

# **REPORT OF THE GUIDELINES FOR NEW FACILITIES TASK FORCE**

## **TRANSCANADA (ALBERTA SYSTEM) FACILITIES LIAISON COMMITTEE (FLC)**

### **Guidelines for New Facilities**

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#### **Guiding Principles:**

- NGTL will expand its existing system to meet individual customer requests.
- NGTL will modify (expand/extend) its existing system to meet aggregate contractual obligations for receipt and delivery service.
- Customers are not precluded from building facilities. Third party construction has implications on ownership, operation and accountability.
- Guidelines would apply to the majority of situations.
- The established Annual Plan/FLC process will be followed.

TransCanada continues to follow IL 90-8 and the two-stage application process it specifies for applications to the EUB for facilities additions to the NGTL system. The first stage of this process is the filing of an Annual Plan. The second stage consists of the filing of an application for each facility contained in the Annual Plan which includes the final technical information for the applied-for facility.

NGTL's facility planning processes are outlined in the Annual Plan. The Annual Plan provides the Board and industry participants with an understanding of how specific facility applications fit into the overall long term development of the NGTL system. The Annual Plan includes descriptions of NGTL's design assumptions and criteria, as well as the long term outlook for field deliverability, firm service productive capability, gas deliveries, and proposed facility additions.

Facilities identified subsequent to the filing of the Annual Plan will be applied for under Section L of IL 90-8. Section L applications arising from aggregate system requirements will be disclosed to the FLC prior to application whereas, as a general rule, facilities arising from specific customer requests will not be subject to FLC review prior to application to the EUB unless unusual circumstances prevail.

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**F2000-01: Circumstances (what/when) under which NGTL will construct (own/operate) new facilities on the Alberta System.**

With the Alberta Energy and Utilities Board (“Board”) Decision 2000-6 respecting NGTL’s 1999 Products and Pricing Application, NGTL will no longer construct (own/operate) laterals to connect to the NGTL system. As outlined in the Decision, the Board accepted as reasonable NGTL’s submission that *“in general new connections of 12 inches or less in diameter distinctly associated with one or a few customers would normally be considered laterals, while facilities required to meet the aggregate forecast of more than one customer would normally be classified as mainline”*. Questions have arisen since the Board’s decision relating to what facilities NGTL will construct (own/operate) and what facilities NGTL will not construct (own/operate). Further, questions have been raised concerning NGTL’s requirement or obligation to build facilities as a regulated entity.

The following definitions/criteria have been developed which outline under what circumstances (what/when) NGTL will construct (own/operate) new facilities on the Alberta system.

For an illustrative example of the definitions that have been established, refer to Appendix 1.

***Expansion Facilities:***

NGTL will continue to identify expansions to its existing system on an annual basis as per the Annual Plan process and will expand (own/operate) its existing system to/from the point of customer connection, generally downstream in the case of receipt and upstream in the case of deliveries. This would include any loop of the existing system, metering and associated connection piping and system compression. In the event that it is more economic for a third party to EPC (Engineer, Procure & Construct) a facility to NGTL’s specifications/standards, NGTL may contract with the third party to provide these services.

**Expansion Facilities Construction/Own/Operate Matrix**

	<b>Construct</b>	<b>Own</b>	<b>Operate</b>
<b>System Compression</b>	NGTL or 3 <sup>rd</sup> party	NGTL	NGTL
<b>Loop</b>	NGTL or 3 <sup>rd</sup> party	NGTL	NGTL
<b>Metering/Associated Piping</b>	NGTL or 3 <sup>rd</sup> party	*NGTL	NGTL

\* very small meter stations for co-ops could be an exception

***Extension Facilities***

Extension facilities are those facilities which connect new or incremental supply or markets to the NGTL system. NGTL may construct (own/operate) extension facilities which are generally greater than or equal to 12 inches in diameter and are expected to meet the aggregate forecast of two or more facilities (gas plants/industrials). NGTL will

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not construct (own/operate) facilities that connect new or incremental supply or markets to the NGTL system which are generally less than 12 inches in diameter and are generally associated with one facility.

### **Extension Facilities Criteria**

<b>NGTL Builds (Owns/Operates)</b>	<b>NGTL Doesn't Build (does not Own/Operate)</b>
Facilities to serve aggregate forecast as per Annual Plan process	Facilities to serve specific customer requests - whatever NGTL can't justify through Annual Plan process, third party would build
Facilities greater than or equal to 12 inches in diameter	Facilities less than 12 inches in diameter
Facilities greater than 20 kilometres in length. Associated connection piping.	Facilities less than 20 kilometres in length
Volumes greater than 100 mmcf/d	Volumes less than 100 mmcf/d

The determination of whether NGTL will construct the extension facility will depend on whether or not the majority of the criteria as described in the table above are met. It is anticipated once parties have had an opportunity to experience these criteria that refinements may be necessary.

### **Statistics**

TransCanada provided some statistics to provide a feel for the size and number of lateral facilities that NGTL has built over the last few years and to test the comfort level in the criteria used in the definitions established.

The statistics showed that 67 out of 99 laterals and lateral loops built since 1994 were 8 inches in diameter or less. The percentage of laterals and lateral loops built during this time increased to 89 out of 99 as the diameter increased to 12 inches or less. In terms of length, 93 of the 99 laterals and lateral loops that were built since 1994 were 50 kms or less. The last consideration was contract volume and 92 out of the 99 laterals and lateral loops had a customer requested contract volume of 60 mmcf/d or less.

Overall, the task force was satisfied that the statistics reasonably supported the definitions. (See Appendix 4 for Flow Ranges for Pipelines and Appendix 5 Unit Cost Index Calculations from NGTL's 1999 P&P Application.)

### **Connection of Storage Facilities**

Please refer to the Connection of Storage Facilities Procedure for criteria pertaining to connection of new storage facilities.

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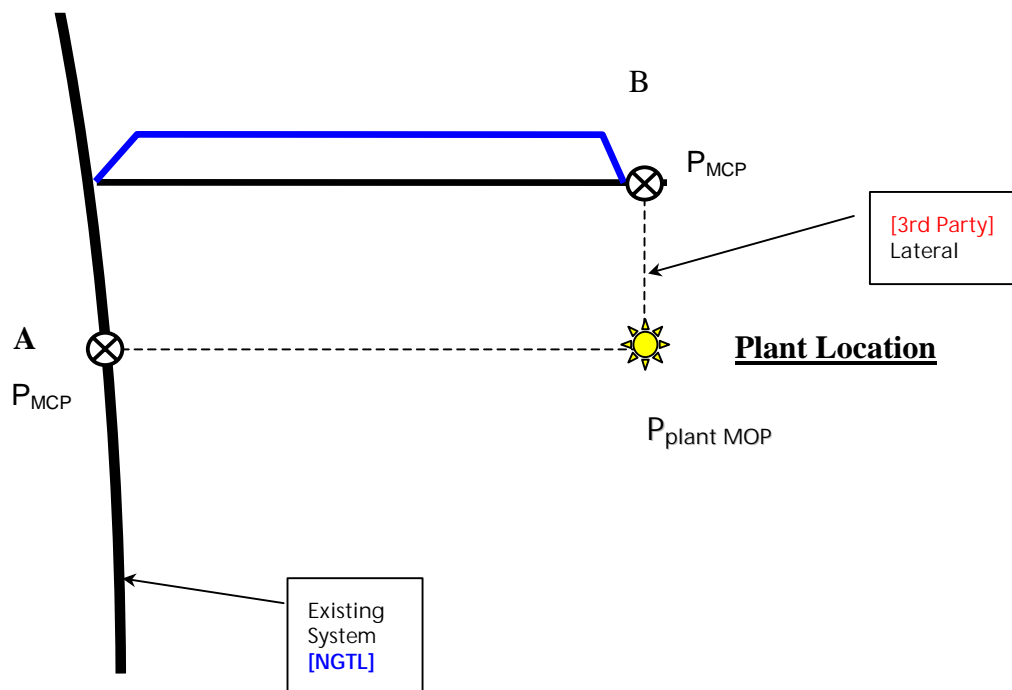
### F2000-02: Optimal connection to the NGTL system for third party facilities.

Customers wishing to connect receipt or delivery facilities to the NGTL system may be required to construct facilities in order to make that connection. As outlined in Decision 2000-6, the Customer requesting service and NGTL will discuss the best location for connection to the system as well as the best timing for the construction of tie-in facilities. A process must be established to ensure optimal tie-in to the system. This process will ensure the sharing of appropriate information to determine the lowest cost-efficient solution, considering the overall transportation cost of the gas to be connected and the design, efficiency and safety standards of NGTL. In addition, the process will ensure fair and consistent treatment of all parties. This process contemplates and establishes necessary criteria to ensure consistency in the determination of optimal tie-in points, such as a consistent method for determining cost of NGTL and third party facility costs. It must also address customer requests in a timely manner.

