

National Energy Board

Reasons for Decision

TransCanada PipeLines Limited

Application Dated 2 July 1991 for 1992-93 Facilities

GH-4-91

April 1992

Minister of Supply and Services Canada 1992

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Recital and Appearances

IN THE MATTER OF the *National Energy Board Act* ("the 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, to expand its pipeline system;

AND IN THE MATTER OF an application by Northland Power for an order pursuant to section 71 of the Act;

AND IN THE MATTER OF Hearing Order GH-4-91.

HEARD at Calgary, Alberta on 18, 19, 20, 21, 22, 26 and 27 November 1991.

BEFORE:

R. Priddle	Presiding Member
J.-G. Fredette	Member
C. Belanger	Member

APPEARANCES:

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K.F. Miller	Indeck Gas Supply Corporation
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J.H. Farrell H.T. Soudek	Niagara Gas Transmission Limited
J.H. Smellie	Northern States Power Company (Wisconsin)
C.C. Havers	NOVA Corporation of Alberta
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M.D. Grant J. Kowch	ProGas Limited
S.W. Widger, Jr.	Rochester Gas and Electric Corporation
D.G. Hart, Q.C.	St. Clair Pipeline Limited
N.J. Schultz W.D. Rapp L.L. Manning	Tennessee Gas Pipeline Company
D.G. Davies	Unigas Corporation
G.A. Cameron	Union Gas Limited
M.J. Samuel	Westem Gas Marketing Limited
W.M. Moreland	Alberta Petroleum Marketing Commission
J. Robitaille	Procureur general du Quebec
J. Syme	National Energy Board

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Abbreviations

1991 Supply and Demand Report	"Canadian Energy Supply and Demand - 1990-2010", NEB, June 1991
Act	<i>National Energy Board Act</i>
Algonquin	Algonquin Gas Transmission Company
ANR	ANR Pipeline Company
APMC	Alberta Petroleum Marketing Commission
Bcf	Billion cubic feet
Board, NEB	National Energy Board
CanadianOxy	Canadian Occidental Petroleum Ltd.
Centra Ontario	entra Gas Ontario Inc.
CIBC	Canadian Imperial Bank of Commerce
CNG	CNG Transmission Corporation
Consumers' Gas	Consumers' Gas Company Ltd., The
CPA	Canadian Petroleum Association
CSA Z184	Canadian Standards Association - Standard Z184-M92 Gas Pipeline Systems
Dartmouth Power	Dartmouth Power Associates Limited Partnership
DFO	Department of Fisheries and Oceans
DOE/FE	(U.S.) Department of Energy/Office of Fossil Energy
EARP	Guidelines Order Environmental Assessment and Review Process Guidelines Order
EIL	Environmental Issues List

EJ	Exajoule
Empire	Empire State Pipeline
Encogen	Encogen Four Partners, L.P.
FAQ	Facilities Application Queue
FERC	(U.S.) Federal Energy Regulatory Commission
FS	Firm Service
FSC	FSC Resources Limited
Fulton	Fulton Cogeneration Associates
GH-2-87	Hearing Order GH-2-87 in respect of TransCanada's application for 1988 and 1989 facilities and approval of its toll methodology and related tariff matters
GH-4-88	Hearing Order GH-4-88 in respect of TransCanada's application for 1989 and 1990 facilities
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-3-90	Hearing Order GH-3-90 in respect of each of Husky, Mobil and L & J application for a change, alteration or variation of natural gas export licence GL-81 and Western Gas Marketing Limited application for a change, alteration or variation of natural gas export Licence GL-90
GH-9-90	Hearing Order GH-9-90 in respect of Dartmouth Power Associates Limited Partnership gas export licence
GH-3-91	Hearing Order GH-3-91 in respect of various gas export licence applications
GH-2-91	Hearing Order GH-2-91 in respect of various applications

	by L & J Energy Systems, Inc. for a review of gas export Licence GL-148
GH-4-91	Hearing Order GH-4-91 in respect of TransCanada's application for 1992 facilities
GJ	gigajoule(s)
GLGT	Great Lakes Gas Transmission Company
IGTS	Iroquois Gas Transmission System
Indeck-Corinth	Indeck Gas Supply Corporation - Indeck Corinth
Indeck-Services-Ilion	Indeck Energy Services of Ilion, Inc.
Indeck-Ilion	Indeck Gas Supply Corporation - Indeck Ilion
IPAC	Independent Petroleum Association of Canada, The
IPP	independent power producers
IR	Information Request
Iroquois Falls Project	Northland Power's proposed 350 MW power project at Iroquois Falls, Ontario
Kamine Carthage	Kamine Carthage Cogen Co., Inc. and Beta Carthage Inc.
km	kilometre(s)
kPa	kilopascals
L&J	L & J Energy Systems, Inc.
LDC(s)	local distribution company(ies)
m ³ /d	cubic metres per day
MAOP	maximum allowable operating pressure
idwestern	Midwestern Gas Transmission Company
MMcfd	million cubic feet per day

MNR, OMNR	Ministry of Natural Resources (Ontario)
MW	megawatts
NEB, Board	National Energy Board
NFG	National Fuel Gas Supply Corporation
Niagara Mohawk	Niagara Mohawk Power Corporation
Northern Natural	Northern Natural Gas Company
Northland	Northland Power
NOVA	NOVA Corporation of Alberta
NSPW	Northern States Power, Wisconsin
NYPSC	New York State Public Service Commission
OPCC	Ontario Pipeline Coordination Committee
PJ	petajoule(s)
PPBR	Plans, Profiles and Books of Reference
ProGas	ProGas Limited
PS/ES Documents	Project Status/Evidentiary Support Documentation
RG&E	Rochester Gas and Electric Corporation
Sproule	Sproule Associates Limited
STS	Storage Transportation Service
Tennessee	Tennessee Gas Pipeline Company
TransCanada, TCPL	TransCanada PipeLines Limited
TransGas	TransGas Limited
U.S.	United States of America
Unigas	Unigas Corporation

Union	Union Gas Limited
Viking	Viking Gas Transmission Company
WCSB	Western Canadian Sedimentary Basin

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 11 July 1991, as amended on 25 September 1991 and 13 November 1991, TransCanada PipeLines Limited ("TransCanada") sought 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 1992. The proposed facilities consist of 278.2 kilometres of new pipeline loop across the system and the relocation of three portable compressor units to stations in the Central Section for a total capital cost of \$360.4 million. The proposed expansion would enable TransCanada to provide an additional 4 422 103 cubic metres per day (156.1 MMcfd) of new firm service capacity from Empress, provide an additional 1 062 103 cubic metres per day (37.5 MMcfd) of firm service capacity from St. Clair to Niagara Falls and restore capability lost to a downward revision of the winter season capability factor and a decrease in the power available for some compressor units.

Following the hearing, TransCanada advised the National Energy Board ("the Board") that The Consumers' Gas Company Ltd. ("Consumers' Gas"), one of the companies with a new transportation service request which underpinned the expansion, had requested a reduction in its firm service contract demand from 1 841 103 cubic metres per day (65 MMcfd) to 708 103 cubic metres per day (25 MMcfd). As well, Consumers' Gas requested an increase of 425 103 cubic metres per day (15 MMcfd) in its Storage Transportation Service effective 1 November 1992. By letter dated 18 February 1992, the Board requested comments from Interested Parties to the GH4-91 proceedings and received a number of comments. In light of the change in the Consumers' Gas request for new firm service, the Board requested TransCanada to revise, where necessary, the evidence with respect to the in-service dates of the applied-for facilities.

Section 71 Application

Northland Power ("Northland") filed an application dated 1 August 1991, pursuant to section 71 of the Act, for an order requiring TransCanada to receive, transport and deliver natural gas offered by Northland and to provide adequate and suitable facilities to do so. The natural gas would be delivered beginning on 1 November 1993 to a proposed cogeneration plant at Iroquois Falls, Ontario. This application was considered in the hearing.

Subsequent to the end of the hearing, Ontario Hydro announced on 7 February 1992 a revised

strategy with respect to the sourcing of electricity from non-utility generation. The announcement included a list of 13 power projects which would be delayed by Ontario Hydro. One of these projects was Northland's project in Iroquois Falls. By letter dated 26 February 1992, the Board requested and subsequently received Northland's views on the matter.

Highlights of the Board's Decision

The Board was satisfied that the supply arrangements of the shippers which supported their request for capacity were 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 will be used at a reasonable level over their economic life and that demand charges will be paid. The Board has concerns with respect to the changes in TransCanada's forecast requirements which occurred subsequent to the hearing and the effect that these changes may have on the need for the facilities. However the Board is of the view that appropriate certificate conditions would ensure that facilities could only be built if they were necessary to meet the aggregate firm service requirements. As a result, any certificate to be issued by the Board, in respect of the applied-for facilities, will include the aforementioned conditions.

In light of the announcement by Ontario Hydro of its decision to delay the purchase of electricity from Northland Power's Iroquois Falls project, the Board was not satisfied that Northland has demonstrated the need for the requested facilities at this time and has denied its application pursuant to section 71.

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 thereto 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 11 July 1991, as amended on 25 September 1991 and 13 November 1991, TransCanada PipeLines Limited ("TransCanada", "TCPL") sought a certificate, pursuant to Part 111 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 1992.

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) provide a total of 4 422 103 cubic metres per day ("m³/d") (156.1 million cubic feet per day ("MMcfd")) of new firm service for delivery from Empress, of which 2 162 103m³/d (76.3 MMcfd) or 49% would be for customers in Canada and the remaining 2 260 103m³/d (79.8 MMcfd) or 51% would be for customers in the United States of America ("U.S.");
- (c) provide a total of 1 062 103m³/d (37.5 MMcfd) of firm service from St. Clair to Niagara Falls, Ontario; and
- (d) restore capability lost due to a downward revision in TransCanada's winterseason capability factor and a decrease in the power available from some compressor units under conditions.

The proposed facilities consist of 278.2 kilometres ("km") of new pipeline loop across the system and the relocation of three portable compressor units to stations in the Central Section. The total cost of the proposed facilities is estimated to be \$360.4 million in 1991 dollars. TransCanada estimated that the proposed facilities would result in an increase in the cost of delivering gas to the Eastern Zone of less than \$0.01/gigajoule ("GJ") in 1994.

1.2 Section 71 Application

An application dated 1 August 1991 was filed by Northland Power ("Northland"), pursuant to section 71 of the Act, for an order requiring TransCanada to receive, transport and deliver natural gas offered by Northland and to provide adequate and suitable facilities to do so. The natural gas would be used to serve a proposed cogeneration plant at Iroquois Falls, Ontario. Deliveries were expected to commence 1 November 1993. Northland's application was considered in the hearing.

1.3 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 that 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.

1.4 Developments Following the Hearing

1.4.1 TransCanada's Requirements

By letter dated 30 January 1992, TransCanada advised the Board that The Consumers' Gas Company Ltd. ("Consumers' Gas"), one of the new transportation service requests which underpinned the facilities expansion, wanted to reduce the contract demand under its Precedent Agreement from 1 841 103m³/d (65 MMcfd) to 708 103m³/d (25 MMcfd). As well, Consumers' Gas requested an increase of 425 103m³/d (15 MMcfd) in its Storage Transportation Service ("STS") contract effective 1 November 1992. TransCanada advised that it had agreed to these requests. By letter dated 18 February 1992, the Board sought comments on this development from the Interested Parties to the GH-4-91 Proceeding. The Alberta Petroleum Marketing Commission ("APMC"), the Canadian Petroleum Association ("CPA") and the Independent Petroleum Association of Canada ("IPAC") each provided comments. TransCanada replied to these comments by letter dated 28 February 1992.

In light of the change in Consumers' Gas' request for firm transportation service, the Board requested TransCanada to revise, where necessary, the evidence provided in the GH-4-91 proceedings with respect to the forecast in-service dates of the transportation service requests and the projected in-service dates of the applied-for facilities. TransCanada responded to this information request on 19 March 1992, advising the Board that the in-service dates of several of the requirements, which had been part of the aggregate requirements at the time of the hearing, had been revised. Accordingly, TransCanada was not intending to construct the majority of the applied-for facilities until 1993. Nonetheless, TransCanada maintained that all of the applied-for facilities would be required by 1 November 1993.

1.4.2 Section 71 Application

On 7 February 1992, Ontario Hydro announced a revised strategy with respect to the sourcing of electricity from non-utility generation. The announcement also included a list of 13 power projects, including Northland's proposed power plant at Iroquois Falls, Ontario, with which Ontario Hydro would work "to delay in-service dates and to meet new guidelines of efficiency and/or the use of renewable resources". By letter dated 26 February 1992, the Board sought Northland's views on how the announcement by Ontario Hydro would affect its proposed project. Northland responded by letter dated 4 March 1992.

1.4.3 Request for Early Decision for Certain Facilities

By letter dated 24 February 1992, TransCanada requested that the Board render a Decision, with

Reasons to follow regarding certain of the applied-for facilities. In the letter, TransCanada specifically identified 28.7 km of loop and the relocation of a portable compressor unit to Station 130, as being in need of immediate approval if the proposed construction start-up dates were to be met.

The Board issued an order pursuant to section 58 order in respect of these specific facilities on 5 March 1992.

Chapter 2

Overall Gas Supply/Demand

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. The Board considers that an overall supply analysis and a long-term assessment of the market areas served provide an indication of the future utilization of existing pipeline capacity and the proposed new capacity. These are considerations in assessing the economic feasibility of a facilities expansion given that the terms of the transportation service contracts underlying the proposed expansion are often for shorter periods than the economic life of the new facilities.

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 - 1991 to 2013". This is an update of two studies prepared by Sproule for TransCanada for the GH-1-89 and GH-5-89 facilities proceedings.

Sproule based its most recent study upon the price projection used in the high resource case in the Board's "Canadian Energy Supply and Demand 1990-2010", June 1991 ("1991 Supply and Demand Report"), with modifications for the years 1991 through 2002 to reflect uncertainties about natural gas prices in the near term.

Sproule's projections of supply and demand are higher than the NEB Control Case projections in the 1991 Supply and Demand Report and show supply exceeding demand throughout the 1991 to 2013 period. These results are based upon an inferred ultimate potential of some 325 EJ compared to the NEB Control Case estimate of 250 EJ.

Views of the Board

The Sproule methodology is well known to the Board and was reviewed extensively in the GH-5-89 Reasons for Decision. The Board notes that Sproule has made some modifications to its model to resolve some of the issues raised by the NEB in that Decision. While there are differences in the methodology used by Sproule and the Board in examining overall supply and demand, the Board considers Sproule's projection of overall supply capability and requirements from the Western Canadian Sedimentary Basin ("WCSB") to be sound and consistent with its own estimate of conventional natural gas resources for the WCSB. The Board is satisfied that there will be adequate gas supply to ensure sufficient long-term utilization of the TransCanada system including the proposed facilities.

2.2 Long-Term Markets

Domestic Market

TransCanada provided an outlook for natural gas requirements for Manitoba, Ontario and Quebec that included the following:

- (a) contracted requirements showing expected annual deliveries under firm contracts for each shipper; and
- (b) projections of end-use requirements.

End-use demand is expected to exceed projected contracted requirements, thereby indicating the existence of an uncontracted Canadian market. Table 2-1 summarizes TransCanada's view of natural gas requirements in Manitoba, Ontario and Quebec for the period 1990 to 2000. Table 2-2 illustrates the projected level of uncontracted demand in Ontario and Quebec.

TransCanada's outlook is based, in part, on the following assumptions:

- (a) the West Texas Intermediate crude oil price at Cushing is expected to average \$19.29 per barrel in 1991 (in constant 1990 US dollars) and then rise by just over 2 percent per year to \$30 per barrel by 2010;
- (b) the average Alberta border price of natural gas is projected to rise by 5.5 percent per year in real terms from 1991 to 2010; and
- (c) the electric power generation market for natural gas in Ontario and Quebec is expected to rise from 8 petajoules ("PJ") in 1990 to 214 PJ by 2000.

