

# **National Energy Board**

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## **Reasons for Decision**

**TransCanada Pipelines  
Limited**

**GH-4-92**

**October 1992**

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1993-1994 Facilities

## **National Energy Board**

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**TransCanada PipeLines  
Limited**

Application Dated 3 April 1992  
for 1993-94 Facilities

**GH-4-92**

**October 1992**

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### Recitals and Appearances

IN THE MATTER OF the *National Energy Board Act* and the Regulations made thereunder;

AND IN THE MATTER OF an application by TransCanada PipeLines Limited for a Certificate of Public Convenience and Necessity pursuant to Part III of the Act;

AND IN THE MATTER OF an application by TransCanada PipeLines Limited for an Order under Part IV of the Act respecting the accounting treatment for the retirement of certain facilities;

AND IN THE MATTER OF the National Energy Board Hearing Order GH-4-92;

HEARD in Calgary, Alberta on 4, 5, 6 and 7 August 1992.

BEFORE:

A. Côté-Verhaaf	Presiding Member
J.-G. Fredette	Member
R.L. Andrew, Q.C.	Member

APPEARANCES:

N.D.D. Patterson	TransCanada PipeLines Limited
E.P. Varga	
P.R. Jeffrey	
M.A. Newton	Independent Petroleum Association of Canada
A.S. Hollingworth	AG-Energy, L.P.
A.G. Menzies	Alberta Natural Gas Company Ltd
T.G. Kane	ANR Pipeline Company
P.J. McIntyre	Centra Gas Ontario Inc.
H.T. Soudek	Consumers' Gas Company Ltd., The; and St. Lawrence Gas Company, Inc.
F.X. Berkemeier	Consumers Power Company
D.W. Rowbotham	Encogen Four Partners, L.P.
S.H. Lockwood	FSC Resources Limited/Saranac Power Partners, L.P.
J.S. Bulger	Gaz Métropolitain, inc.

L.G. Keough	Husky Oil Operations Ltd.; North Canadian Oils Limited; Northland Power; and Selkirk Cogen Partners, L.P.
D.A. Holgate	Kamine Natural Dam Cogen Co., Inc., as Managing General Partner of Kamine/Besicorp Natural Dam L.P., Kamine Syracuse Cogen Co., Inc., as Managing General Partner of Kamine/Besicorp Syracuse L.P.; and Kamine Beaver Falls Cogen Co., Inc., as Managing General Partner of Kamine/Besicorp Beaver Falls L.P.
J.J. Pasieka	KannGaz Producers Ltd.
N.M. Gretener	Lake Superior Power Limited Partnership; and New York State Electric & Gas Company
N.M. Gretener J. Howe	Northeast Group (The)
C. Havers	NOVA Corporation of Alberta
L. Meyer	Pan-Alberta Gas Ltd.
K.J. Hadley	PanCanadian Petroleum Limited
R.B. Hillary	Paramount Resources Ltd.
J.R.M. Kowch M.A.K. Muir	ProGas Limited
N.J. Schultz	Tennessee Gas Pipeline Company
G.A. Cameron	Union Gas Limited
G.W. Toews	Western Gas Marketing Limited
W.M. Moreland	Alberta Petroleum Marketing Commission
R.A. Konkle	Town of Lincoln
P. Noonan C. Morin	National Energy Board

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## Abbreviations

1991 Supply and Demand Report	“Canadian Energy Supply and Demand - 1990-2010”, NEB, June 1991
Accounting Regulations	Gas Pipeline Uniform Accounting Regulations
AG-Energy	AG-Energy, L.P.
Act	<i>National Energy Board Act</i>
ANR	ANR Pipeline Company
ANSI	Area of Natural Scientific Interest
APMC	Alberta Petroleum Marketing Commission

ATCOR	ATCOR Ltd.
Bcf	billion cubic feet
Board, NEB	National Energy Board
Bow Valley	Bow Valley Industries Ltd.
Cardinal Power	Cardinal Power of Canada, L.P.
CASCO	Canadian Starch Operating Company, Inc.
Centra Ontario	Centra Gas Ontario Inc.
Consumers' Gas	Consumers' Gas Company Ltd., The
CWS	Canadian Wildlife Services
dBA	decibels
DFO	Department of Fisheries and Oceans
DOE/FE	(U.S.) Department of Energy/Office of Fossil Energy
D/t ratio	pipe diameter to pipewell thickness ratio
EARP Guidelines Order	Environmental Assessment and Review Process Guidelines Order
Eastern Canada	Manitoba, Ontario and Quebec
EIL	Environmental Issues List
EJ	exajoule(s)
Empire	Empire State Pipeline Company, Inc.
EPN	Early Publication Notification
Esso	Esso Resources Canada
FERC	(U.S.) Federal Energy Regulatory Commission
FS	Firm Service
FST	Firm Service Tendered

Gazifère	Gazifère Inc.
GH-1-89	Hearing Order GH-1-89 in respect of TransCanada's application for 1990 facilities and various applications for natural gas export licences
GH-5-89	Hearing Order GH-5-89 in respect of TransCanada's application for 1991 and 1992 facilities and various applications for natural gas export licences
GH-1-92	Hearing Order GH-1-92 in respect of AG-Energy's application for a gas export licence
GH-4-91	Hearing Order GH-4-91 in respect of TransCanada's application for 1992 facilities
GH-4-92	Hearing Order GH-4-92 in respect of TransCanada's application for 1993-94 facilities
GH-5-92	Hearing Order GH-5-92 in respect of various applications for natural gas export licences.
GJ	gigajoule(s)
Home Oil	Home Oil Company Limited
Husky	Husky Oil Operations Ltd.
IGTS	Iroquois Gas Transmission System
Indeck - Hull	Indeck Energy Services of Hull, Inc.
Kamine - Beaver Falls	Kamine/Besicorp Beaver Falls L.P.
Kamine - Natural Dam	Kamine/Besicorp Natural Dam L.P.
Kamine - Syracuse	Kamine/Besicorp Syracuse L.P.
km	kilometre(s)
Lake Superior Power	Lake Superior Power Limited Partnership
LDC(s)	local distribution company(ies)
m	metre(s)

m <sup>3</sup>	cubic metres
m <sup>3</sup> /d	cubic metres per day
MLV	mainline valve
mm	millimetre
Mcf	thousand cubic feet
MMcf	million cubic feet
MMcfd	million cubic feet per day
MW	megawatts
NCM	North Canadian Marketing
NEB, Board	National Energy Board
Niagara Gas	Niagara Gas Transmission Limited
NIMO	Niagara Mohawk Power Corporation
North Canadian	North Canadian Oils Limited
North Country	North Country Gas Pipeline Corporation
NOVA	NOVA Corporation of Alberta
NYPSC	New York State Public Service Commission
NYSEG	New York State Electric and Gas Company
O.D.	outside diameter
OEB	Ontario Energy Board
OMNR	Ontario Ministry of Natural Resources
OPCC	Ontario Pipeline Coordination Committee
PanCanadian	PanCanadian Petroleum Limited
Petro-Canada	Petro-Canada Inc.
PJ	petajoule(s)

PPBR	Plans, Profiles and Books of Reference
RPM	revolutions per minute
Selkirk	Selkirk Cogen Partners, L.P.
Simplot	Simplot Canada Limited
SLPC	St. Lawrence Psychiatric Centre
St. Lawrence	St. Lawrence Gas Company, Inc.
Sproule	Sproule Associates Limited
STS	Storage Transportation Service
Tcf	trillion cubic feet
Tennessee	Tennessee Gas Pipeline Company
the assessments	environmental and socio-economic assessment reports
TransCanada, TCPL	TransCanada PipeLines Limited
TransGas	TransGas Limited
U.S.	United States of America
WCSB	Western Canada Sedimentary Basin
WGML	Western Gas Marketing Ltd.

## Overview

*(Note: This overview is provided solely for the convenience of the reader and does not constitute part of this Decision or the Reasons, to which readers are referred for detailed text and tables)*

## The Application

By application dated 3 April 1992, as amended 10 June 1992, TransCanada PipeLines Limited applied for a certificate, pursuant to Part III of the *National Energy Board Act*, to expand its natural gas pipeline system in western and central Canada for the contract year commencing 1 November 1993. On 12 July 1992, TransCanada notified the Board regarding the withdrawal of the Simplot Canada Limited request for  $100 \times 10^3$  cubic metres per day ( $\text{m}^3/\text{d}$ ) (3.5 million cubic feet per day (“MMcfd”)) of firm service.

TransCanada sought authorization to construct 366.1 kilometres of new pipeline loop across the system and to install 42.8 megawatts of new compression at an estimated capital cost of \$501.2 million (\$1992). The proposed expansion, excluding the Simplot Canada Limited volume, would allow TransCanada to provide a total of  $6\,061.0 \times 10^3 \text{m}^3/\text{d}$  (214.0 MMcfd) of new firm service of which  $2\,548.0 \times 10^3 \text{m}^3/\text{d}$  (90.0 MMcfd) would be for domestic service and the remaining  $3\,513.0 \times 10^3 \text{m}^3/\text{d}$  (124.0 MMcfd) would be for six new export services. The application also requested an order under Part IV respecting the accounting treatment for the retirement of two compressor units.

## Highlights of the Board's Decision

The Board is satisfied that the supply arrangements of the shippers, underpinning the applied-for capacity, are sufficient to ensure long-term utilization of the facilities. The Board determined that the proposed expansion was economically feasible, given that there was a strong likelihood that the facilities would be used at a reasonable level over their economic life and that demand charges would be paid. The Board considered the Sproule Associates Limited estimate of natural gas resources for the Western Canada Sedimentary Basin to be somewhat optimistic although, within an acceptable range, in relation to the Board's own estimate.

While the Board is concerned with the noise levels arising from the portable compressor unit 9001 used at Station 211, it is of the view that the installation of a new compressor and other appropriate measures will reduce the noise to an acceptable level. The Board will ensure that the measures taken will achieve this objective.

The Board is satisfied that the conditions that are included in the certificate will ensure that only those facilities needed to meet the aggregate firm service requirements will be built.

## Environmental Screening

The Board conducted an environmental screening of the applied-for facilities in compliance with the *Environmental Assessment and Review Process Guidelines Order* insofar as there was no duplication with the Board's own regulatory process. The Board determined that the potential adverse environmental effects, including the social effects directly related to those environmental effects which may be caused by the proposal, would be insignificant or mitigable with known technology.

## Chapter 1

# Introduction

---

## 1.1 The Facilities Application

By application dated 3 April 1992, as amended on 10 June 1992, TransCanada PipeLines Limited ("TransCanada", "TCPL") applied for a certificate, pursuant to Part III of the *National Energy Board Act* ("the Act"), to expand its natural gas pipeline system in western and central Canada in order to meet domestic and export requirements for the contract year commencing 1 November

1993. On 12 July 1992, TransCanada notified the Board that the request by Simplot Canada Limited (“Simplot”) for 100 10<sup>3</sup> cubic metres per day (“m<sup>3</sup>/d”) (3.5 million cubic feet per day (“MMcfd”) of new firm service had been withdrawn. TransCanada did not change the facilities requirements applied-for because of the small volume involved.

The proposed expansion would enable TransCanada to:

- (a) meet projected requirements under existing transportation service contracts after accounting for contract demand reductions, contract expiration, and changes in load factors;
- (b) with the exclusion of the Simplot request for service, provide a total of 6 061.0 10<sup>3</sup>m<sup>3</sup>/d (214.0 MMcfd) of new firm service for delivery from Empress, of which 2 548.0 10<sup>3</sup>m<sup>3</sup>/d (90.0 MMcfd) or 42 percent of the total would be for customers in Canada and the remaining 3 513.0 10<sup>3</sup>m<sup>3</sup>/d (124.0 MMcfd) or 58 percent would be for service to export customers;
- (c) restore the capability that will be lost due to the proposed retirement of one compressor unit at Station 211; and
- (d) purchase and install a portable compressor unit to replace an existing portable unit that was proposed for relocation in TransCanada’s 1992-93 Facilities Application.

The proposed facilities consist of 366.1 kilometres (“km”) of new pipeline loop across the system and 42.8 megawatts (“MW”) of new compression equipment. The total cost of the proposed facilities is estimated to be \$501.2 million in 1992 dollars. TransCanada estimated that the proposed facilities would result in an increase in the cost of delivering gas to the Eastern Zone of \$0.001/gigajoule (“GJ”) over the long term.

TransCanada requested an order, under Part IV of the Act, to treat the retirement of compressors Number 1, at Station 17‘A’ Plant, and the portable unit 9001 at Station 211, as “ordinary” under the subsection 40(4) of Gas Pipeline Uniform Accounting Regulations (“Accounting Regulations”).

## 1.2 Environmental Screening

The National Energy Board (the “Board”) conducted an environmental screening of the applied-for facilities in compliance with the *Environmental Assessment and Review Process Guidelines Order* (“the EARP Guidelines Order”) insofar as there was no duplication with the Board’s own regulatory process. The Board’s findings in respect of the environmental effects and directly-related social effects of the applied-for facilities are set out in Chapter 5 of these Reasons for Decision.



## Chapter 2

# Overall Gas Supply / Demand

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The Board examines overall gas supply and long-term market potential to determine whether pipeline facilities, such as those proposed in TransCanada's application, are and will be in the present and future public convenience and necessity.

## 2.1 Overall Gas Supply

To demonstrate the adequacy of overall gas supply, TransCanada relied upon a study prepared by Sproule Associates Limited ("Sproule") entitled "The Future Natural Gas Supply Capability of the Western Canada Sedimentary Basin ("WCSB") - 1991 to 2013". This is an update of three previous studies prepared by Sproule for TransCanada for the GH-1-89, GH-5-89 and GH-4-91 facilities proceedings.

Sproule concluded that the WCSB could support increasing levels of natural gas productive capacity at least up to a total of  $159.0 \times 10^9 \text{ m}^3$  (5.6 trillion cubic feet ("Tcf")) per year throughout the rest of the decade and into the next century, under Sproule's stipulated conditions of price and demand.

Sproule's projections of supply are higher than the NEB Control Case projections in the Board's "Canadian Energy Supply and Demand 1990-2010", NEB June 1991 ("1991 Supply and Demand Report"), and show supply exceeding demand throughout the 1991 to 2013 period. These results infer, according to Sproule, an ultimate potential of some 325 Exajoules ("EJ") compared to the NEB Control Case estimate of 250 EJ.

### Views of the Board

The Board is of the view that the overall approach used by Sproule is an acceptable methodology for the projection of supply capability from the WCSB and agrees with TransCanada that many of the assumptions of the Sproule study are appropriate for basin-wide supply analysis. However, the Board has identified a number of specific concerns pertaining to the study methodology and assumptions, these are discussed below.

Sproule's projection of future reserves additions is in part based on a statistical relationship between cumulative reserves additions and cumulative gas-directed drilling activity. Given an estimate of ultimate gas-directed drilling footage, an estimate of the WCSB's ultimate natural gas potential could be inferred. Although the Sproule study was not intended to provide evidence to the Board on the ultimate potential of the WCSB, the Board considered that an estimate of ultimate potential based on the data provided in the Sproule report was useful and necessary. Sproule referred to a study by Western Gas Marketing Ltd. ("WGML") which had estimated the

ultimate gas-intent metreage on the basis of assumptions regarding the ultimate well spacing and average well depths for various regions of the WCSB. At this ultimate drilling level, cumulative additions would be about 307 Tcf (325 EJ). The Board feels that the Sproule model tends to predict an optimistic view of WCSB reserves and productive capacity. This is implicit in the inferred 325 EJ ultimate potential estimate which is approximately 30 percent higher than estimates adopted by the Board.

Sproule states that their model's results indicated that adequate cash flow would be generated for each year of the projection. The Board is concerned that there may not be sufficient internal cash flow for the necessary reinvestment in exploration and development to maintain productive capacity to meet the forecast demand.