The following 5-steps describe the process for optimal connection to the NGTL system for third party facilities has been developed: (See Appendix 2 – Flow Diagram)

#### 1. Customer requests service by providing a completed *Application for Service* to NGTL.

In order to ensure TransCanada has all the necessary information to determine the facility requirements, a completed application for service with all the required information including; plant location, plant capacity, plant maximum operating pressure (MOP), requested volume, on-stream date, gas quality, reserve information, etc. is required. TransCanada will provide customer with the Maximum Contract Pressure (MCP) for receipt facilities and the minimum delivery pressure (MDP) for delivery facilities at the alternative tie-in points.



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### **2. TransCanada estimates the first year capital costs of the facilities required (including NGTL costs and third party costs) based on the customer requested volume.**

It was determined that the analysis should include third party costs to ensure the most orderly, economic and efficient construction of combined facilities (i.e. if third party costs were ignored, TransCanada would minimize its cost causing the third party to incur costs that may be uneconomic). To highlight this situation it was suggested, as an extreme case, if third party costs are excluded from the analysis the most optimum tie in from the perspective of the NGTL system would be the export delivery points.

TransCanada will perform hydraulic analysis to determine facility sizes based upon the plant MOP or MDP as applicable and the NGTL junction pressure. All cost estimates, including third party costs, will be determined based upon NGTL Rule of Thumb cost estimates and will not include capitalization (indirect capital) or AFUDC amounts. In determining third party costs, TransCanada will use its own estimate of the facilities required, typically pipe, to accommodate the customer's requested volume. Third party compression costs will also be included if TransCanada has determined that more than one alternative exists for tie-in and there is a difference in the pipeline operating pressure between alternatives. In determining the estimate of capital costs, only practical pipe sizes will be used i.e. 4, 6, 8 10 and 12 inches.

The following Rule of Thumb pipeline costs will be used to estimate the cost of both NGTL and third party costs.

PIPE SIZE (NPS)	PIPELINE COST (\$/Dia-in-km)	PIPELINE COST (\$/km)
4	22,800	91,200
6	17,100	102,600
8	14,500	116,000
10	14,200	142,000
12	13,300	159,600

These Rule of Thumb cost estimates will be subject to change from time to time. Costs are representative only, as such, actual costs may vary and will be dependent upon site specific or seasonal construction conditions.

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3. **TransCanada to estimate the capital costs of the facilities required (both first year costs and future costs - including NGTL costs and 3<sup>rd</sup> party costs) based on the volume potential in the local area.**

TransCanada will continue to maintain its system design criteria of sizing a system expansion loop facility to accommodate future volume potential in the area for receipt facilities and to accommodate an estimate of the aggregate demand for the area for delivery facilities.

In determining area supply potential for the purpose of appropriately sizing system expansion loops, three sources of "native" gas supply are considered. If applicable, the gas supply available from interconnections with other pipeline systems is considered as well. The three sources are:

- a) **Established Connected:** Gas reserves that are currently producing and may be recognized by the EUB and already connected to the NGTL system. Supply profiles are generated using an appropriate modelling approach such as tank modelling.
- b) **Established Unconnected:** Gas reserves that may be recognized by the EUB, and are located within the "natural" drainage area, but are not tied in and not producing. In addition to established EUB reserves, newly discovered customer confidential gas reserve information is included in the analysis. Gas supply profiles for unconnected reserves are generated using an appropriate reserves modelling approach and customer contractual information.
- c) **Undiscovered Resources:** The gas supply associated with future reserve additions is based upon ERCB Report 92-A, "Ultimate Potential and Supply of Natural Gas in Alberta". Future reserve additions are allocated to meter stations on a "natural" drainage area basis with appropriate consideration for topographic barriers, drilling density and activity levels. If relevant, supply shrinkage due to competitive pipeline interfaces is given proper consideration. The future gas reserve potential associated with a natural drainage area is developed into a supply profile utilizing reasonable assumptions regarding phase in of reserves and rates of take.

4. **TransCanada will estimate and compare the cumulative present value cost of service (CPVCOS) of each alternative (both first year costs and future costs - including NGTL and 3<sup>rd</sup> party costs) using the aggregate volume assumption.**

The CPVCOS estimate for each alternative will be calculated as follows:

Estimate of CPVCOS = CPVCOS of NGTL system expansion facilities (including both directly attributable and non-directly attributable facilities); plus  
CPVCOS of NGTL system extension facilities (if any); plus  
CPVCOS of third party extension facilities.

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The CPVCOS will be determined on the same basis as the CPVCOS as described in NGTL's Tariff, Appendix E, "Criteria for Determining Primary Term". The one exception to this is that the CPVCOS for tie-in determination will be based upon book depreciation rates such that the CPVCOS is calculated over the depreciable life of the facility. Otherwise, the determination of CPVCOS for each tie-in alternative will include operating and maintenance expenses, municipal taxes, income taxes, and return on rate base.

### **5. TransCanada identifies the least cost CPVCOS alternative as the optimal tie-in point.**

The optimal tie-in determination will be based upon the least cost comparison of the CPVCOS amounts determined in Step 4.

The results of Steps 2, 3 and 4 will be compared and presented to the customer to illustrate the tie-in determination for each step. This step is included in the process to highlight how changed assumptions may impact the tie-in determination as a visual aid to flag where a dispute may arise. In a situation where step #2, step #3 and, step #4 all conclude that the same alternative is the optimal tie-in, then it is not likely a dispute will arise. There would be a mechanism for a third party to dispute the third party cost estimate or other key assumptions as part of the dispute resolution process (issue F2000-4).

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### **F2000-03: Directly attributable facilities which will be included in economic tests to ensure appropriate level of accountability.**

The FLC has expressed concerns related to the appropriate level of accountability of facilities. The FLC needs to define directly attributable facilities which are included in the economic tests for calculation of primary term. The process should consider and establish a procedure for the appropriate allocation of directly attributable facility cost for future sizing, for example system expansion loop that has been upsized to accommodate future forecast increases in field deliverability.

In looking at the appropriate level of accountability, the task force agreed that through Decision 2000-6 there is increased accountability with customer responsibility for building the lateral facility. The task force also agreed that the inclusion of directly attributable system expansion loop facilities as part of the customers direct accountability (either through inclusion of the costs in the primary term calculation or the minimum annual volume calculation) raised rolled in versus incremental issues that were not resolvable. The task force shared concerns with respect to adding further shipper accountability without addressing pipeline accountability. The task force agreed to resume discussions on these matters in a broader discussion of accountability in front of the TTP.

The following process has been developed by the task force: (see Appendix 2 – Flow Diagram starting with Step 6).

#### **6. TransCanada calculates the primary contract term or minimal annual volume requirement using the meter station and connection costs only and reviews potential contract terms and conditions with customer (see Appendix 3 – Customer Information Package) which includes the following:**

- Primary term to cover meter station and connection costs. The task force, which is a joint FLC/TTP task force supports the Tariff amendments that are required to incorporate these changes to the calculation of the primary term (Refer to Appendix 6 for black lined version of the Tariff changes to be filed with the Board).
- If the optimal tie-in point is used, the secondary term will provide accountability for all system expansion loop facilities (i.e. everything downstream of the meter station)
- If the optimal tie-in point is not used, the shipper is responsible for costs associated with facilities in excess of costs at the optimal tie-in point through a contribution-in-aid-of-construction. TransCanada would have some discretion to decline projects not using the optimal tie-in point which are not in the best interests of its other customers.
- Minimum Annual Volume requirement to cover meter station and connection costs for delivery service.

The task force had significant discussion over several meetings on the issue of directly attributable system expansion loop facilities. Some felt that system expansion loop facilities are shared facilities and are difficult to attribute to a specific customer request. Others felt that without ensuring direct accountability for these facilities, customers would not be incented to tie-in at the optimal point in instances where it meant a higher cost third party extension facility. The consensus reached was that if the customer tied in at a



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point other than the optimal point, then the customer should be accountable for costs that would not have been incurred had the optimal tie-in location been selected (through a capital contribution rather than through primary term). Conversely, if the customer tied in at the optimal point, then the customer would not be directly accountable for any system expansion loop facilities. The secondary term of 3 years would provide a reasonable level of accountability for all facilities downstream of the receipt point including system expansion loop facilities.