Subsequent to the hearing, Ontario Hydro amended the forecast of its requirements for electricity to be sourced from independent power producers ("IPP"). The revisions reduced the forecast of IPP-sourced electricity over the near term but maintained the forecast level for the year 2000.

TransCanada projected that the natural gas demand for its eastern Canadian markets will rise by 530 PJ between 1990 and 2000. Natural gas prices are expected to be competitive with other fuels in the residential, commercial and industrial market sectors and, therefore, natural gas demand in these three sectors is to increase by nearly 300 PJ from 1990 to 2000. This represents about 55 percent of the total increase in natural gas requirements between 1990 and 2000. The IPP market is expected to underpin nearly 40 percent of the total increase in natural gas demand over this period. The bulk of this increase is expected to take place in Ontario.

Views of Interested Parties

Consumers' Gas argued at the time of the hearing that changes in policy by Ontario Hydro to increase its use of IPP-sourced electricity would encourage increased demand for natural gas for cogeneration and electric power generation over the next 20 years.

The APMC voiced concern that Ontario Hydro's energy plan was not firm and that an overly optimistic outlook, particularly beyond 1994, could lead to an overbuilding of the TransCanada system.

Table 2.1

**TransCanada's Estimate of Natural End-Use Demand
for Manitoba, Ontario and Quebec
(PJ)**

	1990	1995	2000
Residential	314	369	397
Commercial	227	266	289
Industrial	491	580	643
Power Generation	8	152	214
Other(1)	83	107	110
Total	1 123	1 474	1 653

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

(1) Includes non-energy use (petrochemical feedstocks), natural gas vehicles and pipeline fuel.

Table 2.2

**Reconciliation of End-Use and
Customer Forecast of Canadian Requirements for
Ontario and Quebec**

Year	(1) Total Demand (PJ)	(2) Total Demand (106m ³)	(3) Local Supply (106m ³)	(4) Contracted Requirements (106m ³)	(5) Not- Contracted Requirements (106m ³)
------	--------------------------------	--	--	---	---

1991	1 044.4	27 924	680	26 142	1 102
1995	1 324.4	35 412	680	28 068	6 664
2000	1 497.3	40 035	680	28 068	11 287

Source: Exhibit B-1, Tab "Requirements", Sub-Tab 2, Table 7.

Note: Column 5 is equal to column 2 less columns 3 and 4.

Views of the Board

The Board views the assumptions and background information that underlie TransCanada's projections of natural gas consumption for Manitoba, Ontario and Quebec to be acceptable. The Board is of the opinion that TransCanada's forecast is only one of several possible views. Another outlook, for example, is presented in the Board's 1991 Supply and Demand Report which adopted a more conservative projection for industrial gas demand (compared to TransCanada's outlook) and assumed no change in policy by Ontario Hydro with regard to non-utility electric power generation. Notwithstanding these differences, the 1991 Supply and Demand Report also showed overall growth in the Manitoba, Ontario and Quebec markets from 1989 to 2000.

Therefore, for the purpose of this application, the Board finds TransCanada's overall forecast of natural gas demand in Manitoba, Ontario and Quebec to be reasonable.

2.3 Long-Term Export Markets

With respect to the United States of America ("U.S.") Northeast market, TransCanada noted that several U.S. Northeast market forecasts have been revised upward, with most of the increase in gas demand occurring in the electric generation market sector, as additional utilities make natural gas their preferred fuel. Since the GH-5-89 proceedings, TransCanada has revised its forecast of annual deliveries to the U.S. Northeast based upon surveys and follow-up discussions with its current and prospective export shippers. TransCanada concluded that the long-term outlook for the U.S. Northeast market continues to be strong.

Views of the Board

With respect to this market, no evidence was adduced to cause the Board to depart from its GH-5-89 findings that:

- (a) there is a long-term market for gas;
- (b) there is a role for Canadian-sourced gas, at least over the periods of the contracts underpinning the GH-5-89 facilities expansion; and
- (c) Canadian-sourced gas could continue to compete for U.S. Northeast markets beyond the initial contract periods.

The Board is of the view that these findings remain applicable in respect of the proposed facilities expansion and that there continues to be a role for Canadian-sourced gas in the U.S. Northeast market, at least over the periods of the contracts underpinning the GH-4-91 facilities expansion.

Chapter 3

Specific Transportation Services

Requirements

The capacity to be provided by the facilities in TransCanada's 1992-93 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 and 1993 (Refer to Table 3-0 and Table 3-1). This forecast was provided for each firm service shipper in terms of winter maximum daily demand and estimated annual deliveries.

During the hearing, TransCanada submitted that its domestic and export market forecasts were based upon executed transportation service contracts with existing shippers, executed precedent agreements with prospective shippers, as well as upon information received from those shippers. TransCanada's export market forecast assumes that the gas export licences will be extended beyond their current expiry dates.

TransCanada argued that the flexibility provided in its firm service agreements and the provisions in its tariff for assignments, diversions and backhauls are reflected in its requirements forecast. TransCanada added that these provisions ensure better utilization of the shippers' contractual entitlements in the event their market requirements are less than their contractual obligations.

Subsequent to the hearing, TransCanada advised the Board on 19 March 1992 of changes to its forecasted contractual requirements. These changes include reductions in volumes and delays in the in-service dates of certain of the new transportation services and some services which were discussed in earlier proceedings but which had not yet commenced.

TransCanada's revised forecast of contractual requirements is shown on Table 3-1(b).

With respect to the revised requirements which became apparent following the hearing, TransCanada argued that all of the applied-for facilities will still be required by 1 November 1993. TransCanada submitted that due to contract rationalization and load factor optimization under existing contracts, the projected summer season load factors for existing customers have increased significantly. TransCanada noted that this would affect the requirement for facilities on the Western and Central Sections. As well, TransCanada stated that Consumers' Gas has requested an additional 850.0 103m³/d (30 MMcfd) of STS to Ottawa. Consequently, all of the proposed facilities on the North Bay Shortcut are still required to provide loss of unit protection.

3.2 Base Case Requirements

Base case requirements refer to those transportation services which are currently available or for which the facilities necessary to enable the service to commence have been certificated.

Table 3.0

**TransCanada's November 1991 Forecast of Winter Maximum
Daily and Annual Deliveries (1)**

(a) Winter Maximum Daily Deliveries

Contract Year	Domestic(2)		Export		Total (106m3)
	(106m3)	(MMcf)	(106m3)	(MMcf)	
1991-92	100.4	3544	64.4	2 273	164.8
1992-93	101.6	35 87	82.3	2 905	183.9
1993-94	105.3	3717	86.2	3 043	191.5

(b) Annual Deliveries

Contract Year	Domestic(2)		Export		Total (109m3)	Firm Service (109m3)
	(109m3)	(Bcf)	(109m3)	(Bcf)		
1991-92	31.2	1 101	21.2	748	52.4	198
1992-93	32.2	1 137	26.5	936	58.7	210
1993-94	32.4	1 144	27.1	957	59.5	241

(1) Source: Exhibit B-1, "Requirements", Table 1, revised 14 November 1991.

(2) Includes Firm Service ("FS"), Firm Service Tendered ("FST"), Storage Transportation Service ("STS"), back-haul and exchange volumes, but excludes all fuel requirements, losses and other uses.

Table 3.1

**TransCanada's March 1992 Forecast of Winter Maximum
Daily and Annual Deliveries (1)**

(a) Winter Maximum Daily Deliveries

Contract	Domestic(2)		Export		Total	
Year	(106m3)	(MMcf)	(106m3)	(MMcf)	(106m3)	(MMcf)
1991-92	98.9	3 491	65.9	2 326	164.8	5 817
1992-93	100.4	3 544	77.4	2 732	177.8	6 276
1993-94	106.4	3 756	85.7	3 025	192.1	6 781

(b) Annual Deliveries

Contract	Domestic(2)		Export		Total	% Increase Over	
Year	(109m3)	(Bcf)	(109m3)	(Bcf)	(109m3)	(Bcf)	Previous Year
1991-92	30.9	1091	20.9	738	51.8	1 829	n/a
1992-93	31.9	1126	25.8	911	57.7	2 037	11.4

1993-94	32.0	1 130	28.0	998	60.02	118	4.0
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(1) Source: TransCanada letter dated 19 March 1992, "TransCanada's Response to National Energy Board Letterdated 11 March 1992", Table 1, revised March 1992.

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

TransCanada's 1991-92 winter maximum daily requirements have been reduced by 20.69 106m³/d (730.4 MMcfd) from that contemplated in the GH-5-89 proceedings to 164.8 106m³/d (5 817.0 MMcfd).

TransCanada explained that this change resulted from:

- (a) termination or permanent reduction in volumes to be transported under service agreements with TransGas Limited ("TransGas"), Centra Gas Ontario Inc. ("Centra Ontario"), and Gaz. Métropolitain, inc.;

- (b) delay in service to 1 November 1992 of some export projects caused by the delay in the release of the Board's GH-5-89 Reasons for Decision (Refer to Table 3-2);

- (c) denial of the Gananoque Extension and Blackhorse Extension facilities applications which has resulted in either a delay in the commencement of service, depending on the outcome of the Board's review of the Blackhorse Extension decision, or a shift in the export points;

- (d) delays in the FSC Resources Limited ("FSC")(Plattsburg) in-service date;

- (e) capacity made available through assignments;

- (i) load factor adjustments; and

- (g) TransCanada's termination of its Precedent Agreement with Canadian Occidental Petroleum Ltd. ("CanadianOxy").

Most of the GH-5-89 export shippers have executed firm service agreements and, in large part, those who have not yet done so have experienced delays in obtaining regulatory approvals in both Canada and the U.S. TransCanada submitted that it has no reason to believe that these export transportation services would not proceed as currently contemplated.

In response to concerns raised by several intervenors, TransCanada stated that it continues to believe that the FSC (Plattsburg) export project, which had originally been scheduled to commence service in November 1990 and which, at the time of the hearing, was forecast to be in service in May 1993, is viable and should continue to be included in its base case system requirements. TransCanada noted that despite the delay in the project, substantial progress has been made. In this regard, TransCanada cited the New York State Public Service Commission's ("NYPSC") approval to allow consolidation of FSC's three previously-approved cogeneration projects into a single-site project. TransCanada also cited the existing U.S. Federal Energy Regulatory Commission ("FERC") and NYPSC approvals for construction of the interconnecting pipeline facilities by North Country Gas Pipeline Corporation. On 19 March 1992, TransCanada advised the Board that the service to FSC (Plattsburg) was not expected to commence until November 1993.

Table 3.2

Commencement Dates For The GH-5-89 Export Projects

Shipper/Buyer	Volume-5-89 (106m3/d)	Response to NEB IR No. 279 GH-5-89	Projected as of Nov '91 (1)(a)	Projected as of Mar '92 (1)(b)
	(MMcfd)			
Emerson, Man. Kamline/Besicorp (S. Glen Falls)	.402	Nov. 91	Nov. 91	Nov. 91(5)
Niagara Falls, Ont. WGML (Elizabethtown) CanadianOxy (Long Island) Subtotal	.283 (.460) .283	Nov. 92 Nov. 92	Nov. 92 (7)	Nov. 92 (5)
Chippawa, Ont. Encogen (American Brass) Fulton (Nestles) Indeck (Corinth) Kamline/Besicorp (Carthage) Subtotal	.425 .170 .459 .402 1.456	Apr. 92 Nov. 92 Apr. 92 Nov. 92	Nov. 92 Nov. 92 Aug. 93 Nov. 92	Nov. 92 (2) Nov. 92 (2) Aug. 93 (2) Nov. 93 (9)
Iroquois, Ont. AEC (ANE) ATCOR (ANE) ProGas (ANE) ProGas (ANE) WGML (ANE) WGML (ANE) JMC Selkirk Pawtucket Power ProGas (MassPower) Shell (Granite State) Esso (Boston Gas) New England Power Subtotal	399 .790 1.156(3) .244(3) 1.416 4.127 .595 360 .708 .992 .992 1.700 13.479	Apr. 92 Apr. 92 Jan. 92 Apr. 92 Nov. 91 Jan. 92 Nov. 92 Nov. 92 Nov. 92 Nov. 92 Nov. 92 Apr. 92	Apr. 92 Apr. 92 Jan. 92 Apr. 92 Dec. 91 Jan. 92 Nov. 92 Nov. 92 Nov. 92 Nov. 92 Nov. 92 (6)(8) Apr. 92 (8) Apr. 92 (8)	Apr. 92 (5) Apr. 92 (5) Jan. 92 (5) Apr. 92 (5) Dec. 91 (5) Jan. 92 (5) Nov. 92 (5) Nov. 92 Nov. 92 (5) Nov. 92 (6)(8) Apr. 92 (8) Apr. 92 (8)
Iroquois, Ont. AEC (ANE) ATCOR (ANE) ProGas (ANE) WGML (ANE) Subtotal	.134 .267 .471 1.963 2.835	Nov. 92 Nov. 92 Nov. 92 Nov. 92	Nov. 92 Nov. 92 Nov. 92 Nov. 92	Nov. 92 (5) Nov. 92 (5) Nov. 92 (5) Nov. 92 (5)
Cornwall, Ont. Power City Partners	.567	Nov. 92	Sept. 92	Sept. 92 (4)(5)
Napierville, Que. FSC Resources	1.445	Nov. 92	May 93	Nov. 93

With regard to the Indeck Gas Supply Corporation-Indeck Corinth ("Indeck-Corinth") export project, TransCanada noted that the delay in the commencement of service from 1 November 1992 to 1 August 1993 was the result of the Board's denial of TransCanada's Blackhorse Extension facilities application and the uncertainty with respect to the outcome of the Board's review of its decision. TransCanada continues to believe that the Indeck-Corinth export project is viable.

TransCanada indicated that the other Blackhorse Extension shippers (i.e., Rochester Gas and Electric Corporation ("RG&E"), Encogen Four Partners, L.P. ("Encogen"), Fulton Cogeneration Associates ("Fulton"), Indeck Gas Supply Corporation - Indeck Ilion ("Indeck-Ilion") and Karnine Carthage Cogen Co. ("Kamine Carthage")) continue to be included in its requirements forecast notwithstanding the Board's decision to deny TransCanada's Blackhorse Extension facilities application. TransCanada explained that it had requested the Board to review its decision and had sought leave from the Federal Court of Appeal to appeal the Board's decision. At the hearing, TransCanada submitted that, should the Board's decision be reversed, TransCanada would be in a position to commence service on 1 November 1992. If the Board's decision is not reversed, TransCanada indicated that it would revise its facilities application accordingly.

Subsequently, on 19 March 1992, TransCanada advised that should the Board reverse its decision in respect of the Blackhorse Extension, it does not expect to be in a position to provide service at Chippawa, Ontario before 1 November 1993. TransCanada also stated it has amended the Precedent Agreement of Indeck-Ilion, Encogen, and Fulton to provide for service commencing 1 November 1992 at Niagara Falls, Ontario instead of Chippawa, Ontario. TransCanada noted that none of these shippers have yet acquired unconditional long-term firm transportation downstream of Niagara Falls, Ontario. Accordingly, TransCanada suggested that these services may not commence on 1 November 1992, but may commence later in the 1992-93 contract year.

TransCanada argued that keeping the delayed export projects in the base case requirements does not prejudice any party since facilities would only be constructed to accommodate these new services upon execution, or imminent execution, of a Firm Service Agreement.

TransCanada indicated that forecasting its base case requirements was made difficult by the fact that shippers with expiring contracts are under no obligation to indicate their intention to renew their contracts prior to six months before the renewal date.

TransCanada objected to Consumers' Gas' recommendation that the Board direct TransCanada to formalize the process by which TransCanada would independently verify the information furnished by its prospective shippers (Refer to Subsection 3.5, "Views of Interested Parties"). TransCanada noted that the current degree to which it scrutinizes individual projects and its stringent queuing procedures have resulted in the inclusion in its facilities design of only those new requirements that are "appropriate".

