (i) Service occurring before a break in Continuous Service shall not be included in determining the length of Continuous Service, unless otherwise approved by the President, subject to the requirements of any applicable legislation.
- (ii) Continuous Service shall not be considered to have been broken by periods of sabbatical, educational, maternity or parental leave (paid or unpaid), consented to by the Employer, or by periods of sickness or accident leave or disability. Continuous Service shall not be considered to have been broken by periods of active military service in the Canadian Armed Forces, if such active service immediately followed time spent in the service of the Employer and provided the Employee returns to the service of the Employer within four (4) months of terminating his active service in the Canadian Armed Forces.
- (iii) Continuous Service shall include Affiliated Service and PSSA Service.

**"Credited Interest"** means interest credited in accordance with Section 4.10 of Article IV;

**"Credited Service"** is the measurement of service upon which the calculation of retirement and other benefits is based, and is calculated from a Participant's Pensionable Service as follows:

- (i) divide, if necessary, the Participant's Pensionable Service into periods throughout which the Permanent Part Time Service Ratio is constant, and
- (ii) in respect of each such period of Pensionable Service, Credited Service is equal to Pensionable Service multiplied by the Permanent Part Time Service Ratio;

**"Designated Province"** has the meaning attributed thereto under the Pension Benefits Act;

**"Early Retirement Eligibility Service"** means a Participant's Pensionable Service plus his Eligible Affiliated Service and his PSSA Service, and shall be measured in years and fractions of years in respect of completed calendar months;

## Article I - Definitions

---

"**Effective Date**" means 31 December 1986;

"**Eligible Affiliated Service**" means, in respect of a Participant who has transferred from the Employer to an Affiliated Company, or vice versa, under the terms of an Agreement of Reciprocity, such portion of the Participant's Affiliated Service as the Agreement of Reciprocity requires to be recognized for the purposes of eligibility for early retirement rights, and which is service rendered to a predecessor employer of a company participating in this Plan. Eligible Affiliated Service shall be measured in years and fractions of years in respect of completed calendar months;

"**Eligible Dependant Child**" of a Participant means a natural or legally adopted child of the Participant who was, at the time of determination, dependent on the Participant for support and who

- (i) is under the age of twenty-two (22), and
- (ii) was either born to, or legally adopted by, the Participant prior to the Participant's retirement or termination of service, whichever first occurred, or, where the Participant retired directly from active service with the Employer, was born to the Participant after retirement and whose other natural parent was the Spouse of the Participant at the time of the Participant's retirement, and
- (iii) is either under the age of nineteen (19) years throughout the entire calendar year that includes the time of determination, or is in full-time attendance at an educational institution, or is dependent upon the Participant by reason of mental or physical infirmity.

The plural of Eligible Dependant Child is "**Eligible Dependant Children**";

"**Employee**" means any person in the permanent employment of the Employer who is paid on a salaried basis, as well as any such person who has become disabled or who has been granted temporary or military leave of absence by the Employer, provided that members of the Board of Directors who are employed by the Company on other than a full time basis are also included within the meaning of the expression "Employee";

"**Employer**" means, individually or collectively as the context requires,

Canadian Utilities Limited,  
ATCO Electric Ltd.,  
Yukon Electrical Company Limited,  
ATCO Power Ltd.,

their predecessors and successors, and such of their Subsidiaries which may from time to time be designated by the Company as participating in this Plan;

## **Article I - Definitions**

---

**"Excess Transfer Value"** has the meaning ascribed thereto in Section 4.13 of Article IV;

**"Fund"** means the fund and all earnings, appreciations, or additions thereon and thereto held by the Funding Agencies alone or in combination under the Funding Agreements and shall also include the Fund established under the Variable Accumulation Fund Group Annuity Policy issued by the Sun Life Assurance Company of Canada;

**"Funding Agencies"** means the Trust Companies, Trustees, or Insurance Company, individually or in combination, or successors thereof as the Company may appoint to hold the Fund in whole or in part pursuant to the Funding Agreements;

**"Funding Agreements"** means the agreements or contracts entered into by the Company and the Funding Agencies establishing the Fund;

**"Income Tax Act"** means the Income Tax Act, 63 S.C. 1970-71-72, c. 63, and the regulations thereunder, and where applicable includes the provisions of Information Circular 72-13R8 issued by the Department of National Revenue, each as amended or replaced from time to time;

**"Indexed Remuneration"** means, with respect to a specific calendar year (the "compensation year") or part thereof in which Remuneration was earned, and with respect to a specific calendar year (the "calculation year") in which a calculation involving Indexed Remuneration is to be made, the Remuneration earned during the compensation year (or specified portion thereof) multiplied by the Average Wage for the calculation year, and divided by the Average Wage for the compensation year, or for 1986 if the compensation year is prior to 1986. In the event that the Average Wage for a calendar year prior to the calculation year, but not before the later of 1986 and the compensation year, shall be greater than the Average Wage for the calculation year, then the greatest such Average Wage shall be used as if it were the Average Wage for the calculation year;

**"Married Participant"** means any Participant

- (i) who has retired directly from the service of the Employer in accordance with the provisions of Section 5.1, 5.2, 5.3 or 5.4 and who, at the date of commencement of his monthly retirement benefit, has a Spouse, or who has at least one (1) Eligible Dependant Child, or

## Article I - Definitions

---

- (ii) whose employment has terminated in accordance with Article X with entitlement to a monthly retirement benefit thereunder and who, at the date of such termination, has a Spouse, or who has at least one (1) Eligible Dependant Child;

**"Monthly Maximum Pensionable Earnings"** means, subject to Subsection 4.1(d), one twelfth of the Y.M.P.E.;

**"Monthly Plan Year Earnings"** means a Participant's monthly rate of basic earnings, exclusive of premiums, northern allowance and variable compensation, as determined by the Employer for the purposes of the Plan, subject to the following:

- (i) For a Permanent Part Time Employee, Monthly Plan Year Earnings means the basic monthly earnings, as determined by the Employer, which the Participant would have received had he worked the number of hours per month required for permanent full time status in his job classification.
- (ii) During any period of disability or temporary absence which is deemed to be included in Pensionable Service by virtue of Section 4.1(b) or (c), Monthly Plan Year Earnings shall be calculated in accordance with Section 4.1(d).
- (iii) (deleted).
- (iv) Monthly Plan Year Earnings during any period of Affiliated Service shall be determined in accordance with the terms of the Agreement of Reciprocity relating to such period of Affiliated Service, and if such Agreement of Reciprocity is silent in this matter, Monthly Plan Year Earnings during that period shall be zero (0).
- (v) Effective January 1, 1994, Monthly Plan Year Earnings in a calendar year shall include any amount paid in that calendar year under the Employer's re-earnable lump sum payment program, which applies in the place of a salary adjustment to Employees whose salary falls in the upper half of the applicable salary range, with one-twelfth of the amount recognized in each calendar month.
- (vi) In all cases, Monthly Plan Year Earnings shall be such that the calculation of Annual Final Average Earnings at that point in time shall not result in an amount which is greater than the highest average of the Participant's Indexed Remuneration over any three (3) non-overlapping periods of twelve (12) consecutive months prior to that point in time.

## Article I - Definitions

---

- (vii) Monthly Plan Year Earnings shall be nil in respect of any period following the termination of the Plan or the commencement of the Participant's pension.

"**NCPC**" means the Northern Canada Power Commission;

"**Participant**" means any Employee or any Permanent Part Time Employee who fulfils the eligibility requirements set forth in Article III hereof and whose application for participation has been accepted and recorded by the Company or any ex-Employee to whom undischarged obligations are due under the Plan in respect of a previous period of participation;

"**Pension Benefits Act**" means, as applicable, the Pension Benefits Standards Act, 1985, being a statute of Canada, and such similar or succeeding federal or provincial legislation as may now be or hereafter become effective and to which the Plan may now be or hereafter become subject, including all amendments thereto from time to time and all regulations issued thereunder;

"**Pensionable Service**" means, in respect of a Participant, the aggregate of all periods of Continuous Service which fall between the date of commencement of participation in the Plan in accordance with the provisions of Article III, and the earliest of the Participant's death, the Participant's retirement, the Participant's termination of employment or the termination of the Plan, and which satisfy the following conditions:

- (i) the period is a period throughout which the Participant was employed in Canada by the Employer, and in receipt of Remuneration, or
- (ii) the period is a period of disability which has been deemed to be Pensionable Service under the provisions of Section 4.1(b), or
- (iii) the period is a period of leave or temporary absence which has been deemed to be Pensionable Service under the provisions of Section 4.1(c), or
- (iv) the period is a period that was Pensionable Service under the provisions of a Reciprocal Plan, in respect of which the Reciprocal Plan has made a transfer of assets to this Plan and in respect of which the Participant is no longer entitled to benefits under the Reciprocal Plan, or

## Article I - Definitions

---

- (v) the period is a period of Pensionable Service that was rendered to the Employer prior to the most recent period of Continuous Service, and which the President has declared to be a period of Pensionable Service in accordance with the provisions of Section 6.15, or
- (vi) the period is a period of PSSA Service that is to be recognized as Pensionable Service by virtue of Section 3.12 of Article III.

Pensionable Service shall be measured in years and fractions of years in respect of completed calendar months.

**"Permanent Part Time Employee"** means any person in the permanent employment of the Employer who is paid on a salaried basis, but whom the Employer considers not to be employed on a full time basis. For greater certainty, Permanent Part Time Employee does not include any person employed by the Employer on an hourly paid basis, nor any person employed on a temporary contract of definite duration not exceeding two (2) years;

**"Permanent Part Time Service Ratio"** means, for each month of Continuous Service during which the Permanent Part Time Employee was a Participant, the ratio of the number of hours which the Permanent Part Time Employee worked over the number of hours per month which the Employer designates as the permanent full time standard for the Participant's job classification. Whenever used in respect of an Employee who is not a Permanent Part Time Employee, Permanent Part Time Service Ratio shall mean the number one (1);

**"Plan"** means The Retirement Plan for Employees of Canadian Utilities Limited and Participating Companies - Plan 2 established by the Company on 31 December 1986 for the provision of retirement benefits to Employees of the Employer employed in the Yukon Territory, and extended to Employees of the Employer employed in the Northwest Territories effective January 1, 1994, including any changes therein, amendments thereto, or modifications thereof;

**"Plan 2A"** means the Retirement Plan for Salaried Employees of Canadian Utilities Limited and Participating Companies - Plan 2A established by the Company on 1 April 1987 for the provision of retirement benefits to Employees of the Employer who were formerly employees of the Northern Canada Power Commission, and which transferred all of its assets and liabilities to the Plan effective January 1, 1994.

**"Plan 3"** means the Retirement Plan for Salaried Employees of Canadian Utilities Limited and Participating Companies - Plan 3 established by the Company on 31 December

## Article I - Definitions

---

1986 for the provision of retirement benefits to Employees of the Employer employed in the Northwest Territories, and which transferred all of its assets and liabilities to the Plan effective January 1, 1994.

**"Plan Year"** means the period commencing 1 January of a calendar year and ending the following 31 December;

**"President"** means the President of Canadian Utilities Limited, and extends to and includes the Executive Vice-President of Canadian Utilities Limited during such periods as such position exists;

**"Post-61 Service"** means the Participant's Credited Service following 2 January 1962;

**"Predecessor Plan"** means The Retirement Plan for Employees of Canadian Utilities Limited and Participating Companies - Plan 1, established 2 January 1962 and as thereafter amended from time to time.

**"Prior Plan"** means Prior Plan One or Prior Plan Two or both, as required by the context, but does not include Prior Plan Three;

**"Prior Plan One"** means the pension plan providing retirement benefits to certain Employees of the Company by means of Group Annuity Contract Number 2076-G between the Company and the Sun Life Assurance Company of Canada, dated 2 January 1935, as thereafter amended;

**"Prior Plan Three"** means the pension plan providing retirement benefits to certain Employees of the Company by means of Group Annuity Policy G-393 between the Company and the Government Annuities Branch of Canada, dated 1 November 1945, as thereafter amended;

**"Prior Plan Two"** means the pension plan providing retirement benefits to certain Employees of the Company by means of Group Annuity Contract Number PW 10464 between the Company and The Standard Life Assurance Company, dated 1 August 1957, as thereafter amended;

**"PSSA Service"** means service rendered prior to 1 April 1987 which was covered under the Public Service Superannuation Act;

**"Reciprocal Agreement"** means the Agreement entered into between the Company, the Employer, and Her Majesty the Queen in Right of Canada, pertaining to the recognition of PSSA Service under Plan 2A;

## Article I - Definitions

---

**"Reciprocal Plan"** means the Predecessor Plan and includes any other Registered Pension Plan which the Company may, from time to time, declare to be a Reciprocal Plan with respect to a particular group of transferring Employees, in respect of which assets and benefit obligations are to be transferred in accordance with Sections 3.5 and 3.6.

**"Registered Pension Plan"** means a superannuation or pension fund or plan accepted both by the Minister of National Revenue for registration for the purposes of the Income Tax Act of Canada and by the Superintendent of Pensions for the purposes of the Pension Benefits Act as the case may be in respect of its constitution and operation for the taxation year under consideration;

**"Registered Retirement Savings Plan" or "RRSP"** means any instrument, security, or vehicle to which monies from a Registered Pension Plan may be transferred, or which a Registered Pension Plan may purchase on behalf of a specific person, without attracting liability for income tax. Without restricting the generality of the foregoing, the term RRSP shall include a Registered Pension Plan, a registered retirement savings plan within the meaning of the Income Tax Act, and a deferred or immediate life annuity contract issued by any body licensed to carry on an annuities business in Canada. When the phrase "transfer to" is used in the context of an RRSP which is a life annuity contract, it shall be understood to mean "purchase";

**"Remuneration"** means all salary, wages, bonuses, vacation pay, honoraria, directors' fees, commissions, taxable allowances, the value of taxable benefits, and any other payments for service rendered during a period of Pensionable Service in a year as an officer or Employee of the Employer, excluding any portion thereof that may reasonably be considered to relate to a period throughout which the individual was not resident in Canada, but including any Approved Foreign Service Remuneration and including any amount deemed to be the Participant's Monthly Plan Year Earnings in respect of a period of Pensionable Service during which the Participant was not rendering service to the Employer by reason of leave of absence or disability. Where a Participant is a Permanent Part Time Employee during all or a portion of a year, the Remuneration for that year or portion shall be the amount that would otherwise be his Remuneration for that period divided by his Permanent Part Time Service Ratio during that period;

**"Restricted Registered Retirement Savings Plan"** means any instrument, security, or vehicle to which monies from a Registered Pension Plan may be transferred, or which a Registered Pension Plan may purchase on behalf of a specific person, without the attracting of income tax, and which satisfies the requirements under the

## **Article I - Definitions**

---

Pension Benefits Act pertaining to the eventual payment as a form of pension acceptable under the Pension Benefits Act and to the investment of funds and other matters. Without restricting the generality of the foregoing, the term Restricted Registered Retirement Savings Plan shall include a Registered Pension Plan, a registered retirement savings plan within the meaning of the Income Tax Act, and a deferred or immediate life annuity contract issued by any body licensed to carry on an annuities business in Canada, provided such plans or contracts otherwise meet the aforementioned requirements under the Pension Benefits Act. When the phrase "transfer to" is used in the context of a Restricted RRSP which is a life annuity contract, it shall be understood to mean "purchase";

**"Senior Executive Officer"** means an officer of the Employer who is a Vice-President of the Company or who has an equivalent or more senior position in the Company;

**"Single Participant"** means any Participant who is not a Married Participant;

**"Spouse"** means in relation to a Participant,

- (i) a person who is cohabiting with the Participant in a conjugal relationship at the relevant time, having so cohabited with the Participant for at least one (1) year, or for a shorter period of some permanence where there is a child of the relationship by birth or adoption and the Participant was most recently employed in Ontario, or
- (ii) if there is no person to whom paragraph (i) applies, a person who is married to the Participant or who is party to a void marriage with the Participant, provided, however, that in the case of a Participant most recently employed in Ontario the Participant and such person are not living separate and apart at the relevant time.

**"Subsidiary"** means a company which is owned, in whole or in part, by another company, and for the purposes of this Plan, the term Subsidiary shall include the Subsidiary of a Subsidiary, ad infinitum;

**"Superintendent of Pensions"** or **"Superintendent"** means the Superintendent as defined under the Pension Benefits Standards Act, 1985;

**"Variable Accumulation Fund Group Annuity Policy"** means the contract between the Company and the Sun Life Assurance Company of Canada, establishing the Fund;

## **Article I - Definitions**

---

"**Y.M.P.E.**" means the Year's Maximum Pensionable Earnings and shall have the meaning from time to time attributed thereto in the Canada Pension Plan.

## **Article II - Establishment of the Plan**

---

- 2.1 The Predecessor Plan was established by the Company with effect from 2 January 1962 for the provision of retirement benefits to its Employees. The Plan was established with effect from 31 December 1986 for the provision of retirement benefits to Employees of the Employer who are employed in the Yukon Territory.

Also effective 31 December 1986, the Company established Plan 3 for the provision of retirement benefits to Employees of the Employer who are employed in the Northwest Territories.

Effective 1 April 1987, the Company established Plan 2A for the purpose of providing retirement benefits to the Employees of the Employer who were, immediately prior to that date, employed by NCPC. Such Employees were employed in the Yukon Territory.

Effective 1 January 1994, this Plan is extended to all Employees of the Employer who are employed in the Yukon Territory and the Northwest Territories, thereby causing the obligations and assets of Plan 2A and Plan 3 to be transferred to the Plan, and upon completion of that transfer causing Plan 2A and Plan 3 to be terminated.

Effective 30 December 2003, this Plan is extended to all Employees of the Employer who are employed in the Yukon Territory, the Northwest Territories, Nunavut and Ontario.

- 2.2 The Plan is hereby amended and restated with effect from 1 January 1994 for the purposes of extending the Plan to Participants and former Participants of Plan 2A and Plan 3 and accepting the obligations and the assets of Plan 2A and Plan 3 in respect of service rendered and benefits accrued under those plans prior to 1 January 1994, subject to retaining
- (a) registration with Revenue Canada, Taxation, necessary to qualify as a Registered Pension Plan under the Income Tax Act, and
  - (b) registration with the relevant authorities in accordance with the Pension Benefits Act.

- 2.3 Prior to the Effective Date, certain Employees of the Employer who are covered by the Plan were covered by the Predecessor Plan. As of the Effective Date, assets were transferred from the Predecessor Plan in respect of such Employees, and the Plan thereafter assumed responsibility for the provision of benefits previously provided under the Predecessor Plan. It is anticipated that in the future other Employees may become eligible or cease to be eligible to participate in the Plan, whereupon the transfer provisions of Article III shall apply. Numerous references pertinent to the history of the Predecessor Plan are included in the Plan for ease of reference and clarity.

Similar provisions applied in the case of Plan 3, prior to its amalgamation into the Plan effective 1 January 1994.

## **Article II - Establishment of the Plan**

---

Prior to 1 April 1987, certain Employees of the Employer were employed by NCPC, were covered under the Public Service Superannuation Act, and had accrued benefits thereunder in respect of their PSSA Service. Such PSSA Service is recognized under the Plan as Continuous Service for the purposes of determining the rights of eligibility to benefits. Also, the Company and the Employer entered into a Reciprocal Agreement providing for the recognition of PSSA Service under Plan 2A for the purposes of determining the amount of benefits provided under Plan 2A, in respect of those Employees who fulfilled all the obligations therefor as set out in the Reciprocal Agreement. Effective 1 January 1994, the obligations of Plan 2A in respect of such PSSA Service were assumed by the Plan.

- 2.4 Prior to 2 January 1962 certain Employees of the Employer had accumulated retirement benefits under the Prior Plan. The terms and provisions of the Prior Plan will apply to all benefits accumulated by such Employees and such benefits will be paid in accordance therewith to the extent of the accumulation thereunder, and the annuities provided thereunder. On and after 2 January 1962 no additional contributions will be made under the Prior Plan by such Employees and the Plan will supplement such benefits accumulated by such Employees under the Prior Plan. Employees who have not accumulated any benefits under the Prior Plan and who become eligible to accumulate benefits on and after 2 January 1962 shall do so under the Plan.
- 2.5 Prior to 2 January 1962 certain Employees of the Employer had accumulated retirement benefits under Prior Plan Three. The terms and provisions of Prior Plan Three will apply to all benefits accumulated by such Employees and such benefits will be paid in accordance therewith to the extent of the accumulation thereunder. On and after 2 January 1962 no additional contributions will be made under Prior Plan Three by such Employees.

The Company will not supplement any Prior Plan Three benefits. However, Credited Service for use in calculating the minimum pension benefit under Section 6.3 of the Plan, will include all service under Prior Plan Three and any Plan benefits shall be in addition to Prior Plan Three benefits.

As of 1 January 1992, there were no active Employees who retained any rights to benefits under Prior Plan Three.

### **Article III - Participation in the Plan**

---

- 3.1 Participation in the Plan shall be limited to those Employees and Permanent Part Time Employees who perform their duties as Employees of the Employer within the geographical bounds of the Yukon Territory, the Northwest Territories, Nunavut and Ontario, except that temporary assignments of pre-determined duration not in excess of one (1) year outside of those geographical bounds shall not be deemed to have made an Employee or Permanent Part Time Employee ineligible to participate in the Plan.

All eligible Employees and Permanent Part Time Employees who were contributing to the Public Service Superannuation Account immediately prior to 1 April 1987 shall participate in the Plan immediately on that date. All other eligible Employees and Permanent Part Time Employees who were not contributing to the Public Service Superannuation Account but were completing an initial probationary period with NCPC prior to 1 April 1987 shall participate in the Plan upon the completion of that probationary period.

Except as provided above and except for Employees and Permanent Part Time Employees who are members of a Reciprocal Plan immediately prior to becoming eligible for participation in the Plan, each eligible Employee and Permanent Part Time Employee shall commence participation in the Plan on the first day of the month coinciding with or next following the date he is appointed to the permanent staff of the Employer, or on the first day of the month following his attaining age 18, whichever is later. It is provided, however, that an Employee or Permanent Part Time Employee who is a member of a Reciprocal Plan and who is on a temporary assignment of pre-determined duration not in excess of one (1) year within the geographical bounds of the Yukon Territory or the Northwest Territories shall not be eligible to participate in this Plan unless, upon the expiry of such temporary assignment, he is still employed within such geographical bounds.

For the purposes of interpreting this Section 3.1, any individual who satisfies the definition of Employee at any time on or after 1 January 1987 shall be conclusively deemed to have been appointed to the permanent staff of the Employer no later than the date which is the latest of:

- (i) 1 January 1987;
- (ii) the date upon which he first completes twenty-four (24) months of Continuous Service; and
- (iii) the date upon which he has first earned at least thirty-five percent (35%) of the Y.M.P.E. in each of two (2) consecutive calendar years, without considering any period prior to 1 January 1985.

### **Article III - Participation in the Plan**

---

- 3.2 All Employees and all Permanent Part Time Employees must make written application for participation in the Plan on forms to be provided by the Company. Such application shall constitute an agreement by the applying Employee or Permanent Part Time Employee to be bound by the terms and conditions of the Plan.
- 3.3 Each Participant and his Spouse shall receive a written explanation of the provisions of the Plan and of any amendments thereto which apply to him, within six (6) months after the establishment of the Plan or the making of the amendment, and such other information as required by the Pension Benefits Act. From time to time as prescribed under the Pension Benefits Act, each Participant and his Spouse shall receive, in the manner prescribed and within the time limits permitted under the Pension Benefits Act, an annual statement showing the pension benefits to which the Participant is entitled under the Plan at the end of the year, his accumulated contributions, the funded ratio of the Plan, and such other information as may be prescribed under the Pension Benefits Act. In the event of death, retirement, or termination of service, the affected Participant (or his personal representative, if deceased) and his Spouse shall receive a statement, in the form and manner prescribed and within the time limits permitted under the Pension Benefits Act, showing the Participant's benefits and options under the Plan. A copy of the Plan and of the Funding Agreements and of any amendments thereto, and of any other documents as may be required under the Pension Benefits Act, shall be available at the Canadian head office of the Company to be read or copied by any Participant or his Spouse or their authorized agents upon request during normal office hours, within the limits provided under the Pension Benefits Act.
- 3.4 An Employee or Permanent Part Time Employee who transfers from an Affiliated Company and who was a Participant under the retirement plan(s) of the Affiliated Company shall become a Participant under the Plan on the first day of the month coinciding with or next following the date of his transfer, and his service with the Affiliated Company shall be deemed as Continuous Service for the purposes of the Plan.

In the case of Employees or Permanent Part Time Employees transferred from an Affiliated Company who were fulfilling a period of service with the Affiliated Company in order to become eligible to participate in the retirement plan(s) of the Affiliated Company, participation in the Plan shall commence on appointment to permanent staff.

- 3.5 Any Participant who ceases to be eligible to participate in this Plan, but who remains an Employee eligible to participate in a Reciprocal Plan, shall immediately participate in the Reciprocal Plan. As soon as practicable after the end of the Plan Year in which such change in participation occurs, the Company shall cause the Plan to transfer to the Reciprocal Plan assets equal to the actuarial liability related to such Participant's participation in this Plan, measured in accordance with the actuarial basis in effect for the most recent actuarial

## **Article III - Participation in the Plan**

---

valuation of the Plan as a going concern. The Participant shall thereafter look only to the Reciprocal Plan in respect of benefits accrued hereunder. Notwithstanding the foregoing, where the transfer of assets would, in the opinion of the Superintendent of Pensions under the Pension Benefits Act unduly impair the solvency of the Plan, then the Superintendent of Pensions may direct that the asset transfer be delayed or made over such period as he may require, and may prescribe the conditions that shall apply in the event that benefits become due and payable prior to the completion of such transfer.

- 3.6 Any member of a Reciprocal Plan who becomes eligible to participate in this Plan shall cease to be eligible for participation in the Reciprocal Plan and shall immediately participate in this Plan. The Reciprocal Plan shall transfer assets to this Plan in respect of such Participant's participation in the Reciprocal Plan as soon as practicable after the end of the Plan Year in which such change in participation occurs, and the Participant's Pensionable Service shall be deemed to commence as of the date his service for pensionable purposes under the Reciprocal Plan commenced, or such later date as may be determined under the terms of the transfer of employment as is necessary to give effect to any difference in the general level of benefits provided by the Plan as compared to the Reciprocal Plan. In addition, all contributions made by the Participant to the Reciprocal Plan shall be deemed to have been made to this Plan. It is understood that such transfer of contributions from the Reciprocal Plan shall not be considered to be contributions made by the Participant in the year of transfer for the purposes of deduction from income under the Income Tax Act.

In the event that the transfer of assets has been delayed at the requirement of the Superintendent of Pensions and benefits have become due and payable hereunder, then application shall be made to the Superintendent of Pensions for a determination as to the appropriate portion of the benefits to be provided by this Plan and the Reciprocal Plan.

- 3.7 Notwithstanding the provisions of this Article III which require an individual to participate in this Plan, no Employee or Permanent Part Time Employee shall be required to participate in this Plan if participation would be in violation of that individual's religious beliefs or convictions.
- 3.8 Should a Participant assign any part of his accrued benefits to his Spouse on marriage breakdown, such Spouse shall be deemed to have been a Participant whose participation in the Plan ceased on the date of the assignment. However, a subsequent Spouse of that Spouse shall not, under any circumstances, become entitled to any benefit from the Plan in respect of the benefits assigned by the Participant to his Spouse.
- 3.9 Should the Plan have fifty (50) or more Participants, the majority of Participants may require the Company to establish a pension committee in the manner prescribed pursuant to the Pension Benefits Act. The committee shall include a representative of Employees, if

### **Article III - Participation in the Plan**

---

required by a majority of Employees. Should the Plan have fifty (50) or more retired Participants, the majority of retired Participants may require that a representative of their group sit on the pension committee. Representatives of Employees and retired Participants shall be elected in the manner prescribed pursuant to the Pension Benefits Act. The pension committee shall have only those duties and responsibilities specifically provided therefor under the Pension Benefits Act, unless the Company specifically assigns the pension committee additional duties or responsibilities.

- 3.10 Any Employee who is participating in, or accruing benefits under, another Registered Pension Plan as an employee of an employer which does not deal at arm's length with the Employer shall not be entitled to participate or accrue Pensionable Service during such period of participation in the other plan.
- 3.11 Any Employee who is in receipt of retirement benefits from this Plan or any Reciprocal Plan shall not be eligible to participate in the Plan in respect of his employment after such retirement benefits commence.
- 3.12 Where an eligible Employee or Permanent Part Time Employee has filed a written election made in accordance with the Reciprocal Agreement, his Pensionable Service shall include his PSSA Service as set out in the Reciprocal Agreement. Otherwise, Pensionable Service shall include only the service rendered after commencing participation in accordance with Section 3.1 above.

## **Article IV - Contributions**

---

- 4.1 (a) Except as otherwise provided in this Section 4.1, each Participant, throughout his Pensionable Service in the Plan, is required to contribute monthly to the Fund, through payroll deductions during each Plan Year the lesser of
- (i) \$166.67 and
  - (ii) 2.8% of the lesser of
    - (A) his Monthly Plan Year Earnings and
    - (B) his Monthly Maximum Pensionable Earnings

PLUS

4.0% of the amount, if any, by which his Monthly Plan Year Earnings exceeds his Monthly Maximum Pensionable Earnings.

For each Permanent Part Time Employee, the required contribution calculated above will be multiplied by his Permanent Part Time Service Ratio.

It is hereby expressly provided that in no event shall the contributions required under this Section 4.1(a) exceed the amount permitted under the regulations issued under the Income Tax Act.

- (b) In the event that a Participant is disabled, he shall not be required to contribute to the Plan for the period of time he is in receipt of benefits from any disability plan sponsored or contributed to by the Employer, nor for the period of time after 31 December 1986 during which he is in receipt of a total disability benefit under The Workers' Compensation Act of Alberta or similar legislation of another Canadian jurisdiction. In respect of such a period of disability which falls prior to 31 December 1983, the Employer shall be considered to have made the contributions required in Section 4.1(a) on the Participant's behalf, provided the Participant was not exempt from contributions by reason of Section 4.1(e), and such contributions shall be included as required contributions made by the Participant.

The period during which the Participant is disabled, within the meaning ascribed under the regulations issued under the Income Tax Act and so certified in writing by a medical doctor licensed to practise under the laws of a province of Canada or of the place where the Participant resides, and is not required to contribute under this Section 4.1(b), shall be deemed to be included in the Participant's Pensionable Service, provided that such period of deemed Pensionable Service shall in no event extend beyond his date of normal retirement. It is further provided that such deemed Pensionable Service prior to 1 January 1992 shall in no event exceed

## **Article IV - Contributions**

---

twenty-four (24) months duration, unless the Participant is totally and permanently disabled, within the meaning ascribed under the regulations issued under the Income Tax Act and so certified in writing by a medical doctor licensed to practise under the laws of a province of Canada or of the place where the Participant resides.

- (c) The Company may determine that a period of temporary absence or military service which does not constitute a break in Continuous Service, shall be deemed, in whole or in part, a period of Pensionable Service, subject to the following conditions:
  - (i) The portion of such an absence, which is neither a paid leave of absence nor military service and which occurs prior to 1 January 1992, that is deemed to be Pensionable Service shall not exceed twenty-four (24) months.
  - (ii) The aggregate of all such periods of deemed Pensionable Service, excluding:
    - (A) periods before 1 January 1992, and
    - (B) periods after 31 December 1991, aggregating no more than thirty-six (36) months, which fall between the time of the birth of a child of whom the Participant is a natural parent or the time at which the Participant adopts a child, and the date which is twelve (12) months after that time,shall not exceed sixty (60) months in respect of any one Participant.
  - (iii) The Company may make the application of this Section 4.1(c) conditional upon the Participant making a contribution to the Plan which may be:
    - (A) the amount required of the Participant under Section 4.1(a), based on Monthly Plan Year Earnings and other factors as set forth in Section 4.1(d), or
    - (B) an amount larger than the amount in (A) above which may reasonably be considered to represent the cost of the benefits accruing in respect of the period of deemed Pensionable Service,or the Company may waive the requirement for the Participant to make any contribution under Section 4.1(a).
  - (iv) Where the Company requires a contribution to be made by the Participant in respect of the period of deemed Pensionable Service, the Pensionable Service shall only become recognized as the contribution is made, and in the proportion that the contribution made bears to the contribution required. The contribution shall be made by the Participant in such manner and over such time period as may be agreed between the Participant and the Company, provided that contributions made in respect of a calendar year after 1991 are not made:

## **Article IV - Contributions**

---

- (A) prior to that calendar year, and
  - (B) later than 30 April of the calendar year immediately following the calendar year in which the period of absence for which the contribution is being made ended.
- (v) Where the Company, prior to 1 January 1983, waived the requirement of a Participant, who was on a paid leave of absence or absent due to military service, to make contributions as provided for under Section 4.1(a), the Employer shall be deemed to have made those contributions on the Participant's behalf, and they shall be included as required contributions made by the Participant.

The Company shall apply the provisions of this Section 4.1(c) in a systematic and non-discriminatory fashion according to its customary policy or policies concerning leaves of absence, as developed or amended from time to time.

- (d) During any period of disability, temporary absence, or military service which has been deemed to be Pensionable Service in accordance with the provisions of Section 4.1(b) or Section 4.1(c), the following conditions shall apply:
- (i) The Participant's Permanent Part Time Service Ratio throughout the period of deemed Pensionable Service shall be equal to the Permanent Part Time Service Ratio in effect immediately prior to the commencement of the disability, temporary absence, or military service.
  - (ii) The Participant's Monthly Plan Year Earnings throughout the period of deemed Pensionable Service shall be equal to the Monthly Plan Year Earnings in effect immediately prior to the commencement of the disability, temporary absence, or military service, but increased on each 1 January which follows the later of the commencement of the period and 31 December 1977 by the lesser of three percent (3%) or the rate of increase in the Consumer Price Index over the previous year. Monthly Plan Year Earnings in any year after 1991 shall not exceed the amount that can reasonably be considered to be the amount that would have been the Participant's Monthly Plan Year Earnings in that year had the Participant continued to render services to the Employer in the manner and to the extent that he rendered services prior to the period of disability, temporary absence or military service as the case may be.
  - (iii) The Monthly Maximum Pensionable Earnings in effect during the period of deemed Pensionable Service shall, in calculations relating to the Participant,

## **Article IV - Contributions**

---

be equal to the Monthly Maximum Pensionable Earnings in effect immediately prior to the commencement of the disability, temporary absence, or military service, but increased in the same fashion as the Monthly Plan Year Earnings.

- (e) With effect from 1 January 1979, Senior Executive Officers shall not be required to make any contributions.
- 4.2 (a) Prior to 1 January 1987, Participants were permitted to make additional voluntary contributions in respect of service rendered either currently or previously, subject to the limits of deductibility imposed by the Income Tax Act.

Subsequently, additional voluntary contributions may be made only in respect of service rendered in the year of contribution, and only by permission of the President. Such contributions shall be made by payroll deductions, and shall in no event exceed the maximum permitted under the provisions of the Income Tax Act after taking into account the contributions made under the provisions of Section 4.1 and after taking into account the benefits accruing under the Plan for Pensionable Service in the year.

- (b) All voluntary contributions made under this Section 4.2, Section 4.4 and Section 4.8 will be allocated to the Participant's voluntary contribution account, to which account shall also be allocated annually with Credited Interest. The accumulated amount so allocated to the Participant's voluntary contribution account shall be treated in accordance with the provisions of the Plan in the event of death, withdrawal or retirement as outlined in the respective Articles.
  - (c) Effective 1 January 1997, all amounts allocated to a Participants' voluntary contribution account shall be transferred to the Participant's RRSP, or paid to the Participant in cash if the Participant so elects, provided however that any amounts which are subject to the "locking-in" provisions of the Pension Benefits Act shall not be available in cash but must be transferred to the Participant's Restricted Registered Retirement Savings Plan. Thereafter, the accumulated value of the Participant's additional voluntary contributions shall be considered to be nil for all purposes of this Plan, and all provisions of the Plan which would otherwise call for benefits to be payable in respect of such contributions shall be of no effect.
- 4.3 (a) The Employer will contribute from time to time but not less frequently than required under the terms of the Pension Benefits Act, such amounts as are not less than those certified by the Actuary as being necessary to provide for funding in accordance

## **Article IV - Contributions**

---

with the tests for solvency prescribed by the Regulations under the Pension Benefits Act.

- (b) The Company reserves the right to make any use whatsoever of any actuarial surplus arising after the Effective Date, subject to the provisions of the Pension Benefits Act and the Income Tax Act and to the obtaining of the necessary approvals thereunder. Without restricting the generality of the foregoing, the Company may apply such surplus towards contributions required under Subsection (a) above, cause such surplus to be transferred in accordance with Section 147.3 of the Income Tax Act to another registered pension plan under its control, receive a cash refund of such surplus, or utilize any combination thereof.
- (c) It is expressly stipulated that the Employer will not make any additional contributions corresponding to the additional voluntary contributions made by a Participant as provided for in Section 4.2, 4.4 or 4.8 of this Article IV.
- (d) The Employer shall remit all contributions made by it and by the Participants to the Funding Agency within the time limits prescribed therefor under the Pension Benefits Act, including all contributions, if any, accrued up to the date of termination of the Plan.
- (e) The contributions made by the Employer in any Plan Year shall not exceed the maximum amount that is permitted under the Income Tax Act for that Plan Year.

4.4 A Participant may, prior to 1 January 1987, deposit in the Fund as a lump sum, all or any portion of such amount as such Participant is entitled to receive or has received,

- (a) as a cash refund from a Registered Pension Plan, or
- (b) as a cash refund from a registered retirement savings plan, as defined under the Income Tax Act, or
- (c) as a retiring allowance as defined under the Income Tax Act of Canada,

within the period allowed in the Income Tax Act of Canada for deposit of such amounts without the payment of income tax being required. Such deposits shall be deemed to be additional voluntary contributions and will be treated in accordance with Section 4.2 of this Article IV.

4.5 No Participant shall contribute to the Fund during any period in which he is not rendering Continuous Service to the Employer.

## **Article IV - Contributions**

---

- 4.6 Notwithstanding anything contained herein to the contrary, in the event that a Participant deposits in the Fund a lump sum payment in accordance with Section 4.4, all or any part of which is subject to the "locking-in" provisions of the Pension Benefits Act, such deposit shall be administered in accordance with the Pension Benefits Act.
- 4.7 The rates of Participant's required contributions to the Predecessor Plan prior to 1 June 1972 are shown in Schedule I.
- 4.8 Where a Participant is retiring after 1 January 1987, the Company may permit the Participant to transfer all or a part of any retiring allowance provided by the Employer to the Plan, subject to the limits prescribed under the Income Tax Act. Such transfer shall be considered to be made under the provisions of Section 4.4 notwithstanding that the date of the transfer occurs after 1 January 1987.
- 4.9 For the purposes of this Plan, the contributions made by a Participant under the provisions of a Reciprocal Plan shall be deemed to have been made under the appropriate provisions of this Article IV upon completion of the transfer of assets provided for under Section 3.6 of Article III. Such contributions shall be considered to have earned Credited Interest up to the date of such transfer as calculated under the provisions of the Reciprocal Plan.
- 4.10 Credited Interest shall be calculated on each category of contribution as at each interest calculation date, which shall be:
- (a) in the case of a refund, transfer, or other event requiring the calculation of Credited Interest, the last day of the month preceding the month in which such refund or transfer is made, or such other event occurs, and
  - (b) in the case of a lump sum deposit or transfer into the Plan, the date of such deposit or transfer, and
  - (c) the day preceding the date on which the Participant first began to contribute to the Plan, and
  - (d) each intervening December 31.

The annual rate of interest shall be calculated at the end of each Plan Year as the average of the yields of five (5) year personal fixed term chartered bank deposit rates, as reported monthly by the Bank of Canada, over the 12 months of that Plan Year. The rate of interest so calculated shall be applied at December 31 of that Plan Year and each calculation date of

## **Article IV - Contributions**

---

the following Plan Year up to but not including December 31, subject to the following provisions of this Section 4.10.

The balance, if any, of contributions and Credited Interest at the previous interest calculation date shall be credited with interest for the full period since such previous interest calculation date. Contributions, other than lump sum deposits or transfers as in subsection (b) above, made since the previous interest calculation date shall be credited with interest for one half the period since such previous interest calculation date.

It is provided, however, that any interest calculation date described in (a) which arises solely from the need to provide information as to a Participant's balance at a particular time shall be disregarded in calculating the Credited Interest to be applied at subsequent interest calculation dates.

Notwithstanding the foregoing provisions of this Section 4.10, with respect to additional voluntary contributions, the Company may declare prior to December 31 of any year a minimum interest rate which shall apply for the subsequent year. If such a minimum rate is declared, then the rate used in calculating Credited Interest for that subsequent year shall be the greater of the declared minimum rate and the rate otherwise provided for herein. It is provided, however, that the cumulative amount of Credited Interest allocated after 1 January 1992 in respect of additional voluntary contributions shall in no event exceed a reasonable measure of the earnings of the Fund in respect of such voluntary contribution accounts.

- 4.11 Where a Participant is required to make contributions in respect of a period that is deemed to be Pensionable Service in accordance with the provisions of Section 4.1 or Section 6.15, the Participant may satisfy that requirement by causing funds to be transferred to the Plan from any source, provided that the transfer is permissible under the provisions of the Income Tax Act, and provided that all certifications that may be required in respect of any past service pension adjustments have been completed.
- 4.12 In the event that any person shall make a contribution to this Plan which would, in the absence of this provision, result in the Plan's registration under the Income Tax Act being revoked, then such contribution shall be returned to the person who made the contribution, following receipt of the approval of the Superintendent of Pensions under the Pension Benefits Act.
- 4.13 For the purposes of interpreting this Plan as it applies to Participants who were formerly members of Plan 2A, the contributions made by a Participant under the provisions of the Public Service Superannuation Act shall be deemed to have been made under the appropriate provisions of this Article IV. Such contributions shall be considered to have

## **Article IV - Contributions**

---

earned Credited Interest up to the date of such transfer as calculated under the provisions of the Public Service Superannuation Act.

In respect of each transfer of assets and service under the provisions of the Reciprocal Agreement, the Company calculated, on the advice of the Actuary, the actuarial present value of the benefits expected to be provided under Plan 2A in respect of the transferred PSSA Service, and where the amount transferred to Plan 2A under the Reciprocal Agreement exceeded the value calculated hereunder, then such excess was credited to the Participant as his Excess Transfer Value to be used to provide additional benefits upon death, termination, or retirement. No such transfers shall occur after December 31, 1991.

A Participant's Excess Transfer Value shall be credited with interest in the same manner as additional voluntary contributions.

At death, termination, or retirement, a Participant's Excess Transfer Value may be used to provide additional monthly pension in the same manner as additional voluntary contributions or may be transferred to a Restricted Registered Retirement Savings Plan designated by the Participant, or his surviving Spouse, if applicable, but may not be received in cash during the lifetime of the Participant.

Subject to the above restriction on cash refunds, whenever the term additional voluntary contributions is used hereafter in the Plan, it shall, for convenience, be read as including any Excess Transfer Value, unless clearly specified to the contrary.

## **Article V - Retirement Date**

---

- 5.1 The date of normal retirement of a Participant shall be the first day of the calendar month coincident with or immediately following the attainment of age 65.
- 5.2 A Participant may, without the consent of the Company, retire prior to the date of his normal retirement, provided his Period of Participation equals or exceeds two (2) years. The date of such early retirement shall be the first day of a calendar month and shall not precede his date of normal retirement by more than one hundred twenty (120) months.
- 5.3 If the Participant and the Company agree, a Participant may take special early retirement prior to the date of his normal retirement. The date of such special early retirement shall be the first day of the calendar month selected by the Participant and consented to by the Company and shall in no event be prior to the earlier of
- (a) the first day of the calendar month coincident with or immediately following the attainment of age 55, and
  - (b) the first day of the calendar month coincident with or immediately following the date on which the Participant's combined years of age (including fractions of years for complete calendar months) and years of Early Retirement Eligibility Service first total 90.

With the consent of the Company such Participant may, on the date of his special early retirement, elect to defer commencement of his retirement benefits. In no event, however, may the commencement of such special early retirement benefits be deferred beyond such Participant's date of normal retirement.

Notwithstanding the foregoing, a female Participant who was rendering Continuous Service, other than PSSA Service, prior to 1 June 1972 may elect a special early retirement date as early as her age 62 without Company consent.

- 5.4 Each Participant who remains in the employ of the Employer or an Affiliated Company after his date of normal retirement may, for the purposes of the Plan, elect to retire on his normal retirement date in which case no further contributions or retirement benefits will accrue and such Participant shall commence drawing his monthly retirement benefit referred to in Article VI at his date of normal retirement. If the Participant does not elect to retire for the purposes of the Plan on his date of normal retirement, he shall continue to make contributions and accrue service and benefits in the usual manner. The Participant's retirement benefit will become payable on his actual retirement date but in any event not later than the first day of the month in which the latest retirement date permitted under the provisions of the Income Tax Act occurs.

## **Article V - Retirement Date**

---

Notwithstanding the foregoing, a Participant who is exempt from making contributions in accordance with the provisions of Subsection 4.1(b) of Article IV and who is still disabled at his date of normal retirement shall be deemed to have retired for the purposes of the Plan on his date of normal retirement.

- 5.5 Except as provided in Section 5.4, a Participant who has transferred to an Affiliated Company may not retire from this Plan while still active as an employee of the Affiliated Company. In order for such a Participant to elect to retire under Section 5.4, however, he must have ceased to accrue benefits under any and all defined benefit Registered Pension Plans in respect of his service with any employer with which the Employer does not deal at arm's length.

## **Article VI - Retirement Benefits**

---

6.1 The amount of the monthly retirement benefit payable to a Participant at the date of his normal retirement or his postponed retirement shall be equal to the sum of the amounts referred to in (a), (b) and (c) below as applicable:

(a) For service between 2 January 1962 and 2 January 1966, if any, the greater of (i) and (ii) as follows:

(i) one twelfth of the product of

- 2% of the Participant's Annual Final Average Earnings, and
- the number of years (including fractions of years for completed months) of the Participant's Post-61 Service up to the Amendment Date;

(ii) if the Participant was a member of Prior Plan One, one twelfth of the product of

- 35% if male, or 43.75% if female, and
- the Participant's required contributions made up to the Amendment Date.

otherwise zero.