The Board direction was not absolutely clear on whether the primary or secondary term should be used to ensure customer accountability for downstream system expansion facilities:

*“The Board acknowledges that shippers requesting new laterals would pay incrementally for this service and also continue to contribute to the costs associated with the downstream facilities.”*

The task force agreed that using the secondary term to cover downstream system expansion facilities may very well be what the Board had intended in its' decision.

### **7. Customer accepts the terms and conditions of service including the optimal tie-in point.**

Another factor that may have an impact on the customer's decision is the receipt point specific toll at the connection point. TransCanada will provide this information to the customer as it may factor into the customer's acceptance of the terms and conditions of service.

### **8. Customer executes the contract and TransCanada proceeds with the necessary facilities application to the Board.**

If upon filing the facilities application with the Board, a third party has an objection, and it is unable to resolve it through discussions with TransCanada, the issue will be raised at the FLC by the third party for discussion and resolution. If resolution can not be reached at the FLC, the third party will have the option of addressing their concerns through the Dispute Resolution Process or simply filing an objection with the Board.

### **9. Upon approval from the Board, TransCanada proceeds with the necessary facilities additions and service proceeds on the estimated onstream date.**

### **10. If Customer does not accept the terms and conditions of the contract including the optimal tie-in point, TransCanada and the customer will work together to alter the assumptions (i.e. plant location, contract volume etc.) in an attempt to provide an alternative that is acceptable to the customer and TransCanada.**

### **11-13**

#### **Changed assumptions fail to gain customer acceptance and the customer wishes to tie-in at a point other than the optimal tie-in point.**

If the customer wishes to tie-in at a point other than the optimal tie-in point and TransCanada agrees the customer would be responsible, through a capital contribution, for all costs (including future costs) in excess of the cost of the optimal tie-in. The task

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force agreed that the rate base should remain neutral and that the remainder of the customers should not have to pay for the customer's sub-optimal tie-in choice. The customer would also be responsible for a primary contract term using the meter station and connection costs and a secondary term of 3 years.

**14. If TransCanada does not agree with the customer's wish to tie-in at the sub-optimal point, parties may take the issue to the optional dispute resolution process.**

**15–16**

**If the issue is resolved through the dispute resolution process, the customer executes a contract and TransCanada would proceed with the necessary facilities application to the Board.**

**17. If the issue is not resolved through the dispute resolution process, the concerned party may file an application with the Board for resolution.**

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### **F2000-04: Expedited dispute resolution process/criteria.**

The FLC must develop an expedited process for dispute resolution in the event that there are disagreements related to optimal tie-in and what NGTL will construct (own/operate). The dispute resolution process must address disputes between NGTL and a customer with respect to the customer's request for service as well as third party disputes where a third party has concerns with the agreement reached between NGTL and a customer.

The task force has agreed to investigate the use of the Board's Alternate Dispute Resolution (ADR) Process to resolve disputes. Due to timing, the task force has not been able to meet with the Board to discuss their ADR Process in detail and how it may be used in these situations. The task force has agreed that it makes sense to utilize an existing process rather than create a new one. The task force will pursue discussions with the Board to gain further understanding of the process and how it will be used to resolve disputes. The task force recommends that discussion on this issue should continue and resolution be voted separately in due course.

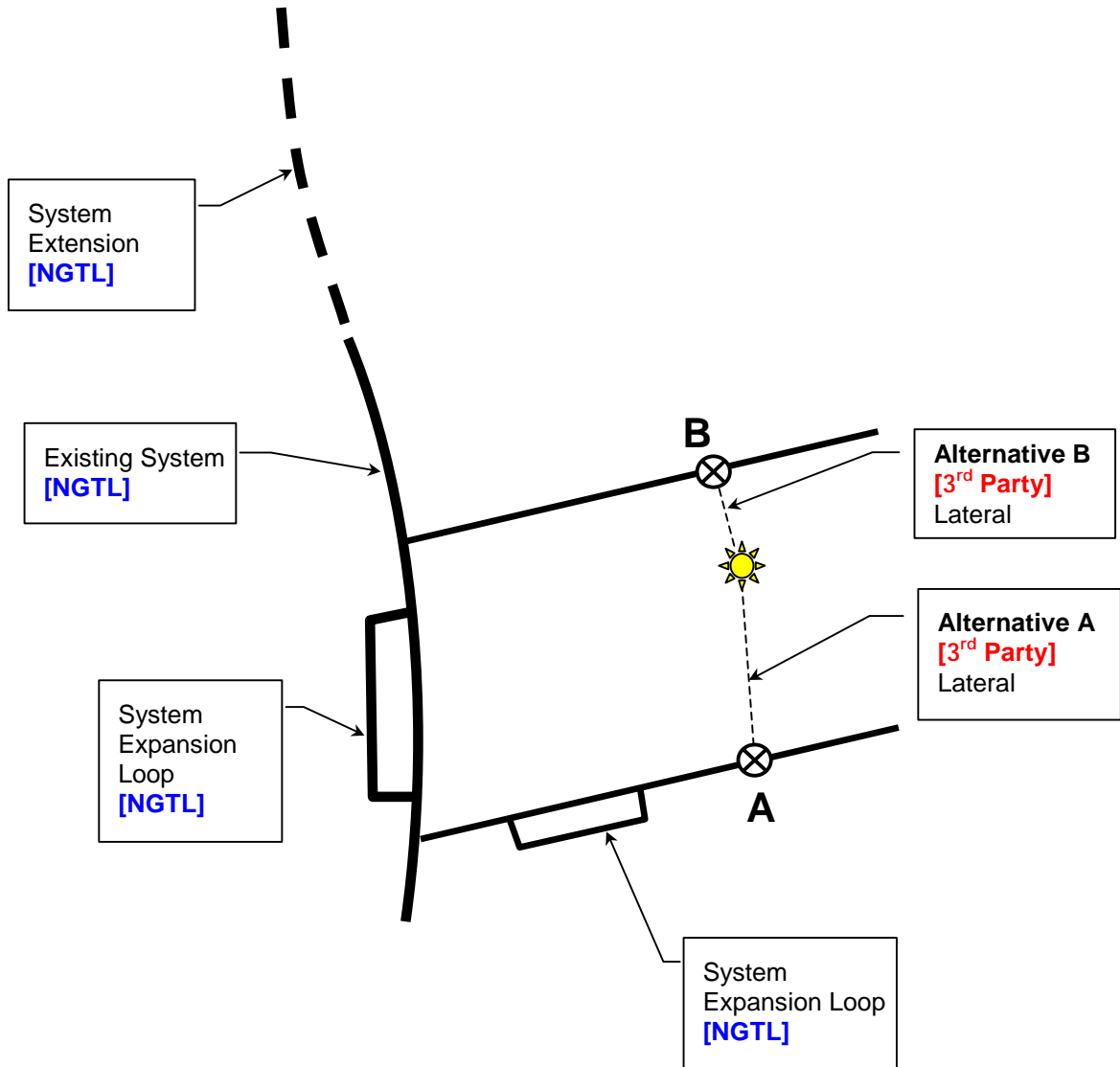
### **Issue to be resolved in future discussions**

- Overall Accountability Issues
  - Review of the complete package of accountability including primary & secondary term calculations, minimum annual volume calculation, and export delivery term requirements to ensure continued appropriateness.
  - Test experience with the new rules to ensure not encouraging inappropriate behaviour.
  - Review the accountability for TransCanada in facility decisions
- How should deviations between NGTL's cost estimates and actual costs be handled?
- Test the aggregate potential volume used by NGTL to ensure it is appropriate.
- NGTL policy regarding meter station location – NGTL to provide current practice.
- There may be value in adding 3<sup>rd</sup> party laterals to the NGTL system map? – not for this task force to solve.
- The Annual Plan/Annual Plan process may need to be reviewed/changed based on task force work and the new toll design.