TransCanada submitted that there is no evidence to support the need for the Board to regulate TransCanada's day-to-day business activities and that Consumers' Gas' recommendation, if implemented, would constitute an unnecessary intrusion into TransCanada's conduct of those business activities. TransCanada also argued that it only constructs facilities to accommodate contractual service and that the continued high level of system utilization is evidence that no extra diligence is required on its part.

TransCanada submitted that if any of the projects which support its requirements forecast do not proceed as originally contemplated, such projects would be replaced with other long-term contracted FS requirements. TransCanada noted that this initiative would be in accordance with the Board's views on the issue of substitution as set forth in its GH-5-89 Reasons for Decision, Section 20.3.5, page 167.

In the GH-5-89 Reasons for Decision, the Board found, with respect to the issue of substitution, that should any of the individual shippers identified in TransCanada's export forecast be unable to meet their scheduled commencement dates, with the consequence that the export projects are either delayed or cancelled, the Board expects TransCanada to substitute sufficient long-term contracted FS requirements in time to replace such projects. Similarly, the Board found that recent experience indicates that the scope and magnitude of substitution in previously-certificated expansions has been limited, but should that experience change, the Board would consider seeking the views of interested parties regarding the extent to which a substituted service request supports TransCanada's request that commencement of construction be permitted pursuant to the certificate. The Board indicated that the exact scope of this procedure would be determined on the basis of the particular circumstances before it at that time.

3.3 New Domestic Services

At the time of the hearing, three domestic shippers, as identified in Table 3-3, accounted for 2 162.0 103m3/d (76.3 MMcfd) or 49 percent of the new firm service requirements supporting the applied-for facilities. TransCanada argued that, in each case, the existence of upstream and downstream transportation arrangements had been demonstrated. By letter dated 30 January 1992, TransCanada advised that Consumers' Gas had reduced its request for transportation service from 1 841.0 103m3/d (65.0 MMcfd) to 708.0 103m3/d (25.0 MMcfd). This revision reduced the total new domestic services to 1 029.0 103m3/d (36.3 MMcfd) or 31 percent of the new firm service requirements.

3.3.1 TCPL Cogeneration Ltd.

TCPL Cogeneration Ltd. ("TCPL Cogen") is constructing a 7 megawatt ("MW") gas-fired, enhanced cycle power plant near Nipigon, Ontario which will produce electricity for sale to Ontario Hydro in accordance with an executed 20-year power sales agreement. Construction of the facility is 95 percent complete.

TCPL Cogen has executed a 20-year Precedent Agreement with TransCanada, dated 16 August 1991, for the delivery of 170.9 103m3/d (6.0 MMcfd) of gas from Alberta and Saskatchewan to TransCanada's delivery point at Station 75 near Nipigon, Ontario, commencing 1 November 1992. Centra Gas Ontario Inc. ("Centra Ontario") will assign TCPL Cogen part of its FS entitlement in order to allow the plant to commence full commercial operation in or before May 1992. The gas will be delivered directly off the TransCanada system to the TCPL Cogen facilities.

Table 3.3

New Firm Services Associated with TransCanada's 1992-93 Facilities Application

As of November 1991

As of March 1992

Shipper/Buyer	Start Date	Volume	Start Date	Volume
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cm 1

		(103m3/d)	(MMcfd)			(103m3/d)	(MMcfd)
I. DOMESTIC							
TCPL Cogen	Nov 92	171.0	6.0	Nov 92	171.0	6.0	
Centra Gas (Ontario)	Nov 92	150.0	5.3	Nov 92	150.0	5.3	
Consumers' Gas	Nov 92	1 841.0	65.0	Nov 92	708.0(2)	25.0	
Total Domestic		2 162.0	76.3		1 029.0	36.3	
II. EXPORT							
@ Emerson, Man.							
Northern States Power (Wisconsin)	Nov 92	850.0	30.0	Nov 92	850.0	30.0	
@ Niagara Falls, Ont.							
Indeck Gas Supply Corporation/Indeck-Ilion Cogen	Sept 93	225.0	7.9	Sept 93	225.0	7.9	
@ Iroquois, Ont.							
L&J Energy	Sept 93	331.0	11.7	Sept 93	331.0	11.7	
Dartmouth Power	Nov 92	401.0	14.2	Nov 92	401.0	14.2	
@ Chippawa, Ont.							

RG&E/RG&E	Nov 92	453.0	16.0	Nov 93	453.0	16.0
Total Export		2 260.0	79.8		2 260.0	79.8
Total Domestic and Export		4 422.0	156.1		3 289.0	116.1

III. IMPORT/EXPORT

@ St. Clair to Niagara Falls, Ont.
Tennessee

Nov 92	1 062.0	37.5	Nov 93	1 062.0	37.5
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(1) In accordance with TransCanada's letter dated 19 March 1992.

(2) By letters dated 30 January and 19 March 1992, TransCanada notified the Board that Consumers' Gas had reduced its transportation service request from 1 841.0 103m³/d (65.0 MMcfd) to 708.0 103m³/d (25.0 MMcfd).

Gas supply arrangements have been made with three producers, Canada Northwest Energy Limited, Lone Pine Resources Ltd. and Ocelot Industries Ltd., for 177.0 103m³/d (6.2 MMcfd) with a term volume of 1 357 106m³ (47.9 billion cubic feet ("Bcf")). The estimated volume of gas reserves supporting these contracts is 2 981 106m³ (105 Bcf).

3.3.2 Centra Gas Ontario Inc.

Centra Ontario has entered into a ten-year Precedent Agreement dated 12 February 1991, as amended, with TransCanada for the delivery of 150.0 103m³/d (5.3 MMcfd) of gas from Alberta to various delivery points in Centra Ontario's franchise area. The additional gas supply will be used to serve normal residential and commercial market growth. The gas for this project will be supplied pursuant to an Alberta border buy/sell arrangement between Centra Ontario and Dupont Canada.

3.3.3 Consumers' Gas Company Ltd.

At the hearing, TransCanada testified that Consumers' Gas has entered into a ten-year Precedent Agreement with TransCanada dated 5 November 1990, for the delivery of 1 841.0 103m³/d (65.0 MMcfd) of natural gas from Alberta and Saskatchewan to Consumers' Gas' franchise area. Consumers' Gas has requested the additional firm service capacity, commencing 1 November 1992, to serve the increased requirements in its residential, commercial, and industrial market sectors. The 4.2 percent increase in additional firm service for Consumers' Gas reflects, in part, the construction of two new cogeneration facilities within its franchise area.

Consumers' Gas noted that the actual increase in its FS transportation would only be 1 133.1 103m³/d (40.0 MMcfd), since the remaining 708.2 103m³/d (25.0 MMcfd) is a replacement for a one-year assignment of FS transportation from Union Gas Limited ("Union") which expires on 31 October 1992. Consumers' Gas noted that TransCanada would nevertheless have to construct capacity for the entire 1 841.0 103m³/d (65.0 MMcfd).

Consumers' Gas argued that the forecast rate of growth in its demand, between 1993 and 1997 is primarily attributable to an increase in the number of IPPs within its franchise area. Consumers' Gas noted that this was consistent with Ontario Hydro's plans to increase its reliance upon IPPs.

Consumers' Gas stated that the requested FS capacity is needed in spite of its recent practice of assigning its excess capacity. Consumers' Gas explained that it found itself in a position of excess capacity as a result of reduced gas demand due to the current economic recession, coupled with an extremely mild winter, therefore, the level of its assignments should be viewed as a shortterm situation. Consumers' Gas pointed out that, in any event, such assignments represent only a small fraction of its FS entitlement on the TransCanada system. The Consumers' Gas request for service is supported by its existing long-term system gas supply contracts and two long-term direct purchase contracts held by a transportation customer of Consumers' Gas.

Following the hearing, TransCanada advised the Board by letters dated 30 January 1992 and 19 March 1992 that it had agreed to reduce the volume under the aforementioned Precedent Agreement with Consumers' Gas from 1 841.0 103m³/d (65.0 MMcfd) to 708.0 103m³/d (25.0 MMcfd). As well TransCanada agreed to an increase of 425.0 103m³/d (15.0 MMcfd) in the Consumers' Gas STS contract for the Eastern Delivery Area. Both of these services to Consumers' Gas would be effective 1 November 1992.

In its letter to TransCanada, which was appended to the TransCanada letter of 30 January 1992, Consumers' Gas attributed the reduction in its transportation service requirements to a new "grass roots" forecast and an updated econometric forecast which indicate a continuing downturn in the Ontario economy and a delay in the economic recovery which had been anticipated in the previous econometric forecast. Consequently, Consumers' Gas' new forecasts for 1992-93 and subsequent contract years show significantly less demand for natural gas in its traditional Ontario markets than its demand forecast which was reviewed during the GH-4-91 proceedings. As a result, Consumers' Gas stated that it was not able to utilize, at an acceptable level, the full 1 841.0 103m³/d (65.0 MMcfd) of additional FS that had been contemplated by the Precedent Agreement.

TransCanada took the position that the change by Consumers' Gas should not prejudice a decision by the Board to issue a certificate for the applied-for facilities. TransCanada noted the Board's practice of conditioning certificates to ensure that facilities were not built which would not be fully utilized. TransCanada also noted that it would not endeavour to do so in any event. TransCanada further stated that the reduction in Consumers' Gas' requirements would be reflected in the next application for release to construct, wherein TransCanada would include only those facilities which are supported by executed transportation service contracts.

TransCanada also noted the existence of the 1993-94 queue of transportation service requests. TransCanada believed that transportation service requests from the 1993-94 queue could be used by November 1993 to form part of the aggregate requirement to utilize all certificated facilities as well as those applied for in the GH-4-91 proceeding. TransCanada noted that some parties may be concerned about substitution without public scrutiny. However, TransCanada stated that it expects to be filing a facilities application in the near future to accommodate the new 1993-94 transportation service requests, including those which could be substituted for requirements which were considered in the GH-4-91 proceedings.

Notes:

- (1) (a) Source: TCPL response to NEB Information Request ("IR") No. 42, dated 8 November 1991.**
- (1) (b) Source: TCPL letter to the NEB dated 19 March 1992.**
- (2) Now projected to commence at Niagara Falls, Ontario export point rather than the Chippawa, Ontario export point. TransCanada has agreed to amend the executed Precedent Agreement.**
- (3) Exports to commence at 1155.8 103m³/d (40.8 MMcfd) and 243.6 103m³/d (8.6 MMcfd) on Jan. 92 and Apr. 92, respectively.**
- (4) Husky Oil will be the shipper on the TransCanada system pursuant to an assignment of the transportation contract from Power City Partners.**
- (5) Firm service agreement has been executed.**
- (6) Firm service agreement has been executed for 340.0 103m³/d (12.0 MMcfd).**
- (7) Precedent Agreement terminated, replaced with unallocated capacity at Niagara Falls, Ontario commencing 1 November 1991.**
- (8) At the time of hearing, firm service agreements had been sent for execution to Shell for the remaining 651.5 103m³/d (23.0 MMcfd), to Esso, and to New England Power. Those agreements have been subsequently executed and filed with the Board.**
- (9) Service to commence 1 November 1993 in accordance with TransCanada's letter dated 19 March 1992.**
- (10) Service request reduced from 354 103m³/d (12.5 MMcfd) to 170 103m³/d (6.0 MMcfd) in accordance with TransCanada's letter dated 19 March 1992.**

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3.4 New Export Services

The applied-for facilities are also supported by five new export shippers who have requested incremental long-haul service totalling 2 260.0 103m³/d (79.8 MMcfd). These services represent 51 percent⁽¹⁾ of the new firm service requests underpinning the applied-for facilities. In addition, Tennessee Gas Pipeline Company ("Tennessee") has requested 1 062.0 103m³/d (37.5 MMcfd) of short-haul service from the St. Clair, Michigan import point to Niagara Falls, Ontario (Refer to Table 3-3)

(1) On 19 March 1992, TransCanada advised the Board of changes to its forecast of new firm service requirements. Accordingly, the new export services accounted for 69 percent of the new firm service requirements.

TransCanada argued that all of the new export projects underpinning the applied-for facilities

expansion are supported by export licences that have either been issued, or are pending; executed Precedent Agreements with TransCanada; upstream and downstream transportation pursuant to existing transportation service contracts or executed precedent agreements; and U.S. import approvals that have either been issued or are expected to be issued soon.

3.4.1 Northern States Power Company (Wisconsin)

TransCanada and Northern States Power Company, Wisconsin ("NSPW") have executed two ten-year Precedent Agreements, dated 10 October 1991, for the delivery of 850.0 103m³/d (30.0 MMcfd) of gas from Empress, Alberta to the Emerson, Manitoba export point, commencing 1 November 1992.

Downstream, the gas will be shipped via the Great Lakes Gas Transmission Company ("GLGT"), Northern Natural Gas Company ("Northern Natural") and Viking Gas Transmission Company ("Viking") pipeline systems to NSPW's franchise areas in Wisconsin and Northern Michigan. All downstream transportation agreements have been executed and all related facilities applications have been approved by the FERC.

NSPW intends to use the gas as baseload supply to meet its overall system requirements. NSPW has executed ten-year gas supply contracts with Amoco Canada Petroleum Company Ltd. ("Amoco"), CanadianOxy and ProGas Limited ("ProGas"). Export licence applications filed by Amoco, CanadianOxy and ProGas and heard in the GH-3-91 proceedings are awaiting the Board's decision. Each of the producers is negotiating for transportation capacity on the NOVA Corporation of Alberta ("NOVA") system. NSPW's application for authorization to import is pending before the Department of Energy/Office of Fossil Energy ("DOE/FE").

3.4.2 Indeck Gas Supply Corporation (Indeck-Ilion)

TransCanada and Indeck Gas Supply Corporation ("Indeck-Ilion") have entered into a 15-year Precedent Agreement dated 4 October 1990, as amended, for the delivery of 225.0 103m³/d (7.9 MMcfd) of gas from Empress, Alberta to the Niagara Falls, Ontario export point, commencing 1 September 1993 (1). A firm service contract has been executed with NOVA for upstream capacity.

Downstream transportation services have been arranged through the execution of precedent agreements or agreements in principle with the National Fuel Gas Supply Corporation ("NFG") on the proposed Niagara Spur Loop, CNG Transmission Corporation ("CNG"), and Niagara Mohawk Power Corporation ("Niagara Mohawk"). NFG's and Niagara Mohawk's facilities applications have not yet been filed with the federal and state regulatory authorities.

The gas will be sold by Indeck-Ilion to Indeck Energy Services of Ilion, Inc. ("Indeck-ServicesIlion") for use in its 54.9 MW cogeneration plant to be constructed near Ilion, N.Y. Indeck-Ilion has signed an 18-year Gas Sales and Purchase Agreement with Trilogy Resources Corporation for its gas supply.

Following the GH-5-89 proceeding, the Board issued Licence GL-156 authorizing Indeck-Ilion to export 210.0 103m³/d (7.5 MMcfd) at Chippawa, Ontario over a 15-year period, commencing with the date of first deliveries. The licence will need to be amended to reflect the change in export point from Chippawa to Niagara Falls, Ontario. TransCanada has agreed to amend its

(1) By letter dated 19 March 1992, TransCanada indicated that the service to the Indeck-Ilion at Niagara Falls, Ontario may not start until 1 November 1993.

Precedent Agreement with Indeck-Ilion to change the delivery point to Niagara Falls, Ontario.

Indeck-Services-Illion's application for authorization to import is pending before the DOE/FE.

