



National Energy Board

Reasons for Decision

**TransCanada PipeLines
Limited**

GH-4-88

January 1989

Pipelines Facilities

National Energy Board

Reasons for Decision

In the Matter of

Facilities Application

GH-4-88

January 1989

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Cat. No. NE22-1/1989-1E
ISBN 0-662-16727-9

This report is published separately in both official languages.

Copies are available on request from:

Regulatory Support Office
National Energy Board
473 Albert Street
Ottawa, Canada
K1A 0E5
(613) 998-7204

Printed in Canada

Ce rapport est publié séparément dans les deux langues officielles.

Exemplaires disponibles sur demande auprès du:

Bureau du soutien à la réglementation
Office national de l'énergie
473, rue Albert
Ottawa (Canada)
K1A 0E5
(613) 998-7204

Imprimé au Canada

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Abbreviations

Accounting Regulations	Gas Pipeline Uniform Accounting Regulations
ACQ	Annual Contract Quantity
Act	National Energy Board Act
AEC	AEC Oil and Gas Company
Altresco	Altresco Pittsfield Incorporated
ANE	Alberta Northeast Gas, Limited
ANR	ANR Pipeline Company
APMC	Alberta Petroleum Marketing Commission
Arrowhead	Arrowhead Cogeneration Company Limited Partnership
Bcf	Billion cubic feet
Board	National Energy Board, The
Canterra	Canterra Energy Ltd.
Consolidated	Consolidated Fuel Company
Consumers Gas	Consumers' Gas Company Ltd., The
CPA	Canadian Petroleum Association, The
CPCo	Consumers Power Company
Direct Energy	Direct Energy Marketing Limited
Dome	Dome Petroleum Limited
EIL	Environmental Issues List
ERA	(United States) Economic Regulatory Administration
FERC	(United States) Federal Energy Regulatory Commission
FS	Firm Service
FST	Firm Service Tendered
GH-2-87	Hearing held to consider TransCanada's application for 1988 and 1989 facilities

Hearing	
GJ	Gigajoule(s)
GMI	Gaz Métropolitain, inc.
Great Lakes	Great Lakes Gas Transmission Company
Greater Winnipeg	Greater Winnipeg Gas Limited
ICG Manitoba	ICG Utilities (Manitoba) Ltd.
ICG Ontario	ICG Utilities (Ontario) Ltd.
IPAC	Independent Petroleum Association of Canada, The
KannGaz	KannGaz Producers Ltd.
km	kilometre(s)
KPUC	Public Utilities Commission of the City of Kingston, The
LDC	local distribution company
LNG	liquefied natural gas
Loutex	Loutex Energy, Inc.
m	metre(s)
m ³	cubic metre(s)
m ³ /d	cubic metre(s) per day
MCV	Midland Cogeneration Venture Limited Partnership
MDCQ	maximum daily contract quantity
MDQ	maximum daily quantity
MGSC	Michigan Gas Storage Company
MichCon	Michigan Consolidated Gas Company
Midwestern	Midwestern Gas Transmission Company
MLV	mainline valve
MMBtu	million British thermal unit(s)

MMcfd	million cubic feet per day
MW	megawatt(s)
NEB	National Energy Board, The
Norcen	Norcen Energy Resources Limited
N o r t h e r n Natural	Northern Natural Gas Company
Northridge	Northridge Petroleum Marketing, Inc.
NOVA	NOVA Corporation of Alberta
NSP Minnesota	Northern States Power Company, A Minnesota Corporation
NSP Wisconsin	Northern States Power Company, A Wisconsin Corporation
O.D.	outside diameter
ODV	operating demand volume
Ontario	Minister of Energy for Ontario, The
OPCC	Ontario Pipeline Coordinating Committee, The
OSP	Ocean State Power
Panhandle	Panhandle Eastern Pipeline Co.
Poco	Poco Petroleums Ltd.
PPBoR	plan, profile and book of reference
ProGas	ProGas Limited
Shell	Shell Canada Limited
Southeastern	Southeastern Michigan Gas Company
Tennessee	Tennessee Gas Pipeline Company
TransCanada	TransCanada PipeLines Limited
Trunkline	Trunkline Gas Company
Union	Union Gas Limited
Vector	Vector Energy Inc.

Vermont	Vermont Gas Systems, Inc.
WGML	Western Gas Marketing Limited

Explanation of Statutory References

On 12 December 1988 the Revised Statutes of Canada 1985 came into force, thereby resulting in the replacement of the *National Energy Board Act*, R.S.C. 1970, c. N-6, as am. ("the 1970 Act") by the *National Energy Board Act*, R.S.C. 1985, c. N-7 ("the 1985 Act").

In TransCanada's application, all references to the *National Energy Board Act* are to the 1970 Act which was in force throughout the GH-4-88 public hearing. Therefore, in these Reasons for Decision all references to relief sought by TransCanada refer to the applicable sections of the 1970 Act.

However, as the relief granted by the Board in these proceedings was granted subsequent to 12 December 1988, all such relief was pursuant to the 1985 Act. Therefore in these Reasons for Decision all references to relief granted by the Board refer to the applicable sections of the 1985 Act.

The following Table of Concordance includes all references to the *National Energy Board Act* that are found in these Reasons for Decision.

Table of Concordance

1970 Act	1985 Act
subs. 20(1)	subs. 24(1)
par. 26(1)(a)	par. 30(1)(a)
subs. 26(2)	subs. 30(2)
s. 27	s. 31
par. 27(b)	par. 31(c)
par. 27(c)	par. 31(d)
s. 29	s. 32
s. 44	s. 52
s. 49	s. 58
s. 63	s. 74
subs. 63(1)	subs. 74(1)
par. 63(1)(d)	par. 74(1)(d)
s. 75	s. 87

Recital and Appearances

IN THE MATTER OF the *National Energy Board Act*, R.S.C. 1985, c. N-7, ("the Act"), and the Regulations made thereunder; and

IN THE MATTER OF an application dated 28 July 1988, as amended, by TransCanada PipeLines Limited ("TransCanada"), pursuant to Parts III, IV and V of the Act, for a certificate in respect of certain proposed facilities, for an order exempting certain of those proposed facilities from the provisions of certain sections of the Act and for orders respecting the retirement of certain compression facilities; filed with the National Energy Board (the "Board") under File No. 1555-TI-157; and

IN THE MATTER OF Hearing Order GH-4-88, as amended.

HEARD at Ottawa, Ontario on:

18, 19, 20, 21, 26, 27 and 28 October and 1, 2, 3, 7, 8, 14 and 15 November 1988.

BEFORE:

J.G. Fredette	Presiding Member
J.R. Jenkins	Member
K.W. Vollman	Member

APPEARANCES:

J.M. Murray J.C. Schatz	TransCanada PipeLines Limited
D.A. Holgate C.K. Yates	Canadian Petroleum Association, The
A.S. Hollingworth J.A. Snider	Independent Petroleum Association of Canada, The
P.C.P. Thompson, Q.C.	Industrial Gas Users Association, The
T.G. Kane	ANR Pipeline Company
L.E. Smith	Alberta Northeast Gas Export Project, The
C. Page	Alberta & Southern Gas Co. Ltd.
M.M. Peterson	C-I-L Inc.
G. MacInes	Canterra Energy Ltd.
A.M. Bigué S. Struthers	Champlain Pipeline Company

F.X. Berkemeier W. Lange	Consumers Power Company
J.H. Farrell	Consumers' Gas Company Ltd., The
S. Lockwood	Esso Resources Canada Limited
J. Lutes	Foothills Pipe Lines (Yukon) Ltd.
L.-C. Lalonde	Gaz Métropolitain, inc.
J.D. Brett	Greater Winnipeg Gas Company and ICG Utilities (Manitoba) Ltd.
J.H. Smellie	ICG Utilities (Ontario) Ltd.
J.T. Horte	KannGaz Producers Ltd.
A.Vandam J. Lowe	Midland Cogeneration Venture Ltd.
W.L. Oostenbrink	Mobil Oil Canada
D.G. Hart, Q.C.	New England Power Company
W. Mirosh	Norcen Energy Resources Limited
M. Himmelspach	Northridge Petroleum Marketing, Inc.
J. Hopwood, Q.C.	NOVA Corporation of Alberta
L.E. Smith	Ocean State Power and Ocean State Power II
R.B. Brander	Poco Petroleums Ltd.
T.M. Hughes	Polysar Limited
E.S. Decter	Shell Canada Limited
D.G. Hart, Q.C.	St. Clair Pipelines Ltd.
N.J. Schultz J. Burke-Robertson	Tennessee Gas Pipeline Company
J.F. Weiler J.M. Johnson R. Kruse	Texas Eastern Transmission Corporation
R. Valdis	Union Gas Limited

A.M. Bigué
S. Struthers

Vermont Gas Systems, Inc.

P. McCunn-Miller

Alberta Petroleum Marketing Commission, The

P.D. Morris

Minister of Energy for Ontario, The

J. Robitaille
J. Giroux

Procureur général du Québec, Le

J.A. Vockeroth
F.J. Morel

National Energy Board, The

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 the detailed text and tables.)

On 19 December 1988, the Board released its decision with respect to an application by TransCanada PipeLines Limited ("TransCanada") under Part III of the *National Energy Board Act* regarding new facilities to be added to TransCanada's pipeline system. The decision was released in advance of the Reasons for Decision in order to allow TransCanada to take advantage of favourable winter construction conditions in northern Ontario, to provide the necessary lead time for compressor and pipe procurement and to address concerns regarding the financing requirements of the Northland Power and Ocean State Power projects. The National Energy Board's ("Board") reasons for this decision are included in this report.

The Application

By application dated 28 July 1988, as amended on 14 October 1988, TransCanada applied for a certificate in respect of new facilities to expand the capacity of its pipeline system for the 1989/90 contract year.

The proposed expansion was required in order to:

- (i) meet projected sales and transportation requirements under existing service contracts, including higher load factors for some of the existing customers;
- (ii) provide incremental services to new and existing customers;
- (iii) provide a level of advance capacity;
- (iv) maintain loss-of-unit protection to the Montreal Line in the event of compressor failure;
- (v) restore the capability that will be lost due to:
 - the proposed retirement of certain compressors; and
 - the re-evaluation of actual power available to existing compressors;
- (vi) replace the capacity that would have been provided by the aftercoolers and compressors that the Board previously approved and that TransCanada no longer proposes to install; and
- (vii) compensate for the reduction of transportation services provided by Great Lakes Gas Transmission Company to TransCanada.

The total cost of the proposed facilities was estimated to be \$568 million. These facilities were estimated to increase the current Eastern Zone toll by approximately \$0.02/gigajoule ("GJ"), relative to tolls without the expansion calculated to range from about \$0.80/GJ in 1990 to \$0.90/GJ in 1998, not including fuel.

Details of the applied-for facilities are provided in Table 1.

The Hearing

A public hearing, lasting 14 days, was held at the Board's offices in Ottawa during the period 18 October to 15 November 1988.

Requirements

The Board found the forecasted domestic and export requirements to be reasonable for the purpose of assessing the level of capacity requirements for the 1989/90 contract year. The new firm services which will be provided in 1989/90 are listed in Table 2.

Supply

Evidence was submitted suggesting that there is an ample resource base for delivery through TransCanada's system, and TransCanada indicated that, at the present time, there are adequate supplies of gas in Alberta to ensure the full utilization of its system. On the basis of the evidence, the Board was satisfied that adequate reserves and productive capacity will be available to support the applied-for facilities.

Contracts

The Board found TransCanada's transportation arrangements to be reasonable in light of the current market-oriented environment.

Facilities

The Board found that TransCanada's system was operating at or near capacity and could not accommodate either higher load factor movements or the high number of requests by new and existing shippers for incremental transportation service for 1 November 1989. The Board also noted the queue for service for the contract year commencing 1 November 1990. In view of these factors, the Board found that an expansion of the TransCanada system is required. The Board also decided that it was appropriate to include an amount of advance capacity in the system design for the 1989/90 contract year. This advance capacity would allow for new firm domestic or export services which may develop before or during the 1989/90 contract year. The Board also considered that the applied-for facilities, although not the least cost design, were justified in view of the inability of Great Lakes Gas Transmission Company to install additional facilities on its system by 1 November 1989. Accordingly, the Board, upon approval by the Governor in Council, issued three certificates for the proposed facilities. These certificates are described in Table 3.

For the purpose of conditioning the certificates, the Board considered it appropriate to distinguish between the compression facilities, the line pipe required to increase the capacity in order to accommodate domestic requirements and the line pipe required to increase the capacity in order to accommodate export requirements. All three certificates are subject to routine conditions and the two certificates in respect of line pipe facilities are also conditional upon the receipt of signed transportation contracts. In addition, the certificate in respect of line pipe facilities underpinned by new export requirements is conditional upon the receipt of necessary United States and Canadian federal regulatory approvals.

Environment and Land Use

The Board found that the project would only create minimal environmental impacts of a local and temporary nature, if the measures for environmental protection proposed by TransCanada are implemented. The Board included in the certificates it issued a condition requiring TransCanada to implement all of the policies, practices, recommendations and procedures for the protection of the environment included in its application.

The Board considered the route selection made by TransCanada to be appropriate in light of TransCanada's proposed use of existing and new permanent easements along existing pipeline infrastructure. The Board also found TransCanada's land acquisition requirements and notifications to be reasonable.

As requested in TransCanada's letter of 1 December 1988, the Board decided to exempt the facilities from the requirements of detailed route proceedings. However, in order to protect the interests of the owners of lands proposed to be acquired, the exemption granted by the Board is conditional upon all necessary option or easement agreements being executed by the affected owners of lands prior to commencement of construction.

Retirement of Compressors

The Board concluded that its leave is not required in order for TransCanada to implement its proposed compressor unit retirements since these retirements will not result in the abandonment of the operation of a pipeline. Accordingly, the Board denied TransCanada's request for an order under Part V respecting the proposed retirement of certain compressor units.

With respect to TransCanada's request under Part IV of the Act, the Board considered each of the proposed retirements to be an ordinary retirement as defined in the *Gas Pipeline Uniform Accounting Regulations* and directed TransCanada to treat the proposed compressor unit retirements as such.

Economic Feasibility of Expansion

On the basis of forecasted producer netbacks, aggregate net revenues at the Alberta border, the extent to which the cost of providing the proposed new services would be offset by additional transportation revenues received for such services, and evidence demonstrating the existence of long-term supplies and markets, the Board concluded that the proposed expansion of the TransCanada system was economically feasible.

Table 1
Description and Cost of Applied-for Facilities

Location	Facilities Description	Length of Pipeline (km)	Capital Cost (1988 base) (\$ 000)
Western Section	1219 mm O.D. Pipeline Loop between MLV 2 and MLV 3	3.4	
	between MLV 13 and MLV 14	13.7	
	between MLV 25 and MLV 27	<u>31.7</u>	
	Total Western Section Looping	48.8	45,393
	Two existing 10.4 MW Compressor Units upgraded to 13.8-MW at Station 41		6,450
Central Section	1067 mm O.D. Pipeline Loop between MLV 41 and MLV 42	3.6	
	between MLV 45 and MLV 46	11.8	
	between MLV 49 and MLV 50	23.8	
	between MLV 50 and MLV 51	8.3	
	between MLV 53A and MLV 54	24.5	
	between MLV 59 and MLV 60	7.0	
	between MLV 61 and MLV 62	23.8	
	between MLV 62 and MLV 63	29.8	
	between MLV 67 and MLV 69	12.9	
	between MLV 69 and MLV 71	4.0	
	between MLV 75 and MLV 76	18.0	
	between MLV 86 and MLV 87	31.4	
	between MLV 87 and MLV 88	3.0	
	between MLV 88 and MLV 89	5.6	
	between MLV 95 and MLV 97	31.6	
	between MLV 99 and MLV 100	26.6	
	between MLV 107 and MLV 108	<u>5.0</u>	
	Total Central Section Looping	<u>270.7</u>	285,347
	Two new 22.8 MW Compressor Units at Stations 45 and 86		39,000
	Three new 26.1 MW Compressor Units at Stations 75, 107 and 112 and one new 24.8 MW Compressor Unit at Station 95		81,680
	Spare compressor equipment and standby plant items		13,200
	Two existing 10.4 MW Compressor Units and one existing 11.5 MW Compressor Unit upgraded to 13.8 MW at Stations 60, 84 and 92		9,780
	Axial inlet compressor conversions to existing 10.4 MW Compressor Units at Stations 60, 84 and 102		5,910
Montreal Line	Two new 3.7 MW Compressor Units at Station 147		12,400
St. Mathieu Extension	508-mm O.D. Pipeline Loop between MLV 707 and MLV 708	4.7	
	between MLV 802 and MLV 803	<u>10.0</u>	
	Total St. Mathieu Extension Looping	14.7	<u>7,158</u>
Direct Cost			506,318
Indirect Cost			61,285
Total			<u>567,603</u>

Table 2

**New Firm Services Underpinning the
28 July 1988 Application, as Amended¹**

Shippers/Customers		1989/90	
	10⁶m³/d		(MMcfd)
<u>Domestic</u>			
ICG Manitoba	1.000		(35.3)
Greater Winnipeg	0.900		(31.8)
Northland Power	0.595		(21.0)
Union	0.622		(22.0)
Consumers Gas ²	0.850		(30.0)
KPUC	0.051		(1.8)
GMi	<u>0.380</u>		<u>(13.6)</u>
	DOMESTIC TOTAL	4.403	(155.5)
<u>Export</u>			
<u>@Emerson</u>			
WGML	/NSP Wisconsin	0.397	(14)
WGML	/Northern Natural	0.878	(31)
WGML	/Southeastern	0.425	(15)
Northridge	/Loutex, Union ³	0.425	(15)
Poco	/CPCo	0.708	(25)
Canterra	/CPCo	0.425	(15)
Norcen	/CPCo	0.397	(14)
Shell	/CPCo	0.425	(15)
WGML	/CPCo	<u>0.425</u>	<u>(15)</u>
	/CPCo sub-total	2.380	(84)
Poco	/MCV		
Canterra	/MCV		
Norcen	/MCV		
Shell	/MCV		
WGML	/MCV		
	/MCV sub-total	2.167	(76.5)
<u>@Niagara Falls²</u>			
Vector	/Altresco	0.904	(31.9)
<u>@Philipsburg</u>			
Direct Energy	/Consolidated Fuel	<u>0.171</u>	<u>(6.0)</u>
	EXPORT TOTAL	7.747	(273.4)
DOMESTIC AND EXPORT TOTAL		12.150	(428.9)

1 The volumes shown in this table represent contractual maximum day obligations which are incremental to the 1987/88 contract year.