At the request of the Board, Sproule provided a sensitivity analysis which examined reduced net revenues by inclusion of debt service costs and corporate taxes. The Board has reviewed the results and notes that the productive capacity projections are sensitive to the net revenue assumption. The sensitivity analysis indicates that the forecast of cumulative footage would drop significantly, the reinvestment ratio would be over 100 percent after 1996, demand would exceed productive capacity after 1998, and by the year 2013 the excess of demand over productive capacity would exceed  $50 \times 10^9 \text{ m}^3$  (1.8 Tcf). Sproule suggested that by-product revenues should also be included in the analysis. The Board agrees, but notes that these revenues would only offset the incremental operating costs. Further, Sproule's analysis is based on an average real growth in natural gas prices of 3.6 percent per year (1992 to 2013). The Board feels that if this growth were not realized, then productive capacity could be notably less than demand.

The Board recommends that TransCanada's overall supply studies should include: a review of all parameters and assumptions used in the model to derive productive capacity; the effect of by-products, costs and revenues associated with gas production; and sensitivities of productive capacity relative to forecasts of natural gas price.

As stated by TransCanada in the GH-5-89 proceeding, the Sproule model is a gas supply model only and does not address the extent to which the available gas supply will actually flow through the TransCanada system to markets in Manitoba, Ontario and Quebec ("Eastern Canada") and the United States. The Board recommends that TransCanada make an effort to further integrate its studies of overall supply capability and market demand in assessing the longer term utilization of its total pipeline capacity, including the applied-for expansions. In consideration of the above, the Board reaffirms concerns expressed in a previous Decision.<sup>(1)</sup>

While the Board believes that Sproule's productive capacity estimates are optimistic given the current natural gas price, it agrees that the forecast is within an acceptable range and is consistent with Sproule's estimate of conventional natural gas resources for the WCSB. Notwithstanding the above-noted concerns, the overall supply capability projected by the Sproule study for the WCSB is within the range that the Board considers plausible, given the uncertainty inherent in many of the underlying assumptions.

In summary, while the Board has some reservations about Sproule's analysis, it is satisfied that there will be an adequate natural gas supply to ensure sufficient utilization of the TransCanada

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<sup>1</sup> GH-5-89 Reasons for Decision, Volume 3, Section 19.2, page 149.

system, including the proposed expansion.

## **2.2 Long-Term Domestic Markets**

TransCanada provided a detailed long-term projection of natural gas requirements for Eastern Canada. Table 2.1 summarizes TransCanada's view of natural gas requirements for Eastern Canada for the period from 1991 to 2010.

TransCanada expects natural gas demand in Eastern Canada to grow by an average 2.2 percent per year between 1991 and 2010. Natural gas prices are expected to remain competitive with the prices of other fuels in the residential, commercial and industrial market sectors. Consequently, natural gas demand in each of these sectors is expected to experience moderate growth. As shown in Table 2.1, natural gas use for electric power generation is projected to increase from 20 petajoules ("PJ") in 1991 to 233 PJ by 2010. This sector alone is expected to account for 35 percent of the increase in gas demand over the projection period.

TransCanada submitted that projected Eastern Canada demand will not be fully met by TransCanada's contracted deliveries and therefore, additional capacity on its system and/or gas imports will be required. TransCanada argued that its mainline system will remain utilized at a high level even with a significantly higher level of United States of America ("U.S.") imports into Canada.

### **Views of the Board**

The Board considers the assumptions that underlie TransCanada's projections of natural gas consumption for Eastern Canada to be within reasonable limits. Therefore, for the purpose of this application, the Board finds TransCanada's overall outlook for natural gas demand in Eastern Canada to be reasonable. The Board also believes that, for this application, TransCanada has made reasonable allowance for the possibility for increased U.S. natural gas imports.

## **2.3 Long-Term Export Markets**

TransCanada updated its forecasts of gas demand in the U.S. Northeast and Midwest and relied on four current demand projections by the Gas Research Institute, Energy Information Administration, DRI/McGraw-Hill and Foster Associates Inc. These forecasts project an increase in natural gas demand from 0.7 to 1.9 percent per annum for the U.S. Northeast and 0.3 to 1.3 percent per annum for the Midwest over the forecast period 1990 to 2010. The electric power generation sector is expected to be the primary source of growth in natural gas demand in these markets.

With respect to the competitiveness of TransCanada's system, TransCanada argued that, despite increased competition, gas buyers and sellers continue to purchase long-term transportation service from TransCanada.

### **Views of the Board**

The Board is of the view that the evidence indicates that the long-term outlook for natural gas use in the U.S. Northeast and Midwest is for increased sales. The Board also notes that no evidence was presented to show that Canadian-sourced gas could not continue to effectively compete with other gas supplies for U.S. Northeast and Midwest markets.

**Table 2.1**

**TransCanada's Projection of Natural Gas Consumption  
by Sector for Manitoba, Ontario and Quebec  
(PJ)**

	1991	2000	2010	% Change 1991-2010
Residential	334	375	374	0.6
Commercial	235	281	276	0.9
Industrial	482	652	753	2.4
Electric Power Generation	20	175	233	13.7
Other <sup>(1)</sup>	90	119	127	1.8
Total	1 161	1 602	1 763	2.2

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Source: Adapted from Exhibit B-1, Tab "Requirements", Sub-Tab 2, Table 6.

<sup>(1)</sup> Includes non-energy use, natural gas for vehicles and pipeline fuel.

## Specific Transportation Services

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### Requirements

The capacity to be provided by the facilities in TransCanada's 1993-94 Facilities Application is, among other things, intended to allow TransCanada to satisfy the projected requirements under existing transportation service contracts and new firm domestic and export service requirements.

### 3.1 TransCanada's Requirements Forecast

TransCanada provided forecast contractual requirements for the contract years commencing 1 November 1991, 1992, 1993 and 1994 (Refer to Table 3.1). The forecast was provided for each firm service shipper in terms of winter maximum daily demand and estimated annual deliveries.

TransCanada indicated that its forecast of maximum daily deliveries is based upon its existing transportation service contracts and executed precedent agreements with prospective shippers. TransCanada's forecast of annual deliveries is based upon the results of a survey questionnaire and upon discussions with current and prospective shippers. TransCanada's export market forecast assumes that the export licences will be extended upon their current expiry dates. The applicant noted that the questionnaire, which was sent to both domestic and export shippers, asked each shipper to provide: a forecast of gas supply, by source; a forecasted gas demand by market and delivery point; anticipated use of diversions, storage, and U.S.-sourced gas; the potential impact associated with inter-fuel competition; and, any possible decontracting or non-renewal of contracts.

TransCanada acknowledged that, while its 1992-93 base case requirements<sup>(1)</sup> includes several export requests for which transportation service contracts have not yet been executed, there remain only a few regulatory approvals to be secured and contractual arrangements to be finalized, before contracts can be finalized. TransCanada expects all of those outstanding contracts to be executed to permit service to commence on or about 1 November 1993.

TransCanada submitted that for the new service requirements most of the associated Canadian and U.S. regulatory approvals have either been sought and approved, or are expected to be received shortly. With respect to those regulatory approvals that have not yet been applied for, TransCanada anticipates that those applications will be filed forthwith.

TransCanada argued that the evidence clearly shows that the new service requests underpinning the applied-for facilities expansion are founded upon solid, long-term gas supply, and transportation and markets arrangements.

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<sup>1</sup> Base case requirements refers to those transportation services which are currently available or for which the facilities necessary to enable the service to commence have been certified.

**Table 3.1**

**TransCanada's Forecast of Winter Maximum Daily  
and Annual Deliveries <sup>(1) (2)</sup>**

**(a) Winter Maximum Daily Deliveries**

<b>Contract Year</b>	<b>Domestic</b>		<b>Export</b>		<b>Total</b>	
	<b>(10<sup>6</sup>m<sup>3</sup>)</b>	<b>(MMcf)</b>	<b>(10<sup>6</sup>m<sup>3</sup>)</b>	<b>(MMcf)</b>	<b>(10<sup>6</sup>m<sup>3</sup>)</b>	<b>(MMcf)</b>
1991-92	98.9	3 491	65.9	2 326	164.8	5 817
1992-93	99.0	3 495	75.0	2 648	174.0	6 143
1993-94	102.7	3 625	86.8	3 064	189.5	6 689
1994-95	104.5	3 689	88.4	3 121	192.9	6 810

**(b) Annual Deliveries**

<b>Contract Year</b>	<b>Domestic</b>		<b>Export</b>		<b>Total</b>	
	<b>(10<sup>9</sup>m<sup>3</sup>)</b>	<b>(Bcf)</b>	<b>(10<sup>9</sup>m<sup>3</sup>)</b>	<b>(Bcf)</b>	<b>(10<sup>9</sup>m<sup>3</sup>)</b>	<b>(Bcf)</b>
1991-92	31.1	1 098	22.6	798	53.7	1 896
1992-93	31.8	1 123	26.0	918	57.8	2 041
1993-94	32.4	1 144	29.4	1 038	61.8	2 182
1994-95	32.8	1 158	29.8	1 052	62.6	2 210

<sup>(1)</sup> Source: TransCanada's "1993-94 Facilities Application", Tab "Requirements", Sub-tab 1, Table 1, revised 10 June 1992.

<sup>(2)</sup> Includes FST, STS, back-haul, and exchange volumes, but excludes all fuel requirements, losses and other uses.

## 3.2 New Domestic Services

The applied-for facilities are supported by four domestic shippers who have requested incremental service totalling  $2\,548.0\,10^3\text{m}^3/\text{d}$  (90.0 MMcfd), or 42.0 percent of the total new firm service requirements (Refer to Table 3.2).

### 3.2.1 Cardinal Power of Canada, L.P.

Cardinal Power of Canada, L.P. (“Cardinal Power”) has executed a fifteen-year Precedent Agreement with TransCanada dated 25 March 1992, as amended, for the delivery of  $895.0\,10^3\text{m}^3/\text{d}$  (31.6 MMcfd) of gas commencing 15 June 1994. The gas will be shipped from Alberta and Saskatchewan to the point of interconnection of the TransCanada and Centra Gas Ontario Inc. (“Centra Ontario”) facilities near Cardinal, Ontario.

Cardinal Power, a member of the Sithe/Energies Group, has commenced construction of a 150 MW gas-fired cogeneration facility on the Canada Starch Operating Company, Inc. (“CASCO”) corn processing plant site in Cardinal, Ontario. Cardinal Power and CASCO have entered into a twenty-year letter of intent in accordance with which CASCO will purchase all of the thermal energy (i.e. steam) produced by the cogeneration facility. Cardinal Power and Ontario Hydro have executed a Power Purchase Agreement for the purchase of the electricity over a twenty-year term.

Upstream, transportation service agreements have been entered into by Husky Oil Operations Ltd. (“Husky”) with NOVA Corporation of Alberta (“NOVA”) and with TransGas Limited (“TransGas”). Downstream, the gas will either be delivered by Centra Gas Ontario Ltd. (“Centra Ontario”), or through the facilities to be constructed, owned and operated by Cardinal Power. Cardinal Power indicated that it has applied to the Ontario Energy Board (“OEB”) to construct a seven kilometre, 219.1 millimetres (“mm”) O.D. pipeline from the TransCanada facilities to the CASCO site.

Gas supply arrangements have been made with Husky to supply up to  $895.0\,10^3\text{m}^3/\text{d}$  (31.6 MMcfd), with a term volume of  $7\,036.2\,10^6\text{m}^3$  (248.4 Bcf). The estimated volume of gas reserves supporting the contract is  $17\,811.0\,10^6\text{m}^3$  (628.7 Bcf). The reserves will also be supporting Husky’s obligations to four other markets: Consumers Power Company, Midland Cogeneration Venture Limited Partnership, San Diego Gas and Electric Company, and Kalium Chemicals. Husky’s total obligations to all five markets currently amount to  $13\,133.5\,10^6\text{m}^3$  (463.6 Bcf).

### 3.2.2 Centra Gas Ontario Inc.

Centra Ontario has executed a ten-year Precedent Agreement with TransCanada dated 3 October 1991, as amended, for the delivery of  $350.0\,10^3\text{m}^3/\text{d}$  (12.4 MMcfd) of gas from Alberta and Saskatchewan to various points of interconnection of the TransCanada and Centra Ontario systems in Ontario. Gas delivery is to commence 1 November 1993. Upstream, transportation arrangements are being negotiated with NOVA and TransGas.

The incremental service requested by Centra Ontario will be used to serve normal market growth in its existing franchise area (i.e. to meet the incremental needs of its new residential and commercial customers).

Centra Ontario's existing gas supply arrangements consist of both long and short-term contracts. A long-term contract with WGML provides 42.8 percent of Centra Ontario's firm gas supply requirements while short-term gas supply contracts constitute 57.2 of its requirements.

### **3.2.3 Consumers' Gas Company Ltd.**

Consumers' Gas Company Ltd. ("Consumers' Gas") has executed two ten-year Precedent Agreements with TransCanada, dated 27 March 1992, for the delivery of  $708.0 \times 10^3 \text{ m}^3/\text{d}$  (25.0 MMcfd) of gas from Alberta and Saskatchewan to various points of interconnection of the TransCanada and Consumers' Gas systems in Ontario. Service is expected to commence 1 August 1994.

Consumers' Gas explained that the additional Firm Service ("FS") during the 1993–94 contract year represents a 2.6 percent increase in its combined 1992-93 contract year daily FS and Firm Service Tendered ("FST") entitlements on the TransCanada system of  $26\,947.8 \times 10^3 \text{ m}^3/\text{d}$  (951.3 MMcfd).

Consumers' Gas indicated that the additional FS is required to serve market growth in its and Gazifère Inc.'s ("Gazifère's") service areas, including a large new 140 MW cogeneration facility to be constructed by Indeck Energy Services of Hull, Inc. ("Indeck-Hull") at E.B. Eddy Forest Products Ltd.'s paper plant in Hull, Quebec. Consumers' Gas foresees growth in its residential and commercial market sectors where gas is used primarily for space and water heating purposes. In the industrial sector, significant growth is expected to result from increased demand associated with cogeneration and electric generation loads. Consumers' Gas is forecasting an average annual growth of 4.2 percent per year over the 1991–92 to 1996–97 forecast period.

Consumers' Gas noted that despite the additional requested FS, it is still forecasting deficiencies in firm supply and therefore, plans to contract for additional service through other pipeline systems. Consumers' Gas added that by contracting on other pipeline systems it is also achieving its goal of diversifying its gas supply portfolio.

Upstream transportation arrangements are being finalized with NOVA and TransGas. With respect to the Indeck-Hull's gas transportation, Consumers' Gas explained that transportation arrangements between Consumers' Gas and Indeck-Hull have not yet been finalized. Consumers' Gas noted that if Indeck-Hull selects a Western Canada buy/sell arrangement, Consumers' Gas would be the shipper on TransCanada. Alternatively, if Indeck-Hull selects a T-Service arrangement or an Ontario buy/sell arrangement, Indeck-Hull would be the shipper on TransCanada. Consumers' Gas submitted that under any of these arrangements, it would be the "shipper of last resort" and would therefore, ultimately be liable for the payment of TransCanada's demand charges associated with the Indeck-Hull related FS. The aforementioned arrangements would be accomplished through an FS assignment thus making Consumers' Gas liable for all demand charges in the event that Indeck-Hull defaults.

With regard to downstream transportation, Consumers' Gas indicated that its affiliate, Niagara Gas Transmission Limited ("Niagara Gas"), will construct and operate a new pipeline across the Ottawa River to accommodate both the growth in Gazifère's Quebec market area and the new Indeck-Hull cogeneration facility in Hull, Quebec. Consumers' Gas has concluded that the new pipeline is required for both capacity and security of supply reasons.



Consumers' Gas argued that, while construction of the new river crossing will be subject to provincial and federal approvals (i.e. NEB), these facilities are not "downstream facilities" within the meaning of that term as it appears in the Board's typical certificate condition associated with proof of downstream transportation. Consumers' Gas submitted that it does not consider Niagara Gas to be a downstream transporter since it simply serves as an interprovincial link between two affiliated distributors who share a single gas supply pool.

Consumers' Gas indicated that approval and construction of the Niagara Gas Ottawa River crossing is not a condition precedent in its TransCanada Precedent Agreement and that if the gas did not service Gazifère's expanding market area, Consumers' Gas would use the additional FS capacity to meet its own market requirements.