(b) For service after 2 January 1966, one twelfth of the product of

(i) 2%, and

(ii) the number of years (including fractions of years for completed months) of the Participant's Post-61 Service after the Amendment Date, and

(iii) the amount, if any, by which the Participant's Annual Final Average Earnings exceeds the average of the Y.M.P.E.'s in effect during the period over which Annual Final Average Earnings are calculated;

plus one twelfth of the product of

(iv) 1.4%, and

## **Article VI - Retirement Benefits**

---

- (v) the number of years (including fractions of years for completed months) of the Participant's Post-61 Service after the Amendment Date, and
  - (vi) the lesser of the Participant's Annual Final Average Earnings or the average of the Y.M.P.E.'s in effect during the period over which Annual Final Average Earnings are calculated;
  - (c) For service prior to 2 January 1962, the monthly retirement benefit as provided under Prior Plan One which has not been provided by an annuity issued under Prior Plan One.
- 6.2 No longer applicable to this plan.
- 6.3 Notwithstanding the provisions of Subsections 6.1(a), (b) and (c) of this Article VI, it is specifically provided that the amount of the monthly retirement benefit under the Plan payable at the date of normal retirement to a Participant who joined the Predecessor Plan prior to the Amendment Date or to a female Participant whose Pensionable Service, other than PSSA Service, began prior to the Amendment Date shall not be less than
- (a) one twelfth of the product of
    - (i) 2% of the Participant's Annual Final Average Earnings, and
    - (ii) the number of years (including fractions of years for completed months) of the Participant's Credited Service

MINUS

- (b) the monthly retirement benefit to which he is entitled through an annuity issued under the Prior Plan, exclusive of any such monthly retirement benefit determined from additional voluntary contributions thereunder,

MINUS

- (c) the monthly retirement benefit he is or will become qualified to receive under the Canada Pension Plan calculated as follows:

$$\frac{A \times C}{B}$$

where:

## **Article VI - Retirement Benefits**

---

A equals the number of years (including fractions for completed months) of the Participant's Pensionable Service from the latest of

- (i) 1 January 1966,
- (ii) the Participant's eighteenth birthday, and
- (iii) the date of the Participant's eligibility for participation in the Canada Pension Plan

to the earlier of the Participant's date of termination of employment and actual date of retirement,

B equals the greatest of

- (iv) ten (10) years,
- (v) the number of years (including fractions of years for completed months) from the latest of
  - (A) 1 January 1966,
  - (B) the Participant's eighteenth birthday, and
  - (C) the date of the Participant's eligibility for participation in the Canada Pension Plan

to the earlier of the Participant's date of termination of employment and actual date of retirement, and

- (vi) 85% of the sum of the number of years (including fractions of years for completed months) from the Participant's date of termination of employment or his date of early retirement to age 65 and the number of years (including fractions of years for completed months) calculated in Paragraph 6.3(c)(v) above, and

C equals 25% of one twelfth of the Participant's Average Y.M.P.E.

6.4 (a) A Participant who retires prior to his date of normal retirement under the provisions of Section 5.2 of Article V shall be entitled to an immediate monthly retirement

## **Article VI - Retirement Benefits**

---

benefit having a Commuted Value equal to that of the deferred monthly retirement benefit that would be payable at his date of normal retirement in accordance with Section 6.1 or Section 6.3 as applicable, but based upon his earnings and service up to the date of his early retirement. For greater certainty, the immediate monthly retirement benefit payable shall in no event exceed that which would be payable if the monthly retirement benefit calculated in accordance with Section 6.1 or Section 6.3 were reduced in the manner set out in Section 6.14(b).

- (b) A Participant who retires subsequent to 2 January 1974 and prior to the date of his normal retirement in accordance with Section 5.3 of Article V shall receive a percentage of the monthly retirement benefit determined in accordance with Section 6.1 or Section 6.3, as applicable. Such percentage shall be either:

- (i) if such Participant's combined years of age (including fractions of years for completed calendar months) and years of Early Retirement Eligibility Service total 90 or more, one hundred percent (100%),

Or

- (ii) if such Participant's combined years of age (including fractions of years for completed calendar months) and years of Early Retirement Eligibility Service total less than 90 at his actual retirement date, the appropriate percentage from the following table:

| Age of Participant at Date<br>of Monthly Retirement<br>Benefits Commence | Percentage |
|--------------------------------------------------------------------------|------------|
| 64                                                                       | 100        |
| 63                                                                       | 100        |
| 62                                                                       | 100        |
| 61                                                                       | 97         |
| 60                                                                       | 94         |
| 59                                                                       | 88         |
| 58                                                                       | 82         |
| 57                                                                       | 76         |
| 56                                                                       | 70         |
| 55                                                                       | 64         |

NOTE:1. The age of a Participant for the purpose of this table shall be taken to years and completed calendar months. For ages which are not integral, adjustment

## **Article VI - Retirement Benefits**

---

will be made by straight line interpolation of the appropriate percentages in the above table.

- (c) Notwithstanding the provisions of Subsection 6.4(b) of this Article VI, a Participant whose Pensionable Service began prior to the Amendment Date and who retires prior to the date of his normal retirement in accordance with Section 5.3 of Article V shall receive an amount of monthly retirement benefit which shall be the greater of the amounts A and B, where

A equals the monthly retirement benefit payable in accordance with Paragraph 6.4(b)(i) or Paragraph 6.4(b)(ii) above as is appropriate, and

B equals the monthly retirement benefit determined in accordance with the formula  $P(R - S) - Z$  where

P equals the appropriate percentage as set out in Section 6.4(b) of this Article VI, and

R equals one twelfth of the product of

(i) 2% of the Participant's Annual Final Average Earnings, and

(ii) the number of years (including fractions of years for completed months) of the Participant's Credited Service, and

S equals the monthly retirement benefit which the Participant will become qualified to receive under the Canada Pension Plan calculated in accordance with Subsection 6.3(c) of this Article VI, and

Z equals the monthly retirement benefit which he is entitled to receive through an annuity issued under the Prior Plan, adjusted to recognize the earlier commencement of pension payments in accordance with the terms and provisions of the Prior Plan.

- 6.5 The monthly retirement benefit payable to a retired Participant pursuant to the provisions of this Article VI or periodic payments to a beneficiary pursuant to Article VII or Article VIII hereof shall commence on the first day of the month of the Participant's retirement or immediately following his death, as the case may be. Nevertheless, a Participant who retires prior to the date of his normal retirement shall commence to receive benefits on the first day of the month selected by him.

## **Article VI - Retirement Benefits**

---

- 6.6 A Participant eligible for any retirement benefit under the Plan must submit such proof of date of birth, proof and/or certification of marital status, and, if applicable, proof of his Spouse's date of birth, as is acceptable to the Company prior to the commencement of such retirement benefit.
- 6.7 If the Company determines that any person entitled to payments hereunder is incompetent by reason of physical or mental disability as so certified by a medical practitioner and is unable to give a valid receipt, the Company may request the Funding Agencies to cause the payments becoming due to such a person to be made to the legal representative of such a person without responsibility on the part of the Company or the Funding Agencies to follow the application of such funds. Payments made pursuant to this Section shall operate as a complete discharge of the obligations of the Funding Agencies, the Fund, and the Company.
- 6.8 In addition to the regular monthly retirement benefit payable in the normal form to a female Participant who was rendering Continuous Service, other than PSSA Service, prior to 1 June 1972, there shall be payable
- (a) at her date of early retirement on or after her age 62, a monthly retirement benefit, hereinafter called the Canada Pension Plan Bridge, equal to the amount of such Participant's estimated Canada Pension Plan benefit as calculated in Subsection 6.3(c), or
  - (b) at her date of early retirement prior to her age 62, the Canada Pension Plan Bridge as described in Subsection 6.8(a), multiplied by 36 and divided by the number of months from her early retirement date to her age 65.

Such Canada Pension Plan Bridge shall commence on the Participant's actual retirement date and continue on the first day of each month thereafter up to and including the payment due on the first day of the month following the month in which such Participant reaches age 65 or until the date of death of the Participant whichever first occurs. Thereafter, no Canada Pension Plan Bridge shall be payable.

- 6.9 Any monthly retirement pensions in payment on or before 2 January 1972 and any monthly retirement pensions payable from a Participant's normal retirement date between 2 January 1972 and 2 June 1972, in accordance with this Article VI, excluding any pension benefit payable in respect of additional voluntary contributions, have been and will be adjusted on 2 June 1972 and annually thereafter on 2 January of each calendar year in accordance with the following provisions. Any monthly retirement pensions payable in accordance with Section 6.4 due to the early retirement of a Participant between 2 January 1972 and 2 June 1972 and any monthly retirement pensions payable from a Participant's normal retirement date under

## **Article VI - Retirement Benefits**

---

Section 5.1 of Article V, postponed retirement date under Section 5.4 of Article V, or special early retirement date under Section 5.3 of Article V after 2 June 1972 will be adjusted annually thereafter on 2 January of each calendar year in accordance with the following provisions. Effective 1 January 2008, all adjustments will occur annually on 1 January of each calendar year.

- (a) The annual adjustment will be as determined by the Company but will not exceed 3% per annum. In calculating the annual adjustment the Company will take into consideration annual percentage changes in the Consumer Price Index for Canada and any previous annual adjustments paid.
- (b) The annual adjustment above will be applied each year to the retirement benefit as determined by the Company to which a Participant, his surviving Spouse or Eligible Dependant Child is or was entitled in the normal form of benefit (as that phrase is used in Article VII) that applied at the time the retirement benefit commenced, including any previous such annual adjustment.
- (c) Such adjustments shall apply in respect of Canada Pension Plan Bridge pensions (while they are in payment), Prior Plan pensions, but they shall not apply to Prior Plan Three pensions or to pensions to Participants whose employment has terminated in accordance with Article X.
- (d) In the case of a pension that commenced prior to 1 January 1992 and is payable to a pensioner who is age sixty (60) or less, this adjustment will in no event have the effect of increasing the pensioner's total annual pension to an amount which is greater than \$1715 times the pensioner's Pensionable Service up to a maximum of thirty-five (35) years.
- (e) Adjustments provided under this Section 6.9 shall not increase the pension benefit to an amount in excess of the amount permitted under the provisions of Section 6.14.

6.10 Not applicable to this Plan.

6.11 Not applicable to this Plan.

6.12 Not applicable to this Plan.

6.13 Notwithstanding anything contained herein to the contrary, no benefit provided under this Plan shall be capable of being

## **Article VI - Retirement Benefits**

---

- (a) assigned, charged, anticipated, or given as security, nor does it confer upon any Participant, personal representative, dependent, or other person any right or interest therein that is capable of being assigned, charged, anticipated, or given as security except insofar as is specifically required or permitted under the Income Tax Act and the Pension Benefits Act, or
  - (b) surrendered or commuted during the lifetime of the Participant or the Participant's Spouse, nor does it confer upon any Participant or personal representative, dependent, or other person any right or interest therein that is capable of being surrendered or commuted during the lifetime of the Participant or the Participant's Spouse, except as specifically provided for in the Plan in respect of small benefits.
- 6.14 Notwithstanding any provision of this Plan to the contrary, the amount of any benefits payable under the Plan to a Participant, including any benefits payable to the Participant's Spouse or former Spouse pursuant to Section 15.4, but excluding any benefits deriving from the Participant's additional voluntary contributions, shall be subject to the following provisions.
  - (a) The amount, expressed on an annualized basis, of retirement benefits, excluding Canada Pension Plan Bridge benefits, payable in respect of a Participant during the calendar year in which the retirement benefits commence to be paid shall not exceed an amount equal to the aggregate of:
    - (i) in respect of service rendered prior to 1 January 1992, the lesser of:
      - (A) two percent (2%) of the highest average of three (3) consecutive years of the Participant's Remuneration, and
      - (B) the defined benefit limit, as defined in the regulations issued under the Income Tax Act, for the year in which the retirement benefits commence to be paid (being \$1,722.22 for the year 1992),  
all multiplied by the Participant's Credited Service earned prior to 1 January 1992, up to a maximum of thirty-five (35) years; and
    - (ii) in respect of service rendered after 31 December 1991 the lesser of:
      - (A) two percent (2%) of the highest average of three (3) non-overlapping periods of twelve (12) consecutive months of the Participant's Indexed Remuneration, and
      - (B) the amount in (a)(i)(B) above,  
all multiplied by the Participant's Credited Service earned after 31 December 1991;

## **Article VI - Retirement Benefits**

---

provided that such amount shall be modified by such of the following provisions of this Section 6.14 as are applicable.

- (b) The maximum amount calculated in Section 6.14(a) above, shall be reduced by one-quarter of one percent (0.25%) for each month (or fraction thereof), if any, by which the date of commencement of the retirement benefits precedes the earliest of:
  - (i) the day on which the Participant attains or would attain sixty (60) years of age;
  - (ii) the day on which the Participant completes or would complete thirty (30) years of Early Retirement Eligibility Service were he to remain in employment with the Employer; and
  - (iii) the day on which the sum of the Participant's age and Early Retirement Eligibility Service equals or would equal eighty (80) years if he were to remain in employment with the Employer.
- (c) The amount, expressed on an annualized basis, of retirement benefits, excluding Canada Pension Plan Bridge benefits, payable in respect of a Participant during a calendar year after the year in which the retirement benefits commence to be paid shall not exceed the amount determined under the provisions of Sections 6.14(a) and (b) above, multiplied by the greatest of all amounts each of which is:
  - (i) the average Consumer Price Index for a calendar year not earlier than the calendar year in which the retirement benefits commence to be paid, and not later than the year for which the determination is being made, divided by
  - (ii) the average Consumer Price Index for the calendar year in which the retirement benefits commence to be paid.

For the purposes of this Section 6.14, the average Consumer Price Index for a calendar year means the average of the Consumer Price Index for each of the 12 months in the 12 month period ending on 30 September of the year immediately preceding the calendar year.

- (d) The amount, if any, of Canada Pension Plan Bridge benefits payable in respect of a Participant during a particular month shall not exceed an amount equal to:
  - (i) the maximum amount of monthly benefit that would be payable under the Old Age Security Act to the Participant if he had just attained age sixty-five and first commenced to receive such benefit in the particular month, plus the proportion, not exceeding one, of the maximum monthly benefit that would be payable under the Canada Pension Plan to the Participant if he had just attained age sixty-five and first commenced to receive such benefit in the particular month, that the Participant's remuneration for the three calendar

## **Article VI - Retirement Benefits**

---

- years in which his remuneration is the highest to the total of the Y.M.P.E.s for those three years,
- (ii) reduced by one-quarter of one percent (0.25%) for each month, or fraction thereof, if any, by which the date of commencement of the Canada Pension Plan Bridge precedes the date on which the Participant attains age sixty (60),
  - (iii) with the result of that calculation multiplied by the greatest of all amounts each of which is the ratio of the Consumer Price Index for a month not before the month in which the Canada Pension Plan Bridge commences to be paid and not after the particular month, to the Consumer Price Index for the month in which the Canada Pension Plan bridge commences to be paid,
  - (iv) with the result of that calculation multiplied by the ratio, not exceeding one (1), of the Participant's Pensionable Service to ten (10) years.
- (e) Where Canada Pension Plan Bridge benefits are payable in respect of a Participant, the total amount of retirement benefits including the Canada Pension Plan Bridge, expressed on an annualized basis, payable during the period that the Canada Pension Plan Bridge benefits are payable, shall not exceed:
- (i) during the calendar year in which retirement benefits commence to be paid, an amount equal to the amount in Section 6.14(a)(i)(B) above, multiplied by the Participant's Pensionable Service, plus twenty-five percent (25%) of the average of the Y.M.P.E. for the year in which retirement benefits commence to be paid and the two immediately preceding years, multiplied by the ratio, not exceeding one, of the Participant's Pensionable Service to thirty-five (35) years, and
  - (ii) during a calendar year after the year in which retirement benefits commence to be paid, the amount calculated in Section 6.14(e)(i) above, increased in the same manner as applicable under Section 6.14(c) above.
- (f) In no event shall the benefit accrued in a Plan Year under this Article VI, plus any contribution made in that Plan Year under Section 4.2, result in a pension adjustment (as defined under the Income Tax Act) in excess of the limits prescribed by the Income Tax Act.
- 6.15 Subject always to the provisions of Section 6.14, and subject to proper funding of the Plan under Section 4.3, the President may, in special circumstances, authorize more favorable benefits to be paid in respect of Participants, as set forth in this Section 6.15. The President may:
- (a) permit a Participant to retire under the provisions of Section 5.2 or Section 5.3 earlier than would otherwise be provided under those Sections,

## **Article VI - Retirement Benefits**

---

- (b) reduce or waive the reduction applicable under the provisions of Section 6.4, provided that the reduction shall in no event be less than the reduction which applies under Section 6.14(b),
- (c) determine that a period of Continuous Service which precedes the most recent period of Continuous Service shall be combined with the current period of Continuous Service,
- (d) determine that the Commuted Value of benefits which is to be transferred out of the Plan be calculated on the assumption that benefits are indexed in the manner permitted under Income Tax Regulation 8503(2)(m)(ii),
- (e) cause a Participant's Annual Final Average Earnings to be calculated over a different period or in a different manner, subject always to the restriction set out in clause (vi) of the definition of "Monthly Plan Year Earnings" in Section 1.1,
- (f) cause a Participant who is not otherwise eligible for a Canada Pension Plan Bridge to be so eligible,
- (g) increase the amount of Canada Pension Plan Bridge payable in respect of a Participant, provided that the restrictions in Section 6.14 are respected,
- (h) reduce the number of years of Continuous Service necessary for entitlement to vested benefits on termination or death,
- (i) cause a period of service rendered to the Employer or a predecessor company to be included within the meaning of Early Retirement Eligibility Service,
- (j) reinstate a former period of Pensionable Service rendered to the Employer prior to 1990, conditional upon the Participant contributing to the Plan an amount determined by the Human Resource Committee of the Board,
- (k) reinstate a former period of Pensionable Service rendered to the Employer after 1989, conditional upon the Participant contributing to the Plan an amount determined by the Human Resource Committee of the Board, and conditional upon such reinstatement not becoming effective until such time as the resulting past service pension adjustment has been certified, or
- (l) exercise any combination of the above.

The amount of any contribution required of a Participant under items (j) and (k) above shall be determined by the Human Resource Committee of the Board, having reference to the amount by which the going concern actuarial liability of the Plan would increase as a result of recognizing the additional service, and shall not exceed such amount.

The amount of any contribution required of a Participant under item (j) above which relates to a period of service for which the benefit was commuted in accordance with Section 10.6 (or such analogous provision as may have existed at the time) must only be made by means of a direct transfer from a registered retirement savings plan, a deferred profit sharing plan or a registered pension plan.

## **Article VI - Retirement Benefits**

---

- 6.16 **Excess of 50% of the Commuted Value of Benefits** - In the event that the sum of all contributions made by a Participant to the Plan under the provisions of Section 4.1 of Article IV, together with Credited Interest thereon, exceeds fifty percent (50%) of the Commuted Value of the Participant's retirement benefit, other than any benefit payable under Section 6.2 hereof, then the Participant's retirement benefit shall be increased by such amount as has a Commuted Value equal to the amount of the excess contributions, except where the Participant was last employed by the Employer in Ontario, in which case the Participant shall receive a lump sum cash payment equal to the amount of the excess contributions.

## **Article VII - Normal Form of Retirement Benefit**

---

The provisions of this Article VII describe the benefits payable to retiring Participants under what is referred to hereafter as the "**normal form**". The availability of benefits in the normal form is subject to the provisions of Section 8.3 of Article VIII. The following provisions apply only to Participants rendering service to the Employer on or after July 1, 1987.

- 7.1 In the event of the death of a Married Participant after the date of commencement of his monthly retirement benefit, his surviving Spouse, if eligible, or his Eligible Dependant Child or Children, shall be entitled to receive a monthly retirement benefit equal to sixty percent (60%) of the monthly retirement benefit the Married Participant was receiving, or was entitled to receive, in accordance with Sections 6.1, 6.3, 6.4 or 6.9 of Article VI, plus sixty percent (60%) of the retirement benefit he was receiving, or was entitled to receive, under the provisions of the Prior Plan including any annual adjustments made according to the provisions of Section 6.9 of Article VI and excluding any such monthly retirement benefit determined from additional voluntary contributions thereunder, provided, however, that:
- (a) to be eligible for benefits hereunder such surviving Spouse must have been the Spouse of the Married Participant prior to his date of retirement or termination of employment, whichever is the earlier, and
  - (b) if the Married Participant was receiving pension payments from Prior Plan Two and died before receiving sixty (60) monthly payments, the monthly pension payable to the Spouse or Eligible Dependant Child or Children from the Plan will be reduced by the amount of monthly pension being paid from Prior Plan Two for the balance of the sixty (60) months and the payments will thereafter be equal to the amount specified above.

The payment of such retirement benefit shall be continued until the later of

- (i) the death of the Spouse,
- and
- (ii) the death of the Eligible Dependant Child or Children, if any, or the ceasing of such to continue to qualify as an Eligible Dependant Child, whichever first occurs.

In the case of a retirement benefit paid to Eligible Dependant Children, each Eligible Dependant Child shall share equally the retirement benefit payable.

## **Article VII - Normal Form of Retirement Benefit**

---

- 7.2 In the event of the death after retirement of a Single Participant and before the Single Participant has received payments totalling an amount equal to his contributions, including Credited Interest to his date of retirement on his contributions made after the Amendment Date, the balance of such amount shall be paid in one lump sum to the beneficiary or estate of the Single Participant, provided he has not elected an optional form of retirement benefit.

For the purposes of determining the Actuarial Equivalent Value of this normal form of benefit, this benefit shall be considered to be guaranteed for a period of months equal to the amount of contributions and interest described above, divided by the monthly amount of pension payable, but not to exceed fifteen (15) years.

- 7.3 If the sum of all payments to a Married Participant after his retirement made prior to his death, to his surviving Spouse, if any, and to his Eligible Dependant Child or Children, if any, is less than an amount equal to the Married Participant's contributions to the Prior Plan and the Plan, including Credited Interest to his date of retirement on his contributions made after the Amendment Date, the balance of such amount will be paid in a lump sum to such of his then living children, if any, who received retirement benefits as an Eligible Dependant Child, share and share alike, otherwise to the estate of the last to survive of the Married Participant, his Spouse, and his Eligible Dependant Child or Children.

## **Article VIII - Optional Forms of Retirement Benefit**

---

- 8.1 Subject to the provisions of Section 8.3 hereof, in lieu of the normal form of pension described in Article VII, a Participant entitled to receive benefits, other than a Married Participant whose Spouse meets the conditions for a survivor benefit set forth in Section 7.1(a), may elect to accept one of the optional forms of monthly retirement benefit set forth below. The optional form of monthly retirement benefit shall be of Actuarial Equivalent Value to the monthly retirement benefit which the Participant would have been entitled to receive if no election had been made.

### **Optional Forms of Monthly Retirement Benefits**

(a) **Life Annuity**

The Life Annuity shall provide a monthly amount larger than would be payable under the normal form and shall be payable during the life of the Participant with the provisions that no payments shall be made subsequent to the last payment due prior to the date of death of the Participant. In the event that the equivalent guaranteed period of the normal form of pension as described in Section 7.2 shall exceed ten (10) years, this option shall not be available, nor shall this option be available if its effect would be to cause the annual benefit accrual rate to exceed two percent (2%) contrary to the provisions of the Income Tax Act.

(b) **Life Annuity - 10 Years Certain**

The Life Annuity - 10 Years Certain shall provide a monthly amount no larger than would be payable under the normal form and shall be payable during the life of the Participant with the provision that should he die before the equivalent of One Hundred and Twenty (120) monthly payments have been made then either the remainder of the One Hundred and Twenty (120) monthly payments shall be made to his beneficiary or the commuted value thereof shall be paid as a lump sum to his estate.

(c) **Joint and Survivor Annuity**

The Joint and Survivor Annuity shall provide a monthly amount no larger than would be payable under the normal form, and shall be payable during the life of the Participant with the provision that should he die before the person named by him as his joint annuitant, payments will continue during the life of that designated joint annuitant, provided that

- (i) on electing this option, the Participant shall specify that the payments, if any, continuing to his joint annuitant shall be either sixty percent (60%),

## **Article VIII - Optional Forms of Retirement Benefit**

---

seventy-five percent (75%), or one hundred percent (100%) of the amount payable to him, and

- (ii) the joint annuitant must submit to the Company prior to the commencement of the monthly retirement benefit acceptable proof of date of birth; should such proof not be submitted or should the joint annuitant die before the Participant begins to receive monthly payments hereunder, the Participant's election of a Joint and Survivor Annuity shall be void and, unless the Participant otherwise elects, his monthly retirement benefit shall be paid in the normal form, and
- (iii) the joint annuitant must be a person who, in relation to the Participant, was, at the time the retirement benefit commences or at any prior time, a person
  - (A) who was married to the Participant, or
  - (B) who was cohabiting with the Participant in a conjugal relationship and either had so cohabited for a period of at least one (1) year, or was a parent of a child of whom the Participant is a parent.

8.2 Subject to the provisions of Section 8.3 hereof, in lieu of the normal form of pension described in Article VII, a Married Participant entitled to receive monthly retirement benefits and whose Spouse meets the conditions for a survivor benefit set forth in Section 7.1(a) may elect to accept one of the optional forms of monthly retirement benefit set forth below. The optional form of monthly retirement benefit shall be of Actuarial Equivalent Value to the monthly retirement benefit which the Participant would have been entitled to receive if no election had been made.

Optional Forms of Monthly Retirement Benefits:

**(a) Joint and Survivor Annuity**

The Joint and Survivor Annuity shall provide a monthly amount which shall be payable during the life of the Married Participant with the provision that should he die before his Spouse the payments will continue to the Spouse during the Spouse's lifetime, and also provided that on electing this option the Participant shall specify that the payments continuing to the Spouse shall be either sixty percent (60%), seventy-five percent (75%), or one hundred percent (100%) of the amount payable to him.

## **Article VIII - Optional Forms of Retirement Benefit**

---

### **(b) Joint and Survivor Annuity with a Period Certain**

The Joint and Survivor Annuity with a Period Certain shall provide a monthly amount which shall be payable during the Married Participant's lifetime with the provision that should the Participant die before the period certain following the Retirement Date has expired, the monthly payments will continue unreduced to his surviving Spouse, or to the designated beneficiary if the Participant's Spouse does not survive him, until the balance of the period certain has expired. Thereafter, the monthly payments will continue only to the surviving Spouse for the remainder of the Spouse's lifetime. Should the pensioner die following the expiry of the period certain, the monthly payments shall continue to his Spouse for the remainder of the Spouse's lifetime.

The Married Participant shall specify:

- (i) that the payments continuing to his Spouse shall be either sixty percent (60%), seventy-five percent (75%) or one hundred percent (100%) of the amount payable to him, and
- (ii) that the period certain for payment of the annuity shall be either One Hundred and Twenty (120) months or One Hundred and Eighty (180) months.

In the event that both the Married Participant and his Spouse die before the expiry of the period certain and that the beneficiary designated is the estate the Commuted Value of the monthly payments for the balance of the period certain will be paid in one lump sum to the estate.

**8.3 Automatic Optional Form** - Notwithstanding anything to the contrary contained in this Article VIII or in Article VII, any Participant who has a Spouse at the date of commencement of retirement benefits shall automatically be deemed to have elected an optional form of benefit under Subsection 8.1(c) or Subsection 8.2(a) as the case may be, with his Spouse as the joint annuitant, and with sixty percent (60%) being the designated proportion continuing to the Spouse after the Participant's death. It is further provided that such Participant must submit to the Company acceptable proof of his Spouse's date of birth prior to the commencement of any retirement benefits.

It is provided, however, that the automatic optional form restrictions of this Section 8.3 shall not apply if any of the following conditions hold:

- (a) the retirement benefits have commenced prior to 1 January 1987;

## **Article VIII - Optional Forms of Retirement Benefit**

---

- (b) the Participant's Spouse has filed with the Company a waiver executed in a manner prescribed under the applicable Pension Benefits Act; or
- (c) the Participant has made an otherwise valid election to take his retirement benefits in form which provides for at least sixty percent (60%) of the benefit payable to him to continue to his Spouse after his death.

It is further provided, however, that the provisions of this Section 8.3 shall in no way be deemed to impact upon the right of any Eligible Dependant Child of a deceased Participant to receive the benefits to which he would have otherwise been entitled under the provisions of Article VII.

For greater certainty, it is hereby expressly declared that the provisions of this Section 8.3 apply to any retirement benefits arising from additional voluntary contributions, as provided for under Section 6.2 of Article VI.

- 8.4 Subject to the following provisions of this Section 8.4, a Participant entitled to receive monthly retirement benefits may elect to receive the same on an adjusted basis so that his monthly retirement benefit gives cognizance to his being entitled to receive the Government Old Age Security and/or the Canada Pension Plan benefit commencing after his monthly retirement benefit payments begin. Such monthly retirement benefit will provide for increased benefit payments prior to the end of the month immediately following the month in which the member attains 65 years of age and decreased payments thereafter, with the amounts of such increased and decreased benefit payments being of Actuarial Equivalent Value to the benefits that would otherwise be payable.
- 8.5 Subject to the provisions of Section 8.3 hereof, a Single Participant entitled to receive monthly retirement benefits may elect any other optional form not outlined herein provided that
  - (a) the Company agrees to such other election, and
  - (b) such other optional form provides at least for the payment of retirement benefits during such Single Participant's lifetime, and
  - (c) the guaranteed period, if any, does not exceed fifteen (15) years, and
  - (d) the actuarial present value of any increase in the lifetime benefit payable to the Single Participant does not exceed the actuarial present value of a guaranteed period equal to the lesser of ten (10) years and the guaranteed period described in Section 7.2, and

## **Article VIII - Optional Forms of Retirement Benefit**

---

- (e) such other optional form is permissible under the terms of the Pension Benefits Act and the Income Tax Act in respect of registered pension plan benefits.
- 8.6 A Participant entitled to receive monthly retirement benefit payments who wishes such payments be made in other than the normal form or the automatic optional form, as applicable, must submit written election to the Company at least thirty (30) days prior to the date of his actual retirement.

## **Article IX - Benefits on Death Before Retirement**

---

The following provisions of this Article IX shall apply upon receipt of proof satisfactory to the Company of the death of a Participant prior to the commencement of his retirement benefits.

- 9.1 Upon the death of a Participant:
- (a) whose Pensionable Service is less than two (2) years, or
  - (b) whose employment with the Employer had terminated prior to 1 January 1987, or
  - (c) whose employment with the Employer had terminated prior to 1 January 2001 and who is not survived by his Spouse,
- the designated beneficiary of such Participant shall receive a lump sum refund of all contributions made by the Participant to the Plan, to the extent that these remain in the Fund, together with Credited Interest thereon.
- 9.2 Subject to Sections 9.3 and 9.4, upon the death of a Participant who rendered service to the Employer on or after 1 January 2001, and to whom Section 9.1 does not apply, the following benefits shall apply:
- (a) If the deceased Participant is survived by his Spouse, then, subject to Subsection 9.2(c), the Participant's Spouse shall be entitled to a lump sum amount equal to the Commuted Value of the deferred retirement benefit to which the Participant was or would have been entitled had his employment terminated immediately prior to his death, plus the amount, if any, by which the Participant's required contributions, together with Credited Interest thereon, exceeds fifty percent (50%) of such Commuted Value, except that where the Participant had terminated his employment prior to his death the benefit payable in respect of such excess contributions shall be limited to that portion, if any, of such excess contributions as remain in the Fund.
- The benefit provided to the Participant's Spouse under this Subsection 9.2(a) shall be payable by way of transfer to the Spouse's Restricted Registered Retirement Savings Plan, or if the provisions of the applicable Pension Benefits Act permit, in cash if the Spouse so elects. Where the deceased Participant was last employed by the Employer in Ontario, the Spouse may elect to receive the benefit provided under this Subsection 9.2(a) in the form of a monthly pension having a Commuted Value equal to the lump sum amount calculated above.
- (b) If the deceased Participant is not survived by his Spouse, then his designated beneficiary shall be entitled to a cash lump sum amount equal to the Commuted Value of the deferred retirement benefit to which the Participant was or would have been entitled had his employment terminated immediately prior to his death, plus the amount, if any, by which the Participant's required contributions, together with Credited Interest thereon, exceeds fifty percent (50%) of such Commuted Value, except that where the Participant had terminated his employment prior to his death

## **Article IX - Benefits on Death Before Retirement**

---

the benefit payable in respect of such excess contributions shall be limited to that portion, if any, of such excess contributions as remain in the Fund.

- (c) Except where the deceased Participant was last employed by the Employer in Ontario, if the deceased Participant was eligible to retire under the provisions of Section 5.2 of Article V and is survived by his Spouse, then, in lieu of the lump sum benefit provided for in Subsection 9.2(a), the Spouse may elect to receive a monthly pension equal to the benefit that the Spouse would have been entitled to receive had the deceased Participant so retired on such first day of a calendar month as coincides with or immediately precedes the date of his death, and the benefit to his Spouse shall be calculated in accordance with the provisions of Article VI and Section 8.3 of Article VIII, or such greater amount as has a Commuted Value equal to the lump sum benefit set forth in Subsection 9.2(a).

The provisions of Section 9.2 as they applied on 31 December 2000 shall continue to apply in respect of any Participant whose employment with the Employer had terminated before 1 January 2001 and to whom Section 9.1 does not apply.

- 9.3 If a Participant has retired under the provisions of Section 5.3 of Article V and elected to defer the commencement of his retirement benefits as provided thereunder, and such Participant dies prior to the commencement of his retirement benefits, then such Participant shall be deemed to have commenced receipt of such benefits immediately prior to his death, and benefits shall be payable in accordance with the normal form of benefit as prescribed in Article VII or the automatic optional form prescribed in Section 8.3 of Article VIII, whichever applies.
- 9.4 Any amounts that may be payable to the Spouse or a former Spouse of a deceased Participant in cash under the provisions of this Article IX may, at the Spouse's option, be transferred to the Spouse's RRSP.
- 9.5 The Spouse of a Participant who is employed in Ontario, or of a deceased Participant who was last employed by the Employer in Ontario, may waive the Spouse's entitlement to death benefits under this Article VI by delivering to the Company a written waiver in the approved form. A Spouse who has delivered such a waiver may cancel it by delivering a written and signed notice of cancellation to the Company before the death of the Participant. If a waiver is in effect on the date of death of the Participant who was last employed by the Employer in Ontario, then the provisions of this Article IX shall apply as if the Participant was not survived by the Spouse.

## **Article X - Termination of Service**

---

- 10.1 Subject to the following provisions of this Article X, and the limitations imposed by Sections 4.6 and 4.12 of Article IV, a Participant whose employment terminates for any reason other than death or retirement shall be entitled to receive a refund of all of the contributions made by him to the Plan, together with Credited Interest thereon. Payment of such refund shall operate as full and final satisfaction of the Participant's entitlement under the Plan.
- 10.2 A Participant whose employment terminates and whose Pensionable Service equals or exceeds two (2) years shall not be entitled to any benefits under Section 10.1, but shall receive instead the following benefits:
- (a) a deferred retirement benefit commencing at his date of normal retirement and determined in accordance with Sections 6.1 or 6.3 of Article VI, as applicable; plus
  - (b) no longer applicable to this plan;
  - (c) no longer applicable to this plan.

In addition, if the sum of all the required contributions made by the Participant under Section 4.1 of Article IV, together with Credited Interest thereon to date of termination of employment, exceeds fifty percent (50%) of the Commuted Value of the deferred retirement benefit provided under Subsection 10.2(a), then the Participant's deferred retirement benefit shall be increased by such amount as has a Commuted Value equal to the amount of such excess contributions, except where the Participant was last employed by the Employer in Ontario, in which case the Participant shall receive a lump sum cash payment equal to the amount of the excess contributions. For greater certainty, such additional benefit provided by the operation of this provision shall be eligible for transfer to the Participant's Restricted Registered Retirement Savings Plan in accordance with Section 10.6 if the Participant elects a transfer under Section 10.6.

- 10.3 A Participant whose employment terminates after his attaining age forty-five (45), but to whom Section 10.2 does not apply, may elect to have his entitlement under Section 10.1 paid into his Restricted Registered Retirement Savings Plan, in which case his entitlement shall be increased, if necessary, so that it is not less than the sum of
- (a) the Commuted Value of a deferred retirement benefit commencing at his date of normal retirement and determined in accordance with Sections 6.1 or 6.3 of Article VI, as applicable; plus
  - (b) no longer applicable to this plan.

## **Article X - Termination of Service**

---

An election to receive benefits under this Section 10.3 must be made in writing and be received by the Company no later than ninety (90) days after the later of:

- (c) the Participant's date of termination, and
- (d) the date the Participant was advised in writing of his benefits under this Article X.

10.4 Any Participant whose employment terminates after his attaining age sixty-five (65) shall be considered to have retired in accordance with Article V and Article VI, and is consequently ineligible to receive benefits under this Article X.

10.5 A Participant who transfers to an Affiliated Company shall not be considered to have terminated employment until such time as notification is received that his employment with the Affiliated Company has terminated. Such Participant shall continue to accrue Continuous Service under the Plan and, if he qualifies, Eligible Affiliated Service.

10.6 A Participant who is entitled to benefits under Section 10.2, either directly or by virtue of another Section of this Article X, may elect to have the Commuted Value of his benefits hereunder transferred to his Restricted Registered Retirement Savings Plan. Such transfer shall be subject, in amount and timing, to the requirements of the Pension Benefits Act in respect of the protection of Plan solvency. Upon completion, such transfer shall represent a final satisfaction of the Participant's benefits under the Plan.

In order for an election under this Section 10.6 to be valid, it must be made in writing and provided to the Company on or before the later of

- (a) a date that is ninety (90) days after the date employment terminates, and
- (b) a date that is sixty (60) days after the date information is provided to the Participant as to his entitlement under the Plan.

Any benefits under Section 10.2 which are less, in terms of the annual amount, than two percent (2%) of the Y.M.P.E. for the calendar year in which termination of employment occurs, shall be commuted and paid either to the Participant or to his Restricted Registered Retirement Savings Plan in a lump sum as final satisfaction of his entitlement under the Plan.

10.7 A Participant who remains entitled to a benefit under Section 10.2 may elect to have the benefit commence earlier than his date of normal retirement, in accordance with Section 5.2 of Article V and Subsection 6.4(a) of Article VI.

## **Article X - Termination of Service**

---

It is provided, however, that if the Participant is a female who was rendering Continuous Service, other than PSSA Service, on 1 June 1972, Subsection 6.4(a) of Article VI shall be read as if references to the date of normal retirement were references to the first day of the month coincident with or immediately following attainment of age sixty-two (62).

- 10.8 Amounts transferred in accordance with Section 10.3 or 10.6 shall not exceed the maximum amount prescribed under the Income Tax Act. Where the application of this Section 10.8 results in less than the full amount of the Commuted Value being available for transfer, the portion that may not be transferred shall be paid to the Participant in cash, as permitted under the Income Tax Act and the Pension Benefits Act.
- 10.9 Any amounts that may be payable to a Participant in cash under the provisions of this Article X, except any cash payment arising from the operation of Section 10.8, may, at the Participant's option, be transferred to the Participant's RRSP.
- 10.10 Notwithstanding anything in this Plan to the contrary, if a Participant who was employed by NCPC prior to 1 April 1987 becomes covered by the Public Service Superannuation Act after terminating his employment with the Employer, he may be eligible under the terms of the Reciprocal Agreement to elect a transfer of service, contributions, and benefits to the Public Service Superannuation Act. In the event that such a transfer is elected and made under the Reciprocal Agreement, the Plan shall be fully discharged from the provision of any and all benefits in respect of service rendered prior to such transfer, including all benefits relating to the Participant's Excess Transfer Value. The Participant shall, however, be entitled to a refund of his additional voluntary contributions (**not** including any Excess Transfer Value) made by him to this Plan after the Effective Date, if any, together with Credited Interest thereon, to the extent that such contributions have not already been refunded, transferred, or otherwise utilized to the benefit of the Participant.

## **Article XI - Administration of the Plan**

---

- 11.1 The administration of the Plan shall be the Company's responsibility and whenever a question which cannot be settled by reference to the Plan arises in the course of such administration the Company may settle such question at its discretion in any manner not inconsistent with the provisions of the Plan.
- 11.2 The Board of Directors of the Company may appoint any corporation to administer the Plan and may delegate for such purpose, from time to time, such authority as the Board of Directors may deem necessary and advisable.

## **Article XII - Designation of Beneficiary**

---

- 12.1 A Participant shall, on the application for participation referred to in Section 3.2 of Article III hereof, designate a person (herein referred to as "the designated beneficiary") to receive the benefits payable under the Plan in the event of the Participant's death and may also be written notice, given to the Company during such Participant's lifetime, alter or revoke such designation from time to time subject always to the provisions of any annuity, insurance, or other contract or law governing the designation of beneficiaries which may then apply to such Participant. Such written notice may be in such form and executed in such manner as the Company and the Insurer may require.
- 12.2 If at the death of a Participant the person designated as the designated beneficiary shall not then be living such amount as may be payable on or after the Participant's death shall be paid to the estate of the Participant.

## **Article XIII - Establishment of the Fund**

---

- 13.1 The Company will establish and maintain during the term of the Plan a Fund under the terms of the Funding Agreements, of which this Plan forms a part, to be held and invested by the Funding Agencies, subject to the provisions of the Pension Benefits Act and the Income Tax Act, the regulations thereunder, and any other legislation governing the investment of pension funds.
- 13.2 All contributions of the Employer in respect of this Plan will be paid into the Fund. All reasonable expenses and fees incurred in the operation of the Plan or Fund will be withdrawn from the Fund by the Funding Agencies in accordance with the Funding Agreements, unless otherwise paid by the Company. The Fund in each other respect will be administered by the Funding Agencies in accordance with the terms of the Funding Agreements.

## **Article XIV - Amendment or Termination of the Plan**

---

14.1 The Company retains the right to amend or modify or terminate the Plan in whole or in part, at any time and from time to time, and in such manner and to such extent as it may deem advisable, subject to the following provisions:

- (a) No amendment shall have the effect of reducing the benefits then accrued to the credit of any Participant, Spouse, dependent child, joint annuitants, beneficiary or estate.
- (a.1) Notwithstanding the foregoing, should any amendment to the Plan create or increase benefits for any person or persons, which would, in the absence of this provision, result in the Plan's registration under the Income Tax Act being revoked, then the Company may by subsequent amendment reverse or cancel such benefit creation or increase in order to retain the registration of the Plan.
- (a.2) Where an amendment results in a certifiable past service pension adjustment (as defined under the Income Tax Act) in respect of a Participant, the amendment shall not apply to such Participant prior to certification of the past service pension adjustment in accordance with the Income Tax Act.
- (b) If it should become necessary to discontinue the Plan, the assets of the Fund shall be used to provide the benefits then accrued to Participants, Spouses, dependent children, joint annuitants, beneficiaries and estates, with such benefits being treated as being fully vested. The method of providing such benefits shall be determined by the Company on the advice of an Actuary provided that:
  - (i) the benefit provided to any individual may not exceed the maximum described in Section 6.14; and
  - (ii) assets of the Fund shall not be applied toward the provision of such benefits until all the necessary approvals have been obtained under the Pension Benefits Act; and
  - (iii) the benefits provided upon termination of the Plan in respect of the PSSA Service of any Participant who elected to transfer his PSSA Service under the terms of the Reciprocal Agreement shall not have a value less than the amount of funds transferred under the terms of the Reciprocal Agreement plus Credited Interest thereon to the date of termination of the Plan.

If the total assets in the Fund are not adequate to provide the benefits hereunder, then benefits shall be reduced in a manner acceptable under the Pension Benefits Act and as approved by the Superintendent.

## **Article XIV - Amendment or Termination of the Plan**

---

- (c) Any funds remaining upon termination of the Plan which are not required to provide the benefits hereunder shall revert to the Employer after having obtained the necessary approvals under the Pension Benefits Act, or may be used at the Company's discretion, in whole or in part, to increase the benefits hereunder, provided that in no event shall any increased benefit exceed the maximum described in Section 6.14.
- 14.2 In the event of a partial termination of the Plan, the Participants in that portion of the Plan being terminated shall receive benefits as described in Section 14.1 above as if the entire Plan were terminated, and the remaining assets shall remain in the Fund for the benefit of those Participants in that portion of the Plan which is not being terminated.

## **Article XV - General Conditions**

---

- 15.1 (a) The adoption and maintenance of the Plan shall not be deemed to constitute a contract of employment between the Employer and any Employee or Participant.
- (b) Nothing contained herein shall be deemed to give to any Employee the right to be retained in the service of the Employer or to interfere with the right of the Employer to terminate the employment of any Employee or Participant at any time.

- 15.2 All benefits payable under the Plan shall be paid or provided for solely from the Fund or any other fund which the Company in its discretion may establish, from time to time, for the purpose of receiving contributions made in accordance with the provisions of the Plan and persons entitled to benefits hereunder shall look only to the assets of the Fund or other fund, if any, for payment. The Employer's obligations hereunder are limited solely to the making of contributions as provided for in the Plan, or as required under the Pension Benefits Act, to the Fund or to any other fund which is established for the purpose of receiving contributions made in accordance with the provisions of the Plan. In the event of termination of the Plan and in the event that there should be insufficient funds to make the payments provided for hereunder, in whole or in part, the right to such payments shall cease or such payments shall be ratably reduced, in accordance with the provisions of Article XIV.

This paragraph 15.2 notwithstanding, the Company may satisfy a pension obligation under the Plan by the purchase of an immediate or deferred annuity from a life insurance company authorized to issue such contracts in Canada. Upon delivery of such a contract to a Participant, the Participant will have no further claim against the Plan or Fund.