2 The need for additional capacity to accommodate additional contract increases in 1989/90, including domestic volumes for Consumers Gas and export volumes by WGML and KannGaz for Tennessee and by ProGas for Ocean State Power, was addressed in the GH-2-87 proceeding - see Reasons for Decision dated July 1988.

3 The exact split of volumes between Loutex and Union had not been determined before the close of the GH-4-88 proceeding.

Table 3
Certificates Issued in Respect
of the Applied-for Facilities

Certificate No.	Description of Facilities Being Certified	Estimated Cost ¹ of Certificated Facilities (\$ million)	Key Certificate Conditions
GC-74	All applied-for compression facilities ²	168	- Technical and environmental conditions
GC-75	6 km of loop on the Western Section	6	- Technical, environmental and land acquisition conditions
	271 km of loop of the Central Section	285	- Execution of transportation contracts in respect of the new firm domestic services listed in Table 2
	6 km of loop on the St. Mathieu Extension	3	
GC-76	43 km of loop on the Western Section	40	- Technical, environmental and land acquisition conditions
	8 km of loop on the St. Mathieu Extension	4	- Execution of transportation contracts in respect of the new firm export services listed in Table 2 - Granting of all necessary United States and Canadian federal regulatory approvals

¹ Direct costs only. Total costs may be approximated by multiplying the figures in the table by a factor of 1.12.

² The evidence filed at the hearing was that, for the most part, these facilities were required whether the new services listed in Table 2 proceeded or not.

Chapter 1

The Application

1.1 Sequence of Events

On 28 July 1988, TransCanada PipeLines Limited ("TransCanada") applied to the National Energy Board ("the Board"), pursuant to Part III of the *National Energy Board Act* ("the Act"), for a certificate in respect of certain proposed pipeline facilities. The proposed facilities would expand the capacity of the TransCanada pipeline system in order that additional gas volumes could be transported to domestic markets and to markets in the midwestern and northeastern United States. The additional volumes include gas proposed to be exported, under existing licences or under licences currently being sought from the Board, to the United States at points near Emerson in Manitoba, Niagara Falls in Ontario and Philipsburg in Quebec. Under Part III of the Act, the application also sought exemption from the provisions of paragraph 26(1)(a), subsection 26(2) and section 27 with respect to the line pipe facilities.

In its application, TransCanada also requested, pursuant to Part V of the Act, an order with respect to the proposed retirement of certain compressor units. In addition, TransCanada requested, pursuant to Part IV of the Act, an order treating the retirements as ordinary under the *Gas Pipeline Uniform Accounting Regulations* (the "Accounting Regulations").

On 12 August 1988, the Board issued Order No. GH-4-88, setting down TransCanada's application for hearing commencing 18 October 1988. On 18 August 1988, the Board issued, pursuant to section 14 of Order No. GH-4-88, a List of Issues to be considered at the hearing, which was amended on 31 August 1988. A copy of the Board's Amended List of Issues appears in Appendix I.

On 20 September 1988, the Board issued Order No. AO-1-GH-4-88 to change certain filing dates set out in Order No. GH-4-88.

By letter dated 14 October 1988, TransCanada filed an amendment to its 28 July 1988 application. The amendment sought certification of additional facilities required as a result of:

- increased winter peak day requirements for Gaz Métropolitain, inc. ("GMi") at Sabrevois;
- increased winter peak day requirements for Direct Energy Marketing Limited ("Direct Energy") at Philipsburg; and
- increased winter peak day requirements on the Western Section.

The 14 October 1988 amendment also described the following changes in the applied-for facilities:

- continued operation of the 5.7 megawatt ("MW") Orenda portable compressor unit at Station 147;
- revised location of a 12.9 kilometre ("km") loop segment upstream of Station 69; and
- a one-month delay in the in-service dates for three of the six proposed compressor units.

In addition, TransCanada advised of its decision to install the Kirkwall Line previously authorized by the Board and to construct 11.8 km of the previously authorized 16.3 km loop on the Niagara Line. The 14 October 1988 amendment also included revisions to the level of advance capacity and to the level of contracted transportation service from Great Lakes Gas Transmission Company ("Great Lakes").

The public hearing was conducted in Ottawa for a total of 14 days between 18 October and 15 November 1988.

On 4 November 1988, TransCanada filed with the Board a Notice of Motion with respect to striking certain portions of the evidence submitted by Union Gas Limited ("Union") respecting the use of the Kirkwall Line. On 8 November 1988, Union withdrew that part of its evidence that was the subject of TransCanada's motion.

By letter dated 1 December 1988, TransCanada requested an order pursuant to section 49 of the Act, exempting certain loop sections from the provisions of section 27 of the Act prior to the issuance of the applied-for certificate with respect to those loop sections. TransCanada also requested exemption from the detailed route determination and approval provisions of section 29 of the Act for all the loop sections. TransCanada withdrew at the same time its request for exemption from paragraph 26(1)(a) and section 26(2) of the Act.

On 5 December 1988, the Board decided to re-open the record of the GH-4-88 proceeding for the limited purpose of receiving TransCanada's letter dated 1 December 1988 and any comments from interested parties.

On 19 December 1988, in view of TransCanada's evidence and argument and having regard to the fact that TransCanada's system is currently operating at full capacity and therefore, cannot accommodate any of the large number of requests for new service for 1 November 1989, the Board released its decision in advance of the release of its Reasons for Decision. This early release took place in order to allow TransCanada to take advantage of favourable winter construction conditions in northern Ontario (where extensive swamp areas will be encountered) to provide the necessary lead time for compressor and pipe procurement and to address concerns regarding the financing requirements of the Northland Power and Ocean State Power ("OSP") projects.

The Board's reasons for this decision, together with its decision and reasons in respect of TransCanada's 1 December 1988 application, are included in this report.

1.2 Details of Application

Certification

In its application, as amended on 14 October 1988, TransCanada requested a certificate under Part III of the Act, with respect to the additional facilities required to expand the capacity of its pipeline system in order to serve existing markets and to deliver the incremental domestic and export volumes referred to in Table 1-1. The export volumes were proposed to be transported on the TransCanada system to the United States border, connecting with American pipeline systems for ultimate delivery to the midwestern and northeastern United States.

The facilities applied for by TransCanada were as follows:

Western Section - 48.8 km of parallel pipeline sections and the upgrading of two existing 10.4 MW compressor units to 13.8 MW at Station 41;

Central Section - one 22.8 MW compressor unit at each of Stations 45 and 86, one 26.1 MW compressor unit at each of Stations 75, 107 and 112 and one 24.8 MW compressor unit at Station 95; 270.7 km of parallel pipeline sections; the upgrading of two existing 10.4 MW compressor units and one existing 11.5 MW compressor unit to 13.8 MW at Stations 60, 84 and 92, the axial inlet conversion of three existing 10.4 MW compressor units at Stations 60, 84 and 102, and spares and standby plant;

Montreal Line - two 3.7 MW compressor units at Station 147; and

St. Mathieu Extension - 14.7 km of parallel pipeline sections.

A map and further details of the above facilities are provided in Chapter 6 of these Reasons.

Exemption Orders

TransCanada requested orders, pursuant to section 49 of the Act, providing for exemption from the provisions of paragraphs 27(b) and (c) and section 29 thereof respecting the installation of each of the proposed line pipe facilities. Such orders would exempt said facilities from plan, profile and book of reference ("PPBoR") requirements. Further details are provided in Subsection 7.1.4 of these Reasons.

In addition, on 1 December 1988, TransCanada requested an order, pursuant to section 49 of the Act, providing for exemption from the provisions of section 27 for certain loop sections located in swamp areas. Such an order would allow TransCanada to begin construction on those loop sections prior to the issuance of a certificate. TransCanada's objective in seeking this further relief was to immediately commence construction by clearing brush and removing snow to allow for frost penetration in these swamp areas. Furthermore, the installation of these loop sections during the winter would increase the Central Section capability in 1988/89.

Part V Order

TransCanada requested an order, pursuant to Part V of the Act, with respect to the proposed retirement of compressor units at Stations 68, 95, 99 and 123.

Toll Order

TransCanada requested an order, pursuant to Part IV of the Act, treating the retirement of compressor units at Stations 68, 95, 99 and 123 as ordinary under the Accounting Regulations.

Table 1-1

New Firm Services Underpinning the
28 July 1988 Application, as Amended¹

Shippers/Customers		10 ⁶ m ³ /d	1989/90 (MMcfd)
<u>Domestic</u>			
ICG Manitoba		1.000	(35.3)
Greater Winnipeg		0.900	(31.8)
Northland Power		0.595	(21.0)
Union		0.622	(22.0)
Consumers Gas ²		0.850	(30.0)
KPUC		0.051	(1.8)
GMi		<u>0.380</u>	<u>(13.6)</u>
	DOMESTIC TOTAL	4.403	(155.5)
<u>Export</u>			
<u>@Emerson</u>			
WGML	/NSP Wisconsin	0.397	(14)
WGML	/Northern Natural	0.878	(31)
WGML	/Southeastern	0.425	(15)
Northridge	/Loutex, Union ³	0.425	(15)
Poco	/CPCo	0.708	(25)
Canterra	/CPCo	0.425	(15)
Norcen	/CPCo	0.397	(14)
Shell	/CPCo	0.425	(15)
WGML	/CPCo	<u>0.425</u>	<u>(15)</u>
	/CPCo sub-total	2.380	(84)
Poco	/MCV		
Canterra	/MCV		
Norcen	/MCV		
Shell	/MCV		
WGML	/MCV		
	/MCV sub-total	2.167	(76.5)
<u>@Niagara Falls²</u>			
Vector	/Altresco	0.904	(31.9)
<u>@Philipsburg</u>			
Direct Energy	/Consolidated Fuel	<u>0.171</u>	<u>(6.0)</u>
	EXPORT TOTAL	7.747	(273.4)
	DOMESTIC AND EXPORT TOTAL	12.150	(428.9)

1 The volumes shown in this table represent contractual maximum day obligations which are incremental to the 1987/88 contract year.

2 The need for additional capacity to accommodate additional contract increases in 1989/90, including domestic volumes for Consumers Gas and export volumes by WGML and KannGas for Tennessee and by ProGas for Ocean State Power, was addressed in the GH-2-87 proceeding - see Reasons for Decision dated July 1988.

3 The exact split of volumes between Loutex and Union had not been determined before the close of the GH-4-88 proceeding.

Chapter 2 Supply Matters

The incremental services underpinning TransCanada's application related to both domestic and export services. The evidence indicated that the main source of supply to TransCanada's system is the supply managed by Western Gas Marketing Limited ("WGML") in respect of both domestic and export requirements. TransCanada estimated WGML's remaining reserves to be 675.3 10⁹ cubic metres ("m³") (23.8 trillion cubic feet) as of 31 December 1987. It also estimated that WGML had sufficient reserves and productive capacity under contract to meet WGML's annual requirements until 1995.

A major export project underpinning the applied-for facilities is the proposed sale of gas to Consumers Power Company ("CPCo") and the Midland Cogeneration Venture Limited Partnership ("MCV"). Suppliers for this project would consist of POCO Petroleum Ltd. ("Poco"), Canterra Energy Ltd. ("Canterra"), Norcen Energy Resources Limited ("Norcen"), Shell Canada Limited ("Shell") and WGML. WGML would provide the gas from its general system supply. The other participants in the project would dedicate the following established reserves:

Supplier	Reserves	
	10 ⁶ m ³	Bcf
Poco	4960	175.1
Canterra	5297	187.0
Norcen	3646	128.7
Shell	16918	

597.2

Vector Energy Inc. ("Vector") indicated that it has dedicated 6 805 10⁶ m³ (240.2 billion cubic feet ("Bcf")) of remaining reserves to Altresco Pittsfield Incorporated ("Altresco"), and Direct Energy has dedicated 853 10⁶ m³ (30.1 Bcf) of reserves to the Consolidated Fuel Company ("Consolidated").

Gas supply estimates provided at the hearing by witnesses of the above exporters were unchallenged by interested parties.

Most domestic sales are currently supplied by WGML from its system supply. TransCanada stated that it has little or no knowledge of the reserves supporting the gas transported on behalf of the many direct shippers under short-term firm service ("FS") contracts. Similarly, TransCanada indicated that it has little knowledge of gas reserves underpinning longer term sales contracts under which local distribution companies ("LDCs") recently purchased incremental gas supplies. Although TransCanada expressed concern on these matters, it took the position that there clearly exists adequate supplies of gas in Alberta to ensure the full utilization of its system for several years.

ICG Ontario was concerned as to who would bear the financial consequences in the event that the gas supply which purports to underpin the exports does not materialize, either in whole or in part. It submitted that the Board should reasonably assure itself that the requisite gas supply will be in place before granting an unconditional certificate for the facilities.

The Consumers' Gas Company Ltd. ("Consumers Gas") indicated that it proposed to start the competitive bidding process in November 1988 for the procurement of gas supply for its additional 0.850 10³ cubic meters per day ("m³/d") (30 million cubic feet per day("MMcfd")) of FS transportation commencing 1 November 1989.

GMI indicated that Soquip and Pan-Alberta Gas Ltd. have agreed to supply its increased FS requirement of 0.385 10⁶/m³/d (13.6 MMcfd).

Northland Power submitted that it has a letter of intent from Methon Gas Marketing Ltd. (as agent) for the supply of the 0.191 10⁶m³/d (6.7 MMcfd) required for its Cochrane power station project. Supply arrangements were also being finalized for the 0.406 10⁶m³ /d(14.3 MMcfd) required for its Kirkland Lake power station.

Greater Winnipeg Gas Company ("Greater Winnipeg") and ICG Utilities (Manitoba) Ltd. ("ICG Manitoba") indicated that they have not yet made supply arrangements for their 1989/90 requirements. Specific supply evidence was not provided by Union or ICG Utilities (Ontario) Ltd. ("ICG Ontario") in respect of their additional service requests.

Northridge Petroleum Marketing, Inc. ("Northridge") indicated that Northridge Exploration Ltd. has agreed to dedicate sufficient reserves and deliverability to enable Northridge to supply the entire volume of gas committed to Loutex Energy Inc. ("Loutex").

Views of the Board

Having reviewed the evidence submitted concerning the availability of gas supply in Alberta to ensure full utilization of TransCanada's system for several years, and in light of the absence of specific concerns by interested parties, the Board is satisfied that adequate reserves and productive capacity will be available to support the applied-for facilities.

Chapter 3

Requirements

In support of the applied-for facilities, TransCanada provided forecasted winter maximum daily requirements, by class of service, for the contract years commencing 1 November 1988 and 1989. TransCanada also provided estimated annual system deliveries for the contract years 1988 to 1998. The forecasted sales and transportation service requirements for the contract years commencing 1 November 1988 and 1989 are summarized in Table 3-1 below.

TransCanada indicated that the applied-for facilities would allow it to satisfy, commencing 1 November 1989, the forecasted requirements which consist of the Canadian market (including growth), the existing and proposed export markets, and a measure of advance capacity.

3.1 Canadian Market

3.1.1 Markets under FS Contract

TransCanada provided a forecast of:

- (i) contracted Canadian requirements; and
- (ii) projected Canadian natural gas market growth over and above (i), which at the time of the hearing remained uncontracted.

The uncontracted Canadian market is discussed in Subsection 3.1.2 of these Reasons.

The proposed facilities were underpinned by several incremental services to new and existing domestic customers. Increased load factors for some of the existing customers were also projected. TransCanada provided evidence that the increase in annual load factors in eastern Canada recognized recent trends caused by a return to more normal weather conditions and continuing economic growth, which had increased energy demand overall.

TransCanada included the following requests for incremental services to new and existing domestic customers for the 1988/89 and 1989/90 contract years:

**Table 3-1
TransCanada's Sales and Transportation Service Requirements**

	1988/89				1989/90			
	Winter Maximum Daily Demand		Annual Delivery		Winter Maximum Daily Demand		Annual Delivery	
	10 ⁶ m ³ /d	(MMcfd)	10 ⁶ m ³	(Bcf)	10 ⁶ m ³ /d	(MMcfd)	10 ⁶ m ³	(Bcf)
Canadian ¹	94.020	(3 320)	28 158	(994)	91.268	(3 223)	28 915	(1 021)
Export	40.522	(1 431)	9 636	(340)	44.679	(1 578)	11 912	(421)
Advance Capacity	-	-	-	-	0.665	(23)	243	(9)
Total	134.542	(4 751)	37 794	(1 334)	136.612	(4 824)	41 070	(1 451)

¹ Estimated Canadian deliveries including Storage Transportation Services.