Consumers' Gas possesses a portfolio of gas supply contracts consisting of contracts of short, medium and long-term duration. Consumers' Gas long-term gas supply contracts are with several suppliers for a total daily contract volume of  $7\,944.0\,10^3\text{m}^3/\text{d}$  (280.4 MMcfd), of which  $708.0\,10^3\text{m}^3/\text{d}$  (25.0 MMcfd) is proposed for this TransCanada expansion. Suppliers include WGML, which provides 44 percent of the total volume, and several other suppliers including Direct Energy Marketing Ltd., Canadian Hunter Exploration Ltd., Shell Canada Ltd., Home Oil Company Limited ("Home Oil"), Unocal Canada Ltd., Gulf Canada Resources Ltd., Northridge Petroleum Marketing Inc. and Renaissance Energy Ltd.

### **3.2.4 Lake Superior Power Limited Partnership**

Lake Superior Power Limited Partnership ("Lake Superior Power") has executed a fifteen-year Precedent Agreement with TransCanada dated 26 March 1992, as amended, for the delivery of  $595.0\,10^3\text{m}^3/\text{d}$  (21.0 MMcfd) of gas from Alberta and Saskatchewan to the point of interconnection of the TransCanada and Centra Ontario systems at Sault Ste. Marie, Ontario commencing 1 November 1993.

Lake Superior Power, a joint venture of Union Energy Inc. and Great Lakes Power Limited, is developing a 95 MW gas-fired, combined cycle, cogeneration plant in Sault Ste. Marie, Ontario. The plant, to be owned and operated by Lake Superior Power, is scheduled to enter its commissioning phase on 1 November 1993 and to be in full commercial operation by 1 April 1994. All of the electrical output from the plant will be sold by Lake Superior Power to Ontario Hydro, starting 1 April 1994, in accordance with an executed, twenty-year agreement. The thermal energy will be sold to St. Mary's Paper Inc. in accordance with an executed, fifteen-year Steam Supply Agreement.

Upstream, transportation arrangements have been entered into by the two gas suppliers with NOVA and TransGas. Downstream, Lake Superior Power and Centra Ontario are continuing their negotiations towards executing a Precedent Agreement. Centra Ontario will have to apply for and receive OEB approval to expand its facilities to connect to the Lake Superior Power cogeneration plant site.

Gas supply arrangements have been made with two producers, Petro-Canada Inc. ("Petro-Canada") and Bow Valley Industries Ltd. ("Bow Valley"), for  $595.0\,10^3\text{m}^3/\text{d}$  (21.0 MMcfd), with a term volume of  $3\,500.0\,10^6\text{m}^3$  (123.6 Bcf). The estimated volume of gas reserves supporting the Petro-Canada contract is  $11\,097.8\,10^6\text{m}^3$  (391.8 Bcf) and the Bow Valley contract is  $2\,616.1\,10^6\text{m}^3$  (92.3 Bcf). Petro-Canada's portion of the reserves will also support other Petro-Canada

obligations of  $2\,508.3\,10^6\text{m}^3$  (88.5 Bcf) to Union Gas Limited and Domtar Inc., while Bow Valley's reserves also support other commitments totalling  $238.0\,10^6\text{m}^3$  (8.4 Bcf).

### 3.3 New Export Services

The applied-for facilities are supported by six new export shippers who have requested incremental service totalling  $3\,513.2\,10^3\text{m}^3/\text{d}$  (124.0 MMcfd). These services represent 58 percent of the total new firm service requests underpinning the applied-for facilities (Refer to Table 3.2).

#### 3.3.1 Kamine/Besicorp Syracuse L.P.

Kamine/Besicorp Syracuse L.P. ("Kamine-Syracuse") and TransCanada have entered into a fifteen-year Precedent Agreement dated 20 January 1992, as amended, for the delivery of  $461.7\,10^3\text{m}^3/\text{d}$  (16.3 MMcfd) of gas from Alberta and Saskatchewan to the Chippawa, Ontario export point commencing 1 November 1993.

Each of the Kamine/Besicorp projects is owned by a limited partnership formed solely for the purpose of owning and operating the cogeneration facility. In each case, there are two general partners, one of which is an affiliate of Kamine Development Corp., the other being a wholly-owned subsidiary of Besicorp Group Inc. Kamine-Syracuse is a partnership between Kamine Syracuse Cogen Co., Inc. and Beta Syracuse Inc.

The gas will be used by Kamine-Syracuse as fuel for its 79 MW cogeneration plant currently under construction near Solvay, N.Y. Kamine-Syracuse Cogen Co., Inc. has executed a long-term Power Sales and Purchase Agreement with Niagara Mowhawk Power Corporation ("NIMO") for the purchase of the electricity. Kamine-Syracuse has executed an Energy Services Agreement with The New York State Fair for the sale of the thermal energy.

Upstream, the producers supplying the gas to the Kamine-Syracuse project will use existing, or to be applied for, service on the NOVA and TransGas systems. Downstream, Kamine Syracuse Cogen Co., Inc. has executed a fifteen-year Amended and Restated Precedent Agreement with Empire State Pipeline Company, Inc. ("Empire") for the delivery of up to  $481.6\,10^3\text{m}^3/\text{d}$  (17.0 MMcfd) of gas to the point of interconnection of the Empire and NIMO systems at Syracuse, N.Y. Kamine/Besicorp Syracuse L.P. has entered into a fifteen-year Agreement on Principle Terms with NIMO for the delivery of the gas to the Solvay, N.Y. plant site.

Kamine-Syracuse's licence application to export  $461.7\,10^3\text{m}^3/\text{d}$  (16.3 MMcfd) over a fifteen-year term ending 31 October 2008 was heard by the Board in its GH-5-92 proceeding and is awaiting the Board's decision. Kamine-Syracuse has not yet filed an import authorization application with the U.S. Department of Energy/Office of Fossil Energy ("DOE/FE").

Kamine-Syracuse has executed a fifteen-year Natural Gas Purchase Agreement with North Canadian Marketing Inc. ("NCM") for up to  $461.7\,10^3\text{m}^3/\text{d}$  (16.3 MMcfd), with a term volume of  $2\,506.8\,10^6\text{m}^3$  (88.5 Bcf).

**Table 3.2**

**New Firm Services Associated With  
TransCanada's 1993-94 Facilities Application**

		<b>Start Date</b>	<b>Volume</b> <b>(10<sup>3</sup>m<sup>3</sup>/d) (MMcfd)</b>	
<b>I</b>	<b>Domestic</b>			
	Cardinal Power	June 94	895.0	31.6
	Centra Ontario	Nov. 93	350.0	12.4
	Consumers' Gas	Aug. 94	708.0	25.0
	Lake Superior Power	Nov. 93	595.0	21.0
	<b>Total Domestic</b>		2 548.0	90.0 <sup>(1)</sup>
<b>II</b>	<b>Export</b>			
	@ Chippawa, Ont.			
	Kamine-Syracuse	1 Nov. 93	461.7	16.3
	@ Napierville, Que.			
	NYSEG	1 Nov. 93	230.0	8.1
	@ Iroquois, Ont.			
	AG-Energy	1 Nov. 93	467.4	16.5
	Kamine-Beaver Falls	1 Nov. 93	456.1	16.1
	Kamine-Natural Dam	1 Nov. 93	339.9	12.0
	Selkirk Cogen II	1 June 94	1 558.1	55.0
	<b>Total Export</b>		3 513.2	124.0
	<b>Total Domestic and Export</b>		6 061.2	214.0

<sup>(1)</sup> By letter dated 20 July 1992, TransCanada advised the Board that the total domestic service underpinning its application had been reduced from 2 648.7 10<sup>3</sup>m<sup>3</sup>/d (93.5 MMcfd) to 2 548.0 10<sup>3</sup>m<sup>3</sup>/d (90.0 MMcfd) to reflect the withdrawal of the service request by Simplot. TransCanada noted however, that because the volume involved was small, it was not revising its 1993-94 Facilities Application.

### 3.3.2 New York State Electric & Gas Company

New York State Electric & Gas Company (“NYSEG”) and TransCanada have executed a twelve-year Precedent Agreement dated 24 March 1992, as amended, for the delivery of  $230.0 \times 10^3 \text{ m}^3/\text{d}$  (8.1 MMcfd) of gas from Alberta to the Napierville, Quebec export point commencing 1 November 1993.

NYSEG is a combination electric and gas utility serving New York state. The Canadian gas will be used by NYSEG to service a new franchise area located in Clinton County which includes the city of Plattsburgh.

Upstream, the Canadian gas supplier to the project holds sufficient capacity on the NOVA system, whereas downstream, NYSEG has executed a fifteen-year Precedent Agreement with North Country Gas Pipeline Corporation (“North Country”) for delivery of the gas from the Napierville, Quebec export point to NYSEG’s franchise area. North Country has received both Federal Energy Regulatory Commission (“FERC”) and New York State Public Service Commission (“NYPSC”) approvals to construct its pipeline facilities which will connect with the approved TransCanada Napierville extension.

NYSEG’s licence application to export  $255.0 \times 10^3 \text{ m}^3/\text{d}$  (9.0 MMcfd) of gas was heard in the GH-1-92 proceeding. NYSEG’s U.S. import authorization application is pending before the DOE/FE.

NYSEG has executed a twelve-year Natural Gas Purchase Agreement with ProGas Limited for up to  $255.0 \times 10^3 \text{ m}^3/\text{d}$  (9.0 MMcfd), with a term volume of  $1 \times 10^{11} \text{ m}^3$  (39.6 Bcf).

### 3.3.3 AG-Energy, L.P.

AG-Energy, L.P. (“AG-Energy”) and TransCanada have executed a fifteen-year Precedent Agreement dated 4 February 1992, as amended, for the delivery of  $467.4 \times 10^3 \text{ m}^3/\text{d}$  (16.5 MMcfd) of gas from Alberta to the Iroquois, Ontario export point commencing 1 November 1993.

AG-Energy, affiliated with Sithe Energies Inc. and an experienced builder and operator of cogeneration facilities throughout North America, proposes to construct a 79 MW combined cycle cogeneration facility on the grounds of the St. Lawrence Psychiatric Centre (“SLPC”) in the city of Ogdensburg. Construction of the cogeneration facility was to commence in July 1992, with full operation expected by 1 November 1993. AG-Energy has executed a Power Purchase Agreement with NIMO for the purchase of the electricity and a Steam Sales Agreement with the New York State Office of Mental Health for the purchase of the thermal energy.

Upstream, the Canadian gas supplier, Home Oil has entered into a service agreement with NOVA. Downstream, AG-Energy and Iroquois Gas Transmission System, L.P. (“IGTS”) have executed a fifteen-year Precedent Agreement for delivery of the gas from the point of interconnection of the TransCanada and IGTS systems to the point of interconnection of the IGTS and St. Lawrence Gas Company, Inc. (“St. Lawrence”) systems at Lisbon, N.Y. AG-Energy and St. Lawrence have

executed a Precedent Agreement for the delivery of gas from Lisbon, N.Y. to AG-Energy's cogeneration plant at Ogdensburg, N.Y.<sup>(1)</sup>

In June 1992, following the GH-1-92 proceeding, the Board issued export Licence GL-182 authorizing AG-Energy to export 467.4 10<sup>3</sup>m<sup>3</sup>/d (16.5 MMcfd) of gas over a fifteen-year period at Iroquois, Ontario. AG-Energy's U.S. import approval application is pending before the DOE/FE.

AG-Energy has executed a fifteen-year Natural Gas Purchase Agreement with Home Oil for up to 467.4 10<sup>3</sup>m<sup>3</sup>/d (16.5 MMcfd), with a term volume of 2 535.0 10<sup>6</sup>m<sup>3</sup> (89.5 Bcf).

### **3.3.4 Kamine/Besicorp Beaver Falls L.P.**

Kamine/Besicorp Beaver Falls L.P. ("Kamine-Beaver Falls") and TransCanada have entered into a fifteen-year Precedent Agreement dated 5 November 1991, as amended, for the delivery of 456.1 10<sup>3</sup>m<sup>3</sup>/d (16.1 MMcfd) of gas from Alberta and Saskatchewan to the Iroquois, Ontario export point commencing 1 November 1993.

Kamine-Beaver Falls is a partnership between Kamine-Beaver Falls Cogen Co., Inc. and Beta Beaver Falls Inc.

The gas will be used by Kamine-Beaver Falls as fuel for its 79.9 MW combined-cycle, cogeneration plant to be constructed at Beaver Falls, N.Y. Kamine-Beaver Falls Cogen Co. Inc. has executed a long-term Power Sales and Purchase Agreement with NIMO for the purchase of the electricity. Kamine-Beaver Falls has executed a Energy Services Agreement with Specialty Paperboard Inc. for the sale of the thermal energy.

Upstream, North Canadian Oils Limited ("North Canadian"), the parent of NCM, and the gas producers supplying NCM will use existing access to NOVA capacity. In the event any of the gas originates from Saskatchewan, it will be the responsibility of the producer to contract for pipeline capacity on TransGas. Downstream, Kamine-Beaver Falls has executed a fifteen-year interruptible Precedent Agreement with IGTS for the delivery of the gas from Iroquois, Ontario to the point of interconnection of the IGTS and St. Lawrence systems. St. Lawrence will deliver the gas to the Beaver Falls, N.Y. cogeneration facility on an interruptible basis in accordance with a long-term Natural Gas Transportation Services Agreement entered into with Kamine-Beaver Falls.

Kamine/Besicorp has entered into Natural Gas Peak Shaving Supply Agreements with Consumers' Gas for the Beaver Falls and Natural Dam projects which will allow Kamine/Besicorp to divert gas to Consumers' Gas to help satisfy its peak day requirements or to assist Kamine in the event its interruptible downstream capacity on IGTS or St. Lawrence is curtailed.

TransCanada submitted that, while downstream transportation capacity for those two projects is only available on an interruptible basis, it is expected that downstream curtailments will be

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<sup>1</sup> By letter dated 24 September 1992, AG-Energy notified the Board that it had decided to contract for interruptible rather than firm service. AG-Energy further indicated that it would remain a firm service shipper on TransCanada.

unlikely and/or insignificant since the cogeneration facilities are near the international border and since Kamine-Beaver Falls' TransCanada service is firm through to compressor Station 1401.

Kamine-Beaver Falls' licence application to export 456.1  $10^3\text{m}^3/\text{d}$  (16.1 MMcfd) of gas at Iroquois, Ontario was heard in the GH-5-92 proceeding and is awaiting the Board's decision. Kamine-Beaver Falls' U.S. import authorization application is pending before the DOE/FE.

Kamine-Beaver Falls has executed a fifteen-year Natural Gas Purchase Agreement with NCM for up to 456.1  $10^3\text{m}^3/\text{d}$  (16.1 MMcfd), with a term volume of 2 493.2  $10^6\text{m}^3$  (88.1 Bcf).

### **3.3.5 Kamine/Besicorp Natural Dam L.P.**

Kamine/Besicorp Natural Dam L.P. ("Kamine-Natural Dam") and TransCanada have entered into a fifteen-year Precedent Agreement dated 20 January 1992, as amended, for the delivery of 339.9  $10^3\text{m}^3/\text{d}$  (12.0 MMcfd) of gas from Alberta and Saskatchewan to the Iroquois, Ontario export point commencing 1 November 1993.

Kamine-Natural Dam is a partnership between Kamine Natural Dam Cogen Co., Inc. and Beta Natural Dam Inc.

The gas will be used by Kamine-Natural Dam as fuel for its 49 MW combined-cycle, cogeneration facility currently under construction near Natural Dam, N.Y. Kamine Natural Dam Cogen Co., Inc. has executed a long-term Power Sales and Purchase Agreement with NIMO for the purchase of the electricity. Kamine-Natural Dam has executed a Energy Services Agreement with James River Paper Company, Inc. for the sale of the thermal energy.

Upstream, North Canadian, the parent of NCM, and the gas producers supplying NCM, will use existing access to NOVA capacity. In the event any of the gas originates from Saskatchewan, it will be the responsibility of the producer to contract for the pipeline capacity on TransGas. Downstream, Kamine-Natural Dam has executed a fifteen-year interruptible Precedent Agreement with IGTS for the delivery of the gas from Iroquois, Ontario to the point of interconnection of IGTS and St. Lawrence systems. St. Lawrence will deliver the gas to the Natural Dam, N.Y. cogeneration facility on an interruptible basis in accordance with a long-term Natural Gas Transportation Services Agreement entered into with Kamine-Natural Dam.