3.4.3 L&J Energy Systems, Inc.

TransCanada and L&J Energy Systems, Inc. ("L&J") have executed a 15-year Precedent Agreement dated 29 October 1990, for the delivery of 331.4 103m³/d (1 1.7 MMcfd) of gas from Empress, Alberta to the Iroquois, Ontario export point, commencing 1 September 1993. L&J has executed a 15-year Gas Supply Agreement with Morgan Hydrocarbons, Inc. and is currently negotiating upstream capacity on the NOVA system. L&J has entered into a 15-year Precedent Agreement with Iroquois Gas Transmission System ("IGTS") for limited interruptible service to L&J's proposed 49 MW combined-cycle cogeneration facility at Lowville, N.Y.

In January 1991, the Board issued Licence GL-148 to L&J following the GH-3-90 proceeding: the licence was subsequently amended in May 1991 following the GH-2-91 proceeding. The licence, as amended, authorizes L&J to export 329.6 103m³/d (11.6 MMcfd) of gas at Iroquois, Ontario over a 15-year period, commencing with the date of first deliveries. L&J's application for authorization to import is pending before the DOE/FE.

The cogeneration facility's start-up date has been delayed until September 1993 due to delays in the completion of financing and further delayed due to the missing of a construction window. L&J emphasized that the financing delays resulted solely from procedural difficulties rather than from concerns over the viability of the project.

3.4.4 Dartmouth Power Associates Limited Partnership

Dartmouth Power Associates Limited Partnership ("Dartmouth Power") and TransCanada have entered into a 20-year Precedent Agreement dated 17 September 1990, as amended, for the delivery of 401.0 103m³/d (14.2 MMcfd) of gas from Empress Alberta to the Iroquois, Ontario export point. Dartmouth Power has executed a firm service contract with NOVA and precedent agreements with IGTS, Tennessee, and Algonquin Gas Transmission Company ("Algonquin") for the delivery of the gas to Dartmouth, Massachusetts. Tennessee's and Algonquin's downstream facilities applications are pending before the FERC.

The gas will be used by Dartmouth Power to fuel a 67.4 MW gas-fired IPP which is under construction in Dartmouth, Massachusetts. The facility is expected to start taking Canadian gas on 1 November 1992. Dartmouth Power has signed 20-year gas supply contracts with Remington Energy Ltd., Columbia Gas Development of Canada Ltd., Excel Energy Inc. and Canadian Natural Resources Limited.

In May 1991, following the GH-9-90 proceeding, the Board issued Licence GL-164, authorizing Dartmouth Power to export 400.9 103m³/d (14.2 MMcfd) of gas at Iroquois, Ontario over a 15-year period, commencing 1 November 1992. Dartmouth Power's U.S. application for authorization to import is pending before the DOE/FE.

3.4.5 Rochester Gas and Electric Corporation

TransCanada and RG&E have executed a 15-year Precedent Agreement, dated 19 December 1990, for the delivery of 453.2 103m³/d (16.0 MMcfd) of gas from Empress, Alberta and from various Saskatchewan receipt points to the Chippawa, Ontario export point, commencing 1 November 1992(1). Upstream capacity on the NOVA, TransGas and Westcoast Energy Inc. ("Westcoast") systems has been contracted.

The gas will be transported via TransCanada's proposed Blackhorse Extension facilities and the proposed Empire State Pipeline ("Empire") system to RG&E's franchise area in western New York State. RG&E will use the gas as system supply to satisfy normal market growth. RG&E and Empire have executed an Amended and Restated Precedent Agreement, dated 7 May 1990, to provide for downstream transportation service.

In April 1991, following the GH-5-89 proceeding, the Board issued Licence GL-162, authorizing Unigas Corporation ("Unigas") to export 453.2 103m³/d (16.0 MMcfd) of gas at Chippawa, Ontario over a 10-year period commencing with the date of first deliveries. RG&E has made gas supply arrangements with Unigas which, in turn, has executed a 10-year gas supply contract with its subsidiary Mark Resources Ltd.

RG&E has received DOE/FE conditional import approval for a 10-year period commencing with the in-service date of Empire.

3.4.6 Tennessee Gas Pipeline Company

TransCanada and Tennessee have entered into a ten-year Precedent Agreement, dated 14 November 1990, for 1 062.3 103m³/d (37.5 MMcfd) of firm short-haul service commencing 1 November 1992. The gas will be received at the point of interconnection of the TransCanada and GLGT pipeline systems near St. Clair, Michigan and delivered to the point of interconnection of the TransCanada and Tennessee pipeline systems near Niagara Falls, Ontario.

The gas, to be purchased by Tennessee from ProGas at the Emerson, Manitoba export point, will be imported at St. Clair, Ontario and re-exported at Niagara Falls, Ontario into the Tennessee system. ProGas will use its existing transportation arrangements with TransCanada to deliver the gas to Emerson, Manitoba. Downstream, Tennessee will use its existing transportation arrangements with GLGT, as amended, to deliver the gas to the St. Clair, Ontario import point.

Under the existing gas supply arrangement, ProGas holds upstream pipeline capacity on the TransCanada system at the Emerson, Manitoba export point. Downstream, Tennessee transports the gas, purchased from ProGas, on the GLGT/ANR Pipeline Company ("ANR")/Midwestern Gas Transmission Company ("Midwestern") pipeline systems for delivery into the Tennessee system at Portland, Tennessee. Tennessee explained that this existing gas supply arrangement has become unsatisfactory because of the large rate increases on the ANR system.

In addition to the 1 062.3 103m³/d (37.5 MMcfd) of firm imports, Tennessee proposes to import 1 062.3 103m³/d (37.5 MMcfd) of interruptible gas at St. Clair, Ontario. On 13 September 1991, Tennessee applied to the Board for an import for re-export order for a total of 2 124.6 103m³/d (75.0 MMcfd). That application is pending. Tennessee will use the gas as system supply.

(1) By letter dated 19 March 1992, TransCanada indicated that the transportation services at Chippawa, including the RG&E request, are not forecast to commence until 1 November 1993.

Tennessee has obtained DOE/FE approval to export at St. Clair, Michigan and subsequently re-import at Niagara Falls, N.Y., 2 124.6 103m³/d (75.0 MMcfd) of gas during the period ending 31 October 2000.

In its letter dated 19 March 1992, TransCanada explained that Union had initiated the termination provision in the M-12 firm transportation contract between Union and TransCanada which underpins TransCanada's proposed St. Clair to Niagara Falls, Ontario service for Tennessee. TransCanada

submitted that given Union's action and TransCanada's inability to comply with the conditions precedent, it was possible that the proposed service to Tennessee would be terminated, or delayed to 1 November 1993, unless the conditions precedent could be satisfied in the very near future. The conditions precedent pertained to NEB approval of the aforementioned M-12 firm transportation contract and NEB approval of Tennessee's import for re-export order.

3.5 Views of Interested Parties

Consumers' Gas questioned TransCanada's assumption that the FSC (Plattsburg) project will proceed on 1 May 1993, as it forecast at the time of the hearing. Consumers' Gas submitted that if the Board had similar concerns regarding this project, it should remove the FSC (Plattsburg) project from TransCanada's aggregate demand forecast.

Consumers' Gas raised the issue of TransCanada's due diligence procedures, or the steps taken by TransCanada to verify independently the information related to markets, the status of regulatory approvals, contractual arrangements, etc. provided by prospective shippers seeking access to TransCanada's Facilities Application Queue ("FAQ") and thereby, access to long-term service on the TransCanada system.

Consumer's Gas submitted that, in order to access the FAQ, a project proponent will always highlight the positive features of its project, with the result that TransCanada does not always get realistic, up-to-date information. Consumers' Gas argued that TransCanada should verify independently this information as it is ultimately used to develop TransCanada's long-term aggregate demand forecast and, thereby, to identify the requirement for new capacity.

Consumers' Gas believed that TransCanada should implement due diligence procedures at both the FAQ stage in order to minimize the risk that TransCanada's requirements forecast used to support its facilities expansion is overstated, and at the post-certification stage to ensure that its aggregate demand forecast continues to be reliable.

While Consumers' Gas acknowledged that TransCanada does attempt to verify independently information provided by prospective shippers, it also argued that TransCanada is pursuing new markets and therefore, cannot rely on its past record. Consumers' Gas cited the delay in the FSC (Plattsburg) and L&J projects as reflecting the need for TransCanada to improve the way in which it monitors developing projects that comprise TransCanada's aggregate demand.

Consumers' Gas recommended that the Board direct TransCanada to develop a formal process by which TransCanada could verify independently the information furnished by prospective shippers. Consumers' Gas acknowledged that such a formal process could include many of the steps that TransCanada now takes on an informal basis (e.g., obtaining information from electric utilities and electric power pools, institutions financing the projects, and regulators at various levels in both Canada and in the U.S.).

Union similarly questioned the FSC (Plattsburg) project, noting the lack of the Power Purchase and Steam Sales Agreements, project financing, and major regulatory approvals. Union argued that FSC's new consolidated project (i.e., one cogeneration plant instead of three) was not the one that was subjected to public scrutiny at three previous NEB hearings.

The APMC expressed concern regarding the L&J project. Specifically, the APMC cited the unexpected withdrawal of the financing for the project which will delay the project's start-up to September 1993.

The APMC argued that the project no longer seems ripe and that the Board should therefore consider excluding the L&J project from the aggregate requirements.

The APMC also expressed concern regarding the forecast of natural gas demand put forward by Consumers' Gas. The APMC argued that if the forecast is not reliable, particularly beyond 1993, excess TransCanada capacity could result. The APMC invited the Board to compare the Consumers' Gas demand forecast with that generated by the Board in its 1991 Supply and Demand Report.

The APMC noted that a significant volume of currently-contracted FS capacity is renewable in 1992 and that TransCanada has assumed 100 percent renewal of those contracts notwithstanding that TransCanada will not know of shippers' intentions until May 1992. In addition, the APMC pointed out that in November 1991, TransCanada operated with assignments of approximately 7 082.0 103m³/d (250.0 MMcfd), or some five percent of its total system throughput.

With respect to the changes in TransCanada's forecast requirements which became apparent subsequent to the hearing, IPAC supported TransCanada's position that the reduction in Consumers' Gas' service request should not affect a decision by the Board to issue a certificate for the full applied-for facilities. IPAC's support was contingent upon the Board putting the usual conditions in the certificate to prohibit the commencement of construction of facilities prior to a proper demonstration that all necessary regulatory authorizations have been obtained and relevant contractual arrangements have been executed.

The CPA took the position that the facilities TransCanada required to serve Consumers' Gas' original request should not be approved for construction unless TransCanada demonstrated to the Board, prior to the date of certification, that it has contracted that capacity on a firm basis. Alternatively, TransCanada should provide to the Board, prior to the date of certification, its undertaking that facilities to serve the 1 138.0 103m³/d (40.0 MMcfd) would not be constructed until Leave to Construct was first obtained and that TransCanada, in seeking Leave to Construct, demonstrated that the capacity was contracted on a firm basis.

The APMC stated that, in this particular case, it does not appear likely that parties will be prejudiced by TransCanada's proposed course of action. The APMC referred to the next TransCanada facilities application, the typical conditioning of TransCanada certificates and TransCanada's statement that it will not build facilities for an in-service date prior to 1993-94 in-service date as the basis of its position. The APMC stressed that in principle, it is opposed to the certification of facilities in the absence of a current demonstrated need.

3.6 Views of the Board

TransCanada provided the required information on specific 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. On the basis of its review of both the reserves and productive capacity, the Board is satisfied with the supply arrangements outlined for both the domestic and export shippers in support of their requests for capacity.

The Board finds TransCanada's requirements forecast as revised to be reasonable for the purpose of assessing TransCanada's facilities requirements for the 1992-93 and 1993-94 contract years. In addition, the Board is satisfied that the new transportation services scheduled to start in the 1992 and 1993 contract years, including the services considered in the GH-5-89 proceedings, are sufficiently advanced with respect to gas supply arrangements; upstream and downstream transportation arrangements, sales arrangements, and securing the necessary Canadian and U.S. regulatory approvals to support TransCanada's facilities design. The Board believes that there is reasonable certainty that any outstanding contractual or regulatory matters can be finalized in a timely manner in order to allow these projects to proceed as contemplated by TransCanada.

While the Board acknowledges the concerns expressed by Consumers' Gas and Union regarding the FSC (Plattsburg) export project and by the APMC regarding the L&J export project, the Board accepts that the status of each request for service will vary as to the number of regulatory and contractual details outstanding, resulting in differing degrees of uncertainty with respect to the forecasted in-service dates. These uncertainties are the result of today's marketing, financing, and regulatory environments as well as the long lead times required for the many arrangements to be finalized.

The Board agrees with TransCanada that despite the delays with the FSC (Plattsburg) and L&J export projects, sufficient progress has been made in executing associated contractual arrangements and in securing the required regulatory approvals to justify continued inclusion in TransCanada's base case requirements. The Board is of the view that no public interest would be served in removing these requirements from the base case requirements at this time. The Board notes that the certificate conditions ensure that facilities will be constructed to accommodate these service requests only after all contracted arrangements and regulatory approvals have been finalized.

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

Although the possibility exists that specific shippers in TransCanada's forecast may not achieve their respective scheduled commencement dates, the Board is satisfied that sufficient long-term contracted FS requirements for 1992-93 and 1993-94 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. With respect to the issue of substitution, the Board reiterates that the substitution of service requests underpinning facilities expansions has been limited. Therefore, the Board believes that the views the Board set forth in its GH-5-89 Reasons for Decision regarding the substitution of requirements at Volume 3, section 20.3.5, page 1 67 remain appropriate.

To date, the Board has been 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. Therefore, the Board will not, as recommended by Consumers' Gas, direct TransCanada to develop a formal process in this regard.

To ensure that the applied-for facilities are both used and useful over the long term, the commencement of construction of the approved facilities will be conditioned upon TransCanada demonstrating to the Board's satisfaction that, in respect of the new firm export volumes or import for re-export volumes, all necessary U.S. and Canadian federal regulatory approvals have been received.

TransCanada will 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 concurs with TransCanada that changes to its base case requirements could affect the need for the applied-for facilities. The Board acknowledges TransCanada's submission that the six-month renewal notice provision in its tariff limits TransCanada's ability to forecast its requirements precisely prior to the commencement of construction for the 1992-93 contract year.

The Board expects TransCanada to continue to monitor its base case requirements and, in the event of a change which would impact its aggregate requirements, revise its facilities requirements accordingly. The Board believes that it would be appropriate to condition any certificate that it will issue in this regard.

With respect to the revision to TransCanada's forecast requirements which occurred subsequent to the hearing, the Board understands that TransCanada adapted its forecast to reflect market and regulatory changes. The Board remains satisfied that the new firm service requests which underpin the facilities expansion are bona fide, notwithstanding the delays in the in-service dates of certain requirements. The Board is of the view that the aforementioned certificate conditions would ensure the construction of facilities only if those facilities were necessary to meet the aggregate firm requirements.

Decision

The Board will recommend to the Governor in Council that any certificate to be issued by the Board, in respect of the applied-for facilities, include the aforementioned conditions.

3.7 Risk and Financial Assurances

3.7.1 Risk

The risks associated with capacity expansions, 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 requirements underpinning the applied-for facilities represent a very modest increase in capacity to serve the domestic and export markets. With respect to the export market, TransCanada noted that the new services are to accommodate market growth and gas supply diversity of U.S. local distribution companies ("LDC(s)") and market growth associated with increases in U.S. electricity production.

TransCanada emphasized that its transportation service agreements with each of the new shippers do not contain regulatory, market, supply, or transportation "outs". These agreements thereby ensure payment of the associated demand charges.

TransCanada submitted that it assesses the risks associated with each underpinning gas sales arrangement by examining the provisions in every contract submitted by prospective shippers in accordance with its examination and evaluation of the Project Status/Evidentiary Support Documentation ("PS/ES Documents") submitted at Stage 2 of its Queuing Procedures. Specifically, TransCanada noted that it reviews the documentation to determine, among other things, that the documents constitute contracts, rather than simply letters of intent, and that the documents support the need for service in the time-frame identified by the prospective shipper. TransCanada noted that it also screens these documents to determine who will hold the transportation service and whether there are any contractual outs or re-openers, or arbitration provisions.