In the Manitoba Delivery

- one year FS for ICG Manitoba of 1.000 10⁶m³/d (35.3 MMcfd), commencing November 1989, and
- one year FS for Greater Winnipeg of 0.900 10⁶m³/d (31.8 MMcfd), commencing November 1989.

in the Western Delivery Area

- a 20 year FS for Northland Power of 0.595 10⁶m³/d (21 MMcfd), commencing January 1990 (further details on the Northland Power project appear below).

in the Central Delivery Area

- for Consumers Gas, long-term FS¹ of 0.940 10⁶m³/d (33.2 MMcfd) and a one year FS¹ of 1.060 10⁶m³/d (37.4 MMcfd), commencing November 1988,
- long-term FS¹ of 1.910 10⁶m³/d (67.4 MMcfd) for Consumers Gas, commencing November 1989,
- long-term FS of 0.850 10⁶m³/d (30 MMcfd) for Consumers Gas, commencing November 1989, and
- long-term FS of 0.622 10⁶ m³/d (22 MMcfd) for Union, starting November 1989.

¹ The need for facilities to accommodate these firm services was addressed in the GH-2-87 proceeding - refer to pages 39 and 40 of Reasons for Decision dated July 1988.

Eastern Delivery Area

- long-term FS for the Public Utilities Commission of the City of Kingston ("KPUC") of 0.051 10⁶m³/d (1.8 MMcfd), commencing November 1989 (service starts in November 1988 on a short-term basis), and
- long-term FS for GMi of 0.385 10⁶m³/d (13.6 MMcfd), commencing November 1989.

Northland Power

Northland Power is a general partnership whose business purpose is the design, construction, ownership and operation of cogeneration power plants. Northland Power testified that it will require a portion of the requested capacity to serve its proposed Cochrane and Kirkland Lake cogeneration projects.

Northland Power's Cochrane power station project consists of two plants, one using a wood-fired boiler, the other a gas-fired turbine heat recovery boiler and steam turbine. The gas-fired plant would use a maximum of 0.191 10⁶m³/d (6.7 MMcfd) of gas. The combined plant would supply steam and hot water to a nearby wood products company and would generate 42 MW of electricity for sale to Ontario Hydro. The Kirkland Lake power station would use a gas-fired turbine, heat recovery boiler and steam turbine. The plant would consume a maximum of 0.406 10⁶m³/d (14.3 MMcfd) of gas and would produce a peak output of 69 MW of electricity for sale to Ontario Hydro.

Both projects were expected to be on line by early 1990, with firm gas deliveries anticipated to start for the Cochrane facility between 1 December 1989 and 1 February 1990.

TransCanada's forecast included deliveries of 0.595 10⁶m³/d (21 MMcfd) for Northland Power at a 73 percent load factor during the 1989/90 contract year. TransCanada submitted evidence during the hearing that the initial Operating Demand Volume ("ODV") for the Cochrane project would be 0.183 10⁶m³/d (6.5 MMcfd) increasing to 0.190 10⁶m³/d (6.7 MMcfd) by 31 December 1990. At the time of the hearing, transportation arrangements for the Kirkland Lake project were under negotiation and were expected to include the same terms and conditions (except for volume and timing) as those of the Cochrane project. Transportation arrangements for both projects were yet to be finalized with ICG Ontario, the LDC proposing to construct the necessary connecting facilities.

Northridge Sale to Union

Evidence was filed by Northridge during the latter part of the hearing, in respect of a proposed long-term FS sale by Northridge to Union. A letter of agreement, dated 27 October 1988, between Union and Northridge was filed setting out the terms and conditions of the proposed ten year term arrangement. Under the agreement, Northridge agrees to deliver to Union a volume of gas ranging from a minimum of 0.300 10⁶m³/d (10.6 MMcfd) to a maximum of 0.425 10⁶m³/d (15 MMcfd) to the point of delivery, namely, the point of interconnection between the proposed facilities of St. Clair Pipelines Ltd. and Union, near Sarnia, Ontario. The gas would be transported by Northridge on the TransCanada system to Emerson, Manitoba, for ultimate delivery to Union at Sarnia via pipelines in the United States. The volumes to be sold by Northridge to Union were initially earmarked for Loutex. The proposed Northridge sale to Loutex is discussed in Section 3.2 of these Reasons.

Northridge estimated that approximately $0.283 \times 10^6 \text{m}^3/\text{d}$ (10 MMcfd) of the $0.425 \times 10^6 \text{m}^3/\text{d}$ (15 MMcfd) initially earmarked for Loutex would be sold to Union instead. An amending agreement between Northridge and Loutex dated 11 November 1988 provides that Northridge has the option of electing, by 1 September 1989, to reduce the Loutex volume to $0.125 \times 10^6 \text{m}^3/\text{d}$ (4.4 MMcfd) from $0.425 \times 10^6 \text{m}^3/\text{d}$ (15 MMcfd). Northridge testified that the full volume of $0.425 \times 10^6 \text{m}^3/\text{d}$ (15 MMcfd) would remain committed to Loutex should the proposed arrangement with Union not proceed.

Views of parties

The Canadian Petroleum Association ("the CPA") expressed concern that TransCanada had failed to recognize the extent to which oil pricing volatility might cause loss of market share to heavy fuel oil in the industrial and large commercial markets. The CPA argued that this failure could result in a significant overstatement of domestic requirements.

The Independent Petroleum Association of Canada ("IPAC"), ICG Ontario and Union found TransCanada's specific requirements forecast to be generally acceptable and reasonable.

Views of the Board

The Board notes that intervenors did not dispute the overall reasonableness of the forecasted domestic requirements under contract. While the CPA expressed concern about a potential overstatement of requirements caused by oil pricing volatility, the Board nevertheless considers TransCanada's forecast of domestic requirements under contract to be reasonable in view of the recent resilience of natural gas in maintaining its market share. The Board therefore accepts the forecast for the purpose of considering the design of the applied-for facilities.

3.1.2 Total Natural Gas Demand Forecast

As part of its application, TransCanada provided a forecast of total natural gas requirements for Manitoba, Ontario and Quebec. While this forecast did not form the basis for the design of facilities for the 1989/90 contract year, it provided an indication of expected total requirements to be met through both firm and interruptible services. TransCanada also provided, in response to an information request from the Board, a range of ten long-term total natural gas demand forecasts, to illustrate the sensitivity of natural gas demand to a range of major assumptions. These sensitivities showed total natural gas requirements for Ontario and Quebec ranging between $28\,636 \times 10^6 \text{m}^3$ (1 011 Bcf) and $39\,243 \times 10^6 \text{m}^3$ (1 385 Bcf) in 1998. This compares to $33\,642 \times 10^6 \text{m}^3$ (1 189 Bcf), used by TransCanada in its total natural gas demand forecast in the application. In 1990, demand was estimated to range from $26\,869 \times 10^6 \text{m}^3$ (949 Bcf) to $30\,979 \times 10^6 \text{m}^3$ (1 094 Bcf) as compared to $29\,195 \times 10^6 \text{m}^3$ (1 032 Bcf) in the application (see Table 3-2 below).

Table 3-2 summarizes TransCanada's long-term forecasts of total natural gas requirements for Ontario and Quebec ("Total Demand, Ontario/Quebec") and FS volumes currently contracted with Canadian customers in those provinces (last column, "Canadian Requirements, Ontario/Quebec"). The column "Not Contracted Canadian" is equal to "Total Demand" less the sum of:

- (i) "Provincial Supply";
- (ii) "Import Supply"; and
- (iii) "Canadian Requirements".

According to TransCanada, uncontracted volumes may materialize as new firm services or as interruptible volumes.

Table 3-2
End Use and Customer Forecast of Canadian Requirements
10⁶m³ (Bcf)

Year	Total Demand ¹ Ontario/Quebec		Provincial Supply		Import Supply		Not Contracted Canadian ² , including advance capacity		Canadian Requirements ³ Ontario/Quebec	
1989	28 602	(1 011)	745	(26.3)	283	(10.0)	2 264	(80.0)	25 310	(894.3)
1990	29 195	(1 032)	745	(26.3)	283	(10.0)	2 608	(92.2)	25 559	(903.1)
1995	32 409	(1 145)	745	(26.3)	283	(10.0)	5 567	(196.7)	25 814	(912.2)
1998	33 642	(1 189)	745	(26.3)	283	(10.0)	6 800	(240.3)	25 814	(912.2)

Source: Exhibit B-11, Table 4.

oil prices will influence the amount of switching which might occur, hence the risk of reduction of the size of the gas market. Recent experience, at least, indicates an ability of natural gas to compete in markets with dual fuel capability. The Board believes that TransCanada is in a position to assess explicitly the impact of low oil prices on the demand for natural gas.

The Board agrees that the ability of the Ontario market to import natural gas adds uncertainty to the planning process. This uncertainty is indeed part of a competitive deregulated market environment and must be assessed along with other risks and uncertainties in TransCanada's forecast.

The Board refers TransCanada to the recommendations relating to its forecasting process set out in Subsection 3.1.2 of the GH-2-87 Reasons for Decision, dated July 1988. The Board believes that TransCanada can improve upon its demand forecasting approach and that this would be useful for assessing the public interest in applications for facilities expansion. The Board recognizes that this is an ongoing process requiring time and resources.

In the Board's view, the evidence at the hearing indicates that the assumptions underlying TransCanada's demand forecast constitute one reasonable set of views.

For purposes of this application, the Board finds TransCanada's forecast of total natural gas demand to be reasonable.

3.2 Export Markets

TransCanada provided a forecast of export requirements which consisted of the existing market, additional volumes to be exported pursuant to existing export licences, and proposed volumes to be exported pursuant to export licences being sought from the Board.

TransCanada submitted that its system requirements forecast for its export sales and transportation services was reasonable, emphasizing that its forecast is comprised of FS transportation volumes only.

Sales to CPCo

CPCo is the sixth largest gas distributor in the United States, as measured by the number of customers it serves. CPCo supplies gas to about 1.3 million customers in the lower peninsula of Michigan, including the suburban Detroit area.

Poco, Canterra, Norcen, Shell and WGML entered into separate contractual arrangements with CPCo providing for the sale of an aggregate maximum daily quantity ("MDQ") of 2.380 10⁶m³/d (84 MMcfd) of gas commencing April 1989. TransCanada submitted that Canadian gas would be used by CPCo as part of its system supply to serve its residential, industrial and commercial gas markets. Canadian gas would represent approximately 10 percent of the CPCo system supply.

While CPCo traditionally purchases most of its gas supply for resale from two American natural gas pipelines, namely Trunkline Gas Company ("Trunkline") and Panhandle Eastern Pipeline Company ("Panhandle"), it has undertaken a program to diversify, strengthen and reduce the gas supply costs of its supply portfolio. As part of this program, CPCo has negotiated reductions in its gas supply arrangements with Trunkline and Panhandle through CPCo's affiliated supplier, Michigan Gas Storage

Company ("MGSC"). In its efforts to make up the difference between its market needs and the reduced Trunkline and Panhandle volumes, it has purchased gas from other sources, which has resulted in the proposed purchase arrangements with the five Canadian suppliers.

Each of the CPCo / Canadian supplier gas purchase contracts, excepting the Poco arrangement, sets out the delivery between CPCo and its Canadian supplier as being the international border at a point near Emerson, Manitoba, at the interconnection between the pipeline facilities of TransCanada and Great Lakes. CPCo will arrange for the transportation of the gas from Emerson to its service area via the Great Lakes and ANR Pipeline Company ("ANR") systems. ANR will transport the gas for the account of CPCo to either the Michigan Consolidated Gas Company ("MichCon") or CPCo systems. Poco has made similar transportation arrangements with Great Lakes and ANR with respect to its sales to CPCo.

In argument, TransCanada took the position that its evidence established that CPCo represents a substantial market.

Sales to MCV

MCV is a limited partnership formed in 1987 to acquire and convert a portion of the idled Midland nuclear project owned by CPCo into a 1 370 MW combined cycle, gas-fired cogeneration facility producing electricity and steam. The MCV facility will sell power to CPCo and steam and electricity to the Michigan Division of the Dow Chemical Company. MCV also expects to market the power output of the facility to other third party buyers. MCV hopes to have the plant available for the commencement of operational testing by July 1989, with a target commercial operation date not later than 1 March 1990.

The same five Canadian companies (Poco, Canterra, Norcen, Shell and WGML) that wish to supply CPCo, also propose to serve the MCV facility. These five Canadian companies have entered into separate contractual arrangements with MCV for the sale of an initial aggregate MDQ of 2.167 $10^6\text{m}^3/\text{d}$ (76.5 MMcfd), increasing to 2.266 $10^6\text{m}^3/\text{d}$ (80 MMcfd) by 1 November 1994. Firm sales to the MCV are forecasted to commence by May 1990. The sellers have agreed to provide interruptible service under individual contract terms of up to an MDQ of 2.167 $10^6\text{m}^3/\text{d}$ (76.5 MMcfd) commencing in late 1989.

TransCanada indicated that the MCV plant is expected to operate at a 70 percent load factor or higher. The plant's initial gas requirements are projected to be approximately 4.250 $10^6\text{m}^3/\text{d}$ (150 MMcfd), increasing to 5.665 $10^6\text{m}^3/\text{d}$ (200 MMcfd) by 1995. The Canadian gas would account for approximately 50 percent of the MCV plant's initial fuel requirements.

Each of the gas purchase contracts between MCV and its Canadian suppliers, excepting the Poco contract, provides for the delivery of the gas to MCV at Emerson, Manitoba. TransCanada explained that MCV has arranged for the transportation of the gas to its plant via the pipeline facilities of Great Lakes, MGSC and CPCo. The Poco contract provides for the delivery of the gas to MCV at the point where the pipeline facilities of Great Lakes interconnect with those of MGSC.

TransCanada submitted in argument that, with respect to MCV, there is a very real, well financed market and need for the proposed volumes of gas starting in May 1990 or earlier.

Dome Petroleum Limited ("DOME") Sale to Northern States Power Company, A Minnesota Corporation ("NSP Minnesota")

TransCanada's forecasted requirements included Dome's proposed export sale to NSP Minnesota of 0.425 10⁶m³/d (15 MMcfd), commencing 1 November 1988.

The Dome exports would be transported in Canada on the Nova Corporation of Alberta ("NOVA"), TransGas Limited and TransCanada pipeline systems for export at Emerson, Manitoba. NSP Minnesota would transport the gas to its markets via the Midwestern Gas Transmission Company ("Midwestern") system.

Sales to Northern Natural Gas Company ("Northern Natural"), Northern States Power, A Wisconsin Corporation ("NSP Wisconsin") and Southeastern Michigan Gas Company ("Southeastern")

TransCanada's requirements forecast included a total of 1.615 10⁶m³/d (57 MMcfd) of gas for sale by WGML to Northern Natural, NSP Wisconsin and Southeastern.

TransCanada testified that it did not require additional facilities to serve its proposed export sales to these three customers, as a consequence of the general understanding between ANR and WGML to reduce ANR's contractual obligations by 1.700 10⁶m³/d (60 MMcfd) for the 1989/90 contract year. TransCanada indicated that it intends to continue to utilize the ANR-related pipeline capacity currently under contract to its affiliate, WGML, for the purpose of delivering the incremental volumes to serve Northern Natural, NSP Wisconsin and Southeastern. WGML emphasized that its existing transportation arrangements with TransCanada, coupled with the fact that no new facilities are required for WGML to serve these customers, meant that it need not seek the Board's approval, in the GH-4-88 hearing, for the arrangements contemplated by WGML.

TransCanada intends to deliver a total of 1.743 10⁶m³/d (61.5 MMcfd) to the three customers as follows:

	10⁶m³/d	(MMcfd)
Northern Natural	0.921	32.5
NSP Wisconsin	0.397	14.0
Southeastern	0.425	15.0

TransCanada acknowledged that the total of the sales to these three customers exceeded the 1.700 10⁶m³/d (60 MMcfd) of available transportation capacity that had been released by ANR.

TransCanada indicated that WGML and Northern Natural had agreed to reduce the daily contract quantity for the 1989/90 contract year to 0.878 10⁶m³/d (31 MMcfd) if TransCanada cannot accommodate the full 1.743 10⁶m³/d (61.5 MMcfd) in 1989/90. It was this reduced volume that TransCanada included in its forecast of export requirements.

Vector Sale to Altresco

TransCanada included in its forecast of export requirements a proposed sale by Vector to Altresco of 0.904 10⁶m³/d (31.9 MMcfd), commencing 1 November 1989.

With respect to the proposed sale to Altresco, Vector acts as an agent for a group of seven Canadian producers with regard to a proposed twenty year gas supply arrangement. The gas would be exported from the TransCanada system at Niagara Falls for ultimate delivery to the proposed Altresco cogeneration facility.

The Altresco cogeneration facility would consist of a 162 MW gas turbine combined cycle plant, located at Pittsfield, Massachusetts. Distillate oil would be used as a back up fuel in the event of a major disruption or any other unforeseen supply problem. The electric power output from the Altresco facility would be sold to the Massachusetts Electric Company.