Kamine-Natural Dam's licence application to export 339.9  $10^3\text{m}^3/\text{d}$  (12.0 MMcfd) of gas at Iroquois, Ontario was heard in the GH-1-92 proceeding. Kamine-Natural Dam's U.S. import authorization application is pending before the DOE/FE.

Kamine-Natural Dam has executed a fifteen-year Natural Gas Purchase Agreement with NCM for up to 339.9  $10^3\text{m}^3/\text{d}$ , (12.0 MMcfd), with a term volume of 1 767.1  $10^6\text{m}^3$  (62.4 Bcf).

### **3.3.6 Selkirk Cogen Partners II, L.P.**

Selkirk Cogen Partners II, L.P. ("Selkirk") and TransCanada have entered into a twenty-year Precedent Agreement dated 5 March 1992, amended, for the delivery of 1 558.1  $10^3\text{m}^3/\text{d}$  (55.0 MMcfd) of gas from Alberta to the Iroquois, Ontario export point commencing 1 June 1994.

The gas will be used by Selkirk as fuel for its proposed 277 MW gas-fired, combined cycle, cogeneration facility to be constructed at Selkirk, N.Y. The facility is to be located at the General Electric Plastics Division's plant. JMC Selkirk, Inc. has executed a twenty-year Power Purchase Agreement with Consolidated Edison Company of New York, Inc. for the purchase of the electricity produced by the generation facility. Selkirk has entered into an Amended and Restated Agreement with the General Electric Company for the sale of the thermal energy.

Upstream, the NOVA capacity is to be arranged by each of the gas producers supplying the Selkirk project (i.e. Esso Resources Canada ("Esso")), PanCanadian Petroleum Limited ("PanCanadian") and ATCOR Ltd. ("ATCOR"). Downstream, Selkirk has entered into a twenty-year Precedent Agreement with IGTS for firm service from Iroquois, Ontario to the point of interconnection of the IGTS system and that of Tennessee Gas Pipeline Company ("Tennessee"). Tennessee will deliver the gas to Selkirk, N.Y. in accordance with a twenty-year Precedent Agreement entered into with Selkirk.

Licence applications by each of the three producers to export a total of  $1\,558.1\,10^3\text{m}^3/\text{d}$  (55.0 MMcfd) of gas at Iroquois, Ontario, during the period ending 31 October 2009, were heard in the GH-1-92 proceedings.

Selkirk has executed fifteen-year Natural Gas Purchase Agreement (with a five-year option to extend) with each of Esso, PanCanadian and ATCOR. These three companies will supply up to  $1\,558.1\,10^3\text{m}^3/\text{d}$  (55.0 MMcfd), with a term volume of  $8\,774.0\,10^6\text{m}^3$  (309.7 Bcf). Export licence applications were filed by Makowski-Selkirk Inc. as agent for Selkirk Cogen Partners II L.P. and each of Esso, PanCanadian and ATCOR.

### 3.4 Views of the Board

The Board finds TransCanada's requirements forecast to be reasonable for the purpose of assessing TransCanada's facilities requirements for the 1993-94 contract year. In addition, the Board is satisfied that the new transportation services scheduled to commence in the 1993-94 contract year are sufficiently advanced with respect to: gas supply arrangements; upstream and downstream transportation arrangements; gas sales arrangements; and, with respect to securing the necessary Canadian and U.S. regulatory approvals, to support TransCanada's facilities design. The Board believes that there is a reasonable expectation that any outstanding contractual or regulatory matters can be finalized in a timely manner to allow those projects to proceed as currently contemplated.

Although the possibility exists that specific shippers underpinning the expansion may not achieve their respective scheduled commencement dates, the Board is satisfied that sufficient long-term contracted FS requirements will materialize in time to replace those service requirements that may be so delayed or cancelled. The Board continues to expect TransCanada to substitute sufficient long-term contracted FS requirements in time to replace such foregone requirements.<sup>(1)</sup>

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<sup>1</sup> Refer to the Board's GH-5-89 Reasons for Decision, Volume 3, Section 20.3.5, page 167.

While the Board continues to be satisfied with TransCanada's record and its approach to independent verification of the information furnished by prospective shippers in support of their requests for service, the Board nevertheless believes that to ensure that the applied-for facilities are both used and useful over the long-term, the commencement of construction of the approved facilities should be conditioned upon TransCanada demonstrating to the Board's satisfaction that, in respect of the new firm export volumes, all necessary U.S. and Canadian federal regulatory approvals have been received. Similarly, the Board believes that TransCanada should be required to demonstrate that, in respect to the transportation of all new firm volumes on its system, all necessary U.S. and Canadian regulatory approvals have been granted in respect of any necessary downstream facilities or transportation services.

The Board accepts TransCanada's assumption with respect to the evergreening of certain domestic and export services included in TransCanada's base case requirements.

The Board agrees with TransCanada that changes to its base case requirements could affect the need for the applied-for facilities and accordingly, it expects TransCanada to continue to monitor its base case requirements and, in the event of a change which impacts upon aggregate requirements, to revise its facilities requirements accordingly. The Board believes that it would be appropriate to condition any certificate that is to be issued in this regard.

The Board is of the view that the aforementioned certificate conditions would ensure that the construction of only those facilities which are required to meet the aggregate firm requirements.

TransCanada provided the required information on specific project gas supply for the shippers requesting new firm transportation service. The Board notes that these shippers have signed binding supply agreements for the requested new volumes.

TransCanada filed a motion at the hearing regarding evidence on gas supply and whether or not it would be required by the Board in support of facilities for normal market growth in a shipper's franchise area. TransCanada stated that the Board rendered a decision regarding this matter in GHW-3-89. The list of information normally required to be filed by TransCanada was not required for an incremental volume representing normal market growth and TransCanada asked for relief for this proceeding. For the purposes of this proceeding only, the Board granted this relief.

The Board considers that the supply for both the new domestic projects is adequate. For the Lake Superior Power and the Cardinal Power projects, the Board's analysis of the data provided by the producers resulted in supply estimates (both reserves and productive capacity) similar to those filed. The gas supply was compared to both the requested volumes, as well as to the total corporate commitments, where applicable. Furthermore, the Board notes that corporate warranties were provided by the producers to ensure that adequate supply would be provided.

Supply evidence for the Lake Superior Power service requirement was revised during the proceedings. Petro-Canada increased its supply pool to include additional reserves which will revert to Petro-Canada's control, effectively doubling its supply portfolio. Bow Valley relied on its Alberta reserves and indicated that it could backstop with its Saskatchewan supply. The Board's analysis indicates that sufficient supply arrangements are in place for the Lake Superior Power service requirement.



Supply for the Cardinal Power service requirement will be provided by Husky. Husky submitted its Alberta supply pool to demonstrate adequate gas supply both in terms of the reserves and productive capacity available to meet all current commitments including the Cardinal Power service requirement.

In its analysis, the Board recognized 145 Petro-Canada pools, 247 Bow Valley pools and 543 Husky pools, all in Alberta. The majority of Petro-Canada's and Husky's remaining reserves are in relatively large producing pools, while nearly half of Bow Valley's remaining reserves are in small non-producing pools.

The Board is satisfied with the supply arrangements outlined for both the domestic and export shippers in support of their requests for capacity both since these shippers have signed binding supply agreements and since the Board believes that there will be adequate overall gas supply to satisfy requirements.

## **3.5 Risk, Financial Assurances and FERC Order 636**

### **3.5.1 Risk**

The risks associated with a capacity expansion, including market and regulatory risks in other jurisdictions, are among the criteria to be used in determining the likelihood that the applied-for facilities will be used at a reasonable level over their economic life and that the demand charges will be paid.

TransCanada submitted that the new domestic and export requirements underpinning the applied-for facilities represent a very modest increase in capacity. With respect to the domestic market, TransCanada indicated that both domestic local distribution companies ("LDC's") have requested additional capacity to meet normal market growth. In addition, TransCanada noted that both Cardinal Power and Lake Superior Power have firm commitments from Ontario Hydro to purchase the electric power and from their steam hosts to purchase the thermal energy. With respect to the export market, TransCanada noted that the new services are to accommodate market growth associated with increased U.S. electric power generation through cogeneration and to enable NYSEG, an established U.S. LDC, to expand its New York state market.

TransCanada noted that the final form of the FS contract to be entered into with each of the new shippers are long-term and do not provide for regulatory, market, transportation or gas supply outs.

### **3.5.2 Financial Assurances**

TransCanada has executed either a Performance Agreement on Financial Assurances or a Letter Agreement with some, but not with all, of the shippers underpinning the facilities expansion. In the case of the domestic shippers, financial assurance agreements were executed with Cardinal Power and Lake Superior Power, whereas no financial assurance agreements were required of the two domestic LDCs, Centra Ontario and Consumers' Gas. In the case of the export shippers, with

the exception of NYSEG, all executed a Performance Agreement on Financial Assurances. NYSEG has executed a Letter Agreement.

### 3.5.3 FERC Order 636

With respect to regulatory risk, TransCanada submitted that it has been closely monitoring developments to assess the possible impact that FERC Order 63<sup>(1)</sup> might have on TransCanada and on its existing and prospective shippers. TransCanada noted that in order to track Order 636 developments and to assess their impact it has obtained intervenor status in eight restructuring proceedings, participates in a joint industry and government task group coordinated by the Canadian Petroleum Association, and maintains contact with gas supply aggregators and marketers.

TransCanada indicated that, given the number of interstate pipelines that are impacted by Order 636 and the unique operational characteristics and markets served associated with each, it is unclear what impact the Order 636 features such as unbundling, capacity release, transition cost recovery, or the movement to Straight Fixed-Variable Rate Design might have. However, TransCanada believes that Canadian gas supply and transportation costs will be competitive with U.S. gas supply and transportation costs in the long term. TransCanada does not believe that U.S. pipeline restructuring will ultimately place Canadian sales at a disadvantage relative to U.S. competitors since it is the FERC's goal to increase, rather than hinder, competition in the U.S. market with respect to both gas supply and gas transportation. TransCanada concluded that since Canadian gas represents a viable, competitive alternative for U.S. gas consumers, it follows that the FERC would ensure that in restructuring U.S. interstates' services there will be no anti-competitive bias towards Canadian gas supplies.

TransCanada submitted that the impact of Order 636 on Canadian gas sales and thereby, on the need for TransCanada transportation service, will be a function of the degree to which Canadian gas supply remains competitive with U.S. gas supply. Specifically, TransCanada believes that if, as a result of each pipeline's restructuring proceeding the basis for determining rate design and cost allocation associated with transporting Canadian-sourced gas to U.S. markets is fair in comparison to that used for transporting U.S.-sourced gas to those same markets, then Canadian gas will continue to remain competitive.

TransCanada indicated that its policy and practice is to assess its requirements based on discussions with its shippers and consideration of all relevant factors, including the impact of FERC Order 636, which bear upon the requirements projection.

TransCanada utilizes the best information available to assess its requirements, prior to seeking release from Board conditions relating to the commencement of construction. In this context, TransCanada expressed no objection to the imposition by the Board of a condition that would require TransCanada to file a comprehensive assessment, prepared after consultation with its shippers, of the impact of FERC Order 636 upon TransCanada's base case requirements.

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<sup>1</sup> Refers to the FERC's final rule entitled Order 636, or more specifically, "Pipeline Service Obligations and Revisions to Regulations Governing Self-Implementing Transportation Under Part 284 of the Commission's Regulations". The main goals of Order 636 are to ensure that all shippers have access to both pipeline capacity at fair and reasonable tolls and to adequate gas supply at reasonable prices by requiring U.S. interstate pipelines to, among other things, unbundle their merchant and transportation functions.

## Views of Interested Parties

Tennessee noted that FERC Order 636 will, among other things, provide for open-access pipelines and:

- require pipelines to unbundle their bundled firm and interruptible sales services;
- permit sales customers to renegotiate their gas purchases from among all gas suppliers, of which a merchant pipeline is but one;
- relieve merchant pipelines of any obligation to serve sales customers;
- allow sales customers to contract for transportation services separately from any sales agreement with the pipeline;
- allow firm shippers, during restructuring, to release unwanted capacity to those who want capacity;
- require pipeline sales customers and open access transportation customers, if they wish to retain firm capacity, to match the price and term offered by those seeking firm capacity;
- establish a new firm capacity reallocation (i.e. brokering) program by which shippers can permanently or temporarily release capacity to those wanting capacity;
- require merchant pipelines to realign their gas purchases so as to be competitive with other sellers; and
- encourage pipeline sales customers to take assignments of pipeline gas purchase contracts to avoid the incurrence of transition costs.

Tennessee indicated that it wished to convey to the Board its belief that Canadian gas suppliers will successfully respond to the challenge associated with restructuring under Order 636, although there is no guarantee that this will occur since Order 636 will create an intensely competitive market structure. Tennessee noted that, if Canadian gas suppliers are unable to do so, then Order 636 restructuring could result in lost opportunities for Canadian exports and in unutilized Canadian pipeline capacity. Tennessee believes, however, that Order 636 will result in a more open and competitive market that will ultimately benefit all gas sellers and therefore, the Order "...should be seen in a positive, forward-looking way."

Tennessee argued that Order 636 will have a bearing on the subject facilities application since that application builds off a base case of existing service requirements. Specifically, Tennessee pointed out that TransCanada's base case includes a substantial volume of gas at forecast load factors which TransCanada acknowledges could be impacted by Order 636. Tennessee noted, for example, that some of the high load factor requirements are made up of secondary sales into U.S. markets using interruptible U.S. transportation. Tennessee argued that if restructuring resulted in a loss of market for such secondary sales through the realignment of gas purchases of U.S. buyers or a loss of market access through the restructuring of U.S. transportation capacity, then TransCanada's base case assumptions and the need for the applied-for facilities would be impacted.

Tennessee concluded that the Board could deal with the matter of Order 636 in the subject proceeding by conditioning the certificate requiring TransCanada, prior to the commencement of construction, to demonstrate to the Board's satisfaction that the proposed facilities are required to transport the new firm volumes underpinning the facilities application having taken account of the restructuring in U.S. gas markets resulting from Order 636. Tennessee believes that the certificate condition proposed by the Board, as modified by TransCanada, is acceptable.

Centra Ontario argued that it would be premature to consider imposing any condition as a result of Order 636 until the impacts of that Order are better known. Centra Ontario believes that since the standard certificate conditions already require TransCanada to demonstrate, prior to construction, that the proposed facilities are required, this would automatically entail an assessment of Order 636.

North Canadian concurred with the position taken by Centra Ontario. North Canadian argued that Order 636 is very much in its preliminary stages and that as such, it is very difficult for parties to fully assess the impact that that Order might have. North Canadian submitted that it views the Order positively since it believes that the Order will create new opportunities for Canadian gas in U.S. markets. North Canadian argued that the existence of Order 636 should in no way affect certification of the subject facilities.

The Alberta Petroleum Marketing Commission (“APMC”) supported the Board’s position that it might be appropriate to condition the certificate with respect to Order 636.

### **Views of the Board**

The Board agrees with TransCanada and other interested parties who have argued that it would be impractical at this early stage to make a definitive assessment of the possible impact of FERC Order 636 upon Canadian gas exports and upon the need for Canadian pipeline facilities, including the subject facilities expansion.

While the Board acknowledges TransCanada’s position that it would adjust its facilities demand resulting from the implementation of the provisions of Order 636, the Board has nevertheless been persuaded that any Board certificate should be conditioned with respect to that Order. The Board believes that such a condition would ensure shipper participation in the assessment of the impact of Order 636 and provide the Board and all interested parties with a clear insight into how and to what extent TransCanada has allowed for Order 636 in assessing the need for the facilities expansion at the time it seeks release of those facilities from the Board.

## Chapter 4

# Facilities

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### 4.1 Load Factors

In part as a result of unforeseen increases in FS contract utilization in the summer of 1992, TransCanada is projecting an overall deficit of approximately  $0.82 \times 10^9 \text{m}^3$  (27.0 Bcf) in firm deliveries by the end of the 1991-92 contract year. TransCanada noted that this shortfall is being met through: the shifting of some maintenance work from the summer to the winter; Board release of previously-certificated facilities to allow for construction in the 1992-93 winter to meet the 1993 summer requirements; the deferral of FST to the 1992-93 contract year; the delay in the start-up of some services from the 1991-92 contract year to the 1992-93 contract year; the curtailment of long-haul FS and diversions; and, the borrowing of transportation capacity for repayment in the winter of 1992-93. With respect to the latter, TransCanada has entered into an agreement with WGML which permits TransCanada to borrow up to  $424.9 \times 10^6 \text{m}^3$  (15.0 Bcf) of pipeline capacity in the summer of 1992 on an as needed basis, to be paid back through the 1992-93 winter season.

