

**TRANSCANADA - ALBERTA SYSTEM  
Tolls, Tariff & Procedures Committee**

**RESOLUTION**

**CO<sub>2</sub> Management Service Application Amendments**

**Resolution T2000-11(a)**

The Tolls, Tariff & Procedures Committee (“TTP”) supports the CO<sub>2</sub> Management Service Application, filed with the Alberta Energy and Utilities Board (“EUB”) on June 21, 2002, with the attached amendments.

**Background**

In a letter dated February 28, 2000 TransCanada informed Common Stream Operators (“CSO’s”) at stations flowing gas in excess of the NGTL Gas Transportation Tariff (“Tariff”) specifications for CO<sub>2</sub> that effective April 1, 2001 CO<sub>2</sub> relief would be terminated. Subsequent to April 1, 2001 shippers putting gas onto the Alberta System in excess of 2% CO<sub>2</sub> content would be shut in. At the time of the TransCanada notification, there was approximately 900 MMcf/d of production containing CO<sub>2</sub> in excess of 2%, or about 7% of the Alberta System’s total receipts. The gas containing excess CO<sub>2</sub> is not isolated to particular areas of the Alberta System and is a province wide issue. TransCanada’s motivation to terminate CO<sub>2</sub> relief was due to concerns about pipeline integrity and delivered gas quality.

Subsequent to TransCanada’s letter of February 28, 2000, a number of CSO’s and producers affected by the shut in notice requested that TransCanada consider alternatives to shutting in production, including offering a service. As part of the EUB decision on Products and Pricing, the EUB denied TransCanada’s application for new services subject only to complaint. Instead, the EUB encouraged TransCanada to work with stakeholders in order to implement new services requested by Customers. On June 13, 2000, the TTP adopted an issue to consider a CO<sub>2</sub> Management Service and a TTP task force was struck.

In early 2002, parties asked the EUB to review TransCanada’s interpretation of the NGTL Tariff, specifically as it related to providing relief on the gas quality provisions and in particular, the specification of 2% for CO<sub>2</sub>. In EUB Decision 2002-044, the EUB found that the NGTL Tariff was being correctly interpreted by TransCanada, however, the gas quality provisions and CO<sub>2</sub> specification should be reviewed to determine their continued relevance or if the Tariff required updating. The EUB also directed TransCanada to file an application for the proposed CO<sub>2</sub> Management Service. TransCanada complied with the EUB directive and filed the CO<sub>2</sub> Management Service Application on June 21, 2002. Since the application was filed, TransCanada and industry parties have been working collaboratively to land amendments to the application that will provide assurances that the CO<sub>2</sub> Management Service will protect the

interests of downstream industry should the EUB approve the CO<sub>2</sub> Management Service application.

### **Next Steps**

TransCanada will file an amended CO<sub>2</sub> Management Service Application with the EUB containing the amendments approved by the TTP in this Resolution.

## CO<sub>2</sub> Management Service - Application Amendments

### Add new Section 1.3 (vi)

Adoption of appropriate measures to mitigate a demonstrated material adverse impact on a recipient of natural gas deliveries at major nodes on the NGTL mainline due to receipt of Excess CO<sub>2</sub>.

### Amend Section 1.9

A Service Cap will be implemented to limit the volume of Excess CO<sub>2</sub> in the commingled gas stream. ~~The Service Cap will set a threshold volume of Excess CO<sub>2</sub> in NGTL's commingled gas stream above which NGTL will contract for CO<sub>2</sub> extraction~~ NGTL shall remove the CO<sub>2</sub> in excess of the Service Cap by contracting for CO<sub>2</sub> extraction. The Service Cap allows for a balance of interests between producers and end-users as more particularly described in Section 5.2 of this Application.

### Add new Section 1.11

Subject to the Service Cap, NGTL will contract for CO<sub>2</sub> extraction along the same flow path (described in Section 6.2) where natural gas containing Excess CO<sub>2</sub> is delivered on the NGTL System. NGTL will contract for such CO<sub>2</sub> extraction to reasonably ensure the commingled gas stream at major nodes on the NGTL mainline contains no more CO<sub>2</sub> than if natural gas at Receipt Points conforms to the 2% CO<sub>2</sub> specification.