TransCanada indicated that it expected gas takes by Vector to be reasonably uniform throughout the year, with an anticipated average load factor of 90 to 95 percent.

The Vector sale would be transported in the United States via interim arrangements, utilizing the systems of Tennessee Gas Pipeline Company ("Tennessee"), CNG Transmission and Berkshire Gas Company. These interim arrangements would allow for gas transportation to the Altresco facility for a minimum of 300 days per year, with an anticipated average of 330 days per year. TransCanada explained that the resolution of the "Open Season" proceedings before the United States Federal Energy Regulatory Commission ("FERC") would result in firm service being available for the Altresco volumes throughout the year.

Direct Energy Sale to Consolidated

TransCanada forecasted Direct Energy exports to Consolidated of $0.171 \cdot 10^6 \text{m}^3/\text{d}$ (6.0 MMcfd) commencing 1 November 1989 at a 90 percent load factor.

Direct Energy is a producer-owned gas marketing company that has entered into a contractual arrangement with Consolidated for the sale of gas for use at the proposed plant of the Arrowhead Cogeneration Company Limited Partnership ("Arrowhead"), to be located in East Georgia, Vermont. The Arrowhead facility would use the natural gas to operate a 28 MW combined cycle cogeneration plant which would sell electric power to UNITIL Power Corp. and steam to Wyeth Nutritionals, Inc.

TransCanada advised that the Arrowhead project's primary fuel would be natural gas, with No. 2 fuel oil being the backup fuel. The plant would have a high load factor, projected to operate 8 200 or more hours a year. TransCanada indicated that when dispatched, the plant can be turned back to as low as 17 MW, at which point it is estimated that the operation would require between 4 100 and 4 600 million British thermal units ("MMBtu") per day.

The gas would be delivered to Consolidated at the point of interconnection between the facilities of TransCanada and Vermont Gas Systems, Inc. ("Vermont") on the international boundary near Philipsburg, Quebec. Consolidated will arrange for the transportation of the gas on the Vermont pipeline system to the Arrowhead facility.

Northridge Sale to Loutex

Loutex is a Louisiana corporation engaged in the purchase and sale of natural gas in the United States. Loutex is also the marketing agent for its parent company, TGX Corporation, a producer of natural gas in the United States.

Northridge and Loutex entered into a ten year gas sales agreement, whereby Northridge would sell up to $0.425 \times 10^6 \text{m}^3/\text{d}$ (15 MMcfd) of gas to Loutex at Emerson, Manitoba, commencing sometime during the late winter of 1989. Northridge's sales arrangement with Loutex provides for the reduction, at Northridge's option, of the maximum daily contract quantity ("MDCQ") from $0.425 \times 10^6 \text{m}^3/\text{d}$ (15 MMcfd) to $0.283 \times 10^6 \text{m}^3/\text{d}$ (10 MMcfd), should Northridge be successful in finding an additional customer. Northridge emphasized that its contracted transportation volume with TransCanada would remain at $0.425 \times 10^6 \text{m}^3/\text{d}$ (15 MMcfd).

During the latter part of the hearing, Northridge filed an amending agreement between Northridge and Loutex which modified Article 4.1 of the Northridge - Loutex gas sales agreement such that the MDCQ may be reduced from $0.425 \times 10^6 \text{m}^3/\text{d}$ (15 MMcfd) to $0.125 \times 10^6 \text{m}^3/\text{d}$ (4.4 MMcfd), if Northridge requests such a reduction no later than 1 September 1989. Northridge explained that its sales arrangements with Loutex facilitate the sale of gas from Northridge to Union. As discussed in Subsection 3.1.1. of these Reasons, this amending agreement would allow for Northridge's proposed long-term sales arrangement with Union.

Loutex explained that the gas would be transported in the United States on the Great Lakes, ANR and Panhandle pipeline systems, to access its traditional gulf coast and eastern seaboard markets. The gas would likely be delivered to its market areas through backhaul or exchange arrangements. Northridge would act as Loutex's agent for purposes of administering the transportation of gas on Great Lakes, whereas Loutex would arrange for transportation downstream of Great Lakes.

Views of Parties

The CPA suggested that, before approving this application, the Board should be satisfied that the facilities are supported by assured requirements. According to the CPA, assured requirements exist when the underpinning markets provide reasonable assurance that gas will flow in the year beginning 1 November 1989, and the market will be sustained over the long term. It expressed concern that TransCanada had failed to consider recent oil pricing volatility, arguing that potential loss of gas market share to alternate fuels could result in a significant overstatement of TransCanada's requirements. According to the CPA, reduced oil prices could result in the projected increases in the load factor of current exports not materializing, in the renewal of existing export licences at lower volumes, and in the delay of those new sales forming the basis of TransCanada's application.

As indicated in Section 6.1 of these Reasons, the CPA also suggested that the Board investigate the potential to defer construction of those facilities required for those export projects which may not proceed by 1 November 1989. It argued that deferral of facilities construction to 1990 could result in considerable cost savings, as ample time would then be available to include expansion of the Great Lakes system in TransCanada's facilities design. The CPA identified the OSP, Vector, Direct Energy and Northridge export sales projects as being suitable candidates for deferral.

Although IPAC found TransCanada's specific forecasts to be generally acceptable, it expressed some concern about existing shipments to the Midwestern United States, noting the volatility of this market as demonstrated by historical and projected load factor performance. It suggested that a more detailed analysis of this market was required.

ICG Ontario considered TransCanada's requirements forecast to be generally reasonable. It submitted that, while certain of the proposed exports are at a more advanced stage of 'ripeness' than others, the overall public interest would best be served by accepting TransCanada's forecasted export

requirements, conditioning any certificate upon the receipt of all necessary regulatory approvals and the execution of all supporting contracts.

MCV argued that the evidence adduced during the proceeding demonstrated that MCV will provide a reliable and long-term market for Canadian gas.

Views of the Board

The Board notes that TransCanada's forecast of volumes to be exported by specific shippers remained essentially unchallenged during the hearing. With respect to the concerns expressed by the CPA about oil pricing volatility, the Board is of the view, as indicated in Subsection 3.1.2 of these Reasons, that, although oil prices in 1990 may be lower than these forecasted by TransCanada, recent experience indicates an ability of natural gas to compete in the market.

The Board is not convinced by the CPA's argument that the Board should defer construction of those facilities required to accommodate the proposed OSP, Vector, Direct Energy and Northridge export projects. While the varying degrees of "ripeness" associated with the proposed export projects are recognized, it is the Board's view that the uncertainty associated with the in-service dates of these projects is inevitable, given the current regulatory and marketing environment. It is because of these uncertainties that the Board's certificates in respect of certain of the applied-for facilities, as fully discussed in Section 6.1 of these Reasons, are conditional upon the execution of transportation contracts and the obtaining of relevant Canadian and United States federal regulatory approvals.

On the basis of the foregoing, the Board finds TransCanada's export requirements forecast to be reasonable for the purpose of assessing facilities requirements for the 1989/90 contract year.

3.3 Advance Capacity

The issue of whether or not it is in the public interest to construct advance capacity was the subject of lengthy discussions in the GH-2-87 hearing held in respect of an earlier facilities application by TransCanada. At that time, TransCanada had not included any allowance for advance capacity in its facilities design. In the current proceeding, TransCanada applied for facilities which included some advance capacity for the 1989/90 contract year. This capacity was over and above TransCanada's forecast of requirements based on its contracts for services of a firm nature (essentially FS and Annual Contract Quantity ("ACQ")) at the time the application was filed.

During the hearing, intervenors and TransCanada expressed their views on the need for advance capacity including whether there should be an explicit and continuing "running band" of advance capacity on TransCanada's system.

TransCanada indicated that it had selected an initial level of $2.125 \times 10^6 \text{ m}^3/\text{d}$ (75 MMcfd) of advance capacity based on pipeline design and information on projects which were likely to mature prior to construction of facilities. The intention of the advance capacity was to allow for projects to mature as the hearing approached, with the expectation that there would be little or no uncontracted capacity once the facilities were in place. During the course of the hearing, TransCanada submitted evidence

regarding requests for service (which were at varying stages of completion) which would account for approximately two thirds of the originally proposed advance capacity.

TransCanada acknowledged that without any advance capacity, its pipeline system would be operating near its capability in the 1989/90 contract year and might be unable to respond to swings in demand. TransCanada stated that $0.655 \times 10^6 \text{ m}^3/\text{d}$ (23.5 MMcfd) (the level of advance capacity that would remain if all requests for service, excluding $0.425 \times 10^6 \text{ m}^3/\text{d}$ (15 MMcfd) for Northridge, materialized) was close to the minimum acceptable level of advance capacity at this time, taking into account current circumstances. TransCanada further stated that if there were advance capacity of $0.241 \times 10^6 \text{ m}^3/\text{d}$ (8.5 MMcfd) (the level of uncontracted capacity that would remain in the event that all requests for service received during the course of the hearing materialized) on the Central Section in 1989/90, TransCanada would be very limited in its ability to respond to swings in demand.

TransCanada did not endorse the concept of a steady band of advance capacity, arguing that such a policy would encourage reliance on interruptible service and would discourage shippers from contracting for FS, on the basis that there would generally exist a certain amount of excess capacity.

With respect to the issue of who had the responsibility for determining the appropriate level of advance capacity, TransCanada was of the view that the onus was on LDCs and TransCanada to carry out adequate long-term planning to be able to determine the appropriate level.

The CPA was opposed to the inclusion of any advance capacity in the design of pipeline facilities and argued that all pipeline expansion should be underpinned by ten year FS contracts.

The CPA further stated that shippers could obtain additional flexibility through contracts.

The Alberta Petroleum Marketing Commission ("APMC"), while generally opposed to the concept of a steady band of advance capacity, supported TransCanada's application as it would provide flexibility for handling natural gas sales which might materialize prior to or during the 1989/90 contract year.

IPAC was not supportive of a band of advance capacity set at a specific level but took the position that the advance capacity proposed by TransCanada in its application was appropriate taking into account requests which came forward prior to the hearing, and the fact that the amount which was likely to remain uncontracted was well below the initial proposal of $2.125 \times 10^6 \text{ m}^3/\text{d}$ (75 MMcfd). IPAC indicated that it had initially opposed construction of $2.125 \times 10^6 \text{ m}^3/\text{d}$ (75 MMcfd) of advance capacity. It argued that the appropriateness of advance capacity should be reviewed on a case-by-case basis.

Consumers Gas was concerned that the marketplace has no recent experience working with a system that is running at capacity, as there has been some degree of spare capacity on the system for the past several years. Consumers Gas advocated some advance capacity on the system, the amount to be reviewed on a regular basis. It suggested that in addition to advance capacity, there might be a requirement for spare capacity to allow shippers to respond to unforeseen variations in the weather or in economic growth. It indicated that it plans its facilities and supplies in such a way as to be able to cope with swings in weather or in market demand and expected to be able to provide TransCanada with 18 to 24 months notice of a request for increased service.

However, it stated that there might be situations where fluctuations in weather and/or economic growth pushed demand outside of Consumers Gas' planning band. Under such situations, it felt spare capacity on the system would be useful. It stated, however, that spare capacity should not be interpreted by shippers as a licence for poor planning, as the knowledge that such flexibility was available may

inhibit shippers from finalizing firm service contracts, or from adopting prudent planning to serve their markets under a reasonable range of likely outcomes - particularly swings in weather or economic activity.

Consumers Gas indicated that it would expect to require such spare capacity only under rare circumstances when a combination of factors pushed demand outside of its planning band. In the event of higher than expected demand, Consumers Gas expressed reluctance to curtail its interruptible industrial customers for an extended period of time, arguing that this would reduce the confidence of industrial customers in the supply of natural gas.

ICG Manitoba and Greater Winnipeg supported the view that there should be some advance capacity to allow the pipeline system to respond to rapidly changing market conditions in a timely fashion.

GMI argued that advance capacity should be included on an annual basis, to encourage competition and to allow for access to markets. However, it argued for prudence with respect to advance capacity for export markets, as these are subject to much greater volatility than are Canadian markets.

ICG Ontario recommended a cautious approach, stating that advance capacity should not become a crutch for poor planning. However, it generally supported the existing application and inclusion of advance capacity. According to ICG Ontario, such advance capacity would:

- enhance access to transportation for new shippers or for increases in existing contracts, thereby increasing market opportunities for producers;
- enhance the ability of industry to react to the changing conditions of a deregulated marketplace;
- recognize the fact that TransCanada owns the sole transmission system from western to eastern markets;
- enhance TransCanada's ability to respond to in-service dates of less than 24 months;
- accommodate increases in actual versus forecasted load factors; and,
- enhance TransCanada's ability to respond to variations in the weather.

These benefits, in ICG Ontario's opinion, outweighed any risk.

Union took the position that the proposed level of advance capacity in 1989/90 afforded additional inexpensive insurance to LDCs and to the other customers. It expressed concern, however, that the advance capacity was being used as a cushion providing a certain flexibility to parties executing contracts with TransCanada beyond the date of filing of an application for new facilities, rather than as a cushion for customers to contract for additional capacity as emergencies arise during the year until the next facilities application.

The Minister of Energy for Ontario ("Ontario") did not recommend any specific level, but supported, in principle, the provision of advance capacity. It argued that some advance capacity would allow for a more orderly expansion of facilities in the current, rapidly changing market and regulatory environment. According to Ontario, such advance capacity should be reviewed on a case-by-case basis.

Views of the Board

The Board recognizes the desirability of some flexibility in the pipeline system. However, it is important to distinguish between "advance capacity" and "spare capacity" on the system. "Advance capacity" might be included in a facilities design, at the time of filing the application for facilities, to provide some flexibility for maturing of projects over time. It is anticipated that this advance capacity would fall to zero either before the in-service date of the facilities providing that capacity, or during the contract year under question. "Spare capacity" may be defined as some fixed amount of uncontracted capacity on the system, available for interruptible service, or which might be used to meet temporary swings in demand. Spare capacity, unlike advance capacity, would remain available with no expectation that it would become contracted over time.

If there is advance capacity on the pipeline system, or any capacity not covered by an FS contract, a part of the associated cost may be borne by all shippers on the system if such capacity is not fully utilized by interruptible customers. Depending on market conditions and the determination of natural gas prices in end use markets, producers and consumers may share varying proportions of this cost. However, as requests mature and as the capacity is contracted, those who bore the cost of the advance capacity may not be those who benefit from having capacity available to them in a timely manner.

Although it is proposed that advance capacity be constructed with some probability that the capacity will be fully contracted during the particular contract year for which it is provided, there are no assurances that this will occur. Thus there is the risk that market participants may bear the additional cost of the advance capacity for a longer period than originally expected. This is clearly the risk associated with the suggested benefits of advance capacity.

The Board supports the concept of advance capacity. In the Board's view, TransCanada's inclusion of advance capacity in its current application is in the public interest. The Board does not feel that it is possible to predetermine a level of advance capacity which would apply at all times, but agrees with those who argued that advance capacity should be reviewed on a case-by-case basis, taking into account market conditions at the time of the application and expected future requirements for service.

With respect to the provision of "spare capacity" available to meet unexpected changes in demand due to weather variation and swings in the economy, the Board notes that TransCanada's facilities design already incorporates a number of elements capable of providing some temporary flexibility. These include, *inter alia*:

- i) the use of capability factors;
- ii) the design of facilities on the basis of steady state simulation;
- iii) the design of the Central Section on the basis of annual requirements; and
- iv) the design on the basis of the loss of the most critical unit.

The Board is of the view that these design provisions are justified in the context of a complex pipeline system such as that of TransCanada. However, if shippers wish to obtain firm assurance that capacity will be available in the event of unexpected swings in demand, they should contract accordingly.

Decision

As more fully discussed in Chapter 6 of these Reasons, the Board upon approval by the Governor in Council has certificated the facilities in respect of the level of advance capacity proposed by TransCanada.

3.4 Criteria for Inclusion of New Services in Facilities Applications

Certain intervenors expressed concern about the number of revisions to the application, some of which occurred once the hearing was underway. These revisions for the most part reflected FS requests which had matured sufficiently for TransCanada to include them in its application. These requests were accommodated through reduction of the initial allowance of advance capacity of $2.125 \times 10^6 \text{m}^3/\text{d}$ (75 MMcfd). Intervenors questioned TransCanada on its approach to preparing and updating the application and in particular, whether it would be possible to establish a more efficient process.

TransCanada discussed the criteria it uses to determine whether a request for service is 'ripe' for inclusion in a facilities application. It identified the following criteria:

- a defined supply of gas (signed contracts with producers are preferable, but not necessary, although producers must be identified);
- a defined market for the gas;
- downstream transportation capacity (particularly for exports); and
- financial assurances.

TransCanada acknowledged that a certain amount of judgment is also required in assessing whether all criteria must be met fully before including a request for service in a facilities application.

The CPA argued that the number of amendments to TransCanada's application and the resulting delay to the hearing were unacceptable. It suggested that a cut-off date be established with a set of "sensible" identifiable criteria to be met by that date by parties seeking service that would require new facilities. Such criteria would include:

- an executed precedent agreement for transportation;
- an agreement on acceptable financial assurances;
- a signed precedent sales agreement; and
- a sunset date in the precedent agreements by which all conditions precedent must be met.