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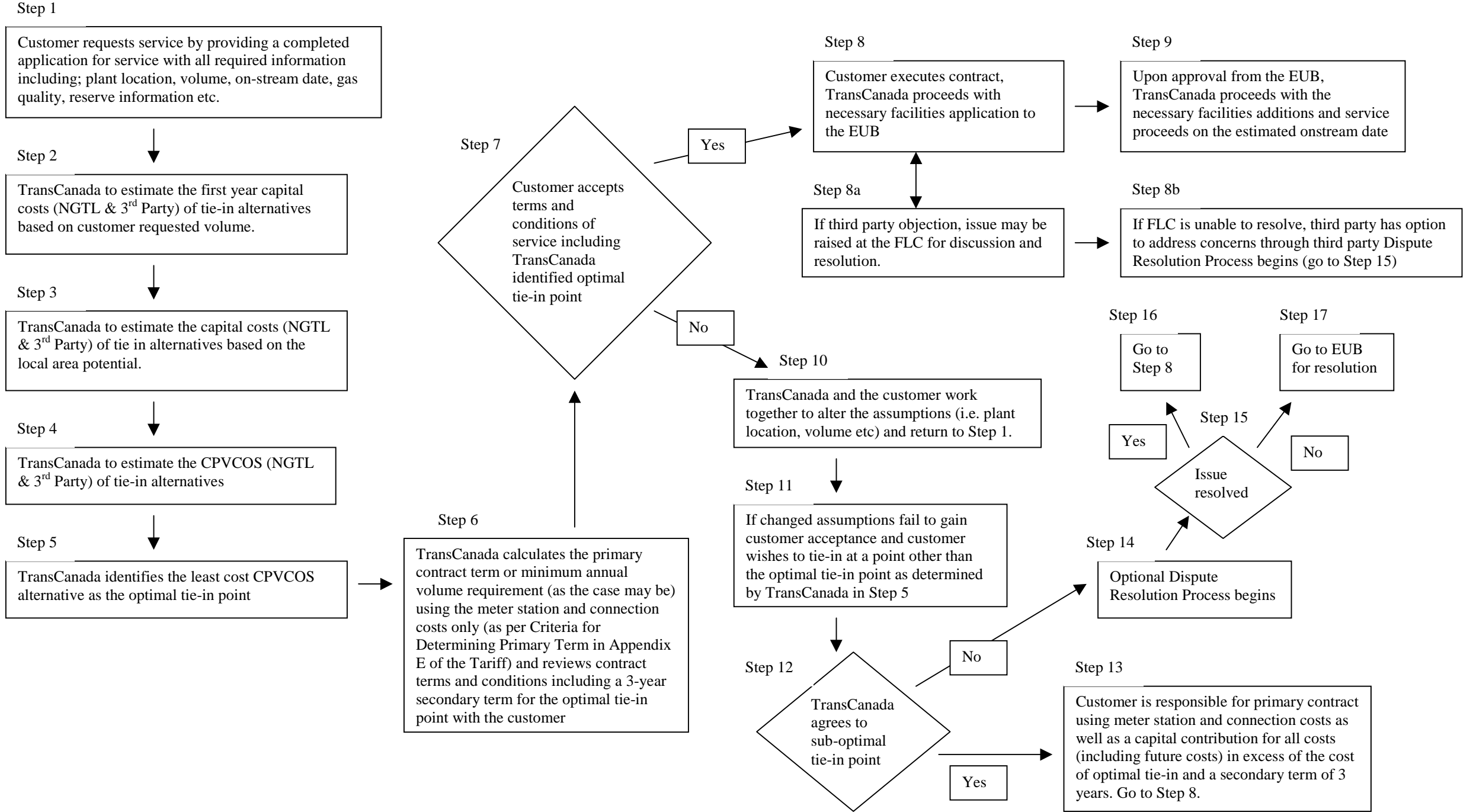
## APPENDIX 1

F2000-01: Schematic to Aid Definitions



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**APPENDIX 2 - Process for Determination of Optimal Tie-In & Associated Accountability**



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**APPENDIX 3 - Customer Information Package**

**Step 2 – Estimates Based on Customer Requested Volume**

<b>Alternative A</b>	<b>Facility Description</b>	<b>First Year Capital Cost (\$000's)</b>
▪ NGTL Facilities		
▪ Third Party Facilities		
▪ Total		
<b>Alternative B</b>		
▪ NGTL Facilities		
▪ Third Party Facilities		
▪ Total		

**Step 3 – Estimates Based on Area Potential**

<b>Alternative A</b>	<b>Facility Description</b>	<b>First Year Capital Cost (\$000's)</b>	<b>Total Capital Cost (\$000's)</b>
▪ NGTL Facilities			
▪ Third Party Facilities			
▪ Total			

<b>Alternative B</b>			
▪ NGTL Facilities			
▪ Third Party Facilities			
▪ Total			

**Step 4 – CPVCOS Analysis of Tie-in Alternatives**

<b>Alternative A</b>	<b>Facility Description</b>	<b>First Year Capital Cost (\$000's)</b>	<b>Total Capital Cost (\$000's)</b>	<b><u>CPVCOS</u> (\$000's)</b>
▪ NGTL Facilities				
▪ Third Party Facilities				
▪ Total				

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<b>Alternative B</b>				
▪ NGTL Facilities				
▪ Third Party Facilities				
▪ Total				

**Estimated Receipt Point Specific Price**

<b>Tie-in Point</b>	<b>Estimated Price<sup>1</sup></b>
<b>A</b>	
<b>B</b>	

1. Estimated receipt point specific price based upon 3 year term,

**Maximum Contract Pressure (MCP) or Minimum Delivery Pressure (MDP):**

<b>Tie-in Point</b>	<b>MCP or MDP</b>
<b>A</b>	
<b>B</b>	

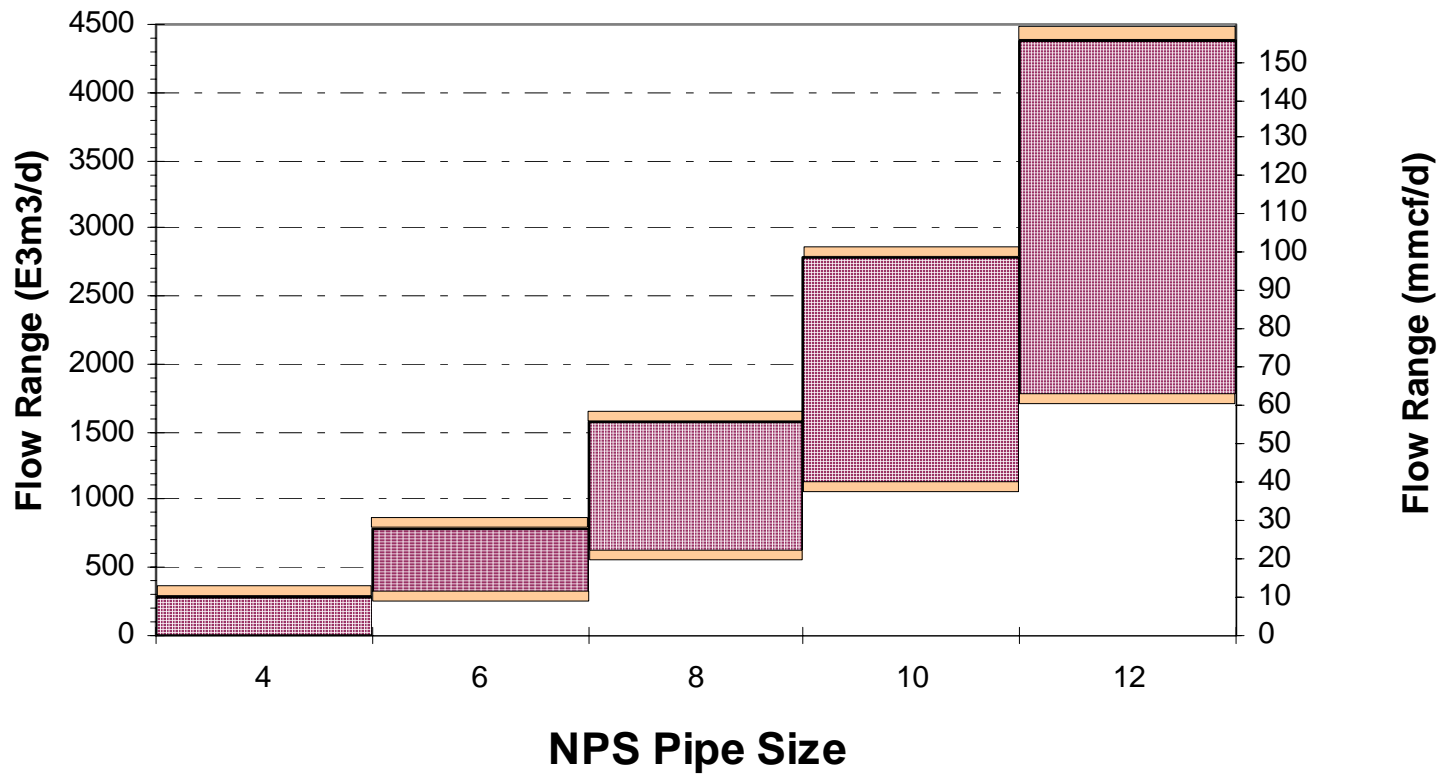
**Optimal Tie-in Checklist:**

<b>TIE-IN ANALYSIS CHECKLIST</b>			
<b>Step</b>	<b>Description</b>	<b>Tie-in A</b>	<b>Tie-in B</b>
2.	Tie-in estimate based upon <b>Customer request</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.	Tie-in estimate based upon <b>area potential</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4.	Tie-in estimate based upon <b>least CPVCOS.</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