### Amend Section 3.2.1 (iii)

NGTL must be able to acquire CO<sub>2</sub> extraction services on the flow path (described in Section 6.2) that will ensure that the CO<sub>2</sub> content from Excess CO<sub>2</sub> does not exceed the Service Cap level (described in Section 5.2) or the limit in any new or existing CO<sub>2</sub> Receipt Zone (described in Section 5.3).

### Amend Section 3.9 (ii)

NGTL is no longer able to obtain economic CO<sub>2</sub> extraction for the Schedule of Service in order to maintain the limits within a new or existing CO<sub>2</sub> Receipt Zone or on the relevant flow path; or

### Amend Section 5.2.2

The annual average Service Cap will be set at 155 10<sup>3</sup>m<sup>3</sup>/d (5.5 MMcf/d) initially, representing the volume of Excess CO<sub>2</sub> delivered to the system in 1999 (a reduction of approximately 300 10<sup>3</sup>m<sup>3</sup>/d (10.6 MMcf/d) of CO<sub>2</sub> from current levels). NGTL will reduce the annual average Service Cap to 125 10<sup>3</sup>m<sup>3</sup>/d (4.5 MMcf/d) following the fifth year of the Service.

### Add new Section 5.2.4

Excess CO<sub>2</sub> delivered to the NGTL System is not expected to exceed 600 10<sup>3</sup>m<sup>3</sup>/d (21.3 MMcf/d). Should NGTL expect that the contracted volume of Excess CO<sub>2</sub> under the Service will exceed 600 10<sup>3</sup>m<sup>3</sup>/d (21.3 MMcf/d), NGTL shall provide notice to the TTP to initiate a review of the CO<sub>2</sub> Management Service to determine the effect of Service on Customers, producers and end-users. Within 90 days of the commencement of the TTP review, NGTL on behalf of the TTP will advise the EUB of any required changes to the Service to ensure the Service will not have an impact on the commingled gas stream that has unintended consequences and a material adverse economic consequence on Customers, producers or end-users. In the event that the TTP can not reach resolution on issues related to the CO<sub>2</sub> Management Service, NGTL on behalf of the TTP will provide a report to the EUB identifying such issues and seek EUB direction. NGTL will continue to operate, offer and contract for the CO<sub>2</sub> Management Service during this time.

### **Add new Section 5.2.5**

Should the contracted volume of Excess CO<sub>2</sub> under the Service continue to increase beyond 600 10<sup>3</sup>m<sup>3</sup>/d (21.3 MMcf/d), the TTP will conduct similar reviews at increments of 100 10<sup>3</sup>m<sup>3</sup>/d (3.6 MMcf/d) unless otherwise agreed to by the TTP or directed by the EUB.

### **Amend Section 5.3.1**

If, while providing the CO<sub>2</sub> Management Service, natural gas volumes containing CO<sub>2</sub> greater than 2% are expected to be delivered to a CPO and NGTL is satisfied that the CPO or its Customers would experience a demonstrated material adverse impact, NGTL may designate a CO<sub>2</sub> Receipt Zone (“CRZ”) or arrange another alternative with the CPO. A CPO is any party that has signed a Facility Connection Service agreement with NGTL. A material adverse impact is defined as a quantifiable cost ~~of~~ to an industrial process (that uses natural gas as a feedstock) that would experience a material efficiency degradation or detriment of a material economic consequence resulting from the receipt of gas containing CO<sub>2</sub> concentrations in excess of 2%. This applies only to the CO<sub>2</sub> concentrations in excess of 2% on a monthly average basis and does not include short-term upset conditions caused from unplanned outages at CO<sub>2</sub> extraction facilities or upset conditions at Receipt Points where natural gas normally conforms with the 2% CO<sub>2</sub> receipt specification.