TransCanada concluded that this scrutiny results in some prospective shippers being offered binding transportation service precedent agreements which, upon execution, are included in its aggregate demand forecast and its facilities requirements.

With respect to regulatory risk, TransCanada cited the FERC's Notice of Proposed Rulemaking with respect to the issues of unbundling, comparability of services, capacity reallocation, and rate design for interstate natural gas pipelines(1). TransCanada noted that while it had been monitoring the FERC proceedings, it has concluded that, until the FERC releases its final ruling and U.S. interstate pipelines commence restructuring proceedings, the possible effects of the proposed rule and its impact on Canadian gas shipments are unclear.

TransCanada has concluded that the risk associated with its new transportation services is minimal. TransCanada believed that given the projection of domestic and export market growth and the shippers' ability to assign pipeline capacity permanently or temporarily, there is little risk that its system capacity will not be used should any of the new projects which underpin the applied-for facilities be delayed or terminated.

3.7.2 Financial Assurances

TransCanada has executed either a "Performance Agreement on Financial Assurances" or a "Letter Agreement" with each of the new export shippers. In the case of Indeck-Ilion, the end-user (i.e., Indeck-Services-Ilion) has also agreed to co-sign the FS contract. No financial assurance agreements were executed with any new domestic shipper, including TCPL Cogen.

In the case of a Performance Agreement on Financial Assurances, the shipper agrees, prior to executing an FS contract, to provide TransCanada with an irrevocable letter of credit to cover one year

of demand charges under the FS contract. The shipper has the option of providing an alternative form of financial assurance if it is satisfactory to TransCanada.

In the case of a Letter Agreement, TransCanada waives any further financial assurance requirements based upon its assessment of the shipper's current financial status. However, should TransCanada become dissatisfied with the shipper's creditworthiness, it reserves the right, during the term of the FS contract, to perform further financial reviews of the shipper and to request additional financial assurances.

TransCanada submitted that it did not seek financial assurances from TCPL Cogen since it was a wholly-owned subsidiary of TransCanada and as such, TCPL Cogen's directors and officers are TransCanada personnel. TransCanada argued that this provides it with direct involvement in all facets of TCPL Cogen's contractual arrangements and daily operations and provides it with the equivalent of a very strong financial assurance package. TransCanada argued that this direct involvement allows it, if the need arises, to gain control of any rights associated with the project (e.g., gas supply, upstream and downstream transportation, power purchase agreements, and thermal energy sales agreements, etc.). TransCanada concluded that it has been very prudent in this regard.

In response to the APMC's submission that TransCanada should not be allowed to recover any unpaid demand charges from its other tollpayers should TCPL Cogen default, TransCanada argued that, if it is unsuccessful in securing payment, it will examine the circumstances that led to the nonpayment and then decide whether to apply to the Board for recovery of the demand charges through its tolls. TransCanada noted that this approach was consistent with the Board's findings in the GH-5-89 proceeding, Volume 3, Section 21.5. TransCanada concluded that the appropriate time to review the prudence of its selection of financial assurances is in a future tolls proceeding and then only in the event that there are unrecovered demand charges.

(1) FERC's Notice of Proposed Rulemaking dated 31 January 1991 regarding pipeline service obligations and revisions to regulations governing self-implementing transportation under Part 284 of the Commission's Regulations.

3.7.3 Views of Interested Parties

The APMC submitted that it recognizes that the ultimate decision as to the type of financial assurance package to be negotiated with the prospective shipper is a matter that should be left to TransCanada's discretion. However, the APMC was of the opinion that, in the event TCPL Cogen defaults with respect to its demand charge obligations, TransCanada's decision not to obtain financial assurances from TCPL Cogen should be found to be an imprudent decision: TransCanada should then not be allowed to recover any unpaid demand charges from the other tollpayers.

3.7.4 Views of the Board

As set out more fully in its GH-5-89 Reasons for Decision, Chapter 21, "Contractual Arrangements and Risk Allocation", Section 21.5, pages 173 and 174, the Board continues to believe that TransCanada is in the best position to assess the risks associated with the individual projects underpinning the facilities expansion and, in particular, to determine the risk associated with the recovery of demand charges. Likewise, the Board continues to believe that TransCanada should retain the right to determine the type of financial assurance package that should be negotiated with individual prospective shippers.

The Board believes that the question of prudence with respect to TransCanada's decision on the level

of financial assurances would be reviewed in the event that a shipper defaulted on its demand charge obligations and TransCanada applied to the Board for the recovery of those demand charges from the remaining shippers on its system.

Chapter 4

Facilities

4.1 Specific Facilities

The facilities applied for by TransCanada consist of 278.2 km of system-wide looping, some manifolding at Compressor Station 49, and 3 portable compressor relocations. Details and costs of these facilities are provided in Figure 4-1 and Table 4-1. The total capital cost of the facilities is estimated (in 1991 dollars) at \$360.4 million. TransCanada submitted that the proposed facilities are required by the present and future public convenience and necessity.

In its letter of 19 March 1992, TransCanada indicated that the proposed relocation of the portable compressor unit from Station 43 to Station 119 was no longer required.

Views of the Board

The Board is of the view that the system requirements justify the installation of the proposed facilities. The Board notes that there is a possibility that some of the forecasted requirements may not materialize as expected. This could occur, for example, as a result of a shipper deciding to not renew its existing contract or a delay or change in a new transportation service. TransCanada would have the ability to substitute these requirements with new transportation services which would be able to meet all of the certificate conditions described in Chapter 3. However, TransCanada must demonstrate to the Board's satisfaction, through the submission of engineering flow schematics, and through such other information as the Board may require, that the facilities for which release for construction is sought are required to accommodate the aggregate requirements of the TransCanada system. The certificate will be conditioned accordingly.

4.2 Capability Factor

Following a review of the performance of its system for the summers of 1988-89 and 1989-90, the winters of 1989-90 and 1990-91, and the historical operation of system compressors, TransCanada decided that an adjustment of its winter season capability factor for the Western Section was warranted. This adjustment necessitated the addition of 36.5 km of loop in the Western Section, 5.6 km of loop for the Central Section and 1.2 km of loop on the Emerson Extension.

The capability factor is used to reduce the estimated theoretical system capability to allow for outages as well as uncertainties in the values of some parameters used in the computer simulation which are employed in designing the pipeline system. Actual ambient temperatures, compressor performance, scheduled and unscheduled pipe and compressor outages and other factors may differ from those used in the computer simulation.

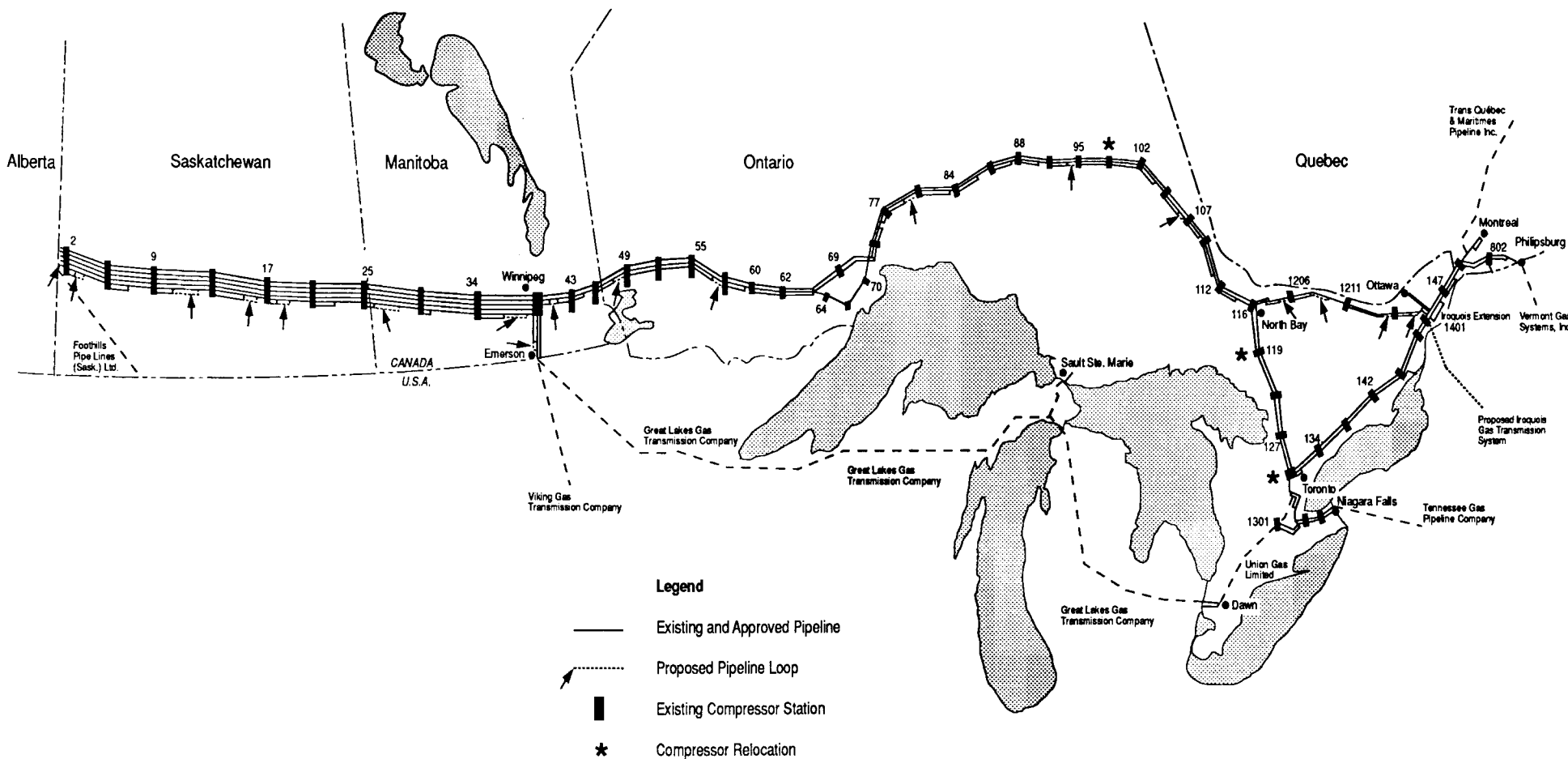
TransCanada based its analysis on the expected availability of individual compressor units derived from a statistical analysis of historical records. This analysis provided a winter season capability factor of 97.7% for the Western Section. TransCanada further reduced the capability

Table 4.1

Description and Cost of the Applied-for Facilities

Figure 4.1

TransCanada PipeLines Limited **Location of the Applied-for Facilities**



1992 Construction (as submitted in November 1991)(1)

Line	Loop Description	Length (km)	Direct Cost (1991 base) (\$000)	
Western Section		1992	1993(2)	
100-5	Empress to MLV 2	2.2		3 269
100-6	Empress to MLV 2		2.2	3188
100-6	MLV 2+13.2 km to MLV 2 + 26.3 km		13.1	12 840
100-6	MLV 9+19.5 km to MLV 10		6.6	7 340
100-6	MLV 10 to MLV 11		23.0	22 730
100-6	MLV 15+18.5 km to MLV 16		8.2	8 840
100-6	MLV 37+9.9 km to MLV 38	20.0		19 740
100-6	MLV 38 to MLV 39		23.7	25 000
Emerson Extension				
400-3	MLV 402+24.5 km to MLV 403		4.8	5 550
Central Section				
100-3	MLV 41+24.7 km to MLV 42		5.6	5 350
100-3	MLV 47+11.4 km to MLV 49		12.3	19 850
100-3	MLV 57+8.4 km to MLV 58		22.3	29 960
100-3	MLV 106+17.9 km to MLV 106A	11.1		15 460
North Bay Shortcut				
1200-2	MLV 1207+16.1 km to MLV 1208		12.3	17 300
1200-2	MLV 1215 to MLV 1215+11.2 km		11.2	15 910
1200-2	MLV 1217+21.5 km to MLV 1218	8.7		11 850
Total 1992 Looping		42.0	145.3	224 177

**1992 Portable Compressor Unit
Relocation and Piping Modifications**

Power	Direct Cost
	(1991 base)
	(\$000)

Station 99 (from Station 62)	5.7 MW(ISO)(2)	2 400
Manifolding at Station 49		990
Total		3 390

(1) Many of the applied-for facilities that were initially scheduled for 1992 construction are now scheduled for 1993 construction as per TransCanada's response dated 19 March 1992 to the NEB Information Request.

(2) Delayed until 1 November 1993.

1993 Construction

Line	Loop Description	Length	Direct Cost
		(km)	(1991 base)
			(\$000)
Western Section			
100-6	MLV 18 to MLV 18+23.1 km	23.1	22 890
100-6	MLV 27 to MLV 28	24.8	24 630
Central Section			
100-3	MLV 79 to MLV 79+9.8 km	9.8	12 334
100-3	MLV 93+3.3 km to MLV 94	22.2	22 180
100-3	MLV 94 to MLV 95	0.8	5 080
North Bay Shortcut			
1200-2	MLV 1203+10.2 km to MLV 1203+20.4 km	<u>10.2</u>	<u>17 040</u>
	Total 1993 Looping	90.9	104 154

1993 Portable Compressor Unit	Power	Direct Cost
Relocations	(1991 base)	
		(\$000)
Station 119 (from Station 43)	10.4 MW (ISO)(1)	3 010
Station 130 (from Station 1301)	6.3 MW (ISO)	<u>2 400</u>
TOTAL		5 410
Total Estimated Cost of Facilities		337 131
Associated Indirect Costs		23 324
Total Estimated Costs		360 455

(1) Relocation of unit no longer required.

factor to 97.0% to account for other determinants, such as temperature variations and pipeline outages, which affect the performance of the system. The effect of these factors on the capability of the system was not quantified by TransCanada.

Views of the Board

The Board is satisfied with the methodology used by TransCanada to determine the effect of compressor unit availability on the capability of the system, and accepts the TransCanada facilities design based on a Western Section capability factor of 97%. However, The Board notes that factors other than compressor unit availability will affect the capability of the system. The Board intends to review the appropriateness of TransCanada's capability factors in the context of TransCanada's next major facilities application. The Board therefore directs TransCanada to include in its next application, a detailed study of the effect of variations in all the factors which may affect the capability of its system. This study should address the probability of these effects acting together to decrease or increase the capability of the system.

4.3 Design of Line 100-6

By letter dated 26 July 1991, TransCanada requested pursuant to Condition 2 of Certificates GC-78 and GC-80 to increase the wall thickness of the previously approved sections of Line 100-6 in order to accommodate an increase at some future date in the maximum allowable operating pressure ("MAOP") of the pipeline from 6067 kilopascals ("kPa") to 6900 kPa. TransCanada indicated that it has determined that Line 100-5 could be uprated through retesting in accordance with the Canadian Standards Association - Standard CSA Z184-M92 Gas Pipeline Systems ("CSA Z184"), at nominal cost, to operate at approximately 6900 kPa. By changing the design MAOP of Line 100-6 to 6900 kPa, Lines 100-5 and 100-6 could be operated independently from the adjacent loops at the higher pressure thereby increasing the capacity of the lines by 13 percent or approximately 11 331 103m³/d (400 MMcfd). TransCanada submitted that the cost of the incremental capacity on a per unit basis would be much less than the current long term marginal capital cost of increased capacity on the Western Section of approximately \$700 000 per MMcfd. On September 1991 TransCanada requested that the application for an increase in the wall thickness be considered in the GH-4-91 proceeding.

With respect to the design of Line 100-6, TransCanada indicated that it was prudent to design its pipeline to operate at a lower stress level than that allowed for in CSA Z184, although it intended to operate the adjacent Line 100-5 at a higher stress level which would also be allowed by CSA Z184. TransCanada acknowledged that the proposed design resulted in higher costs for Line 100-6.