The CPA argued that such criteria would provide some flexibility to account for market circumstances. If a prospective shipper did not meet these criteria by the cut-off date, the shipper would lose its place in the queue. TransCanada would then design its expansion to meet the requirements of those who meet the criteria by the cut-off date. Such cut-off date need not be a fixed annual date, but would be

a function of the timing of requests for service and the need for facilities. This procedure, the CPA argued, would have prevented the amendments to TransCanada's application for the 1989/90 expansion.

IPAC suggested that a process be established which could allow TransCanada to react quickly to changes to the required transportation facilities. It proposed that a set of criteria be established in the tariff, for the allocation of any existing spare transportation capacity to new services. For new facilities, it suggested that TransCanada establish a set of criteria with a cut-off date. It argued that an application for facilities expansion should occur only when a project is viable and economically sound, and that for this reason development of a set of minimum criteria is critical.

Northridge argued that the changing natural gas marketing environment does not lend itself to the establishment of a fixed cut-off date. While it recognized the inconvenience caused by changes to the filings when there is no cut-off date, it argued that an arbitrary cut-off date would impede sales of natural gas.

Union urged TransCanada to review its proposed new policy of setting a firm cut-off date and building facilities with no allowance for advance capacity. It further argued that the inconvenience caused by revisions to the application were small in comparison to the "public calamity that could occur in an unforeseen emergency situation". It urged TransCanada not to consider such inconvenience as a motivating factor for dropping advance capacity in future applications.

TransCanada expressed the view that the existence of advance capacity contributed to the revisions to the application. It stated that a firm cut-off date for requests was established in respect to its pending facilities application for the 1990/91 contract year. TransCanada also indicated that it did not intend to provide an allowance for advance capacity in that application and that new service requests would only be accommodated up to the cut-off date. Thus, the next application would not be subject to the revisions which occurred in this hearing.

With respect to the need for additional criteria for the inclusion of new service requests in a facilities application, TransCanada referred to the GH-2-87 Reasons for Decision where the Board expressed the view that:

"...an applicant should be awarded the next place in the queue upon signing a letter of intent committing itself to enter a firm transportation contract with TransCanada for a specified volume with delivery and destination points indicated, upon the happening, by a date certain, of any events it may wish to specify. (It must also indicate that it can meet all the requirements for access set out in the TransCanada tariff) " (page 88)

According to TransCanada, the criteria proposed by the CPA would be inconsistent with the Board's position in GH-2-87, as these criteria would require more than a letter of intent for a shipper to be granted a place in the queue.

Views of the Board

The Board encourages TransCanada to provide flexibility of access to transportation, consistent with the efficient functioning of the natural gas market. While the numerous revisions to the original application for facilities expansion for the 1989/90 contract year necessitated a short delay in the hearing process, the Board is satisfied

that TransCanada was prudent in including an allowance for advance capacity, and in amending its application to reflect the gradual contracting for use of that capacity.

As to the need for a firm cut-off date and a set of criteria for the inclusion of new services in facilities applications, the Board is of the view that such practices, if implemented, would facilitate TransCanada's planning process and would require prospective shippers to finalize their requests without undue delay. However, access to the TransCanada system is governed by the provisions of the tariff on file with the Board. In this respect, queuing rules have been established by the Board as a result of the GH-2-87 proceedings. Specific tariff changes implementing the Board's queuing decision have now been filed with the Board.

Chapter 4

Contracts

4.1 Status of Contractual Arrangements

TransCanada's facilities application was underpinned by contractual arrangements related to the purchase, supply, transportation and sale of the gas forecasted to be transported by TransCanada during the 1989/90 contract year. TransCanada filed a considerable volume of evidence relating to these contractual arrangements. Such evidence included letters of intent, letters of agreement, executed precedent agreements, and various *pro forma* transportation, sales and purchase agreements.

The status of contractual arrangements was provided and updated throughout the hearing. While parties displayed interest in the status of all of the contractual arrangements, particular attention was paid to the transportation arrangements between TransCanada and its shippers.

TransCanada testified during the hearing that it would accept a condition in any certificate or order issued by the Board in respect of the applied-for facilities requiring the execution of all relevant transportation agreements prior to commencement of construction. It defined "all relevant transportation agreements" as being those transportation and financial assurance agreements pertaining to the TransCanada system.

The CPA recommended that any certificate in respect of the proposed facilities be conditioned to the effect that no construction commence and no funds be committed, other than at TransCanada's shareholders' sole risk, until all transportation agreements are executed in final form.

The APMC also suggested a certificate condition disallowing capital expenditures on facilities, until all the transportation agreements are in place, unless TransCanada is prepared to assume the full financial risk and obligation for these expenditures.

Views of the Board and Decision

As discussed in Chapter 6 of these Reasons, the Board upon approval by the Governor in Council has issued two certificates in respect of the applied-for line pipe facilities. These certificates are conditional upon the execution, in final form, of transportation contracts with respect to the transportation of the anticipated new firm volumes on the TransCanada system, prior to commencement of construction.

4.2 Term of Transportation Contracts

The CPA expressed the view that adequate protection of current and future users of the TransCanada system requires that proposed facilities expansions only be undertaken if they can be directly related to transportation contracts of at least ten years duration. It submitted that several factors are increasing the risk that the proposed facilities will be underutilized. According to the CPA, these factors included:

- (i) the numerous pipeline supply alternatives available to traditional TransCanada United States markets;

- (ii) the pipeline supply alternatives developing in TransCanada's traditional domestic markets;
- (iii) an increasing reliance upon short-term contracts to serve TransCanada's traditional markets;
- (iv) the risk associated with Canadian gas moving to non-TransCanada markets; and
- (v) the possibility that TransCanada understated the potential for future competition from alternative fuels in its traditional market areas.

The CPA explained that its recommendation in respect of a ten year term would apply to new shippers or existing shippers seeking new services, in cases where the additional capacity being sought by these shippers resulted in the need for a pipeline expansion. It recognized that its recommendation would give rise to the possibility of inequitable treatment between existing and new shippers, but indicated that it had not yet addressed this difficulty.

TransCanada submitted in reply that the term of each of the transportation agreements underpinning its facilities application was at least 10 years. It also expressed the view that CPA's proposal is an attempt to review the Board's GH-2-87 decision in respect of the provision of facilities and service for long-term markets under short-term contracts.

Northridge indicated that, as a general principle, it supports a requirement that an applicant for transportation be prepared to demonstrate a long-term market, but that an applicant should not be required to contract for any minimum specified term.

Views of the Board

The Board agrees with TransCanada that the CPA's proposal amounts to a review of the GH-2-87 decision regarding the provision of facilities and service in respect of short-term contracts serving long-term markets. The limited evidence that was submitted at the hearing was not sufficient to persuade the Board to change its GH-2-87 decision in this matter.

Decision

The Board does not change its GH-2-87 decision regarding the provision of facilities and service in respect of short-term contracts serving long-term markets.

4.3 Early Termination of Transportation Contracts

There was considerable discussion during the hearing regarding the existence and potential implications of the early termination clause prevalent in many of the gas purchase agreements and FS export transportation contracts. This clause provides for the early termination of a contract if certain regulatory or governmental authorizations are either revoked or not renewed. The early termination clause, typically set out in Article III, paragraph 3.1, of TransCanada's FS export transportation contracts, was of primary interest, since it is in the transportation contracts that the shippers' contractual obligations to pay TransCanada's transportation demand charges are outlined.

Paragraph 3.1 of TransCanada's FS export transportation contract defines the term of contract as follows:

“3.1 This Contract shall be effective from the date hereof and shall continue until fifteen (15) years have elapsed from the date of first delivery or until any of the regulatory or governmental authorizations referred to in paragraphs 1 and 2 of the Precedent Agreement are no longer in effect for any of the volumes to be transported hereunder, whichever shall first occur.”

Paragraphs 1 and 2 of the various precedent agreements typically read as follows:

- “1. TransCanada shall apply for and seek with due diligence to obtain such certificates, permits, licences, and authorizations as may be necessary to enable TransCanada to render the transportation service contemplated in the Transportation Contract and, as may be necessary, to seek the authorization to construct the 1989 Facilities and/or obtain additional transportation service on other gas transmission systems.*
- 2. Shipper shall apply for (or use all reasonable efforts to cause others to apply for) and seek with due diligence to obtain such Canadian and United States of America (the "United States" or "U.S.") certificates, permits, licences, and authorizations as are necessary to enable Shipper and others designated by Shipper:*
 - (a) to export from Canada, sell, deliver and import into the United States at the Delivery Point the quantities of gas which TransCanada agrees to transport for Shipper pursuant to the terms and conditions of the Transportation Contract;*
 - (b) to construct any facilities and/or arrange for the provision of any transportation service pursuant to the Transportation Contract required to allow Shipper to deliver such gas to TransCanada at the Receipt Point and to receive such gas from TransCanada at the Delivery Point and required to allow Shipper and/or customers in the United States to import and transport such gas from the Delivery Point.”*

In its GH-2-87 Decision, the Board indicated on page 26 thereof that, in respect of the proposed Alberta Northeast Gas, Limited ("ANE") exports at Iroquois, Ontario, the Board would have been prepared to accept the recommendations of those intervenors that argued that more of the United States regulatory risk associated with the project should be borne by the United States repurchasers. The Board went on to say that it would have been prepared to consider imposing a condition requiring that the force majeure clauses be amended so that it be clear that only two events of force majeure would relieve the repurchasers and ANE from the obligation to pay TransCanada's transportation charges:

- (i) the failure to tender gas at the export point due to an upstream event of force majeure on the TransCanada system; and*
- (ii) United States or Canadian federal regulatory or governmental actions that would have the effect of proscribing the export or import.*

It should be noted that the views which the Board expressed in the GH-2-87 Reasons for Decision applied to the Gas Purchase and Gas Sales Agreements associated with ANE's proposed exports to various United States repurchasers at Iroquois. These views were not directed to those parties contracting for transportation with TransCanada.

TransCanada acknowledged during cross-examination by the CPA that the loss of a necessary regulatory approval would allow for the early termination of certain transportation contracts.

TransCanada testified that the necessary authorizations would include the following:

- (i) provincial removal permits;
- (ii) NEB authorizations to transport the gas from TransCanada's receipt point to its delivery point;
- (iii) NEB export authorization; and
- (iv) United States Economic Regulatory Administration ("ERA") import authorization and FERC authorization for the shipper, or its agent to be able to take the gas away from TransCanada's export delivery point at the Canadian-United States border.

According to TransCanada, early termination pursuant to paragraph 3.1 of the transportation contract could not be invoked once gas is taken away from the export point and moving on the United States' system.

TransCanada argued that, while the loss of a necessary regulatory authorization could lead to early termination of the transportation contract, thereby eliminating any future demand charge obligations, the risk borne by existing tollpayers under these circumstances is comparable to the risk the new shipper accepts with respect to existing tollpayers' transportation contracts with TransCanada.

TransCanada submitted that its contractual arrangements are prudent, providing for the termination of demand charge obligations only in the most catastrophic circumstances. It was TransCanada's view that parties must protect themselves, particularly in a regulated environment, from events over which they have no control. TransCanada argued that there is no reason to single out a particular party to bear the consequences of a regulatory or force majeure situation, to the extent that pipeline system users uniformly comply with regulatory requirements. It submitted that its evidence demonstrates that it and other parties adopted a prudent approach to the negotiation of contractual arrangements, designed to minimize, to the extent possible, the risk of non-recovery of costs from those who have contracted to bear such costs.

The CPA submitted that those shippers whose requests for service have given rise to this facilities application should be prepared to accept the regulatory risk associated with their projects. According to the CPA, these shippers should not proceed with their commercial transactions if they are not prepared to accept the demand charge risk inherent in the loss or non-renewal of a necessary regulatory approval.

The CPA objected to the clause providing for early termination of the transportation contract. Referring to page 26 of the Board's GH-2-87 Reasons for Decision, the CPA argued that clause 3.1 fails to comply with the Board's finding, in that the early termination clause, when read in conjunction with paragraphs 1 and 2 of the precedent agreement, clearly contemplates the loss of a provincial removal permit as potentially relieving a shipper from its demand charge responsibilities. The CPA submitted that the early termination clause clearly extends to regulatory authorizations well beyond the federal authorizations referred to in the Board's GH-2-87 Decision.

The CPA recommended that TransCanada be directed to amend the transportation agreement to state clearly that only an event of physical force majeure on the TransCanada system would relieve a shipper of demand charge responsibility.

Consumers Gas also expressed concern about the clause in TransCanada's FS transportation contracts providing for early termination in the event that regulatory authorizations expire or are revoked. According to Consumers Gas, in the event that a contract terminates prematurely, TransCanada would shift the risk of non-recovery of the fixed costs allocated to the contract to its tollpayers. Consumers Gas took the position that, by proceeding with a contract containing an early termination provision like 3.1, TransCanada should be considered to have accepted the fixed-cost risk for its own account, and not for the account of its tollpayers.

The APMC recommended that the Board include a condition in any certificate requiring that the transportation contracts be amended so that it is clear that only the following two events would relieve the shipper of its obligation to pay the TransCanada demand charges:

- (i) a failure to tender gas at the export point due to an upstream event of force majeure on the TransCanada system; and
- (ii) United States or Canadian regulatory or governmental action that would have the effect of proscribing the export or import of the gas volumes.

The APMC also submitted that TransCanada should confirm that Canadian demand charges are payable by its shippers, notwithstanding the denial, in whole or in part, of the passing through of any of the gas purchase costs by a United States state commission or regulator exercising its retail rate-making authority. It further recommended that the shippers continue to assume the risk of demand charges, notwithstanding the non-renewal of a FERC 7(c) transportation certificate required for transportation of gas on the Great Lakes system.

KannGaz Producers Ltd. ("KannGaz"), MCV, Northridge and TransCanada argued against the amendment or removal of the early termination clause.

KannGaz expressed concern regarding the CPA's recommendation that the early termination clause be removed from TransCanada's transportation contracts, arguing that such an action would have a detrimental effect on the industry. It argued that regulatory risk is an inherent characteristic of the regulatory environment and submitted that the industry as a whole has the obligation to carry the risk. It indicated that it would be even more concerned if the Board, in accepting the CPA's recommendation, introduced any retroactive application of its decision.

MCV argued that regulatory risk is neither new nor unusual and suggested that such risk relates to all existing domestic and export volumes.

Northridge supported the KannGaz and MCV position.

In its reply, TransCanada expressed the view that the CPA recommendation to delete the early termination clause was unwarranted and unacceptable. It submitted that the remote risk associated with this clause is properly shared by all tollpayers, arguing that the placement of this risk only on the new shipper would be inequitable since present shippers do not carry this risk. It added that acceptance of the CPA proposal might deter parties from contracting on TransCanada's system in the future, since, while the probability may be remote, the consequences of loss of regulatory authorization

would be large. According to TransCanada, the CPA recommendation is unacceptable since TransCanada's regulatory risk exposure, however remote, is clearly not provided for in determining its regulated rate of return.

Views of the Board

The Board appreciates that the current regulatory environment is evolving and that gas is being moved by numerous shippers through various regulatory jurisdictions. It is reasonable that parties dealing with such a regulatory environment would attempt to protect themselves from events over which they cannot exercise control. The Board also appreciates that any Canadian or United States federal regulatory or governmental action having the effect of proscribing the exportation or importation of Canadian natural gas is beyond the control of TransCanada and its shippers. The Board accepts that any Canadian or United States action that physically prevents a shipper or its agent, from taking delivery of or transporting Canadian gas from TransCanada's export delivery points, is viewed by the contractual parties as an event potentially leading to the early termination of the transportation contract. The Board, however, views such regulatory risk as minimal and therefore considers it to be highly unlikely that such risk would result in some or all of the applied-for facilities no longer being used and useful.

While the Board appreciates that certain changing conditions such as the increased number of shippers contracting with TransCanada for both short-term and long-term FS and uncertainties associated with a deregulated market-oriented natural gas market may have increased the risk of individual shippers leaving the system, the Board believes that such risk is mitigated by both the number of existing shippers utilizing TransCanada's system and the number of prospective shippers requesting new services.

In view of the foregoing, the Board views TransCanada's overall transportation arrangements to be reasonable.

Decision

The Board is not persuaded by the arguments that clause 3.1 should be removed from TransCanada's FS export transportation contracts or amended so as to limit its applicability. Accordingly, the Board has not conditioned any of the certificates in respect of the applied-for facilities upon the removal or the amendment of clause 3.1 in TransCanada's FS export transportation contracts.

Chapter 5

Regulatory Matters

The applied-for facilities were partly underpinned by new firm services intended to serve both existing and new markets in Canada and in the United States. These new services would require various Canadian and United States regulatory authorizations before gas service could commence. At the hearing, TransCanada provided the status of the various regulatory authorizations associated with its requirements forecast.

TransCanada's application sought certification of the applied-for facilities "conditional on receipt of approvals required from appropriate regulatory bodies in Canada and the United States, all in a manner satisfactory to the Board." These regulatory approvals consisted of:

- (i) provincial gas removal permits;
- (ii) Canadian gas export authorizations;
- (iii) United States gas import authorizations; and
- (iv) regulatory authorizations in the United States with respect to facilities which may be required for transportation of the gas volumes referenced in the application.

As indicated in Chapter 4 of these Reasons, TransCanada stated that it would not commence the construction of facilities in the absence of executed transportation contracts and would accept a certificate conditioned to that effect. It testified that the transportation contracts would not be executed prior to all of the regulatory conditions precedent outlined in the relevant transportation precedent agreements being met to the satisfaction of both TransCanada and the shipper.