(Note: double click table above to edit checkboxes)

APPENDIX 4

### Flow Ranges for Pipelines





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**APPENDIX 5**

**REFER TO ATTACHED UNIT COST INDEX CALCULATIONS**

# Unit Cost Index Calculations

1	A	B	X	Y	Z	AA	AB	AC	AD	AE
2	<b>Unit Cost Index</b>									
3	<b>Revenue Requirement</b>									
4	Pipe Diameter	Distribution of pipe lengths	Pipe Capital	Pipe O&M	Comp. Capital	Comp. O&M	Total	Pipe Capacity <sup>4</sup>	Relative cost per unit of capacity	Unit Cost Index
5	NPS	%					%	mmcf/d		
6										
7	4	5.55%	1.34%	1.05%	0.01%	0.00%	2.42%	5.73	75.94	73.63
8	6	11.07%	2.91%	2.10%	0.07%	0.03%	5.12%	16.46	28.08	27.22
9	8	10.74%	3.14%	2.04%	0.14%	0.05%	5.37%	32.77	15.25	14.79
10	10	8.24%	3.44%	1.57%	0.19%	0.07%	5.26%	58.24	10.97	10.63
11	12	10.91%	4.28%	2.07%	0.40%	0.14%	6.90%	90.76	6.96	6.75
12	14	0.61%	0.29%	0.12%	0.03%	0.01%	0.45%	115.16	6.37	6.17
13	16	12.89%	7.34%	2.45%	0.86%	0.30%	10.95%	166.44	5.10	4.95
14	18	1.71%	1.14%	0.33%	0.15%	0.05%	1.67%	221.33	4.42	4.29
15	20	7.17%	5.51%	1.36%	0.86%	0.30%	8.04%	299.65	3.74	3.63
16	22	0.62%	0.50%	0.12%	0.09%	0.03%	0.74%	372.97	3.22	3.12
17	24	4.48%	1.90%	0.85%	0.87%	0.30%	3.93%	482.27	1.82	1.76
18	26	0.17%	0.09%	0.03%	0.04%	0.01%	0.17%	590.11	1.74	1.69
19	28	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	717.95	1.65	1.60
20	30	8.27%	5.78%	1.57%	2.86%	0.99%	11.21%	859.06	1.58	1.53
21	32	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1021.26	1.42	1.37
22	34	1.84%	1.30%	0.35%	0.89%	0.31%	2.85%	1198.02	1.29	1.25
23	36	6.44%	4.58%	1.22%	3.57%	1.24%	10.62%	1375.59	1.20	1.16
24	42	6.82%	8.10%	1.30%	5.63%	1.96%	16.98%	2048.86	1.21	1.18
25	48	2.47%	3.01%	0.47%	2.87%	1.00%	7.34%	2886.55	1.03	1.00
26		100.00%	54.7%	19.0%	19.5%	6.8%	100.0%			

<sup>4</sup> Pipe capacities are based on the standard AGA fully turbulent flow equation at the following conditions:

- base temperature = 15 degrees C
- base pressure = 101.325 kPa
- up stream pressure = 8450 kPa
- pressure drop = 20 kPa / km
- length = 30 km
- effective roughness = 19 microns
- specific gravity = 0.6
- average temperature = 20 degrees C
- average Z factor = 0.829

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**Appendix 6**

**Refer to Attached Tariff Amendments**

**RATE SCHEDULE FT-R**  
**FIRM TRANSPORTATION - RECEIPT**

**1.0 DEFINITIONS**

**1.1** The capitalized terms used in this Rate Schedule have the meanings attributed to them in the General Terms and Conditions of the Tariff unless otherwise defined in this Rate Schedule.

**2.0 SERVICE DESCRIPTION AND AVAILABILITY**

**2.1** Subject to the stated terms and conditions, service under Rate Schedule FT-R shall mean the receipt of gas within Alberta from Customer at Customer's Receipt Points (the "Service") which includes transportation of gas that Company determines necessary to provide services under the Tariff.

**2.2** The Service is available to any Customer that has executed a Service Agreement and Schedule of Service under Rate Schedule FT-R. A standard form Service Agreement for Service under this Rate Schedule FT-R is attached.

**3.0 PRICING**

**3.1** Subject to paragraph 3.2, the rate used in calculating Customer's monthly demand charge under each of Customer's Schedules of Service for Service under Rate Schedule FT-R is the FT-R Demand Rate.

**3.2** If the Primary Term plus the Secondary Term of any of Customer's Schedules of Service for new or renewed Service under Rate Schedule FT-R is:

- (i) five (5) years or greater the Price Point shall be 95% (Price Point "A");
- (ii) at least three (3) years but less than five (5) years the Price Point shall be 100% (Price Point "B"); and
- (iii) at least one (1) year but less than three (3) years the Price Point shall be 105% (Price Point "C").

#### **4.0 CHARGE FOR SERVICE**

##### **4.1 Aggregate of Customer's Monthly Demand Charges**

The aggregate of Customer's monthly demand charges for a Billing Month for Service under Rate Schedule FT-R shall be equal to the sum of the monthly demand charges for each of Customer's Schedules of Service under Rate Schedule FT-R, determined as follows:

$$\text{MDC} = (F \times P) \left[ \left( A \times \frac{B}{C} \right) - \left( \frac{D}{E} \right) \right]$$

Where:

"MDC" = the monthly demand charge applicable to such Schedule of Service;

"F" = the FT-R Demand Rate applicable to such Schedule of Service;

"P" = the applicable Price Point in such Schedule of Service;

- “A” = the Receipt Contract Demand in such Schedule of Service;
- “B” = the number of days in such Billing Month that Customer was entitled to Service under such Schedule of Service;
- “C” = the number of days in such Billing Month;
- “D” = the volume of gas allocated to Customer as determined by Company for Gas Used and Gas Lost for the month preceding such Billing Month under such Schedule of Service; and
- “E” = the number of days in the month preceding such Billing Month.

#### 4.2 Aggregate of Customer’s Surcharges

The aggregate of Customer’s Surcharges for a Billing Month shall be equal to the sum of all Surcharges set forth in the Table of Rates, Tolls and Charges applicable to each of Customer’s Schedules of Service under Rate Schedule FT-R.

#### 4.3 Aggregate of Customer’s Over-Run Gas Charges

The aggregate of Customer’s charges for Over-Run Gas in a Billing Month for Service under Rate Schedule FT-R shall be equal to the sum of the monthly charges for Over-Run Gas for each Receipt Point at which Customer is entitled to Service under Rate Schedule FT-R, determined as follows:

$$\text{MOC} = ((V - Y) - U) \times Z$$

Where:

- “MOC” = the monthly charge for Over-Run Gas at the Receipt Point;
- “V” = total volume of gas received from Customer for the month preceding such Billing Month under all of Customer’s Schedules of Service for Service under Rate Schedule FT-R at the Receipt Point;
- “Y” = the aggregate of the products obtained for each of Customer’s Schedules of Service for Service under Rate Schedule FT-R at the Receipt Point, each determined as follows:

(A x B)

Where:

- “A” = the Receipt Contract Demand under Customer’s Schedule of Service for Service under Rate Schedule FT-R at the Receipt Point for the month preceding such Billing Month;
- “B” = the number of days in the month preceding such Billing Month that Customer was entitled to Service under such Schedule of Service;
- “U” = the volume of gas allocated to Customer as determined by Company for Gas Used and Gas Lost for the month preceding such Billing Month for Service provided to Customer for Over-Run Gas at the Receipt Point; and
- “Z” = the IT-R Rate at such Receipt Point.

**4.4** The calculation of Customer's charge for Over-Run Gas in paragraph 4.3 shall not take into account Customer's Inventory on the last day of the month preceding the Billing Month.

**4.5 Aggregate Charge For Service**

Customer shall pay for each Billing Month:

- (i) the sum of the amounts calculated in accordance with paragraphs 4.1, 4.2, and 4.3; less
- (ii) the amount, if any, calculated in accordance with the Terms and Conditions Respecting Relief for Mainline Capacity Restrictions in Appendix "B" of the Tariff.