- 15.3 Except to the extent expressly provided in this Plan, no benefit provided under the Plan shall be capable, in any manner in whole or in part, of being surrendered, assigned, charged, anticipated, given as security, alienated, sold, transferred, pledged, or encumbered, and to the extent permitted by law benefits shall not be subject to attachment or otherwise to the claims of creditors of the person entitled thereto under the provisions of the Plan.
- 15.4 Notwithstanding the foregoing, the right of any person to receive a benefit hereunder is subject to rights arising under a matrimonial property order or an agreement between the Spouses made under the provisions of the matrimonial property law of any province having appropriate jurisdiction over such person. In addition, a Participant may, in accordance with the Pension Benefits Act, make an assignment of all or a portion of his benefits hereunder in favour of his Spouse, effective as of divorce, annulment or separation.

Where the benefits to a Participant have been assigned to his Spouse, or the Spouse has otherwise become entitled to a portion thereof, the Company shall have the power to vary

## **Article XV - General Conditions**

---

the form of benefits within the limits permitted by the Pension Benefits Act, provided that the actuarial present value of such benefits remains unchanged.

- 15.5 A person claiming to be entitled to receive a benefit under this Plan has the onus of proving to the satisfaction of the Company that he is so entitled, and the Company may require the claimant to provide such evidence, including evidence by way of affidavit, declaration, or certificate, as the Company requires to have the claim established.
- 15.6 Except as provided in Section 3.11 of Article III, if the employment of a Participant is terminated and that person is thereafter re-employed, he will for all purposes of the Plan be considered a new Employee and to have first commenced employment with the Employer on the date of his re-employment. Any benefits under the Plan to which the Participant was entitled in respect of his previous employment shall be totally unaffected by his re-employment.
- 15.7 Once an Employee becomes a Participant of the Plan, withdrawal therefrom will not be permitted while he remains an Employee of the Employer.
- 15.8 Employees of Subsidiary companies of the Company may be included in the Plan at the request of the Board of any such Subsidiary company and with approval of the Board of Directors.
- 15.9 Article headings are for convenient references only and shall not be deemed to be a part of the substance of this instrument or in any way to enlarge or limit the contents of any Article.
- 15.10 The masculine gender shall include the feminine and the singular shall include the plural unless the context clearly indicates otherwise.
- 15.11 The Plan is to be construed according to the laws of Canada.

Canadian Utilities Limited  
Retirement Plan - Plan 2

## **EXECUTION**

---

IN WITNESS WHEREOF, the Company has caused this instrument to be executed by its duly authorized officers as of the      day of      , 20   .

CANADIAN UTILITIES LIMITED

---

---

## **Schedule I - Rates of Participants' Required Contributions**

---

Prior to 1 January 2005 Participants were, during their Periods of Participation in the Plan, required to contribute the following amounts each month:

| <b>For Participation</b> |                   | <b>Monthly Contributions</b> |                | <b>Maximum</b>               |
|--------------------------|-------------------|------------------------------|----------------|------------------------------|
| <b>From</b>              | <b>To</b>         | <b>Males</b>                 | <b>Females</b> | <b>Monthly Contributions</b> |
| 2 January 1962           | 1 January 1966    | 5%                           | 4%             | --                           |
| 2 January 1966           | 30 September 1969 | 3.0%/5.0%                    | 2.4%/4.0%      | \$125.00                     |
| 1 October 1969           | 31 December 1971  | 3.5%/5.5%                    | 2.9%/4.5%      | \$125.00                     |
| 1 January 1972           | 31 May 1972       | 3.5%/5.5%                    | 2.9%/4.5%      | \$208.33                     |
| 1 June 1972              | 31 December 2004  | 3.5%/5.0%                    | 3.5%/5.0%      | \$208.33                     |

Note:

In the above table the percentages shown under Monthly Contributions apply as follows:

- (a) on the first line the two single percentages apply to the Participant's Monthly Plan Year Earnings, and
- (b) in the remainder of the table the first percentage in each pair applies to the lesser of the Participant's Monthly Plan Year Earnings and his Monthly Maximum Pensionable Earnings and the second percentage in each pair applies to the excess, if any, of his Monthly Plan Year Earnings over his Monthly Maximum Pensionable Earnings.

**AMENDMENT NUMBER 16A TO  
THE RETIREMENT PLAN FOR EMPLOYEES OF  
CANADIAN UTILITIES LIMITED AND  
PARTICIPATING COMPANIES  
PLAN 2**

**WHEREAS** Canadian Utilities Limited (the "Company") established The Retirement Plan for Employees of Canadian Utilities Limited and Participating Companies - Plan 2 effective December 31, 1986 (the "Plan");

**AND WHEREAS** the Company retained the right to amend the Plan from time to time;

**AND WHEREAS** it is desirable to the Company that the Plan be amended effective July 15, 2009 to enhance the pre-retirement death benefit provided by the Plan;

**NOW, THEREFORE, TAKE NOTICE THAT** the Plan is hereby amended effective July 15, 2009, in accordance with the following:

1. Section 9.2(a) is amended by replacing the first reference to "Subsection 9.2(c)" with a reference to "Subsection 9.2(c) and Subsection 9.2(d)".
2. Section 9.2(c) is amended by adding the phrase "or the provisions of Subsection 9.2(d) apply" immediately after the word "Ontario" in the opening phrase.
3. A new Section 9.2(d) is added as follows:  
*"(d) If the deceased Participant was eligible to request special early retirement under the provisions of Section 5.3 of Article V and is survived by his Spouse, then, in lieu of the lump sum benefit provided for in Subsection 9.2(a), the Spouse may elect to receive a monthly pension equal to the benefit that the Spouse would have been entitled to receive had the deceased Participant: (i) retired on the first day of the calendar month of the date of his death; and (ii) received Company consent in accordance with Section 5.3 of Article V. The benefit payable to his Spouse shall be calculated in accordance with the provisions of Article VI and Section 8.3 of Article VIII, which pension shall not have a Commuted Value less than the lump sum benefit set forth in Subsection 9.2(a)."*

**AMENDMENT NUMBER 16A TO  
THE RETIREMENT PLAN FOR EMPLOYEES OF  
CANADIAN UTILITIES LIMITED AND  
PARTICIPATING COMPANIES  
PLAN 2**

**(continued)**

**Effective January 1, 2010:**

4. Subsection 4.1(a) is deleted and replaced with the following:

“(a) Except as otherwise provided in this Section 4.1, each Participant, throughout his Pensionable Service in the Plan, is required to contribute monthly (for Participants paid on a monthly basis) or bi-weekly (for Participants paid on a bi-weekly basis) to the Fund, through payroll deductions during each Plan Year the lesser of

(i) \$166.67 (for Participants paid on a monthly basis) or \$76.92 (for Participants paid on a bi-weekly basis), as applicable, and

(ii) 2.8% of the lesser of  
(A) his Monthly Plan Year Earnings and  
(B) his Monthly Maximum Pensionable Earnings

PLUS

4.0% of the amount, if any, by which his Monthly Plan Year Earnings exceeds his Monthly Maximum Pensionable Earnings,

with the result of this calculation multiplied by twelve and divided by the number of pay periods per year for Participants paid on other than a monthly basis.

For each Permanent Part Time Employee, the required contribution calculated above will be multiplied by his Permanent Part Time Service Ratio.

It is hereby expressly provided that in no event shall the contributions required under this Section 4.1(a) exceed the amount permitted under the regulations issued under the Income Tax Act.”

**AMENDMENT NUMBER 16A TO  
THE RETIREMENT PLAN FOR EMPLOYEES OF  
CANADIAN UTILITIES LIMITED AND  
PARTICIPATING COMPANIES  
PLAN 2**

**(continued)**

**IN WITNESS WHEREOF** the Company has caused this instrument to be executed by its duly authorized officers this \_\_\_\_\_ day of \_\_\_\_\_, A.D. 2009.

**CANADIAN UTILITIES LIMITED**

\_\_\_\_\_

\_\_\_\_\_

**AMENDMENT NUMBER 17A TO  
THE RETIREMENT PLAN FOR EMPLOYEES OF CANADIAN UTILITIES  
LIMITED AND PARTICIPATING COMPANIES PLAN 2**

**WHEREAS** Canadian Utilities Limited (the “Company”) established The Retirement Plan for Employees of Canadian Utilities Limited and Participating Companies – Plan 2 effective December 31, 1986 (the “Plan”);

**AND WHEREAS** the Company is authorized to make amendments to the plan pursuant to Article 14 thereunder;

**AND WHEREAS** it is necessary that the Company amend the Plan to ensure ongoing compliance with the requirements of the *Pension Benefits Standards Act* (Canada);

**NOW THEREFORE TAKE NOTICE THAT:**

The Plan is hereby amended effective July 1, 2011 in accordance with the following:

1. The following paragraph is added immediately before the last paragraph of Section 4.13:

“Upon death of a Participant who does not have a surviving Spouse, the Participant’s Excess Transfer Value as a lump sum to the Participant’s designated beneficiary or estate, as applicable.”

2. The following words are deleted from Section 5.2:

“, provided his Period of Participation equals or exceeds two (2) years”

3. Section 9.1 is revised by deleting paragraph (a), renumbering paragraph (b) as (a), and renumbering paragraph (c) as (b).

4. Section 10.1 is deleted and is replaced with the text “Not applicable to this Plan”.

5. Section 10.2 is deleted and replaced in its entirety by the following:

“A Participant whose employment terminates for any reason other than death or retirement shall receive a deferred retirement benefit commencing at his date of normal retirement and determined in accordance with Sections 6.1 or 6.3 of Article VI, as applicable.

In addition, if the sum of all the required contributions made by the Participant under Section 4.1 of Article IV, together with Credited Interest thereon to date of termination of employment, exceeds fifty percent (50%) of the Commuted Value of

the deferred retirement benefit provided under this Section 10.2, then the Participant's deferred retirement benefit shall be increased by such amount as has a Commuted Value equal to the amount of such excess contributions, except where the Participant was last employed by the Employer in Ontario, in which case the Participant shall receive a lump sum cash payment equal to the amount of the excess contributions. For greater certainty, such additional benefit provided by the operation of this provision shall be eligible for transfer to the participant's Restricted Registered Retirement Savings Plan in accordance with Section 10.6 if the Participant elects a transfer under Section 10.6. "

6. Section 10.3 is deleted and replaced with "no longer applicable to this plan".
7. The last paragraph of Section 10.6 is deleted and replaced in its entirety by the following:

"Any benefits under Section 10.2 which have a Commuted Value of less than 20% of the Y.M.P.E. for the calendar year in which termination of employment occurs, shall be commuted and paid either to the Participant or to his Restricted Registered Retirement Savings Plan in a lump sum as final satisfaction of his entitlement under the Plan."

8. The first paragraph of Section 14.1 is deleted and replaced in its entirety by the following:

"The Company retains the right to amend or modify the Plan in whole or in part, or to terminate the Plan in whole, at any time and from time to time, and in such manner and to such extent as it may deem advisable, subject to the following provisions:"

9. The last paragraph of Subsection 14.1(b) is deleted in its entirety.

**IN WITNESS WHEREOF** the Company has caused this instrument to be executed by its duly authorized officers this \_\_\_\_\_ day of \_\_\_\_\_, 2011.

**CANADIAN UTILITIES LIMITED**

---

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

### **RESPONSE TO UNDERTAKING #3**

November 4, 2013  
Transcript Volume 1

---

Undertaking: By Ms. Kellgren to Mr. Grattan

Page 84, Lines 3 - 7

To provide an estimate of the level of special funding if 50 percent of CPI up to 3 percent is used as the assumption in special funding requirements.

#### **Yukon Electrical Response:**

At the outset, Yukon Electrical notes that the issue of cost of living adjustments (COLA) in the calculation of special payment pension funding was not raised by any party prior to the this undertaking being given to the City of Whitehorse during the public hearing. Accordingly, this is Yukon Electrical's first opportunity to address the need for, and reasonableness of, the continuation of its historical practice of including in its revenue requirement the full special payment based on COLA being equal to 100% of the annual increase in CPI to a maximum of 3%. The special payment funding is assessed in accordance with the Office of the Superintendent of Financial Institutions regulations and Yukon Electrical is required to make the full special payment based on COLA being equal to 100% of the annual increase in CPI to a maximum of 3%, as outlined in its annual actuarial valuation. If the special payment was assessed based on the assumption of COLA being equal to 50% of the annual increase in CPI to a maximum of 3%, which it was not, Yukon Electrical's special payment would decrease from \$351,000 to \$59,600. Yukon Electrical would nevertheless be required by law to pay the \$351,000.

In Yukon Electrical's view, it is reasonable and appropriate that it continue to include the full special payment based on 100% of COLA in its revenue requirement particularly given the practice of other employers in the Yukon such as the Yukon Government which has a fully indexed defined benefit plan and the Yukon Energy Corporation which has a fully indexed defined benefit plan up to a maximum of 3%. In order to confirm the reasonableness and prudence of continuing with special payment based on COLA equal to 100% of the annual increase in the CPI to a maximum of 3%, Yukon Electrical, as well as other ATCO Utilities, engaged Mercer (Canada) Limited to provide an independent, market-based assessment of ATCO Utilities' total remuneration levels.

This review demonstrates that the ATCO Utilities, including Yukon Electrical, are generally market competitive but fall 3% short of the Target Total Remuneration as outlined at page 21 of the Mercer Remuneration Review, which is attached hereto as Attachment 1. This conclusion supports the continued practice of including special payments based on COLA equal to 100% of the annual increase in the CPI to a maximum of 3% as being reasonable and prudent.



TALENT • HEALTH • RETIREMENT • INVESTMENTS

# TOTAL REMUNERATION REVIEW ATCO UTILITIES

04 NOVEMBER 2013

## STRICTLY PRIVATE & CONFIDENTIAL

*The information included in this report is strictly confidential and is proprietary to Mercer.  
Any unauthorized use and/or distribution of this material are strictly prohibited unless  
explicitly agreed to in advance and in writing by Mercer.*

# Table of Contents

|                               | Page |
|-------------------------------|------|
| • Summary                     | 2    |
| • Introduction                | 3    |
| • Compensation Philosophy     | 4    |
| • Methodology                 | 6    |
| • Total Remuneration Analysis | 20   |
| • Appendix A – Peer Group     | 22   |

## Summary

- Canadian Utilities engaged Mercer to review its total remuneration for non-executive employees at ATCO Utilities that is comprised of ATCO Pipelines, ATCO Gas and ATCO Electric
- The purpose of this review is to provide an independent, market-based assessment of ATCO Utilities' total remuneration levels, and that this report will be filed as part of ATCO Utilities' application with the Yukon Utilities Board
- The table below shows the percent differential from median between ATCO Utilities and its Peer Group of 43 companies on base salary, target total cash, target total direct and target total remuneration for a total of 3,337 positions:

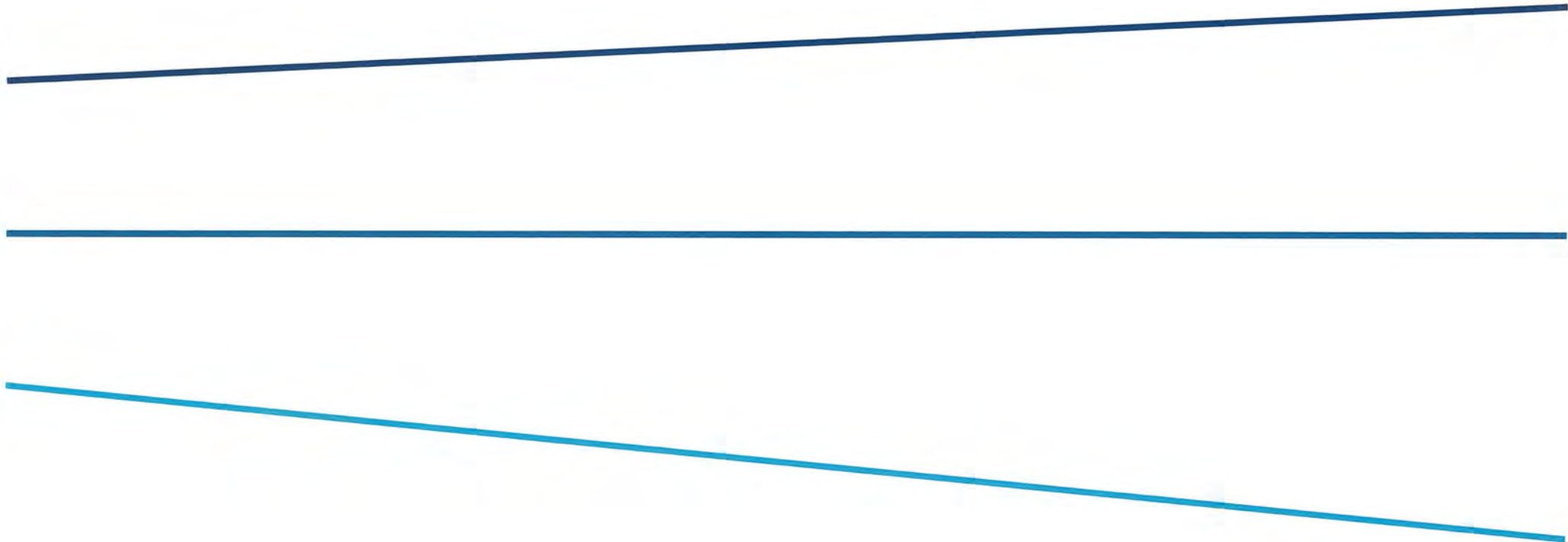
| Compensation Element             | % Differential from P50 |
|----------------------------------|-------------------------|
| Base Salary                      | +2%                     |
| Target Total Cash Compensation   | -2%                     |
| Target Total Direct Compensation | -4%                     |
| Target Total Remuneration        | -3%                     |

These results show that ATCO Utilities are generally market competitive but fall 3% short of P50 target pay positioning

## Introduction

- Canadian Utilities engaged Mercer to review its total remuneration for non-executive employees at ATCO Utilities that is comprised of ATCO Pipelines, ATCO Gas and ATCO Electric
- The purpose of this review is to provide an independent, market-based assessment of ATCO Utilities' total remuneration levels, and that this report will be filed as part of ATCO Utilities' application with the Yukon Utilities Board with respect to pension plan costs
- The approach used in this review is consistent with Mercer's typical practice and considers the value provided by, rather than the cost of, ATCO Utilities' remuneration arrangements relative to those provided by others within the peer group – this approach gives a more accurate reflection of the competitiveness of ATCO Utilities' total remuneration offerings
- This report reviews the competitiveness of the total remuneration levels for 1,148 non-union positions and 2,189 union positions (for a total of 3,337 positions) at ATCO Utilities
- This report benchmarks ATCO Utilities positions using compensation data collected in the 2012 Mercer Total Compensation Survey for the Energy Sector ("MTCS") from among the 43 organizations that compete with ATCO Utilities for non-executive talent

# COMPENSATION PHILOSOPHY

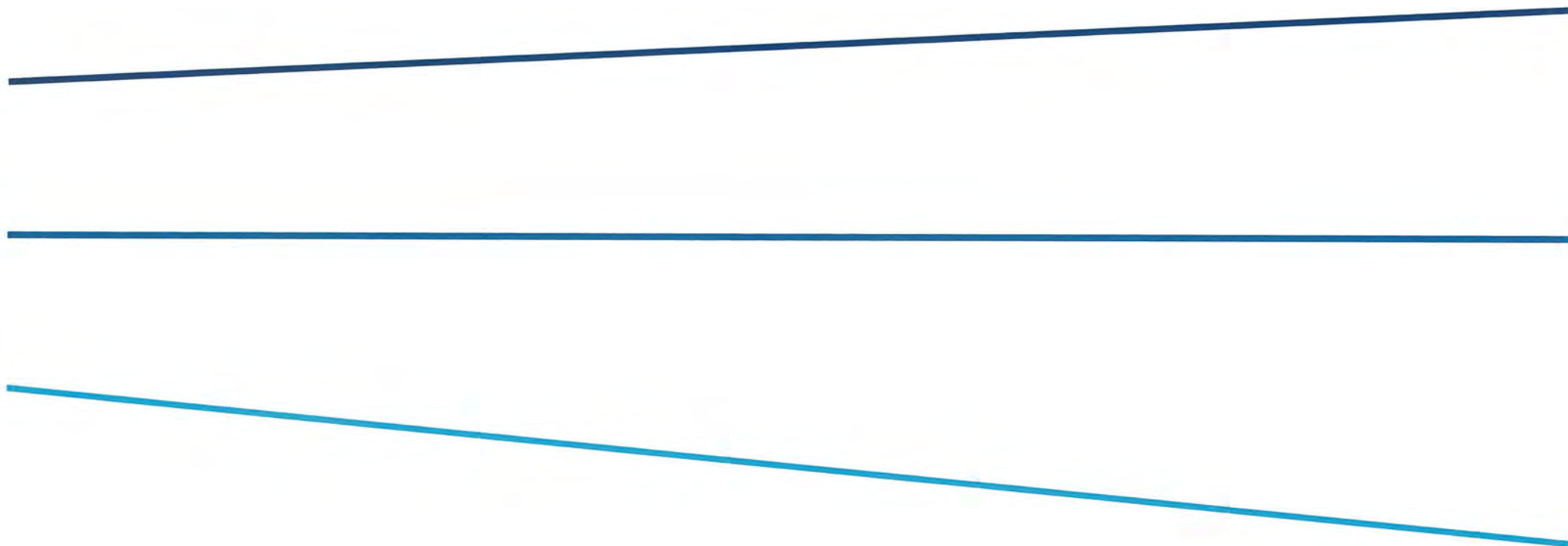


## Compensation Philosophy

- On an aggregate basis, ATCO Utilities targets base salaries, total cash compensation (i.e., sum of base salary and short-term incentives “STI”), total direct compensation (i.e., sum of total cash, perquisites and long-term incentives “LTI”) and total remuneration (i.e., sum of total direct, pension and savings, and health and group benefits) at the market median level for both union and non-union employees
  - Median (i.e., “P50” or 50<sup>th</sup> percentile) represents the rate within the sample where half of the values fall above and half fall below
- On a job-by-job basis, ATCO Utilities considers compensation levels within 10% of market median / P50 to be market competitive

Mercer believes a P50 philosophy is reasonable and defensible and should allow ATCO Utilities to provide competitive compensation and compete effectively with other companies for non-executive talent. In addition, Mercer believes that +/- 10% of P50 represents a market competitive range on a position level, but that companies should stay close to P50 on an aggregate basis.

# METHODOLOGY



## Methodology Peer Group

- Market data has been extracted from the 2012 MTCS and reflects compensation data for a peer group of 43 companies that compete with ATCO Utilities for non-executive talent ("Peer Group") – refer to Appendix A for a complete list of ATCO's peer companies
  - It includes all Western Canadian-based Utility, Pipelines / Midstream, Engineering, Procurement and Construction ("EPC") companies as well as select Exploration & Production ("E&P") companies
  - In order to ensure that the Peer Group is appropriately balanced between the various industry sectors and is not skewed towards E&P in particular, we only included E&P companies with revenue between 0.5x – 2.0x ATCO Ltd.'s 2012 revenue of \$4.3 billion
- The tables below provide an industry and geography breakdown of the Peer Group of 43 companies:

| Industry Sector     | %   |
|---------------------|-----|
| Utility             | 26% |
| Pipelines/Midstream | 37% |
| EPC                 | 14% |
| E&P                 | 23% |

| Location         | %   |
|------------------|-----|
| Alberta          | 90% |
| British Columbia | 5%  |
| Saskatchewan     | 5%  |

- A significant majority of the companies are Alberta-based, with less than 10% of the peers based in either BC or Saskatchewan

The Peer Group was developed using Mercer's standard practice and provides a good representation of the market that ATCO Utilities competes with for non-executive talent

## Methodology

### Peer Group (cont'd)

- In terms of technical roles, positions that are unique to the Utilities industry will be matched primarily by Utility companies rather than by other types of companies in the Peer Group; the same logic applies to technical positions unique to the Pipeline / Midstream industry
- In terms of corporate roles, these positions are not unique to any particular industry and are inherently similar across ATCO Utilities; the skill sets and qualifications required to be successful and fully competent in a corporate role is not industry dependent and therefore all corporate positions should be assessed using one common peer group of companies that regularly compete with ATCO Utilities for talent
- Furthermore, both union and non-union employees are compared against the same peer group as the same companies compete with ATCO Utilities for talent between the two groups of employees

## Methodology Geography

- 85% of ATCO Utilities' employee population are employed in locations outside of Calgary – 45% are located in Edmonton, 38% located in rural Alberta and 2% located in Yukon and Northwest Territories
- Mercer compared the market data between multiple geographic data cuts to identify the degree of difference in compensation levels between the various geographic locations and concluded the following:
  - Calgary compensation levels are generally higher than those found in the rest of Western Canada
  - Edmonton compensation levels are on average comparable to those found in Western Canada (minus Calgary)
- As a result, Mercer used the following geographic data cuts in this total remuneration review:
  - Calgary ATCO Utilities employees were compared to Calgary data within the Peer Group
  - All other ATCO Utilities employees were compared to Western Canada excluding Calgary data within the Peer Group

## Methodology Position Matching

- Mercer's analysis includes 1,148 non-union employees and 2,189 union employees (for a total of 3,337 employees) across ATCO Utilities, and does not include positions which could not be appropriately matched to an MTCS benchmark position
  - Survey positions were considered to be appropriate matches if approximately 80% of the ATCO Utilities job content was represented in the description
- The MTCS position matches were selected by ATCO Utilities; however, Mercer reviewed a representative sample of positions across various levels and business units within ATCO Utilities to validate ATCO Utilities' position matching process
- The table below shows the number of ATCO Utilities employees included in the analysis:

|           | Number of ATCO Utilities Employees | Number of Employees Matched |
|-----------|------------------------------------|-----------------------------|
| Non-Union | 1,778                              | 1,148                       |
| Union     | 3,058                              | 2,189                       |
| Total     | 4,836                              | 3,337                       |
|           |                                    | 69% Matched                 |

- The selected positions represent a statistically reliable sample for validating ATCO Utilities' competitiveness

## Methodology

### Total Remuneration Analysis

- The table below outlines the compensation elements presented in this report:

| Compensation Element             | ATCO Utilities                                                                                                         | Survey Analysis                                                |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|
| Base Salary                      | 2013 base salary                                                                                                       | 2012 base salary                                               |
| STI                              | 2013 target STI                                                                                                        | 2012 target STI                                                |
| Target Total Cash Compensation   | 2013 base salary + 2013 target STI                                                                                     | 2012 base salary + 2012 target STI                             |
| Perquisites                      | Estimated annual employer cost of any perquisites provided (e.g. vehicle allowances, parking, fitness club fees, etc.) | Estimated annual employer cost of any perquisites provided     |
| LTI                              | Actual value of most recent awards                                                                                     | Actual value of most recent awards                             |
| Target Total Direct Compensation | Target total cash compensation + 2013 actual LTI + perquisites                                                         | Target total cash compensation + 2012 actual LTI + perquisites |

## Methodology

### Total Remuneration Analysis (cont'd)

- The table below outlines the compensation elements presented in this report:

| Compensation Element      | ATCO Utilities                                                                                                                                | Survey Analysis                                                                    |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Pension and Savings       | Employer-paid value of open and closed retirement and savings plans (i.e., DC pension plan, DB pension plan and employee share purchase plan) | Employer-paid value of open retirement and savings plans for regular employees     |
| Health and Group Benefits | Employer-paid value of health and group benefit plans                                                                                         | Employer-paid value of health and group benefit plans for regular employees        |
| Target Total Remuneration | Target total direct compensation + pension and savings + health and group benefits                                                            | Target total direct compensation + pension and savings + health and group benefits |

- To estimate 2013 market compensation levels:
  - For non-union positions, Mercer increased the 2012 MTCS market data (effective April 1, 2012) by 4.0%, the median 2013 projected salary increases as reported by ATCO Utilities' Peer Group in Mercer's 2012 MTCS Fall Update
  - For union positions, Mercer increased the 2012 MTCS market data by 3.5%, which is the median of the ratified 2013 wage settlements among the unions within ATCO Utilities' Peer Group

## Methodology

### Long-term Incentives

- The following standard methodology was used to value various types of LTI awards granted to employees within ATCO Utilities and the Peer Group:
  - For regular stock options and share appreciation rights, we estimated the expected value using the Black-Scholes Option Pricing Model and the following inputs:
    - Expected life – option term plus assumed 3-year vesting period divided by 2
    - Volatility – based on daily closing prices for the 3-year period preceding the grant
    - Dividend yield – average dividend yield of the 12-month period preceding the grant
    - Risk-free rate – average yield of a Government of Canada bond with a term corresponding to the expected life
  - For restricted share units (“RSUs”) and performance share units (“PSUs”), we estimated the expected value as the face value of the awards
  - For performance-contingent awards that are structured as a “fixed amount” or “defined maximum”, we applied a discount ranging from 20% to 50% depending on the performance measure, as per Mercer’s standard methodology

## Methodology

### Pension and Savings

- Mercer estimated the values of employer-paid retirement and savings plans accrued in a year based on a percentage of an employee's base salary in the calendar year
  - The total employer-paid value reflects all retirement savings vehicles, including any defined benefit registered pension plan ("DB"), defined contribution registered pension plan ("DC") and savings plans provided by ATCO Utilities and the Peer Group
  - Pension and savings benefits that are fully employee paid are not included in this study
- We estimated the values based on a standard workforce with a weighted average age of 41 and a weighted average service of 12 years
  - We used a standard workforce for benchmarking to reflect the value of benefits available in the general marketplace rather than focusing on an individual company
  - In many cases, DC plans have the same value regardless of age or service but DB plans almost always increase in value in direct relation to age
- We compared ATCO Utilities' closed DB and open DC pension plans plus employee share purchase plan to the open plans among the Peer Group because it provides a point of comparison for ATCO Utilities' arrangements for existing employees who are in either the closed DB plan or the open DC plan
  - While there are closed DB plans at some of the companies in the Peer Group, they have not been included in the analysis as these plans would not be available to ATCO Utilities employees should they choose to join one of the Peer Group companies

## Methodology

### Pension and Savings (cont'd)

- To calculate values for total remuneration, we used the percentage of earnings calculated for the typical workforce applicable to each specific retirement and savings arrangement and applied it to the specific salary of each position at ATCO Utilities and among the Peer Group
- We assumed STI to be 10% of salary for the purpose of determining the value of those plans that include STI in pensionable earnings – 10% is a reasonable estimate based on target STI levels in the Peer Group

## Methodology

### Pension and Savings (cont'd)

- The following standard methodology was used to estimate the relative value of DB, DC, and savings plans within ATCO Utilities and the Peer Group:
  - **Defined Benefit Registered Pension Plans**
    - Where a DB plan requires employee contributions, we assumed that employees contribute to get the maximum employer provided benefit; however, the estimated value shown is net of the employee contribution requirement
    - Where the employer offers a choice between a DB and a DC plan, we assumed that employees elect the more generous of the DB and DC benefits
    - The value of the benefit reflects the normal form of payment applicable to each plan
    - Bridge benefits payable upon early retirement were included
    - Since the value of retirement benefits vary based on when an employee exits the plan, we have included a termination and retirement scale to reflect this variation in value
  - **Defined Contribution Registered Pension Plans / Savings Plans**
    - Where the employer contributes to the DC or Savings plan on a matching basis, we assumed that employees will contribute such that they maximize the value of the employer-paid benefit
    - Where the employer contributions to the DC or Savings plans are a function of age and service, the value assessment is based on the employee profiles over the employee's remaining career

## Methodology

### Pension and Savings (cont'd)

- The table below presents the pension and savings assumptions used in the analysis:

| Economic Assumptions                                               |                                                                    |
|--------------------------------------------------------------------|--------------------------------------------------------------------|
| Discount rate                                                      | 5.50% per annum                                                    |
| Salary increase                                                    | 4.00% per annum                                                    |
| YMPE increase                                                      | 2.25% per annum                                                    |
| Inflation rate                                                     | 2.00% per annum                                                    |
| Interest credited to employee DB contributions                     | 5.50% per annum                                                    |
| Demographic Assumptions                                            |                                                                    |
| Probability member will terminate employment before retirement age | Termination scale based on age; rate declines with increase in age |
| Probability member will retire at retirement ages                  | 25% at age 55; 50% at age 60; 100% at age 65                       |
| Percentage married                                                 | 80%                                                                |
| Percentage male                                                    | 50%                                                                |
| Post-retirement mortality                                          | UP-1994 full generational mortality                                |

The above assumptions are appropriate for purpose of the relative value analysis and would provide an accurate reflection of the competitiveness of ATCO Utilities' pension and savings arrangements

## Methodology

### Health and Group Benefits

- Mercer valued the health and group benefit plan for active regular salaried employees of each company based on their cost sharing and plan design reported in the 2012 MTCS Benefits Survey
  - The values, while not based on specific employee demographics or claims utilization patterns, provide an indication of the relative value of the various plans by benefit, and the overall ranking of the benefit plans offered by each company
  - The values calculated are estimates and should not be interpreted as a cost comparison; as an example, if two companies offer the same benefit plan, they would be assigned the exact same relative value, even though their costs would be different, due to several factors such as different claims experience, premium rates, and employee demographics

- The following benefits were included in the relative value study:

|                                       |                               |                                                   |
|---------------------------------------|-------------------------------|---------------------------------------------------|
| Basic Life                            | Basic Dependent Life          | Basic Accidental Death and Dismemberment ("AD&D") |
| Business Travel Accident Insurance    | Short Term Disability ("STD") | Long Term Disability ("LTD")                      |
| Employee Assistance Plan ("EAP")      | Health                        | Dental                                            |
| Health Care Spending Account ("HCSA") |                               |                                                   |

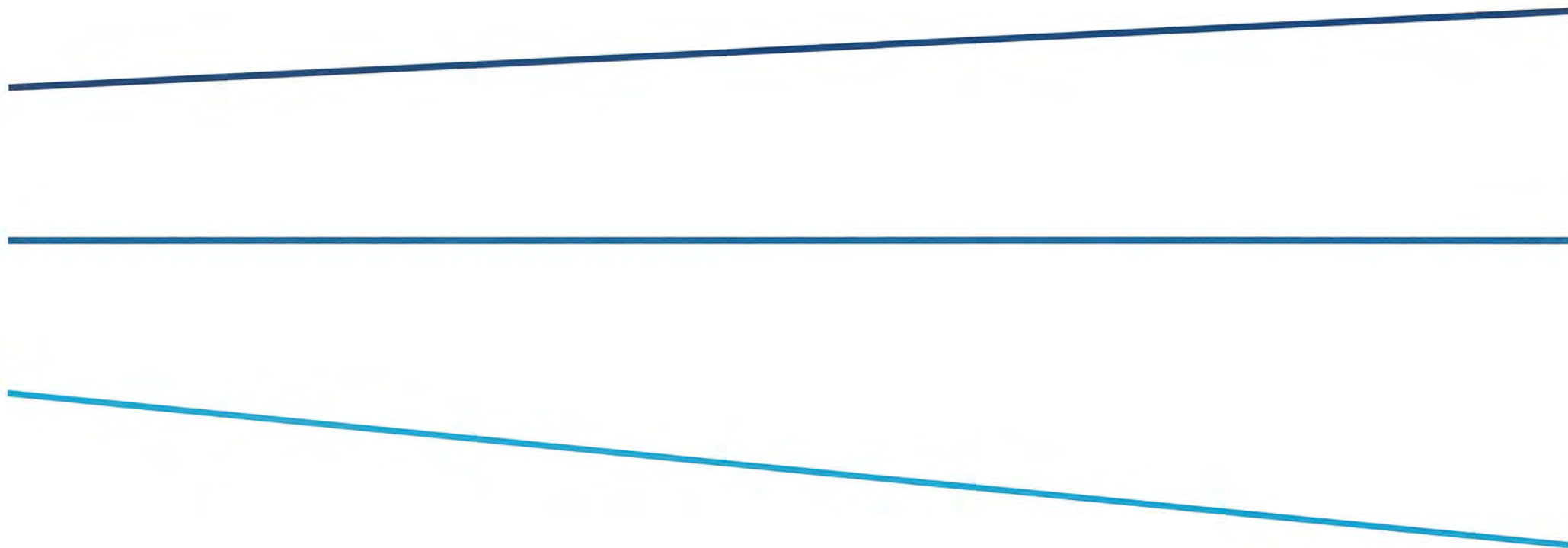
- Retiree benefits were not included in the study because information collected in the MTCS was not sufficient for us to properly value such benefits – this would not materially impact the results of the total remuneration analysis

## Methodology

### Health and Group Benefits (cont'd)

- Benefits that are entirely optional and fully employee paid were not included in this study
- The benefit values are based on typical manual rates for a standard salaried employee group for the various plan designs and ignore the impact of any differences in employee demographics or plan utilization
  - For flex plans where there is choice, (i.e., health, dental and LTD), we valued all options (excluding opt-out and very low value options) and applied standardized participation and anti-selection discounts/loads
  - The following family status assumptions were used to value health and dental options – single / family split – 20% / 80%
- Where flex credits are a function of the options selected, we allocated these credits to the specific benefit
  - For example, flex credits allocated to the health or dental plan were valued as part of those plans; flex credits were first used to pay for the employee contribution to health and dental benefits, and the HCSA values reflect the remaining credits and assume no forfeitures
- Where flex credits can be allocated to either a HCSA or Savings Plan only, we assumed these credits to be part of the Savings Plan and did not value these credits under health and group benefits

## TOTAL REMUNERATION ANALYSIS



## Total Remuneration Analysis

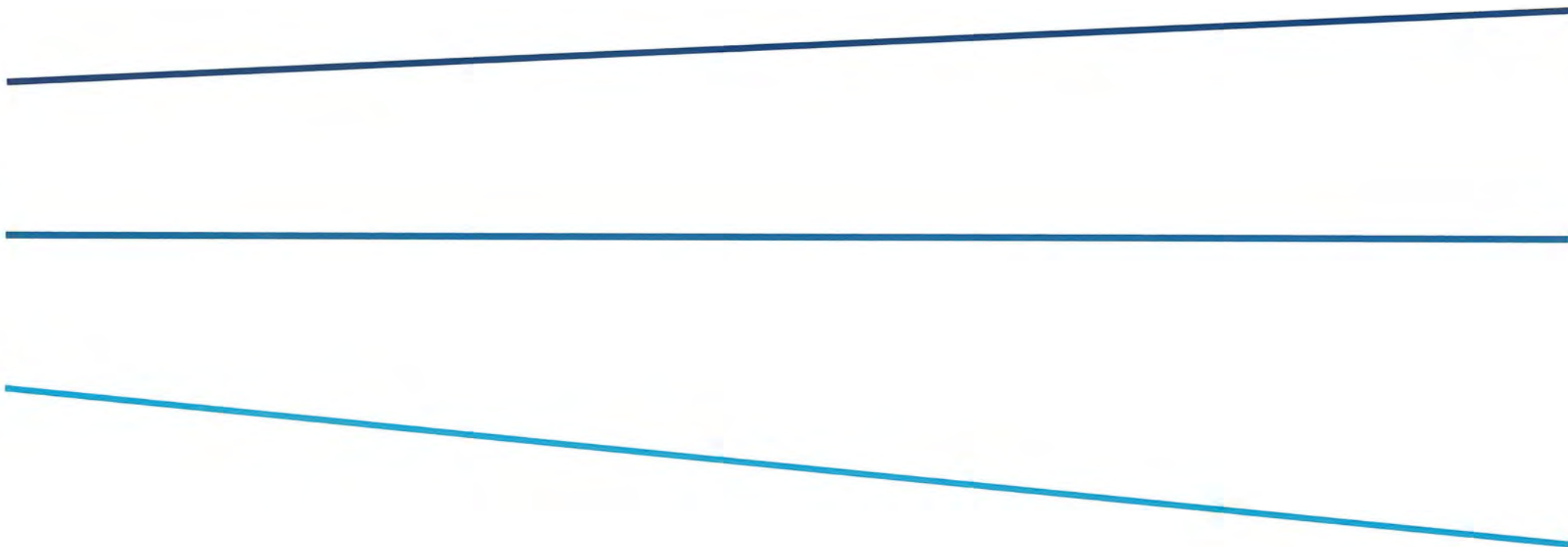
### Summary of Findings

- The table below shows the percent differential from median between ATCO Utilities and its Peer Group for the 3,337 ATCO Utilities positions:

| Compensation Element             | % Differential from P50 |
|----------------------------------|-------------------------|
| Base Salary                      | +2%                     |
| Target Total Cash Compensation   | -2%                     |
| Target Total Direct Compensation | -4%                     |
| Target Total Remuneration        | -3%                     |

These results show that ATCO Utilities are generally market competitive but fall 3% short of P50 target pay positioning

## APPENDIX A PEER GROUP



## Appendix A

### Peer Group [N = 43]

- Access Pipeline Inc.
- Alberta Electric System Operator
- Alliance Pipeline
- AltaGas Ltd.
- AltaGas Utilities Inc.
- AltaLink Management Ltd.
- BC Hydro Power & Authority
- BP Canada Energy Group ULC
- Canadian Oil Sands Limited
- Capital Power Corporation
- Chevron Canada Resources
- ConocoPhillips Canada
- Devon Canada Corporation
- Enbridge Inc.
- EnCana Corporation
- ENMAX Corporation
- EPCOR Utilities Inc.
- Flint Energy Services Ltd.
- FortisAlberta Inc.
- Gibson Energy ULC
- Harvest Operations Corp.
- Inter Pipeline Fund - Pipeline Management Inc.
- Keyera Corp.
- Kiewit Energy Canada
- Kinder Morgan Canada Inc.
- Nexen Inc.
- Niska Gas Storage Partners LLC
- O'Rourke Engineering Ltd.
- Pembina Pipeline Corporation
- Penn West Exploration
- Plains Midstream Canada
- Propak Systems Ltd.
- SaskEnergy Incorporated
- SaskPower
- SemCAMS
- Spectra Energy Transmission
- Stantec Consulting Ltd.
- Talisman Energy Inc.
- TransAlta Corporation
- TransCanada Corporation
- Veresen Inc.
- Williams Energy (Canada), Inc.
- WorleyParsons Canada Services Ltd.



Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #4**

November 4, 2013  
Transcript Volume 1

---

Undertaking: By Ms. Kellgren to Mr. Redden

Page 85, Lines 17 - 20

Provide the details that make up the lease arrangements with respect to the LNG facility equipment as compared to any assessment of buying the assets.

**Yukon Electrical Response:**

Please refer to Attachment 1 for the annual revenue requirement impact of the lease for the storage and vapourization equipment and associated services as outlined in Yukon Electrical's response to UCG-YECL-21(g), Attachment 15 as compared to the revenue requirement impact of buying the equipment and purchasing the associated services separately.

In light of the delay in project timing outlined in Yukon Electrical's Updates Filing (ex. B-11), please also refer to Attachment 2 for a calculation showing the updated annual revenue requirement of the lease agreement in comparison to the purchase option as a result of the delay in the project start until September 2014 due to the permitting and licensing process taking longer than anticipated.