TransCanada confirmed that it would not commence construction of certain of the applied-for facilities until all necessary United States regulatory authorizations are in place. With respect to Canadian authorizations, however, TransCanada testified that it could start construction prior to the issuance of a gas removal permit. It also indicated that TransCanada's construction lead time is longer than NOVA's, and that it could not wait for NOVA to get all of its permits prior to commencing construction on TransCanada's system. Accordingly, it would proceed with facilities construction upon evidence that NOVA is planning capacity to meet all of the shippers' requirements on the TransCanada system.

The CPA recommended that any certificate for the proposed facilities be conditioned to the effect that no construction commence or funds be committed until all necessary Canadian and United States regulatory authorizations are received. ICG Ontario also suggested that any certificate be conditional upon the receipt of all necessary regulatory approvals. IPAC was of the view that construction of those facilities intended to serve the export market should not begin before all regulatory approvals are in place in the United States. The APMC supported the inclusion of a certificate condition directing that no capital expenditures on facilities be allowed until all associated regulatory approvals are obtained in final, nonappealable form, unless TransCanada is prepared to assume the full financial risk and obligation for such expenditures.

Views of the Board

The Board finds it to be prudent to condition the certification of the applied-for facilities in such a manner that no construction may commence until all necessary Canadian and United States federal regulatory approvals have been granted. As more fully detailed in Section 6.1 of these Reasons, the Board has issued, upon approval by the Governor in Council, three certificates in respect of the applied-for facilities. By its nature, such a condition would only apply to the certificate which is the subject of Appendix IV to these Reasons (GC-76).

Decision

The Board has issued, upon approval by the Governor in Council, a certificate in respect of certain line pipe facilities on the Western Section and on the St. Mathieu Extension, as detailed in Section 6.1 and Appendix IV of these Reasons. This certificate (GC-76) is conditional upon the granting, in final non-appealable form, of all necessary Canadian and United States federal regulatory approvals.

Chapter 6

Facilities

6.1 Need for Facilities

TransCanada submitted that the applied-for facilities were required in order to:

- (i) meet projected sales and transportation requirements under existing service contracts, including higher load factors for some of the existing customers;
- (ii) provide incremental services to new and existing customers;
- (iii) provide a level of advance capacity as far as Oakville, Ontario;
- (iv) replace the loss-of-unit protection of the Montreal Line currently afforded by liquefied natural gas ("LNG") under an LNG exchange agreement with GMi which expires on 31 October 1989;
- (v) restore the capability that would be lost due to the retirement of certain compressor units and due to the reduction in estimated power available from certain other compressor units;
- (vi) replace the capacity of the Central Section that would have been provided by the four aftercoolers (referred to in Order No. XG-6-88¹) and by the six 12.5 MW compressors authorized by Certificate No. GC-71², all of which TransCanada no longer proposes to install; and
- (vii) compensate for the reduction in transportation service provided by Great Lakes to TransCanada in 1989/90 relative to 1988/89 due to the provision of new firm services by Great Lakes to other customers.

The proposed facilities and their estimated capital costs are listed on Table 6-1 and shown in TransCanada provided evidence demonstrating that, for the most part, the proposed compressors, compressor upgrades and compressor modifications, estimated to cost a total of \$168.4 million (not including indirect costs) were justified even if none of the new firm services that are listed in Table 1-1 of these Reasons came to fruition. In such a case, however, smaller compressors would be preferable at some locations.

¹ TransCanada has determined that it would be more cost effective to construct additional loop instead of constructing the four aftercoolers approved by Order No. XG-6-88, which was issued as a result of the GH-2-87 proceedings. See Subsection 6.2.2 of these Reasons for further details on this matter.

² TransCanada indicated that the six 12.5 MW compressors authorized by Certificate No. GC-71 further to the GH-2-87 proceedings are no longer manufactured. See Subsection 6.2.2 of these Reasons for further details on this matter.

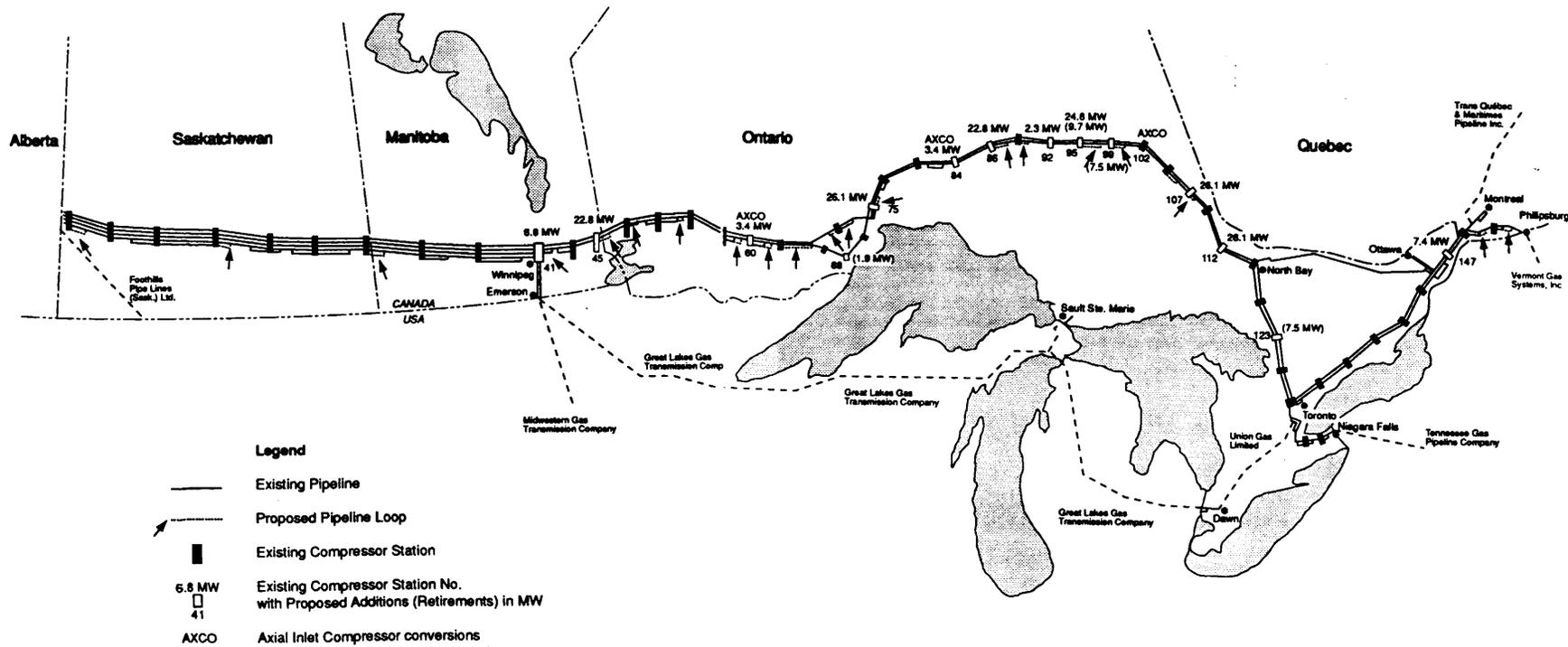
The evidence was that the new firm domestic services, which were essentially ready to proceed subject to the execution of transportation contracts, could be accommodated if the following facilities, in addition to the proposed compressors, were installed:

- Western Section: 6 km of 1219 mm O.D. loop;
- Central Section: 245 km of 1067 mm O.D.; and
- St. Mathieu Extension: 6 km of 508 mm O.D. loop.

The new firm services that are destined to United States markets would require, in addition to the execution of transportation contracts, the obtaining of regulatory approvals from the FERC and ERA and the issuance of an export licence by the NEB, could be accommodated if TransCanada were to expand its system by installing, in addition to the compression and looping facilities described above, the following facilities:

Figure 6-1

TransCanada PipeLines Limited Location of Applied-for Facilities



**Table 6-1
Description and Cost of Applies-for Facilities**

Location	Facilities Description	Length of Pipeline (km)	Capital Cost (1988 base) (\$ 000)	
Western Section	1219 mm O.D. Pipeline Loop			
	between MLV 2 and MLV 3	3.4		
	between MLV 13 and MLV 14	13.7		
	between MLV 25 and MLV 27	31.7		
	Total Western Section Looping	48.8	45,393	
	Two existing 10.4 MW Compressor Units upgraded to 13.8 MW at Station 41		6,450	
Central Section	1067 mm O.D. Pipeline Loop			
	between MLV 41 and MLV 42	3.6		
	between MLV 45 and MLV 46	11.8		
	between MLV 49 and MLV 50	23.8		
	between MLV 50 and MLV 51	8.3		
	between MLV 53A and MLV 54	24.5		
	between MLV 59 and MLV 60	7.0		
	between MLV 61 and MLV 62	23.8		
	between MLV 62 and MLV 63	29.8		
	between MLV 67 and MLV 69	12.9		
	between MLV 69 and MLV 71	4.0		
	between MLV 75 and MLV 76	18.0		
	between MLV 86 and MLV 87	31.4		
	between MLV 87 and MLV 88	3.0		
	between MLV 88 and MLV 89	5.6		
	between MLV 95 and MLV 97	31.6		
	between MLV 99 and MLV 100	26.6		
	between MLV 107 and MLV 108	5.0		
		Total Central Section Looping	270.7	285,347
		Two new 22.8 MW Compressor Units at Stations 45 and 86		39,000
		Three new 26.1 MW Compressor Units at Stations 75, 107 and 112 and one new 24.8 MW Compressor Unit at Station 95		81,680
	Spare compressor equipment and standby plant items		13,200	
	Two existing 10.4 MW Compressor Units and one existing 11.5 MW Compressor Unit upgraded to 13.8 MW at Stations 60, 84 and 92		9,780	
	Axial inlet compressor conversions to existing 10.4 MW Compressor Units at Stations 60, 84 and 102		5,910	
Montreal Line	Two new 3.7 MW Compressor Units at Station 147		12,400	
St. Mathieu Extension	508-mm O.D. Pipeline Loop			
	between MLV 707 and MLV 708	4.7		
	between MLV 802 and MLV 803	10.0		
	Total St. Mathieu Extension Looping	14.7	7,158	
Direct Cost			506,318	
Indirect Cost			61,285	
Total			567,603	

- Western Section: 43 km of 1219 mm O.D. loop;
- Central Section: 26 km of 1067 mm O.D. loop; and
- St. Mathieu Extension: 8 km of 508 mm O.D. loop.

Optimal Central Section/Great Lakes Configuration

TransCanada designs its system such that the total of the capability of the Central Section and TransCanada's firm contracted transportation on Great Lakes is sufficient to meet the firm annual requirements east of Winnipeg, not including exports at Emerson.

TransCanada submitted that a combined expansion of both the Central Section and the Great Lakes system would result in the expansion yielding the lowest present worth. However, TransCanada had been informed by Great Lakes prior to the filing of the application that Great Lakes would not be in a position to obtain regulatory approval and install facilities in time for the 1989/90 contract year. In view of this constraint, TransCanada proposed in its application to construct facilities to provide capacity in order to move most of the increased requirements east of Winnipeg through the Central Section. TransCanada's proposal would result in \$46.2 million of additional capital costs and an increase of \$132 million in the present worth of the proposed Central Section/Great Lakes expansion relative to the optimal design.

Table 6-2 summarizes current and forecasted levels of transportation service provided to TransCanada by Great Lakes. Great Lakes has received FERC approval for an increase of $1.06 \times 10^6 \text{ m}^3/\text{d}$ (37.5 MMcfd) in its T-4 contract with TransCanada in the 1988/89 contract year, bringing the total level of TransCanada's firm transportation on Great Lakes to $21.95 \times 10^6 \text{ m}^3/\text{d}$ (775 MMcfd). TransCanada has requested a further increase in T-4 service of $1.77 \times 10^6 \text{ m}^3/\text{d}$ (62.5 MMcfd) for 1 November 1990, for which Great Lakes has sought FERC approval. This higher T-4 level would require the construction of facilities. In the interim period, this increase or a portion thereof would be available as annual transportation service on Great Lakes. This service would be subject to daily interruptions. Great Lakes estimated that FERC approval of the $1.77 \times 10^6 \text{ m}^3/\text{d}$ (62.5 MMcfd) increase in T-4 service and the interim annual service would likely take from six to twelve months from the September 1988 filing date.

Table 6-2

Transportation Services on Great Lakes

Contract years	Increase-(Decrease)		Type of Service	Total Service Level			
				Daily		Annual	
	10 ⁶ m ³ /d	MMcfd		10 ⁶ m ³ /d	MMcfd	10 ⁶ m ³	Bcf
1988-89	1.06	37.5	Firm Daily	21.95	775	8 013	282.9
	1.77 ¹	62.5	Firm Annual	<u>1.77</u>	<u>62.5</u>	<u>646</u>	<u>22.8</u>
			Total Service	23.72	837.5	8 659	305.7
1989-90	-	-	Firm Daily	21.95	775	8 013	282.9
	(0.30)	(10.5)	Firm Annual	<u>1.47</u>	<u>52</u>	<u>538</u>	<u>19.0</u>
			Total Service	23.42	827	8 551	291.9

¹ For the 1988/99 and 1989/90 contract years, TransCanada has contracted for 646 10⁶m³ (22.8 Bcf) of firm annual service or the equivalent of 1.77 10⁶m³/d (62.5 MMcfd), which is fully interruptible on any day. Great Lakes is required to provide this service (to the extent possible) with existing facilities. Great Lakes has advised that it will be able to provide the full firm annual service in 1988/89 but only equivalent of 1.47 10⁶m³/d (52 MMcfd) in 1989/90. This service would rank higher in priority than overrun service, but lower than T-4 firm transportation. At the time of the hearing, FERC approval for this service had not yet been received.

also being ordered at the time the hearing was held, with a further commitment expected by the end of 1988. According to TransCanada, if cancellation occurred after 31 December 1988, cancellation charges would increase by about \$30 million.

Following completion of the hearing, TransCanada filed a letter dated 1 December 1988¹, which indicated that it would be advantageous to begin construction of certain loop sections during the winter period. These sections, totalling 128 km on the Central Section, would involve extensive construction through swamp areas. TransCanada submitted that an early decision on these facilities, if positive, would allow it to commence construction by clearing brush and removing snow to allow for frost penetration in swamp areas thereby optimizing construction activities with the objective of significantly reducing construction costs. A further benefit of winter construction would be an increase in the Central Section capability in contract year 1988/89, thereby reducing the need for Great Lakes overrun service and/or providing an increase in the amount of interruptible service available during that year.

Views of Parties

The CPA argued that TransCanada had a duty to pursue the least cost option for any facilities expansion and submitted that the construction of facilities on Great Lakes was not pursued in a timely fashion for this application. It expressed concern that the window of opportunity for a Great Lakes expansion for the contract year 1990/91 may also be missed.

As indicated in Chapter 3 of these Reasons, the CPA suggested that the Board investigate the possibility of deferring to the 1990/91 contract year the facilities for those projects not likely to proceed by 1 November 1989. According to the CPA, this could result in considerable cost savings since these requirements, if postponed, could be satisfied by an expansion of Great Lakes at a cost which would be less than the currently proposed expansion of the Central Section.

The CPA was also concerned about the appropriateness of the facilities design, but did not express specific concerns in respect of any of the proposed facilities.

It commented that the ability of an intervenor to test the proposed facilities design and, consequently, to provide the Board with any reasonable assistance, was detrimentally affected by a lack of information and by the incompatibility of the information actually provided. Accordingly, it submitted that it was not in a position to address the Board on the extent of additional facilities required. The CPA recommended that TransCanada be encouraged to improve the presentation of its application to ensure that intervenors are in a better position to provide assistance to the Board in its task of assessing the facilities proposed.

The CPA also suggested that in light of storage available in Ontario and changes in TransCanada's capability factors, the loss of the most critical unit factor as a design criterion should be reviewed in the next facilities application.

IPAC submitted that lack of coordination was having a direct and detrimental effect on the planning of proposed expansions of the TransCanada system. Evidence of that lack of coordination, according to IPAC, was provided by the cancellation of the 12.5 MW compressor units and the aftercoolers previously proposed for the Central Section, and by TransCanada's inability to obtain the optimal

¹ TransCanada's letter of 1 December 1988 was admitted by the Board into the record of these proceedings.

amount of capacity on Great Lakes. IPAC argued that the effect would be higher facilities costs which would be borne by shippers through their tolls.

Union expressed general support for TransCanada's facilities application as it believed the proposed facilities were necessary to adequately serve existing and new markets. However, it submitted that optimal and maximum use of the Great Lakes system ought to be made, rather than expanding facilities solely on the Central Section of TransCanada's system. It expressed concern that TransCanada may miss the opportunity to obtain increased capacity on Great Lakes for the 1990/91 contract year and submitted that in order to achieve the optimal design, TransCanada should in future take the necessary steps to ensure that its transportation needs can be accommodated on the Great Lakes system.

GMi, KannGaz, OSP, MCV, Tennessee, the APMC and le Procureur Général du Québec expressed support for an expansion of the TransCanada system.

Views of the Board

The Board notes that the TransCanada system is currently operating at or near capacity in most sections. In order to accommodate the growth in existing markets and new FS requests, an expansion is required.

A large consensus was clearly expressed among intervenors that an expansion of the system was justified. Parties only differed on the qualifications placed on their support for an expansion. It also appears to the Board that there is significant interest amongst several industry participants in a further expansion of the system beyond the currently applied-for facilities, as evidenced by the queue for a significant level of additional firm services for the 1990/91 contract year.