**4.6 Allocation of Gas Received**

Notwithstanding any other provision of this Rate Schedule, any Service Agreement or the General Terms and Conditions of the Tariff, and without regard to how gas may have been nominated, the aggregate volume of gas received from Customer at a Receipt Point shall be allocated for billing purposes as follows:

- (i) first to service to Customer under Rate Schedules LRS and LRS-2 to a maximum of such Customer's LRS Contract Demand for such Receipt Point under such Rate Schedule LRS and to a maximum of such Eligible LRS-2 Volumes for the Coleman Receipt Point under such Rate Schedule LRS-2;
- (ii) secondly to Service to Customer under Rate Schedule FT-R to a maximum of such Customer's Receipt Contract Demand for such Receipt Point under Rate Schedule FT-R; and



- (iii) thirdly to service to Customer under Rate Schedule IT-R at such Receipt Point. If Customer is not entitled to service under Rate Schedule IT-R at such Receipt Point, gas shall be allocated as Over-Run Gas and charged in accordance with paragraph 4.3.

## **5.0 TERM OF SERVICE**

### **5.1 Term of a Schedule of Service**

If, in the provision of new Service, Company determines that:

- (i) no new Facilities are required to be installed or constructed at any Receipt Point to provide the Service requested, the term of the Schedule of Service shall be a Secondary Term equal to the term requested by Customer with the minimum term being three (3) years; or
- (ii) new Facilities are required to be installed or constructed at any Receipt Point to provide the Service requested, the term of the Schedule of Service shall be equal to the sum of:
  - (a) the Primary Term; and
  - (b) a Secondary Term equal to the Secondary Term requested by Customer with the minimum Secondary Term being three (3) years.

**5.2** The Price Point for the term shall be determined in the manner described in paragraph 3.2.

**5.3** If the number of years calculated for the Primary Term exceeds fifteen (15) years the Primary Term shall be fixed at fifteen (15) years and a Surcharge, determined under the Criteria for Determining Primary Term in Appendix “E” of the Tariff, shall be applied in respect of such Service.

**5.4 Term of Service Agreement**

Customer's Service Agreement shall terminate on the latest Service Termination Date of Customer's Schedules of Service for Service under Rate Schedule FT-R.

**6.0 SERVICE DURING TESTS**

**6.1** Customer may tender, for one (1) month in any calendar year, a daily volume of gas at a Receipt Point in excess of the aggregate of Customer's Receipt Contract Demand under all of Customer's Schedules of Service for Service under Rate Schedule FT-R at such Receipt Point, and Company will receive such excess volume pursuant to the terms and conditions applicable to this Rate Schedule FT-R, provided that:

- (a) Customer has first satisfied Company that it is a requirement under the terms of a gas purchase contract that Customer tender such excess volume to Company for the purpose of a test; and
- (b) Company has determined in its sole judgment that it can receive such volume for such period without adversely affecting the operation of the Facilities or service to any other Customer receiving service under any Rate Schedule other than Rate Schedules IT-R, IT-D or IT-S.

**6.2** The IT-R Rate for the applicable Receipt Point shall apply to the excess volumes tendered under paragraph 6.1. The excess shall be Over-Run Gas and Customer shall be charged in accordance with paragraph 4.3.

**6.3** Notwithstanding the provisions of paragraph 6.1, Company in its sole discretion may interrupt or terminate the test at any time.

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**7.0 CAPACITY RELEASE**

**7.1** If Customer desires a reduction of Customer's Receipt Contract Demand for all or any portion of its Service under a Schedule of Service under Rate Schedule FT-R, Customer shall notify Company of its request for such reduction specifying the particular Receipt Point, Schedule of Service and the Receipt Contract Demand available to any other Person who requires Service under Rate Schedule FT-R. Company shall not have any obligation to find any Person to assume the Receipt Contract Demand Customer proposes to make available. If after notice is given to Company a Person is found who agrees to assume the Receipt Contract Demand Customer proposes to make available, together with any applicable Surcharge, Company may reduce Customer's Receipt Contract Demand under such Schedule of Service, on terms and conditions satisfactory to Company, by an amount equal to the Receipt Contract Demand specified in a new Schedule of Service, executed by Company and such Person. Notwithstanding such reduction, Customer shall at Company's sole option either:

- (i) continue to pay any Surcharge until the Service Termination Date as described in the applicable Schedule of Service (unless any other Person acceptable to Company has agreed to pay such Surcharge); or
- (ii) in the event that Company retires any Facilities required to provide such Service, pay to Company within a time determined by Company, an amount equal to the net book value of such Facilities adjusted for all costs and expenses associated with such retirement.

**8.0 RELIEF FOR MAINLINE RESTRICTIONS**

- 8.1** Company will grant relief to a Customer entitled to Service under Rate Schedule FT-R, in accordance with the Terms and Conditions Respecting Relief for Mainline Capacity Restrictions in Appendix “B” of the Tariff.

**9.0 TRANSFER OF SERVICE**

**9.1 Transfers Between Receipt Points Within the Same Project Area**

If Customer desires to transfer all or any portion of Service under a Schedule of Service from a Receipt Point within a Project Area to a Receipt Point within the same Project Area, Customer shall notify Company of Customer’s request for such transfer specifying the Receipt Points, the Schedule of Service and the portion of the Receipt Contract Demand that Customer wishes to transfer.

- 9.2** Company is under no obligation to permit the transfer requested in paragraph 9.1, but may permit such transfer provided that:

- (i) Company determines that sufficient capacity exists in the Facilities to accommodate the transfer;
- (ii) Company determines that the construction or installation of new Facilities that are directly attributable to the transfer is not required;
- (iii) the transfer does not occur during the Primary Term of the Schedule of Service;
- (iv) the Price Point in effect for Service under the Schedule of Service, from which Customer wishes to transfer Service at the time of the transfer, applies to the new Schedule of Service for the Service that has been transferred;

- (v) the FT-R Demand Rate applicable to Service under the Schedule of Service that has been transferred shall be the FT-R Demand Rate in effect at the Receipt Point to which the Service under the Schedule of Service has been transferred; and
- (vi) Customer executes new Schedules of Service.

**9.3 Transfers Between Receipt Points in Different Project Areas**

If Customer desires to transfer all or any portion of Service under a Schedule of Service from a Receipt Point within a Project Area to a Receipt Point in a different Project Area, Customer shall notify Company of Customer's request for such transfer specifying the Receipt Points, the Schedule of Service and the portion of the Receipt Contract Demand that Customer wishes to transfer.

**9.4** Company is under no obligation to permit the transfer requested in paragraph 9.3, but may permit such transfer provided that:

- (i) Company determines that sufficient capacity exists in the Facilities to accommodate the transfer;
- (ii) Company determines that the construction or installation of new Facilities that are directly attributable to the transfer is not required;
- (iii) the transfer does not occur during the Primary Term of the Schedule of Service;
- (iv) three (3) years are added to the balance of Customer's Secondary Term for the new Schedule of Service (the "New Term") for the Service that has been transferred;

- (v) the Price Point for Service under the new Schedule of Service for the Service that has been transferred shall be determined in the manner described in paragraph 3.2 using the New Term;
- (vi) the FT-R Demand Rate applicable to the Service under the Schedule of Service that has been transferred shall be the FT-R Demand Rate in effect at the Receipt Point to which Service under the Schedule of Service has been transferred; and
- (vii) Customer executes new Schedules of Service.

## **9.5 Transfers Between Receipt Points and Delivery Points**

A Customer entitled to receive Service under Rate Schedule FT-R shall not be entitled to transfer all or any portion of Service under Rate Schedule FT-R to a Delivery Point.

## **10.0 TERM SWAPS**

### **10.1 Term Swap Between Receipt Points Within the Same Project Area**

If Customer desires to swap the Service Termination Date of a Schedule of Service with the Service Termination Date of another Schedule of Service and the Receipt Points for the Schedules of Service are within the same Project Area, Customer shall notify Company of Customer's request for such swap specifying the particular Receipt Points, the Service Termination Dates and the Schedules of Service, if necessary, that Customer wishes to swap.