## Cost Comparison

Analysis is based on 20 years of costs

| Reference       | Watson Lake Bi-Fuel Project - Lease | Watson Lake Bi-Fuel Project - Purchase |
|-----------------|-------------------------------------|----------------------------------------|
| Base Year       | 2012                                | 2012                                   |
| In-Service Year | 2013                                | 2013                                   |

| Revenue Requirement<br>(from base year) | Watson Lake Bi-Fuel Project - Lease | Watson Lake Bi-Fuel Project - Purchase |
|-----------------------------------------|-------------------------------------|----------------------------------------|
| CPV @ Year 5                            | \$696,912                           | \$762,610                              |
| CPV @ Year 10                           | \$1,480,133                         | \$1,432,088                            |
| CPV @ Year 15                           | \$2,041,198                         | \$1,801,781                            |
| CPV @ Year 20                           | \$2,443,120                         | \$2,000,211                            |
| CPV @ Year 25                           | -                                   | -                                      |
| CPV @ Year 40                           | -                                   | -                                      |

## Capital Cost Summary

| (2012 Dollars) | Watson Lake Bi-Fuel Project - Lease | Watson Lake Bi-Fuel Project - Purchase |
|----------------|-------------------------------------|----------------------------------------|
| Transmission   | \$0                                 | \$1,800,000                            |
| Distribution   | \$0                                 | \$0                                    |
| Communication  | \$0                                 | \$0                                    |
| Other          | \$0                                 | \$0                                    |
| <b>Total</b>   | <b>\$0</b>                          | <b>\$1,800,000</b>                     |

*(Includes ES&G, escalation, & AFUDC)*

|               |            |                    |
|---------------|------------|--------------------|
| Transmission  | \$0        | \$1,800,000        |
| Distribution  | \$0        | \$0                |
| Communication | \$0        | \$0                |
| Other         | \$0        | \$0                |
| <b>Total</b>  | <b>\$0</b> | <b>\$1,800,000</b> |

Economic Assumptions

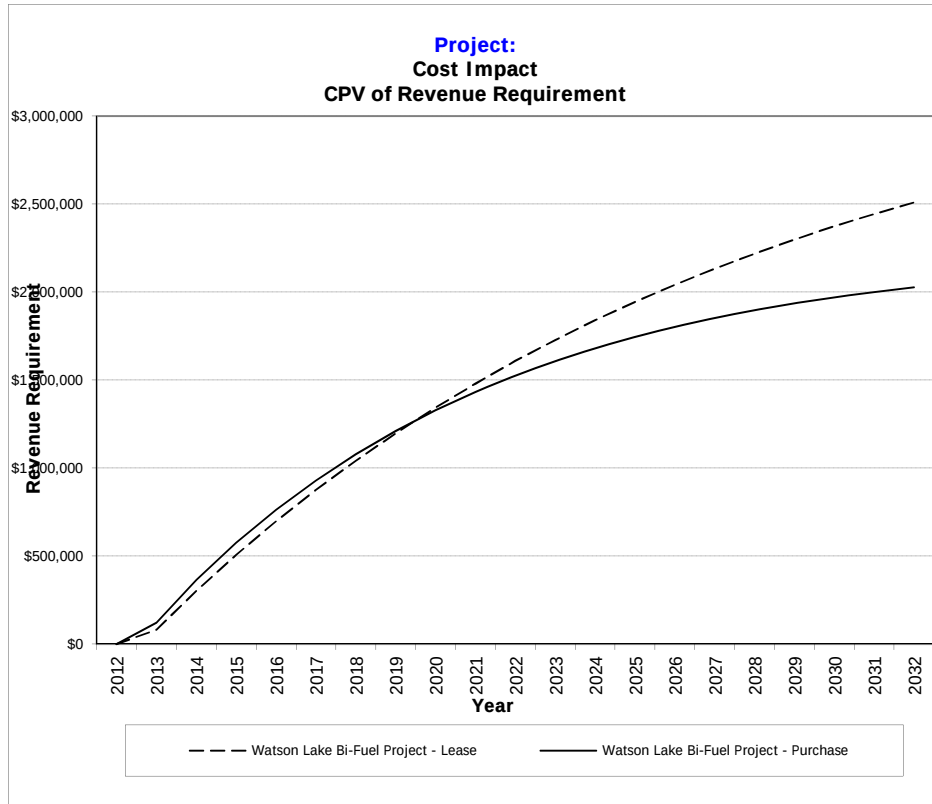
- Analysis is based on 20 years
- Pool Price as per Chase Energy Report dated May 2, 2013
- 2013 Before Tax Discount Rates of 9.04% (Distribution) and 9.04% (Transmission)
- Distribution Losses are included

2013 Incremental Capital Structure and Cost

|               | Generation |       |              |              |
|---------------|------------|-------|--------------|--------------|
|               | Return     | Ratio | B.T. Cost    | A.T. Cost    |
| Debt          | 5.80%      | 56%   | 3.25%        | 3.25%        |
| Preferred     | 0.00%      | 0%    | 0.00%        | 0.00%        |
| Common        | 9.21%      | 44%   | 5.79%        | 4.05%        |
| <b>TOTALS</b> |            |       | <b>9.04%</b> | <b>7.30%</b> |

Cost Comparison

Analysis is based on 20 years of costs  
Revenue Requirement Summary



| Year | Calendar Year | Watson Lake             |                            |
|------|---------------|-------------------------|----------------------------|
|      |               | Bi-Fuel Project - Lease | Bi-Fuel Project - Purchase |
| 0    | 2012          | \$0                     | \$0                        |
| 1    | 2013          | \$88,000                | \$132,268                  |
| 2    | 2014          | \$264,000               | \$290,468                  |
| 3    | 2015          | \$264,000               | \$272,335                  |
| 4    | 2016          | \$269,280               | \$264,202                  |
| 5    | 2017          | \$274,666               | \$256,868                  |
| 6    | 2018          | \$280,159               | \$249,551                  |
| 7    | 2019          | \$285,762               | \$242,250                  |
| 8    | 2020          | \$291,477               | \$234,965                  |
| 9    | 2021          | \$297,307               | \$227,698                  |
| 10   | 2022          | \$303,253               | \$220,447                  |
| 11   | 2023          | \$309,318               | \$213,215                  |
| 12   | 2024          | \$315,504               | \$206,001                  |
| 13   | 2025          | \$321,815               | \$198,804                  |
| 14   | 2026          | \$328,251               | \$191,627                  |
| 15   | 2027          | \$334,816               | \$184,469                  |
| 16   | 2028          | \$341,512               | \$177,330                  |
| 17   | 2029          | \$348,342               | \$170,211                  |
| 18   | 2030          | \$355,309               | \$163,113                  |
| 19   | 2031          | \$362,415               | \$156,035                  |
| 20   | 2032          | \$369,664               | \$148,978                  |

Yukon Electrical Project Economic Evaluation

Input data in blue

|                                     |
|-------------------------------------|
| Watson Lake Bi-Fuel Project - Lease |
| Lease Option                        |
| Cost Impact                         |

Assumptions:

1 Financial Parameters

| Distribution Capital Structure and Cost |        |         |           |           | Generation Capital Structure and Cost |        |         |           |           | Incremental Depreciation Rates: |  | Service Life | Rate  |
|-----------------------------------------|--------|---------|-----------|-----------|---------------------------------------|--------|---------|-----------|-----------|---------------------------------|--|--------------|-------|
|                                         | Return | Ratio   | B.T. Cost | A.T. Cost |                                       | Return | Ratio   | B.T. Cost | A.T. Cost | Generation                      |  | 20           | 5.00% |
| Debt                                    | 5.80%  | 56.00%  | 3.25%     | 3.25%     | Debt                                  | 5.80%  | 56.00%  | 3.25%     | 3.25%     | Distribution                    |  | 20           | 5.00% |
| Preferred                               | 0.00%  | 0.00%   | 0.00%     | 0.00%     | Preferred                             | 0.00%  | 0.00%   | 0.00%     | 0.00%     | Communication                   |  | 20           | 5.00% |
| Common                                  | 9.21%  | 44.00%  | 5.79%     | 4.05%     | Common                                | 9.21%  | 44.00%  | 5.79%     | 4.05%     | "D" Other                       |  | 20           | 5.00% |
| TOTALS                                  |        | 100.00% | 9.04%     | 7.30%     | TOTALS                                |        | 100.00% | 9.04%     | 7.30%     |                                 |  |              |       |

| Income Taxes and Escalation        |  | 2011   | 2012   | 2013   | 2014   | >=2015 |
|------------------------------------|--|--------|--------|--------|--------|--------|
| Federal and Territorial Income Tax |  | 31.50% | 30.00% | 30.00% | 30.00% | 30.00% |
| Escalation                         |  |        |        |        |        |        |
| Capital                            |  |        | 2.00%  | 2.00%  | 2.00%  | 2.00%  |
| O & M                              |  |        | 2.00%  | 2.00%  | 2.00%  | 2.00%  |

|                   |        |
|-------------------|--------|
| 2013 Income Taxes | 30.00% |
|-------------------|--------|

2 All analysis are based on 20 years of costs.

3 Embedded distribution capital and O&M costs are not considered in analysis.

|                  |      |
|------------------|------|
| 4 Base Year (\$) | 2012 |
| In-Service Year  | 2013 |

5 Incremental Capital Spending:

|                                                                              | Annual Escalation Factor     | 1.000  | 1.020  | 1.020  | 1.020  | 1.020  | 1.020  | 1.020  | 1.020  | 1.020 | 1.020  | 1.020   | 1.020   | 1.020   | 1.020   | 1.020   | 1.020   |
|------------------------------------------------------------------------------|------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|---------|---------|---------|---------|---------|---------|
|                                                                              | Compounded Escalation Factor | 1.000  | 1.020  | 1.040  | 1.061  | 1.082  | 1.104  | 1.126  | 1.149  | 1.172 | 1.195  | 1.219   | 1.243   | 1.268   | 1.294   | 1.319   | 1.346   |
|                                                                              | ISD Index                    | 0      | 1      | 0      | 0      | 0      | 0      | 0      | 0      | 0     | 0      | 0       | 0       | 0       | 0       | 0       | 0       |
|                                                                              | 2012                         | 2013   | 2014   | 2015   | 2016   | 2017   | 2018   | 2019   | 2020   |       | 2021   | 2022    | 2023    | 2024    | 2025    | 2026    | 2027    |
|                                                                              | Year 0                       | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 |       | Year 9 | Year 10 | Year 11 | Year 12 | Year 13 | Year 14 | Year 15 |
| Enter capital expenditures in 2012 dollars<br>(include ES&G and Contingency) |                              |        |        |        |        |        |        |        |        |       |        |         |         |         |         |         |         |
| Generation                                                                   | \$0                          | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    |       | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| (inflated)                                                                   | \$0                          | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    |       | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| Distribution                                                                 | \$0                          | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    |       | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| (inflated)                                                                   | \$0                          | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    |       | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| Distribution Communications                                                  | \$0                          | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    |       | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| (inflated)                                                                   | \$0                          | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    |       | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| Transmission Communications                                                  | \$0                          | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    |       | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| (inflated)                                                                   | \$0                          | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    |       | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| Distribution Other                                                           | \$0                          | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    |       | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| (inflated)                                                                   | \$0                          | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    |       | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| Total Capital Cost (2012\$)                                                  | \$0                          | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    |       | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| Total Capital Cost (Nom\$)                                                   | \$0                          | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    |       | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |

Source:

7    Incremental Operation and Maintenance Costs:

|                              |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Annual Escalation Factor     | 1.000 | 1.000 | 1.000 | 1.000 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 |
| Compounded Escalation Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.020 | 1.040 | 1.061 | 1.082 | 1.104 | 1.126 | 1.149 | 1.172 | 1.195 | 1.219 | 1.243 | 1.268 |       |
| ISD Index                    | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |       |

**O&M Calculated based on Percentage of Rate Base (Nom\$)**                      **No**                      (yes or no)                      **Manually enter O&M in next section**

*If non-linear O&M is required, manually input the data into the Manual Input table.*

O & M based on a percentage of    capital cost at ISD, escalated thereafter.

| O&M Rates                             | 2012<br>Year 0 | 2013<br>Year 1 | 2014<br>Year 2 | 2015<br>Year 3 | 2016<br>Year 4 | 2017<br>Year 5 | 2018<br>Year 6 | 2019<br>Year 7 | 2020<br>Year 8 | 2021<br>Year 9 | 2022<br>Year 10 | 2023<br>Year 11 | 2024<br>Year 12 | 2025<br>Year 13 | 2026<br>Year 14 | 2027<br>Year 15 |
|---------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Generation Rate =                     | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |
| Distribution Rate =                   | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |
| Distribution Communications Rate =    | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |
| Transmission Communications    Rate = | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |
| Distribution Other Rate =             | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |
| Total                                 | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |

**O&M Manual Input (2012\$)**

|                                    | Year 0 | Year 1   | Year 2    | Year 3    | Year 4    | Year 5    | Year 6    | Year 7    | Year 8    | Year 9    | Year 10   | Year 11   | Year 12   | Year 13   | Year 14   | Year 15   |
|------------------------------------|--------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Generation O&M                     | \$0    | \$88,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 |
| Distribution O&M                   | \$0    | \$0      | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       |
| Distribution Communications O&M    | \$0    | \$0      | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       |
| Transmission Communications    O&M | \$0    | \$0      | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       |
| Distribution Other O&M             | \$0    | \$0      | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       |
|                                    | \$0    | \$88,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 |

**Escalated Manually Input O&M (Nom\$)**

|                                    | Year 0 | Year 1   | Year 2    | Year 3    | Year 4    | Year 5    | Year 6    | Year 7    | Year 8    | Year 9    | Year 10   | Year 11   | Year 12   | Year 13   | Year 14   | Year 15   |
|------------------------------------|--------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Generation O&M                     | \$0    | \$88,000 | \$264,000 | \$264,000 | \$269,280 | \$274,666 | \$280,159 | \$285,762 | \$291,477 | \$297,307 | \$303,253 | \$309,318 | \$315,504 | \$321,815 | \$328,251 | \$334,816 |
| Distribution O&M                   | \$0    | \$0      | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       |
| Distribution Communications O&M    | \$0    | \$0      | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       |
| Transmission Communications    O&M | \$0    | \$0      | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       |
| Distribution Other O&M             | \$0    | \$0      | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       |
|                                    | \$0    | \$88,000 | \$264,000 | \$264,000 | \$269,280 | \$274,666 | \$280,159 | \$285,762 | \$291,477 | \$297,307 | \$303,253 | \$309,318 | \$315,504 | \$321,815 | \$328,251 | \$334,816 |

Yukon Electrical Project Economic Evaluation

Input data in blue

|                                        |
|----------------------------------------|
| Watson Lake Bi-Fuel Project - Purchase |
| Purchase                               |
| Cost Impact                            |

Assumptions:

1 Financial Parameters

| Distribution Capital Structure and Cost |        |        |           |           | Generation Capital Structure and Cost |        |        |           |           | Incremental Depreciation R |              |       |
|-----------------------------------------|--------|--------|-----------|-----------|---------------------------------------|--------|--------|-----------|-----------|----------------------------|--------------|-------|
|                                         | Return | Ratio  | B.T. Cost | A.T. Cost |                                       | Return | Ratio  | B.T. Cost | A.T. Cost | Generation                 | Service Life | Rate  |
| Debt                                    | 5.80%  | 56.00% | 3.25%     | 3.25%     | Debt                                  | 5.80%  | 56.00% | 3.25%     | 3.25%     | Distribution               | 20           | 5.00% |
| Preferred                               | 0.00%  | 0.00%  | 0.00%     | 0.00%     | Preferred                             | 0.00%  | 0.00%  | 0.00%     | 0.00%     | Communication              | 20           | 5.00% |
| Common                                  | 9.21%  | 44.00% | 5.79%     | 4.05%     | Common                                | 9.21%  | 44.00% | 5.79%     | 4.05%     | "D" Other                  | 20           | 5.00% |
| TOTALS                                  |        |        | 9.04%     | 7.30%     | TOTALS                                |        |        | 9.04%     | 7.30%     |                            |              |       |
| 0                                       |        |        |           |           | 0                                     |        |        |           |           | 0                          |              |       |

| Income Taxes and Escalation       | 2011   | 2012   | 2013   | 2014   | >=2015 |
|-----------------------------------|--------|--------|--------|--------|--------|
| Federal and Provincial Income Tax | 31.50% | 30.00% | 30.00% | 30.00% | 30.00% |
| Escalation                        |        |        |        |        |        |
| Capital                           |        | 2.00%  | 2.00%  | 2.00%  | 2.00%  |
| O & M                             |        | 2.00%  | 2.00%  | 2.00%  | 2.00%  |

|   |                   |        |
|---|-------------------|--------|
| 0 | 2013 Income Taxes | 30.00% |
|---|-------------------|--------|

2 All analysis are based on 20 years of costs.

3 Embedded distribution capital and O&M costs are not considered in analysis.

4 Base Year (\$) 2012  
In-Service Date 2013 **WARNING: Capital expenditures are occurring in/after ISD year**

5 Incremental Capital Spending:

|                                                                           |           |             |        |        |        |        |        |        |        |        |         |         |         |         |         |         |
|---------------------------------------------------------------------------|-----------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| Annual Escalation Factor                                                  | 1.000     | 1.000       | 1.000  | 1.000  | 1.000  | 1.020  | 1.020  | 1.020  | 1.020  | 1.020  | 1.020   | 1.020   | 1.020   | 1.020   | 1.020   | 1.020   |
| Compounded Escalation Factor                                              | 1.000     | 1.000       | 1.000  | 1.000  | 1.000  | 1.020  | 1.040  | 1.061  | 1.082  | 1.104  | 1.126   | 1.149   | 1.172   | 1.195   | 1.219   | 1.243   |
| ISD Index                                                                 | 0         | 1           | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 0       | 0       | 0       |
|                                                                           | 2012      | 2013        | 2014   | 2015   | 2016   | 2017   | 2018   | 2019   | 2020   | 2021   | 2022    | 2023    | 2024    | 2025    | 2026    | 2027    |
|                                                                           | Year 0    | Year 1      | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Year 11 | Year 12 | Year 13 | Year 14 | Year 15 |
| Enter capital expenditures in 2012 dollars (include ES&G and Contingency) |           |             |        |        |        |        |        |        |        |        |         |         |         |         |         |         |
| Generation                                                                | \$200,000 | \$1,600,000 | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| (inflated)                                                                | \$200,000 | \$1,600,000 | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| Distribution                                                              | \$0       | \$0         | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| (inflated)                                                                | \$0       | \$0         | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| Distribution Communications                                               | \$0       | \$0         | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| (inflated)                                                                | \$0       | \$0         | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| Transmission Communications                                               | \$0       | \$0         | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| (inflated)                                                                | \$0       | \$0         | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| Distribution Other                                                        | \$0       | \$0         | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| (inflated)                                                                | \$0       | \$0         | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| Total Capital Cost (2012\$)                                               | \$200,000 | \$1,600,000 | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| Total Capital Cost (Nom\$)                                                | \$200,000 | \$1,600,000 | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |

Source:

7    Incremental Operation and Maintenance Costs:

|                              |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Annual Escalation Factor     | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 |
| Compounded Escalation Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.020 | 1.040 | 1.061 | 1.082 | 1.104 | 1.126 | 1.149 | 1.172 | 1.195 | 1.219 | 1.243 |
| ISD Index                    | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |

**O&M Calculated based on Percentage of Rate Base (Nom\$)**                      **No**                      (yes or no)                      **Manually enter O&M in next section**

*If non-linear O&M is required, manually input the data into the Manual Input table.*

O & M based on a percentage of capital cost at ISD, escalated thereafter.

|                                    | O&M Rates   | 2012<br>Year 0 | 2013<br>Year 1 | 2014<br>Year 2 | 2015<br>Year 3 | 2016<br>Year 4 | 2017<br>Year 5 | 2018<br>Year 6 | 2019<br>Year 7 | 2020<br>Year 8 | 2021<br>Year 9 | 2022<br>Year 10 | 2023<br>Year 11 | 2024<br>Year 12 | 2025<br>Year 13 | 2026<br>Year 14 | 2027<br>Year 15 |
|------------------------------------|-------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Generation Rate =                  | <b>0.0%</b> | <b>\$0</b>     | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |
| Distribution Rate =                | <b>0.0%</b> | <b>\$0</b>     | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |
| Distribution Communications Rate = | <b>0.0%</b> | <b>\$0</b>     | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |
| Transmission Communications Rate = | <b>0.0%</b> | <b>\$0</b>     | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |
| Distribution Other Rate =          | <b>0.0%</b> | <b>\$0</b>     | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |
| Total                              |             | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |

**O&M Manual Input (2012\$)**

|                                 | Year 0     | Year 1          | Year 2          | Year 3          | Year 4          | Year 5          | Year 6          | Year 7          | Year 8          | Year 9          | Year 10         | Year 11         | Year 12         | Year 13         | Year 14         | Year 15         |
|---------------------------------|------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Generation O&M                  | <b>\$0</b> | <b>\$10,000</b> | <b>\$50,000</b> | <b>\$40,000</b> | <b>\$40,000</b> | <b>\$40,000</b> | <b>\$40,000</b> | <b>\$40,000</b> | <b>\$40,000</b> | <b>\$40,000</b> | <b>\$40,000</b> | <b>\$40,000</b> | <b>\$40,000</b> | <b>\$40,000</b> | <b>\$40,000</b> | <b>\$40,000</b> |
| Distribution O&M                | <b>\$0</b> | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      |
| Distribution Communications O&M | <b>\$0</b> | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      |
| Transmission Communications O&M | <b>\$0</b> | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      |
| Distribution Other O&M          | <b>\$0</b> | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      | <b>\$0</b>      |
|                                 | \$0        | \$10,000        | \$50,000        | \$40,000        | \$40,000        | \$40,000        | \$40,000        | \$40,000        | \$40,000        | \$40,000        | \$40,000        | \$40,000        | \$40,000        | \$40,000        | \$40,000        | \$40,000        |

**Escalated Manually Input O&M (Nom\$)**

|                                 | Year 0 | Year 1   | Year 2   | Year 3   | Year 4   | Year 5   | Year 6   | Year 7   | Year 8   | Year 9   | Year 10  | Year 11  | Year 12  | Year 13  | Year 14  | Year 15  |
|---------------------------------|--------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Generation O&M                  | \$0    | \$10,000 | \$50,000 | \$40,000 | \$40,000 | \$40,800 | \$41,616 | \$42,448 | \$43,297 | \$44,163 | \$45,046 | \$45,947 | \$46,866 | \$47,804 | \$48,760 | \$49,735 |
| Distribution O&M                | \$0    | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      |
| Distribution Communications O&M | \$0    | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      |
| Transmission Communications O&M | \$0    | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      |
| Distribution Other O&M          | \$0    | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      |
|                                 | \$0    | \$10,000 | \$50,000 | \$40,000 | \$40,000 | \$40,800 | \$41,616 | \$42,448 | \$43,297 | \$44,163 | \$45,046 | \$45,947 | \$46,866 | \$47,804 | \$48,760 | \$49,735 |

Project:

[Watson Lake Bi-Fuel Project](#)

Response to Undertaking #4

Attachment 2

Page 1 of 6

## Cost Comparison

Analysis is based on 20 years of costs

| Reference       | Watson Lake Bi-Fuel Project - Lease | Watson Lake Bi-Fuel Project - Purchase |
|-----------------|-------------------------------------|----------------------------------------|
| Base Year       | 2012                                | 2012                                   |
| In-Service Year | 2013                                | 2013                                   |

| Revenue Requirement | Watson Lake Bi-Fuel Project - Lease | Watson Lake Bi-Fuel Project - Purchase |
|---------------------|-------------------------------------|----------------------------------------|
| (from base year)    |                                     |                                        |
| CPV @ Year 5        | \$468,171                           | \$762,610                              |
| CPV @ Year 10       | \$1,251,392                         | \$1,432,088                            |
| CPV @ Year 15       | \$1,812,457                         | \$1,801,781                            |
| CPV @ Year 20       | \$2,214,379                         | \$2,000,211                            |
| CPV @ Year 25       | -                                   | -                                      |
| CPV @ Year 40       | -                                   | -                                      |

## Capital Cost Summary

| (2012 Dollars) | Watson Lake Bi-Fuel Project - Lease | Watson Lake Bi-Fuel Project - Purchase |
|----------------|-------------------------------------|----------------------------------------|
| Transmission   | \$0                                 | \$1,800,000                            |
| Distribution   | \$0                                 | \$0                                    |
| Communication  | \$0                                 | \$0                                    |
| Other          | \$0                                 | \$0                                    |
| Total          | \$0                                 | \$1,800,000                            |

(Includes ES&G, escalation, & AFUDC)

|               |     |             |
|---------------|-----|-------------|
| Transmission  | \$0 | \$1,800,000 |
| Distribution  | \$0 | \$0         |
| Communication | \$0 | \$0         |
| Other         | \$0 | \$0         |
| Total         | \$0 | \$1,800,000 |

## Economic Assumptions

- Analysis is based on 20 years
- Pool Price as per Chase Energy Report dated May 2, 2013
- 2013 Before Tax Discount Rates of 9.04% (Distribution) and 9.04% (Transmission)
- Distribution Losses are included

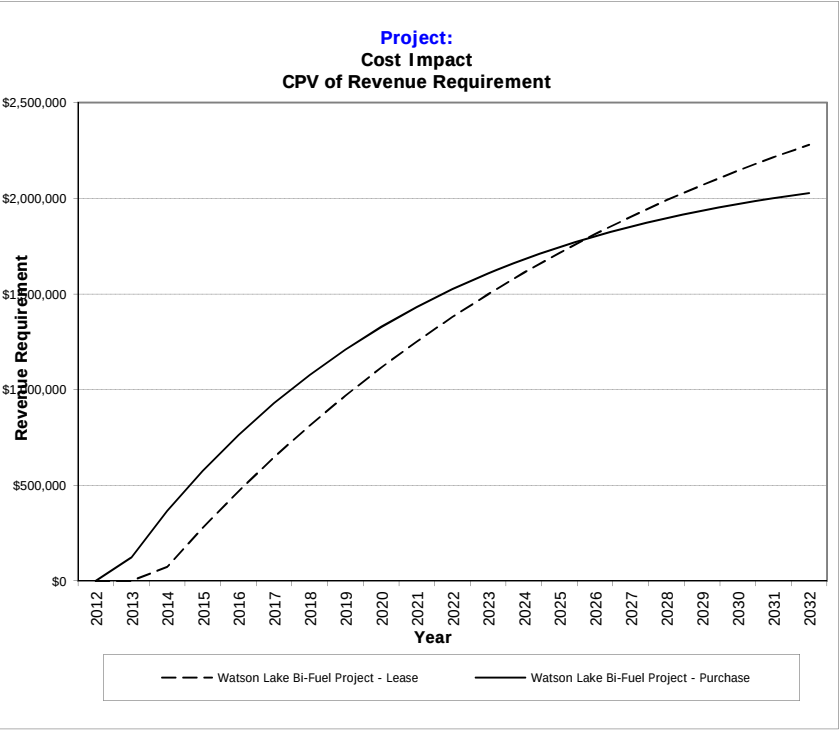
## 2013 Incremental Capital Structure and Cost

|               | Generation |       |              |              |
|---------------|------------|-------|--------------|--------------|
|               | Return     | Ratio | B.T. Cost    | A.T. Cost    |
| Debt          | 5.80%      | 56%   | 3.25%        | 3.25%        |
| Preferred     | 0.00%      | 0%    | 0.00%        | 0.00%        |
| Common        | 9.21%      | 44%   | 5.79%        | 4.05%        |
| <b>TOTALS</b> |            |       | <b>9.04%</b> | <b>7.30%</b> |

Cost Comparison

Analysis is based on 20 years of costs

Revenue Requirement Summary



| Watson Lake |               |                                     |                                        |
|-------------|---------------|-------------------------------------|----------------------------------------|
| Bi-Fuel     |               |                                     |                                        |
| Project -   |               |                                     |                                        |
| Purchase    |               |                                     |                                        |
| Year        | Calendar Year | Watson Lake Bi-Fuel Project - Lease | Watson Lake Bi-Fuel Project - Purchase |
| 0           | 2012          | \$0                                 | \$0                                    |
| 1           | 2013          | \$0                                 | \$132,268                              |
| 2           | 2014          | \$88,000                            | \$290,468                              |
| 3           | 2015          | \$264,000                           | \$272,335                              |
| 4           | 2016          | \$269,280                           | \$264,202                              |
| 5           | 2017          | \$274,666                           | \$256,868                              |
| 6           | 2018          | \$280,159                           | \$249,551                              |
| 7           | 2019          | \$285,762                           | \$242,250                              |
| 8           | 2020          | \$291,477                           | \$234,965                              |
| 9           | 2021          | \$297,307                           | \$227,698                              |
| 10          | 2022          | \$303,253                           | \$220,447                              |
| 11          | 2023          | \$309,318                           | \$213,215                              |
| 12          | 2024          | \$315,504                           | \$206,001                              |
| 13          | 2025          | \$321,815                           | \$198,804                              |
| 14          | 2026          | \$328,251                           | \$191,627                              |
| 15          | 2027          | \$334,816                           | \$184,469                              |
| 16          | 2028          | \$341,512                           | \$177,330                              |
| 17          | 2029          | \$348,342                           | \$170,211                              |
| 18          | 2030          | \$355,309                           | \$163,113                              |
| 19          | 2031          | \$362,415                           | \$156,035                              |
| 20          | 2032          | \$369,664                           | \$148,978                              |

Yukon Electrical Project Economic Evaluation

Input data in blue

|                                     |
|-------------------------------------|
| Watson Lake Bi-Fuel Project - Lease |
| Lease Option                        |
| Cost Impact                         |

Assumptions:

1 Financial Parameters

| Distribution Capital Structure and Cost |        |         |           |           | Generation Capital Structure and Cost |        |         |           |           | Incremental Depreciation Rates: | Service Life | Rate  |
|-----------------------------------------|--------|---------|-----------|-----------|---------------------------------------|--------|---------|-----------|-----------|---------------------------------|--------------|-------|
|                                         | Return | Ratio   | B.T. Cost | A.T. Cost |                                       | Return | Ratio   | B.T. Cost | A.T. Cost | Generation                      | 20           | 5.00% |
| Debt                                    | 5.80%  | 56.00%  | 3.25%     | 3.25%     | Debt                                  | 5.80%  | 56.00%  | 3.25%     | 3.25%     | Distribution                    | 20           | 5.00% |
| Preferred                               | 0.00%  | 0.00%   | 0.00%     | 0.00%     | Preferred                             | 0.00%  | 0.00%   | 0.00%     | 0.00%     | Communication                   | 20           | 5.00% |
| Common                                  | 9.21%  | 44.00%  | 5.79%     | 4.05%     | Common                                | 9.21%  | 44.00%  | 5.79%     | 4.05%     | "D" Other                       | 20           | 5.00% |
| TOTALS                                  |        | 100.00% | 9.04%     | 7.30%     | TOTALS                                |        | 100.00% | 9.04%     | 7.30%     |                                 |              |       |

| Income Taxes and Escalation        |  | 2011   | 2012   | 2013   | 2014   | >=2015 |
|------------------------------------|--|--------|--------|--------|--------|--------|
| Federal and Territorial Income Tax |  | 31.50% | 30.00% | 30.00% | 30.00% | 30.00% |
| Escalation                         |  |        |        |        |        |        |
| Capital                            |  |        | 2.00%  | 2.00%  | 2.00%  | 2.00%  |
| O & M                              |  |        | 2.00%  | 2.00%  | 2.00%  | 2.00%  |

|                   |        |
|-------------------|--------|
| 2013 Income Taxes | 30.00% |
|-------------------|--------|

2 All analysis are based on 20 years of costs.

3 Embedded distribution capital and O&M costs are not considered in analysis.

|                  |      |
|------------------|------|
| 4 Base Year (\$) | 2012 |
| In-Service Year  | 2013 |

5 Incremental Capital Spending:

|                                                                              |        |        |        |        |        |        |        |        |        |        |         |         |         |         |         |         |
|------------------------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| Annual Escalation Factor                                                     | 1.000  | 1.020  | 1.020  | 1.020  | 1.020  | 1.020  | 1.020  | 1.020  | 1.020  | 1.020  | 1.020   | 1.020   | 1.020   | 1.020   | 1.020   | 1.020   |
| Compounded Escalation Factor                                                 | 1.000  | 1.020  | 1.040  | 1.061  | 1.082  | 1.104  | 1.126  | 1.149  | 1.172  | 1.195  | 1.219   | 1.243   | 1.268   | 1.294   | 1.319   | 1.346   |
| ISD Index                                                                    | 0      | 1      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 0       | 0       | 0       |
|                                                                              | 2012   | 2013   | 2014   | 2015   | 2016   | 2017   | 2018   | 2019   | 2020   | 2021   | 2022    | 2023    | 2024    | 2025    | 2026    | 2027    |
| Enter capital expenditures in 2012 dollars<br>(include ES&G and Contingency) | Year 0 | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 | Year 10 | Year 11 | Year 12 | Year 13 | Year 14 | Year 15 |
| Generation                                                                   | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| (inflated)                                                                   | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| Distribution                                                                 | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| (inflated)                                                                   | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| Distribution Communications                                                  | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| (inflated)                                                                   | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| Transmission Communications                                                  | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| (inflated)                                                                   | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| (Telecom / Telecontrol)                                                      | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| Distribution Other                                                           | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| (inflated)                                                                   | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| Total Capital Cost (2012\$)                                                  | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |
| Total Capital Cost (Nom\$)                                                   | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0    | \$0     | \$0     | \$0     | \$0     | \$0     | \$0     |

Source:

7    Incremental Operation and Maintenance Costs:

|                              |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Annual Escalation Factor     | 1.000 | 1.000 | 1.000 | 1.000 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 |
| Compounded Escalation Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.020 | 1.040 | 1.061 | 1.082 | 1.104 | 1.126 | 1.149 | 1.172 | 1.195 | 1.219 | 1.243 | 1.268 |       |
| ISD Index                    | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |       |

O&M Calculated based on Percentage of Rate Base (Nom\$)

No

(yes or no)

Manually enter O&M in next section

If non-linear O&M is required, manually input the data into the Manual Input table.

O & M based on a percentage of capital cost at ISD, escalated thereafter.

| O&M Rates                          | 2012<br>Year 0 | 2013<br>Year 1 | 2014<br>Year 2 | 2015<br>Year 3 | 2016<br>Year 4 | 2017<br>Year 5 | 2018<br>Year 6 | 2019<br>Year 7 | 2020<br>Year 8 | 2021<br>Year 9 | 2022<br>Year 10 | 2023<br>Year 11 | 2024<br>Year 12 | 2025<br>Year 13 | 2026<br>Year 14 | 2027<br>Year 15 |
|------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Generation Rate =                  | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |
| Distribution Rate =                | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |
| Distribution Communications Rate = | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |
| Transmission Communications Rate = | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |
| Distribution Other Rate =          | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |
| Total                              | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |

O&M Manual Input (2012\$)

|                                 | Year 0 | Year 1 | Year 2   | Year 3    | Year 4    | Year 5    | Year 6    | Year 7    | Year 8    | Year 9    | Year 10   | Year 11   | Year 12   | Year 13   | Year 14   | Year 15   |
|---------------------------------|--------|--------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Generation O&M                  | \$0    | \$0    | \$88,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 |
| Distribution O&M                | \$0    | \$0    | \$0      | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       |
| Distribution Communications O&M | \$0    | \$0    | \$0      | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       |
| Transmission Communications O&M | \$0    | \$0    | \$0      | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       |
| Distribution Other O&M          | \$0    | \$0    | \$0      | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       |
|                                 | \$0    | \$0    | \$88,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 | \$264,000 |

Escalated Manually Input O&M (Nom\$)

|                                 | Year 0 | Year 1 | Year 2   | Year 3    | Year 4    | Year 5    | Year 6    | Year 7    | Year 8    | Year 9    | Year 10   | Year 11   | Year 12   | Year 13   | Year 14   | Year 15   |
|---------------------------------|--------|--------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Generation O&M                  | \$0    | \$0    | \$88,000 | \$264,000 | \$269,280 | \$274,666 | \$280,159 | \$285,762 | \$291,477 | \$297,307 | \$303,253 | \$309,318 | \$315,504 | \$321,815 | \$328,251 | \$334,816 |
| Distribution O&M                | \$0    | \$0    | \$0      | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       |
| Distribution Communications O&M | \$0    | \$0    | \$0      | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       |
| Transmission Communications O&M | \$0    | \$0    | \$0      | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       |
| Distribution Other O&M          | \$0    | \$0    | \$0      | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       | \$0       |
|                                 | \$0    | \$0    | \$88,000 | \$264,000 | \$269,280 | \$274,666 | \$280,159 | \$285,762 | \$291,477 | \$297,307 | \$303,253 | \$309,318 | \$315,504 | \$321,815 | \$328,251 | \$334,816 |

Yukon Electrical Project Economic Evaluation

Input data in blue

|                                        |
|----------------------------------------|
| Watson Lake Bi-Fuel Project - Purchase |
| Purchase                               |

Cost Impact

Assumptions:

1 Financial Parameters

Distribution Capital Structure and Cost

|           | Return | Ratio  | B.T. Cost | A.T. Cost |
|-----------|--------|--------|-----------|-----------|
| Debt      | 5.80%  | 56.00% | 3.25%     | 3.25%     |
| Preferred | 0.00%  | 0.00%  | 0.00%     | 0.00%     |
| Common    | 9.21%  | 44.00% | 5.79%     | 4.05%     |
| TOTALS    |        |        | 9.04%     | 7.30%     |

0

Generation Capital Structure and Cost

|           | Return | Ratio  | B.T. Cost | A.T. Cost |
|-----------|--------|--------|-----------|-----------|
| Debt      | 5.80%  | 56.00% | 3.25%     | 3.25%     |
| Preferred | 0.00%  | 0.00%  | 0.00%     | 0.00%     |
| Common    | 9.21%  | 44.00% | 5.79%     | 4.05%     |
| TOTALS    |        |        | 9.04%     | 7.30%     |

0

Incremental Depreciation R Service Life

|               |    |       |
|---------------|----|-------|
| Generation    | 20 | 5.00% |
| Distribution  | 20 | 5.00% |
| Communication | 20 | 5.00% |
| "D" Other     | 20 | 5.00% |

0

Income Taxes and Escalation

Federal and Provincial Income Tax  
Escalation

|        |        |        |        |        |
|--------|--------|--------|--------|--------|
| 2011   | 2012   | 2013   | 2014   | >=2015 |
| 31.50% | 30.00% | 30.00% | 30.00% | 30.00% |
|        | 2.00%  | 2.00%  | 2.00%  | 2.00%  |
|        | 2.00%  | 2.00%  | 2.00%  | 2.00%  |

0

2013 Income Taxes

|        |
|--------|
| 30.00% |
|--------|

2 All analysis are based on 20 years of costs.

3 Embedded distribution capital and O&M costs are not considered in analysis.

4 Base Year (\$) 2012  
In-Service Date 2013WARNING: Capital expenditures are occurring in/after ISD year

5 Incremental Capital Spending:

|                              |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Annual Escalation Factor     | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 |
| Compounded Escalation Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.020 | 1.040 | 1.061 | 1.082 | 1.104 | 1.126 | 1.149 | 1.172 | 1.195 | 1.219 | 1.243 |
| ISD Index                    | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |

Enter capital expenditures in 2012 dollars  
(include ES&G and Contingency)

|                                    |           |             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|------------------------------------|-----------|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Generation                         | \$200,000 | \$1,600,000 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| (inflated)                         | \$200,000 | \$1,600,000 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Distribution                       | \$0       | \$0         | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| (inflated)                         | \$0       | \$0         | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Distribution Communications        | \$0       | \$0         | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| (inflated)                         | \$0       | \$0         | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Transmission Communications        | \$0       | \$0         | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| (inflated) (Telecom / Telecontrol) | \$0       | \$0         | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Distribution Other                 | \$0       | \$0         | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| (inflated)                         | \$0       | \$0         | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Total Capital Cost (2012\$)        | \$200,000 | \$1,600,000 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |
| Total Capital Cost (Nom\$)         | \$200,000 | \$1,600,000 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 | \$0 |

Source:

7    Incremental Operation and Maintenance Costs:

|                              |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Annual Escalation Factor     | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 | 1.020 |
| Compounded Escalation Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.020 | 1.040 | 1.061 | 1.082 | 1.104 | 1.126 | 1.149 | 1.172 | 1.195 | 1.219 | 1.243 |
| ISD Index                    | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |

**O&M Calculated based on Percentage of Rate Base (Nom\$)**

*If non-linear O&M is required, manually input the data into the Manual Input table.*

O & M based on a percentage of capital cost at ISD, escalated thereafter.

| O&M Calculated based on Percentage of Rate Base (Nom\$)                             |           | No             | (yes or no)    | Manually enter O&M in next section |                |                |                |                |                |                |                |                 |                 |                 |                 |                 |                 |
|-------------------------------------------------------------------------------------|-----------|----------------|----------------|------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| If non-linear O&M is required, manually input the data into the Manual Input table. |           |                |                |                                    |                |                |                |                |                |                |                |                 |                 |                 |                 |                 |                 |
| O & M based on a percentage of capital cost at ISD, escalated thereafter.           |           |                |                |                                    |                |                |                |                |                |                |                |                 |                 |                 |                 |                 |                 |
|                                                                                     | O&M Rates | 2012<br>Year 0 | 2013<br>Year 1 | 2014<br>Year 2                     | 2015<br>Year 3 | 2016<br>Year 4 | 2017<br>Year 5 | 2018<br>Year 6 | 2019<br>Year 7 | 2020<br>Year 8 | 2021<br>Year 9 | 2022<br>Year 10 | 2023<br>Year 11 | 2024<br>Year 12 | 2025<br>Year 13 | 2026<br>Year 14 | 2027<br>Year 15 |
| Generation Rate =                                                                   | 0.0%      | \$0            | \$0            | \$0                                | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |
| Distribution Rate =                                                                 | 0.0%      | \$0            | \$0            | \$0                                | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |
| Distribution Communications Rate =                                                  | 0.0%      | \$0            | \$0            | \$0                                | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |
| Transmission Communications Rate =                                                  | 0.0%      | \$0            | \$0            | \$0                                | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |
| Distribution Other Rate =                                                           | 0.0%      | \$0            | \$0            | \$0                                | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |
| Total                                                                               |           | \$0            | \$0            | \$0                                | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0            | \$0             | \$0             | \$0             | \$0             | \$0             | \$0             |

**O&M Manual Input (2012\$)**

|                                 |        |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
|---------------------------------|--------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                                 | Year 0 | Year 1   | Year 2   | Year 3   | Year 4   | Year 5   | Year 6   | Year 7   | Year 8   | Year 9   | Year 10  | Year 11  | Year 12  | Year 13  | Year 14  | Year 15  |
| Generation O&M                  | \$0    | \$10,000 | \$50,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 |
| Distribution O&M                | \$0    | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      |
| Distribution Communications O&M | \$0    | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      |
| Transmission Communications O&M | \$0    | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      |
| Distribution Other O&M          | \$0    | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      |
|                                 | \$0    | \$10,000 | \$50,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 | \$40,000 |

**Escalated Manually Input O&M (Nom\$)**

|                                 |        |          |          |          |          |          |          |          |          |          |          |          |          |          |          |          |
|---------------------------------|--------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
|                                 | Year 0 | Year 1   | Year 2   | Year 3   | Year 4   | Year 5   | Year 6   | Year 7   | Year 8   | Year 9   | Year 10  | Year 11  | Year 12  | Year 13  | Year 14  | Year 15  |
| Generation O&M                  | \$0    | \$10,000 | \$50,000 | \$40,000 | \$40,000 | \$40,800 | \$41,616 | \$42,448 | \$43,297 | \$44,163 | \$45,046 | \$45,947 | \$46,866 | \$47,804 | \$48,760 | \$49,735 |
| Distribution O&M                | \$0    | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      |
| Distribution Communications O&M | \$0    | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      |
| Transmission Communications O&M | \$0    | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      |
| Distribution Other O&M          | \$0    | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      | \$0      |
|                                 | \$0    | \$10,000 | \$50,000 | \$40,000 | \$40,000 | \$40,800 | \$41,616 | \$42,448 | \$43,297 | \$44,163 | \$45,046 | \$45,947 | \$46,866 | \$47,804 | \$48,760 | \$49,735 |

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #6**

November 4, 2013  
Transcript Volume 1

---

Undertaking: By Ms. Kellgren to Mr. Massie

Page 110, Lines 23 – 25 and Page 111, Lines 1-2

To provide a document that is the same format as YUB-YECL-65 but specific to the miscellaneous overhead services costs for various subdivisions and the underground costs.

**Yukon Electrical Response:**

Please refer to Attachment 1 for a schedule of the Miscellaneous O/H Services – Various Services capital expenditures and New Underground Line Extensions capital expenditures in the same format as YUB-YECL-65. Customer contributions are recorded in the year received which may, due to timing differences, differ from the year the capital expenditure occurred.

**Yukon Electrical Company Limited**  
**New Extension Capital Expenditure Projects**

|                                        | <b>2011<br/>Actual</b> | <b>2012<br/>Actual</b> | <b>2013<br/>Forecast</b> | <b>2014<br/>Forecast</b> | <b>2015<br/>Forecast</b> |
|----------------------------------------|------------------------|------------------------|--------------------------|--------------------------|--------------------------|
| Miscellaneous O/H Services - Various * | 3,148,000              | 3,083,000              | 3,625,000                | 2,900,000                | 4,300,000                |
| Customer Contributions                 | (2,902,000)            | (1,655,000)            | (2,900,000)              | (2,320,000)              | (3,360,000)              |
| Yukon Electrical Net Investment        | 246,000                | 1,428,000              | 725,000                  | 580,000                  | 940,000                  |

|                                    | <b>2011<br/>Actual</b> | <b>2012<br/>Actual</b> | <b>2013<br/>Forecast</b> | <b>2014<br/>Forecast</b> | <b>2015<br/>Forecast</b> |
|------------------------------------|------------------------|------------------------|--------------------------|--------------------------|--------------------------|
| New Underground Line Extensions ** | 960,000                | 1,153,000              | 600,000                  | 1,000,000                | 1,000,000                |
| Customer Contributions             | (454,000)              | (793,000)              | (480,000)                | (800,000)                | (800,000)                |
| Yukon Electrical Net Investment    | 506,000                | 360,000                | 120,000                  | 200,000                  | 200,000                  |

\* Includes all small projects included in Miscellaneous O/H Services - Various in Section 9 of the Application as well as those projects in 2011 and 2012 that were originally forecast as part of this category.

\*\* Includes all small projects included in New Underground Line Extensions in Section 9 of the Application as well as those projects in 2011 and 2012 that were originally forecast as part of this category.

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #7**

November 4, 2013  
Transcript Volume 1

---

Undertaking: By Ms. Kellgren to Mr. Massie

Page 112, Lines 4 – 8 and Page 114, Lines 17-21

To highlight the projects on the spreadsheet that are under system improvements that originated as miscellaneous pole replacements for the years 2008 to 2012 as well as 2013 year-to-date.

**Yukon Electrical Response:**

Please refer to Attachment 1 for a listing of the Distribution Improvement projects for 2008 to 2012 with the projects that originated as miscellaneous pole replacements highlighted, as well as a listing of the Distribution Improvement projects for September 2013 to date with the pole replacement projects highlighted.