### **Amend Section 5.3.2**

A CRZ will encompass the Receipt Points contributing to the commingled gas stream delivered to the affected CPO. To ensure that deliveries to the CPO do not contain Excess CO<sub>2</sub> concentrations in excess of 2%, NGTL may at any time within the CRZ:

- (i) install real-time CO<sub>2</sub> analyzers to monitor CO<sub>2</sub> concentrations;
- (ii) enforce Maximum CO<sub>2</sub> Volumes associated with the Schedule of Service under Rate Schedule CO<sub>2</sub> within the CRZ;
- (iii) contract for additional local CO<sub>2</sub> extraction from existing or incremental facilities; and/or
- (iv) reduce gas volumes accepted under the CO<sub>2</sub> Management Service for short periods.

### **Add new Section 5.3.4**

NGTL will endeavor to ensure, on a real-time basis, that the commingled gas stream delivered to a CPO within a CRZ will not exceed 2% CO<sub>2</sub>. In the case of a short-term upset, NGTL will take reasonable steps to ensure natural gas conforms to the 2% CO<sub>2</sub> receipt specification as soon as practical.

### **Amend Section 5.4**

NGTL will record and electronically post on a monthly basis, the amount of CO<sub>2</sub> on the System, the aggregate amount of Excess CO<sub>2</sub> received by NGTL, and the aggregate amount of CO<sub>2</sub> removed under the Service. This monthly information will be reported semi-annually to the Tolls, Tariff and Procedures Committee (“TTP”) and the Board.

### **Amend Section 6.1**

NGTL will contract for CO<sub>2</sub> extraction to physically remove CO<sub>2</sub> from the gas stream. NGTL has two options available for contracting CO<sub>2</sub> extraction. The first option is to extract CO<sub>2</sub> from the gas upstream of the Receipt Point. The second option involves extracting CO<sub>2</sub> from gas that has already entered the NGTL System by removing gas from the System, extracting the CO<sub>2</sub> and returning the gas to the NGTL System. In either case, NGTL will contract only for CO<sub>2</sub> to be extracted from the gas. Under the second option, the CO<sub>2</sub> Management Service will not enable the removal of NGLs from the gas stream except for those trace amounts of NGLs removed through the normal CO<sub>2</sub> extraction process.

## **Replace Section 6.2**

~~Subject to the Service Cap, NGTL will contract for CO<sub>2</sub> extraction at facilities that will reasonably ensure that NGTL's commingled gas stream contains no more CO<sub>2</sub> than if gas received at Receipt Points conformed to the 2% CO<sub>2</sub> specification.~~

Subject to the Service Cap, NGTL will contract for CO<sub>2</sub> extraction along the same flow path, upstream, downstream or in parallel, to the Receipt Point where natural gas containing Excess CO<sub>2</sub> is delivered on the NGTL System, provided such parallel stream converges upstream of major nodes. NGTL will contract for such CO<sub>2</sub> extraction to reasonably ensure the commingled gas stream at major nodes, such as Cochrane Junction or Empress, contains no more CO<sub>2</sub> than if natural gas at Receipt Points conforms to the 2% CO<sub>2</sub> specification. Major nodes, as determined by NGTL (acting reasonably), are points on the NGTL mainline outside of a defined CRZ where large volumes of natural gas from multiple Receipt Points on the upstream flow path are delivered or flow through and where industrial processes would experience a material efficiency degradation or detriment of a material economic consequence. Mainlines, for the purpose of defining flow paths, are generally pipelines of NPS 24 (609.6 mm) diameter or greater. NGTL will use reasonable efforts to apportion the CO<sub>2</sub> Service Cap among flow paths in proportion to the Excess CO<sub>2</sub> volumes that are received on the various flow paths.

## **Add new Section 10.4**

More frequent independent technical audits may be conducted under Section 10.2 at the expense of the TTP member requesting the audit. The audit costs that are payable by such TTP member will include the costs of the independent audit plus any costs incurred by NGTL related to the audit, including all staff costs.

## **Add Appendix H to Appendices C and D of the Application and amend Section 8.1 to reflect inclusion of Appendix H in the Application**

See attached.

**APPENDIX "H"**  
**TO**  
**GAS TRANSPORTATION TARIFF**  
**OF**  
**NOVA GAS TRANSMISSION LTD**

**TERMS AND CONDITIONS RESPECTING**  
**CO<sub>2</sub> MANAGEMENT SERVICE**

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**TERMS AND CONDITIONS RESPECTING  
CO<sub>2</sub> MANAGEMENT SERVICE**

**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.

In this Appendix:

**1.2** “Excess CO<sub>2</sub>” shall mean the volume of CO<sub>2</sub> in excess of 2% contained in gas receipts with a CO<sub>2</sub> concentration exceeding 2%.