The Board accepts TransCanada's evidence that a less than optimal design flow split between the Central Section and the Great Lakes system was necessary in the circumstances. It is noted that the resulting imbalance in the design flow split could be rectified in the context of a future expansion of the Central Section/Great Lakes system. However, failure to identify future facilities requirements in a timely fashion may result in further sub-optimal expansions. The Board expects TransCanada to take every means possible to accelerate the development of design alternatives, thereby allowing for timely applications for additional optimal facilities before the FERC and the Board.

With respect to the need for additional looping on the Central Section to compensate for the late installation of compressors, the Board accepts TransCanada's evidence that such a compromise was necessary in order to meet the firm needs of the market for the 1989/90 contract year. The Board is of the view that any spare capacity which becomes available in the Central Section in 1990/91 as a result of the installation of that loop will likely be used to provide interruptible services and/or new firm services to eastern Canada provided that a corresponding expansion of the Western Section is undertaken by TransCanada.

The views of the Board regarding the specific applied-for facilities, by section, are provided in Section 6.2 of these Reasons.

Some intervenors expressed concern regarding the design information provided by TransCanada in its application. The Board appreciates TransCanada's efforts to make information on system design and operations both accessible and understandable to interested parties before and during Part III proceedings. The Board is cognizant of the complexity of the design of the integrated TransCanada/Great Lakes/Union system and encourages TransCanada to continue its efforts in this regard.

Regarding the CPA's concern over design criteria which incorporate loss of critical unit provisions, the Board notes that such matters are always subject to review at facilities proceedings on a case-by-case basis.

Decision

(i) Compression Facilities

In order to meet the requirements for the 1989/90 year in a timely fashion, the Board issued, subsequent to approval by the Governor in Council, a certificate in respect of the requested compression facilities (see Certificate No. GC-74, shown as Appendix 11). For the most part, these facilities are justified whether the new firm services listed in Table 1-1 proceed or not. Furthermore, lead time for their acquisition, installation and commissioning is such that an early, final decision was required. For these reasons, the certificate in respect of the applied-for compression facilities is only conditional upon the technical and environmental conditions which are discussed in Section 6.4 and Chapter 7 of these Reasons.

(ii) Loop Sections

The provision of the new firm domestic services, which are listed in Table 1-1, would require TransCanada to expand its pipeline system by installing most of the loop which is proposed in the Central Section together with short loop sections on both the Western Section and St. Mathieu Extension. These new services are likely to proceed, subject only to the execution of transportation contracts. The evidence clearly points to the advantages of winter construction in swamp areas, the tight construction schedule which must be met by TransCanada, and the desirability of ensuring reliability and flexibility in the operation of the Central Section. In addition, in light of the number of requests for new services commencing 1 November 1990, any spare capacity on the Central Section is expected to be short lived. For these reasons, the Board has decided to certificate the entire 271 km of looping of the Central Section, at an estimated cost of \$285 million (not including indirect costs) upon the condition that transportation contracts in respect of the new domestic services be executed prior to commencement of construction.

Those loop sections on the Western Section and St. Mathieu Extension that were identified by TransCanada as being necessary to provide the capacity required to accommodate the new firm domestic services are also certificated conditional on the execution of relevant transportation contracts prior to commencement of construction. These sections represent 6 km of loop on the Western Section and 6

km of loop on the St. Mathieu Extension. Their estimated capital cost is approximately \$8.5 million (not including indirect costs).

The balance of the line pipe facilities consists of 43 km of loop on the Western Section and 8 km of loop on the St. Mathieu Extension at a total estimated cost of approximately \$44 million (not including indirect costs). The installation of these facilities, in conjunction with the other facilities discussed above, would provide TransCanada with sufficient capacity to accommodate the new export services which are listed in Table 1-1. These services, involving for the most part transportation to Emerson, represent a peak day requirement of $7.747 \times 10^6 \text{ m}^3/\text{d}$ (273.4 MMcfd), which constitutes almost two thirds of the new services underpinning the application.

For reasons of administrative convenience, the Board has issued two separate certificates regarding the proposed looping. The first of these certificates (see Certificate No. GC-75 reproduced in Appendix III), which applies to the loop sections which could provide capacity to accommodate the new firm domestic services, is conditional upon the execution of transportation contracts with respect to these services. The second (see Certificate No. GC-76 reproduced as Appendix IV) is issued in respect of the loop sections that would provide capacity to accommodate the new export services and is conditional upon both the execution of transportation contracts with respect to these services and the granting, in final non-appealable form, of all necessary United States and Canadian federal regulatory approvals.

6.2 Specific Facilities

6.2.1 Western Section

The increased requirements for the 1989/90 contract year required a change in the critical design basis of the Western Section (which extends from the Alberta border to Winnipeg) from winter season conditions to winter peak day conditions with provision for the loss of the most critical compression unit. This change resulted principally from a significant increase in peak day requirements relative to the winter seasonal requirements.

TransCanada provided evidence that the proposed Western Section facilities represented the least cost alternative in meeting the forecasted increase in peak day requirements.

The facilities proposed by TransCanada on the Western Section consisted of three sections of 1219 mm loop totalling 48.8 km, and the upgrading of two existing 10.4 MW units at Station 41 to 13.8 MW. The total cost of these facilities was estimated to be \$51.8 million (not including indirect costs).

IPAC submitted in argument that it was too early to determine whether the change in design basis of the Western Section from winter season to winter peak day was appropriate given uncertainties in the demand for and features of the newly proposed Firm Service Tendered ("FST") service, which is contemplated in recent agreements between WGML and Canadian distributors. The terms and conditions of the new FST transportation service (which is intended to replace ACQ) are within the subject matter of Phase II of the GH-1-88 tolls proceeding.

Views of the Board

The Board notes the significant increase in peak day requirements on the Western Section and finds that it is appropriate, for the purposes of this application, to design the Western Section on a peak day basis. In the Board's view, the increased system requirements justify the installation of the facilities that are proposed for the Western Section.

6.2.2 Central Section

The majority of the facilities proposed by TransCanada in its application would be installed on the Central Section, from Winnipeg to Toronto. These facilities, as listed in Table 6-1, would consist of six large new turbocompressors, various modifications to several existing compressors, and 270.7 km of 1067 mm looping, totalling \$434.9 million (not including indirect costs). These facilities would be in service by 1 November 1989, with the exception of the six new compressors which would be phased in during the winter of 1989/90.

The evidence was that these facilities would allow TransCanada to meet its forecasted 1989/90 annual requirements east of Station 41, totalling 20 970 10⁶m³ (740 Bcf). As indicated in Section 6.1 of these Reasons, a large portion of these facilities was proposed because Great Lakes could not have the necessary facilities in place to provide additional firm service to TransCanada by 1 November 1989.

TransCanada proposed to install six large turbine-driven compressors, ranging in size from 22.8 MW to 26.1 MW, at Stations 45, 75, 86, 95, 107 and 112. These units were estimated to cost \$120.7 million (not including indirect costs) and were planned for the same locations as the 12.5 MW units authorized by Certificate No. GC-71 in the GH-2-87 proceeding. The increased size of these six compressors was justified by the following:

- (i) increased throughput levels;
- (ii) the fact that the proposed 12.5 MW units are no longer manufactured;
- (iii) the moderate additional capital cost associated with the approximate doubling of their rated power;
- (iv) the improved fuel efficiency of the larger compressors;
- (v) the loss in capability due to the retirement of eight compressors at Stations 68, 95, 99 and 123, and the replacement of a portable unit at Station 95;
- (vi) the reduction in available power ratings on some aging Westinghouse and Orenda compressors; and
- (vii) the future retirement of other units which is planned at other locations, such as Stations 75, 107 and 112.

Other compression projects included the upgrade in power of an Avon unit at each of Stations 60, 84 and 92, and axial inlet modifications at each of Stations 60, 84 and 102 to reduce flow restrictions on pipeline compressors. These projects, estimated at \$15.7 million (not including indirect costs) were part of an ongoing program to make the most efficient use of existing compressor units. An allowance

of \$13.2 million (not including indirect costs) was also included for spare equipment for the new compressor units.

Several expansion alternatives were presented by TransCanada, showing various throughput scenarios for future flow-splits on Great Lakes, and various combinations of incremental domestic and export flows. In all cases where significant volumes were shipped on the Central Section, six large turbocompressors and the proposed compressor modifications at the specified locations were shown to be required.

Seventeen sections of 1067 mm looping were proposed for the Central Section. These were located between MLV 41 and MLV 108 and ranged in length from 3.0 km to 31.6 km. The total length of 270.7 km was estimated to cost \$285 million (not including indirect costs). As indicated in Section 6.1 of these Reasons, some of this loop would be required because the six new large compressors could not be in service by 1 November 1989 due to the long lead times involved in their acquisition, installation and commissioning. While the first unit at Station 95 would be in service by 1 December 1989, the other units at each of Stations 45, 75, 86, 107 and 112 will only be available by 1 April 1990.

The proposed design did not include the four aftercoolers originally incorporated into the design authorized in the GH-2-87 proceeding. TransCanada provided several reasons as to why such aftercoolers were no longer appropriate. These included:

- (i) poorer aftercooler performance than previously anticipated;
- (ii) failure to take into account optimal loop locations at the time of preliminary design;
- (iii) the effects of compressor axial inlet modifications; and
- (iv) the lack of temperature-dependence of stress corrosion cracking on the Central Section.

Views of the Board

The Board finds that the proposed compression and looping facilities on the Central Section are required to serve TransCanada's projected annual requirement for 1989/90. It is also the Board's view that these facilities represent a prudent design in view of timing difficulties in obtaining additional capacity on the Great Lakes system and procuring compression facilities, and the required operational flexibility and reliability on the Central Section.

The compressor additions consisting of six large turbocompressors and modifications to several existing units would form part of any significant expansion of the Central Section. This is due to the relatively large increase in throughput capability at moderate capital cost, which results from the installation of additional compression, the inherent fuel efficiency of new units, and the ensuing increase in system reliability.

6.2.3 Montreal Line Facilities

TransCanada's proposed facilities included two 3.7 MW compressor units at Station 147 near Cornwall, Ontario at a cost of \$12.4 million (not including indirect costs). The increased power provided by these units, to be located immediately downstream of the North Bay Shortcut, would allow for loss of unit protection on the Montreal Line currently afforded by an LNG agreement with

GMi which expires 31 October 1989. These facilities would also increase the capacity available to markets east of the North Bay Shortcut by $0.385 \times 10^6 \text{m}^3/\text{day}$ (13.6 MMcfd), and would replace a temporary 5.7 MW unit presently located at Station 147.

Views of the Board

The Board finds that it would be appropriate to install two new 3.7 MW compressor units at Station 147. These facilities would be required to increase the capacity of the TransCanada system in order to accommodate existing and new firm services.

6.2.4 St Mathieu Extension

The amended application included the construction of two sections of 508 mm loop on the St. Mathieu extension, totalling 14.7 km at an estimated cost of \$7.2 million (not including indirect costs). These facilities would be required to increase pipeline capacity in order to accommodate new FS to GMi and a new export to Consolidated by Direct Energy to serve the new Arrowhead cogeneration facility in Vermont.

Views of the Board

The Board considers that it would be appropriate to construct the proposed looping on the St. Mathieu Extension, in order to provide the capacity necessary to accommodate the new firm services requested by GMi and Direct Energy.

6.3 Facilities Necessary to Provide Advance Capacity

In its original application dated 28 July 1988, TransCanada included $2.125 \times 10^6 \text{m}^3/\text{d}$ (75 MMcfd) of advance capacity from the Alberta border to Oakville. This level was determined by TransCanada to be practical given the forecasted magnitude of the uncontracted Canadian market growth and the fact that there had been requests for export service that were considered not ripe for inclusion in the application. When TransCanada revised its application in October 1988, three new incremental firm services for 1989/90 had materialized towards which TransCanada applied the advance capacity:

- (i) $0.385 \times 10^6 \text{m}^3/\text{d}$ (13.6 MMcfd) for GMi;
- (ii) $0.904 \times 10^6 \text{m}^3/\text{d}$ (31.9 MMcfd) for Vector for export to Altresco at Niagara Falls; and
- (iii) $0.171 \times 10^6 \text{m}^3/\text{d}$ (6 MMcfd) for Direct Energy for export to Consolidated at Philipsburg.

The remaining $0.665 \times 10^6 \text{m}^3/\text{d}$ (23.5 MMcfd) of advance capacity would be available for new firm services that may later materialize or for interruptible deliveries.

TransCanada indicated that the originally proposed $2.125 \times 10^6 \text{m}^3/\text{d}$ (75 MMcfd) of advance capacity required the installation on the Western and Central Sections facilities valued at approximately \$175 million. Upon inclusion of the three above-mentioned requirements, the cost of facilities necessary to provide the remaining $0.665 \times 10^6 \text{m}^3/\text{d}$ (23.5 MMcfd) of advance capacity was reduced to \$63 million.

TransCanada testified that in the event that a proposed transportation contract by Northridge for export at Emerson of $0.425 \times 10^6 \text{m}^3/\text{d}$ (15 MMcfd) were executed, the advance capacity on the Western Section would be reduced to $0.241 \times 10^6 \text{m}^3/\text{d}$ (8.5 MMcfd). This reduction would effectively limit the amount of contractable capacity downstream of Station 41 to this level, thereby "trapping" $0.425 \times 10^6 \text{m}^3/\text{d}$ (15

MMcfd) of advance capacity on the Central Section. Nevertheless, TransCanada proposed to construct all of the proposed facilities on the Central Section including those for the provision of the full $0.665 \times 10^6 \text{m}^3/\text{d}$ (23.5 MMcfd) of advance capacity. The full amount of $0.665 \times 10^6 \text{m}^3/\text{d}$ (23.5 MMcfd) could be restored by the addition of 10.3 km of 1219 mm loop on the Western Section. This would necessitate capital expenditures of \$11 million. In argument, TransCanada indicated that it would be willing to bring forward an application under section 49 of the Act for this extra amount of loop if the Northridge arrangement proceeds.

In its original application, TransCanada had indicated that $1.416 \times 10^6 \text{m}^3/\text{d}$ (50 MMcfd) of the $2.125 \times 10^6 \text{m}^3/\text{d}$ (75 MMcfd) of advance capacity would be available for OSP when it commenced deliveries in September 1990. In a revision to the application, TransCanada included OSP's forecasted volumes for September and October 1988 as part of the annual requirements for contract year 1989/90. Thus, the new service requests by GMi, Vector, Direct Energy and later Northridge, were deemed to be accommodated by the advance capacity, with the understanding that OSP, being ahead in the queue, would have priority over these services in November 1990, when additional capacity to transport all of the new firm volumes on an ongoing basis would be required.

Views of the Board

As discussed in Section 3.3 of these Reasons, the Board has determined that, in the present circumstances, the level of advance capacity proposed by TransCanada is appropriate to allow for potential firm requirements that may be reasonably assumed to proceed before and during the 1989/90 contract year to be served in a timely way. In the current application, the original proposal by TransCanada was to incorporate $2.125 \times 10^6 \text{m}^3/\text{d}$ (75 MMcfd) of advance capacity into its design. Recent developments reduced this amount to $0.665 \times 10^6 \text{m}^3/\text{d}$ (23.5 MMcfd) with a possible further reduction to $0.241 \times 10^6 \text{m}^3/\text{d}$ (8.5 MMcfd). It appears to the Board that these developments demonstrate that the original request of $2.125 \times 10^6 \text{m}^3/\text{d}$ (75 MMcfd) of advance capacity was reasonable.

Decision

As indicated in Section 6.1 of these Reasons, the Board has issued certificates in respect of all the applied-for facilities, including those facilities which are necessary to provide the level of advance capacity proposed by TransCanada.

6.4 Technical Conditions of Certificates

TransCanada was requested to comment on the appropriateness of certain technical conditions that had been attached to previous certificates and that the Board indicated it might include for the proposed facilities. These conditions consisted of the following:

- (i) the submission of a detailed construction schedule;
- (ii) the submission of construction alignment drawings, construction drawings and specifications;
- (iii) the submission of updates to the construction schedule during construction, if required;
- (iv) the submission of monthly construction cost reports;
- (v) the submission of monthly construction progress reports;

- (vi) the submission of qualified welding and nondestructive testing procedures; and
- (vii) the submission, within six months of putting the facilities into service, of a cost report providing a breakdown of the costs incurred during construction, including reasons for significant differences from preconstruction estimates.

TransCanada expressed no concerns with respect to items (i)-(iii) and (vii). With respect to items (iv) and (v), TransCanada indicated that it had no reservations in providing construction cost and construction progress reports, provided that the timing and format could be determined by agreement between itself and the Board following the issuance of the decision.

Regarding item (vi), TransCanada explained that the condition as proposed was impractical since the nondestructive testing procedures and the capability of the technician and contractor-requested welding procedures are only tested and qualified in the days immediately prior to production welding. TransCanada indicated that it would submit a field joining program which includes field joining procedures and the requirements for the qualification thereof prior to construction for the approval of the Board. It would then file any deviations to the approved procedures as they are fully documented and added to those previously qualified.

Views of the Board

To enable the Board to adequately monitor and inspect the construction of the facilities and to monitor project costs, the Board is of the view that conditions requiring the submission of construction schedules, schedule updates, drawings, specifications and construction cost reports should be included with the certificates issued in respect of the proposed facilities.