- 10.2** Company is under no obligation to permit the swap requested in paragraph 10.1, but may permit such swap provided that:

- (i) Company determines that sufficient capacity exists in the Facilities to accommodate the swap;
- (ii) Company determines that the construction or installation of new Facilities that are directly attributable to the swap is not required;
- (iii) the swap does not occur during the Primary Term of the Schedule of Service;
- (iv) the Receipt Contract Demand and the FT-R Demand Rate;
  - (a) at each Receipt Point; and
  - (b) for each Service Termination Datedo not change as a result of the swap;
- (v) the Price Point in effect for each Schedule of Service after the swap shall be the Price Point in effect for the other Schedule of Service immediately prior to the time the Service Termination Dates were swapped; and
- (vi) Customer executes new Schedules of Service.

### **10.3 Term Swaps Between Receipt Points in Different Project Areas**

If Customer desires to swap the Service Termination Date of a Schedule of Service with the Service Termination Date of another Schedule of Service and the Receipt Points for the Schedules of Service are in different Project Areas, Customer shall notify Company of Customer's request for such swap specifying the particular Receipt Points, the Service Termination Dates and the Schedules of Service, if necessary, that Customer wishes to swap.

**10.4** Company is under no obligation to permit the swap requested in paragraph 10.3, but may permit such swap provided that:

- (i) Company determines that sufficient capacity exists in the Facilities to accommodate the swap;
- (ii) Company determines that the construction or installation of new Facilities that are directly attributable to the swap is not required;
- (iii) the swap does not occur during the Primary Term of the Schedule of Service;
- (iv) the Receipt Contract Demand and the FT-R Demand Rate:
  - (a) at each Receipt Point; and
  - (b) for each Service Termination Datedo not change as a result of the swap;
- (v) subject to subparagraph 10.4(vi), the Price Point in effect for each Schedule of Service after the swap shall be the Price Point in effect for the other Schedule of Service immediately prior to the time the Service Termination Dates were swapped;
- (vi) three (3) years are added to the balance of Customer's Secondary Term for each Schedule of Service (the "New Term") if the remaining term of either of the Schedules of Service is less than three (3) years and the Price Point that shall apply to each Schedule of Service shall be the Price Point determined in the manner described in paragraph 3.2 using the New Term for such Schedules of Service; and
- (vii) Customer executes new Schedules of Service.



**10.5 Term Swaps Between Schedules of Service Under Rate Schedule FT-R and other Schedules of Service**

Except as provided in article 10, a Customer entitled to receive Service under Rate Schedule FT-R shall not be entitled to swap the Service Termination Date of any Schedule of Service under Rate Schedule FT-R with the Service Termination Date under any Schedule of Service.

**11.0 TITLE TRANSFERS**

**11.1** A Customer entitled to receive Service under Rate Schedule FT-R may transfer all or a portion of Customer's Inventory to another Customer or may accept a transfer of all or a portion of Customer's Inventory from another Customer provided such Customer is entitled to receive service under any Rate Schedule that permits title transfers and such title transfer is in accordance with the Terms and Conditions of Service Respecting Title Transfers in Appendix "C" of the Tariff.

**12.0 RENEWAL OF SERVICE****12.1 Renewal Notification**

Customer shall be entitled to renew all or any portion of Service under a Schedule of Service under Rate Schedule FT-R with a Service Termination Date prior to March 1, 2001 if Customer gives notice to Company of such renewal at least six (6) months prior to the Service Termination Date. If Customer does not provide such notice, the Service shall expire on the Service Termination Date.

Customer shall be entitled to renew all or any portion of Service under a Schedule of Service under Rate Schedule FT-R with a Service Termination Date of March 1, 2001 or

later, if Customer gives notice to Company of such renewal at least one (1) year prior to the Service Termination Date. If Customer does not provide such notice, the Service shall expire on the Service Termination Date.

**12.2 Irrevocable Notice**

If a Service Termination Date is prior to March 1, 2001, Customer notice shall be irrevocable six (6) months prior to the Service Termination Date. If a Service Termination Date is March 1, 2001 or later, Customer notice shall be irrevocable one (1) year prior to the Service Termination Date.

Any renewal of Service is subject to Financial Information and Security provisions in Article 10 of the General Terms and Conditions

**12.3 Renewal Term**

Customer's notice shall specify a renewal term of not less than one (1) year consisting of increments of whole months. The Price Point for the renewal term shall be determined in the manner described in paragraph 3.2 based on the length of the renewal term requested by Customer.

**13.0 APPLICATION FOR SERVICE**

**13.1** Applications for Service under this Rate Schedule FT-R shall be in such form as Company may prescribe from time to time.

**14.0 GENERAL TERMS AND CONDITIONS**

**14.1** The General Terms and Conditions of the Tariff and the provisions of any Service Agreement for Service under Rate Schedule FT-R are applicable to Rate Schedule FT-R to the extent that such terms and conditions and provisions are not inconsistent with this Rate Schedule.

**SERVICE AGREEMENT**  
**RATE SCHEDULE FT-R**

BETWEEN:

NOVA Gas Transmission Ltd., a body corporate having an office in the  
City of Calgary, in the Province of Alberta (“Company”)

- and -

•, a body corporate having an office in the City of •, in the Province of  
Alberta (“Customer”)

IN CONSIDERATION of the premises and the covenants and agreements in this Service Agreement, the parties covenant and agree as follows:

1. Customer acknowledges receipt of a current copy of the Tariff.
2. The capitalized terms used in this Service Agreement have the meanings attributed to them in the General Terms and Conditions of the Tariff, unless otherwise defined in this Service Agreement.
3. Customer requests and Company agrees to provide Service pursuant to Rate Schedule FT-R in accordance with the attached Schedules of Service. The Service will commence on the Billing Commencement Date and will terminate, subject to the provisions of this Service Agreement, on the Service Termination Date.

4. Customer agrees to pay to Company each Billing Month, for all Service rendered under this Service Agreement, an amount equal to the aggregate charges for Service described in Rate Schedule FT-R.
  
5. Customer shall:
  - (a) provide such assurances and information as Company may reasonably require respecting any Service to be provided pursuant to this Rate Schedule FT-R including, without limiting the generality of the foregoing, an assurance that necessary arrangements have been made among Customer, producers of gas for Customer, purchasers of gas from Customer and any other Person relating to such Service, including all gas purchase, gas sale, operating, processing and common stream arrangements; and
  
  - (b) at Company's request provide Company with an assurance that Customer has provided the Person operating facilities upstream of any Receipt Point in respect of which Customer has the right to receive service with all authorizations necessary to enable such Person to provide Company with all data and information reasonably requested by Company for the purpose of allocating volumes of gas received by Company among Company's Customers and to bind Customer in respect of all such data and information provided.

If Customer fails to provide such assurances and information forthwith following request by Company, from time to time, Company may at its option, to be exercised by notice to Customer, suspend the Service to which such assurances and information relate until such time as Customer provides the assurances and information requested, provided however that any such suspension of Service shall not relieve Customer from any obligation to pay any rate, toll, charge or other amount payable to Company.

6. Customer acknowledges that the Facilities have been designed based on certain assumptions and forecasts described each year in Company's Annual Plan, and that interruption and curtailment of Service may occur if the aggregate gas volume actually received or the aggregate gas volume actually delivered at the Facilities is different than forecast.
7. Every notice, request, demand, statement, bid or bill (for the purpose of this paragraph, collectively referred to as "Notice") provided for in Rate Schedule FT-R, this Service Agreement and the General Terms and Conditions, or any other Notice which either Company or Customer may desire to give to the other, shall be in writing and each of them and every payment provided for shall be directed to the Person to whom given, made or delivered at such Person's address as follows:

Customer:

- 
- 
- 
- Attention: •
- or
- Attention: •
- Fax: •

Company:

- 
- 
- 
- Attention: Customer Account Representative
- Fax: •

Notice may be given by fax or other telecommunication and any such Notice shall be deemed to be given four (4) hours after transmission. Notice may also be given by personal delivery or by courier and any such Notice shall be deemed to be given at the time of delivery. Any Notice may also be given by prepaid mail and any such Notice shall be deemed to be given four (4) business days after mailing, Saturdays, Sundays and statutory holidays excepted. In the event of disruption of regular mail, every payment not made electronically shall be personally delivered, and any other Notice shall be given by one of the other stated means.

Any Notice for the matters listed in the Notice Schedule for Electronic Commerce in Appendix "F" of the Tariff shall be given via Company's electronic bulletin board ("EBB"). Company shall not accept any such Notice for those matters listed in Appendix "F" via any other alternative means, unless the EBB is inoperative or Customer is unable to establish connection with the EBB, in which case Notice shall be given by any other alternative means set out herein. Any Notice given by the EBB shall be deemed to be given one (1) hour after transmission.

Any Notice may also be given by telephone followed immediately by EBB, fax, personal delivery, courier or prepaid mail, and any Notice so given shall be deemed to have been given as of the date and time of the telephone notice.