The Yukon Electrical Company Limited  
Distribution Improvement Projects 2008-2015

| Project Name                                                                                  | Reference                                               | 2008    | 2009    | 2010    | 2011      | 2012    | 2013    | 2014      | 2015    | Total     |
|-----------------------------------------------------------------------------------------------|---------------------------------------------------------|---------|---------|---------|-----------|---------|---------|-----------|---------|-----------|
| Hillcrest Subdivision Conversion                                                              | Bus Case 18, Pg 9-9, 9-15, 9-22, 9-31, 9-39, 9-47, 9-57 | 93,000  | 152,000 | 226,000 | 2,000     | 252,000 | 275,000 | 250,000   |         | 1,250,000 |
| Whistle Bend 34.5kV Substation Distribution Lines                                             | Bus Case 19, Pg 9-21, 9-30                              |         |         | 492,000 | 156,000   |         |         |           |         | 648,000   |
| Whistle Bend Substation                                                                       | Bus Case 20, Pg 9-29, 9-39                              |         |         |         | 1,690,000 | 423,000 |         |           |         | 2,113,000 |
| 5L628 Crestview to Mayo Road Corner Double Circuit                                            | Bus Case 21, Pg 9-39                                    |         |         |         |           | 628,000 |         |           |         | 628,000   |
| McIntyre Subdivision Replacement Stage 1                                                      | Bus Case 22, Pg 9-47, 9-57                              |         |         |         |           |         | 475,000 | 250,000   |         | 725,000   |
| Whitehorse 5L628 and New 34.5kV Build                                                         | Bus Case 23, Pg 9-56                                    |         |         |         |           |         |         | 1,890,000 |         | 1,890,000 |
| Downtown Whitehorse 25kV Conversion                                                           | Bus Case 24, Pg 9-56, 9-62                              |         |         |         |           |         |         | 450,000   | 450,000 | 900,000   |
| Takhini/Marwell 4L315 Upgrade to 266 ACSR                                                     | Bus Case 25, Pg 9-57, Pg 9-63                           |         |         |         |           |         |         | 250,000   | 350,000 | 600,000   |
| 4L311 Upgrade Distribution Lines Between 1st and 6th Avenue Downtown Whitehorse               | Pg 9-8                                                  | 439,000 |         |         |           |         |         |           |         | 439,000   |
| 5L628 Squanga Road Rebuild                                                                    | Pg 9-8                                                  | 290,000 |         |         |           |         |         |           |         | 290,000   |
| 9L - Km 129 to Km 132 South Klondike Highway - Distribution Line Rebuild                      | Pg 9-8                                                  | 189,000 |         |         |           |         |         |           |         | 189,000   |
| Connect Pelly Crossing into Yukon Interconnected System                                       | Pg 9-8                                                  | 435,000 |         |         |           |         |         |           |         | 435,000   |
| Ketza Court Live Front Transformers Replacement                                               | Pg 9-8                                                  | 346,000 |         |         |           |         |         |           |         | 346,000   |
| Right of Way Widening                                                                         | Pg 9-8, 9-15, 9-21, 9-30, 9-39, 9-47, 9-57, 9-63        | 268,000 | 240,000 | 304,000 | 331,000   | 377,000 | 374,000 | 389,000   | 405,000 | 2,688,000 |
| Beaver Creek Planned Pole Replacements                                                        | Pg 9-9                                                  | 25,000  |         |         |           |         |         |           |         | 25,000    |
| Cadet Camp Three Phase Service System Improvement                                             | Pg 9-9                                                  | 83,000  |         |         |           |         |         |           |         | 83,000    |
| Campbell Highway Relocation                                                                   | Pg 9-9                                                  | 43,000  |         |         |           |         |         |           |         | 43,000    |
| Carmacks Planned Pole Replacements                                                            | Pg 9-9                                                  | 28,000  |         |         |           |         |         |           |         | 28,000    |
| Carmacks Upper Bench Rerouting                                                                | Pg 9-9                                                  | 31,000  |         |         |           |         |         |           |         | 31,000    |
| Little Atlin Lake Area 3 Phase Pole Upgrades                                                  | Pg 9-9                                                  | 60,000  |         |         |           |         |         |           |         | 60,000    |
| McIntyre Subdivision 34.5kV Upgrade                                                           | Pg 9-9                                                  | 47,000  |         |         |           |         |         |           |         | 47,000    |
| Morley Bay Line Upgrade                                                                       | Pg 9-9                                                  | 46,000  |         |         |           |         |         |           |         | 46,000    |
| North Star Clearance Upgrade                                                                  | Pg 9-9                                                  | 24,000  |         |         |           |         |         |           |         | 24,000    |
| Paddlewheel Line Relocation                                                                   | Pg 9-9                                                  | 30,000  |         |         |           |         |         |           |         | 30,000    |
| Porter Creek Regulator Upgrade                                                                | Pg 9-9                                                  | 26,000  |         |         |           |         |         |           |         | 26,000    |
| System Upgrades Lot 1378/79 Range Road                                                        | Pg 9-9                                                  | 93,000  |         |         |           |         |         |           |         | 93,000    |
| Tagish Bridge Conduit Replacement                                                             | Pg 9-9                                                  | 60,000  |         |         |           |         |         |           |         | 60,000    |
| 9L Reliability Upgrade Squanga Lake Area                                                      | Pg 9-9, 9-15                                            | 77,000  | 51,000  |         |           |         |         |           |         | 128,000   |
| Birch Alley Upgrade                                                                           | Pg 9-9, 9-15                                            | 45,000  | 32,000  |         |           |         |         |           |         | 77,000    |
| Echo Lake Road Upgrade                                                                        | Pg 9-9, 9-15                                            | 52,000  | 75,000  |         |           |         |         |           |         | 127,000   |
| Miscellaneous Pole Replacements                                                               | Pg 9-9, 9-16, 9-23, 9-31, 9-40, 9-48, 9-57, 9-64        | 92,000  | 22,000  | 26,000  | 70,000    | 60,000  | 260,000 | 260,000   | 260,000 | 1,050,000 |
| Test and Treat Pole Program                                                                   | Pg 9-9, 9-22, 9-40, 9-49, 9-58, 9-64                    | 72,000  |         | 57,000  |           | 153,000 | 110,000 | 120,000   | 130,000 | 642,000   |
| Convert Spirit Lake to 14.4kV                                                                 | Pg 9-10                                                 | 22,000  |         |         |           |         |         |           |         | 22,000    |
| Marwell Subdivision Improvements                                                              | Pg 9-10                                                 | 21,000  |         |         |           |         |         |           |         | 21,000    |
| McIntyre Creek Pumphouse Upgrade                                                              | Pg 9-10                                                 | 23,000  |         |         |           |         |         |           |         | 23,000    |
| Arkel Subdivision Upgrade                                                                     | Pg 9-10, 9-15                                           | 21,000  | 197,000 |         |           |         |         |           |         | 218,000   |
| McDonald Road to Centennial Road Upgrade                                                      | Pg 9-10, 9-15                                           | 23,000  | 24,000  |         |           |         |         |           |         | 47,000    |
| Liard River Crossing                                                                          | Pg 9-15                                                 |         | 29,000  |         |           |         |         |           |         | 29,000    |
| Robinson Substation Upgrade                                                                   | Pg 9-15                                                 |         | 39,000  |         |           |         |         |           |         | 39,000    |
| Whitehorse Airport Conversion                                                                 | Pg 9-15                                                 |         | 29,000  |         |           |         |         |           |         | 29,000    |
| Wickstrom Road Line Relocation for Whitehorse General Hospital Residence and Medical Building | Pg 9-15                                                 |         | 83,000  |         |           |         |         |           |         | 83,000    |
| System Upgrade on Hotsprings River Road                                                       | Pg 9-16                                                 |         | 22,000  |         |           |         |         |           |         | 22,000    |
| Watson Lake Hotel Upgrade                                                                     | Pg 9-16                                                 |         | 20,000  |         |           |         |         |           |         | 20,000    |
| Teslin and Klondike Road Upgrade                                                              | Pg 9-16, 9-23                                           |         | 20,000  | 30,000  |           |         |         |           |         | 50,000    |
| Destruction Bay Distribution Breaker Addition                                                 | Pg 9-22                                                 |         |         | 54,000  |           |         |         |           |         | 54,000    |
| Destruction Bay Main Feeder                                                                   | Pg 9-22                                                 |         |         | 42,000  |           |         |         |           |         | 42,000    |
| Haines Junction Distribution Breaker Addition                                                 | Pg 9-22                                                 |         |         | 51,000  |           |         |         |           |         | 51,000    |
| Main Steel Alley 4th - 7th Avenue Upgrade                                                     | Pg 9-22                                                 |         |         | 98,000  |           |         |         |           |         | 98,000    |
| Main Street Alley Upgrade                                                                     | Pg 9-22                                                 |         |         | 44,000  |           |         |         |           |         | 44,000    |
| Mount Sima Subdivision                                                                        | Pg 9-22                                                 |         |         | 42,000  |           |         |         |           |         | 42,000    |
| North Klondike Grounding Improvements                                                         | Pg 9-22                                                 |         |         | 42,000  |           |         |         |           |         | 42,000    |
| Old Crow Pole Change Outs                                                                     | Pg 9-22                                                 |         |         | 46,000  |           |         |         |           |         | 46,000    |
| Porter Creek Breaker Replacement                                                              | Pg 9-22                                                 |         |         | 54,000  |           |         |         |           |         | 54,000    |
| Takhini North Upgrade                                                                         | Pg 9-22                                                 |         |         | 134,000 |           |         |         |           |         | 134,000   |
| Watson Lake 3-Phase System Protection Upgrade                                                 | Pg 9-22                                                 |         |         | 100,000 |           |         |         |           |         | 100,000   |
| 4L316 Two Mile Hill Conductor Upgrade                                                         | Pg 9-23                                                 |         |         | 38,000  |           |         |         |           |         | 38,000    |
| McIntyre Subdivision Prebuilding Work                                                         | Pg 9-23                                                 |         |         | 22,000  |           |         |         |           |         | 22,000    |
| Nordenskiold River Bridge Rerouting                                                           | Pg 9-23                                                 |         |         | 42,000  |           |         |         |           |         | 42,000    |
| Pole Removal Wickstrom Road                                                                   | Pg 9-23                                                 |         |         | 25,000  |           |         |         |           |         | 25,000    |
| Whitehorse Copper Rebuild                                                                     | Pg 9-23                                                 |         |         | 27,000  |           |         |         |           |         | 27,000    |
| System Frequency Upgrades at S150 Substation                                                  | Pg 9-23, 9-31                                           |         |         | 39,000  | 37,000    |         |         |           |         | 76,000    |
| System Upgrade, Extension of 5L628 to Grizzly Valley                                          | Pg 9-29                                                 |         |         |         | 454,000   |         |         |           |         | 454,000   |
| 5L626 Double Circuit Line to Whistle Bend Substation                                          | Pg 9-30                                                 |         |         |         | 200,000   |         |         |           |         | 200,000   |
| Hotsprings Road Upgrade                                                                       | Pg 9-30                                                 |         |         |         | 190,000   |         |         |           |         | 190,000   |
| Laberge Substation Distribution Upgrades                                                      | Pg 9-30                                                 |         |         |         | 416,000   |         |         |           |         | 416,000   |
| Upgrade Laberge Substation Transformer to 10 MVA                                              | Pg 9-30                                                 |         |         |         | 189,000   |         |         |           |         | 189,000   |

The Yukon Electrical Company Limited  
Distribution Improvement Projects 2008-2015

| Project Name                                                                              | Reference                                         | 2008      | 2009      | 2010      | 2011      | 2012      | 2013      | 2014      | 2015      | Total      |
|-------------------------------------------------------------------------------------------|---------------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| PCB Identification and Transformer Change Outs                                            | Pg 9-30, 9-39, 9-48, 9-58, 9-65                   |           |           |           | 239,000   | 401,000   | 175,000   | 100,000   | 100,000   | 1,015,000  |
| Carcross Town Pole Replacements                                                           | Pg 9-31                                           |           |           |           | 27,000    |           |           |           |           | 27,000     |
| Centennial Street Upgrades                                                                | Pg 9-31                                           |           |           |           | 20,000    |           |           |           |           | 20,000     |
| Configure Pelly Substation to Yukon Interconnected System                                 | Pg 9-31                                           |           |           |           | 23,000    |           |           |           |           | 23,000     |
| Line Relocation Eagle Way                                                                 | Pg 9-31                                           |           |           |           | 30,000    |           |           |           |           | 30,000     |
| Line Upgrade and Relocation Army Beach                                                    | Pg 9-31                                           |           |           |           | 92,000    |           |           |           |           | 92,000     |
| Line Upgrade and Relocation Lot 56 Paint Mountain                                         | Pg 9-31                                           |           |           |           | 69,000    |           |           |           |           | 69,000     |
| System Upgrade 113 Copper Road                                                            | Pg 9-31                                           |           |           |           | 53,000    |           |           |           |           | 53,000     |
| Whistle Bend Substation Transformer                                                       | Pg 9-31                                           |           |           |           | 127,000   |           |           |           |           | 127,000    |
| Shipyard's Substation Transformer Failure and Upgrades                                    | Pg 9-39                                           |           |           |           |           | 473,000   |           |           |           | 473,000    |
| 97 Lewes Boulevard Transformer Upgrade                                                    | Pg 9-40                                           |           |           |           |           | 70,000    |           |           |           | 70,000     |
| Breaker Replacement in Services Substation                                                | Pg 9-40                                           |           |           |           |           | 84,000    |           |           |           | 84,000     |
| Laberge Substation 34.5KV Conductor Upgrade                                               | Pg 9-40                                           |           |           |           |           | 103,000   |           |           |           | 103,000    |
| Laberge Substation Upgrade                                                                | Pg 9-40                                           |           |           |           |           | 57,000    |           |           |           | 57,000     |
| Old Crow 3rd Distribution Breaker                                                         | Pg 9-40                                           |           |           |           |           | 78,000    |           |           |           | 78,000     |
| Range Road Line Rerouting                                                                 | Pg 9-40                                           |           |           |           |           | 56,000    |           |           |           | 56,000     |
| Regulator to North Klondike Highway                                                       | Pg 9-40                                           |           |           |           |           | 154,000   |           |           |           | 154,000    |
| Whitehorse Elementary School Transformer Upgrade                                          | Pg 9-40                                           |           |           |           |           | 94,000    |           |           |           | 94,000     |
| CRE Breaker Replacement in Lewes Boulevard                                                | Pg 9-41                                           |           |           |           |           | 30,000    |           |           |           | 30,000     |
| Marsh Lake Structure Upgrade                                                              | Pg 9-41                                           |           |           |           |           | 21,000    |           |           |           | 21,000     |
| Marsh Lake Substation Upgrade                                                             | Pg 9-41                                           |           |           |           |           | 45,000    |           |           |           | 45,000     |
| Ponderosa Road Vault Addition and Service Upgrade                                         | Pg 9-41                                           |           |           |           |           | 35,000    |           |           |           | 35,000     |
| Porter Creek Underground Vaults Replacement                                               | Pg 9-41                                           |           |           |           |           | 28,000    |           |           |           | 28,000     |
| Ross River Recloser for S7580                                                             | Pg 9-41                                           |           |           |           |           | 30,000    |           |           |           | 30,000     |
| System Improvements Lowe Street                                                           | Pg 9-41                                           |           |           |           |           | 21,000    |           |           |           | 21,000     |
| Whitehorse Service Area Line Clearance Upgrades                                           | Pg 9-41                                           |           |           |           |           | 25,000    |           |           |           | 25,000     |
| Downtown Whitehorse 4L313 Labert Street to Elliot Street - Replace with Underground Lines | Pg 9-47                                           |           |           |           |           |           | 424,000   |           |           | 424,000    |
| Tagish 5L600 Rebuild                                                                      | Pg 9-47, 9-63                                     |           |           |           |           |           | 300,000   |           | 276,000   | 576,000    |
| Crestview to Mayo Road 5L628 Upgrade to 266 MCM                                           | Pg 9-48                                           |           |           |           |           |           | 250,000   |           |           | 250,000    |
| Old Alaska Highway Bypass                                                                 | Pg 9-48                                           |           |           |           |           |           | 248,000   |           |           | 248,000    |
| Downtown Whitehorse 4L316 6th Avenue 266 Reconductor                                      | Pg 9-48, 9-57                                     |           |           |           |           |           | 250,000   | 300,000   |           | 550,000    |
| Carmacks North Main Line Rebuild                                                          | Pg 9-49                                           |           |           |           |           |           | 100,000   |           |           | 100,000    |
| Hot Springs Road Main Line Relocation and Upgrade                                         | Pg 9-49                                           |           |           |           |           |           | 325,000   |           |           | 325,000    |
| Jack Hulland School Upgrades                                                              | Pg 9-49                                           |           |           |           |           |           | 100,000   |           |           | 100,000    |
| Lot 1037 Range Road Line Upgrade                                                          | Pg 9-49                                           |           |           |           |           |           | 34,000    |           |           | 34,000     |
| Pelly Crossing Substation Fence                                                           | Pg 9-49                                           |           |           |           |           |           | 100,000   |           |           | 100,000    |
| Teslin Area Pole Upgrades                                                                 | Pg 9-49                                           |           |           |           |           |           | 53,000    |           |           | 53,000     |
| Teslin Sawmill Road Upgrade for New Subdivision                                           | Pg 9-49                                           |           |           |           |           |           | 38,000    |           |           | 38,000     |
| Whitehorse Safety Code Corrections                                                        | Pg 9-49                                           |           |           |           |           |           | 30,000    |           |           | 30,000     |
| Whitehorse Area Line Clearance Upgrades                                                   | Pg 9-49, 9-58                                     |           |           |           |           |           | 65,000    | 70,000    |           | 135,000    |
| Whitehorse Asset Management - Create a Pole Database                                      | Pg 9-49, 9-58                                     |           |           |           |           |           | 75,000    | 75,000    |           | 150,000    |
| Marwell Lot 14 Transformer Upgrade                                                        | Pg 9-58                                           |           |           |           |           |           |           | 100,000   |           | 100,000    |
| Riverdale Lewes Substation 25KV Transformer                                               | Pg 9-58                                           |           |           |           |           |           |           | 100,000   |           | 100,000    |
| Takhini/Marwell Completion of Mountain Air Subdivision                                    | Pg 9-63                                           |           |           |           |           |           |           |           | 300,000   | 300,000    |
| Whitehorse Hot Springs Road 3 Phase Conversion                                            | Pg 9-63                                           |           |           |           |           |           |           |           | 363,000   | 363,000    |
| Lewes Lake Substation Conversion                                                          | Pg 9-64                                           |           |           |           |           |           |           |           | 146,000   | 146,000    |
| MacDonald Road Pole Change                                                                | Pg 9-64                                           |           |           |           |           |           |           |           | 250,000   | 250,000    |
| Riverdale Line 4L317 Tagish Road                                                          | Pg 9-64                                           |           |           |           |           |           |           |           | 250,000   | 250,000    |
| Whitehorse Airport Hangar D Area Rebuild                                                  | Pg 9-64                                           |           |           |           |           |           |           |           | 140,000   | 140,000    |
| Deep Creek Subdivision Connection to Whitehorse Distribution                              | Pg 9-65                                           |           |           |           |           |           |           |           | 60,000    | 60,000     |
| Grey Mountain 4L320 Tie Upgrade                                                           | Pg 9-65                                           |           |           |           |           |           |           |           | 65,000    | 65,000     |
| McIntock Substation Upgrade                                                               | Pg 9-65                                           |           |           |           |           |           |           |           | 90,000    | 90,000     |
| Spirit Lake Substation Upgrade                                                            | Pg 9-65                                           |           |           |           |           |           |           |           | 88,000    | 88,000     |
| Stewart Crossing West Town Conversion                                                     | Pg 9-65                                           |           |           |           |           |           |           |           | 60,000    | 60,000     |
| Upgrade of S2278                                                                          | Pg 9-65                                           |           |           |           |           |           |           |           | 45,000    | 45,000     |
| Upper Liard - Replace Liard River Crossing                                                | Pg 9-65                                           |           |           |           |           |           |           |           | 100,000   | 100,000    |
| Watson Lake Underground Subdivision Replacement                                           | Pg 9-65                                           |           |           |           |           |           |           |           | 100,000   | 100,000    |
| Other Projects Less Than \$20,000                                                         | Pg 9-10, 9-16, 9-23, 9-31, 9-41, 9-49, 9-58, 9-65 | 291,000   | 168,000   | 216,000   | 211,000   | 320,000   | 76,000    | 34,000    | 56,000    | 1,372,000  |
|                                                                                           |                                                   | 3,395,000 | 1,203,000 | 2,251,000 | 4,626,000 | 4,018,000 | 4,137,000 | 4,638,000 | 4,084,000 | 28,352,000 |

Miscellaneous Pole Replacements

287,000      254,000      261,000      272,000      213,000      260,000      260,000      260,000

**The Yukon Electrical Company Limited**  
**Distribution Improvement Projects September 2013**

| <b>Appropriation Type</b>              | <b>Project Name</b>                                  | <b>September 2013<br/>YTD</b> |
|----------------------------------------|------------------------------------------------------|-------------------------------|
| Distribution Improvements              | McIntyre Subdivision Replacement Stage 1             | 572,000                       |
|                                        | Right of Way Widening                                | 382,000                       |
|                                        | Downtown Whitehorse 4L316 6th Avenue 266 Reconductor | 325,000                       |
|                                        | Hotsprings Road Main Line Relocation and Upgrade     | 321,000                       |
|                                        | Hillcrest Conversion                                 | 246,000                       |
|                                        | Old Alaska Highway Bypass                            | 204,000                       |
|                                        | Tagish 5L600 Rebuild                                 | 147,000                       |
|                                        | 5L628 upgrade to 266                                 | 145,000                       |
|                                        | Teslin Sawmill Road Upgrade for New Subdivision      | 130,000                       |
|                                        | Crestview to Mayo Road 5L628 Upgrade to 266 MCM      | 123,000                       |
|                                        | Jack Hulland School Upgrades                         | 123,000                       |
|                                        | Teslin Area Pole Upgrades                            | 71,000                        |
|                                        | PCB Identification and Transformer Change Outs       | 61,000                        |
|                                        | CRE Breaker Firth Sub                                | 60,000                        |
|                                        | 2013 Miscellaneous Pole Changes                      | 60,000                        |
|                                        | McIntyre Sub Change Switches and Buswork             | 45,000                        |
|                                        | 2013 Deficiency and Salvage Clean Up                 | 43,000                        |
|                                        | Miscellaneous Distribution Pole Replacements         | 33,000                        |
|                                        | 600 Amp Feeder Tamarack to Hickory                   | 32,000                        |
|                                        | Upgrades to Shipyards Substation                     | 28,000                        |
|                                        | Annie Lake Road Clearance                            | 26,000                        |
|                                        | PCB Testing                                          | 24,000                        |
|                                        | Lot 1037 Range Road Line Upgrade                     | 22,000                        |
|                                        | Watson Lake Substation Ground Grid Upgrade           | 22,000                        |
|                                        | Transformer Upgrade & Pole Change Wheeler            | 20,000                        |
|                                        | Other Projects Less Than \$20,000                    | 112,000                       |
| <b>Total Distribution Improvements</b> |                                                      | <b>3,377,000</b>              |

|                                        |                |
|----------------------------------------|----------------|
| <b>Miscellaneous Pole Replacements</b> | <b>190,000</b> |
|----------------------------------------|----------------|

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #8**

November 4, 2013  
Transcript Volume 1

---

Undertaking: By Ms. Kellgren to Mr. Massie

Page 129, Lines 2 - 5

To identify where in the business case or elsewhere in the application the replacement of AMR meters is factored in.

**Yukon Electrical Response:**

Yukon Electrical did not factor replacement meters into either of the two scenarios included in Business Case #27 for the following reasons:

- Based on the analysis performed as part of the depreciation study, both AMR digital meters and conventional digital meters have similar life expectancies (both around 15 years) Also, both AMR digital meters and conventional digital meters are subject to the same testing timeframes (tested after 10 years, then 8 years, then 6 years). For these reasons, replacement of meters is not expected to vary significantly between the two scenarios.
- If all of the meters are replaced with AMR meters as part of the implementation project, the first test required for new AMR meters will not be for 10 years. As a result, it is not expected there will be material replacements of AMR meters in the first 10 years.

Based on the above, as all meters in the Whitehorse and Southern Lakes area are assumed in the Application to be replaced with AMR-compatible meters in 2014 and 2015, there was no requirement to include any further capital for the replacement of AMR meters in the test period. However, if the AMR project is not approved by the Board, capital for the replacement of mechanical meters identified by the required testing in 2014 and 2015 will be required.

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #14**

November 5, 2013  
Transcript Volume 2

---

Undertaking: By Mr. Janigan to Mr. Grattan

Page 226, Lines 23 – 25 and Page 227, Lines 1 – 5

To provide a comparison of the forecasted services from ATCO Electric as detailed in UCG-YECL-21(g), Attachment 4, Page 14 and 15, and what actually happened in 2012; and further, to advise as to the reason for the large increase in the cost of these services between 2012 and 2013.

**Yukon Electrical Response:**

Please refer to Attachment 1 for the requested information, including the rationale for any variances.

| 2012                                       | Actual Per Sch. 5.3 | UCG-YECL-21(g) Att 4 | Difference                                                                                                                                 |
|--------------------------------------------|---------------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Metering Services                          | 48                  | 47                   | 1                                                                                                                                          |
| After Hours - Call Answering               | 34                  | 33                   | 1                                                                                                                                          |
| Governance, HR and Health & Safety         | 91                  | 154                  | (63) Lower than forecast due to a \$40,000 true-up credit relating to 2011 recorded in 2012 (See UCG-YECL-21(a))                           |
| Regulatory Phase II                        | -                   | -                    | -                                                                                                                                          |
| Rates and T&C                              | 15                  | -                    | 15 Higher than forecast due to higher than planned rates and Terms and Conditions work in 2012.                                            |
| Financial Reporting and Regulatory Support | 448                 | 213                  | 235 Higher than forecast due to the addition of the Edmonton based Corporate Accountant as well as 0.5 FTE Manager (See YUB-YECL-22(j)(k)) |
| Payroll, Use of Systems and IT             | 44                  | 44                   | -                                                                                                                                          |
| Materials Management (O&M)                 | 3                   | 3                    | -                                                                                                                                          |
| Corporate Communications                   | -                   | 8                    | (8) Lower than forecast due to no time being incurred by staff in this function on behalf of Yukon Electrical.                             |
| Training & Development                     | -                   | 11                   | (11) Lower than forecast due to no time being incurred by staff in this function on behalf of Yukon Electrical.                            |
| Business Continuity                        | -                   | 10                   | (10) Lower than forecast due to no time being incurred by staff in this function on behalf of Yukon Electrical.                            |
| Total Per Schedule 5.3                     | 683                 | 523                  | 160                                                                                                                                        |
| Materials Management (Capital)             | 66                  | 46                   | 20 Higher than forecast due to higher work required to support shipment of capital items to the Yukon.                                     |
|                                            | 749                 | 569                  | 180                                                                                                                                        |
| <b>Changes from 2012 to 2013</b>           |                     |                      |                                                                                                                                            |
| Metering Services                          | 1                   |                      |                                                                                                                                            |
| After Hours - Call Answering               | 28                  |                      | Higher based on detailed usage review completed by ATCO Electric (See YUB-YECL-6(e))                                                       |
| Governance, HR and Health & Safety         | 46                  |                      | Higher due to the 2011 \$40,000 true up credit that was recorded in 2012. (See above explanation)                                          |
| Rates and T&C                              | 25                  |                      | Higher due to additional work requiring the allocation increasing from 0.1 FTE to 0.2 FTE (See YUB-YECL-6(g))                              |
| Financial Reporting and Regulatory Support | 166                 |                      | Higher due to the full year impact of the Edmonton based Corporate Accountant as well as Manager. (See YUB-YECL-22(j)(k))                  |
| Payroll, Use of Systems and IT             | 2                   |                      |                                                                                                                                            |
| 2013 Total Per Schedule 5.3                | 951                 |                      |                                                                                                                                            |

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #15**

November 5, 2013  
Transcript Volume 2

---

Undertaking: By Mr. Janigan to Mr. Massie

Page 281, Lines 16 - 21

To provide a summary of the measurements showing how the actual use of diesel fuel in litres at Pelly Crossing was determined between November 1<sup>st</sup>, 2008 and November 28<sup>th</sup>, 2008.

**Yukon Electrical Response:**

Please refer to Attachment 1 for the results of the fuel dips at the end of October 2008 (127cm = 25,864L) and November 2008 (66cm = 10,701L), as well as the Monthly Plant Operating Report for Pelly Crossing for November 2008 showing the calculation of the 63,098L of fuel used during that month. Please note no further fuel was used at Pelly Crossing in November 2008 after it was connected to the grid on November 27, so the amount of fuel measured at the end of the month is consistent with the amount that would have been measured at the time the connection to the grid occurred.

PELLEY CROSSING  
**The Yukon Electrical Company Limited**  
**Monthly Plant Operating Report**  
**Isolated Plants**

Plant Pelly Crossing  
Month Oct-08

| Unit No      | Rating<br>kw | Unit hr<br>Month End | Unit hr<br>1st Month | Time Run<br>Hours | Unit kwh<br>Month End | Unit kwh<br>1st Month | Diff.     | Mult. | Generation<br>kwh | Check<br>KW/H Avg |
|--------------|--------------|----------------------|----------------------|-------------------|-----------------------|-----------------------|-----------|-------|-------------------|-------------------|
| 1            | 250          | 7,924.0              | 7,920.0              | 4                 | 542,710.0             | 541,890.0             | 820.0     | 1     | 820               | 205               |
| 2            | 400          | 21,739.0             | 21,110.0             | 629               | 9,295,350.0           | 9,164,820.0           | 130,530.0 | 1     | 130,530           | 208               |
| 3            | 300          | 72,250.0             | 71,484.0             | 766               | 12,311,610.0          | 12,202,600.0          | 109,010.0 | 1     | 109,010           | 142               |
|              |              |                      |                      |                   |                       |                       |           |       |                   |                   |
| <b>Total</b> |              |                      |                      | 1399.0            |                       |                       |           |       |                   |                   |
|              |              |                      |                      |                   |                       |                       |           |       | Gross Gen         | 240,360           |

Plant Peak

| Name Of Feeder    | #1       | #2         | Station/serv | - Gross |
|-------------------|----------|------------|--------------|---------|
| Reading End of Mo | #####    | 11798530.0 | 6657.7       | 235,612 |
| Reading 1st of Mo | #####    | 11687970.0 | 6539.0       | 3.35    |
| Registered        | 130660.0 | 110560.0   | 118.7        |         |
| Multiplier        | 1        | 1          | 40           |         |
| kwh as Fed Out    | 130,660  | 110,560    | 4,748        |         |
| Demand            |          |            | 260          |         |
| Peak kw           | 202      | 201        | 8            |         |

| Fuel Oil          | Litres | Lube Oil Type (Litres) |            |
|-------------------|--------|------------------------|------------|
|                   |        | Delo                   | Super/Plus |
| On Hand 1st Mo    | 34,759 |                        |            |
| Rec'd During Mo   | 61,423 |                        |            |
| Total During Mo   | 96,182 |                        |            |
| On hand End of Mo | 25,864 | 127 cm                 |            |
| Used During Mo    | 70,318 |                        |            |

|         |            | Net Output |             |            |        |
|---------|------------|------------|-------------|------------|--------|
|         |            | Gross      | per Feeders | Difference |        |
| Current | Generation | 240,360    | 241,220     | 0%         | -860   |
|         | Heat Rate  | 3.42       | 3.43        |            |        |
|         | Fuel       | 70,318     |             |            |        |
| YTD     | Generation | 1,962,610  | 1,970,670   | 0%         | -8,060 |
|         | Heat Rate  | 3.40       | 3.41        |            |        |
|         | Fuel       | 577,671    |             |            |        |

PELTY CROSSING  
The Yukon Electrical Company Limited  
Monthly Plant Operating Report  
Isolated Plants

Plant Pelly Crossing  
Month Nov-08

| Unit No | Rating kw | Unit hr Month End | Unit hr 1st Month | Time Run Hours | Unit kwh Month End | Unit kwh 1st Month | Diff.     | Mult. | Generation kwh | Check KW/H Avg |
|---------|-----------|-------------------|-------------------|----------------|--------------------|--------------------|-----------|-------|----------------|----------------|
| 1       | 250       | 7,934.0           | 7,924.0           | 10             | 543,930.0          | 542,710.0          | 1,220.0   | 1     | 1,220          | 122            |
| 2       | 400       | 22,357.0          | 21,739.0          | 618            | 9,425,620.0        | 9,295,350.0        | 130,270.0 | 1     | 130,270        | 211            |
| 3       | 300       | 72,809.0          | 72,250.0          | 559            | 12,395,460.0       | 12,311,610.0       | 83,850.0  | 1     | 83,850         | 150            |
|         |           |                   |                   |                |                    |                    |           |       |                |                |
| Total   |           |                   |                   | 1187.0         |                    |                    |           |       |                |                |
|         |           |                   |                   |                |                    |                    |           |       | Gross Gen      | 215,340        |

Plant Peak 0

| Name Of Feeder    | #1         | #2         | Station/serv | - Gross |
|-------------------|------------|------------|--------------|---------|
| Reading End of Mo | 11413580.0 | 11899220.0 | 6746.0       | 211,808 |
| Reading 1st of Mo | 11296800.0 | 11798530.0 | 6657.7       | 3.36    |
| Registered        | 116780.0   | 100690.0   | 88.3         |         |
| Multiplier        | 1          | 1          | 40           |         |
| kwh as Fed Out    | 116,780    | 100,690    | 3,532        |         |
| Demand            |            |            | 160          |         |
| Peak kw           | 213        | 216        | 7            |         |

| Fuel Oil          | Litres | Lube Oil Type (Litres) |            |
|-------------------|--------|------------------------|------------|
|                   |        | Delo                   | Super/Plus |
| On Hand 1st Mo    | 25,864 |                        |            |
| Rec'd During Mo   | 47,935 |                        |            |
| Total During Mo   | 73,799 |                        |            |
| On hand End of Mo | 10,701 | 66cm                   |            |
| Used During Mo    | 63,098 |                        |            |

|         |            | Net Output |             | Difference |
|---------|------------|------------|-------------|------------|
|         |            | Gross      | per Feeders |            |
| Current | Generation | 215,340    | 217,470     | -1% -2,130 |
|         | Heat Rate  | 3.41       | 3.45        |            |
|         | Fuel       | 63,098     |             |            |
| YTD     | Generation | 2,177,950  | 2,188,140   | 0% -10,190 |
|         | Heat Rate  | 3.40       | 3.41        |            |
|         | Fuel       | 640,769    |             |            |

Note: New Str. Serv. Meter for plant heat. In at 2, month end reading at 156. Multiplier is 60

**STANDARD GAUGE CHART - HORIZONTAL ABOVEGROUND TANKS**  
**INSIDE LENGTH SET AT 1 1/4% OVER NOMINAL**  
**CAPACITY OF TANK - LITRES (L)**  
**AND**

**INSIDE DIAMETERS (ID) - millimetres BY INSIDE LENGTH (IL) - millimetres**

| Depth<br>cm | Depth<br>in | 5000 L<br>2500 ID<br>10200 IL | Depth<br>cm | Depth<br>in | 5000 L<br>2500 ID<br>10200 IL | Depth<br>cm | Depth<br>in | 5000 L<br>2500 ID<br>10200 IL | Depth<br>cm | Depth<br>in | 5000 L<br>2500 ID<br>10200 IL |
|-------------|-------------|-------------------------------|-------------|-------------|-------------------------------|-------------|-------------|-------------------------------|-------------|-------------|-------------------------------|
| 1           | 0.39        | 22                            | 31          | 12.20       | 3515                          | 61          | 24.02       | 9577                          | 91          | 35.83       | 16679                         |
| 2           | 0.79        | 61                            | 32          | 12.60       | 3786                          | 62          | 24.41       | 9799                          | 92          | 36.22       | 16927                         |
| 3           | 1.18        | 115                           | 33          | 12.99       | 3950                          | 63          | 24.80       | 10023                         | 93          | 36.61       | 17177                         |
| 4           | 1.57        | 175                           | 34          | 13.39       | 4138                          | 64          | 25.20       | 10040                         | 94          | 37.01       | 17428                         |
| 5           | 1.97        | 242                           | 35          | 13.78       | 4314                          | 65          | 25.59       | 10474                         | 95          | 37.40       | 17677                         |
| 6           | 2.36        | 318                           | 36          | 14.17       | 4494                          | 66          | 25.98       | 10701                         | 96          | 37.80       | 17928                         |
| 7           | 2.76        | 400                           | 37          | 14.57       | 4676                          | 67          | 26.38       | 10929                         | 97          | 38.19       | 18179                         |
| 8           | 3.15        | 488                           | 38          | 14.96       | 4881                          | 68          | 26.77       | 11158                         | 98          | 38.58       | 18431                         |
| 9           | 3.54        | 581                           | 39          | 15.35       | 5047                          | 69          | 27.17       | 11388                         | 99          | 38.98       | 18883                         |
| 10          | 3.94        | 680                           | 40          | 15.75       | 5238                          | 70          | 27.56       | 11620                         | 100         | 39.37       | 18936                         |
| 11          | 4.33        | 764                           | 41          | 16.14       | 5426                          | 71          | 27.95       | 11882                         | 101         | 39.76       | 19189                         |
| 12          | 4.72        | 992                           | 42          | 16.54       | 5618                          | 72          | 28.35       | 12085                         | 102         | 40.16       | 19443                         |
| 13          | 5.12        | 1004                          | 43          | 16.93       | 5812                          | 73          | 28.74       | 12320                         | 103         | 40.55       | 19897                         |
| 14          | 5.51        | 1121                          | 44          | 17.32       | 6008                          | 74          | 29.13       | 12555                         | 104         | 40.94       | 19951                         |
| 15          | 5.91        | 1242                          | 45          | 17.72       | 6205                          | 75          | 29.53       | 12791                         | 105         | 41.34       | 20208                         |
| 16          | 6.30        | 1366                          | 46          | 18.11       | 6404                          | 76          | 29.92       | 13028                         | 106         | 41.73       | 20461                         |
| 17          | 6.69        | 1495                          | 47          | 18.50       | 6806                          | 77          | 30.31       | 13266                         | 107         | 42.13       | 20716                         |
| 18          | 7.09        | 1626                          | 48          | 18.90       | 6809                          | 78          | 30.71       | 13505                         | 108         | 42.52       | 20972                         |
| 19          | 7.48        | 1761                          | 49          | 19.29       | 7012                          | 79          | 31.10       | 13745                         | 109         | 42.91       | 21228                         |
| 20          | 7.87        | 1900                          | 50          | 19.69       | 7215                          | 80          | 31.50       | 13985                         | 110         | 43.31       | 21484                         |
| 21          | 8.27        | 2048                          | 51          | 20.08       | 7426                          | 81          | 31.89       | 14226                         | 111         | 43.70       | 21740                         |
| 22          | 8.66        | 2186                          | 52          | 20.47       | 7534                          | 82          | 32.28       | 14488                         | 112         | 44.09       | 21997                         |
| 23          | 9.06        | 2334                          | 53          | 20.87       | 7844                          | 83          | 32.68       | 14711                         | 113         | 44.49       | 22254                         |
| 24          | 9.45        | 2485                          | 54          | 21.26       | 8056                          | 84          | 33.07       | 14955                         | 114         | 44.88       | 22511                         |
| 25          | 9.84        | 2638                          | 55          | 21.65       | 8268                          | 85          | 33.46       | 15199                         | 115         | 45.28       | 22755                         |
| 26          | 10.24       | 2795                          | 56          | 22.05       | 8484                          | 86          | 33.86       | 15444                         | 116         | 45.67       | 23026                         |
| 27          | 10.63       | 2954                          | 57          | 22.44       | 8700                          | 87          | 34.25       | 15890                         | 117         | 46.06       | 23283                         |
| 28          | 11.02       | 3115                          | 58          | 22.83       | 8917                          | 88          | 34.65       | 15936                         | 118         | 46.46       | 23541                         |
| 29          | 11.42       | 3279                          | 59          | 23.23       | 9166                          | 89          | 35.04       | 16183                         | 119         | 46.85       | 23799                         |
| 30          | 11.81       | 3440                          | 60          | 23.62       | 9358                          | 90          | 35.43       | 16430                         | 120         | 47.24       | 24057                         |

**STANDARD GUAGE CHART - HORIZONTAL ABOVEGROUND TANKS**  
**INSIDE LENGTH SET AT 1 1/4% OVER NOMINAL**  
**CAPACITY OF TANK - LITRES (L)**  
**AND**

| INSIDE DIAMETERS (ID) - millimetres |       |          |       |       |          | BY INSIDE LENTH (IL) - millimetres |       |          |       |        |          |
|-------------------------------------|-------|----------|-------|-------|----------|------------------------------------|-------|----------|-------|--------|----------|
| Depth                               | Depth | 5000 L   | Depth | Depth | 5000 L   | Depth                              | Depth | 5000 L   | Depth | Depth  | 5000 L   |
| cm                                  | in    | 2500 ID  | cm    | in    | 2500 ID  | cm                                 | in    | 2500 ID  | cm    | in     | 2500 ID  |
|                                     |       | 10200 IL |       |       | 10200 IL |                                    |       | 10200 IL |       |        | 10200 IL |
| 121                                 | 47.64 | 24315    | 156   | 61.42 | 33288    | 191                                | 75.20 | 41559    | 226   | 88.98  | 48210    |
| 122                                 | 48.03 | 24573    | 157   | 61.81 | 33518    | 192                                | 75.59 | 41778    | 227   | 89.37  | 48381    |
| 123                                 | 48.43 | 24831    | 158   | 62.20 | 33768    | 193                                | 75.98 | 41995    | 228   | 89.76  | 48509    |
| 124                                 | 48.82 | 25089    | 159   | 62.60 | 34016    | 194                                | 76.38 | 42211    | 229   | 90.16  | 48653    |
| 125                                 | 49.21 | 25347    | 160   | 62.99 | 34265    | 195                                | 76.77 | 42426    | 230   | 90.55  | 48795    |
| 126                                 | 49.61 | 25806    | 161   | 63.39 | 34512    | 196                                | 77.17 | 42639    | 231   | 90.94  | 48933    |
| 127                                 | 50.00 | 25864    | 162   | 63.78 | 34759    | 197                                | 77.56 | 42851    | 232   | 91.34  | 49089    |
| 128                                 | 50.39 | 26122    | 163   | 64.17 | 35005    | 198                                | 77.95 | 43061    | 233   | 91.73  | 49200    |
| 129                                 | 50.79 | 26380    | 164   | 64.57 | 35251    | 199                                | 78.35 | 43270    | 234   | 92.13  | 49329    |
| 130                                 | 51.18 | 26636    | 165   | 64.96 | 35498    | 200                                | 78.74 | 43477    | 235   | 92.52  | 49453    |
| 131                                 | 51.57 | 26896    | 166   | 65.35 | 35740    | 201                                | 79.13 | 43583    | 236   | 92.91  | 49574    |
| 132                                 | 51.97 | 27164    | 167   | 65.75 | 35884    | 202                                | 79.53 | 43887    | 237   | 93.31  | 49691    |
| 133                                 | 52.36 | 27412    | 168   | 66.14 | 36227    | 203                                | 79.92 | 44090    | 238   | 93.70  | 49803    |
| 134                                 | 52.76 | 27669    | 169   | 66.54 | 36469    | 204                                | 80.31 | 44291    | 239   | 94.09  | 49911    |
| 135                                 | 53.15 | 27927    | 170   | 66.93 | 36710    | 205                                | 80.71 | 44490    | 240   | 94.49  | 50015    |
| 136                                 | 53.54 | 28184    | 171   | 67.32 | 36950    | 206                                | 81.10 | 44687    | 241   | 94.88  | 50114    |
| 137                                 | 53.94 | 28441    | 172   | 67.72 | 37190    | 207                                | 81.50 | 44883    | 242   | 95.28  | 50207    |
| 138                                 | 54.33 | 28698    | 173   | 68.11 | 37429    | 208                                | 81.89 | 45077    | 243   | 95.67  | 50295    |
| 139                                 | 54.72 | 28955    | 174   | 68.50 | 37887    | 209                                | 82.28 | 45263    | 244   | 96.06  | 50377    |
| 140                                 | 55.12 | 29211    | 175   | 68.90 | 37904    | 210                                | 82.68 | 45459    | 245   | 96.46  | 50453    |
| 141                                 | 55.51 | 29487    | 176   | 69.29 | 38140    | 211                                | 83.07 | 45648    | 246   | 96.85  | 50522    |
| 142                                 | 55.91 | 29723    | 177   | 69.69 | 38375    | 212                                | 83.46 | 45834    | 247   | 97.24  | 50682    |
| 143                                 | 56.30 | 29979    | 178   | 70.08 | 38610    | 213                                | 83.86 | 46019    | 248   | 97.64  | 50834    |
| 144                                 | 56.69 | 30234    | 179   | 70.47 | 38843    | 214                                | 84.25 | 46201    | 249   | 98.03  | 50873    |
| 145                                 | 57.09 | 30489    | 180   | 70.87 | 39075    | 215                                | 84.65 | 46381    | 250   | 98.43  | 50895    |
| 146                                 | 57.48 | 30744    | 181   | 71.26 | 39307    | 216                                | 85.04 | 46559    | 251   | 98.82  |          |
| 147                                 | 57.87 | 30998    | 182   | 71.65 | 39537    | 217                                | 85.43 | 46735    | 252   | 99.21  |          |
| 148                                 | 58.27 | 31252    | 183   | 72.05 | 39766    | 218                                | 85.83 | 46909    | 253   | 99.61  |          |
| 149                                 | 58.66 | 31505    | 184   | 72.44 | 39994    | 219                                | 86.22 | 27030    | 254   | 100.00 |          |
| 150                                 | 59.06 | 31759    | 185   | 72.83 | 40221    | 220                                | 86.61 | 47249    | 255   | 100.39 |          |
| 151                                 | 59.45 | 32012    | 186   | 73.23 | 40447    | 221                                | 87.01 | 47418    | 256   | 100.79 |          |
| 152                                 | 59.84 | 32254    | 187   | 73.62 | 40672    | 222                                | 87.40 | 47580    | 257   | 101.18 |          |
| 153                                 | 60.24 | 32518    | 188   | 74.02 | 40896    | 223                                | 87.80 | 47741    | 258   | 101.57 |          |
| 154                                 | 60.63 | 32767    | 189   | 74.41 | 41118    | 224                                | 88.19 | 47900    | 259   | 101.97 |          |
| 155                                 | 61.02 | 33018    | 190   | 74.80 | 41339    | 225                                | 88.58 | 48057    | 260   | 102.36 |          |

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #16**

November 5, 2013  
Transcript Volume 2

---

Undertaking: By Mr. Janigan to Mr. Massie

Page 283, Lines 5 - 10

To provide the actual heat rate, actual purchase power rate, and the actual diesel rate for generation at Pelly Crossing for the period November 1, 2008 to November 27, 2008.

**Yukon Electrical Response:**

The actual heat rate for Pelly Crossing for November 2008 was 3.45. Please refer to page 2 of Attachment 1 of the response to Undertaking #15 for the calculation.

The actual purchase power rate was 6.84 cents/kWh as shown on Line 6 of Schedule 3.1 of the Application.

The actual diesel rate for generation at Pelly Crossing was \$1.0774/L.

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #19**

November 5, 2013  
Transcript Volume 2

---

Undertaking: By Mr. Janigan to Mr. Grattan

Page 318, Lines 6 - 12

To produce the policy that YECL follows with respect to contracting for the expenditures set out in Section 9 of the Application and to indicate any contracts for expenditures that have not been in accordance with the policy.