**1.3** “Service” shall mean the CO<sub>2</sub> Management Service as approved by the Board via Order [Decision] •.

**1.4** “Service Cap” shall mean the minimum annual average volume of Excess CO<sub>2</sub> that Company shall not be required to extract or cause to be extracted from its Facilities.

**1.5** “System” shall mean Company’s Facilities.

**2.0 CO<sub>2</sub> MANAGEMENT SERVICE CAP**

**2.1** Company will implement a Service Cap, to reduce the volume of Excess CO<sub>2</sub> remaining in the commingled gas stream. For Excess CO<sub>2</sub> volumes above the Service Cap level, Company will contract for CO<sub>2</sub> extraction.

**2.2** The annual average Service Cap will be set at 155 10<sup>3</sup>m<sup>3</sup>/d (5.5 MMcf/d) initially, representing the volume of Excess CO<sub>2</sub> delivered to the System in 1999 (a reduction of approximately 300 10<sup>3</sup>m<sup>3</sup>/d (10.6 MMcf/d) of CO<sub>2</sub> from current levels). Company will reduce the annual average Service Cap to 125 10<sup>3</sup>m<sup>3</sup>/d (4.5 MMcf/d) following the fifth year of the Service.

**2.3** Excess CO<sub>2</sub> delivered to the System is not expected to exceed 600 10<sup>3</sup>m<sup>3</sup>/d (21.3 MMcf/d). Should Company expect that the contracted volume of Excess CO<sub>2</sub> under the Service will exceed 600 10<sup>3</sup>m<sup>3</sup>/d (21.3 MMcf/d), Company shall provide notice to the Toll, Tariff & Procedures Committee (“TTP”) to initiate a review of the CO<sub>2</sub> Management Service to determine the effect of Service on Customers, producers and end-users. Within 90 days of the commencement of the TTP review, Company on behalf of the TTP will advise the Board of any required changes to the Service to ensure the Service will not have an impact on the commingled gas stream that has unintended consequential and a material adverse economic consequence on Customers, producers or end-users. In the event that the TTP can not reach resolution on issues related to the CO<sub>2</sub> Management Service, Company on behalf of the TTP will provide a report to the Board identifying such issues and seek Board direction. Company will continue to operate, offer and contract for the CO<sub>2</sub> Management Service during this time.

**2.4** Should the contracted volume of Excess CO<sub>2</sub> under the Service continue to increase beyond 600 10<sup>3</sup>m<sup>3</sup>/d (21.3 MMcf/d), the TTP will conduct similar reviews at increments of 100 10<sup>3</sup>m<sup>3</sup>/d (3.6 MMcf/d) unless otherwise agreed to by the TTP or directed by the Board.

### **3.0 CO<sub>2</sub> RECEIPT ZONE**

**3.1** If, while providing the CO<sub>2</sub> Management Service, natural gas volumes containing CO<sub>2</sub> greater than 2% are expected to be delivered to a CPO and Company is satisfied that the CPO or its customers would experience a demonstrated material adverse impact, Company may designate a CO<sub>2</sub> Receipt Zone (“CRZ”) or arrange another alternative with the CPO. A CPO is any party that has signed a Facility Connection Service agreement with Company. A material adverse impact is defined as a quantifiable cost to an industrial process (that uses natural gas as a feedstock) that would experience a material efficiency degradation or detriment of material economic consequence resulting from the receipt of gas containing CO<sub>2</sub> concentrations in excess of 2%. This applies only to the CO<sub>2</sub> concentrations in excess of 2% on a monthly average basis and does not include



short-term upset conditions caused from unplanned outages at CO<sub>2</sub> extraction facilities or upset conditions at Receipt Points where natural gas normally conforms with the 2% CO<sub>2</sub> receipt specification.