Views of the Board

The Board notes that TransCanada is prepared to operate the older Line 100-5 at a higher stress level than the proposed new parallel line, as permitted by the current standards. Since the CSA Z184 Standard allows a higher stress level in the design of new pipelines, the Board does not see the need to design Line 100-6 at a lower stress level. The Board therefore directs TransCanada to design Line 100-6 for a design pressure of 6 900 kPa as per the CSA Z184 standard.

Decision

The Board denies TransCanada's request to change the wall thickness of the sections of Line 100-6 which were approved by Certificate GC-78 and GC80.

4.4 Union Transportation

In subsection 9.3.1 of the GH-2-87 Reasons for Decision, the Board requested TransCanada to seek approval from the Board prior to committing itself to a change in its long-term contractual obligations with other pipeline companies when the costs of transportation services provided under the contracts are included in TransCanada's revenue requirement. Accordingly, TransCanada requested Board approval of a M-12 firm transportation contract between TransCanada and Union dated 1 July 1991, as amended 30 September 1991. This contract provides for transportation service on the Union system of 1 062.3 103m³/day (37.5 MMcfd) commencing 1 November 1992(1). The volumes are to be received by Union at Dawn, Ontario from TransCanada's system and redelivered at the interconnection between Union's and TransCanada's facilities at Kirkwall, Ontario to be subsequently delivered by TransCanada to Tennessee at the Niagara Falls, Ontario export point. The contract is conditional upon, among other things, TransCanada obtaining Board approval of the contract and upon TransCanada receiving approval from the Board of its 1992-93 facilities application with respect to the transportation of the 1 062.3 103m³/day (37.5 MMcfd) to Tennessee at Niagara Falls, Ontario.

Tennessee supported TransCanada's request for additional facilities and approval of the M-12 contract for transportation service on the Union system necessary to provide service to Tennessee.

Views of the Board

The Board is satisfied That the M-12 firm transportation contract between TransCanada and Union is in the public interest and is required to provide service to Tennessee.

Decision

The Board approves the M-12 firm transportation contract.

4.5 Technical Conditions

TransCanada was requested to comment on the appropriateness of certain technical conditions that had been attached to previous certificates. These conditions included requirements to submit:

- (a) a detailed construction schedule 10 days prior to the commencement of construction;
- (b) construction progress and cost reports;
- (c) qualified welding and non-destructive testing procedures within 21 days of the commencement of pipeline welding; and
- (d) environmental reports.

(1) By letter dated 19 March 1992, TransCanada advised the Board that Union had initiated the revision in the M-12 agreement (see section 3.7).

TransCanada identified no practical problems associated with the conditions and suggested minor modifications to the wording of certain conditions. TransCanada expressed concern with respect to the requirement to file qualified welding and non-destructive testing procedures within 21 days of the commencement of welding.

TransCanada submitted that the procedures must sometimes be modified on short notice in order to address welding problems which may occur during construction. Since TransCanada utilizes the same personnel to supervise the qualification and implementation of procedures and to prepare documents

for submission, TransCanada considers the requirement to file the procedures as specified in the proposed condition onerous.

Views of the Board

The Board previously required the filing of qualified welding and non-destructive testing procedures within 21 days of the commencement of pipeline welding in order to facilitate the audit of this material. As a result of TransCanada's previously expressed concerns regarding the condition, the Board did not include the condition in the certificate issued pursuant to GH-5-89 proceeding. As outlined in section 7.2 of Volume 2 of the GH-5-89 Reasons for Decision, the Board noted that TransCanada must comply with the *"Onshore Pipeline Regulations"* at the time of construction and pipeline welding. Accordingly, the Board did not include the filing requirement in the certificate. The Board also specified that all procedures must be maintained by the company and be available for Board audit. Since TransCanada's procedures are developed and qualified in the field by personnel who supervise their implementation, the Board will require that the qualified welding procedures and non-destructive testing procedures together with all supporting documentation be maintained at each construction spread office for audit purposes. Should welding problems or an incident arise during construction, the Board may request that TransCanada file this information for review.

Chapter 5

Land Use and Environmental Matters

5.1 Early Public Notification

In July 1990, the Board released its Memorandum of Guidance regarding early public notification of proposed projects. The intent of the Memorandum was to provide for public input during the planning and development stage of projects. The information gathered would then be incorporated by applicants into their applications to the Board. It was anticipated that providing early public notification of proposed applications combined with timely public input would improve the Board's regulatory process.

In accordance with the Memorandum, TransCanada initiated its notification program in respect of the 1992-93 Facilities on 12 February 1991. Through this program, TransCanada solicited and encouraged public input on environmental and socio-economic impacts, and responded to all public queries related to the proposed application. The bilingual information program included notices placed in local newspapers, and correspondence with landowners, municipalities, provincial and federal government agencies and departments, elected provincial and federal officials, and public interest groups. The notices were placed in newspapers between 30 March and 4 April 1991 and the letters were sent between 22 March and 12 April 1991.

As a result of the information program TransCanada received 184 queries and had responded to all of them by 15 November 1991. In final argument, TransCanada indicated that with the possible exception of the letters received from Edward Kallio Limited, it had not received any notification of a route-related issue from an affected landowner.

The results of TransCanada's environmental and socio-economic impact assessments for the proposed facilities were distributed to interested and affected parties for information and comment.

Views of the Board

In the Board's view, TransCanada has conducted a satisfactory early public notification program.

5.2 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 of 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. Construction of the pipeline cannot take place unless the Board approves the PPBR.

Under section 58 of the Act, the Board may exempt a company from the requirement to obtain PPBR approval. In its application, as amended, 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) and 31(d) and section 33 of the Act, the Board is mindful of the rights of neighbouring landowners 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 and on that basis has decided to exempt the applied-for facilities from the provisions of paragraph 31(c) and 31(d) and section 33 of the Act.

However, to protect the interests of the landowners whose property TransCanada proposes to acquire, the Board will attach a condition to this exemption from the provisions of paragraphs 31(c) and 31(d) and section 33 of the Act. The wording of the condition is dealt with in section 5.3 of these Reasons.

5.3 Land Acquisition Condition

TransCanada submitted that where new facilities consist of existing pipeline adjacent to or within the existing right-of-way, exemption from sections 31(c) and 31(d) and section 33 of the Act should be granted but subject to reasonable conditions.

TransCanada stated that while it has been able to acquire all necessary options or easements during the past several years in all but a few cases, the precise wording of the condition which was attached to previous certificates occasionally raises serious practical problems for TransCanada which could effectively curtail or significantly delay commencement of service to TransCanada's shippers. That condition requires TransCanada to acquire all the land rights required for an entire loop section prior to commencing construction on that loop. TransCanada has found that if one landowner within a loop section is reluctant to grant an easement at a reasonable price, given the present wording of the condition, that landowner is in a position to block construction.

TransCanada indicated that in its view, the primary purpose of the condition is to ensure the rights of the affected landowners are not prejudiced. TransCanada submitted that this could be fulfilled and allow TransCanada to meet or substantially meet its throughput requirements by revising the condition to read as follows:

"(a)except as provided for in subsection (b) hereof, TransCanada shall, prior to the commencement of construction of any specific loop section referred to in this certificate, demonstrate to the satisfaction of the Board that all required land rights have been obtained along the entire loop section.

(b)In the event that all required land rights have not been acquired within a specific loop section referred to in this certificate, 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."

TransCanada stated that wording the condition in this manner would allow it to build a portion or portions of an approved loop section without obtaining the required land rights for the entire loop section, provided it could demonstrate to the Board's satisfaction that no landowner's rights would be prejudicially affected. Such a condition would help TransCanada meet its contractual commitments without preventing involved landowners from utilizing the process provided for under the Act, including if necessary, a detailed route hearing for a route in the vicinity of the unacquired property.

In final argument TransCanada emphasized that the amendment is not just proposed to minimize the impact of delays on construction caused by "hold out" landowners, but it would provide TransCanada the opportunity to comply with requests by third parties, including government agencies, to meet special construction timing needs or requirements.

Views of the Board

The amended land acquisition condition proposed by TransCanada is satisfactory to the Board. The Board is satisfied that the new condition will afford TransCanada a greater degree of flexibility in planning and carrying out construction, with no prejudice to the rights of the landowners. Landowner rights will be safeguarded by subsection (b) of the condition which will require TransCanada to satisfy the Board that the rights of landowners on a given loop section who have not executed land rights agreement will not be prejudiced by TransCanada beginning construction of that loop section.

5.4 Route Selection

TransCanada has applied for a total of 278.2 km of line pipe, consisting of 22 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.

In TransCanada's view, new facilities located within existing easements and requiring only temporary workspace do not present any route-related issues. This applies to 44.6 kilometres 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 233.6 km.

Table 5.1

TransCanada Proposed 1992/1993 Facilities						
Loop Description	Loop Section	Length	Permanent Easement		Temporary Work Space	
			Width	Length	Width	t g
		(km)	(m)	(km)	(m)	m
Saskatchewan 4th Loop						
Empress to MLV 2	Burstall	2.2	20.0	2.2	20.0	2
Saskatchewan 5th Loop						
Empress to MLV 2	Burstall	2.2				
MLV 2 + 13.2 km to MLV 2 + 26.3 km	Burstall	13.1	20.0	13.1	20.0	1
MLV 9 + 19.5 km to MLV 10	Herbert	6.6	20.0	6.6	20.0	6
MLV 10 to MLV 11	Herbert	23.0	20.0	23.0	20.0	0
MLV 15 + 18.5 km to MLV 16	Pense	8.2	20.0	8.2	20.0	2
MLV 18 to MLV 18 + 23.1 km	Vibank	23.1	20.0	23.1	20.0	1
Manitoba 5th Loop						
MLV 27 to MLV 28	Miniota	24.8	20.0	24.8	20.0	8
MLV 37 + 9.9 km to MLV 38	Starbuck	20.0	20.0	20.0	20.0	0
MLV 38 to MLV 39	Starbuck	23.7	20.0	23.7	20.0	7
MLV 41 + 24.7 km to MLV 42	Steinback	5.6	20.0	5.6	20.0	6

**Manitoba
Emerson Extension
2nd Loop**

MLV 402 + 24.5 to MLV 403	Emerson Extension	4.8	20.0	4.8	20.0	4.8
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**Ontario
2nd Loop**

MLV 47 + 11.4 km to MLV 49	Kenora	12.3	20.0/36.7	11.3	10.0	1.0
MLV 57 + 8.4 km to MLV 58	Ignace	22.3	20.0	17.3	10.0	1.5
MLV 79 to MLV 79 + 9.8 Km	Geraldton	9.8	27.4	0.1	10.0	16.7
MLV 93 + 3.3 Km to MLV 94	Kapuskasing	22.2	27.4	2.2	15.0	15.2
MLV 94 to MLV 95	Kapuskasing	0.8	16.8	0.7		
MLV 106 + 17.9 km to MLV 106A	Swastika	11.1	20.0/30.0	9.2	15.0	1.9

**Ontario
North Bay Short Cut**

MLV 1203 + 10.2 km to MLV 1203 + 20.4 Km	Mattawa	10.2	-	-	20.0	10.2
MLV 1207 + 16.1 km to MLV 1208	Deep River	12.3	-	-	20.0	12.3
MLV 1215 to MLV 1215 + 11.2 Km	Packenham	11.2	-	-	20.0	11.2
MLV 1217 + 21.5 km to MLV 1218	North Gower	8.7	-	-	20.0	8.7

TOTAL		278.2		195.9		233.8
				70.4%		84%

Views of the Board

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

The advantages associated with installing new facilities adjacent to existing easements are recognized by the Board. The Board concurs 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.

5.5 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:* Easements ranging in width from 20 to 36.7 m are required by TransCanada along 17 proposed loop sections.
- (b) *Temporary Workspace Requirements:* TransCanada requires a 10 m to 20 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 will 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 applicable 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 that does not create an interest in land, section 87 of the Act does not apply.

5.6 Landowner Concerns

In a letter dated 10 October 1991, Edward Kallio Limited indicated that during the 1982 construction of the North Bay Shortcut it incurred many problems related to the construction of the pipeline. The Board requested TransCanada to respond to the Kallio concerns.

TransCanada informed the Board that during negotiations for an easement, it was advised by Mr. Edward Kallio that he had development plans for the property and would be filing a plan of subdivision. Accordingly, Mr. Kallio requested not only compensation for the easement but compensation for "lost opportunity" with regard to a number of proposed lots that would be affected by the pipeline. On 9 March 1982, Edward Kallio Ltd. executed an easement permitting TransCanada to construct across its property and compensation was paid by TransCanada which included an advance Damage Payment for the loss of value for 45 building lots.

TransCanada further indicated that on 24 August 1983, Mrs. Kallio, on behalf of Edward Kallio Limited, signed an Approval of Clean-Up Form indicating satisfaction with the clean-up of the property. TransCanada stated that it was unaware of any other problems resulting from construction in 1982 that had not been addressed and settled.

TransCanada further provided information about Edward Kallio Limited's concern in respect of a requirement to construct an access road to his proposed subdivision. TransCanada felt that this requirement was in no way connected to its easement. TransCanada indicated that at the time of construction of the line, it became apparent that a portion of Bass Lake Road which is used to access the Kallio property was in fact situated on private lands owned by a Mr. Carlin. This created some problems with the proposed Kallio subdivision as Edward Kallio Limited would be required to compensate the Ministry of Transportation for the construction of a road to municipal standards as a condition of sub-division approval. Mr. Kallio indicated that he had delayed the sub-division plans for his property as a result of line 1200-1. Now, because of the delay, he is faced with this road problem. Edward Kallio Limited requested TransCanada to apply pressure to have the Ministry of Natural Resources ("MNR") construct the road or, to construct the road itself. TransCanada has no requirement for a road at this location, and advised Edward Kallio Limited that its dispute was with parties other than TransCanada.

By letter dated 11 November 1991, Edward Kallio Limited advised the Board of a number of concerns which were related to TransCanada's proposed looping of the North Bay Shortcut across its property. By its letter dated 21 November 1991, TransCanada responded to these concerns dealing with safety, environmental, compensation and expropriation matters.

TransCanada testified that there were a number of issues raised by Mr. Kallio that had not been previously raised with TransCanada. TransCanada submitted that it is common to have a number of issues that must be resolved prior to reaching a settlement on a new easement. TransCanada has indicated that it will endeavour to resolve the outstanding issues and concerns. TransCanada further indicated that it was optimistic that a settlement can be reached.

Views of the Board

The Board is of the view that two separate issues have been raised by Edward Kallio Limited, those concerning the original installation of pipeline in 1982, and those relating to the proposed pipeline considered in GH-4-91 proceeding. With regard to the first of these, in the Board's view TransCanada does not have any responsibility to resolve issues related to the construction of the access road to the

proposed subdivision. As to the construction in GH-4-91, the Board notes that TransCanada will endeavour to resolve outstanding issues with Edward Kallio Limited.

5.7 Environmental Matters

TransCanada submitted environmental and socio-economic assessment reports dated 1 and 22 August 1991 in support of its application for facilities to be constructed in Saskatchewan, Manitoba and Northern Ontario and on the North Bay Shortcut. TransCanada adopted the recommendations contained in those assessments to prevent or mitigate any adverse environmental impacts resulting from the construction and operation of the applied-for facilities. TransCanada also undertook to adhere to the policy statements and mitigative measures and procedures specified in its revised Pipeline Construction Specifications (1990), and its revised TransCanada's Environmental Protection Practices Handbook (1991).

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

In its application, TransCanada identified a number of environmental effects which could result from the pipeline construction. Those effects, and the mitigative measures proposed by TransCanada, were presented in their assessments. Certain site specific environmental effects and the mitigative measures proposed were discussed during the hearing.