**Yukon Electrical Response:**

Please refer to Attachment 1 for copies of the policies that Yukon Electrical follows with respect to contracting for capital expenditures.

Yukon Electrical is audited by the ATCO Group Internal Audit department on a regular basis to ensure that all of the policies and procedures regarding procurement are being consistently followed. In the latest report, received from Internal Audit dated June 2013, two deficiencies were noted where Yukon Electrical did not obtain all of the required detailed supporting documentation from two different contractors regarding their invoices to Yukon Electrical. The total amount that did not include sufficient supporting documentation was \$34,711. While these two instances were relatively small, Yukon Electrical has since put additional checks into place to ensure all invoices received include sufficient supporting documentation.

Upon review of the reports received from Internal Audit for the period 2006 – 2013, no further deficiencies were noted with respect to Yukon Electrical's adherence to its procurement-related policies.



| FUNCTION                       | REFERENCE  | TOPIC                           | PAGE          |
|--------------------------------|------------|---------------------------------|---------------|
| <b>Supply Chain Management</b> | <b>G93</b> | <b>Purchase Process Control</b> | <b>1 of 1</b> |

This guideline is intended to provide an overview of the key steps required for soliciting and evaluating bids, executing contract documents, processing Purchase Requisitions and Blanket Order releases, and issuing Purchase Orders.

## Bid Solicitation

Seek bids in accordance with the guidelines noted the table below:

| Purchase Value    | Bids Sought | Bid Request Method | Bid Response Method |
|-------------------|-------------|--------------------|---------------------|
| Up to \$50k       | 1           | Informal Written   | Informal Written    |
| >\$50k to \$100k  | 2           | Informal Written   | Informal Written    |
| >\$100k to \$250k | 3           | Informal Written   | Informal Written    |
| >\$250k           | 3           | Formal Written     | Formal Written      |

## Prepare Technical and Commercial Bid Evaluation

Seek technical response to the commercial evaluation during the Bid Evaluation and Award Authorization activity referred to in the Contracting Process No. 100 for Goods and/or Services when the Formal Written Request and Response competitive bid solicitation method is required.

## Execute Contract Documents

Contracts must be executed in accordance with Supply Chain Management Guideline - G98: Approving and Executing Contracts.

## Prepare Purchase Requisition

Prepare and submit an approved Oracle Purchase Requisition. This action will initiate a request to create a Purchase Order.

## Create Purchase Order

Create the Oracle Purchase Order which will trigger commencement of the work and/or delivery of the goods.

## Issue Releases against Blanket Orders

Orders with an automatic release must be processed in accordance with the Purchase Requisition approval authority limits in Oracle.

Blanket Orders must be processed in accordance with the Purchase Order approval authority limits in Oracle.

| AUTHORIZED BY                      | LAST ISSUED | DESIGNATED OWNER                  | NEXT REVIEW |
|------------------------------------|-------------|-----------------------------------|-------------|
| Vice President, Corporate Services | 2013 08 01  | Director, Supply Chain Management | 2014 08 01  |



| FUNCTION                | REFERENCE | TOPIC                     | PAGE   |
|-------------------------|-----------|---------------------------|--------|
| Supply Chain Management | M01       | Principles and Guidelines | 1 of 1 |

## Overview

The purpose of the supply chain management principle and guideline documents of ATCO Electric, Distribution Division, herein ATCO Electric, is to serve as training tools and ongoing references for ATCO Electric supply chain management principles.

These principles guide all actions and decisions that impact activities ranging from the identification of needs, to the delivery of goods and services, to the disposal of goods.

Well-defined objectives, responsibilities and limitations significantly facilitate efficient supply chain management. Efficient supply chain management includes activities that are required to achieve the overall corporate objectives, such as the procurement, storage, and movement of all goods, as well as the related services.

This document will be revised and supplemented, as required, to meet new needs and as conditions develop. As a user of these documents, we ask you to provide ongoing constructive comments for updating purposes so that the documents continue to be useful tools for the Supply Chain Management group and ATCO Electric as a whole.

## Supply Chain Management Statement

Supply chain management uses current strategies, practices, and procedures that employ the highest ethical standards and professional business conduct, and that maximize the value of every dollar expended.

To maintain or improve the position in the market place held by ATCO Electric, the company, as a whole, must strive for lower costs while acquiring the best quality and most effective goods and services that are used internally and externally to meet the demands of consumers and regulations.

The Supply Chain Management Group is responsible for providing consistent, high-quality, and cost-effective support to internal client groups. This service must be provided in accordance with the internal controls of ATCO Electric. To achieve the goals of the company while being responsive to internal demands and market conditions, the Supply Chain Management Group follows established policies, guidelines, and procedures. Additionally, the Supply Chain Management Group encourages continued excellence in quality of work and in the professional development of staff.

|                                    |             |                                   |             |
|------------------------------------|-------------|-----------------------------------|-------------|
| AUTHORIZED BY                      | LAST ISSUED | DESIGNATED OWNER                  | NEXT REVIEW |
| Vice President, Corporate Services | 2013 07 01  | Director, Supply Chain Management | 2015 07 01  |



| FUNCTION                | REFERENCE | TOPIC       | PAGE   |
|-------------------------|-----------|-------------|--------|
| Supply Chain Management | M03       | Procurement | 1 of 1 |

## Overview

It is the practice of ATCO Electric, Distribution Division herein ATCO Electric, to acquire quality goods and services through procurement processes that support the business decisions of the company and that encourage competition. It is the practice of ATCO Electric to maximize the number of opportunities for suppliers to compete for business from ATCO Electric.

Supply Chain Management processes maintain high standards of professional and ethical conduct and foster the establishment of a long term business relationships that are based on the commitment to principles of health, safety, environmental stewardship, and quality control by the supplier.

## Principles

It is our intent to do the following:

- Procure quality goods and services that are available in the right place, in the right quantity and at the right time to ensure our ability to fully satisfy our customers' requirements.
- Prior to establishing a long-term business relationship or awarding a purchase contract, support market analysis or business analysis and encourage meaningful participation of suppliers in a competitive process.
- Maximize opportunities for suppliers who are also ATCO Electric customers to compete for business from ATCO Electric. Where all other relevant commercial factors are considered to be equal among competing proposals, give preference to suppliers who are customers of ATCO Electric.
- Develop planned, mutually-beneficial, long-term, business arrangements with carefully-selected suppliers of goods and services. The decision to select a supplier is to be based on the demonstrated commitment to principles that stress health, safety, environmental stewardship, and quality control. For example, clear commitments to error and defect prevention, cost reduction, and continuous improvement of areas such as delivery, service, safety, employee education, communication and cooperation, technology, management competence, environmental control.
- Procure quality goods and services at the lowest overall cost. Lowest overall cost is not necessarily the lowest price for the material or service. The relevant costs that procurement decisions are based on are total life-cycle costs.
- With the goal of supporting economic development, maximize opportunities for local suppliers to compete for our business. Where all other relevant commercial factors are considered to be equal among competing proposals, give preference to suppliers within the operating area of ATCO Electric.
- Respect information provided to us in confidence. Do not disclose information regarding negotiations, tenders, proposals, or purchase contracts that jeopardizes the competitive position of any firm or the intent of this practice.

| AUTHORIZED BY                      | LAST ISSUED | DESIGNATED OWNER                  | NEXT REVIEW |
|------------------------------------|-------------|-----------------------------------|-------------|
| Vice President, Corporate Services | 2013 07 01  | Director, Supply Chain Management | 2015 07 01  |



| FUNCTION                | REFERENCE | TOPIC              | PAGE   |
|-------------------------|-----------|--------------------|--------|
| Supply Chain Management | M05       | Business Authority | 1 of 1 |

## Overview

The acquisition of goods and services from external sources involves the following four primary activities and requires both financial and external commitment approvals:

- **Identification**  
Identification of the need for a specific good or service.
- **Funding**  
The amount, source, and availability of funds.
- **Commitment**  
External business arrangements.
- **Payment**  
The amount and source of funds.

## Financial Authority

The financial authority handles the identification, funding, and payment activities. This authority is responsible for the legitimacy of the expenditure, appropriateness of the amount, and the account charged. The request to acquire goods and services is initiated through a Purchase Requisition.

## External Commitment Authority

The external commitment authority handles the commitment action, as well as any documentation (for example, a purchase order (PO), or a contract). This authority is responsible for the way that the agreement is developed and executed. This includes the business terms and source that is selected.

## Related Documents

- ATCO Group A-15: Expense Contract and Lease Expenditure Approvals
- ATCO Group C-19: Expenditure Approvals and Signing Authorities

| AUTHORIZED BY                      | LAST ISSUED | DESIGNATED OWNER                  | NEXT REVIEW |
|------------------------------------|-------------|-----------------------------------|-------------|
| Vice President, Corporate Services | 2013 07 01  | Director, Supply Chain Management | 2015 07 01  |



| FUNCTION                       | REFERENCE | TOPIC                     | PAGE   |
|--------------------------------|-----------|---------------------------|--------|
| <b>Supply Chain Management</b> | M09       | <b>Supplier Relations</b> | 1 of 2 |

## Overview

It is the practice of ATCO Electric, Distribution Division, herein ATCO Electric, to develop mutually-beneficial long-term business relationships with suppliers that share a common interest in serving customer needs while committing to the health, safety, environmental stewardship, and quality control principles adopted by ATCO Electric.

## Principles

Before we establish a long term business arrangement with a supplier of goods or services, we intend to foster meaningful participation in a competitive process or a certification process, whenever practical.

We do not intend to develop any form of business relationship with any firm that has a pending lawsuit with ATCO Electric. Additionally, where applicable, we do not intend to develop any form of business relationship with any firm that has launched a successful lawsuit with the company in past.

We intend to meet with key suppliers on a regular basis to continuously improve our relationship with them in all areas (for example, in physical distribution, employee education, delivery, service, production, new goods, and communication), and to encourage that necessary information is provided to foster development of the business arrangement (for example, financial, and technical).

## Independence of Suppliers

Suppliers are to be independent from ATCO Electric. When the company purchases goods or services, the company does not create any agency, legal partnership, or joint venture relationship with the supplier.

Suppliers are expected to compete for business from the company without information, arrangements, or any other connection with any other company or person involved in the competition.

Reciprocity is not sought nor endorsed. All business arrangements, whether buying or selling, are independently based on merit of the transaction given the circumstance and the needs of the company.

## Affiliate Relations

Purchases from firms with whom we share a principal owner are dealt with at arm's-length as much as possible. This includes firms that we own in whole or in part or otherwise control and those firms that have a direct investment in us. The purpose of this is to avoid any subsidy to an affiliate activity, maintain confidentiality of our customer information, and avoid preferential treatment of an affiliate.

## Representatives

Personnel employed by or on behalf of a supplier that we do business with or may do business with are considered to be representatives and sales agents.

| AUTHORIZED BY                      | LAST ISSUED | DESIGNATED OWNER                  | NEXT REVIEW |
|------------------------------------|-------------|-----------------------------------|-------------|
| Vice President, Corporate Services | 2013 07 01  | Director, Supply Chain Management | 2015 07 01  |



| FUNCTION                | REFERENCE | TOPIC              | PAGE   |
|-------------------------|-----------|--------------------|--------|
| Supply Chain Management | M09       | Supplier Relations | 2 of 2 |

Representatives of suppliers are treated as guests and received at our discretion or in accordance with any contractual agreements. They are expected to conduct themselves accordingly, particularly with respect to access to our facilities and information.

### Canadian, Local and Aboriginal Business

We encourage Canadian, local and aboriginal business development to our long-term benefit. Where all other relevant commercial factors are considered to be equal among competing proposals, give preference to suppliers within the operating area of ATCO Electric and closest to the point-of-use that is being supplied. Potential suppliers that meet these criteria are encouraged to compete.

### Treatment of Information

We expect that partners of any arrangement will respect confidential information of one another and support corporate policies regarding security, safety, ethical conduct, and any other such policies.

### Conflict of Interest

Avoid actions or circumstances that might lead to any perception of inappropriate influence or potential conflict of interest.

The following measures are important to minimize the potential for perceived conflict:

- Avoid dealing with firms that a staff member has an interest in.
- Require staff keep any personal dealing at arm's-length from Company business;
- Do not solicit or accept free services without written agreement as to our obligations to the source, and require staff not to solicit or accept gifts, favours, or advantages.

### Use of Our Name

Our name may not be used by any third party in the promotion of business without our prior written consent.

### Related Documents

- ATCO Group A-05: Contractor Selection Policy
- ATCO Group A-16: Aboriginal Policy
- ATCO Group Inter-Affiliate Code of Conduct
- ATCO Group D-01: Code of Ethics Policy

| AUTHORIZED BY                      | LAST ISSUED | DESIGNATED OWNER                  | NEXT REVIEW |
|------------------------------------|-------------|-----------------------------------|-------------|
| Vice President, Corporate Services | 2013 07 01  | Director, Supply Chain Management | 2015 07 01  |



| FUNCTION                       | REFERENCE  | TOPIC            | PAGE          |
|--------------------------------|------------|------------------|---------------|
| <b>Supply Chain Management</b> | <b>M13</b> | <b>Inventory</b> | <b>1 of 2</b> |

## Overview

Inventory is goods (material and equipment) held by ATCO Electric that is ready for use, but not actually in use. Inventory is carried only if it is the most cost effective and feasible method of supporting our standards for customer service, Health Safety and Environment and operations.

## Inventory Types

### Recorded Inventory

Recorded inventory is catalogued goods (includes item description, quantity, stocking location and value) that are noted as an asset in our financial records.

### Expensed Inventory

Expensed inventory is goods that are charged directly to capital projects or operating and maintenance activities.

## Inventory Control

Recorded inventory normally supports more than one operating area and is controlled by Supply Chain Management. Control of Expensed inventory stored outside designated Level 1 - Distribution Centre and Level 2 - Field Warehouses rests with the manager of the operating activity or area the inventory is intended to support.

Adjustments to inventory quantities or values are made only to recognize major changes in item market value, or loss suffered through damage, theft or operational inaccuracies.

## Inventory Coverage

The decision to carry inventory and the actual quantity of an item to be carried is based on the lowest overall cost. This includes inventory carrying costs and the anticipated service benefits. The quantity of inventory carried is based upon forecasted activity, revenue and growth.

## Inventory Valuation

Inventory is valued at the landed purchase cost, which includes the purchase price and costs that are directly attributable to acquiring the goods, such as duty, taxes, freight, brokerage.

Used, salvaged or other previously purchased goods may be added to recorded inventory at the lesser of the original landed purchase cost, current landed purchase cost or assessed value. Overstating the true value of these kinds of goods may distort future decisions regarding its use.

| AUTHORIZED BY                      | LAST ISSUED | DESIGNATED OWNER                  | NEXT REVIEW |
|------------------------------------|-------------|-----------------------------------|-------------|
| Vice President, Corporate Services | 2013 07 01  | Director, Supply Chain Management | 2015 07 01  |



| FUNCTION                | REFERENCE | TOPIC     | PAGE   |
|-------------------------|-----------|-----------|--------|
| Supply Chain Management | M13       | Inventory | 2 of 2 |

### Inventory Carrying Cost

Carrying costs are costs attributable to the investment, storage, handling and internal distribution of inventory and are borne by the operating area the inventory is intended to support.

### Inventory Data Collection

Supply Chain Management sets standards for inventory data collection to satisfy financial reporting requirements, assess effectiveness of inventory usage, and focus attention on inventory costs and benefits.

### External Sales

Inventory is not sold externally unless to:

- mitigate risk to staff, operations or reputation,
- support a Company-wide promotion,
- dispose of slow moving or obsolete inventory,
- reduce costs for over stocked amounts, or
- meet special needs in the interests of customer or community relations.

### Inventory Sold to Staff

Inventory is sold to staff at the discretion of the manager of the operating activity the inventory is intended to support, or at the discretion of the Director, Supply Chain Management, providing:

- the goods are only for the personal use of the employee,
- the goods present no hazard in handling or use, and
- sufficient stock remains to satisfy business needs.

Inventory sold to staff is priced based on the landed purchase cost plus applicable taxes, but excluding any other administrative overhead or markup.

### Sales to Affiliates

Inventory may be sold to an Affiliate provided ATCO Electric's incremental costs are recovered and the sale does not jeopardize existing operations support.

Inventory sold to an Affiliate is priced at the current average unit price plus the higher of the current internal inventory loading pool percentage or actual incremental labour costs and overhead to purchase, handle and sell the material.

### Related Documents

- ATCO Group Inter-Affiliate Code of Conduct

| AUTHORIZED BY                      | LAST ISSUED | DESIGNATED OWNER                  | NEXT REVIEW |
|------------------------------------|-------------|-----------------------------------|-------------|
| Vice President, Corporate Services | 2013 07 01  | Director, Supply Chain Management | 2015 07 01  |



| FUNCTION                | REFERENCE | TOPIC            | PAGE   |
|-------------------------|-----------|------------------|--------|
| Supply Chain Management | M15       | Surplus Disposal | 1 of 3 |

## Overview

When a group identifies goods (material, furniture or equipment) it no longer uses, such items should be declared surplus and disposed of. The disposal of the goods provides two major benefits; namely, the salvage revenue obtained from its disposal, and the savings in inventory carrying charges since less stock is now held.

## Determination of Surplus

The suitability of a good for its intended use is the responsibility of the using department. This decision is to be made independently of any request for a donation.

## Disposal Process

Supply Chain Management leads and supports the processes used to dispose of surplus goods, including the overall strategies and specific tactics with respect to disposal efforts.

A Declaration of Surplus form must be completed along with a preliminary assessment of condition and an estimate of the fair market value. The form must be signed by a person from the originating department having sufficient financial signing authority for the estimated value, and forwarded to the Asset Recovery Coordinator.

## Fair Market Value

Fair market value is the estimated cash value of the surplus item if sold at a given point in time. It is determined initially by the area declaring the goods surplus and reassessed by the Asset Recovery Coordinator who will be disposing of the goods.

## Priority for Disposal

Surplus is reallocated or sold in accordance with the following priorities:

1. reallocate within our company,
2. sell to an affiliate company
3. sell to an employee or outsider,
4. scrap, or
5. donation.

Scrap goods are sold to a third party for scrap values unrelated to initial cost or use. Goods to be destroyed or taken to a landfill are not the subject of this practice; however, they must adhere to all environmental controls, legislation, local regulation, and the Company's internal guidelines.

| AUTHORIZED BY                      | LAST ISSUED | DESIGNATED OWNER                  | NEXT REVIEW |
|------------------------------------|-------------|-----------------------------------|-------------|
| Vice President, Corporate Services | 2013 07 01  | Director, Supply Chain Management | 2015 07 01  |



| FUNCTION                | REFERENCE | TOPIC            | PAGE   |
|-------------------------|-----------|------------------|--------|
| Supply Chain Management | M15       | Surplus Disposal | 2 of 3 |

### Internal Transfers

Transfers within the Company are based on fair market value and as agreed between the parties involved. Any capital asset value recorded for equipment remains the same and the record must be updated to reflect the new location.

### Sales to Affiliates

Sales to Affiliates are managed at arm's length without any preferential treatment to ensure the Company avoids any subsidy to an affiliate activity, and maintain confidentiality of the customer information.

### Sales to Employees

Certain type's surplus goods may be designated by the Director, Supply Chain Management as appropriate for sale to employees. Such sales offerings are handled by internal advertising to some or all employees depending on the value, location and type of goods.

### External Sales

Whenever possible multiple potential buyers are sought to ensure effective competition. Each potential buyer must meet pre-established standards, which considers safety, environmental standards for removal and handling, and insurance.

The principal method of encouraging competition is a competitive bid process. Whenever bids are not solicited the reasons for alternative action is noted.

### Local Sales

Business firms closest to the source of the surplus are given opportunities to compete for surplus, and all things being equal, preference in award.

### Award of Business

A buyer is selected on the basis of the value offered. This considers the price but may include any other related costs to make the sale. Reciprocity is not sought nor endorsed and all sales are based on best overall value.

### Donations

Donations must be processed in accordance with SCM practice guideline G13 - Donating Surplus Goods.

|                                    |             |                                   |             |
|------------------------------------|-------------|-----------------------------------|-------------|
| AUTHORIZED BY                      | LAST ISSUED | DESIGNATED OWNER                  | NEXT REVIEW |
| Vice President, Corporate Services | 2013 07 01  | Director, Supply Chain Management | 2015 07 01  |



| FUNCTION                | REFERENCE | TOPIC            | PAGE   |
|-------------------------|-----------|------------------|--------|
| Supply Chain Management | M15       | Surplus Disposal | 3 of 3 |

### Treatment of Information

Details regarding negotiations, bids, or confidential information related to the sale of goods is not disclosed to an external party.

### Payment and Release

All sales are for cash or near cash equivalent such as certified cheque or bank draft, plus applicable taxes. Title or care for the goods is not passed until after such payment is received.

### Documentation

All sales transactions are sufficiently documented to:

- identify applicable terms and conditions,
- track recorded fixed assets,
- recall how a decision was reached, and
- provide an audit trail for funds.

### Related Documents

- ATCO Group Inter-Affiliate Code of Conduct
- SCM Practice Guideline G13 – Donating Surplus Goods
- Declaration of Surplus form

| AUTHORIZED BY                      | LAST ISSUED | DESIGNATED OWNER                  | NEXT REVIEW |
|------------------------------------|-------------|-----------------------------------|-------------|
| Vice President, Corporate Services | 2013 07 01  | Director, Supply Chain Management | 2015 07 01  |

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #20**

November 5, 2013  
Transcript Volume 2

---

Undertaking: By Mr. Janigan to Mr. Massie

Page 331, Lines 14 -17

With respect to the CIS billing system conversion, to advise what the \$75,000 in other expenses related to.

**Yukon Electrical Response:**

The \$75,000 is associated with food, travel and accommodation costs associated with an employee of Yukon Electrical acting the subject matter expert for the billing system conversion project that took place in Edmonton. Costs were incurred for travel between Whitehorse and Edmonton as well as food and accommodation in Edmonton for extended periods of time during the project. As these non-labour costs were incremental and directly related to the billing system conversion project, they were added to and capitalized to the project.

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #22**

November 6, 2013  
Transcript Volume 3

---

Undertaking: By Dr. Pinard to Mr. Redden

Page 456, Lines 1 - 4

To advise if the Pembina Study referenced above included methane emissions, particularly in unburned methane.

**Yukon Electrical Response:**

Yes, Pembina did include upstream methane emissions, including gas production and gathering systems in their review of the Calgary LNG supplier.

Page 24 of the Pembina Study outlines how methane emissions prior to combustion are accounted for.

The Produce Fuel stage indicates that there are more CH<sub>4</sub> emissions emitted during diesel production (crude extraction and refining) than LNG production (natural gas extraction, gathering, treatment and liquefaction).

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #23**

November 6, 2013  
Transcript Volume 3

---

Undertaking: By Ms. Middler to Mr. Massie

Page 499, Lines 15 - 17

To advise how the load control transponder communicates from the meter to the transponder.

**Yukon Electrical Response:**

The Load Control Transponder (LCT) referred to in this undertaking would use the same Power Line Carrier technology as the proposed AMR meters to communicate with the Substation Communication Equipment.

The LCT is a low voltage device that would be installed beyond-the-meter which uses the TWACS base technology. The information is carried over the power lines, as opposed to another method such as radio frequency. As the LCT communicates directly with the proposed Substation Communication Equipment, there is no direct communication between it and the meter.

The LCT is a stand-alone device that could be connected in the low voltage circuit of the customer's equipment, much like a switch. A signal from the TWACS master station would communicate with the LCT to open or close the switches. The device can be used to control up to two circuits. For example, one circuit might be connected to the customer's electric water heater and one circuit might be connected to the customer's electric baseboard heating. It can also be installed on single phase commercial systems.

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #25**

November 6, 2013  
Transcript Volume 3

---

Undertaking: By Ms. Bentivegna to Mr. Grattan

Page 521, Line 9

Regarding the inflation rates in LE-YECL-15, what rates were approved?

**Yukon Electrical Response:**

All of the labour inflation rates referred to in LE-YECL-15 were approved as requested. Please refer to Attachment 1 for a listing of the rates approved as well as the related Board Decisions in which they were approved.

Please also note that the Alberta Utilities Commission approved ATCO Electric Ltd.'s forecast labour inflation rates of 3.5% for each of 2013 and 2014 in Decision 2013-358 regarding its 2013-2014 Transmission General Tariff Application.

| Utility                                   | Requested (as per LE-YECL-15) |       |       | Approved |       |       | Decision                                  |
|-------------------------------------------|-------------------------------|-------|-------|----------|-------|-------|-------------------------------------------|
|                                           | 2011                          | 2012  | 2013  | 2011     | 2012  | 2013  |                                           |
| ATCO Electric (2011-2012 GTA)             | 3.00%                         | 3.00% |       | 3.00%    | 3.00% |       | Decision 2011-134                         |
| AltaLink (2011-2012 GTA)                  | 4.24%                         | 4.24% |       | 4.24%    | 4.24% |       | Decision 2011-453                         |
| EPCOR (2012 GTA)                          |                               | 4.00% |       |          | 4.00% |       | Decision 2012-272                         |
| Fortis (2012 GTA)                         |                               | 3.00% |       |          | 3.00% |       | Decision 2012-108 (Negotiated Settlement) |
| Northland Utilities (NWT) (2011-2013 GRA) | 3.50%                         | 3.00% | 3.00% | 3.50%    | 3.00% | 3.00% | Decision 17-2011 (Negotiated Settlement)  |
| Northland Utilities (NUY) (2011-2013 GRA) | 3.50%                         | 3.00% | 3.00% | 3.50%    | 3.00% | 3.00% | Decision 12-2011 (Negotiated Settlement)  |

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #26**

November 6, 2013  
Transcript Volume 3

---

Undertaking: By Ms. Bentivegna to Mr. Grattan

Page 526, Lines 23 – 25 and Page 527, Lines 1 – 3

In Schedule 10.1, Line 14, the capital cost allowance, explain why the trend changes so that allowance exceeds the depreciation line 3 for the previous test years 2008 and 2009.

**Yukon Electrical Response:**

In 2008 and 2009, capital cost allowance (CCA) was unusually high as a result of the CIS billing system conversion project, which was completed in 2008. This cost of \$1,035,000 was added to Class 12 at a rate of 100% in 2008, resulting in CCA deductions of \$517,500 ( $\$1,035,000 \times 50\% \times 100\%$ ) for 2008 and \$517,500 ( $(\$1,035,000 - \$517,500) \times 100\%$ ) for 2009.

Software such as the new billing system is depreciated over 10 years for accounting purposes, resulting in much lower depreciation than CCA for the project for 2008 and 2009.

By 2010, all of the CCA related to the CIS billing system conversion project had already been deducted, yet it was still continuing to be depreciated for accounting purposes, resulting in higher depreciation than CCA for the years 2010-2012.

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #28**

November 6, 2013  
Transcript Volume 3

---

Undertaking: By Ms. Bentivegna to Mr. Massie

Page 559, Lines 8 - 13

With respect to the contract with ATCO Electric in relation to the After-Hours Call Centre, to advise how often YECL receives updates re the service and how it determines the costs.

**Yukon Electrical Response:**

Yukon Electrical receives monthly call volume reports from the After-Hours Call Centre. These reports show the number of calls answered each day and those calls that result in a notification to the Yukon Electrical Power Line Technician who is on-call.

Yukon Electrical compares call volume against monthly billing to ensure that costs are reasonable and also maintains a spreadsheet that tracks the monthly payment for After-Hours affiliate service charges. This spreadsheet is reviewed monthly and any large fluctuations are investigated further.

Please refer to Attachment 1 for a copy of the 2012 monthly report summary sheet and the year-to-date report for 2013.

| Jan               | Jan    | Feb               | Feb    | Mar               | Mar    | Apr               | Apr    | May               | May    | June              | June   | July              | July   | Aug               | Aug    | Sept              | Sept   | Oct               | Oct    | Nov               | Nov    | Dec               | Dec    |
|-------------------|--------|-------------------|--------|-------------------|--------|-------------------|--------|-------------------|--------|-------------------|--------|-------------------|--------|-------------------|--------|-------------------|--------|-------------------|--------|-------------------|--------|-------------------|--------|
| YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT |
| 9                 | 5      | 20                | 2      | 2                 | 2      | 29                | 1      | 7                 | 1      | 50                | 19     | 11                | 12     | 10                | 7      | 4                 | 0      | 5                 | 8      | 5                 | 1      |                   |        |
| 11                | 2      | 2                 | 2      | 2                 | 0      | 20                | 10     | 5                 | 2      | 9                 | 7      | 40                | 7      | 5                 | 4      | 10                | 2      | 10                | 5      | 39                | 7      |                   |        |
| 8                 | 3      | 2                 | 3      | 2                 | 0      | 14                | 1      | 9                 | 7      | 17                | 3      | 3                 | 7      | 9                 | 1      | 10                | 1      | 23                | 1      | 2                 | 8      |                   |        |
| 4                 | 6      | 13                | 0      | 15                | 4      | 10                | 0      | 124               | 16     | 95                | 14     | 5                 | 4      | 2                 | 0      | 15                | 4      | 5                 | 2      | 13                | 2      |                   |        |
| 5                 | 5      | 19                | 0      | 22                | 0      | 10                | 1      | 33                | 16     | 13                | 7      | 14                | 3      | 11                | 2      | 5                 | 7      | 3                 | 0      | 5                 | 4      |                   |        |
| 2                 | 2      | 8                 | 1      | 13                | 1      | 3                 | 1      | 7                 | 0      | 1                 | 8      | 5                 | 2      | 86                | 3      | 6                 | 5      | 4                 | 2      | 8                 | 1      |                   |        |
| 5                 | 1      | 8                 | 2      | 7                 | 0      | 1                 | 0      | 10                | 0      | 6                 | 2      | 9                 | 1      | 19                | 5      | 13                | 8      | 8                 | 5      | 10                | 4      |                   |        |
| 9                 | 0      | 7                 | 1      | 19                | 11     | 6                 | 4      | 10                | 2      | 8                 | 12     | 10                | 4      | 5                 | 4      | 76                | 12     | 16                | 6      |                   |        |                   |        |
| 1                 | 10     | 3                 | 0      | 6                 | 7      | 15                | 8      | 8                 | 4      | 22                | 8      | 11                | 8      | 5                 | 2      | 11                | 0      | 23                | 19     |                   |        |                   |        |
| 7                 | 0      | 6                 | 8      | 4                 | 8      | 18                | 9      | 7                 | 2      | 14                | 6      | 5                 | 2      | 4                 | 6      | 11                | 4      | 18                | 4      |                   |        |                   |        |
| 11                | 2      | 4                 | 1      | 6                 | 0      | 7                 | 0      | 7                 | 2      | 18                | 4      | 11                | 1      | 2                 | 1      | 17                | 4      | 10                | 11     |                   |        |                   |        |
| 5                 | 1      | 6                 | 0      | 8                 | 1      | 10                | 0      | 11                | 2      | 15                | 5      | 106               | 0      | 13                | 4      | 34                | 6      | 1                 | 0      |                   |        |                   |        |
| 5                 | 5      | 8                 | 1      | 7                 | 2      | 3                 | 0      | 13                | 2      | 9                 | 2      | 15                | 4      | 9                 | 3      | 9                 | 2      | 1                 | 0      |                   |        |                   |        |
| 30                | 14     | 5                 | 0      | 4                 | 0      | 1                 | 0      | 10                | 7      | 11                | 0      | 1                 | 2      | 8                 | 6      | 15                | 4      | 1                 | 0      |                   |        |                   |        |
| 46                | 11     | 5                 | 4      | 6                 | 1      | 11                | 1      | 10                | 7      | 2                 | 4      | 11                | 4      | 4                 | 2      | 6                 | 4      | 9                 | 2      |                   |        |                   |        |
| 7                 | 3      | 7                 | 4      | 0                 | 0      | 5                 | 5      | 10                | 8      | 4                 | 2      | 9                 | 2      | 6                 | 1      | 5                 | 2      | 6                 | 2      |                   |        |                   |        |
| 10                | 7      | 3                 | 5      | 1                 | 0      | 10                | 2      | 14                | 6      | 63                | 24     | 42                | 4      | 8                 | 10     | 6                 | 7      | 10                | 1      |                   |        |                   |        |
| 11                | 6      | 11                | 3      | 20                | 5      | 7                 | 3      | 4                 | 3      | 25                | 11     | 18                | 1      | 0                 | 2      | 6                 | 6      | 6                 | 8      |                   |        |                   |        |
| 2                 | 3      | 4                 | 4      | 17                | 4      | 6                 | 7      | 2                 | 4      | 9                 | 7      | 6                 | 4      | 11                | 0      | 9                 | 6      | 10                | 3      |                   |        |                   |        |
| 3                 | 3      | 5                 | 1      | 5                 | 4      | 2                 | 3      | 2                 | 0      | 7                 | 4      | 4                 | 7      | 49                | 8      | 8                 | 1      | 3                 | 3      |                   |        |                   |        |
| 10                | 1      | 6                 | 6      | 6                 | 0      | 3                 | 1      | 7                 | 2      | 14                | 13     | 5                 | 8      | 2                 | 2      | 8                 | 2      | 4                 | 3      |                   |        |                   |        |
| 2                 | 3      | 26                | 2      | 12                | 3      | 5                 | 5      | 3                 | 2      | 5                 | 5      | 8                 | 0      | 30                | 3      | 5                 | 1      | 8                 | 9      |                   |        |                   |        |
| 12                | 3      | 4                 | 4      | 3                 | 0      | 11                | 2      | 13                | 4      | 6                 | 4      | 9                 | 4      | 5                 | 4      | 10                | 2      | 6                 | 6      |                   |        |                   |        |
| 17                | 6      | 0                 | 1      | 2                 | 0      | 24                | 7      | 10                | 4      | 7                 | 5      | 25                | 2      | 8                 | 3      | 7                 | 4      | 3                 | 3      |                   |        |                   |        |
| 10                | 2      | 10                | 3      | 12                | 1      | 5                 | 3      | 6                 | 6      | 11                | 1      | 69                | 15     | 61                | 4      | 6                 | 3      | 9                 | 0      |                   |        |                   |        |
| 5                 | 2      | 12                | 3      | 11                | 7      | 11                | 3      | 1                 | 1      | 11                | 9      | 5                 | 1      | 6                 | 5      | 11                | 0      | 6                 | 2      |                   |        |                   |        |
| 2                 | 7      | 9                 | 0      | 5                 | 0      | 3                 | 0      | 14                | 3      | 13                | 3      | 6                 | 4      | 8                 | 3      | 43                | 4      | 4                 | 5      |                   |        |                   |        |
| 10                | 5      | 8                 | 0      | 13                | 1      | 0                 | 0      | 12                | 5      | 14                | 1      | 2                 | 3      | 19                | 9      | 3                 | 0      | 47                | 4      |                   |        |                   |        |
| 4                 | 1      | 0                 | 0      | 9                 | 0      | 5                 | 0      | 7                 | 4      | 11                | 9      | 8                 | 1      | 11                | 5      | 1                 | 8      | 8                 | 1      |                   |        |                   |        |
| 11                | 0      | 0                 | 0      | 2                 | 0      | 22                | 5      | 7                 | 2      | 51                | 8      | 9                 | 0      | 7                 | 5      | 16                | 3      | 14                | 11     |                   |        |                   |        |
| 11                | 5      | 0                 | 0      | 2                 | 1      | 0                 | 0      | 18                | 4      | 0                 | 0      | 25                | 10     | 9                 | 2      |                   |        | 13                | 4      |                   |        |                   |        |
| 285               | 124    | 221               | 61     | 243               | 63     | 277               | 82     | 401               | 128    | 541               | 207    | 507               | 127    | 432               | 116    | 386               | 112    | 294               | 130    | 82                | 27     |                   |        |

**YE EMG  
RSP Ans** YUKON ELECTRICAL EMERGENCY RESPONSE AFTER HOURS PHONE LINE ANSWERED

**YE PLT** YUKON ELECTRICAL POWER LINE TECHNICIAN CALLED FOR RESPONSE OR POWER LINE TECHNICIAN CALLED IN FOR CHECK IN REPORT

| Jan               | Jan    | Feb               | Feb    | Mar               | Mar    | Apr               | Apr    | May               | May    | June              | June   | July              | July   | Aug               | Aug    | Sept              | Sept   | Oct               | Oct    | Nov               | Nov    | Dec               | Dec    |
|-------------------|--------|-------------------|--------|-------------------|--------|-------------------|--------|-------------------|--------|-------------------|--------|-------------------|--------|-------------------|--------|-------------------|--------|-------------------|--------|-------------------|--------|-------------------|--------|
| YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT | YE EMG<br>RSP Ans | YE PLT |
| 1                 | 2      | 5                 | 0      | 2                 | 2      | 2                 | 3      | 24                | 4      | 11                | 1      | 4                 | 4      | 9                 | 6      | 3                 | 3      | 8                 | 7      | 5                 | 3      | 4                 | 0      |
| 17                | 17     | 7                 | 3      | 7                 | 2      | 10                | 0      | 6                 | 2      | 4                 | 2      | 6                 | 0      | 12                | 3      | 1                 | 0      | 9                 | 6      | 9                 | 0      | 19                | 11     |
| 6                 | 3      | 23                | 7      | 4                 | 3      | 8                 | 0      | 3                 | 2      | 2                 | 3      | 12                | 2      | 18                | 8      | 3                 | 5      | 10                | 3      | 5                 | 0      | 10                | 3      |
| 9                 | 4      | 3                 | 18     | 4                 | 2      | 5                 | 6      | 10                | 0      | 9                 | 2      | 7                 | 0      | 1                 | 1      | 13                | 3      | 6                 | 0      | 0                 | 0      | 4                 | 2      |
| 11                | 0      | 7                 | 10     | 40                | 2      | 6                 | 4      | 2                 | 0      | 8                 | 3      | 10                | 0      | 15                | 5      | 27                | 6      | 10                | 4      | 6                 | 1      | 19                | 3      |
| 10                | 0      | 12                | 7      | 8                 | 0      | 10                | 0      | 1                 | 3      | 6                 | 0      | 28                | 3      | 5                 | 0      | 16                | 4      | 25                | 13     | 7                 | 0      | 9                 | 0      |
| 12                | 5      | 4                 | 2      | 11                | 0      | 2                 | 1      | 14                | 0      | 14                | 3      | 9                 | 11     | 10                | 1      | 8                 | 9      | 46                | 6      | 6                 | 0      | 6                 | 0      |
| 2                 | 4      | 10                | 0      | 8                 | 0      | 2                 | 1      | 8                 | 7      | 5                 | 3      | 12                | 11     | 7                 | 0      | 2                 | 1      | 2                 | 2      | 3                 | 0      | 3                 | 3      |
| 10                | 0      | 9                 | 6      | 14                | 2      | 24                | 1      | 13                | 3      | 12                | 12     | 50                | 3      | 4                 | 0      | 1                 | 8      | 0                 | 10     | 5                 | 2      | 5                 | 3      |
| 10                | 0      | 8                 | 1      | 6                 | 4      | 4                 | 2      | 23                | 6      | 4                 | 4      | 33                | 7      | 7                 | 6      | 7                 | 3      | 9                 | 8      | 3                 | 2      | 12                | 6      |
| 9                 | 2      | 4                 | 5      | 1                 | 0      | 7                 | 3      | 7                 | 0      | 19                | 5      | 21                | 9      | 8                 | 7      | 10                | 0      | 10                | 8      | 1                 | 1      | 15                | 6      |
| 7                 | 4      | 8                 | 6      | 9                 | 1      | 4                 | 2      | 37                | 11     | 4                 | 1      | 22                | 10     | 9                 | 8      | 10                | 2      | 5                 | 2      | 9                 | 3      | 4                 | 3      |
| 2                 | 2      | 8                 | 10     | 6                 | 3      | 5                 | 7      | 3                 | 4      | 6                 | 0      | 10                | 2      | 15                | 6      | 7                 | 4      | 4                 | 1      | 9                 | 3      | 8                 | 2      |
| 1                 | 3      | 7                 | 2      | 9                 | 4      | 3                 | 4      | 17                | 0      | 3                 | 3      | 3                 | 1      | 10                | 2      | 4                 | 0      | 2                 | 3      | 4                 | 6      | 11                | 5      |
| 1                 | 0      | 6                 | 0      | 9                 | 2      | 0                 | 0      | 7                 | 2      | 5                 | 0      | 3                 | 2      | 1                 | 1      | 7                 | 2      | 9                 | 3      | 7                 | 3      | 5                 | 5      |
| 7                 | 0      | 7                 | 0      | 7                 | 1      | 7                 | 6      | 16                | 3      | 3                 | 5      | 13                | 2      | 5                 | 0      | 6                 | 4      | 7                 | 1      | 1                 | 1      | 3                 | 4      |
| 13                | 1      | 7                 | 0      | 6                 | 0      | 6                 | 6      | 5                 | 1      | 0                 | 0      | 11                | 8      | 7                 | 0      | 8                 | 3      | 5                 | 6      | 1                 | 1      | 10                | 4      |
| 185               | 9      | 3                 | 1      | 4                 | 8      | 8                 | 6      | 4                 | 1      | 13                | 3      | 14                | 6      | 6                 | 10     | 6                 | 2      | 7                 | 4      | 7                 | 13     | 4                 | 4      |
| 11                | 1      | 3                 | 1      | 8                 | 1      | 5                 | 0      | 2                 | 4      | 8                 | 4      | 8                 | 6      | 2                 | 5      | 6                 | 5      | 8                 | 2      | 6                 | 2      | 3                 | 4      |
| 10                | 4      | 11                | 7      | 9                 | 0      | 5                 | 3      | 0                 | 0      | 11                | 7      | 6                 | 4      | 14                | 4      | 192               | 16     | 2                 | 6      | 6                 | 2      | 4                 | 2      |
| 8                 | 20     | 12                | 4      | 11                | 0      | 2                 | 4      | 3                 | 0      | 3                 | 4      | 5                 | 1      | 13                | 4      | 5                 | 0      | 5                 | 1      | 5                 | 1      | 4                 | 2      |
| 2                 | 6      | 8                 | 3      | 6                 | 1      | 2                 | 0      | 17                | 2      | 8                 | 4      | 7                 | 4      | 8                 | 0      | 1                 | 0      | 14                | 3      | 1                 | 0      | 6                 | 7      |
| 12                | 2      | 13                | 5      | 10                | 1      | 11                | 1      | 16                | 6      | 6                 | 11     | 10                | 7      | 16                | 2      | 1                 | 0      | 11                | 7      | 9                 | 0      | 10                | 9      |
| 13                | 2      | 29                | 0      | 5                 | 0      | 10                | 1      | 21                | 11     | 53                | 11     | 7                 | 1      | 9                 | 0      | 14                | 4      | 11                | 7      | 5                 | 5      | 27                | 6      |
| 11                | 4      | 3                 | 1      | 3                 | 2      | 9                 | 5      | 8                 | 1      | 16                | 7      | 12                | 12     | 4                 | 1      | 15                | 9      | 7                 | 4      | 1                 | 0      | 1                 | 0      |
| 12                | 2      | 3                 | 0      | 10                | 0      | 9                 | 0      | 1                 | 2      | 8                 | 2      | 78                | 10     | 5                 | 3      | 11                | 3      | 5                 | 2      | 8                 | 2      | 6                 | 0      |
| 12                | 0      | 6                 | 0      | 8                 | 2      | 10                | 3      | 1                 | 1      | 7                 | 1      | 50                | 17     | 26                | 10     | 8                 | 6      | 6                 | 4      | 6                 | 9      | 2                 | 0      |
| 2                 | 0      | 9                 | 4      | 5                 | 1      | 4                 | 2      | 40                | 2      | 7                 | 4      | 6                 | 7      | 14                | 9      | 9                 | 9      | 1                 | 1      | 5                 | 3      | 1                 | 2      |
| 3                 | 2      | 11                | 1      | 9                 | 6      | 5                 | 4      | 12                | 4      | 7                 | 2      | 9                 | 14     | 6                 | 0      | 22                | 10     | 11                | 2      | 5                 | 2      | 4                 | 0      |
| 8                 | 0      | 0                 | 0      | 13                | 8      | 22                | 2      | 12                | 3      | 2                 | 0      | 12                | 6      | 7                 | 5      | 3                 | 2      | 33                | 5      | 3                 | 2      | 13                | 11     |
| 13                | 1      | 0                 | 0      | 9                 | 16     | 0                 | 0      | 13                | 0      | 0                 | 0      | 8                 | 0      | 9                 | 6      | 0                 | 0      | 8                 | 2      | 0                 | 0      | 9                 | 3      |
| 430               | 100    | 246               | 104    | 261               | 74     | 207               | 77     | 346               | 85     | 264               | 107    | 486               | 170    | 282               | 113    | 426               | 123    | 296               | 133    | 148               | 67     | 241               | 110    |

YE EMG  
RSP Ans YUKON ELECTRICAL EMERGENCY RESPONSE AFTER HOURS PHONE LINE ANSWERED

YE PLT YUKON ELECTRICAL POWER LINE TECHNICIAN CALLED FOR RESPONSE OR POWER LINE TECHNICIAN CALLED IN FOR CHECK IN REPORT

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #29**

November 6, 2013  
Transcript Volume 3

---

Undertaking: By Ms. Bentivegna to Mr. Redden

Page 566, Lines 9 - 12

Provide the total cost of salary, benefits and pension for this position [Senior Corporate Communications Advisor] for the portion for which YECL is responsible [as compared to the total cost spent on part-time contractors in 2008, 2009 and 2010].

**Yukon Electrical Response:**

Prior to 1997, when Yukon Electrical and Yukon Energy were jointly managed, the two companies shared a full time Corporate Communications position. The role was split between the two utilities. Subsequent to 1997, when management between the two utilities ceased to be combined, Yukon Electrical continued to have a part-time Supervisor Corporate Communications position until 2007 when the individual left the Yukon. From 2008 until 2011, when the position of Senior Corporate Communications Advisor was recreated, Yukon Electrical attempted to meet its communications needs through the use of time allocated by other staff members, part-time temporary help and third party contractors. This approach did not, however, meet the needs of Yukon Electrical, its customers or employees as the temporary and part-time employees were not able to gain the in-depth knowledge of Yukon Electrical that is required and were not experienced enough to react in a timely fashion to provide the level of communication expected by customers, the media, and other stakeholders.