TransCanada argued that its requirements forecast underpinning the expansion incorporates the most current information available. TransCanada noted that its June 1992 application amendment reflects the increase in winter and summer contract utilization. Specifically, TransCanada noted that its overall load-factor utilization of FS contracted volumes is forecast to increase from 71 percent in the 1987-88 contract year to 94 percent in the 1992-93 contract year and increasing thereafter to 96 percent in the 1993-94 and 1994-95 contract years.

TransCanada indicated that there has been a steady trend toward a higher and a more evenly distributed load factor usage of FS contracts as a result of the availability and shipper use of storage, diversions and assignments. TransCanada noted that while the 1992 summer load factor increases have been coincident with the abnormally cold weather conditions and the unexpected reversal in the normal seasonal spot price cycle (i.e. prices peak in the winter and decline in the summer), it believes that the recent trend toward higher load factor utilization will continue. TransCanada argued that shippers will continue to seek out new market opportunities to reduce their demand charge exposure.

Consumers' Gas questioned TransCanada about its ability to meet its aggregate requirements in the 1992-93 and 1993-94 contract years, with regard to its projections of seasonal capacity shortfalls in those Contract Years. Consumers' Gas was concerned that in the event that the capacity shortfalls were either greater than expected or in the event that TransCanada's plans for remedying the seasonal shortfalls in those two years did not work out that one option that TransCanada might consider would be to delay the commencement of new services.

The APMC expressed concerns as to whether the summer load factors which TransCanada projects are sustainable over a long-term, given the vulnerability of these forecasts to the restructuring of gas sales and transportation arrangements now under way to comply with FERC Order 636.

Furthermore, the APMC noted the potential for the applied-for facilities to provide an excess capacity between winter and summer requirements, which could contribute to the over-building of the pipeline.

### **Views of the Board**

Although there is a great deal of uncertainty as to whether the projected load factors are sustainable over the long-term, the Board is of the view that TransCanada's design on the basis of the projected load factors is prudent. Should the load factors decrease, the Board is of the view that the certificate conditions adequately mitigate against over-building of the pipeline. Conversely, should the load factors increase, the Board believes that TransCanada has at its disposal a number of options which would enable it to satisfy the additional demands for service.

## **4.2 Specific Facilities**

In the 10 June 1992 revision, TransCanada indicated a reduction in the Western Section capability as a result of increases in the temperature of gas from NOVA, changes to ambient temperatures, and a net increase in projected summer season deliveries. Currently, TransCanada's projected requirements will exceed the capability of the Western Section during the summer season in both 1994 and 1995. TransCanada indicated that it believes it would be prudent in the current economic environment to explore alternatives such as moving some of its scheduled maintenance projects from the summer to winter months to accommodate the shortfall, rather than constructing additional facilities, that in this case are estimated to be \$55 million.

TransCanada stated that even with the capacity shortfalls experienced in the current contract year as a result of higher than previously-projected load factor utilization, it continues to believe that it is prudent and in the best interest of its shippers to continue to design on the basis of projected load factors.

TransCanada's applied-for expansion proposed in GH-4-92 would provide a total of 6 061.0  $10^3\text{m}^3/\text{d}$  (214.0 MMcfd) of new firm service for delivery from Empress, of which 2 548.0  $10^3\text{m}^3/\text{d}$  (90.0 MMcfd) or 42 percent of the total would be for customers in Canada and the remaining 3 513.0  $10^3\text{m}^3/\text{d}$  (124.0 MMcfd) or 58 percent would be for service to export customers. The facilities applied for by TransCanada consist of 366.1 km of system-wide looping, two permanent compressor units totalling 32.8 MW, and one 10 MW portable compressor unit. Although Simplot withdrew its request for 100  $10^3\text{m}^3/\text{d}$  (3.5 MMcfd) of firm service TransCanada did not change its facilities requirements because of the small volume involved.

The expansion would allow the retirement of two aging compressor units at Stations 17 and 211 and the replacement of the portable unit at Station 119. TransCanada proposes to replace the 5.7 MW Orenda unit at Station 211 with a permanent 10 MW unit and to reduce the use of the existing 3.2 MW unit. TransCanada indicated that this would reduce the noise emissions from the station. TransCanada stated that the 10 MW unit provides more operational flexibility, provides for future growth in export volumes and is more cost-effective over the longer term than the use of a smaller unit.

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The map illustrates the proposed Trans Canada Gas Pipeline route across Canada, from Alberta in the west to Quebec in the east. The route is shown as a series of connected segments, with existing infrastructure represented by solid lines and proposed additions by dashed lines. Key features include:

- Provincial Boundaries:** The map shows the provinces of Alberta, Saskatchewan, Manitoba, Ontario, and Quebec, separated by dashed lines.
- Major Water Bodies:** The Great Lakes and St. Lawrence River are depicted as shaded areas.
- Compressor Stations:** Numerous compressor stations are marked along the route, with their names and capacities listed. For example, in Alberta, stations include Foothills Pipeline (26.1 MW), 2, 9, 17, and 25. In Saskatchewan, stations include 34, 43, and 49. In Manitoba, stations include 55, 60, 62, 64, 69, 70, 77, 84, 88, 95, and 102. In Ontario, stations include 107, 112, 116, 119, 121, 126, 134, 142, 147, and 150. In Quebec, stations include 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, and 200.
- Existing Infrastructure:** The map shows existing gas pipelines and compressor stations, including the Trans Canada Gas Pipeline, the proposed Inland Gas Transmission System, and the proposed Inland Gas Transmission System Extension.
- Proposed Additions:** The map shows proposed additions to the existing infrastructure, including the proposed Inland Gas Transmission System, the proposed Inland Gas Transmission System Extension, and the proposed Inland Gas Transmission System Extension.
- Legend:** The legend defines the symbols used on the map:
  - Solid line: Existing and Approved Pipeline
  - Dashed line: Proposed Pipeline Loop
  - Black rectangle: Existing Compressor Station
  - White rectangle: Existing Compressor Station No. with Proposed Additions (Retirements) in MW

The total capital cost of the facilities is estimated at \$501.2 million in 1992 dollars. TransCanada submitted that the proposed facilities are required by the present and future public convenience and necessity.

### **Views of the Board**

The Board is of the view that the system requirements justify the installation of the proposed facilities.

## **4.3 Capability Factor**

The purpose of the capability factor is to reduce the estimated theoretical system capability to account for outages as well as uncertainties in the values of some parameters used in the computer simulations which are used to design the pipeline system. Unscheduled pipeline and compressor outages, actual ambient temperatures, system operation variances and other factors may differ from those used in computer simulations.

TransCanada filed with the Board a report dated 12 June 1992 titled “TransCanada PipeLines System Capability Estimates” which outlined the effects of factors that affect the seasonal capability of its system. This report was requested by the Board following TransCanada’s adjustment of its winter season capability factor for the Western Section from 98 to 97 percent in its 1992/93 Facilities Application.

This study addressed the probability of effects such as facility outages, temperature, line-pack changes and new pipeline tie-ins acting together to decrease or increase the capability of its system. The results of this quantitative analysis, along with a qualitative assessment of the impact of factors such as line-pack changes and new pipeline tie-ins, on system capability were used to support the winter and summer season capability factors of 97 and 94 percent respectively.

The Board noted that the study on factors that impact system capability and the improvement of the accuracy and reliability of TransCanada’s pipeline simulator is an ongoing process. In this regard, during the GH-4-92 proceedings, TransCanada undertook to provide annual progress reports to the Board.

### **Views of the Board**

The Board is satisfied that TransCanada’s System Capability Estimate reasonably quantifies the impact of unplanned facility outages and temperature changes on the capability of both the Western and Central Sections.

## **4.4 Design of Line 100-6**

In its 1993-94 Facilities Application, TransCanada proposed the use of a higher grade steel which resulted in the pipeline having an aggregate factor of safety which exceeded the minimum



specified by the Canadian Standards Association - Standard CSA Z184-M92 Gas Pipeline Systems.

TransCanada indicated that its proposed design of Line 100-6 to a wall thickness of 11.7 millimetres complies with its design policy to limit the diameter/thickness ratio ("D/t ratio") to 104. TransCanada indicated that the proposed D/t ratio of 104 was based on years of large diameter pipe installation and operational experience, as well as from consultations with pipeline contractors. TransCanada further submitted that for the proposed Line 100-6 loops, using this D/t ratio and a higher grade steel than would be required to meet minimum CSA standards would not result in any additional costs.

### **Views of the Board**

Inasmuch as there is no difference in cost between the grades of steel at this time, the Board accepts TransCanada's design of Line 100-6.

**Table 4.1**  
**Description and Cost of the Applied-For Facilities**

**1992 Construction (as submitted in June 1992)**

Line	Loop Description	Length (km)		Direct Cost (1992 base) (\$000)
		<u>1993</u>	<u>1994</u>	
Western Section				
100-6	MLV 2+26.3 km to MLV 3	5.2		5 930
100-6	MLV 3 to MLV 3+4.9 km	4.9		4 950
100-6	MLV 7 to MLV 8	19.7		18 113
100-6	MLV 11 to MLV 12	27.7		25 883
100-6	MLV 16 to MLV 17	27.0		24 663
100-6	MLV 18+23.1 km to MLV 19	8.2		8 206
100-6	MLV 22+8.4 km to MLV 23	18.1		16 683
100-6	MLV 28 to MLV 29	26.4		24 437
100-6	MLV 31 to MLV 31+6.8 km	6.8		6 793
100-6	MLV 39 to MLV 41	18.5		19 559
Central Section				
100-3	MLV 44+16.4 km to MLV 45		17.1	23 105
100-3	MLV 59+22.3 km to MLV 60	9.3		10 243
100-3	MLV 76+17.6 km to MLV 76A	9.0		11 662
100-3	MLV 79+9.8 km to MLV 80	14.1		17 166
100-3	MLV 83+11 km to MLV 84		8.1	9 852
100-3	MLV 85+14.9 km to MLV 86		16.4	20 199
100-3	MLV 87+20.7 km to MLV 88		9.9	12 669
100-3	MLV 91 to MLV 92		7.8	9 800
100-3	MLV 104+14.1 km to MLV 105	8.4		9 273
100-3	MLV 109+13.5 km to MLV 110	8.6		10 910
100-3	MLV 111+24.7 km to MLV 111A	7.1		11 015
100-3	MLV 111A to MLV 112	11.9		18 766
100-3	MLV 114+16.8 km to MLV 115	6.1		9 863
North Bay Shortcut				
1200-2	MLV 1203+20.4 km to MLV 1204	8.4		11 279
1200-2	MLV 1204 to MLV 1205		15.4	19 668
1200-2	MLV 1208 to MLV 1209	11.9		15 445
1200-2	MLV 1215+11.2 km to MLV 1216	16.7		21 868
Montreal Line				
100-3	MLV 146+19.2 km to MLV 147	11.7		12 572
100-3	MLV 147+21.5 km to MLV 147+27.2 km		5.7	6 337
	Total Looping	<u>285.7</u>	<u>80.4</u>	<u>416 909</u>

<b>1992 Compressor Plant Additions and Piping Modifications</b>	<b>Power</b>	<b>Direct Cost (1992 base) (\$000)</b>
Station 69	22.8 MW(ISO)	22 200
Portable Compressor at Station 119	10.0 MW(ISO)	11 040
Station 211	10.0 MW(ISO)	18 060
Manifolding at Station 17		1 520
Manifolding at Station 41		680
Manifolding at Station 147		<u>590</u>
Total Compressor Plant Additions and Piping Modifications		54 090
Total Estimated Direct Costs of Facilities		470 999
Associated Indirect Costs		<u>30 183</u>
Total Estimated Capital Costs		501 182

# Land Use, Environmental and Socio-Economic Matters

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## 5.1 Assessment and Notification Process

### 5.1.1 Assessment Process

TransCanada submitted environmental and socio-economic assessment reports (“the assessments”) under a covering letter dated 10 April 1992 in support of its application. In addition, TransCanada adopted the recommendations contained in those assessments to prevent or mitigate any adverse environmental effects resulting from the construction and operations of the applied-for facilities. TransCanada also undertook to adhere to the policy statements, mitigative measures and procedures provided in its Pipeline Construction Specifications (1990) and in its Environmental Protection Practices Handbook (1991).

The assessments included a description of the environmental setting, an assessment of the probable adverse environmental effects, and recommendations to prevent or mitigate any adverse environmental effects resulting from the applied-for facilities. Further, an Environmental Issues List (“EIL”) which included the recommended practices and procedures to prevent or mitigate specific adverse environmental effects, was provided for each of the proposed pipeline loops. In general, the assessments provided information on land-use, soils, agricultural capability/productivity, vegetation, fisheries, wildlife, water crossings, forestry, heritage resources, recreation and environmentally sensitive areas.

The environmental and directly-related social effects of the project were considered concurrently under two separate processes:

- (i) a project review pursuant to the Board’s mandate under Part III of the Act; and
- (ii) an environmental screening of the application pursuant to the EARP Guidelines Order insofar as there was no duplication with the Board’s mandate under Part III of the Act.

The screening was conducted concurrent with the GH-4-92 proceeding pursuant to the Board’s Directions on Procedure dated 22 May 1992. The Board’s Environmental review pursuant to Part III of the Act, is detailed under section 5.3.

### Views of the Board

Subsequent to the review of the environmental information contained in TransCanada’s application and submitted as part of the GH-4-92 record, the Board made the following determinations:

- (i) respecting the potential effects which could result from the proposal, the Board determined pursuant to paragraph 12(c) of the EARP Guidelines Order that the potentially adverse environmental effects, including the social effects directly-

related to those environmental effects, which may be caused by the proposal, would be insignificant or mitigable with known technology; and

- (ii) respecting the environmental, directly-related social and land-related effects attributable to the project as proposed, the Board determined that those issues would be appropriately considered as part of its procedures under Part III of the Act, consistent with section 8 of the EARP Guidelines Order.

### **5.1.2 Early Public Notification**

In accordance with the Board's Memorandum of Guidance Concerning Early Public Notification ("EPN") of Proposed Applications, TransCanada initiated its notification program in respect of the 1993-94 Facilities on 28 February 1992. Through this program, TransCanada solicited and encouraged public input on environmental and socio-economic effects, and responded to all public queries related to the proposed application. The information program included notifications placed in local newspapers, and correspondence with landowners, municipalities, provincial and federal government agencies and departments, provincial and federal elected officials, and various public interest groups. TransCanada sent notification letters, giving details of the proposed projects and requesting input, to the above-mentioned parties, between 28 February and 17 March 1992.

The Board directed TransCanada to publish a Notice of Public Hearing, which was published in newspapers in Alberta, Saskatchewan, Manitoba and Ontario as set out in Appendix IV of the Board's Directions on Procedure.

As a result of the notification program and subsequent consultations TransCanada had received and responded to 149 queries by 25 June 1992. TransCanada updated this record at the commencement of the GH-4-92 hearing.

In addition to the above, the results of TransCanada's environmental impact assessments were distributed for review and comment to 126 government agencies, towns and rural municipalities, and interested parties on 23 April 1992.

TransCanada provided the Board with summary tables listing the letters received during the notification process. These tables included a statement summarizing the sender's concerns and any action TransCanada had taken in response to the letters and inquiries received. At the request of the Board, TransCanada filed copies of any letters received and the associated responses from TransCanada. The Board also requested an additional summary which provided greater detail regarding the concerns raised by government agencies and public interest groups. This summary included all environmental, land use or socio-economic recommendations or requirements of the above-mentioned agencies or groups, and provided explanations for any recommendations that TransCanada did not agree with.

### **Views of the Board**

The Board is satisfied that TransCanada has notified and discussed the proposed application in a timely fashion with government agencies, interested parties and affected landowners.

## **5.2 Land Matters**

### **5.2.1 Requirements of the Act in Respect of the Routing of New Pipeline Facilities**

If the Board is satisfied with the proposed general route of a particular loop section of pipeline and issues a certificate in respect to it, the pipeline company must submit to the Board, prior to commencement of construction, plans, profiles and books of reference (“PPBR”) which, among other things, lay out the detailed route of the pipeline segment.