5.7.1 Vegetation

The construction of the proposed looping could lead to the loss of particular vegetation such as rare or unique vascular plants. For certain sites supporting these rare species, detailed site-specific studies had not been concluded as of the close of the hearing. TransCanada indicated that prior to construction, it will undertake to carry out field surveys to determine whether any such 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 with the Board reports relating to these matters.

5.7.2 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 impacts could result from increased concentrations of sedimentation downstream of the construction area.

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 impair 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 testified that reports detailing project planning and development will be completed and filed with the Board.

During the hearing, TransCanada indicated that the Ontario Pipeline Coordination Committee ("OPCC") and Department of Fisheries and Oceans ("DFO") had been involved in an ongoing process of consultation and negotiation with TransCanada so as to identify and resolve various environmental issues. After completing an environmental screening of the proposed facilities' impacts on fish and fish habitat, DFO proposed that several conditions be included in any certificate issued to TransCanada (Appendix III). Those conditions included a number of commitments relating to the timing of construction, such as windows for in-water construction; hydrostatic testing; and notification of provincial authorities. Subject to the implementation of those conditions, the 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. OPCC also presented TransCanada with conditions (Appendix IV) that addressed the Province of Ontario's concerns. TransCanada undertook to comply with all conditions specified by the OPCC and DFO during the hearing.

5.7.3 Wildlife

TransCanada acknowledged in its assessment that construction of the proposed pipeline would have an impact on wildlife, mainly to the extent that wildlife habitat would be modified or reduced. The assessment identified important sites of rare or unique species, such as heronries, or bald eagle and osprey nesting sites along the right-of-way of the Kenora Loop (Northwestern Ontario) and the Mattawa Loop (North Bay Shortcut). Detailed site-specific studies had not been concluded as of the close of the hearing. Prior to construction, TransCanada will carry out field surveys and undertake to file those reports with the Board.

5.7.4 Environmental Inspection

To implement its project specifications and the various recommendations submitted in the environmental assessments, TransCanada indicated that it will retain environmental inspectors throughout the construction of the 1992-93 facilities for the following purposes:

- (a) to advise on and monitor the implementation of all environmental specifications/conditions made in its assessments and the Construction Specifications;
- (b) to help ensure compliance with the contract documents and all commitments made during the hearing;
- (c) to participate in discussions with landowners and government agencies; and
- (d) to act as a liaison with any members of the public, government or landowners with specific environmental interests.

In final argument, TransCanada stated that the environmental inspectors report to the on-site construction supervisor on a daily basis and have substantial authority to ensure that construction personnel adhere to environmental commitments and undertakings.

5.7.5 Views of the Board

The environmental impacts of the project were considered under two separate processes: first, an environmental screening of the application pursuant to the EARP Guidelines Order to the extent that there was no duplication with the Board's own regulatory process, and second, a project review pursuant to the Board's mandate under Part III of the Act. Each process was conducted pursuant to the Board's Directions on Procedures, as set out in Hearing Order GH-4-91. As part of those procedures, the comments of interested parties were solicited with respect to the environmental screening of the application.

Subsequent to the review of the environmental information contained in TransCanada's application and evidence adduced at the hearing, the Board made the following determinations:

- (a) 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 thereto which may be caused by the proposal, would be insignificant or mitigable with known technology; and
- (b) 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 mandate under Part III of the Act, consistent with Section 8 of the EARP Guidelines Order.

Concerning its examination of the proposed facilities under Part III of the Act, the Board is satisfied with the environmental information provided by TransCanada with regard to the potential impacts which may result from the construction and operation of the proposed facilities and is satisfied with TransCanada's proposed mitigation measures. The Board is of the view that if TransCanada's proposed environmental protection measures, as well as those agreed to by TransCanada, with OPCC and the DFO, are implemented, the project would have only minimal environmental impacts 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.

In order to determine whether the environmental objectives have been achieved, the Board will require TransCanada to file, for Board approval, a post-construction environmental report within six months of the date that leave-to-open is granted. The report should address all of the environmental issues which have arisen up to that time. The report should also discuss the status of each issue, as well as the measures to be implemented for the resolution of any outstanding issues.

The Board will also require TransCanada to file a similar report by 31 December following each of the first two full growing seasons after construction.

Chapter 6

Release for Construction

The Board has usually made Certificates of Public Convenience and Necessity issued to TransCanada subject to a number of conditions. Among these are conditions requiring TransCanada to demonstrate that, prior to commencing construction of the approved facilities, transportation and gas supply contracts have been executed, and all necessary U.S. and Canadian regulatory approvals have been granted in respect of any necessary export or import applications, downstream facilities, and/or transportation services. They also require TransCanada to submit certain technical information in respect of its base case and new volume requirements. These conditions are intended to provide the Board with a final opportunity, prior to facilities being constructed, to assure itself that those facilities will be used and useful.

In the past, TransCanada filed a "release for construction" application wherein it demonstrated that the conditions have been satisfied. Once assured that the conditions had been satisfied, the Board would issue a letter to TransCanada indicating that construction could proceed.

In the course of its cross-examination of TransCanada's Requirements Panel, Consumers' Gas requested TransCanada to comment upon the proposition that it be directed, as a condition of all Certificates of Public Convenience and Necessity and Orders issued under Part 111 of the Act, to file its release applications on all Interested Parties who so request. Consumers' Gas indicated that it would like to receive this information to enable it to ascertain whether the projects underpinning the facilities to be constructed are materially different from those considered by the Board in the Part 111 proceeding pursuant to which the facilities were approved. Consumers' Gas also requested TransCanada to comment on the proposition that it be directed to include, in the release packages, a narrative detailing any changes to the major components of the underpinning projects.

Consumers' Gas submitted that unless TransCanada was required to include a narrative with its release packages, there might be changes that could affect aggregate demand which would never be brought to either the Board's or Interested Parties' attention. Consumers' Gas contended that because Interested Parties are afforded an opportunity to comment on the projects underpinning a facilities expansion in a Part 111 proceeding, it follows logically that if there are changes to those projects which could affect aggregate demand, the parties should be made aware of those changes and provided with an opportunity to comment on their potential impact.

In response to Consumers' Gas' request, TransCanada indicated that it would be willing to provide both monthly project status sheets for all projects underpinning facilities that had received Part 111 approval and copies of its release applications to the Board and to any party who requested them. TransCanada did not agree to provide the narrative Consumers' Gas had requested, but did indicate that, if parties receiving the project status sheets found them to be unsatisfactory in terms of the amount of information provided, it would be willing to respond to inquiries from those Parties.

In its argument, TransCanada reiterated its willingness to provide copies of monthly project status sheets and release letters to any party so requesting. TransCanada argued that given its willingness to provide this information voluntarily, a directive from the Board would unnecessarily formalize the release procedure. TransCanada submitted that if the Board were to issue such a directive, it would forfeit its discretion to decide whether parties should have a right to comment on any particular release application. This submission was based on TransCanada's view that implicit in such a directive, would be the right of parties receiving release packages to file comments with the Board and an obligation on

the Board's part to take notice of all comments and institute a proceeding before rendering a decision. TransCanada submitted that this process could delay construction and the commencement of the new services as well as increase construction costs.

Views of Interested Parties

IPAC, Union and the APMC supported Consumers' Gas in calling for TransCanada to provide copies of its release packages to Interested Parties so requesting. None of the parties adopted Consumers' Gas position that TransCanada should be required to include a narrative in its release packages. IPAC argued that a formal release procedure should be established to allow Interested Parties to obtain and comment upon all TransCanada release applications.

Union argued that a procedure should be established that would apply when, after certification but before construction of facilities, a new transportation service is substituted for one that had been reviewed in a prior hearing, or an already-reviewed new transportation service undergoes a material change. The procedure would require TransCanada to deliver to Interested Parties, who so requested, a monthly status sheet indicating the progress of, and any changes to, each project underpinning a facilities application. TransCanada would also be required to serve these parties with copies of its release application. Union submitted that, with this information in hand, parties would be in a position to decide whether to seek a review of the Board's decision pursuant to which the related facilities were certificated and/or an export licence was granted. Like Consumers' Gas, Union argued that its proposal would not alter the rights that Interested Parties currently have to apply to the Board to review an earlier decision; rather it would give parties the information with which to make a decision as to whether to seek such a review.

In its argument, the APMC echoed the concern of Consumers' Gas and Union that Interested Parties currently have no way of knowing whether there have been changes in service requests arising after the close of the hearing and prior to the release of facilities. The APMC submitted that if TransCanada were to provide parties with a significant level of information and explanation related to any changes, the number of requests for an opportunity to comment would likely be minimal. Finally, the APMC indicated that it shares TransCanada's concern that any review proceeding could create construction delays.

In its argument, ProGas indicated that it was opposed to the release package proposition put forward by Consumers' Gas. ProGas submitted that there is no evidence that the current process has not worked to this point and expressed concern that a formalization of the release process could result in unnecessary construction delays. ProGas supported TransCanada's view that the Board should decide on a case-by-case basis whether a public review of a release application is warranted.

Views of the Board

The Board has made Certificates of Public Convenience and Necessity issued TransCanada conditional upon the demonstration by TransCanada, prior to the commencement of construction, that all necessary regulatory approvals and contractual agreements are in place. This condition serves as a final check that the facilities, once constructed, will be used and useful. In the past, TransCanada has complied with the condition, through its release applications, to the Board's satisfaction and no evidence exists that suggests that TransCanada has not been diligent in this regard.

TransCanada has undertaken to provide Consumers' Gas (and any other interested parties who request)

copies of both its release applications and monthly project status sheets for all projects underpinning facilities that have been approved by the Board. TransCanada also volunteered to respond to inquiries from any interested party who indicated that the status sheets provided were unsatisfactory or did not provide as much detail as that party required.

The Board notes that, with the information provided to them by TransCanada, interested parties will have knowledge of any substitutions or changes to service requests and will therefore be in a position to determine whether their interests might be adversely affected by such change and to provide comments to the Board should they be so inclined.

The Board also notes that the substitution of requirements, following Part III approval of facilities, has not materialized on any large scale. The integrity of the requirements justifying these approved facilities has therefore not come into question. Accordingly, the Board believes that there is no reason to depart from the views it expressed on this subject in its GH-5-89 Reasons for Decision(1), that the establishment of a formal procedure relating to substitution or changes to service requests, between Part III approval and release for construction, would constitute an undue regulatory burden.

The Board will continue to ensure that the conditions attached to Part III approvals have been met prior to construction, in order to assure itself that the approved facilities will be used and useful and, where TransCanada seeks relief from full compliance with these conditions, that the granting of such relief is justified.

(1) GH-5-89 - Reasons for Decision, volume 3, page 167.

Chapter 7

Economic Feasibility

The Board determined the economic feasibility of the proposed expansion by examining 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 submission discussed in Chapter 2 demonstrated the existence of long-term gas supply.

TransCanada submitted that a positive long-term outlook for gas demand in the markets to be served, particularly in Eastern Canada and in the U.S. Northeast, was supported by its forecast of a 1.9 percent average growth in Eastern Canadian demand from 1991 to 2002 as discussed in Chapter 2 of these Reasons. TransCanada updated its forecasts of gas demand in the U.S. Northeast that were examined in the GH-5-89 proceeding. These revisions, 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.

In respect of competition with other energy sources, TransCanada argued that natural gas will continue to be competitive. Further, natural gas demand in the markets served will not be negatively affected by interfuel competition.

TransCanada submitted that although its deliveries in the domestic market face potential competition from U.S.-sourced gas, the forecast growth in Eastern Canadian total gas requirements indicates that its system can remain utilized at a high level even with a significantly higher level of U.S. imports. TransCanada submitted evidence that the delivered price of natural gas via TransCanada would be less than that via the proposed InterCoastal pipeline, which is intended to bring natural gas into southern Ontario markets through the conversion from oil service to natural gas service of Interprovincial Pipe Line Ltd.'s pipeline between Sarnia, Ontario and Montreal, Quebec.

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 projectspecific 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, having regard to the nature of the market and its previous experience with the market, are minimal.

The proposed facilities are expected to increase the cost of gas delivered to Eastern Canadian customers by less than half a cent per gigajoule. TransCanada submitted that this toll increase would have little or no 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 strong likelihood that the facilities will be used at reasonable level 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 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 which support the expansion, the Board notes the evidence of a significant level of uncontracted demand and an active market for assignment of firm service, the existence of a queue of service requests for the 1993 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 in these markets.

Chapter 8

Northland Power Section 71

By application, dated 1 August 1991, Northland applied:

- (a) pursuant to subsection 71(2) of the Act, for an Order of the Board requiring TransCanada to receive, transport and deliver 1983.0 103m³/d (70.0 MMcfd) of gas for Northland on a firm basis for a twenty-year period, commencing 1 November 1993, from Empress, Alberta to the point of interconnection of the TransCanada and Centra Ontario systems for delivery to Northland's proposed Iroquois Falls, Ontario 350 MW power project ("the Iroquois Falls Project"); and
- (b) pursuant to subsection 71(3) of the Act, for an Order of the Board requiring TransCanada to provide adequate and suitable facilities for receiving, transmitting and delivering the gas offered by Northland for transmission from Empress, Alberta to Northland's proposed Iroquois Falls Project.

Northland has made gas supply arrangements with seven western Canadian producers for a maximum daily volume of 2 593 103m³/d (91.5 MMcfd) over 20 years with a total term commitment of 15 889 106m³ (561 Bcf).

Northland indicated that it had commenced negotiations with TransCanada in early 1991 with the aim of being included in the 1992-93 Facilities Application, although the service requested would not commence until the 1993-94 contract-year. Northland explained that the request for assured capacity, so far in advance of the in-service date of the Iroquois Falls Project, resulted from the Canadian Imperial Bank of Commerce's ("CIBC") position that no funds would be available for the Iroquois Falls Project without the approval of the Board of the necessary TransCanada capacity. Northland added that, without the necessary CIBC funding, it could not commence construction. Northland testified that the CIBC's financing position stemmed both from the fact that Northland's size and stature gives it little financial clout to borrow the large sums of money required to finance these types of projects, and from the CIBC's need for additional assurances that the project would proceed. Northland had not approached other financial institutions to discuss project financing. However, its experience with other projects led Northland to expect a similar response from other institutions.

Northland noted that TransCanada's overriding reason for rejecting its service request was the absence of an executed agreement between Northland and Ontario Hydro for the purchase of the electricity to be produced by the Iroquois Falls Project.

Northland argued that throughout its negotiations with TransCanada, it had diligently and expeditiously tried to finalize all regulatory approvals and contractual arrangements, including Ontario Hydro's best available commitment to purchase the Iroquois Falls Project electric power output. Northland submitted that it does not view the absence of an executed Power Purchase Agreement as critical to the success of its project, given the strong letters of commitment it had received from Ontario Hydro at the time TransCanada was ready to file its 1992-93 Facilities Application in June 1991.(1)

- (1) Under covering letter dated 28 August 1991, Northland filed an executed binding Letter Agreement, dated 14 August 1991, between Northland and Ontario Hydro, whereby Northland has accepted the rates and commercial terms offered by Ontario Hydro for the power to be

generated at Northland's Iroquois Falls Project.

Subsequent to the hearing, Ontario Hydro announced on 7 February 1992 that due to the success of demand management programs and a lower demand for electricity, it was deferring any nonutility generation that is not required. Ontario Hydro specifically identified Northland's Iroquois Falls project as one that was being placed on hold. Northland provided comments by letter dated 4 March 1992 in respect of the Ontario Hydro announcement.

In its response, Northland stated that subsequent to Ontario Hydro's announcement, Northland had initiated discussion with Ontario Hydro regarding a number of issues for which agreement had been previously reached. Northland acknowledged that if changes have to be made to its project to accommodate Ontario Hydro's new strategy, a delay of six months is possible. Northland stressed that from a "commercial necessity" viewpoint, it is of critical importance to Northland to obtain Board approval of its section 71 application for both financing reasons and in order to meet certain contractual dates to maintain its current gas supply arrangements.