- 8.** The terms and conditions of Rate Schedule FT-R, the General Terms and Conditions and Schedule of Service under Rate Schedule FT-R are by this reference incorporated into and made a part of this Service Agreement.

IN WITNESS WHEREOF the parties have executed this Service Agreement by their proper signing officers duly authorized in that behalf all as of the • day of •, •.

•

NOVA Gas Transmission Ltd.

Per:

\_\_\_\_\_

Per :

\_\_\_\_\_

Per:

\_\_\_\_\_

Per :

\_\_\_\_\_



**SCHEDULE OF SERVICE  
RATE SCHEDULE FT-R**

SCHEDULE NO: •

CUSTOMER: •

PLANT CAPACITY: • 10<sup>3</sup>m<sup>3</sup>/d

COMMON STREAM OPERATOR: •

RECEIPT POINT NAME: •

RECEIPT POINT NO: •

RECEIPT POINT LOCATION: •

RECEIPT CONTRACT DEMAND: • 10<sup>3</sup>m<sup>3</sup>/d

MAXIMUM RECEIPT PRESSURE: • kPa

SECONDARY TERM START DATE: •

PRICE POINT: •

SERVICE TERMINATION DATE: •

SURCHARGE: •

ADDITIONAL CONDITIONS: •

THIS SCHEDULE FORMS PART OF THE SERVICE AGREEMENT DATED • AND SHALL BE DEEMED TO BE ATTACHED THERETO.

•  
Per: \_\_\_\_\_

NOVA Gas Transmission Ltd.  
Per : \_\_\_\_\_

Per: \_\_\_\_\_

Per : \_\_\_\_\_

**APPENDIX “E”**  
**TO**  
**GAS TRANSPORTATION TARIFF**  
**OF**  
**NOVA GAS TRANSMISSION LTD.**

**CRITERIA FOR DETERMINING**  
**PRIMARY TERM**

## CRITERIA FOR DETERMINING PRIMARY TERM

### 1.0 DEFINITIONS

1.1 Capitalized terms used in this Appendix have the meanings attributed to them in the Tariff unless otherwise defined in this Appendix.

### 2.0 INTRODUCTION

2.1 If, pursuant to subparagraph 5.1(ii) of Rate Schedule FT-R, Company determines that new Facilities are required to be installed or constructed at any Receipt Point to provide the Service requested under a Schedule of Service under Rate Schedule FT-R, Company will determine the Primary Term and Surcharge, if any, in accordance with this Appendix.

2.2 The decision to install or construct new Facilities shall be made by Company. In making such decision, Company will take into account factors which may include, but shall not be limited to: capital investment, Receipt Contract Demand, established reserves and area resource potential.

### 3.0 DETERMINATION OF PRIMARY TERM

3.1 The Primary Term is the number of years of Service under a Schedule of Service under Rate Schedule FT-R required for the cumulative present value revenue (“CPVR”) to equal or exceed the cumulative present value cost of service (“CPVCOS”). In calculating the Primary Term, partial years shall be rounded up to the next whole year. The Primary Term may vary from one to fifteen years. If a fifteen-year Primary Term is insufficient for the CPVR to equal or exceed the CPVCOS, then a Surcharge shall be charged by Company.

An example of the calculation of Primary Term is set out in Attachment 1 to this Appendix.

### 3.2 Determination of CPVR

(i) In determining the CPVR, the annual revenue for the first year attributable to the Facilities shall be estimated as follows:

$$\text{AR} = \text{A} \times \text{B} \times 12 \text{ months}$$

Where:

“AR” = annual revenue attributable to the Facilities

“A” = the Receipt Contract Demand requested by Customer

“B” = the FT-R Demand Rate at the applicable Receipt Point multiplied by the applicable Price Point

- (ii) Commencing in the second year of the Primary Term the annual revenue shall be escalated at 2% per annum. The CPVR for the Primary Term is then calculated by adding each year's revenue, discounted at Company's current pre-tax rate of return. The escalation rate and the pre-tax rate of return may vary from time to time as determined by Company.

### 3.3 Determination of CPVCOS

In determining the CPVCOS the estimated capital cost for the first year of metering and other Facilities required to be installed or constructed at any Receipt Point to provide the Service requested shall be used. Estimated capital costs include all direct and indirect costs required to declare a Billing Commencement Date in respect of the requested Service. Facilities are designed in accordance with the criteria and assumptions outlined in Company's Annual Plan.

Commencing in the second year of the Primary Term the annual cost of service ("COS") shall be discounted at Company's current pre-tax rate of return. The CPVCOS for the Primary Term is then calculated by adding each year's COS, discounted at Company's current pre-tax rate of return. Such rate of return may vary from time to time as determined by Company.

The COS is equal to the sum of the components as described in (i) through (v) below.

(i) **Operating and Maintenance ("O&M")**

O&M expense is estimated based on Company's system average O&M costs.

O&M expense is escalated at 2% per annum commencing in the second year of the Primary Term. The escalation rate may vary from time to time as determined by Company.

**(ii) Municipal Taxes**

Municipal tax expense is estimated at Company's system average rate of 1.15% of estimated capital cost and is escalated at 2% per annum commencing in the second year of the Primary Term. Company's system average rate and escalation rate may vary from time to time as determined by Company.

**(iii) Depreciation**

Depreciation expense is calculated on a straight-line basis using the rate required to fully depreciate the estimated capital cost of the Facilities over the Primary Term. This depreciation rate is calculated using an iterative process and is used solely for the determination of Primary Term.

**(iv) Income Taxes**

Income tax expense is calculated on a flow-through basis and in accordance with Canadian generally accepted accounting principles. The income tax rate used is computed by applying the current combined federal and provincial income tax rates.

**(v) Return on Rate Base**

Return on rate base is calculated by applying Company's current rate of return to the average of the opening and closing balances in the rate base account for the applicable twelve month period. Rate base is equal to the estimated capital cost of the Facilities determined to be required to meet Customer's request for Service, less accumulated depreciation, plus a working capital adjustment. The rate of return may vary from time.

**4.0 DETERMINATION OF SURCHARGE**

**4.1** If a fifteen-year Primary Term is insufficient for the CPVR to equal or exceed the CPVCOS, then a Surcharge shall be charged by Company over the Primary Term.

**4.2** The Surcharge is calculated by Company such that when multiplied by the Receipt Contract Demand and discounted over fifteen (15) years and added to the CPVR results in the CPVR being greater or equal to the CPVCOS.

**5.0 REVIEW OF PRIMARY TERM AND SURCHARGE**

**5.1** Upon written request from Customer, Company will review the Primary Term and/or Surcharge on an existing Schedule of Service for Service under Rate Schedule FT-R

**5.2** If there is no Surcharge and either the actual capital cost of the Facilities is lower than originally estimated or actual revenue attributable to the Primary Term is higher than estimated, Company will reduce the Primary Term accordingly.

**5.3** If there is a Surcharge, such Surcharge may be reduced prior to the end of the Primary Term if either the actual capital cost of the Facilities is lower than originally estimated or actual revenue attributable to the Primary Term is higher than estimated, and the resulting CPVCOS is less than or equal to CPVR.

**Attachment 1**  
**Illustrative Primary Term Calculation**

(1)	(2)	(3)	(4)	(5)	(6)
Year	Annual Cost of Service	Cumulative Present Value Cost of Service (CPVCOS)	Annual Revenue	Cumulative Present Value Revenue (CPVR)	Net Present Value (Col. 5-3)
1999	149,329	149,329	121,306	121,306	(28,023)
2000	114,767	252,263	123,732	232,281	(19,982)
2001	121,294	349,836	126,207	333,806	(16,029)
2002	125,280	440,225	128,731	426,685	(13,539)
2003	127,295	522,599	131,305	511,654	(10,945)
2004	128,102	596,948	133,932	589,387	(7,561)
2005	127,551	663,346	136,610	660,501	(2,845)
2006	125,918	722,135	139,342	725,558	3,422
Total	1,019,536	722,135	1,041,165	725,558	3,422

**Capital Cost:** \$460,000

**Receipt Contract Demand:**  $70 \times 10^3 \text{ m}^3 / \text{d}$  (2.5 MMcf/d)

**FT-R Demand Rate:**  $\$143.52 / 10^3 \text{ m}^3 / \text{month}$  (\$4.05 / Mcf / month)

**Primary Term Required:** 8 years

**Rate of Return on Rate Base:** 9.03%

**Discount Rate:** 11.50%

**Surcharge:** N/A