The total costs incurred in 2008-2010 for time spent by the Administrative Assistant position (now called the Executive Assistant on the 2013 organization chart), temporary part-time employees, and third party contractors on Corporate Communications was as follows:

|      |          |
|------|----------|
| 2008 | \$12,003 |
| 2009 | \$28,582 |
| 2010 | \$35,721 |

Yukon Electrical employees in addition to the Administrative Assistant also spent time assisting with Corporate Communications in the 2008-2010 time period. This work was covered off with unpaid overtime in order to complete corporate communications tasks in addition to their regular ongoing duties. This approach was determined to be unsustainable.

The total cost for the Senior Corporate Communications Advisor (0.6 FTE) for 2012 including salary and benefits was \$84,462.

Yukon Electrical also notes its approach is consistent with other northern utilities that have a permanent Corporate Communications person on staff. Both the Northwest Territories Power Corporation (forecast to have 8,657 customers for 2013/14) and Yukon Energy Corporation (forecast to have 2,003 customers for 2013) have full-time Corporate Communications positions approved in their latest regulatory filings.

Yukon Utilities Board  
 In the Matter of Yukon Electrical Company Limited  
 2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #30**

November 6, 2013  
 Transcript Volume 3

Undertaking: By Ms. Bentivegna to Mr. Massie

Page 569, Lines 12 - 15

Provide statistics regarding error rates and number of vehicle incidents for 2009, '10, '11, '12 and '13.

**Yukon Electrical Response:**

The table below provides statistics related to meter reading for the years 2009-2013. Please note that Yukon Electrical is unable to provide the error rate for 2009 as a new billing system was implemented in the year and the old system did not track the information necessary to calculate error rates.

|                                  | <b>2009</b>          | <b>2010</b> | <b>2011</b> | <b>2012</b> | <b>2013 YTD</b> |
|----------------------------------|----------------------|-------------|-------------|-------------|-----------------|
| <b>Error Reads</b>               | Not Available        | 489         | 453         | 1,319       | 1,262           |
| <b>Total Reads</b>               | 184,174              | 187,580     | 191,306     | 198,351     | 169,445         |
| <b>Error Rate</b>                | <b>Not Available</b> | <b>0.3%</b> | <b>0.2%</b> | <b>0.7%</b> | <b>0.7%</b>     |
| <b>Vehicle Incidents</b>         | <b>2</b>             | <b>6</b>    | <b>3</b>    | <b>5</b>    | <b>1</b>        |
| <b>Personal Injury Incidents</b> | <b>1</b>             | <b>1</b>    | <b>1</b>    | <b>2</b>    | <b>5</b>        |

Meter Readers are an entry level position with high turnover, which often results in increased levels of errors, vehicle incidents, and personal injury incidents (dog bites, slip and falls, etc.). As discussed in Business Case #27, reducing the error rate and preventing vehicle incidents and personal injury incidents are important drivers for the request to implement AMR in addition to the cost savings that have been forecast.

Yukon Utilities Board  
 In the Matter of Yukon Electrical Company Limited  
 2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #31**

November 6, 2013  
 Transcript Volume 3

Undertaking: By Ms. Bentivegna to Mr. Massie

Page 570, Lines 7 - 9

Overtime that was done by the meter readers for 2009, '10, '11,' 12 and '13.

**Yukon Electrical Response:**

The chart below identifies overtime hours for meter reading in the Whitehorse and Southern Lakes areas for 2009 – 2013 by Meter Readers. Also identified are overtime hours completed by non-designated meter reading staff, including Field Service Representatives and Power Line Technicians that were assigned the task of meter reading. This chart is only for the communities being considered for Automated Meter Reading and excludes the isolated communities. Please note that over the timeframe outlined in the below table, there were many occasions when estimates were required to be used instead of actual meter reads. These estimates were usually required due to a lack of ability of Meter Readers to complete their workload.

|          | <b>Meter Reader<br/>OT Hours</b> | <b>Cost of<br/>Meter Reader<br/>OT Hours</b> | <b>Meter Reading<br/>Hours by Non-<br/>Meter Reader<br/>Staff</b> | <b>Meter Reading<br/>Hours by Non-<br/>Meter Reader<br/>Staff</b> |
|----------|----------------------------------|----------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------------|
| 2009     | 5                                | \$205                                        | 2,376                                                             | \$66,448                                                          |
| 2010     | 51                               | \$2,442                                      | 689                                                               | \$27,156                                                          |
| 2011     | 121                              | \$6,592                                      | 559                                                               | \$22,046                                                          |
| 2012     | 56                               | \$2,984                                      | 325                                                               | \$15,326                                                          |
| YTD 2013 | 25                               | \$1,374                                      | 235                                                               | \$11,595                                                          |

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

### **RESPONSE TO UNDERTAKING #32**

November 6, 2013  
Transcript Volume 3

---

Undertaking: By Ms. Bentivegna to Mr. Massie

Page 579, Lines 11 - 16

To provide the costs for the contractors referred to in WL-YECL-5(j) Attachment 1 from 2009 until the Engineering Tech 1 Civil position was created or filled.

#### **Yukon Electrical Response:**

The approximate amounts spent on contractors referred to in WL-YECL-5(j) Attachment 1 for duties that are now being completed by the Engineering Tech 1 Civil position were as follows:

|        |           |
|--------|-----------|
| 2009   | \$17,958  |
| 2010   | \$77,349  |
| 2011   | \$283,989 |
| 2012** | \$56,197  |

\*\* To September, as the position was created in October 2012

The Engineering Tech 1 Civil is responsible for design, estimating, coordinating, completion, review and overall management of various projects. The major capital projects that this position will be the project lead for in the test years as opposed to using an outside consultant include: Fish Lake #1 Turbine and Building Replacement, Fish Lake Dyke Upgrade, Old Crow Plant Expansion, Fish Lake Ditch #3 Diversion Structure Replacement and the Fish Lake Unit #1 Spillway Diversion Structure.

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #33**

November 6, 2013  
Transcript Volume 3

---

Undertaking: By Ms. Bentivegna to Mr. Massie

Page 584, Lines 18 - 22

Advise as to how many Customer Service Advisors YECL had when it had 11,000 customers, and what the time period was when YECL added the customer service advisor.

**Yukon Electrical Response:**

Yukon Electrical had approximately 11,000 customers in the early 1990s. In 1996, Yukon Electrical had approximately 13,000 customers. Since 1996-1997 and the end of the management agreement with Yukon Energy, Yukon Electrical has operated with four Customer Service Advisors and one Customer Service Advisor Team Lead. Yukon Electrical is forecasting to have over 17,000 customers when the additional Customer Service Advisor position is added in 2013.

Yukon Utilities Board  
 In the Matter of Yukon Electrical Company Limited  
 2013-2015 General Rate Application

### RESPONSE TO UNDERTAKING #34

November 6, 2013  
 Transcript Volume 3

Undertaking: By Ms. Bentivegna to Mr. Massie

Page 585, Lines 12 - 17

With regards to the Customer Service Advisor position, to advise as to the number of customer interactions that result in a work request of some sort in 2009, '10, '11 and '12.

#### Yukon Electrical Response:

Please refer to the below table for the requested information for 2010, 2011, 2012 and October 31<sup>st</sup>, 2013 year-to-date. Yukon Electrical is unable to provide information for 2009 as a result of the ATCO-CIS Billing System Conversion Project.

| Work Request Type    | 2010         | 2011         | 2012          | YTD2013       |
|----------------------|--------------|--------------|---------------|---------------|
| New Accounts         | 4,478        | 3,537        | 3,874         | 3,392         |
| Account Close Outs   | 1,519        | 1,340        | 1,400         | 1,372         |
| Premises Maintenance | 791          | 630          | 624           | 603           |
| Seasonal Accounts    | 1,587        | 1,565        | 1,221         | 1,450         |
| Special Meter Reads  | 587          | 453          | 1,319         | 1,262         |
| Meter Exchanges      | 254          | 1,342        | 2,047         | 2,880         |
| <b>Total</b>         | <b>9,216</b> | <b>8,867</b> | <b>10,485</b> | <b>10,959</b> |

An additional customer interaction that Yukon Electrical is unable to track is the task of collection of overdue accounts. Approximately 25% of Customer Service Advisor time is spent on collection related activities. This effort reduces the risk of accounts needing to be written off to bad debt as evidenced by Yukon Electrical's low provision for uncollectable accounts detailed on Schedule 5.1, line 35.

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

### **RESPONSE TO UNDERTAKING #35**

November 7, 2013  
Transcript Volume 4

---

Undertaking: Ms. Bentivegna to Mr. Grattan

Page 603, Lines 5 - 10

With respect to schedules 8.10 and 7.1, to advise why there would be a working capital calculation for FRSR, which is included in depreciation expense, when the amount has not actually been spent.

#### **Yukon Electrical Response:**

The inclusion of depreciation, including the FRSR, in working capital is consistent with long standing regulatory practices approved by the Alberta Utilities Commission and its predecessor, the Alberta Energy and Utilities Board (AEUB), dating back to 1991. Yukon Electrical's calculation of working capital, including FRSR in depreciation expense, is consistent with this approach.

For example, in Decision E91095, the AEUB stated:

*Since cash flows from retained earnings and depreciation are internal sources of financing, the use of these internal sources in the financing of plant additions and/or other applications of funds are also deemed to occur evenly throughout the year. Therefore, no compounding is deemed to occur under the mid year convention since substantially all cash flows are deemed to match with corresponding outflows.*

In Decision U97065 (page 313-314) the AEUB reaffirmed Decision E91095 and stated:

*Revenue cash flows to cover depreciation and return on common equity are internal sources of funds used to finance plan additions, to refinance debt and preferred securities and for other corporate purposes. Generally, there is no certainty respecting the timing of these types of expenditures throughout the year. Accordingly, in the past the Board has accepted that these expenditures occur on a uniform basis throughout the year, with payment date equivalent to the provision of service date.*

*The Board continues to hold the view that inclusion of depreciation and common equity return in NWC is appropriate. The portion of the common equity return held as retained earnings is comparable to and can be handled in the same way as depreciation.*

Yukon Utilities Board  
 In the Matter of Yukon Electrical Company Limited  
 2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #36**

November 7, 2013  
 Transcript Volume 4

Undertaking: By Ms. Bentivegna to Mr. Massie

Page 622, Lines 3 - 6

To produce the annual operation and maintenance expenditures and monthly maintenance hours for 2010, 2011 and 2012 [for Haines Junction or any other community].

**Yukon Electrical Response:**

The annual operation and maintenance expenditures for the Haines Junction Standby Generation Plant were as follows:

|      |          |
|------|----------|
| 2010 | \$30,364 |
| 2011 | \$19,203 |
| 2012 | \$8,580  |

The annual hours were as follows:

|              | <b>2010</b> | <b>2011</b> | <b>2012</b> |
|--------------|-------------|-------------|-------------|
| <b>Jan</b>   | 2           | 2           | 1           |
| <b>Feb</b>   | 1           | -           | -           |
| <b>Mar</b>   | 4           | 3           | -           |
| <b>Apr</b>   | -           | -           | 1           |
| <b>May</b>   | -           | 2           | -           |
| <b>Jun</b>   | -           | 10          | -           |
| <b>Jul</b>   | 3           | 2           | 9           |
| <b>Aug</b>   | 9           | 2           | -           |
| <b>Sep</b>   | -           | -           | 6           |
| <b>Oct</b>   | 3           | 20          | -           |
| <b>Nov</b>   | 40          | 4           | -           |
| <b>Dec</b>   | -           | 6           | 1           |
| <b>Total</b> | <u>62</u>   | <u>51</u>   | <u>18</u>   |

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #37**

November 7, 2013  
Transcript Volume 4

---

Undertaking: Ms. Bentivegna to Mr. Massie

Page 623, Lines 21 – 25 and Page 624, Lines 1 – 11

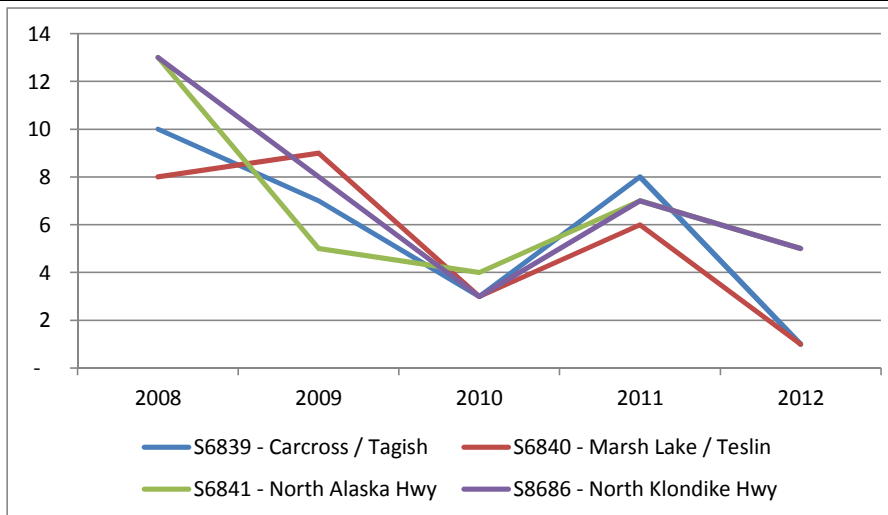
To provide a table and graphs similar to page 1 of 5 in YUB-46(d)(i) with the tables showing the number of interruptions and number of customers as well as the average length of outages for the years 2008 to 2012 with respect to the customers (a) along the North Klondike Highway radial feed, from the Mayo cutoff to the end of the line; (b) North Alaska Highway radial feed from the Mayo cutoff to the end of the line; (c) the South Alaska Highway radial feed from Carcross Corner to Teslin; and (d) the South Klondike Highway radial feed from Carcross Corner to the end of the line.

**Yukon Electrical Response:**

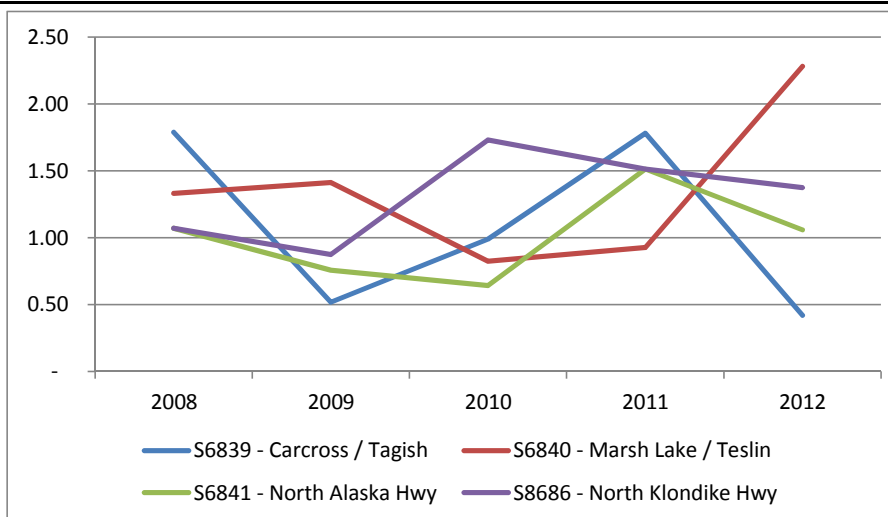
Please refer to Attachment 1 for the requested information. The interrupting device or circuit breaker is identified in Attachment 1 as follows;

- (a) S8686 for customers along the North Klondike Highway radial feed, from the Mayo cutoff to the end of the line;
- (b) S6841 for customers along the North Alaska Highway radial feed from the Mayo cutoff to the end of the line;
- (c) S6840 for customers along the South Alaska Highway radial feed from Carcross Corner to Teslin; and
- (d) S6839 for customers along the South Klondike Highway radial feed from Carcross Corner to the end of the line.

The interrupting devices service the identified areas and all customers within the areas requested.

**Number of Interruptions**

|                             | Year |      |      |      |      |
|-----------------------------|------|------|------|------|------|
|                             | 2008 | 2009 | 2010 | 2011 | 2012 |
| S6839 - Carcross / Tagish   | 10   | 7    | 3    | 8    | 1    |
| S6840 - Marsh Lake / Teslin | 8    | 9    | 3    | 6    | 1    |
| S6841 - North Alaska Hwy    | 13   | 5    | 4    | 7    | 5    |
| S8686 - North Klondike Hwy  | 13   | 8    | 3    | 7    | 5    |

**Average Outage Duration**

|                             | Year |      |      |      |      |
|-----------------------------|------|------|------|------|------|
|                             | 2008 | 2009 | 2010 | 2011 | 2012 |
| S6839 - Carcross / Tagish   | 1.79 | 0.52 | 0.99 | 1.78 | 0.42 |
| S6840 - Marsh Lake / Teslin | 1.33 | 1.41 | 0.82 | 0.93 | 2.28 |
| S6841 - North Alaska Hwy    | 1.07 | 0.76 | 0.64 | 1.51 | 1.06 |
| S8686 - North Klondike Hwy  | 1.07 | 0.88 | 1.73 | 1.51 | 1.37 |

**Number of Customers**

|                             | Year |      |      |      |      |
|-----------------------------|------|------|------|------|------|
|                             | 2008 | 2009 | 2010 | 2011 | 2012 |
| S6839 - Carcross / Tagish   | 639  | 645  | 655  | 667  | 677  |
| S6840 - Marsh Lake / Teslin | 763  | 765  | 776  | 787  | 803  |
| S6841 - North Alaska Hwy    | 177  | 182  | 188  | 194  | 202  |
| S8686 - North Klondike Hwy  | 617  | 629  | 642  | 655  | 668  |

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #38**

November 7, 2013  
Transcript Volume 4

---

Undertaking: By Ms. Bentivegna to Mr. Massie

Page 629, Lines 19 – 25 and Page 630, Lines 1-5

To provide a spreadsheet for the years 2010, 2011, 2012, 2013, 2014 and 2015, setting out the calculations of the actuals for the following: number of customers, new services, miscellaneous overhead new services, miscellaneous underground new services, customer contributions in aid of construction, as well as the forecast for the test years and provide any explanation that is necessary.

**Yukon Electrical Response:**

As noted in CW-YECL-12(a)(iii) and (b)(iii), Yukon Electrical does not track the number of customers or new services broken down by overhead and underground services. Providing this information would require Yukon Electrical staff to review the project file for hundreds of new extension projects completed in each of 2010, 2011, and 2012. This undertaking cannot be completed in the timeframe afforded.

Yukon Electrical notes that in Undertaking #6 it provided historical and forecast Miscellaneous O/H Services Capital Expenditures and Customer Contributions as well as New Underground Line Extension Capital Expenditures and Customer Contributions. Yukon Electrical respectfully submits this available information supports the reasonableness of the net investment forecast for each of Miscellaneous O/H Services and New Underground Line Extensions.

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #39**

November 7, 2013  
Transcript Volume 4

---

Undertaking: By Ms. Bentivegna to Mr. Redden

Page 642, Lines 18 - 22

With respect to the response in YUB-42(e), to provide a detailed list of installation locations and end user classification for the proposed LNG project.

**Yukon Electrical Response:**

Please see Attachment 1 for the list of installation locations and details received from ComAp, who is providing the bi-fuel kits to Yukon Electrical for its project in Watson Lake.

ComAp has indicated that the “prime power” units identified on the list typically run for at least 12 hours per day.

ComAp currently working on a project that consists of 32 gen-sets that will be set up as utility power, but it is yet to be commissioned.

They have also indicated from a bi-fuel perspective that nothing changes whether it is on a standalone generator powering a factory or if it is a utility power system; the bi-fuel system and the generator will act exactly the same.

**BI-FUEL SYSTEMS OF COMAP s.r.o.**  
Reference List Overview



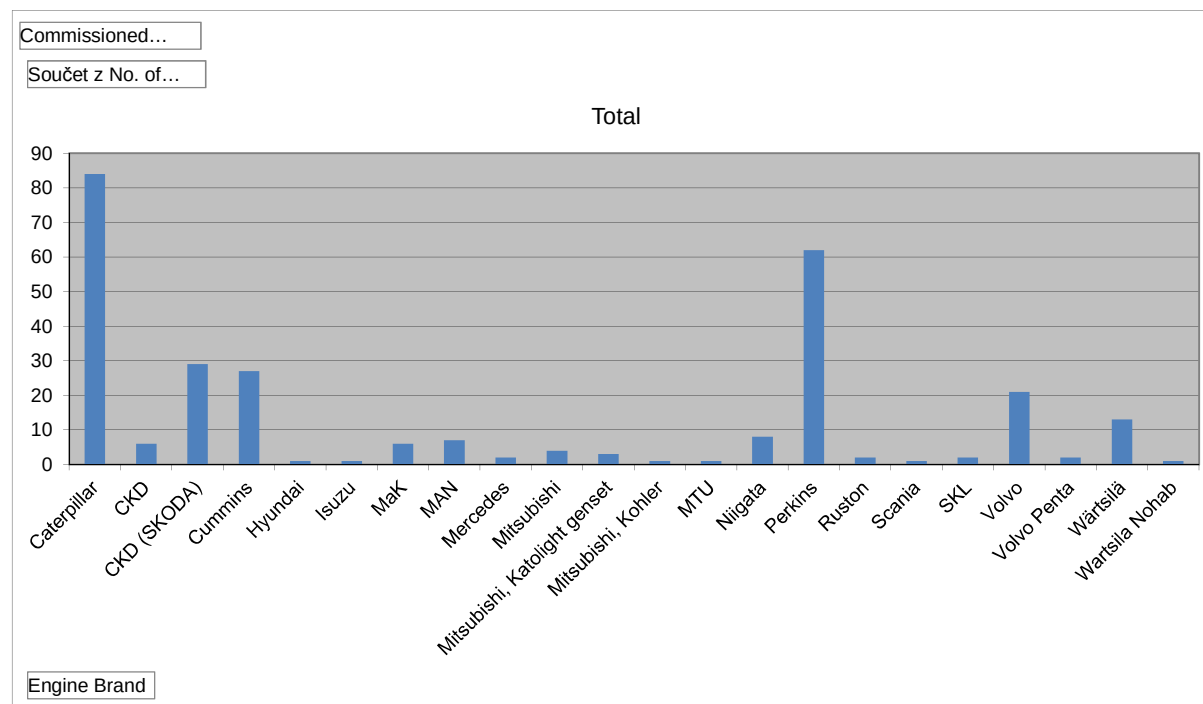
Updated: May 2012

| CUSTOMER / ORDER |        |                |                   |                    |                                       |             |             |              | ENGINE                            |                      |               |                  |      |                     | Note |
|------------------|--------|----------------|-------------------|--------------------|---------------------------------------|-------------|-------------|--------------|-----------------------------------|----------------------|---------------|------------------|------|---------------------|------|
| Country          | Region | No. of Engines | Commissioned Year | Commissioned Month | Pilot Diesel Dose or Gas/Diesel Ratio | Gas Type    | Application | Engine Brand | Engine Type                       | Engine Speed         | DG set Output | No. of Cylinders | RPM  |                     |      |
| Czech Republic   |        | 1              | 1998              |                    | 8%                                    | Natural gas |             | CKD (SKODA)  | 6S350PN                           | Slow or middle speed | 860 kVA       | 6                | 375  |                     |      |
| Czech Republic   |        | 1              | 1999              |                    | 8%                                    | Natural gas |             | CKD (SKODA)  | 9TS35-50/2                        | Slow or middle speed | 1450 kVA      | 9                | 375  |                     |      |
| Nigeria          |        | 4              | 2002              |                    | 15-18%                                | Natural gas | Prime power | CKD (SKODA)  | 9TS35 50/2                        | Slow or middle speed | 1450 kVA      | 9                | 375  |                     |      |
| Nigeria          |        | 3              | 2002              | August             | 11%                                   | Natural gas | Prime power | CKD (SKODA)  | 36-27.5A0S                        | Slow or middle speed | 405 kVA       | 6                | 600  |                     |      |
| Indonesia        |        | 2              | 2003              | March              | 13%                                   | Natural gas | Prime power | MaK          | 8M453                             | Slow or middle speed | 2650 kW       | 8                | 600  |                     |      |
| India            |        | 1              | 2003              | July               | 65/35                                 | Natural gas | Prime power | Cummins      | KTA-3067G                         | High speed           | 1000 kVA      | 16               | 1500 |                     |      |
| Pakistan         |        | 1              | 2003              | May                | 70/30                                 | Natural gas | Prime power | Caterpillar  | 3512                              | High speed           | 1020 kW       | 12               | 1500 |                     |      |
| Nigeria          |        | 2              | 2003              | December           | 60/40                                 | Natural gas | Prime power | Cummins      | KTA-38-G5                         | High speed           | 824 kW        | 12               | 1500 |                     |      |
| Nigeria          |        | 1              | 2004              | September          | 65/35                                 | Natural gas | Prime power | Caterpillar  | 3508B                             | High speed           | 1000 kVA      | 8                | 1500 |                     |      |
| India            |        | 1              | 2004              | December           | 70/30                                 | Natural gas | Stand by    | Caterpillar  | 3508                              | High speed           | 1000 kVA      | 8                | 1500 |                     |      |
| Turkey           |        | 1              | 2004              | June               | 65/35                                 | Natural gas | Prime power | Volvo Penta  | TD 120A                           | High speed           | 150 kW        | 6                | 1500 |                     |      |
| India            |        | 1              | 2004              | June               | 65/35                                 | Natural gas | Prime power | Caterpillar  | 3516B                             | High speed           | 1600 kW       | 16               | 1500 |                     |      |
| Pakistan         |        | 2              | 2004              | September          | 65/35                                 | Natural gas | Prime power | Caterpillar  | 3406                              | High speed           | 365 kVA       | 6                | 1500 |                     |      |
| Nigeria          |        | 1              | 2004              | November           | 65/35                                 | Natural gas | Prime power | Cummins      | KTTA19G2                          | High speed           | 500 kVA       | 16               | 1500 |                     |      |
| India            |        | 1              | 2004              | March              | 70/30                                 | Natural gas | stand by    | Cummins      | KTA 3067G (KTA 50 G1)             | High speed           | 800 kW        | 16               | 1500 |                     |      |
| Nigeria          |        | 4              | 2004              | September          | 65/35                                 | Natural gas | Prime power | Caterpillar  | CA 3412 STA 1x 3412STA 1x 3412STA | High speed           | 800-1000 kVA  | 8,12             | 1500 |                     |      |
| Pakistan         |        | 1              | 2004              | September          | 65/35                                 | Natural gas | Prime power | Caterpillar  | 3412 STA                          | High speed           | 810 kVA       | 12               | 1500 |                     |      |
| Peru             |        | 4              | 2004              |                    | 55/45                                 | Natural gas | Prime power | Caterpillar  | 3512                              | High speed           | 1000 kW       | 12               | 1500 |                     |      |
| Indonesia        |        | 2              | 2005              | July               | 13%                                   | Natural gas | Prime power | MaK          | 8M332                             | Slow or middle speed | 1200 kW       | 8                | 750  |                     |      |
| Nigeria          |        | 5              | 2005              | May                | 14%                                   | Natural gas | Prime power | CKD (SKODA)  | 9TS35-50/2                        | Slow or middle speed | 1450 kVA      | 9                | 375  |                     |      |
| Nigeria          |        | 6              | 2005              | May                | 13%                                   | Natural gas | Prime power | CKD (SKODA)  | 6-38A6S                           | Slow or middle speed | 2270 kVA      | 6                | 500  |                     |      |
| Nigeria          |        | 1              | 2005              | August             | 16%                                   | Natural gas | Prime power | CKD (SKODA)  | 6-27.5A2S                         | Slow or middle speed | 608 kVA       | 6                | 600  |                     |      |
| India            |        | 1              | 2005              | June               | 19%                                   | Natural gas | Prime power | SKL          | 8NVD-48A-2                        | Slow or middle speed | 920 kW        | 8                | 428  |                     |      |
| Indonesia        |        | 1              | 2005              | December           | 64/36                                 | Natural gas | Prime power | Caterpillar  | 3516                              | High speed           | 1200 kW       | 16               | 1500 |                     |      |
| Nigeria          |        | 2              | 2005              | July               | 65/35                                 | Natural gas | Prime power | Caterpillar  | 3516 STD                          | High speed           | 1200 kW       | 16               | 1500 |                     |      |
| Brasil           |        | 1              | 2005              | September          | 66/34                                 | Natural gas | Prime power | Caterpillar  | 3406                              | High speed           | 300 kW        | 6                | 1500 |                     |      |
| India            |        | 1              | 2005              | June               | 60/40                                 | Natural gas | stand by    | Caterpillar  | 3412                              | High speed           | 400 kW        | 12               | 1500 |                     |      |
| Nigeria          |        | 3              | 2005              | November           | 60/40                                 | Natural gas | Prime power | Cummins      | QST30-G2                          | High speed           | 800 kVA       | 12               | 1500 |                     |      |
| Nigeria          |        | 1              | 2005              | October            | 65/35                                 | Natural gas | Prime power | Caterpillar  | 3508B                             | High speed           | 800 kWe       | 8                | 1500 |                     |      |
| Nigeria          |        | 3              | 2005              | June               | 65/35                                 | Natural gas | Prime power | Cummins      | QST 30 G2                         | High speed           | 800 kW        | 12               | 1500 |                     |      |
| Korea            |        | 1              | 2006              | March              | 25%                                   | Natural gas | development | Hyundai      | 6H21/32                           | Slow or middle speed | 1100 kW       | 6                | 900  | Principle of Diesel |      |
| Indonesia        |        | 4              | 2006              | August             | N/A                                   | Natural gas | Prime power | Wärtsilä     | SWD 9FHD240                       | Slow or middle speed | 1200 kW       | 9                | 750  |                     |      |
| Nigeria          |        | 4              | 2006              | December           | 20%                                   | Natural gas | Prime power | CKD (SKODA)  | 9TS35-50/2                        | Slow or middle speed | 1450 kW       | 9                | 375  |                     |      |
| Indonesia        |        | 2              | 2006              | August             | 23%                                   | Natural gas | Prime power | Wärtsilä     | SWD 9FHD240G                      | Slow or middle speed | 1569 kW       | 9                | 1000 |                     |      |
| Japan            |        | 1              | 2006              | April              | 20-30%                                | Natural gas | Prime power | Niigata      | 6L32CLX                           | Slow or middle speed | 2000 kW       | 6                | 600  |                     |      |
| Indonesia        |        | 2              | 2006              | April              | N/A                                   | Natural gas | Prime power | Caterpillar  | 3512                              | High speed           | 1020 kW       | 12               | 1500 |                     |      |
| Indonesia        |        | 1              | 2006              | April              | 55/45                                 | Natural gas | Prime power | Caterpillar  | 3512                              | High speed           | 1020 kW       | 12               | 1500 |                     |      |
| Indonesia        |        | 1              | 2006              | April              | 53/47                                 | Natural gas | Prime power | Caterpillar  | 3512 DITA                         | High speed           | 1020 kW       | 12               | 1500 |                     |      |
| Indonesia        |        | 1              | 2006              | June               | 60/40                                 | Natural gas | Prime power | Caterpillar  | 3512B                             | High speed           | 1200 kW       | 12               | 1500 |                     |      |
| Indonesia        |        | 2              | 2006              | May                | 60/40                                 | Natural gas | Prime power | Caterpillar  | 3516                              | High speed           | 1280 kW       | 16               | 1500 |                     |      |
| Indonesia        |        | 1              | 2006              | May                | 60/40                                 | Natural gas | Prime power | Caterpillar  | 3516B                             | High speed           | 1825 kW       | 16               | 1500 |                     |      |

|           |         |   |      |           |              |                  |               |             |                  |                      |             |      |      |                 |
|-----------|---------|---|------|-----------|--------------|------------------|---------------|-------------|------------------|----------------------|-------------|------|------|-----------------|
| Nigeria   |         | 7 | 2008 | March     | 60/40        | Natural gas      | Prime power   | Caterpillar | 3412, 3406       | High speed           | 365-500 kVA | 6.12 | 1500 |                 |
| Indonesia |         | 1 | 2008 | January   | 60/40        | Natural gas      | Prime power   | Caterpillar | 3412             | High speed           | 400 kW      | 12   | 1500 |                 |
| Nigeria   |         | 1 | 2008 | October   | 67/33        | Natural gas      | Prime power   | Cummins     | QST30G2          | High speed           | 640 kW      | 12   | 1500 |                 |
| Nigeria   |         | 1 | 2008 | October   | 67/33        | Natural gas      | Prime power   | Cummins     | KTA19G4          | High speed           | 400 kW      | 6    | 1500 |                 |
| Indonesia |         | 2 | 2007 | October   | 25%          | Natural gas      | Prime power   | Wärtsilä    | SWD 9FHD240G     | Slow or middle speed | 1569 kW     | 9    | 1000 |                 |
| Nigeria   |         | 1 | 2007 | December  | 22%          | Natural gas      | Prime power   | CKD         | 6-38 A6S         | Slow or middle speed | 2270 kVA    | 6    | 500  |                 |
| Nigeria   |         | 1 | 2007 | August    | 15%          | Natural gas      | Prime power   | CKD         | 6S350PN - marine | Slow or middle speed | 735 kW      | 6    | 375  |                 |
| Indonesia |         | 2 | 2007 | November  | 60/40        | Natural gas      | Prime power   | Caterpillar | 3512             | High speed           | 1000 kW     | 12   | 1500 |                 |
| Indonesia |         | 3 | 2007 | October   | 53/47, 60/40 | Natural gas      | Prime power   | Caterpillar | 3516             | High speed           | 1200 kW     | 16   | 1500 |                 |
| Indonesia |         | 3 | 2007 | May       | 60/40        | Natural gas      | Prime power   | Caterpillar | 3512B            | High speed           | 1200 kW     | 12   | 1500 |                 |
| Egypt     |         | 1 | 2007 | January   | 50/50        | Well gas (crude) | Prime power   | Caterpillar | 3408B            | High speed           | 363 kW      | 8    | 1500 | ig application  |
| Nigeria   |         | 1 | 2007 | March     | 58/42        | Natural gas      | Prime power   | Cummins     | KTA 38G5         | High speed           | 540 kW      | 16   | 1500 |                 |
| Nigeria   |         | 1 | 2007 | June      | 58/42        | Natural gas      | Prime power   | Perkins     | 3012TAG2A        | High speed           | 580 kW      | 12   | 1500 |                 |
| Nigeria   |         | 1 | 2008 | August    | 15%          | Natural gas      | Prime power   | CKD (SKODA) | 9TS35-50/2       | Slow or middle speed | 1450 kVA    | 9    | 375  |                 |
| Australia |         | 5 | 2008 | Sept-Dec  | 25%          | Natural gas      | Prime power   | Wärtsilä    | 12V32            | Slow or middle speed | 3850 kW     | 12   | 750  |                 |
| Indonesia |         | 4 | 2008 | March     | 30%          | Natural gas      | Prime power   | Nigata      | 16V32CX          | Slow or middle speed | 5500 kW     | 16   | 750  |                 |
| Nigeria   |         | 1 | 2008 | October   | 18%          | Natural gas      | Prime power   | CKD         | 6S350PN          | Slow or middle speed | 735 kW      | 6    | 375  |                 |
| Indonesia |         | 1 | 2008 |           | 60/40        | Natural gas      | Prime power   | Caterpillar | 3512             | High speed           | 1020 kW     | 12   | 1500 |                 |
| Indonesia |         | 1 | 2008 |           | N/A          | Natural gas      | Prime power   | Caterpillar | 3516B            | High speed           | 1200 kW     | 16   | 1500 |                 |
| Nigeria   |         | 1 | 2008 | December  | 60/40        | Natural gas      | Prime power   | Cummins     | KTA19G4          | High speed           | 400 kW      | 6    | 1500 |                 |
| Indonesia |         | 2 | 2008 | November  | 60/40        | Natural gas      | Prime power   | Mercedes    | OM 444 LA        | High speed           | 400 kW      | 16   | 1500 |                 |
| Nigeria   |         | 1 | 2008 | September | 60/40        | Natural gas      | Prime power   | Caterpillar | 3508             | High speed           | 800 kW      | 8    | 1500 |                 |
| Nigeria   |         | 1 | 2008 | September | 65/35        | Natural gas      | Prime power   | Caterpillar | 3412             | High speed           | 400 kW      | 12   | 1500 |                 |
| Nigeria   |         | 1 | 2008 | September | 60/40        | Natural gas      | Prime power   | Caterpillar | C18              | High speed           | 400 kW      | 6    | 1500 |                 |
| Egypt     |         | 1 | 2008 |           | 50/50        | Well gas (crude) | Prime power   | Caterpillar | 3512 DITA        | High speed           | 920 kW      | 12   | 1500 | ig application  |
| Indonesia |         | 1 | 2008 | September | 60/40        | Natural gas      | Prime power   | MAN         | D2842            | High speed           | 424 kW      | 12   | 1500 |                 |
| Indonesia |         | 1 | 2008 | May       | 51/49        | Natural gas      | Prime power   | MAN         | D2842            | High speed           | 536 kW      | 12   | 1500 |                 |
| Indonesia |         | 1 | 2008 | April     | 58/42        | Natural gas      | Prime power   | Caterpillar | 3516             | High speed           | 935 kW      | 16   | 1500 |                 |
| Indonesia |         | 3 | 2008 | February  | 55/45        | Natural gas      | Prime power   | Caterpillar | 3516 DITA        | High speed           | 930 kW      | 16   | 1500 |                 |
| Indonesia |         | 1 | 2008 | September | 58/42        | Natural gas      | Prime power   | MAN         | D2842            | High speed           | 536 kW      | 12   | 1500 |                 |
| Nigeria   |         | 1 | 2009 | November  | N/A          | Natural gas      | Prime power   | CKD         | 9TS35-50/        | Slow or middle speed | 1450 kW     | 9    | 375  | 'aiting for gas |
| Nigeria   |         | 2 | 2009 | September | 16%          | Natural gas      | Prime power   | CKD (SKODA) | 9TS35-50/2       | Slow or middle speed | 1450 kVA    | 9    | 375  |                 |
| Indonesia |         | 2 | 2009 | July      | 35%          | Natural gas      | Prime power   | Nigata      | 6L32CLX          | Slow or middle speed | 2000 kW     | 6    | 600  |                 |
| Nigeria   |         | 1 | 2009 | July      | 15%          | Natural gas      | Prime power   | CKD (SKODA) | 6-S 350 PN       | Slow or middle speed | 860 kVA     | 6    | 600  |                 |
| Nigeria   |         | 2 | 2009 | October   | 60/40        | Natural gas      | Prime power   | Caterpillar | 3512B            | High speed           | 1020 kW     | 12   | 1500 |                 |
| Nigeria   |         | 2 | 2009 | November  | 60/40        | Natural gas      | Prime power   | Caterpillar | 3512B            | High speed           | 1020 kW     | 12   | 1500 |                 |
| Nigeria   |         | 3 | 2009 | December  | 60/40        | Natural gas      | Prime power   | Caterpillar | 3512B, 3516      | High speed           | 1020 kW     | 12   | 1500 |                 |
| USA       |         | 1 | 2009 | December  | 70/30        | Natural gas      | Standby power | Caterpillar | 3516             | High speed           | 1825 kW     | 16   | 1500 |                 |
| USA       | Georgia | 1 | 2009 | December  | 70/30        | Natural gas      | Standby power | Caterpillar | 3516B            | High speed           | 2365 kW     | 16   | 1800 |                 |
| Russia    | Siberia | 3 | 2009 | March     | 55/45        | Well gas (crude) | Prime power   | Perkins     | 4006-23TAG3A     | High speed           | 600 kW      | 6    | 1500 | ig application  |
| Nigeria   |         | 1 | 2009 | November  | 65/35        | Natural gas      | Prime power   | Caterpillar | SR 4             | High speed           | 800 kW      | 12   | 1500 |                 |
| Mexico    |         | 1 | 2009 | December  | 65/35        | Natural gas      | Prime power   | Cummins     | QST30G5          | High speed           | 920 kW      | 12   | 1500 |                 |
| Indonesia |         | 1 | 2009 | April     | 60/40        | Natural gas      | Prime power   | Mitsubishi  | S12R - PTA2      | High speed           | 1285 kW     | 12   | 1500 |                 |
| Indonesia |         | 1 | 2009 | November  | 60/40        | Natural gas      | Prime power   | Caterpillar | 3516B            | High speed           | 1600 kW     | 16   | 1500 |                 |
| Egypt     |         | 1 | 2009 | July      | 58/42        | natural gas      | Prime power   | Caterpillar | 3512             | High speed           | 920 kW      | 12   | 1500 |                 |
| Indonesia |         | 1 | 2009 | June      | 58/42        | Natural gas      | Prime power   | MAN         | 2840 LE201       | High speed           | 496 kW      | 12   | 1500 |                 |

|                |                 |    |                 |           |       |                                    |               |                       |                 |                      |          |    |      |                             |
|----------------|-----------------|----|-----------------|-----------|-------|------------------------------------|---------------|-----------------------|-----------------|----------------------|----------|----|------|-----------------------------|
| UAE            | Dubai           | 2  | 2010            | September | N/A   | Natural gas                        | Prime power   | MaK                   | 16M 32          | Slow or middle speed | 7182 kW  | 16 | 750  |                             |
| Iran           |                 | 1  | 2010            | September | N/A   | Natural gas                        | Prime power   | SKL                   | 8NVD48A-2       | Slow or middle speed | 880 kW   | 8  | 428  |                             |
| Canada         | Ontario         | 3  | 2010            | April     | 54/46 | Natural gas                        | Standby power | Ubischi, Katolight ge | S12H-Y2TAW      | High speed           | 1000 kW  | 12 | 1800 |                             |
| Nigeria        |                 | 1  | 2010            | November  | 60/40 | Natural gas                        | Prime power   | Caterpillar           | 3512B           | High speed           | 1200 kW  | 12 | 1500 |                             |
| Iran           |                 | 3  | 2010            | April     | 50/50 | Natural gas                        | Prime power   | Cummins               | QSK 60-G4       | High speed           | 1800 kW  | 16 | 1500 |                             |
| Czech Republic |                 | 1  | 2010            | October   | 60/40 | Bio diesel + Bio gas / Natural gas | Peak-shaving  | Caterpillar           | C15             | High speed           | 500 kW   | 8  | 1500 |                             |
| Canada         | Ontario         | 1  | 2010            | April     | 77/23 | Natural gas                        | Standby power | Mitsubishi, Kohler    | S6R, 600REC2M   | High speed           | 600 kW   | 6  | 1800 |                             |
| Nigeria        |                 | 1  | 2010            | January   | 60/40 | CNG                                | Prime power   | Perkins               | 4006-23TAG3A    | High speed           | 800 kVa  | 6  | 1500 |                             |
| USA            | Georgia, Athens | 1  | 2010            | October   | 72/28 | Natural gas                        | Standby power | Caterpillar           | C27             | High speed           | 800 kW   | 12 | 1800 |                             |
| Thailand       |                 | 1  | 2010            | August    | 55/45 | Well gas (crude)                   | Prime power   | Perkins               | 2306C E14 TAG1A | High speed           | 280 kW   | 6  | 1500 |                             |
| Egypt          |                 | 1  | 2010            | January   | 58/42 | Natural, well gas (crude)          | Prime power   | Caterpillar           | 3406            | High speed           | 292 kW   | 6  | 1500 |                             |
| Mexico         |                 | 1  | 2010            | June      | 54/46 | Natural gas                        | Prime power   | Cummins               | QST30G5         | High speed           | 1000 kW  | 12 | 1500 |                             |
| Nigeria        |                 | 2  | 2011            | September | N/A   | Natural gas                        | Prime power   | CKD                   | 9TS35-50/2      | Slow or middle speed | 1525 kVA | 9  | 375  |                             |
| Germany        | Kovelaer        | 1  | 2011            | November  | 70/30 | Bio diesel + Natural gas           | Prime power   | Mitsubishi            | SR6             | High speed           | 440 kW   | 6  | 1500 |                             |
| Ireland        | Dublin          | 1  | 2011            | October   | 51/49 | Natural gas                        | Standby power | Perkins               | 2806A-E18TAG2   | High speed           | 560 kW   | 6  | 1500 |                             |
| USA            | Georgia         | 1  | 2011            | June      | 65/35 | Natural gas                        | Peak-shaving  | Caterpillar           | 3512            | High speed           | 1200 kW  | 12 | 1800 |                             |
| Canada         | Ontario         | 1  | 2011            | February  | 52/48 | Natural gas                        | Standby power | MTU                   | 20V4000         | High speed           | 2200 kW  | 20 | 1800 |                             |
| USA            | Georgia         | 1  | 2011            | June      | 62/38 | Natural gas                        | Standby power | Cummins               | QSK60           | High speed           | 2200 kW  | 12 | 1800 |                             |
| Canada         | Alberta         | 1  | 2011            | May       | 60/40 | LPG (Propane)                      | Prime power   | Volvo                 | TAD1240GE       | High speed           | 300 kW   | 6  | 1800 |                             |
| Canada         | Alberta         | 20 | 2011            | August    | 53/47 | LPG (Propane)                      | Prime power   | Volvo                 | TAD1642GE       | High speed           | 500 kW   | 6  | 1800 |                             |
| Russia         |                 | 2  | 2011            | July      | 40/60 | Well gas (crude)                   | Prime power   | Cummins               | KTA50 G3        | High speed           | 1000 kW  | 16 | 1500 | ig application              |
| Russia         |                 | 2  | 2011            | July      | 40/60 | Well gas (crude)                   | Prime power   | Cummins               | QSK G8          | High speed           | 1800 kW  | 16 | 1500 | ig application              |
| Germany        |                 | 3  | 2012            | February  | 60/40 | Bio diesel + Bio gas / Natural gas |               | MAN                   | D2842           | High speed           | 500 kVA  | 12 | 1500 |                             |
| Romania        |                 | 4  | 2012            | April     | N/A   | Well gas (crude)                   | Prime power   | Caterpillar           | 3512B           | High speed           | 1200 kW  | 12 | 1500 | hore application            |
| Nigeria        | Lagos           | 4  | 2012            | May       | N/A   | Natural gas                        |               | Caterpillar           | 3512            | High speed           | 1200 kW  | 12 | 1500 |                             |
| Netherlands    |                 | 1  | 2012            | April     | N/A   | Natural gas                        |               | Cummins               | KTA50 GS6       | High speed           | 1250 kW  | 16 | 1500 |                             |
| Indonesia      |                 | 1  | By PSI          |           | N/A   | Coal Gas                           |               | Perkins               | 4012-46TAG2     | High speed           | 1200 kW  | 12 | 1500 | al gas project              |
| Indonesia      |                 | 2  | By PSI          |           |       | Natural gas                        |               | Mitsubishi            | S12R - PTA2     | High speed           | 1285 kW  | 12 | 1500 |                             |
| Nigeria        |                 | 2  | Current project |           | N/A   | Natural gas                        |               | Ruston                | 12RKC(H)        | Slow or middle speed | 1800 kW  | 12 | 750  | supplies delivered, on-site |
| Indonesia      |                 | 1  | Current project |           | N/A   | Natural gas                        |               | Wartsila Nohab        | 16V25           | Slow or middle speed | 2880 kW  | 16 | 750  | ed, waiting for gas         |
| Bangladesh     |                 | 1  | Current project |           | N/A   | Natural gas                        |               | Nisigata              | 16V32CX         | Slow or middle speed | 5000 kW  | 16 | 750  | done, waiting for gas       |
| Brasil         |                 | 1  | Current project |           | N/A   | Natural gas                        | Prime power   | Scania                | DCS 11 65A      | High speed           | 256 kW   | 6  | 1500 |                             |
| Australia      |                 | 2  | Current project |           | N/A   | Natural gas                        |               | Caterpillar           | C32             | High speed           | 800 kW   | 12 | 1500 |                             |
| Mexico         |                 | 47 | Current project |           | N/A   | Natural gas                        |               | Perkins               | 2806C-E18TAG3   | High speed           | 600 kW   | 6  | 1500 |                             |
| Mexico         |                 | 6  | Current project |           | N/A   | Natural gas                        |               | Perkins               | 2206D-13TAG3    | High speed           | 400 kW   | 6  | 1500 |                             |
| Indonesia      |                 | 1  | Current project |           | N/A   | Natural gas                        |               | Volvo Penta           | TAD 1241 GE     | High speed           | 340 kVA  | 6  | 1500 |                             |
| India          |                 | 1  | Current project |           | N/A   | Natural gas                        |               | Cummins               | KTA 50          | High speed           | 1250 kVA | 16 | 1500 |                             |
| Australia      |                 | 1  | Current project |           | N/A   | Natural gas                        |               | Isuzu                 |                 | High speed           | 44 kW    | 4  | 1500 |                             |
| Colombia       |                 | 1  | Current project |           | N/A   | Well gas (crude)                   |               | Perkins               | 2506C E15TAG3   | High speed           | 450 kW   | 6  | 1800 |                             |
| Colombia       |                 | 1  | Current project |           | N/A   | Well gas (crude)                   |               | Caterpillar           | C18             | High speed           | 545 kW   | 6  | 1800 |                             |
| Malaysia       |                 | 9  | Current project |           | N/A   | Natural gas                        |               | Caterpillar           | 3516 DITA       | High speed           | 1450 kW  | 16 | 1500 |                             |
| Nigeria        | Lagos           | 1  | Current project |           | N/A   | Natural gas                        |               | Caterpillar           | 3412            | High speed           | 648 kW   | 12 | 1500 |                             |
| Mexico         |                 | 2  | Current project |           | N/A   |                                    |               | Cummins               | QST30G4 QSK60G6 | High speed           |          |    | 1500 |                             |
| Mexico         |                 | 20 | Current project |           | N/A   |                                    |               | Cummins               | QST30G4 QSK60G6 | High speed           |          |    | 1500 |                             |
| Australia      |                 | 6  | N/A             |           | N/A   | N/A                                |               | Caterpillar           | 3516B           | High speed           | 1600 kW  | 16 | 1500 | aiting for gas              |

| CommissionedYear             | (All) |
|------------------------------|-------|
| Součet z No. of Engines      |       |
| Engine Brand                 | Total |
| Caterpillar                  | 84    |
| CKD                          | 6     |
| CKD (SKODA)                  | 29    |
| Cummins                      | 27    |
| Hyundai                      | 1     |
| Isuzu                        | 1     |
| MaK                          | 6     |
| MAN                          | 7     |
| Mercedes                     | 2     |
| Mitsubishi                   | 4     |
| Mitsubishi, Katolight genset | 3     |
| Mitsubishi, Kohler           | 1     |
| MTU                          | 1     |
| Niigata                      | 8     |
| Perkins                      | 62    |
| Ruston                       | 2     |
| Scania                       | 1     |
| SKL                          | 2     |
| Volvo                        | 21    |
| Volvo Penta                  | 2     |
| Wärtsilä                     | 13    |
| Wartsila Nohab               | 1     |
| Grand Total                  | 284   |



Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #40**

November 7, 2013  
Transcript Volume 4

---

Undertaking: By Ms. Bentivegna to Mr. Grattan

Page 651, Lines 5 – 7

To advise how meter reading costs are determined and what share ATCO Electric would be allocated.