Under section 58 of the Act, the Board may exempt a company from the requirement to obtain PPBR approval. In its application, TransCanada requested that the applied-for facilities be exempted, pursuant to section 58 of the Act, from the provisions of paragraphs 31(c) and 31(d) and section 33 thereof. Such exemptions would relieve TransCanada from the necessity of filing a PPBR for Board approval.

#### **Views of the Board**

In deciding whether or not to exempt TransCanada from the provisions of paragraphs 31(c), 31(d) and section 33 of the Act, the Board is mindful of the rights of adjacent landowners<sup>(1)</sup> who might be affected by the proposed construction. The Board is of the opinion that due to the proposed location of the facilities (i.e., on existing easements or new easements adjacent thereto), it is unlikely that those landowners would be adversely affected in the long term by the proposed construction.

The Board is concerned that landowners, owning property TransCanada proposes to acquire, have their rights under the Act protected. However, the Board is also aware of the potential problems to the Applicant if they are unable to obtain all rights. Therefore, the Board has decided to condition the order to permit construction to commence only if TransCanada has obtained all required land rights along any specific loop section, or, if the land rights have not yet been obtained, to demonstrate that the landowner rights prescribed in the Act will not be prejudiced. The Board is of the opinion that the wording in the proposed condition protects the rights of landowners while allowing TransCanada flexibility in instituting the right of entry process. On that basis, the Board has decided to exempt the applied-for facilities from the provisions of paragraph 31(c), 31(d) and section 33 of the Act.

### **5.2.2 Route Selection**

TransCanada has applied for a total of 366.1 km of line pipe, consisting of 29 loop sections in the Provinces of Saskatchewan, Manitoba and Ontario. The location, length and land requirements for each loop section are found in Table 5.1. All proposed loop sections fall either within or adjacent to existing easements.

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<sup>1</sup> An adjacent landowner is one who owns property which is not along the proposed right-of-way but who finds that their property may be adversely affected by the applied-for facilities.

In TransCanada's view, new facilities located within existing easements and requiring only temporary workspace do not present any route-related issues. This would apply to 92.8 km of looping.

Where new facilities could not be located on existing easements due to easement width constraints, TransCanada proposed that they be located adjacent to the existing easements provided that environmental, engineering, construction and safety concerns were met. New facilities in this category total 273.3 km.

### **Views of the Board**

In the Board's view, TransCanada's plan to utilize existing easements with associated temporary workspace is reasonable.

The Board agrees with TransCanada's rationale for installing the proposed new looping facilities adjacent to existing easements. The general routes proposed by TransCanada for those loop sections are accepted by the Board.

### **5.2.3 Land Requirements and Notification**

TransCanada provided the Board with schematics of the land requirements for each loop location and a description of its existing easements, along with the pipeline location within those easements and the terrain conditions.

- (a) *Easements:* TransCanada requires easements ranging in width from 5.0 metres ("m") to 30.0 m along 22 proposed loop sections.
- (b) *Temporary Workspace Requirements:* TransCanada requires a 10.0 m to 20.0 m width of temporary workspace for machinery movement, the storage of soil, and to ensure that no environmental or landowner interests are compromised. This is in accordance with TransCanada's Pipeline Construction Specifications (1990).

TransCanada filed a preliminary line list setting out those areas where new easements and/or temporary workspace would be required, and indicated that this list would be updated as new information is obtained. TransCanada will submit a second sequential listing identifying owners who have been served with notices of proposed acquisition as required by section 87 of the Act.

### **Views of the Board**

The Board finds that TransCanada's anticipated requirements for easements and temporary work space are reasonable and justified. With respect to easements, the Board encourages TransCanada to serve section 87 notices of proposed acquisition on all eligible owners at the earliest opportunity. With respect to temporary work space, as long as TransCanada's acquisition of same continues to be a short-term commercial transaction which does not create an interest in land, section 87 of the Act does not apply.

**Table 5.1**

**TransCanada Proposed 1993/1994 Facilities**

Loop Description	Loop Section	Length	Permanent Easement	Easement	Temporary Work Space	Work Space
		(km)	Width	Length	Width	Length
			(m)	(km)	(m)	(km)
<u>1993 CONSTRUCTION</u>						
Saskatchewan						
5th Loop						
MLV 2 + 26.3 km to MLV 3	Bayhurst	5.2	20.0	5.2	20.0	5.2
MLV 3 to MLV 3 + 4.9 km	Liebenthal	4.9	20.0	4.9	20.0	4.9
MLV 7 to MLV 8	Pennant	19.7	20.0	19.7	20.0	19.7
MLV 11 to MLV 12	Chaplin	27.7	20.0	27.7	20.0	27.7
MLV 16 to MLV 17	Grand Coulee	27.0	20.0/25.0	27.0	20.0	20.5
MLV 18 + 23.1 km to MLV 19	Vibank	8.2	20.0	8.2	20.0	8.2
MLV 22 + 8.4 km to MLV 23	Grenfell	18.1	20.0	18.1	20.0	18.1
Manitoba						
5th Loop						
MLV 28 to MLV 29	Hamiota	26.4	20.0	26.4	20.0	26.4
MLV 31 to MLV 31 + 6.8 km	Neepawa	6.8	20.0	6.8	20.0	6.8
MLV 39 to MLV 41	St. Norbert	18.5	20.0	18.5	20.0	18.5
Ontario						
2nd Loop						
MLV 59 + 22.3 km to MLV 60	Martin	9.3	15.9/25.0	9.3	-	-
MLV 76 + 17.6 km to MLV 76A	Beardmore	9.0	20.0/30.0	9.0	-	-
MLV 79 + 9.8 km to MLV 80	Geraldton	14.1	-	-	10.0	7.9
MLV 104 + 14.1 km to MLV 105	Montieth	8.4	27.4	7.3	15.0	15.2
MLV 109 + 13.5 km to MLV 110	New Liskeard	8.6	5.0/27.4	6.3	10.0	0.8
MLV 111 + 24.7 km to MLV 111A	Martin River	7.1	20.0/30.0	7.1	-	-
MLV 111A to MLV 112	Martin River	11.9	30.0	11.9	15.0	0.3
MLV 114 + 16.8 km to MLV 115	North Bay	6.1	20.0	6.1	-	-
Ontario						
North Bay Shortcut						
1st Loop						
MLV 1203 + 20.4 km to MLV 1204	Mattawa	8.4	-	-	20.0	8.4
MLV 1208 to MLV 1209	Deep River	11.9	-	-	20.0	11.9
MLV 1215 + 11.2 to MLV 1216	Packenham	16.7	-	-	20.0	16.7
Ontario						
Montreal Line						
2nd Loop						
MLV 146 + 19.2 km to MLV 147	Cornwall	11.7	10.0	11.7	15.0	11.7



**1994 CONSTRUCTION**

**Ontario  
2nd Loop**

MLV 44 + 16.4 km to MLV 45	Falcon Lake	17.1	22.6/25.0	6.5	10.0	17.1
MLV 83 + 11.0 km to MLV 84	Klotz Lake	8.1	20.0	2.4	15.0	5.7
MLV 85 + 14.9 km to MLV 86	Hearst	16.4	-	-	15.0	16.4
MLV 87 + 20.7 km to MLV 88	Shekak River	9.9	-	-	15.0	9.9
MLV 91 to MLV 92	Mattice	7.8	16.8/27.4	2.8	15.0	5.5

**Ontario  
North Bay Shortcut  
1st Loop**

MLV 1204 to MLV 1205	East Mattawa	15.4	-	-	20.0	15.4
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**Ontario  
Montreal Line  
2nd Loop**

MLV 147 + 21.5 km to MLV 147 + 27.2 km	St. Polycarpe	5.7	20.0	5.7	-	-
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TOTAL		366.1		248.6		284.8
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### 5.2.4 Public Concerns

As a result of the EPN process for the 1993-94 Facilities Application, TransCanada was apprised of a number of concerns regarding the proposed application. The most significant public concerns relate to the unacceptable noise and vibration levels at Compressor Station 211 in the Town of Lincoln, Ontario. The concerns and the associated proposal to address these concerns, are reviewed in detail in Section 5.5.

By a letter dated 16 June 1992, the Federal Department of Fisheries and Oceans (“DFO”) advised the Board that it had concluded its initial assessment of TransCanada’s proposal, pursuant to section 19 of the Federal EARP Guidelines Order. DFO’s review addressed fisheries related concerns such as erosion control, hydrostatic test procedures, construction techniques, and mitigation measures. DFO proposed that several conditions be included in any certificate issued to TransCanada. Subject to the implementation of those conditions, DFO found that the potentially adverse environmental effects which may be caused by the applied-for facilities would be insignificant or mitigable with known technology.

The Saskatchewan Natural History Society expressed concerns to TransCanada regarding the preservation of areas of natural vegetation (including native pasture), choosing appropriate native seed mixes and avoiding adverse effects to active nest sites of burrowing owl (a threatened species) in the Grand Coulee and Regina region. Saskatchewan Environment and Public Safety raised concerns regarding heritage resources, water resources, drilling of wells or test holes, environmental inspection, permitting requirements and compliance with appropriate regulations.

The Manitoba Ministry of Agriculture encouraged TransCanada to minimize easement widths and adverse effects to soil and land use in agricultural areas. Manitoba Environment raised concerns with the proposed facilities regarding water quality, air quality and noise. Manitoba Natural Resources expressed concerns addressing protection of fisheries resources and rare and endangered species, minimizing disturbance to waterfowl and maximizing utilization of forest products.

The member ministries of the Ontario Pipeline Coordination Committee (“OPCC”) provided a detailed review of TransCanada’s proposed facilities to be constructed in Ontario. Consultation with the member agencies of the OPCC resulted in a number of undertakings to address the concerns raised. The OPCC undertakings detail the appropriate requirements for applications and the authorizations required within Ontario. Acceptable procedures for notifying regulatory officials of important activities are outlined. Requirements for watercourse crossings, hydrostatic testing, well monitoring and hazardous materials management are also detailed.

The Canadian Wildlife Service of Environment Canada, Ontario Region, provided TransCanada with a detailed listing of wildlife and fisheries related concerns for the proposed Ontario facilities. For those wildlife and fisheries issues identified which remain unresolved, TransCanada continues to consult with the Ontario Ministry of Natural Resources (“OMNR”), DFO and the Canadian Wildlife Service (“CWS”) to determine the appropriate mitigative or avoidance measures.

TransCanada has also addressed specific concerns raised by other municipal, provincial and federal government agencies. TransCanada has undertaken to provide updated information to the Board on the results of discussions with special interest groups and regulatory agencies as the project planning progresses. The specific concerns of DFO and the provincial departments responsible for resource management in Saskatchewan, Manitoba, and Ontario and all other interested parties to the GH-4-92 proceeding, were considered in this document.

## **Views of the Board**

The Board is satisfied that TransCanada is continuing to address public concerns in an effective manner, and will review the progress on outstanding issues as information is provided to the Board.

## **5.3 Environmental Matters**

In its application, TransCanada identified a number of environmental issues which could result from the pipeline construction. Those effects, and mitigative measures proposed by TransCanada, were presented in the assessments. Additional information was also requested and obtained by the Board regarding certain site-specific environmental effects and the mitigative measures proposed.

### **Vegetation**

The construction of the proposed looping could lead to the loss of significant vegetation such as native prairie and/or rare or unique vascular plants.

For certain sites supporting rare or unique species, detailed site-specific studies had not been concluded as of the close of the GH-4-92 proceedings. TransCanada undertook to carry out field surveys prior to construction where appropriate, to determine whether any rare or unique vascular plants are located within the right-of-way or adjacent temporary work space. At locations where rare or unique vascular plants are discovered, the site will be evaluated and where warranted, appropriate mitigative measures to minimize the risk of disturbance during construction will be implemented. TransCanada has undertaken to file those reports with the Board.

For Saskatchewan and Manitoba facilities, TransCanada's proposed seed-mixes for the native pasture, wetland and riparian areas, are made up of native species which are known to occur in the general area. TransCanada will minimize the width of topsoil stripping and undertake measures to minimize damage to the sod layer in areas of native pasture. TransCanada has also undertaken to monitor the effectiveness of their reclamation program in areas they have identified as native pasture and where warranted, to make recommendations for future reclamation programs.

Facilities proposed in eastern Manitoba and Ontario traverse areas where stands of merchantable timber occur. TransCanada indicates that timber cleared for the construction will be used as corduroy, decked for later removal by the licensee, burned as waste wood or re-spread on steep slopes as deemed appropriate by TransCanada's environmental inspector. To maximize conservation of merchantable timber, TransCanada will give first preference to the use of non-merchantable timber for corduroy and for re-spreading on slopes for erosion control purposes. TransCanada also agreed to a number of specific measures to prevent damage to merchantable wood from skidding in wet and muddy conditions. To prevent residual fires, TransCanada would take measures to locate burn piles away from organic soils. TransCanada will also provide post construction estimates of timber utilization.

One vegetation community which was identified as an environmentally sensitive area, the Pakenham (or Panmure) Alvar<sup>(1)</sup> Area of Natural Scientific Interest (“ANSI”), is crossed by the proposed Pakenham Loop. Mitigation measures for traversing the Pakenham Alvar will be developed by TransCanada following discussions with the OMNR. TransCanada will provide this information to the Board.

### **Soil & Agriculture**

The proposed facilities cross agricultural lands in a number of areas throughout Saskatchewan, Manitoba and Ontario.

The primary concerns for pipeline construction through agricultural lands include possible conflicts with land use practices and loss of soil capability from soil mixing, soil loss through erosion, or loss of soil structure through compaction or pulverization. In Saskatchewan and Manitoba, disturbance to native pasture is also an agricultural concern. In addition, saline subsoils found along portions of certain loops in Saskatchewan and Manitoba, increase the concern regarding mixing of subsoil with topsoil.

TransCanada’s standard practices as set out in its Pipeline Construction Specifications (1990) and Environmental Protection Practices Handbook (1991) are designed to minimize conflicts with farming operations and to ensure soil conservation under normal pipeline construction. As noted above, TransCanada has also proposed specific mitigative procedures to minimize disturbance in areas of native pasture. TransCanada has proposed mitigation for prevention of soil mixing in salt-affected soils and has reviewed the issue of salt-affected soils thoroughly in support of the mitigation proposed. TransCanada also undertook to provide the Board with additional information from monitoring, to determine the success of specific aspects of the proposed soil conservation and reclamation procedures.

### **Wildlife**

TransCanada’s construction schedules for the applied-for facilities will avoid highly sensitive periods for wildlife use. TransCanada also proposes a number of measures to avoid or restore significant habitat areas.

A number of the proposed facilities traverse lands supporting habitat for waterfowl. The Hamiota and Neepawa Loops were identified by Ducks Unlimited as traversing portions of the North American Waterfowl Management Plan Area. Ducks Unlimited urged TransCanada to consider potential impacts on wetlands and associated wildlife, especially for those areas where waterfowl breeding populations are significant. TransCanada has undertaken to investigate the possibility of working with the North American Waterfowl Management Organization and Manitoba Natural Resources to address any adverse effects to waterfowl as a result of potential conflicts with the proposed construction schedule. Mitigative measures would include removing any nests that would be affected and having them managed by the North American Plan administration. The Board will be advised of the resolution of this issue.

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<sup>1</sup> An “Alvar” is an area of scant vegetation community associated with thin soil and essentially flat limestone rock.

For Northern Ontario facilities, construction through moose habitat is scheduled to avoid both diurnal and seasonal periods of greatest use by moose. The proposed Mattawa Loop along the North Bay Shortcut is located approximately 600 m north of a heronry, in an area 1 km northwest of Morel Station on the Canadian Pacific rail line. TransCanada will monitor the heronry prior to construction and avoid any disturbance of nesting activities. Scheduling of construction activities at this location will be done in consultation with the OMNR.

The proposed facilities for Saskatchewan and Manitoba cross a number of areas which could support wildlife species with special conservation status (vulnerable, threatened and endangered species). TransCanada has committed to providing the Board with surveys for endangered wildlife species for all of the Saskatchewan and Manitoba facilities, with the exception of the Bayhurst and Grand Coulee Loops which are primarily under cultivation. The Board requested specialist advice from CWS regarding the need for rare and endangered species surveys on the Bayhurst and Grand Coulee Loops. CWS's review of the proposed facilities did not indicate the need for work in addition to what is contained in TransCanada's application.