Views of the Board

In the light of the recent announcement by Ontario Hydro to delay its purchase of electricity from the Northland Power Iroquois Falls Project, the Board is not satisfied that Northland has demonstrated the need for the requested facilities at this time. Therefore, the application pursuant to subsection 71(2) and 71(3) of the Act is denied. The Board notes that Northland is in third position in TransCanada's 1993-94 facilities application queue and will be brought forward by TransCanada at a future Part III proceeding if TransCanada is satisfied that Northland's project represents a sufficiently assured market for transportation services.

Decision

The Board denies Northland's application filed pursuant to subsection 71(2) and 71(3) of the Act.

Chapter 9

Disposition

The foregoing chapters constitute our Decisions and Reasons for Decision in respect of the applications heard by the Board in the GH-4-91 proceedings. The Board has found that the proposed facilities are and will be 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 condition outlined in Appendix II.

R. Priddle
Presiding Member

J.-G. Fredette
Member

C. Bélanger
Member

Appendix I

List of Issues Considered in the GH-4-91 Proceedings

(Excerpt from Exhibit A-2)

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 of 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 suppliers of natural gas;
 - (ii) competing energy resources;
 - (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. 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 the OPCC and to the DFO, or as otherwise adduced in evidence before the Board in the GH-4-91 proceeding.
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, at least ten days 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 vascular and unique plants surveys referred to in the application and in the GH-4-91 proceeding, including any corresponding avoidance or mitigative measures;
 - (c) the results of the bird nest surveys referred to in the GH-4-91 proceeding, including any corresponding avoidance or mitigative measures: and
 - (d) the results of the fish habitat and sensitive water surveys referred to in the application and in the GH-4-91 proceeding, including any corresponding avoidance or mitigative measures.
6. 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.

7. 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-4-91 proceeding, showing the base case requirements and those requirements for which Condition 6 has been satisfied: and

(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).

8. During construction, TransCanada shall 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.

9. TransCanada shall maintain for audit purposes at each construction site, a copy of the welding procedures and non-destructive testing procedures used on the project together all supporting documentation.

10. 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 18 of subtab 9 under Tab "Facilities" of Exhibit B-1 to the GH-4-91 proceeding, setting forth actual-versus-estimated costs, including reasons for significant differences from estimates.

11. (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, and
- (ii) describe the measures TransCanada proposes to take in respect of the unresolved issues.

(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.

12. Unless the Board otherwise directs prior to 31 December 1993, this certificate shall expire on 31 December 1993 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 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.

Appendix III

TransCanada PipeLines Limited

Undertakings to the Department of Fisheries and Oceans ("DFO")

General:

1. Routine application of the procedures outlined in TransCanada's Environmental Protection Practices Handbook, 1991, for all water crossings. These measures include but are not restricted to those identified in Table 5.4-1: List of Standard Mitigative Measures Applicable to All Water Crossing Procedures. In addition the following general mitigation measures must be applied:

(a) No 'wet' crossings shall be constructed within waterways supporting fish habitat during fish spawning/incubation periods without prior approval from the DFO and the appropriate provincial authorities. Suitable construction periods and mitigation measures must be developed in consultation on a site-specific basis with the appropriate provincial authorities.

(b) All debris and temporary structures associated with construction activities must be removed from the crossing locations upon completion of the work.

(c) Fluids used for hydrostatic testing of the installed pipeline must not be discharged, pumped, diverted or in any manner be allowed to enter a waterbody directly. Suitable disposal sites must be selected in consultation with the appropriate provincial authorities.

(d) Extreme caution must be taken when handling fuel and lubricants. Fuel containers and pumps within 100m of waterbodies must be bermed and sufficient absorbent material be on hand in case of spills. Waste lubricants and containers must be removed from the right-of-way and there must be no dumping of waste oils. Contingency plans for the use, storage, handling and clean up of fuels, lubricants and other hazardous products must be in place.

Saskatchewan Facilities:

Saskatchewan Fisheries Branch advises that TransCanada must obtain a Fish Habitat Alteration Permit from the Regina Region Fisheries Biologist for the Cottonwood Creek crossing site.

Manitoba Facilities:

1. General application of the "Recommended Fish Protection Procedures for Stream Crossings in Manitoba", published by the Manitoba Department of Natural Resources, Fisheries Branch, is required for all aspects of construction activities associated with the Arrow River and LaSalle River crossings proposed by TransCanada.

2. With respect to the Arrow River and LaSalle River crossings, the schedule for instream construction must be changed from between June 2 and March 14, as stated in the Environmental and Socio-Economic Assessment, to between June 15 and March 14.

3. The proponent must contact the Manitoba Fisheries Branch Regional Fisheries Biologist in Brandon to consult on site-specific construction plans and mitigative measures prior to construction, and to provide an opportunity for on-site advice during construction if it is deemed necessary.

Ontario Facilities:

DFO Fisheries and Habitat Management-Ontario, advises that the acceptability of the proposed facilities is dependent on adherence to the detailed conditions identified in the correspondence of October 10, 1991, from Mr. L. Douglas, Ontario Ministry of Natural Resources ("OMNR"), to Mr. N. McKay, OPCC, or as subsequently agreed-to by OMNR, OPCC and TransCanada.

Appendix IV

TransCanada PipeLines Limited Undertakings to the Ontario Pipeline Coordination Committee ("OPCC")

1. TransCanada shall, following consultation with the local MNR District Manager or designate, obtain and adhere to OMNR Work Permits for all construction on Crown Land, shorelands, and all water crossings (pipeline and access roads), unless MNR determines that a Work Permit is not required.

TransCanada shall apply for all Work Permits, with the provision of sufficient information, detail, and with sufficient lead time, at least 30 days prior to the time of proposed construction.

Should the method of and mitigation associated with a proposed water crossing or other proposed works or activities not be to MNR's satisfaction, a Work Permit may not be issued and the undertaking will not proceed until MNR's concerns are satisfactorily addressed.

2. TransCanada shall, as part of the application for Work Permits and at least 30 days prior to construction, provide to the local MNR District Manager or designate, and adhere to, detailed construction and sediment control plans for the crossing of all watercourses and waterbodies, as noted below, for both pipeline and access roads, unless MNR determines that such plans are not required.

Typical plans are acceptable for all "dry" water crossings.

Typical plans are also acceptable for "wet" water crossings of watercourses which are not identified on 1:50,000 maps, unless otherwise determined by MNR.

Typical plans shall be accompanied by information pertaining to site-specific details such as flume size and location.

"Wet" water crossings of watercourses identified on 1:50,000 maps require site-specific, detailed plans of construction and sediment control, unless MNR determines typical plans would be sufficient.

Plans will address the following:

- (a) method/techniques of proposed water crossing, both preferred and contingency;
- (b) sequential order of construction activities, including time frames;
- (c) soil conditions and water-flow characteristics of the crossing site;
- (d) fisheries' assessment, including fish communities and habitat;
- (e) analysis of any potential effects, beneficial and adverse, including the effects of any materials such as silt, on the watercourse and fisheries, including downstream fishery values;
- (f) impact mitigation measures, including contingency measures, if there is a risk of failure of the preferred measures;
- (g) for temporary or permanent access, the length and span of bridges, the length and

diameter of culverts, and detailed engineer's drawings for bridges and fords are required;

(h) construction and post-construction sediment and other deleterious material, and storm water management and maintenance plans; and

(i) site rehabilitation plans.

3. TransCanada shall develop, in consultation with MNR, typical construction and sediment control plans incorporating the best available construction and mitigation techniques to reduce sediment during the following construction activities in water: flumed dry crossings, dam and pump dry crossings, and temporary bridges and culverts.

4. TransCanada shall notify the local MNR District Manager or designate of the names of the Construction Supervisor and Field Environmental Inspector and, at least 48 hours prior to the pre-construction environmental seminar, of the date, time, and place of the pre-construction environmental seminar to be held for the on-site supervisory construction personnel for each site. This pre-construction meeting shall occur subsequent to the issuance of the required work permits and at least 2 days prior to construction.

5. TransCanada shall provide the local MNR District Manager or designate at least 48 hours' notice prior to construction at each water crossing, and notice within 5 days of completion construction at each water crossing. Notices are to be provided during normal office hours. MNR will be advised by TransCanada at the earliest possible time of any timing changes after notice has been given.

6. TransCanada shall obtain the appropriate authorization under the *Fisheries Act* from the DFO prior to construction, should MNR be of the opinion that destruction of fisheries' habitat would occur as a result of intended actions of TransCanada.

TransCanada should advise MNR as early as possible of any undertakings or actions that may be expected to require DFO authorization such as plans for wet crossings during the critical fish spawning/incubation times, as determined by the MNR, and allow for sufficient lead time for DFO authorization, as required prior to construction.

7. TransCanada shall comply with any restrictions placed on the timing of site preparation or construction for the protection of fisheries, wildlife, avian, the prevention of forest fires or other interests, as determined by MNR in the Work Permit and under the *Fisheries Act*.

8. The TransCanada Construction Supervisor or designate, in addition to any requirements to contact the Ministry of the Environment of spills, shall immediately notify the local MNR District Manager or designate of any introduction of sediment or other materials into a waterbody or watercourse, or failure of any plans or mitigation measures which may adversely impact fisheries.

9. TransCanada shall advise the MNR District Manager or designate of any measures undertaken as a result of situations, as noted in Condition 8, where possibly these and subsequent measures shall be determined by the TransCanada Construction Supervisor or designate in consultation with the MNR District Manager or designate.

10. TransCanada shall provide directly to the local MNR District Manager, for information purposes, a copy of any applicable Post-Construction and As-Built reports.

Appendix V

Exemption Order No. XG-2-92 Dated 5 March 1992

National Energy Board Office national de l'énergie

File No.: 3200-T1-8 6 March 1992

BY FACSIMILE

Mr. Neil Patterson Solicitor TransCanada PipeLines Limited TransCanada PipeLines Tower P.O. Box 1000, Station M Calgary, Alberta T2P 4K5

Dear Mr. Patterson:

Re: TransCanada PipeLines Limited ("TransCanada") Application dated 24 February 1992 for Early Release of GH-4-91 Decision

The Board has considered your request for early issuance of the Decision on the TransCanada 1992 Facilities (GH-4-91) with Reasons to follow and has decided to approve under section 58, those facilities which were specifically mentioned as requiring an early decision. An order respecting these facilities is attached.

Further to TransCanada's request dated 26 July 1991 to change the design of Line 100-6, the Board has denied TransCanada's request to increase the wall thickness of Line 100-6 for those sections which were approved by Certificates GC-78 and GC-80. The Board directs TransCanada to design the section between MLV 37 + 9.9 km to MLV 38 for a design pressure of 6 895 kPa as per CSA Z184-M92.

The Board's reasons with respect to the facilities approval pursuant to section 58, Conditions 5 and 10 of Order XG-9-92 and Line 100-6 will be contained in its GH-4-91 Reasons for Decision.

The accounting treatment of the cost of these projects should conform with the *Gas Pipeline Uniform Accounting Regulations*. In addition, the cost of each project, including any overruns, will be subject to normal review pursuant to the Board's responsibilities under Part IV of the *National Energy Board Act* before being authorized for inclusion in the rate base.

TransCanada shall serve a copy of this letter and Order XG-9-92 on interested parties to the GH-4-91 proceedings.

Yours truly,
G.A. Laing
Secretary

Attach.

311 - 6th Avenue S.W. 311 , 6e Avenue s.-o. Calgary, Alberta Calgary (Alberta)
T2P 3H2 T2P 3H2

Telephone/Téléphone: (403)292-4800 Facsimile/Télécopieur: (403)292-5503

ORDER XG-9-92

IN THE MATTER OF the *National Energy Board Act* ("the Act") and the regulations made thereunder; and

IN THE MATTER OF an application, pursuant to section 52 of the Act, by TransCanada PipeLines Limited ("TransCanada"); filed with the Board under File No.: 3200-T1 -8.

B E F O R E the Board on 5 March 1992.

WHEREAS by application dated 11 July 1991, TransCanada applied pursuant to section 52 of the Act for approval to add certain facilities to its pipeline system;

WHEREAS the Board held a public hearing to consider TransCanada's application;

WHEREAS by letter dated 24 February 1992 TransCanada requested the Board to issue its Decision with Reasons to follow by mid-March so as to enable it to commence construction of a portion of the applied for facilities (" the Partial Facilities ") in a timely fashion;

WHEREAS the Board has decided to issue its Decision with Reasons to follow, only in respect of the Partial Facilities;

WHEREAS pursuant to the *Environmental Assessment and Review Process Guidelines Order* (" The EARP Guidelines Order "), the Board has performed an environmental screening and has considered the information submitted by TransCanada and evidence adduced at the hearing;

WHEREAS the Board has 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 Partial Facilities are insignificant or mitigable with known technology.

AND WHEREAS the Board has examined the application and considers it to be in the public interest to grant relief in respect of the Partial Facilities pursuant to section 58 of the Act in lieu of the relief requested in the application;

IT IS ORDERED THAT the facilities listed in Schedule A, attached to and forming part of this Order, are exempt from the provisions of sections 30 and 31 and 47 of the Act, upon the following conditions:

1. The Partial Facilities shall be operated by TransCanada.
2. (a) TransCanada shall cause the Partial Facilities to be designed, manufactured, located, constructed and installed in accordance with those specifications, drawings and other information of 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. 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 the Ontario Pipeline Coordination Committee ("OPCC") and to the Department of Fisheries and Oceans ("DFO"), or as otherwise adduced in evidence before the Board in the GH-4-91 proceeding.

4. TransCanada shall, at least 10 days prior to the commencement of construction of the Partial 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, 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.

6. TransCanada shall file with the Board, at least ten days 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 vascular and unique plants surveys referred to in the application and in the GH-4-91 proceeding, including any corresponding avoidance or mitigative measures;

7. Unless the Board otherwise directs, TransCanada shall, prior to the commencement of construction of the Partial 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 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 of transportation services; and

(iii) gas supply contracts have been executed.

8. Unless the Board otherwise directs, TransCanada shall, prior to the commencement of construction of any of the Partial Facilities, submit for Board approval:

(a) requirements tables in the same format as Tables 2, 3, and 5 of subtab 1 under tab "Requirements" of Exhibit B- 1 from the GH-4-91 proceeding, showing the anticipated base case requirements and those requirements for which Condition 6 has been satisfied; and

(b) flow schematics of the TransCanada system demonstrating that those Partial Facilities which are to be released for construction are necessary to transport the requirements referred to in subsection (a).

9. During construction, TransCanada shall 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 complete of each activity and an update of projected costs to complete the project.

10. TransCanada shall 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.

11. TransCanada shall, within six months of putting the Partial Facilities into service, file with the Board a report providing:

(a) a breakdown of the costs incurred in the construction of the additional facilities in the format used in Schedules 3 through 18 of subtab 9 under tab "Facilities" of Exhibit B- 1 to the GH-4-91 proceeding, setting forth actual-versusestimated costs, including reasons for significant differences from estimates; and

(b) the percentage of Canadian content realized in comparison with that estimated in Schedules 19 through 21, of Tab 9 under Tab "Facilities" of Exhibit B-1 to the GH-4-91 proceeding, including reasons for significant differences.

12. (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 Partial 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, and

(ii) describe the measures TransCanada proposes to take in respect of the unresolved issues.

(c) TransCanada shall file with the Board, on or before 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 those that have arisen since the report was filed, if any, and

(ii) a description of the measures TransCanada proposes to take in respect of any unresolved environmental issue.

13. Unless the Board otherwise directs prior to 31 December 1993, this Order shall expire on 31 December 1993 unless the construction and installation with respect to each of the Partial Facilities has commenced by that date.

NATIONAL ENERGY BOARD

G.A. Laing
Secretary