**Yukon Electrical Response:**

As per Business Case #27, Attachment 1 Page 2 of 11, the forecast AMR O&M costs charged from ATCO Electric to Yukon Electrical are \$49,595 per year.

Since 2010, ATCO Electric has been accumulating AMR costs for purposes of determining the appropriate allocation of costs to Northland Utilities Yellowknife for AMR services. This same process will occur for purposes of allocating AMR costs to Yukon Electrical.

ATCO Electric's AMR costs are forecast to be allocated based on the amount of AMR meters in the Yukon (approximately 13,000 meters) as compared to AMR meters in Alberta and the Northwest Territories (approximately 218,000 meters). This effectively means Yukon Electrical will be allocated approximately 6% of ATCO Electric's total AMR costs. This allocation percentage may fluctuate modestly on a go forward basis depending on the relative growth in AMR deployment in Alberta and the Northwest Territories as compared to the Yukon.

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING #41**

November 7, 2013  
Transcript Volume 4

---

Undertaking: By Ms. Bentivegna to Mr. Massie

Page 655, Lines 9 – 14, Page 655, Line 25 and Page 656, Lines 1 – 8

To provide the manufacturer's specification as to what the ABB-5HK breakers are rated for in terms of lifetime operation and the actual number of breaker operations for each of the breakers to be replaced.

To advise if the manufacturer of the ABB-5HK breakers has issued bulletins to users of the breakers warning of the dangers which may occur because of possible cracking and flaking of the asbestos-lined arc extinguishing shoots during the operation of the breaker; and, if so, to provide a copy of such bulletins.

**Yukon Electrical Response:**

The manufacturer was unable to provide a specification for lifetime operation. Yukon Electrical does not track operations of these particular breakers. Though they are typically low usage breakers, deterioration of insulation in the presence of high voltage operations is an operating concern. The vintage of the breakers, as identified in the attached bulletin, is prior to mid-1984.

Please refer to Attachment 1, which is a manufacturer's bulletin regarding asbestos information for the above noted breakers. The bulletin is dated January 28, 1991. In the timeframe from the date of the bulletin to March 5, 2012, there was no concern as the asbestos remained in a bonded state. At that time, Yukon Electrical discovered cracks in the arc chutes and contacted the manufacturer. The manufacturer advised that there is a possibility for asbestos to become airborne as a result of the cracks.

JUL 02 '91 08:14 ABB SERVICE COMPANY (MTGV)

P.2

January 28, 1991



**ABB POWER DISTRIBUTION  
ASBESTOS INFORMATION**

This is a summary of molded asbestos materials used in ABB arc chutes in the past.

There were two types of material used. The cold molded asbestos material had a nominal 30% asbestos material by weight. The other material, Transite, was an asbestos sheet material containing 40% asbestos by weight. Both of these materials contained asbestos, only in the bonded state, and under normal usage no asbestos fibers would be released. Asbestos fibers could only be released if these items were subject to drilling, sanding, milling or filing, which customers are not likely to do. See attached Material Safety Data Sheet.

**K-LINE ARC CHUTES**

Prior to second quarter 1987, K-600-2000 ampere arc chutes were made with asbestos fibers bound in a Portland cement mixture. K-3000 and 4000 ampere arc chutes used this material through the fourth quarter of 1987. In this bonded form, this material is not harmful; see the attached Material Safety Data Sheets.

From the first quarter of 1988 to the present, all forms of the K-line breakers have used non-asbestos moldings containing a mixture of Portland cement and Wollastinite. Although this material has proven satisfactory in all short circuit tests, its reduced mechanical strength led ABB to develop another asbestos free arc chute with improved mechanical properties. This new melamine-like cold-molded product is used on K-600 through K-2000 ampere circuit breakers. K-3000/4000 arc chutes will continue to be made from the Portland cement/Wollastinite mixture until they are replaced in the second quarter of 1991 by a special polyester-glass material.

Asbestos arc chutes had a mottled cement gray/white color whereas the non-asbestos material is a more uniform cement gray color. The improved non-asbestos arc chute moldings are all black in color.

**5BK ARC CHUTES**

Prior to mid-1984 the 5BK 250 and 350 arc chutes had a jump gap block made of cold molded asbestos. This molded part is buried up inside of the arc chute and is not visible or accessible unless an arc chute is tilted upward or inverted. The part involved is at the bottom of the arc chute jump gap assembly and is a cold-molded compound which contains 17% to 30% bound asbestos fibers. The asbestos is contained within the molding compound and there are no free asbestos fibers due to this configuration. Due to the bonding of the asbestos material and the lack of any free fiber, no health hazards will feasibly occur as a result of the use of asbestos in this form.

**ABB Power Distribution Inc.**

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING DSM #1**

November 7, 2013  
Transcript Volume 4

---

Undertaking: By Ms. Kellgren to Mr. Redden

Page 671, Lines 3 - 6

To obtain and produce the Government of Yukon's Microgeneration Policy released on or about October 23, 2013.

**Yukon Electrical Response:**

Attached is the Yukon government Micorogeneration Policy released October 23, 2013.

# ENERGY STRATEGY FOR YUKON

## Micro-Generation Policy

October 23, 2013



IMPLEMENTING THE ENERGY STRATEGY FOR YUKON

## BACKGROUND

The Yukon government released the *Energy Strategy for Yukon* in January 2009. The Energy Strategy sets out the government's energy policies and priorities.

In the Energy Strategy, the government committed to developing policies that will assist individuals to connect renewable energy sources to the grid.

Between November 2009 and February 2010, public consultation was conducted on a discussion paper on micro-generation and independent power production. Through that consultation, the public indicated clearly that there should be separate policies for micro-generation and independent power production. Subsequently, a specific policy for micro-generation was released for public consultation. Valuable input was received on proposed policy objectives, eligible energy sources, size of electricity projects, connecting to the grid, financial arrangements, policy framework, and roles and responsibilities.

This policy is part of the Energy Strategy's priority action to "update and develop a policy framework for electricity that emphasizes efficiency, conservation and renewable energy" by assisting "individuals to connect renewable energy sources to the grid" (p.15).

## SCOPE

### Application

This policy applies to customers in the residential, general service and industrial classes as defined under the Rate Schedules and the Terms and Conditions of Service, who want to generate electricity from eligible sources for their own consumption. This policy does not apply to Secondary Sales connections. The electrical generation will be interconnected to Yukon Energy Corporation's (YEC) or Yukon Electrical Company Limited's (YECL) distribution systems.

### Policy Objectives

Working with our utility partners, the objectives of the micro-generation policy are to:

- a. Provide opportunities for Yukoners to produce electricity from renewable technologies for their own consumption.
- b. Encourage the development and adoption of new individual renewable energy sources to reduce greenhouse gas emissions.
- c. Support ongoing research and technology to diversify renewable energy sources.
- d. Promote energy conservation and greater energy efficiency.



## POLICY PARAMETERS

### Eligible Energy Sources

Eligible energy sources under this policy are limited to renewable technologies, which generally include wind power, micro-hydro, biomass, and solar systems. New renewable technologies will be considered as they emerge.

### Size of Electricity Projects

Micro-generation name plate capacity of less than 5 kilowatts for customers on a shared transformer, and less than 25 kilowatts for customers on a single transformer will be assessed through a streamlined utility approval process. Micro-generation name plate capacities larger than these limits up to 50 kilowatts will be considered on a case-by-case basis by the utilities and will be subject to a detailed review of the customer's current infrastructure capacity and local grid reliability factors. Costs related to this review will be the responsibility of the customer.

Customers considering projects larger than 25 kilowatts are cautioned not to incur any expenses until the appropriate utility has approved the micro-generation project for connection to the grid.

### Connection to the Electrical Grid

Technical interconnection standards are required to ensure the safety of utility workers, micro-generation customers, and equipment. Yukon-wide interconnection standards and interconnection agreement templates will be developed by the utilities within three months of the effective date of this policy and presented to the Yukon Utilities Board (YUB) for approval to ensure safety and consistency of application. The utilities have the right to limit the number of micro-generation customers in circumstances where infrastructure and/or technical constraints exist.

### Financial

The following principles will be used in the development and implementation of the utility interconnection standards, utility policies and the Yukon government "Micro-Generation Production Incentive Program" described in appendix A.

1. The utilities will pay for, own, operate and maintain the metering equipment for the micro-generation customer.
2. The utility will install a single, bi-directional meter that minimizes interconnection costs but allows the utility to measure both imported energy from the grid and exported energy from the micro-generation customer.
3. The micro-generation customer is responsible for the interconnection costs and any potential transformer upgrade requirements.
4. All Yukon micro-generation customers will be eligible for the Yukon government's "Micro-Generation Production Incentive Program". This program will reimburse customers for the amount of electricity exported to the grid at a rate reflective of



the avoided cost of new generation in the territory. Details of this program can be found in Appendix A.

5. All Yukon micro-generation customers who live outside of municipal boundaries will be eligible for the Yukon government's Rural Electrification and Telecommunications Program. This program offers rural Yukoners an affordable and convenient way to install electrical or phone services at their home or business through land taxation based financing. Details of this program can be found in Appendix B.
6. Exported energy does not include energy produced by a micro-generation system but consumed within the building in which the micro-generation system is installed. For the purpose of this policy "exported" is the instantaneous net of energy consumed and produced within the building at any given time; however, energy produced for consumption within the building will result in reduced electricity imported from the utility and therefore result in reduced electricity bills for the customer.
7. The utility will report to the micro-generation customer and the Yukon government on the total energy exported for a given time period.
8. Yukon government will compensate micro-generation customers through the Micro-Generation Production Incentive Program on an annual basis based on the anniversary date in which the system was approved by the utility through the utility interconnection standards.

## ROLES AND RESPONSIBILITIES

### Joint Responsibilities of the Government of Yukon and the Utilities

1. Implement, maintain and communicate this policy.
2. Evaluate this policy two years from the effective date to ensure its implementation is meeting the policy objectives.

### Government of Yukon

1. Ensure this policy is consistent with the *Energy Strategy for Yukon*, the *Climate Change Action Plan*, and other government priorities.
2. Meet obligations under First Nation Final Agreements, and ensure this policy is consistent with those obligations.
3. Deliver the "Micro-Generation Production Incentive Program" as described in Appendix A of this document.
4. Provide information to customers seeking to become micro-generation customers with respect to forecasting capital/maintenance costs and potential energy savings.



### Utilities (YEC/YECL)

1. Develop technical interconnection standards and an interconnection agreement template within three months of the release of this policy.
2. Determine whether micro-generation customers meet the interconnection standards and are therefore eligible for micro-generation.
3. Provide estimates to customers of any upgrades required on the utility side of the meter for interconnection to the grid.
4. Assist the Yukon government in delivering the “Micro-Generation Production Incentive Program” by reporting to the Yukon government and the customer all electricity exported to the grid.

### YUB

1. Review and approve the proposed technical interconnection standards and interconnection agreement templates for micro-generation as required.

### Micro-Generation Customer

1. Meet the interconnection standards set by the utilities.
2. Notify the utilities of micro-generation plans and make available the electrical generation project for inspection by the utilities, or the applicable government regulator. The installation of all eligible energy sources must conform to relevant municipal by-laws, and to territorial and federal regulations.
3. Enter into an interconnection agreement with the relevant electrical service provider (YEC or YECL).
4. Be responsible for their own cost/benefit analysis.

## DEFINITIONS

**Name plate capacity** – The maximum rated capacity of a generation unit.

**Micro-Generation** – The small-scale generation of electric power by individuals, small businesses and communities to meet their own needs, as alternatives or supplements to traditional centralized grid-connected power

**Secondary sales** – Those connections defined under Rate Schedule 32 “Secondary Energy”.



## Appendix A

### Micro-Generation Production Incentive Program

## **BACKGROUND**

The Micro-Generation Production Incentive Program is a Yukon government program designed and delivered to support the Yukon Micro-Generation Policy. The purpose of this program is to offer a production incentive to micro-generation customers that encourages the installation and operation of renewable energy based micro-generation technology in the territory.

## **SCOPE**

### **Application**

This program applies to customers in the residential, general service and industrial classes as defined under the Rate Schedules and the Terms and Conditions of Service, who want to generate electricity from eligible sources for their own consumption. This program does not apply to Secondary Sales connections. The electrical generation will be interconnected to Yukon Energy Corporation's (YEC) or Yukon Electrical Company Limited's (YECL) distribution systems.

### **Program Objectives**

The objectives of this program are to support the objective of the Yukon's Micro-Generation Policy by:

- a. Encouraging the development and adoption of new individual renewable energy sources to reduce greenhouse gas emissions.
- b. Supporting ongoing research and technology to diversify renewable energy sources.
- c. Promoting energy conservation and greater energy efficiency.

## **ELIGIBILITY CRITERIA**

### **Basic Eligibility Criteria**

In order to be considered eligible for this program applicants must meet all utility requirements under the Micro-Generation Policy for Yukon including: system size, eligible energy source, and all interconnection standards.

### **Eligible Energy Sources**

Eligible energy sources under this policy are limited to renewable technologies, which include wind power, micro-hydro, biomass, and solar systems. New renewable technologies will be considered as they emerge.

### **Electric Inspection**

Applicants must provide proof that their micro-generation system has been inspected by both a qualified electrical inspector (territorial or municipal) and the relevant electrical utility for their region.

## **PRODUCTION INCENTIVE**

### **Micro-Generation Production Incentive**

Successful applicants to the Yukon government's Micro-Generation Production Incentive Program will receive an incentive for electricity exported to the grid that is reflective of the current avoided cost of new electrical generation in the territory.

The incentive rate will apply to electricity exported to the grid and be set at \$0.21/kWh on the Yukon's Integrated System (YIS) and \$0.30/kWh in electrically isolated communities powered by diesel generation. This rate will be reevaluated after two years to ensure its relevance as an appropriate incentive rate. These rates are based on the latest analysis conducted by the utilities on avoided cost of new generation supply and published through the Yukon Electric Company Ltd. 2013 rate application (DSM Plan Appendix F).

Any electricity produced by the customer but used by the customer within their own facility will not receive this incentive. Only electricity exported to the grid will receive a production incentive through the Yukon government's program. Through this process the incentive further encourages energy efficiency within the customer's home or business (the less energy used internally the more production incentive offered).

Export data will be collected by the utilities and reported to both the micro-generation customer and the Yukon government. The Yukon government will reimburse micro-generation customers on an annual basis for all exported electricity accrued through the year.

## **APPLICATION PROCESS**

Before applying for the Yukon government's Micro-Generation Production Incentive Program applicants must apply and be accepted by their local utility as a micro-generation customer. This will require meeting all of the utility's interconnection and safety requirements for a micro-generation customer as set out by the utility.

For more information contact the Yukon Energy Corporation or the Yukon Electrical Company Ltd. (contact information provided below).

Applications to the Micro-Generation Production Incentive Program can be made to the Yukon government's Energy Solutions Centre, 206A Lowe Street, Whitehorse, Yukon Y1A 1W6. Application forms will be available at the Energy Solutions Centre office (206A Lowe Street), the Energy Solutions Centre Website ([www.energy.gov.yk.ca](http://www.energy.gov.yk.ca)), and local utility offices.

Micro-generation customers can choose to opt out of the Micro-Generation Production Incentive Program; however, no credit for electricity exported to the grid will be received from the utility or the Yukon government.

## YUKON INTEGRATED SYSTEM COMMUNITIES

The following communities and surrounding areas make up the Yukon Integrated System:

***Dawson City, Keno, Elsa, Mayo, Stewart Crossing, Pelly Crossing, Carmacks, Faro, Ross River, Haines Junction, Whitehorse, Marsh Lake, Tagish, Carcross, Teslin***

Isolated Communities that are served by diesel generation include the following:

***Beaver Creek, Burwash Landing, Destruction Bay, Old Crow, Upper Liard and Watson Lake***

## CONTACT INFORMATION

For information about this program and the Yukon's Micro-Generation Policy contact the Yukon Government's Energy Solutions Centre or visit our website at:

**Website:** [www.energy.gov.yk.ca](http://www.energy.gov.yk.ca)

**Phone:** (867) 393-7063 or toll free at 1-800-661-0408, ext. 7063

**Email:** [energy@gov.yk.ca](mailto:energy@gov.yk.ca)

**Mail or Storefront:** 206A Lowe St., Whitehorse Yukon, Y1A 1W6

For information about the Yukon's micro-generation interconnection standard contact your electrical service provider (YEC or YECL) at:

### **Yukon Energy Corporation**

Phone: (867) 393-5300 or toll free at 1-866-926-3749

Mail: #2 Miles Canyon Road, Box 5920, Whitehorse Yukon, Y1A 6S7

### **Yukon Electrical Company Limited**

Phone: (867) 633-7000 or toll free at 1-800-661-0513

Mail: 100-1100 1<sup>st</sup> Avenue, Whitehorse Yukon, Y1A 4T4

# **RURAL ELECTRIFICATION**

## **POLICY & GUIDELINES**

### **1. Objective and Program Overview**

The program objective is to facilitate the extension of electrical services to rural residential, small load commercial and other non-industrial property outside incorporated communities where the Yukon Government is the property taxation authority.

The program will consider support for a range of electrical service installations from single site specific installations to multiple properties in larger geographic areas. It provides planning, design, project management, and project financing at favorable interest rates.

The program is jointly sponsored by the Yukon Development Corporation (YDC) and the Department of Community Services (CS).

### **2. Definitions**

“alternative service” means electrical power generated from sustainable energy sources such as wind, solar, and water and distributed from a permanent standalone installation not connected to the WAF (Whitehorse/Aishihik/Faro electrical transmission) grid that is serving a single property;

“capital costs” means costs relating to the construction of a primary electrical service extension or a secondary service extension;

“interest” is Bank of Canada rate in effect at the time the project approval ballot survey is issued;

“owner” with respect to real property means:

- (a) an owner with fee simple title or ownership in which the rights, obligations and liabilities are equivalent to fee simple, specifically Category A and Category B Settlement Land where the Yukon Government is the property taxation authority;
- (b) a purchaser by way of agreement for sale with the Government of the Yukon or the Government of Canada;
- (c) a lessee from the Government of the Yukon or the Government of Canada, and where the remaining term of the lease for which the property taxes are payable by the lessee is equal to or greater than the amortization period ; or

- (d) the Department of Indian Affairs and Northern Development acting on behalf of the Indian Band with respect to land which has been reserved or set aside by notation in the property records of the Department of Indian Affairs and Northern Development.

“primary electrical service” means the main electrical power distribution line for all properties within a project area, including supporting poles or underground conductors, and all necessary high voltage transformers;

“rural property” means real property located outside of the boundaries of a municipality;

“secondary electrical service” means the electrical power distribution line required to deliver electrical power to a property from a primary electrical service, including all transmission lines, supporting poles and underground conductors, including the transformer(s) directly required as a part of an individual service connection located on the property;

“project area” means an area of rural property, the boundaries of which have been defined by the Yukon Energy Corporation and Yukon Electrical Company Ltd. where appropriate, with input from affected property owners and the Department of Community Services.

### 3. Principles and Practices

The Rural Electrification Policy is based on the following general principles and practices. These principles and practices will be used to guide operational decisions that are not covered by explicit policy provisions.

#### A. Responsiveness to Needs of Rural Yukoners

The provision of rural electrification services will be in response to requests from rural property owners.

#### B. Public Participation

The rural property owners that may benefit or be directly impacted will have the opportunity to participate in both the planning and decision-making processes for electrification projects.

#### C. Democratic Project Approval

The approval of rural electrification projects will be determined through a democratic vote of a special majority of the property owners in the project area.

#### D. Cost-effectiveness, Prudent Planning, and Utility Standards

Services must be planned from an area and community development perspective consistent with applicable standards and impacts for the systems as a whole.

#### E. Full Cost Recovery

Property owners within a project area must contribute a fair share of the full costs for providing rural electrical services to their properties.

#### F. Equitable and Proportional Distribution of Costs

Property owners who receive an equitable benefit from a rural electrification service, both at the time the service is provided or at a subsequent time, should pay an equitable and proportional share of the costs of the service.

#### G. Creating Partnerships

The provision of rural electrical services should be achieved by property owners, service providers and the Yukon Government working in a cooperative, open partnership.

### 4. Criteria

#### 4.1 Eligibility

Eligible applicants are rural Yukon people, small load commercial and other non-industrial businesses or property owners seeking the extension of electrical services to property outside the boundary of an incorporated community who are owners as defined in Section 2.

To be eligible, an application for stand-alone alternative electrification service to a single property must require funding of at least \$1,000.00.

##### Specific Exclusions

Developers who have undertaken the construction and servicing of a subdivision are not eligible applicants, however where a developer continues to hold a minority number of the total properties in a service area, the developer is included under 5.2 and 5.4.

Major and isolated industrial customers subject to OIC 1995/090 and resource development projects eligible under the Energy Infrastructure Loans for Resource Development Program (OIC 1993/099 as amended) are not eligible applicants.

#### 4.2 Scope of electrical services

Program funding is intended to enable installation of primary and secondary electrical distribution infrastructure and/or permanently installed alternative services to property. Where necessary, provision may be

made for improvements to transmission or substation facilities to allow a rural electrification project to proceed.

Only infrastructure and installations meeting utility standards and specifications or other applicable codes and standards will be supported. Electrical service regulations approved by the Yukon Utilities Board also apply.

#### 4.3 Financing

##### 4.3.1 Program Financing

The level of program funding available for financing electrification projects through the Rural Electrification and Telecommunication Program, is set each year by appropriation. Funding availability shall be subject to the necessary approval of the Yukon Legislative Assembly.

##### 4.3.2 Project Financing Terms and Conditions

Projects costs are determined on an all-inclusive basis including extraordinary planning not normally covered by the service provider, capital costs, and interest on the amortized principal.

Funding for each project, excluding any contribution by the service provider, is limited to a loan maximum of 25% of the total assessed value of land and improvements within the project area. The investment is secured through a local improvement charge to property owners, under the authority of the Assessment and Taxation Act.

##### 4.3.3 Public Utility Contributions

Limited contributions may be available from the Yukon Energy Corporation or The Yukon Electrical Company Ltd. (YECL) in accordance with the electrical service regulations approved by the Yukon Utilities Board.

Subject to justification based on the benefits to other rate payers or the system as a whole, and related regulatory and budgetary approvals that may apply, the Yukon Energy Corporation or Yukon Development Corporation may contribute to upgrading or changes to transmission or substation facilities as part of a rural electrification project.

##### 4.3.4 Equitable Allocation of Costs

All property owners within the area covered by the project will be allocated an equitable portion of the all inclusive project cost from the outset, either as a lump sum or through a local improvement charge, identified on the annual property tax notice, and amortized over a term of up to 15 years depending on the size of the project, and where possible, the preference stated by the affected property owners.

#### 4.3.5 Fair Contribution Toward Existing Systems

Properties outside the original project area who, at a later date, choose to subscribe to an already implemented rural electrification project may apply for the electrical infrastructure specific to their project area, which would be calculated as a separate new project.

Property owners who apply for a service extension which is dependent on an existing electrical system extension that was implemented under this program shall, for a period of 15 years following completion of the initial project, make a fair and proportional contribution toward the costs of the existing electrical system extension. The contribution will be rebated to the owners of property in the original project area, unless they have already been rebated by the utility.

Properties inside the original project area that were not yet approved for legal land tenure when the initial project was completed shall, for a period of 15 years following completion of the initial project, make a fair and proportional contribution toward the costs of the existing electrical system extension. The contribution will be rebated to the owners of property in the original project area, unless they have already been rebated by the utility.

### 5. Application and Approval Process

#### 5.1 Expression of Interest

Application forms are available from, and must be submitted to, Property Assessment and Taxation, Department of Community Services. Requests are dealt with on a first come, first served basis.

##### 5.1.1. a) Stand-alone Services

For an application requesting stand-alone alternative energy service to one property, the applicant(s) are encouraged to solicit competitive proposals from service providers. If the proposed project is determined, through the technical analysis, to be not cost-effective or not competitive, the applicant(s) will be required to seek competitive proposals

The applicant(s) must provide information for technical review and approval which includes:

- property that would be served by the proposed solution;
- features and benefits of the proposed solution;
- detailed information on equipment including costs.

b) Other Single Property Services

With the support of the applicant(s), a project benefiting a single property can proceed to “Detailed Planning and Costing”.

5.1.2 Multiple Property Application

For an application requesting service to two or more properties, preliminary work on the identification of project area, infrastructure requirements, costing including a reasonable planning deposit, if required and financing alternatives, will be undertaken through the Yukon Energy Corporation in cooperation with the Department of Community Services and The Yukon Electrical Company Limited where appropriate.

With the support of the applicant(s), and any other beneficiaries, small projects, can proceed to “Detailed Planning and Costing”. For other projects, if interest is sustained after the review of preliminary information with project proponent(s), a public information meeting may be organized by the Department of Community Services in cooperation with the appropriate utility and proponents. A project may proceed to the Verification of Support Vote or lapse at this stage.

5.2 Verification of Support Vote

Formal survey of all property owners within the project area proposed for electrification services may be undertaken through a mail ballot survey (Vote #1). The Ballot will provide information about the proposed service, and the amount of the planning deposit required, if any, from property owners in the project area.

Each property owner will have the opportunity to vote on whether the project should proceed to detailed planning and costing. Approval by a special majority of 65% of those who respond to the survey ballot is required..

### 5.3 Detailed Planning and Costing

If the required support is obtained and the planning deposit, if any, is paid, the sponsoring agencies proceed with detailed planning, costing and financing analysis. A specific service plan and budget estimate will be prepared by the Yukon Energy Corporation or The Yukon Electrical Company Ltd., or the appropriate service provider, along with a forecast by the Department of Community Services of the local improvement charges the property owner(s) would pay.

If there is a significant and material change in the final project plan and cost estimates, the proposal may be subject to further review with affected property owners before it can proceed for project approval voting.

The financing plan will include eligible contributions by YEC or YECL pursuant to the Electrical Service Regulations, and other contributions, if any, justified on the basis of benefits to other rate payers or the system as a whole.

### 5.4 Project Approval by Property Owners

#### 5.4.1 Single Property Application

After confirming program loan funding, the Department of Community Services will require the property owner to enter into an Agreement authorizing the project and agreeing to repayment terms.

#### 5.4.2 Multiple Property Application

After confirming program loan funding and that the project is feasible, a mail ballot is undertaken (Vote #2). This ballot will include the information necessary for property owners to understand the financial implications and costs to individual properties, of the proposed electrification service, and provide each affected property owner with the opportunity to vote on whether the proposed service should proceed as planned and estimated.

Approval by a special majority of 65% of property owners in the proposed project area, is required for the project to be implemented.

### 5.5 Installation

If the required support is obtained, YEC and/or YECL, or the service provider in the case of an alternative service installation are responsible for the installation of electrical services based on the specific project contribution that was approved by the property owner(s) in the project area.

### 5.6 Recovery of Costs

After completion of the installation project and final costs are known, a regulation pursuant to the Assessment and Taxation Act will be prepared, to attach local improvement charges to all properties in the project area, for the recovery of the project costs. Local improvement charges are payable on an annual basis for a defined period (e.g., up to 15 years) or can be paid out as a lump sum.

Should CS become aware that a stand-alone system which was funded through this program is not functional or has been removed, the property owner may be required to pay the LIC in full immediately.

## 5.7 Deferment

Where a rural electrification system serves two or more properties, a property owner may choose not to hook up to the system and enter into an Agreement to defer payment of the Local Improvement Charge for up to 15 years, subject to legislative amendment, from the completion date of the system.

The property owner will be required to start paying the deferred Local Improvement Charge:

- 1) if they hook-up to the service;
- 2) at the expiry of the deferment period.

The property owner must pay the deferred Local Improvement Charge in full if the property is sold.

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING DSM #2**

November 7, 2013  
Transcript Volume 4

---

Undertaking: By Ms. Kellgren to Mr. Redden

Page 673, Lines 9 - 12

To advise if the AMR meters are capable of bidirectional communication for the purposes of net metering.

**Yukon Electrical Response:**

The currently proposed AMR meters are capable of being utilized for the purposes of reading exported generation to the grid as outlined in the Yukon government Microgeneration Policy. The meters that will be utilized under the Microgeneration program will be programmed with a dual register function to track both imported electricity to the customer and exported electricity to the grid. These meters will provide consumption and export data as outlined in the AMR business case.

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING DSM #3**

November 7, 2013  
Transcript Volume 4

---

Undertaking: By Mr. Janigan to Mr. Redden

Page 693, Lines 13 - 16

To advise how much savings or net benefits are built into the figures relating to DSM for 2011 to 2015.

**Yukon Electrical Response:**

The joint utility demand-side management plan is expected to be implemented in 2014 upon approval of the plan from the Yukon Utilities Board. The electricity savings expected after the completion of the first year of the plan will be 240 MWh and after the completion of the second year of the plan the cumulative savings will be 1487 MWh. The savings of each year of the joint utility plan are outlined in Appendix E (Program Portfolio) page 12, of the Five Year Demand Side Management Plan, which was filed as part of Yukon Electrical's Application (Exhibit B-1).

As programs were not implemented from 2011 to 2013, there are no impact savings or net benefits built into the joint utility plan.

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING DSM #4**

November 7, 2013  
Transcript Volume 4

---

Undertaking: By Ms. Bentivegna to Ms. Carlson

Page 777, Lines 17 - 20

To advise what the item labeled "EM&V Data Preparation" relates to as set out in the 2012 schedule.

**Yukon Electrical Response:**

The costs outlined in the 2012 schedule labeled as EM&V Data Preparation costs were to assess the billing systems capability to provide data that would be critical for the evaluation, measurement and verification reporting mechanisms. This assessment determined that the billing system is capable and ready to create the necessary data extracts and reports.

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING DSM #5**

November 7, 2013  
Transcript Volume 4

---

Undertaking: By Ms. Bentivegna to Ms. Carlson

Page 779, Lines 20 - 22

To advise how the Program Implementation Plan and the EM&V Plan relate to one another.

**Yukon Electrical Response:**

The Program Implementation Plan is a systematic approach outlining how the utilities will deliver the programs to the residential and commercial customers. This includes defining the operation and transactional infrastructure that is required to operate the programs, performance indicators, the targets, the deliverables, the human resources, the roles and responsibilities, and the budgets required to operate. The Evaluation, Measurement and Verification (EM&V) plan outlines how the utilities will evaluate and measure the effectiveness of the Program Implementation Plan. The EM&V Plan outlines the approach to evaluate the impact of the programs and measures, assesses the cost-effectiveness of the programs and relies on feedback to improve current and future program offerings.

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING DSM #6**

November 7, 2013  
Transcript Volume 4

---

Undertaking: By Ms. Bentivegna to Mr. Redden

Page 787, Lines 12 - 16

To provide the costs for 2016, 2017, 2018 with respect to Yukon Electrical's costs related to its portion of the Demand Side Management Plan.

**Yukon Electrical Response:**

Yukon Electrical will incur costs within the joint utility plan for the years 2016, 2017, 2018 as follows:

2016: \$696,500  
2017: \$633,000  
2018: \$740,000

Yukon Electrical will also incur costs for the years 2016, 2017, 2018 for the DSM Coordinator position as follows:

2016: \$96,000  
2017: \$99,000  
2018: \$102,000

Yukon Electrical also anticipates additional costs outside of the DSM Plan related to DSM measures internal to the utility, such as incorporating LED lighting into Yukon Electrical's buildings however, at this time it is not possible to forecast those costs.

Total Yukon Electrical costs for 2016, 2017 and 2018 are as follows:

2016: \$792,500  
2017: \$732,000  
2018: \$842,000

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING DSM #7**

November 7, 2013  
Transcript Volume 4

---

Undertaking: By Ms. Bentivegna to Ms. Carlson

Page 788, Lines 15 - 22

To prepare an estimate of the total costs, with the actuals of what's already been spent and what is forecast to be spent by both utilities on all DSM-related activities to the end of 2018, subtracting out the cost related to the development of the plan or the policy paper.

**Yukon Electrical Response:**

Please refer to the Schedules attached as Attachment 1 for a summary of all actual as well as forecast costs of Yukon Electrical on all DSM related activities to the end of 2018 net of costs incurred by Yukon Electrical related to the development of the DSM Plan.

Yukon Electrical has provided anticipated costs for the years 2016, 2017 and 2018 related the joint utility program costs and the DSM Coordinator position. Yukon Electrical anticipates additional costs related to its internal DSM measures outlined in its response to Undertaking DSM #6, however at this time it is not possible to forecast these costs.

Yukon Electrical is not privy to Yukon Energy's costs outside the Joint Utility Plan budget and will leave it to Yukon Energy to provide its own response in that regard.

| Expenditure Type                        | Amount        |
|-----------------------------------------|---------------|
| PROJECTED DSM COSTS 2018                |               |
| DSM ADMINISTRATOR                       | \$ 102,000.00 |
| DSM PROGRAM COSTS                       |               |
| GENERAL SERVICE PROGRAMS - YECL PORTION | \$ 468,500.00 |
| RESIDENTIAL PROGRAMS - YECL PORTION     | \$ 271,500.00 |
|                                         | \$ 740,000.00 |
| PROJECTED 2018                          | \$ 842,000.00 |

| Expenditure Type                        | Amount        |
|-----------------------------------------|---------------|
| PROJECTED DSM COSTS 2017                |               |
| DSM ADMINISTRATOR                       | \$ 99,000.00  |
| DSM PROGRAM COSTS                       |               |
| GENERAL SERVICE PROGRAMS - YECL PORTION | \$ 382,500.00 |
| RESIDENTIAL PROGRAMS - YECL PORTION     | \$ 250,500.00 |
|                                         | \$ 633,000.00 |
| PROJECTED 2017                          | \$ 732,000.00 |

| Expenditure Type | Amount |
|------------------|--------|
|------------------|--------|

PROJECTED DSM COSTS 2016

|                   |              |
|-------------------|--------------|
| DSM ADMINISTRATOR | \$ 96,000.00 |
|-------------------|--------------|

DSM PROGRAM COSTS

|                                         |               |
|-----------------------------------------|---------------|
| GENERAL SERVICE PROGRAMS - YECL PORTION | \$ 464,000.00 |
| RESIDENTIAL PROGRAMS - YECL PORTION     | \$ 232,500.00 |
|                                         | \$ 696,500.00 |

|                |               |
|----------------|---------------|
| PROJECTED 2016 | \$ 792,500.00 |
|----------------|---------------|

| Expenditure Type                        | Amount        |
|-----------------------------------------|---------------|
| PROJECTED DSM COSTS 2015                |               |
| DSM ADMINISTRATOR                       | \$ 93,000.00  |
| STAFF TRAINING AND DEVELOPMENT          |               |
| PROJECTED COSTS FOR STAFF EDUCATION     | \$ 17,000.00  |
| DSM PROGRAM COSTS                       |               |
| GENERAL SERVICE PROGRAMS - YECL PORTION | \$ 352,500.00 |
| RESIDENTIAL PROGRAMS - YECL PORTION     | \$ 267,500.00 |
|                                         | \$ 620,000.00 |
| PROJECTED 2015                          | \$ 730,000.00 |

| Expenditure Type                        | Amount        |
|-----------------------------------------|---------------|
| PROJECTED DSM COSTS FOR 2014            |               |
| DSM ADMINISTRATOR                       | \$ 91,000.00  |
| STAFF TRAINING AND DEVELOPMENT          |               |
| PROJECTED COSTS FOR STAFF EDUCATION     | \$ 19,000.00  |
| DSM PROGRAM COSTS                       |               |
| GENERAL SERVICE PROGRAMS - YECL PORTION | \$ 197,500.00 |
| RESIDENTIAL PROGRAMS - YECL PORTION     | \$ 214,500.00 |
|                                         | \$ 412,000.00 |
| PROJECTED 2014                          | \$ 522,000.00 |

| Expenditure Type                                | Amount        |
|-------------------------------------------------|---------------|
| DSM EXPENSES 2013                               |               |
| DATA / BILLING SYSTEM IMPROVEMENTS              |               |
| ENERGY BLOCK FEASIBILITY                        | \$ 20,000.00  |
| STAFF                                           |               |
| DSM ADMINISTRATOR                               | \$ 47,400.00  |
| CONSULTATION                                    |               |
| FIRST NATION ENERGY SUMMIT                      | \$ 1,400.00   |
| CONSULTANT SERVICES                             |               |
| ICF MARBEK - PROGRAM IMPEMENTATION / EM&V PLANS |               |
| LAUNCH CONTRACTOR                               | \$ 20,000.00  |
|                                                 | \$ 20,000.00  |
| STAFF TRAINING AND DEVELOPMENT                  |               |
| STAFF TRAINING AND DEVELOPMENT                  | \$ 15,000.00  |
| LED STREET LIGHT JOINT PROJECT                  |               |
| MATERIALS PURCHASED - LIGHTS                    | \$ 1,200.00   |
| TOTAL 2013                                      | \$ 105,000.00 |

| Expenditure Type                   | Amount      |
|------------------------------------|-------------|
| DSM EXPENSES 2012                  |             |
| DATA / BILLING SYSTEM IMPROVEMENTS |             |
| EM&V DATA PREPARATION              |             |
| EDUCATION                          |             |
| DOLLARS TO SENSE WORKSHOP          | \$ 2,000.00 |
| COMMUNICATION & ENGAGEMENT         |             |
| COMMUNICATION SERVICES             |             |
| INCHARGE BRANDING                  |             |
|                                    | \$ -        |
| CONSULTANT SERVICES                |             |
| PROGRAM DESIGN - ICF MARBEK        |             |
| ONE CHANGE COMMUNITY ENGAGEMENT    |             |
|                                    | \$ -        |
| LED STREET LIGHT JOINT PROJECT     |             |
| MATERIALS PURCHASED - LIGHTS       | \$ 2,000.00 |
| TOTAL AS OF DECEMBER 31/2012       | \$ 4,000.00 |

| Expenditure Type                   | Amount       |
|------------------------------------|--------------|
| DSM EXPENSES 2011                  |              |
| DATA / BILLING SYSTEM IMPROVEMENTS |              |
| ENERGY BLOCK FEASIBILITY           | \$ 42,000.00 |
| DATA REQUEST FOR CPR STUDY         |              |
|                                    | \$ 42,000.00 |
| EDUCATION                          |              |
| DOLLARS TO SENSE WORKSHOP          | \$ 5,000.00  |
| STAFF TRAINING AND DEVELOPMENT     |              |
| CONSULTANT SERVICES                |              |
| CPR STUDY - ICF MARBEK             |              |
| ONE CHANGE COMMUNITY ENGAGEMENT    |              |
|                                    | \$ -         |
| TOTAL AS OF DECEMBER 31/2011       | \$ 47,000.00 |

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING DSM #8**

November 7, 2013  
Transcript Volume 4

---

Undertaking: By Ms. Bentivegna to Ms. Carlson

Page 791, Lines 11 - 14

To quantify in dollars the energy savings the utilities believe will be saved if the DSM plan is approved as filed.

**Yukon Electrical Response:**

The joint utility plan expects savings of 9.3 GWh after the completion of the 5<sup>th</sup> year of the filed plan. When calculating the savings, the utilities use the avoided cost of new generation to determine the value of the 9.3 GWh. The avoided cost of new generation is \$0.21KWh. The total avoided new generation savings by the end of year 5 of the Joint Utility Plan is \$1,953,000.

Yukon Utilities Board  
In the Matter of Yukon Electrical Company Limited  
2013-2015 General Rate Application

**RESPONSE TO UNDERTAKING DSM #9**

November 7, 2013  
Transcript Volume 4

---

Undertaking: By Ms. Bentivegna to Mr. Redden

Page 801, Lines 22 - 25

To provide a breakdown of how much time the Senior Corporate Communications Advisor has spent on DSM-related activities in 2012-2013.

**Yukon Electrical Response:**

Yukon Electrical's Senior Corporate Communications Advisor was one of two employees assigned to coordinate the development of the Five Year DSM Plan. The work was performed in addition to the regular duties assigned to both employees. This work was completed from April 2011 until November 2013. The Senior Corporate Communications Advisor completed 2329 hours of work within the time frame of the plan development. The additional employee performed an additional 2392 hours of work within the time frame of the plan development.

The Senior Corporate Communications Advisor estimates that in order to perform the regular duties of the Advisor position with the additional responsibility of the DSM functions that an average of 54 hours a week was required by this individual. This position is an out-of-scope position and does not record overtime hours on a timesheet.

It is no longer reasonable or sustainable for the Senior Corporate Communications Advisor to continue to work the additional hours required to fulfill both the DSM duties and the regular role of Senior Corporate Communications Advisor. The Senior Corporate Communications Advisor, as of December 1, 2013, will no longer be responsible for DSM matters other than DSM communication functions, which duties will include oversight and approval of public messages, approval of campaign materials, approval of public presentations and management of media interactions. The DSM Coordinator position will take responsibility for the balance of the development and implementation of the five year plan as these responsibilities require a full-time position commitment.