- 3.2** A CRZ will encompass the Receipt Points contributing to the commingled gas stream delivered to the affected CPO. To ensure that deliveries to the CPO do not contain CO<sub>2</sub> concentrations in excess of 2%, Company may at any time within the CRZ:
- (i) install real-time CO<sub>2</sub> analyzers to monitor CO<sub>2</sub> concentrations;
  - (ii) enforce Maximum CO<sub>2</sub> Volumes associated with the Schedule of Service under Rate Schedule CO<sub>2</sub> within the CRZ;
  - (iii) contract for additional local CO<sub>2</sub> extraction from existing or incremental facilities; and/or
  - (iv) reduce gas volumes accepted under the CO<sub>2</sub> Management Service for short periods.
- 3.3** CO<sub>2</sub> Management Service within a CRZ may be suspended at any time for the following reasons:
- (i) excluding short-term upset conditions, Company cannot maintain the appropriate CO<sub>2</sub> concentration level within a CRZ; or
  - (ii) sufficient CO<sub>2</sub> extraction capability is no longer available on terms and conditions satisfactory to Company.
- 3.4** Company will endeavor to ensure, on a real-time basis, that the commingled gas stream delivered to a CPO within a CRZ will not exceed 2% CO<sub>2</sub>. In the case of a short-term upset, Company will take reasonable steps to ensure natural gas conforms to the 2% CO<sub>2</sub> receipt specification as soon as practical.

#### 4.0 CO<sub>2</sub> EXTRACTION

- 4.1 Company will contract for CO<sub>2</sub> extraction to physically remove CO<sub>2</sub> from the gas stream. Company has two options available for contracting CO<sub>2</sub> extraction. The first option is to extract CO<sub>2</sub> from the gas upstream of the Receipt Point. The second option involves extracting CO<sub>2</sub> from gas that has already entered the System by removing gas from the System, extracting the CO<sub>2</sub> and returning the gas to the System. In either case, Company will contract only for CO<sub>2</sub> to be extracted from the gas. Under the second option, the CO<sub>2</sub> Management Service will not enable the removal of natural gas liquids (“NGLs”) from the gas stream except for those trace amounts of NGLs removed through the normal CO<sub>2</sub> extraction process.
- 4.2 Subject to the Service Cap, Company will contract for CO<sub>2</sub> extraction along the same flow path, upstream, downstream or in parallel, to the Receipt Point where natural gas containing Excess CO<sub>2</sub> is delivered on the System, provided such parallel stream converges upstream of major nodes. Company will contract for such CO<sub>2</sub> extraction to reasonably ensure the commingled gas stream at major nodes, such as Cochrane Junction or Empress, contains no more CO<sub>2</sub> than if natural gas at Receipt Points conforms to the 2% CO<sub>2</sub> specification. Major nodes, as determined by Company (acting reasonably), are points on the Company’s mainline outside of a defined CRZ where large volumes of natural gas from multiple Receipt Points on the upstream flow path are delivered or flow through and where industrial processes would experience a material efficiency degradation or detriment of a material economic consequence. Mainlines, for the purpose of defining flow paths, are generally pipelines of NPS 24 (609.6 mm) diameter or greater. Company will use reasonable efforts to apportion the CO<sub>2</sub> Service Cap among flow paths in proportion to the Excess CO<sub>2</sub> volumes that are received on the various flow paths.
- 4.3 Company will strive to obtain low cost extraction under optimally flexible contract terms and conditions such as ability to renew, terminate, and vary contract volumes on short notice.

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- 4.4** To ensure that Company is not contracting for CO<sub>2</sub> extraction that was already occurring prior to industry discussions regarding the management of CO<sub>2</sub> on the System, a baseline measure will be established as the lesser of 2% or the historical CO<sub>2</sub> content for the Receipt Point. Company will only contract for CO<sub>2</sub> extraction incremental to the baseline. Historical CO<sub>2</sub> content is deemed to be the CO<sub>2</sub> content for the Receipt Point in 1999 unless it is demonstrated to be an anomalous year in respect of any particular Receipt Point.
- 4.5** In most circumstances, Company will contract for CO<sub>2</sub> extraction through a confidential bid process. Where extraction is required in a particular area with limited options, Company may proceed to contract extraction services through bilateral negotiations.