No wildlife species with special conservation status are known to occur in proximity to the proposed facilities in Ontario, although the Pakenham Alvar ANSI is noted as having the potential to provide breeding habitat for the Loggerhead Shrike (endangered status) and the Eastern Bluebird (vulnerable status). TransCanada has undertaken to ensure that significant habitat, such as nest-sites, for rare and endangered species, is either avoided or restored.

TransCanada has also agreed to contact Saskatchewan Parks and Renewable Resources if new ferruginous hawk, prairie falcon or golden eagle nests are encountered within 500 m of the pipeline route during construction within Saskatchewan.

### **Watercourse Crossings and Fisheries**

The proposed pipeline looping projects cross a number of watercourses which could be adversely affected by construction-related activities. Those activities include clearing and grading, trenching, installation of flow diversions, back-filling, hydrostatic testing and related activities such as equipment maintenance and waste disposal. The most serious adverse effects could result from increased concentrations of sedimentation downstream of the crossing. With respect to fisheries, pipeline construction could result in the disturbance and loss of existing and potential fish habitat at the stream crossing points, as well as downstream. Streambank erosion, sedimentation, and toxic spills could decrease water quality and further reduce fish populations.

TransCanada outlined a number of standard mitigative measures to be followed for all watercourse crossings in an effort to limit potential environmental impacts associated with those crossings. Where no information was currently available for certain stream crossings, TransCanada has conducted and filed with the Board field surveys detailing watercourse sensitivity. TransCanada indicated that DFO and the provincial departments responsible for fisheries management were involved in an ongoing process of consultation and negotiation with TransCanada so as to identify and resolve various environmental issues. As discussed previously, after completing an environmental screening of the proposed facilities impact on fish and fish habitat, DFO proposed several conditions to be included in any certificate issued to TransCanada. Those conditions included commitments relating to construction technique, erosion control, hydrostatic testing, handling of fuel, lubricants and other hazardous products and notification of provincial authorities. Subject to the implementation of those conditions, DFO found that the potentially adverse environmental effects which may be caused by the applied-for facilities would be insignificant or mitigable with known technology. TransCanada agreed to all of DFO's recommendations with

the exception of the request that TransCanada apply the “Recommended Fish Protection Procedures for Stream Crossings in Manitoba”. TransCanada is currently reviewing this document and will advise the Board of any concerns in complying with this request.

The field surveys conducted by TransCanada confirm the presence of a number of streams with warm water and cold water fisheries in Northern Ontario. The sensitive timing period identified by OMNR for the fisheries resources of these streams, conflicts with the proposed construction schedule for some loops. For watercourse crossings requiring site-specific resolution with the OMNR, TransCanada will advise the Board of the schedule and make site specific information regarding the crossing techniques available to the Board in the construction offices. TransCanada’s undertakings to the OPCC include obtaining appropriate authorization from DFO where required; actions such as wet crossings during the critical fish spawning/incubation times as determined by the OMNR, would require such authorization.

DFO and Manitoba Natural Resources have identified mussel beds at the crossing location of the Red River as a potential concern. Mussels have been identified as a potentially important resource in the Red River and Assiniboine River. TransCanada has accepted an undertaking from DFO to sample at the Red River crossing location and to advise Manitoba Fisheries Branch of the results in a timely fashion so that site-specific mitigative measures may be initiated if required. TransCanada will advise the Board of the results of this undertaking.

### **Archaeological and Heritage Resources**

TransCanada has identified the need for heritage resources surveys and/or heritage resource impact assessments for a number of loops in Saskatchewan (Bayhurst, Liebenthal, Pennant, Chaplin, Grand Coulee, and Grenfell Loops), Manitoba (Hamiota, Neepawa, and Falcon Lake Loops), and Ontario (all Loops). TransCanada has indicated that the field reconnaissance will be carried out during July and August, 1992. TransCanada will provide copies of the reports summarizing the results of the heritage resource surveys, including proposed mitigative measures, when they are finalized in late fall, 1992. As outlined in TransCanada’s Environmental Protection Practices Handbook, where possible, known sites are avoided, and where sites cannot be avoided, they will be excavated and evaluated prior to construction. Where monitoring during construction is required, TransCanada has confirmed that lowering in of the pipe and backfilling of the trench would not be allowed to proceed until monitoring had been addressed.

### **Views of the Board**

The Board is satisfied with the environmental information provided by TransCanada with regard to the potential adverse effects which may result from the construction and operation of the proposed facilities and is satisfied with TransCanada’s proposed monitoring and mitigation measures. The Board will also require TransCanada to provide confirmation of acceptance or rejection of the proposed mitigative measures from the appropriate provincial agencies, in the event that those agencies do comment. The Board is of the view that if TransCanada’s proposed environmental protection measures, as well as those agreed to by TransCanada, with all other regulatory agencies, are implemented, the project would create only minimal adverse environmental effects of a local and temporary nature. Should TransCanada’s application be approved, the Board would condition the certificate so as to ensure adherence to those measures and undertakings and to ensure that unresolved issues are adequately addressed prior to construction.

## **5.4 Socio-Economic Matters**

TransCanada examined the socio-economic impacts of recent pipeline construction activities on affected communities which included an assessment of the pros and cons of local procurement practices and the impact of its project workforce on local services. This approach provided background for identifying and avoiding potential problems and served as a basis for planning the proposed expansion in a manner that would avoid potential problems. One significant socio-economic issue arising from the Application was the noise and vibrations emanating from Compressor Station 211, in the Town of Lincoln, Ontario which is discussed in detail under Section 5.5.

Issues such as the timing of heritage resource assessments and impact on tourism have been resolved either through TransCanada clarifying the issue, or TransCanada's commitment to avoid or remedy a potential problem. A request by the city of Regina for a risk assessment to justify the pipeline route through Regina resulted in a study being prepared.

### **Views of the Board**

The Board notes the efforts of TransCanada to measure socio-economic effects, and to use this information as a basis for forward planning. The Board also notes the request of the City of Regina for a risk assessment of the interplay of growth patterns and public safety on the routing of facilities, which TransCanada is undertaking.

With the exclusion of the issues surrounding Compressor Station 211 which are the object of Section 5.5, the Board is of the view that TransCanada has provided satisfactory socio-economic information and analyses on the potential effects from constructing and operating the proposed facilities. The Board expects that TransCanada will monitor the socio-economic effects of these activities in association with the post-construction monitoring and provide reports once the project is completed.

## **5.5 Compressor Station 211**

### **5.5.1 Background to Public Concerns and TransCanada's Proposal**

Station 211 was built in 1984 as a temporary facility. Residents have complained that since that time, noise and vibrations from Station 211 have diminished the enjoyment of their property and undermined their well-being. These complaints increased after 1987 when one of the original two compressors was replaced by a portable Orenda compressor unit and Station 211 became a permanent facility.

Shortly after the Orenda was installed in 1987, TransCanada performed a noise survey. The survey suggested that no complaints should result from operation of the Orenda unit because noise levels measured at the nearest residence were 39 decibels ("dBA") from the GT-22 unit and 41 dBA from the Orenda unit. It was calculated that with the two units running together, the noise level should be in the range of 43 dBA. Approximately one year after the installation of the

Orenda unit, TransCanada indicated that it became evident that noise levels were higher than anticipated and that further modifications to reduce noise were required at the station.

Since 1987, TransCanada has made several modifications to the compressor units at Station 211 in an effort to deal with the local concerns. TransCanada indicated that the primary purpose of these modifications was to reduce the noise emission levels. However, these measures had limited results, especially on the Orenda unit which generates low noise frequencies from its exhaust system, which are difficult to silence. TransCanada also purchased additional buffer lands to the east and west of Cosby Road, which is located immediately to the west of the station.

TransCanada indicated that prior to its early public notification process for the applied-for facilities, complaints were received from residents in the area of Station 211. Some of these complaints led to the involvement of the Ontario Ministry of the Environment. TransCanada has subsequently applied to replace the 5.7 MW portable Orenda compressor with a 10.0 MW turbo compressor unit. TransCanada maintains that this should rectify the vibration problem and result in generally acceptable noise emission levels.

TransCanada indicated that the cause of vibrations from Station 211 is attributed to the low frequency noise that is present in some types of turbo compressors (centrifugal compressors powered by a gas turbine or unit) and not from the transmission of mechanical vibration forces along the ground. TransCanada supported this argument by pointing out that turbo compressors do not lend themselves to creating mechanical vibrations, as they must operate within low vibration limits and would automatically shut down if undue vibrations on the unit were to occur.

### **5.5.2 Proposed Compressor Unit Replacement**

Station 211 currently has two compressors: a portable 5.7 MW Orenda and a 3.2 MW GT-22. TransCanada has proposed replacing its 5.7 MW portable Orenda compressor with a 10.0 MW compressor unit that will be equipped with the latest in noise suppression technology. TransCanada proposed that the GT-22 remain in place and be employed as a back-up unit on the system, to be used an estimated 5 to 10 percent of the time. The reasons stated for the replacement and upgrade include both operational considerations and as an effort to reduce noise and vibrations.

With respect to noise and vibrations, TransCanada has undertaken to design the replacement compressor unit to achieve a 45 dBA level at the Station 211 property (fence) line. According to TransCanada, this represents a 75 percent reduction below the current noise level. The projected noise level at the nearest residence is estimated to be 30 dBA, which approximates the normal background noise in the area. TransCanada indicated that the design of the proposed 10 MW compressor unit is expected to virtually eliminate current vibration problems arising from the low frequencies of the Orenda exhaust system.

When both units are operating, the noise level would rise to an estimated 43 to 45 dBA at the nearest residence. However, TransCanada does not expect this to be a problem since the level is still significantly less than at present. Nonetheless, should further concerns arise, TransCanada has indicated that to reduce the noise levels on the existing GT-22 compressor unit, some or all of the existing silencing equipment on this unit may have to be replaced. TransCanada is conducting a study to consider the various options of sound suppression equipment for the GT-22 unit that would be required to reach several different levels in noise reduction. Once this study



has been completed, TransCanada will review these options along with other alternatives, such as acquiring additional land (noise buffer zone) should any further action be necessary.

With respect to concerns expressed over vibrations, TransCanada indicated that consideration will be given to low frequency noise in the design of the proposed facility. TransCanada's design criteria will set limits for low frequency noise at levels which TransCanada expects will avoid landowner complaints.

It should be noted that TransCanada ruled out other options for resolving the noise and associated vibration problems. The refit of the Orenda compressor and the installation of additional sound suppression equipment was viewed as unlikely to result in an acceptable level of noise or vibration reduction. The options of adding more pipeline to carry additional gas or of relocating Station 211 were not deemed cost effective by TransCanada.

### **5.5.3 Views of Interested Parties**

#### **Evidence from GH-4-92 Hearing**

On 16 July 1992, the Town of Lincoln requested intervenor status for the GH-4-92 hearing, which was subsequently granted. Mayor Ray Konkle of Lincoln indicated that the town wished to be recognized as an intervenor in order that concerns could be expressed on behalf of the taxpayers of the Town of Lincoln, particularly the neighbours of Station 211. Evidence filed by Mayor Konkle included the minutes of the 6 July 1992 Lincoln Town Council meeting and past correspondence between the Town of Lincoln and TransCanada.

The minutes of the 6 July 1992 town council meeting indicate that several affected landowners expressed concerns and raised questions over the station, primarily with respect to noise and vibrations. It was noted by one landowner that the station had originally been constructed as a temporary facility, but was now permanent and increasing in size. Some affected residents expressed concern with TransCanada's inability to solve the problems, as they indicated they had been complaining for some time without any resolution. Concerns were also expressed over the smell and the appearance of the site. The question of safety was directed to TransCanada, given the age of the pipeline and proposed increase in pressure. In response to a query, there was also discussion of the possibility of compensation to local property owners for a loss of property values due to the location of the site.

In his brief, which he presented to the Board during the hearing, Mayor Konkle asked that the Board set strict, mandatory conditions to reduce or eliminate the impact of noise on the nearby residents. He requested that in addition to the measures being considered by TransCanada, the Board require landscaping, berms, noise retarding fencing or similar sound reduction structures, and permanent sound-recording devices.

Mayor Konkle also asked for provisions in the Board's decision that would provide residents with a means of recourse should the problems continue. He suggested that the Ontario Ministry of the Environment be designated as the agency with the authority to determine whether all necessary noise and vibration measures had been taken to protect residents.

Mayor Konkle presented evidence illustrating that the compressor station had originally been approved as a temporary site in 1984 and was made permanent in 1986. The substance of his

argument was that the town council and residents were unaware of the proposed change in status because of an inadequate public notification process at that time. Mayor Konkle pointed out that in correspondence, the use of words specific to the pipeline industry can be confusing and misleading to small municipalities, making it difficult for them to respond in an appropriate and timely fashion.

Mayor Konkle also questioned the effectiveness of the early public notification on this current application. His concern was that the current method of informing those potentially affected through media advertisements and letters to local governments is lacking in quality and quantity of information. The notices are often missed and the letters to local governments may not reach the proper officials. As a result, the exact nature of proposed changes and their implications are not known, and it is difficult for residents to intervene. Mayor Konkle specifically asked the Board to pursue the upgrading and clarification of the public notification process, and to ensure it was unambiguous. Mayor Konkle indicated that in the current process, advertising in all local newspapers and serving the information packages directly on the affected municipalities rather than the regional municipality would have perhaps been more effective.

### **Letters of Comment**

Subsequent to the publishing of the Notice of Public Hearing, the Board received ten letters of comment, emphasizing the local concern over Compressor Station 211, primarily due to the existing noise and vibration levels. Those letters reiterated the concerns raised at the 6 July 1992 Lincoln Town Council meeting.

Residents registered their concern with the past inability of TransCanada to resolve the problems despite repeated complaints. The majority of affected residents stressed the fact that the noise was continuous and made sleeping at night difficult. Some residents expressed their opposition to the station, including a request that it be moved to a more suitable location. Letters of comment also indicated concern for local property values as well as a safety concern from the increased pressure in the pipeline.

One family expressed support for the upgrade of the facility to reduce noise levels, and requested that the Board ensure that an avenue be left open that would allow TransCanada to take whatever further action is necessary to completely solve the problems to the satisfaction of the affected parties without the necessity of further applications or hearings with the National Energy Board.

It was noted in one letter that the station is built on a rock substrate and that TransCanada's engineering representative had confirmed that the station is set on piles driven 40 feet into the rock, which the letter suggested was the cause of the vibrations.

### **Views of the Board**

Mayor Konkle of the Town of Lincoln testified and was cross-examined on the concerns of those town residents who reside in close proximity to Station 211. TransCanada's inability to correct the problems of noise and vibration has resulted in public apprehension regarding the current proposal. The letters of comment from interested residents further illustrated the long-standing problem that has resulted from the unplanned evolution of Station 211.

The Board views the proposed upgrade of the facility as an opportunity to rectify the current situation. It notes that TransCanada admits this is a concern and is proposing to install a state-of-

the-art compressor unit which TransCanada testified will greatly reduce the noise generated by the station. Moreover TransCanada would, if necessary, retrofit the remaining GT-22 compressor with noise suppression features to ensure acceptable noise levels when it is operating together with the proposed 10 MV compressor unit.

TransCanada has undertaken to the Board to monitor noise and vibration levels when the new compressor and the existing GT-22 compressor are both operating. As well, it will provide a summary of discussions with affected landowners detailing any new concerns and indicating if landowners feel that their problems have been resolved. Further, should any noise and vibration issues persist, TransCanada would provide the Board with appropriate mitigative measures. Should the replacement compressor unit be approved, the Board would condition the certificate to ensure compliance with those measures.

The matter of the adequacy of public consultation was raised by Mayor Konkle, with respect to both TransCanada's current and past applications. The Board has had in place a requirement for early public notification, since 1990. Mayor Konkle pointed out that correspondence using pipeline industry terminology can be misunderstood by those unfamiliar with the pipeline business. This can hamper appropriate and timely responses. The Board does recognize Mayor Konkle's concern with the clarity of TransCanada's past correspondence regarding the change from temporary to permanent status of Station 211. However, this occurred prior to the Board having requirements for Early Public Notification. The Board is satisfied that TransCanada has properly applied the Early Public Notification Process for this application, and continues to improve on it, based on experience gained. It should be noted that TransCanada stated that it is continually seeking ways of improving its public awareness process and would be mindful of the comments of Mayor Konkle when embarking on the process again. The fact that the noise and vibration issues were raised and pursued, indicates that the current early public notification system is effective. With reference to submissions in 1984 and 1986, there is evidence of an inadequacy of information flow and municipal approvals being given without full consultation. In the Board's view this appears to be an internal matter with respect to municipal administration procedures.

The Board was asked by Mayor Konkle, to provide a special recourse for residents should noise and vibration problems continue, and specifically, to involve the Ontario Ministry of Environment. The responsibility for following up on obligations relating to this application rests with the Board, and therefore no special recourse is required. The Town of Lincoln and its residents are encouraged to inform the Board whenever issues arise from the operation of Station 211.

The Board can require that any inadequacies identified through the monitoring of the general operation of the station be addressed. This is set out in condition 17 of the certificate as shown in Appendix II.

**Chapter 6****Retirement of Compressors**

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In its 3 April 1992 application, TransCanada applied for an order under Part IV of the Act to treat the retirements of compressor units Number 1 at Station 17 'A' Plant and the portable unit 9001 at Station 211 as "ordinary" pursuant to subsection 40 (4) of the Gas Pipeline Uniform Accounting Regulations.

The two compressors at Station 17 'A' Plant and Station 211 are 31 and 27 years old, respectively, and they have provided an average of 112,000 hours of service since their installation in the early 1960's.

TransCanada proposed to retire the unit at Station 17 'A' because its thermal efficiency has been reduced significantly and is currently operating as a standby unit. The unit at Station 211 is being retired because it is obsolete, noisy, inefficient and produces excessive NO<sub>x</sub> emissions.

**Views of the Board**

The compressor units at Station 17 'A' Plant unit No. 1, and the portable unit 9001 are substantially depreciated and the Board is satisfied that they have provided the number of years of service that was anticipated when the depreciation rates were established. The net loss amount is immaterial.

**Decision**

The Board agrees with TransCanada's proposal to treat the retirement of the two compressor units as "ordinary retirements" pursuant to subsection 40 (4) of the Gas Pipeline Uniform Accounting Regulations.

## Chapter 7

# Economic Feasibility

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The Board examined the economic feasibility of the proposed expansion by assessing the likelihood that the facilities would be used at a reasonable level over their economic life, and by determining whether the demand charges would be paid. To assist in its examination, the Board considers several factors, and TransCanada submitted evidence addressing each of these factors.

TransCanada submitted that the Sproule report, discussed in Chapter 2, demonstrated the existence of long-term gas supply.

TransCanada submitted that there is a positive long-term outlook for gas demand in the markets to be served. In Eastern Canada this was supported by a forecast of a 2.2 percent average growth in demand from 1991 to 2010 as discussed in Chapter 2. TransCanada updated its forecasts of gas demand in the U.S. Northeast and Midwest and relied on four current demand projections. These projections, as well as evidence of additional requests for service for contract years beyond the design year, demonstrated that the applied-for capacity on TransCanada's system will be required over the long term to serve growing gas demand in its market areas.

TransCanada submitted that projected Eastern Canadian demand will not be fully met by TransCanada's contracted deliveries and that additional capacity on its system and/or U.S. gas imports will be required to meet this projected demand. TransCanada noted that its mainline system will remain utilized at a high level even with a significantly higher level of U.S. imports. TransCanada maintained that the market evidence supporting the competitiveness of its system is that natural gas buyers and sellers continue to find TransCanada competitive and are prepared to purchase long-term transportation service.

TransCanada argued that evidence on the individual new contracts which support the expansion suggests that the transportation demand charges will be paid, that there is adequate project-specific supply, that upstream and downstream transportation arrangements will exist and that all appropriate regulatory approvals will be in place.

TransCanada submitted that the risks associated with the new gas sales are minimal given the nature of the markets and TransCanada's previous experience with those markets. While TransCanada continues to monitor the developments with respect to FERC Order 636 it has concluded that it is too early to properly assess the impact this Order might have on its existing and potential shippers and hence upon its facilities.

The proposed facilities are expected to increase the cost of gas delivered to Eastern Canadian customers by less than \$0.002 per gigajoule. TransCanada submitted that this toll increase would have little or no measurable effect on its forecast of system requirements.

## **Views of the Board**

The Board is satisfied that the evidence demonstrates that the proposed expansion is economically feasible, given that there is a long-term gas supply, a long-term domestic and export market, a strong likelihood that the facilities will be used at reasonable levels over their economic life and that the demand charges will be paid. The Board is satisfied that the certificate conditions described in Chapters 3 and 4 will adequately ensure that all necessary transportation service contracts, gas supply contracts and regulatory approvals, will be in place prior to the commencement of construction of the proposed facilities. In addition to the evidence on the new transportation services supporting the expansion, the Board notes the evidence of a significant level of uncontracted-for demand and an active market for assignment of firm service, the existence of a queue of service requests for the 1994-95 contract year, and believes that these factors indicate that the TransCanada system, including the proposed facilities, will be used at a high level. The Board also believes that the demand for natural gas will continue to grow in the market areas served by TransCanada and that TransCanada will continue to be a competitive supplier of transportation services to those markets.

## Chapter 8

# Disposition

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The foregoing Chapters constitute our Decisions and Reasons for Decision in respect of the application heard before the Board in the GH-4-92 proceedings. The Board has found that the proposed facilities are in the present and future public convenience and necessity. Therefore, the Board will recommend to the Governor-in-Council that a certificate be issued. The certificate will be subject to the conditions outlined in Appendix II.

Upon issuance of a certificate, the Board will exempt the facilities, pursuant to section 58 of the Act, from paragraphs 31(c) and 31(d) and section 33 of the Act subject to the exemption order condition outlined in Appendix II.

A. Côté-Verhaaf  
Presiding Member

J.-G. Fredette  
Member

R. Andrew, Q.C.  
Member

Appendix I

## List of Issues Considered in the GH-4-92 Proceedings (Excerpt from Exhibit A-1)

### Economic Feasibility

1. The likelihood of the facilities being used at a reasonable level over their economic life and a determination of the likelihood of the demand charges being paid, having regard to, *inter alia*:
  - (a) evidence that there is likely to be a sufficient long-term supply of gas to keep the pipeline fully utilized over its economic life;
  - (b) evidence on the long-term outlook for gas demand in the market region to be served;
  - (c) evidence on the potential competition to gas supplies delivered via TransCanada's system from:
    - (i) competing supplies of natural gas;
    - (ii) competing energy sources;
    - (iii) competing gas transportation systems;
  - (d) evidence on the individual gas contracts underpinning the expansion, including:
    - (i) evidence that the demand charges will be paid;
    - (ii) evidence as to the adequacy of project-specific supply for the proposed expansion;
    - (iii) evidence that adequate gas transportation arrangements exist or will exist both upstream and downstream from the TransCanada system;
    - (iv) evidence that all appropriate regulatory approvals in both Canada and the United States will be in place prior to construction of the new facilities; and
    - (v) evidence on the financial integrity of the parties to the individual gas sales contracts underpinning the facilities expansion;
  - (e) the risks associated with the new gas sales, including regulatory risks in all other jurisdictions, allowing for the nature of the market and any previous experience with the market; and



- (f) the likelihood of a toll increase caused by the expansion resulting in reduced demand for firm service on the system.

#### Technical Issues

- 2. The appropriate design of the proposed facilities and the consistency of that design with the long-term requirements.
- 3. The appropriate winter season capability factor used in TransCanada's design calculations.

#### Environmental Issues

- 4. The potential environmental effects of the proposed facilities and associated transportation services, and the social effects directly related to those environmental effects.
- 5. The appropriateness of the location of the proposed looping in light of emerging urban growth and land use patterns.

#### Terms and Conditions

- 6. The appropriate terms and conditions to be included in any certificate or order that may be issued.

## Appendix II

# Certificate Conditions

1. The pipeline facilities in respect of which this certificate is issued shall be the property of and shall be operated by TransCanada.
2.
  - (a) TransCanada shall cause the approved facilities to be designed, manufactured, located, constructed and installed in accordance with those specifications, drawings and other information or data set forth in its application, or as otherwise adduced in evidence before the Board, except as varied in accordance with subsection (b) hereof.
  - (b) TransCanada shall cause no variation to be made to the specifications, drawings or other information or data referred to in subsection (a) without the prior approval of the Board.
3. Unless the Board otherwise directs, TransCanada shall implement or cause to be implemented all of the policies, practices, recommendations and procedures for the protection of the environment included in or referred to in its application, its environmental reports filed as part of its application, its Pipeline Construction Specifications (1990), its Environmental Protection Practices Handbook (1991), its undertakings made to DFO and the OPCC, or as otherwise adduced in evidence before the Board in the GH-4-92 proceeding.

### Prior to Commencement of Construction

4. TransCanada shall, at least 10 days prior to the commencement of construction of the approved facilities, file with the Board a detailed construction schedule or schedules identifying major construction activities and shall notify the Board of any modifications to the schedule or schedules as they occur.
5. TransCanada shall file with the Board, 10 working days, excluding Saturday, Sunday and holidays, prior to the commencement of construction;
  - (a) the results of the heritage resources surveys referred to in the application, including any corresponding avoidance or mitigative measures;
  - (b) the results of the rare and unique vascular plants surveys referred to in the application and in the GH-4-92 proceeding, including any corresponding avoidance or mitigative measures; and
  - (c) the results of the rare and endangered wildlife species surveys referred to in the GH-4-92 proceeding, including any corresponding avoidance or mitigative measures.

6. TransCanada shall, prior to the commencement of construction file with the Board copies of any provincial permits or authorization which contain environmental conditions for the applied-for facilities as well as maintaining an information file(s) in the constructions office(s) which would include any changes made in the field, or permits obtained following the commencement of construction.
7. TransCanada shall, prior to the commencement of construction, file with the Board, an update of the summary detailing the results of discussions with all appropriate special interest groups and regulatory agencies; and maintain an information file(s) in the construction office(s) which includes:
  - (a) a detailed listing of all site-specific mitigative measures to be employed as a result of undertakings to special interest groups or regulatory agencies; and
  - (b) an explanation of any constraints identified that may affect the construction program.
8. TransCanada shall, prior to the commencement of construction:
  - (a) serve the Heritage Resource Surveys on the Governments of Manitoba, Saskatchewan and Ontario;
  - (b) seek the opinion of each provincial government described in sub-clause (a) above concerning the acceptability or non-acceptability of the Heritage Resource Surveys; and
  - (c) advise the Board of the respective opinions of each provincial government described in sub-clause (a) above, or of the Applicant's inability to obtain an oral or written opinion from one or more of the provincial governments described in sub-clause (a) above.
9. Unless the Board otherwise directs, TransCanada shall, prior to the commencement of construction of the approved facilities, demonstrate to the Board's satisfaction that:
  - (a) in respect of new firm export volumes, all necessary United States and Canadian federal regulatory approvals, including applicable long-term Canadian export authorizations, have been granted; and
  - (b) with respect to the transportation services of new firm volumes on the TransCanada system:
    - (i) transportation contracts have been executed;
    - (ii) all necessary United States and Canadian regulatory approvals have been granted in respect of any necessary downstream facilities or transportation services; and

- (iii) gas supply contracts have been executed.
10. Unless the Board otherwise directs, TransCanada shall, prior to the commencement of construction of any of the approved facilities, submit for Board approval:
- (a) requirements tables in the same format as Tables 2, 3 and 5 of Subtab I under the Tab “Requirements” of Exhibit B-1 from the GH-4-92 proceeding, showing the base case requirements and those requirements for which Condition 9 has been satisfied;
  - (b) flow schematics of the TransCanada system demonstrating that those approved facilities which are to be released for construction are necessary to transport the requirements referred to in subsection (a); and
  - (c) a comprehensive assessment, prepared in consultation with TransCanada’s shippers, of the impact of Federal Energy Regulatory Commission Order No. 636 upon TransCanada’s base case requirements and upon those requirements for which Condition 9 has been satisfied.

#### During Construction

- 11. TransCanada shall, during construction, ensure that specialized habitat, such as nest sites, for any special status species encountered, will be avoided, relocated or restored in consultation with appropriate regulatory agencies.
- 12. TransCanada shall, during construction, file with the Board monthly construction progress and cost reports, in a format to be determined through consultation with Board staff, providing a breakdown, by location and facility, of costs incurred during that month, the percentage of each activity which has been completed and an update of costs to complete the project.
- 13. TransCanada shall, during construction, maintain for audit purposes at each construction site, a copy of the welding procedures and non-destructive testing procedures used on the project together with all supporting documentation.

#### Post Construction

- 14. TransCanada shall, following construction, provide the Board with an estimate indicating how much merchantable versus non-merchantable timber was used for corduroy or erosion control purposes.
- 15. TransCanada shall, within six months of putting the additional facilities into service, file with the Board a report providing a breakdown of the costs incurred in the construction of the additional facilities, in the format used in Schedules 3 through 16 of subtab 10 under Tab “Facilities” of Exhibit B-1 to the GH-4-92 proceeding, setting forth actual-versus estimated costs, including reasons for significant differences from estimates.

16. (a) TransCanada shall file with the Board a post-construction environmental report within six months of the date that the last leave to open for each loop is granted for the additional facilities.
- (b) The post-construction environmental report referred to in subsection (a) shall set out the environmental issues that have arisen up to the date on which the report is filed and shall:
  - (i) indicate the issues resolved and those unresolved;
  - (ii) describe the measures TransCanada proposes to take in respect of the unresolved issues; and
  - (iii) provide detailed monitoring of the following items:
    - monitoring of the success (percentage cover) of crested wheat grass relative to other intended species in areas where crested was used in the seed mix (Saskatchewan and Manitoba facilities) and a discussion of how this compares to adjacent improved pasture areas;
    - monitoring of the effectiveness of the reclamation program in areas of native pasture, including any recommendations for future reclamation programs;
    - monitoring, and summary of the locations of and reasons for, any topsoil overstripping and a discussion of the positive or negative effects of this activity;
    - testing of topsoil and subsoil for changes in salinity and sodicity in areas that are suspected as having vegetation affected by saline soils; and
    - a summary of the extent to which seeding with cover crops including rhizomatous grasses was undertaken, and an indication of whether any of the species have persisted beyond the intended period of establishment.
- (c) TransCanada shall file with the Board, on or before the 31 December that follows each of the first two complete growing seasons after the post-construction environmental report referred to in subsection (b) is filed:
  - (i) a list of the environmental issues indicated as unresolved in the report and any that have arisen since the report was filed; and
  - (ii) a description of the measures TransCanada proposes to take in respect of any unresolved environmental issue.

17. TransCanada shall file with the Board within three months of the in-service date of the compressor unit replacement at Compressor Station 211, a report which details:
  - (i) the noise and vibration levels at all of the affected residences monitored over an appropriate period and at a time when both compressor units are in operation;
  - (ii) a summary of discussions with affected landowners detailing any additional concerns that have been raised and indicating if landowners feel the problem has been solved; and
  - (iii) mitigative measures TransCanada intends to employ to further resolve any concerns that continue with the station.

#### Expiration of Certificate

18. Unless the Board otherwise directs prior to 31 December 1994, this certificate shall expire on 31 December 1994 unless the construction and installation with respect to each of the additional facilities has commenced by that date.

### **EXEMPTION ORDER CONDITION**

1. TransCanada, prior to the commencement of construction of any specific loop section referred to in this Order, except as provided in subsection (b), shall:
  - (a) demonstrate to the satisfaction of the Board that all required land rights have been obtained along the entire loop section; and
  - (b) in the event that all required land rights have not been acquired within a specific loop section referred to in this Order, any portion or portions thereof may be constructed provided that, prior to commencing construction on any portion or portions of the loop section, TransCanada shall demonstrate to the satisfaction of the Board, that the rights, as prescribed in the Act, of the landowners, along the portion or portions of the loop section for which TransCanada has not yet obtained the required land rights, will not be prejudiced by the construction of the portion or portions of the loop section.