The Board concurs with TransCanada that the item respecting the submission of qualified welding and nondestructive testing procedures is impractical as written. Accordingly, the Board will require that the submission of qualified welding and nondestructive testing procedures be submitted within 21 days of the commencement of pipeline welding.

Decision

The certificates which the Board has issued are subject to the above stipulated conditions, as applicable.

6.5 GH-2-87 Orders and Certificates

For reasons explained in Section 6.2 of these Reasons, TransCanada indicated that it would consent to the amendment of Order No. XG-6-88 in respect of four aftercoolers. It also consented to the revocation of Certificate No. GC-71 in respect of six 12.5 MW compressors, provided that the Governor in Council had approved the issuance of a certificate in respect of the six larger compressor units that are applied for in the current proceeding.

Views of the Board

As indicated in Sections 6.1 and 6.2 of these Reasons, the Board has issued, upon approval by the Governor in Council, three certificates in respect of facilities which will, *inter alia*, replace the capacity to be provided by the six 12.5 MW compressors and four aftercoolers which were certificated or exempted from the

necessity of certification as a result of the GH-2-87 proceeding. Accordingly, it is appropriate to revoke or amend the applicable regulatory instruments to reflect the Board's decision to certificate the applied-for facilities.

Decision

The Board has amended Order No. XG-6-88. Order No. AO-2-XG-6-88, which deletes reference to four aftercoolers in Schedule "A" of Order No. XG-6-88, as amended, is attached as Appendix VI of these Reasons.

The Board has revoked Certificate No. GC-71 in respect of six 12.5 MW compressors.

Chapter 7

Land Use and Environmental Matters

7.1 Land Use

7.1.1 Route Selection

The line pipe facilities applied for by TransCanada, consist of twenty loop sections covering a total of 334.3 km in the Provinces of Saskatchewan, Manitoba, Ontario and Quebec. The location of the loop sections and the land requirements are set out in Table 7-1.

TransCanada elected to locate all facilities within or adjacent to its existing easements, with the exception of one minor deviation of 2.0 km located near MLV 49 in Ontario. TransCanada's view was that the installation of loop immediately adjacent to its existing easements simply involves widening the existing pipeline easement and should not be thought of as a route-related issue. Intervenors raised no concerns regarding the routing of the proposed loop sections.

The Board questioned TransCanada's justification for the placement of Class 3 pipe within Whiteshell Provincial Park in the Province of Manitoba. TransCanada submitted that the existing and potential recreational cottage development within the Park was quite significant and warranted the Class 3 location of pipe.

In Quebec, the Board wishes to ensure that new pipeline locations satisfy the criteria for linear facility development established by that Province. TransCanada indicated that while the looping crossed a decreed agricultural zone, it followed an existing route established before the above-mentioned criteria had been developed and that, in any event, no lesser quality agricultural soils existed in the area. TransCanada also indicated that the existing route follows lot lines where practicable and that efforts would be made to minimize disruptions to hedgerows, windbreaks and any other existing landscaping. The extent of tile drainage improvements within the general area, however, made the disruption of drainage systems unavoidable.

Views of the Board

It is the Board's view that TransCanada has adequately supported the proposed looping locations within Whiteshell Provincial Park and the Province of Quebec. The Board does not perceive any problems with the deviation on the Kenora loop section. For all other loop locations the Board accepts TransCanada's use of existing easements and new easements adjacent thereto.

7.1.2 Land Requirements and Notifications

Because of the potential impact on affected landowners, the amount of land (fee simple, easements, temporary work space) required for pipeline construction is of particular concern to the Board. TransCanada explained the rationale for its specific land requirements and, for each loop location, provided schematics of said requirements and a description of its existing easements, the pipe location within those easements, and the specific terrain conditions.

7.1.2.1 Land Requirements

Fee Simple Land

One parcel of approximately 68 acres, which included a single family residence, was acquired in fee simple by TransCanada. This land was purchased to alleviate the impact of increased noise from Station 95. The Board was concerned with the amount of land purchased by TransCanada and with the possibility that such a large acquisition could withdraw the land from productive use.

TransCanada indicated that its policy was to find tenants whenever possible for its acquired lands and that in this case, by holding the full parcel, it could control future land use.

**Table 7-1
1989-90 Facilities: Additional Land Requirements**

Loop Description	Name	Length (km)	New Land Requirements						Overall Length (km)
			Permanent Easement			Temporary Work Space			
			Width (m)	Length ¹ (km)	% Crown ²	Width (m)	Length ¹ (km)	% Crown ²	
SASKATCHEWAN AND MANITOBA									
MLV2 to MLV2 + 3.4	Burstall	3.4	25	.2	-	20-30	3.5	-	3.3
MLV13 to MLV13 + 13.7	Caron	13.7	-	-	-	30	13.3	-	3.3
MLV25 to MLV 27	Moosomin	31.6	10	1.6	-	25-30	30.0	6.5	31.6
MANITOBA									
MLV41 to MLV41 + 3.6	Île des Chênes	3.6	20	3.3	-	-	-	-	3.3
MLV45 to MLV45 + 11.8	Falcon Lake	11.8	30	11.0	88	-	-	-	11.7
ONTARIO									
MLV49 to MLV50 + 8.3	Kenora	23.8	30	11.2	77	-	-	-	11.2
MLV50 to MLV50 +8.3	Kenora	8.3	15-20	5.0	100	-	-	-	5.0
MLV53 to MLV53 + 24.5	Eagle River	24.5	15-25	5.2	-	10	9.7	-	14.9
MLV59 to MLV59 + 7.0	Ignace	7.0	20	4.3	100	-	-	-	4.3
MLV61 to MLV61 + 23.8	Firesteel River	23.8	-	-	-	-	-	-	-
MLV62 to MLV63	Upsala	29.8	26.8	1.8	91	10	8.5	82	10.3
MLV67 + 9.9 to MLV69	Whitefin	12.9	20	12.9	100	-	-	-	12.9
MLV69 + 6.1 to MLV69 + 10.1	Eaglehead River	4.0	15-20	4.0	100	-	-	-	4.0
MLV75 to MLV75 + 18.0	Nipigon	18.0	15-20	10.2	100	-	-	-	10.2
MLV86 to MLV87 + 3.0	Hearst	34.4	-	-	-	15	33.4	100	33.4
MLV88 to MLV88 + 5.6	Calstock	5.6	-	-	-	15	5.5	100	5.5
MLV95 to MLV97	Kapuskasing	31.6	12-27.43	7.4	27	15	29.7	27	29.7
MLV99 to MLV99 + 26.6	Smooth Rock Falls	26.6	13-22.86	1.5	3	15	25.7	86	25.7
MLV107 to MLV107 + 5.0	Swastika	5.0	-	-	-	-	-	-	-
QUEBEC									
MLV707 to MLV707 + 4.7	Mercier	4.7	-	-	-	17	5.3	-	5.3
MLV802 + 114 to MLV803	St.-Jean	10.0	8.0	9.34	-	15	9.34	-	9.34

1 Lengths of Permanent Easement and Temporary Work Space do not include road allowances and rail allowances.

2 % Crown includes Federal, Provincial and Municipal Governments and Agencies.

Easements

Additional easements, generally ranging in width from 10.0 to 30.0 m, are required by TransCanada along thirteen of its proposed loop locations. TransCanada indicated that the additional easements are required in order to allow pipe placement where insufficient room exists within existing easements, to enable pipe location and construction activity in difficult terrain, and to consolidate easements thereby simplifying construction activity.

Temporary Work Space

TransCanada requires from 10.0 to 30.0 m of temporary work space for machinery movement and for the storage of topsoil and subsoil. Temporary work space in excess of 30.0 m. is required in areas where adverse conditions exist. Such areas include wetlands, rolling terrain and major river crossings.

7.1.2.2 Notifications

For the looping program proposed by TransCanada, approximately two hundred and thirty landowners as well as numerous individuals having interests in Crown lands are affected. TransCanada indicated that all owners were contacted, and it undertook to file a Line List which would indicate the status of land acquisition. TransCanada further indicated that in compliance with section 75 of the Act, it would serve a notice of proposed acquisition on each party holding an interest in any of the lands that it proposes to acquire. In addition, TransCanada filed a copy of the *pro forma* letter which it has sent to each landowner that will be affected by its temporary work space requirements.

Views of the Board

The Board finds that TransCanada's anticipated requirements for fee simple land, easements and temporary work space are reasonable and justified. The Board is also satisfied with TransCanada's proposed method of notification.

7.1.3 Status of Acquisition of Lands

By the conclusion of the hearing, TransCanada had yet to acquire most of the new lands associated with its proposed facilities. The only easements or options that TransCanada had acquired were those pertaining to two parcels to be traversed by the Kenora Loop. The Board further notes that TransCanada had only served notices of proposed acquisition¹ on the Crown, certain parties holding an interest in Crown lands, and the owners of the Kenora Loop parcels.

7.1.4 Exemptions from Paragraphs 27(b) and 27(c) and Section 29 of the Act

In its application of 28 July 1988, as amended, TransCanada requested orders pursuant to section 49 of the Act, exempting its proposed facilities from the provisions of paragraph 26(1)(a), subsection 26(2) and section 27 of the Act. Subsequent to the close of the hearing, the record thereof was reopened in

¹ Section 87 (formerly section 75) of the Act requires that a notice of proposed acquisition be served on an owner of land, prior to acquisition of his or her land (or of any interest therein) by a pipeline company.

order to accept a letter from TransCanada dated 1 December 1988 which requested the following relief:

- (i) with respect to five specific loop sections which, if approved, would cross northern Ontario swampland:
 - (a) an order pursuant to section 49 of the Act exempting said loop sections from the provisions of section 27 thereof; followed by
 - (b) a certificate issued pursuant to section 44 of the Act accompanied by an order pursuant to section 49 thereof exempting said loop sections from the provisions of section 29; and
- (ii) with respect to the balance of the applied-for facilities: a certificate issued pursuant to section 44 of the Act accompanied by an order pursuant to section 49 thereof exempting all loop sections referred to in said certificate from the provisions of paragraphs 27(b) and 27(c) and section 29.

TransCanada, in its letter of 1 December 1988, also indicated that it no longer required an exemption from the provisions of paragraph 26(1)(a) and subsection 26(2) of the Act.

The relief requested in the above paragraph (i)(a) would allow TransCanada to construct the applicable loop sections prior to the issuance of a certificate. Such relief was requested in order that construction could commence in swampland areas during the winter season, thereby saving considerable expense.

The exemption from section 29, referred to in the above paragraphs (i)(b) and (ii), would relieve TransCanada from the necessity of filing PPBoRs and, as a consequence, from the procedures involved in obtaining Board approval thereof.

Views of interested Parties

The CPA and Consumers Gas were the only intervenors to comment on TransCanada's letter of 1 December 1988. Both parties supported the relief requested therein.

Views of the Board and Decision

The Board appreciates the benefits of undertaking winter construction through swamp prone areas. The Board, however, does not consider it appropriate to follow the procedures requested by TransCanada respecting exemption from the provisions of section 27 of the Act. The Board's view, in this instance, is that if a certificate is to be issued, its issuance should precede that of any exemption orders respecting construction.

Subsequent to the issuance of Certificates Nos. GC-75 and GC-76, the Board issued Orders Nos. XG-30-88 and XG-31-88 which exempt all of TransCanada's proposed line pipe facilities from the provisions of paragraphs 31(c) and 31(d) and section 33 (formerly paragraphs 27(b) and 27(c) and section 29) of the Act.

In arriving at its decision to grant the aforementioned exemptions, the Board was persuaded by the fact that the loop sections in question will all be located in areas of low population and that all necessary land acquisition is adjacent to existing easements.

In order to protect the rights of landowners from whom TransCanada must acquire new easements, the orders were conditioned in such a manner that all necessary easement or option agreements are to be executed and evidence of same provided to the Board prior to commencement of construction.

7.1.5 Landowner Concerns

Only one landowner, Mr. Jacques J.L. Gauthier, wrote to the Board concerning TransCanada's facilities application. Mr. Gauthier expressed concerns about TransCanada's de-watering practice after pipe testing and about the maintenance of and control of access to the right-of-way crossing his property.

During the hearing, TransCanada indicated that it would make every effort to resolve the issues raised by Mr. Gauthier. It stated that the method and location for disposal of water used during its hydrostatic testing procedure were approved by the Ontario Ministries of Environment and Natural Resources. It also stated that the weed control spraying of the Gauthier property was an error, and that compensation and subsequent mechanical brush control would be discussed with Mr. Gauthier. In order to control access, TransCanada indicated that fences across the right-of-way would be constructed. TransCanada further indicated that only temporary work space was required from Mr. Gauthier and that if it could not be obtained, construction within the existing easement could take place but at a higher cost.

Views of the Board

The Board is satisfied with the explanations and undertakings made by TransCanada, and is hopeful that TransCanada can resolve the issues raised by Mr. Gauthier.

7.2 Environmental Matters

TransCanada submitted an environmental assessment in support of its application and adopted its recommendations to prevent or mitigate adverse environmental impacts resulting from the project. TransCanada has also undertaken to follow the policy statements and specific environmental mitigative measures and procedures stated in its Environmental Protection Practices Handbook, 1986, and its revised Pipeline Construction Specifications, 1988.

The environmental descriptions, assessments and recommendations contained in the impact statements provided information regarding agricultural capability, soils, crop production, fish and wildlife, stream crossings, environmentally sensitive areas, recreational use and heritage resources. A wide range of environmental concerns were identified as a result of the proposed construction.

An Environmental Issues List ("EEL"), which included the recommended methods to prevent or reduce specific environmental impacts, was provided for each loop section.

TransCanada indicated the environmental sensitivity of each significant watercourse to be crossed by the proposed pipeline additions. The vast majority of proposed watercrossings are located in the

rugged terrain of northern Ontario. A major objective for protecting the aquatic systems is to conduct the crossing during the dry summer months when the watercourse is least sensitive. The concerns for archaeological and historical resources along most of the proposed pipeline route are minimal since previously disturbed rights-of-way are followed. TransCanada, however, has undertaken to further examine those areas where the potential for disruption of artifacts exists.

TransCanada indicated that it will retain environmental inspectors throughout construction of the project in order to advise on the implementation of recommendations submitted in the assessment and project specifications. The inspectors will help to ensure compliance with contractual documents and with commitments made during the hearing or developed following discussions with landowners and government agencies.

TransCanada agreed to a request by Ontario to provide to the Chairman of the Ontario Pipeline Coordinating Committee ("OPCC"), at least 30 days prior to the commencement of construction, the names of the environmental inspectors assigned to each loop section in Ontario. TransCanada also stated that it would meet with the OPCC to discuss the proposed administrative structure of their environmental inspection program.

The EIL will be used by TransCanada throughout the project to track the status of the identified environmental issues and to document the effectiveness of the environmental mitigation measures. The environmental inspector would be responsible for tracking the issues listed in the assessment as well as any additional environmental concerns arising during construction.

Views of the Board

After considering the extensive environmental information contained in TransCanada's application and the evidence presented in the hearing, it is the view of the Board that if the measures for environmental protection are implemented, the project would only create minimal environmental impacts of a local and temporary nature.

The Board requires TransCanada to implement the policies and recommendations contained in the application and the environmental reports, including the EIL. The environmental information contained in the EIL should provide a focus for inspection during construction and help TransCanada to implement an effective environmental monitoring program. TransCanada is also required to implement the undertakings made to the Board during the hearing. Those measures should, if properly applied throughout construction, result in a high standard of environmental protection and right-of-way rehabilitation.

Ontario requested that TransCanada be required to submit the names of its environmental inspectors prior to construction. The Board notes TransCanada's commitment to provide that information and, therefore, does not consider it to be necessary to include any certificate conditions pertaining to this matter.

To determine that the environmental objectives have been achieved, the Board requires TransCanada to file a post-construction environmental report within six months of the date that leave-to-open is granted. The report must discuss all the issues that have been identified up to that point in time, along with a statement of their status. The

report must also discuss the measures to be implemented for the resolution of any outstanding issues.

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

Chapter 8

Retirement of Compressors

8.1 Leave to Retire

TransCanada applied for an order pursuant to section 63 of the Act with respect to the proposed retirement of eight compressor units at Stations 68, 95, 99 and 123 on the Central Section.

TransCanada stated that these retirements were necessitated by the following:

- (i) A 1.9 MW reciprocating engine at Station 68 had suffered a major crankshaft failure in 1987;
- (ii) The 9.7 MW Orenda turbocompressor at Station 95 has been in service since 1964. This type of unit has recently experienced reliability problems in other locations, and spare parts are difficult to obtain because these compressors are no longer manufactured. This station is presently operating in the "bottleneck" region of the Central Section; and
- (iii) Stations 99 and 123 each have a set of three Ingersoll-Rand 2.5 MW units installed adjacent to a newer and larger Avon-driven compressor. The small units were designed to operate in series, and their lack of reliability does not allow them to operate together and in parallel with the large unit. They were installed in 1963 and have seen very limited duty over the past decade.

The loss in Central Section capability as a result of the retirement of these units would be replaced by some of the increased compressor power provided by the six large new compressors. No intervenors objected to the rationale behind TransCanada's proposal to retire these units.

TransCanada also explained that several other old compressors are due for retirement over the next five years, particularly some other Orenda units on the Central Section and three Clark units on the Western Section. The timing of these retirements would depend upon the results of certain maintenance and overhaul programs.

Views of the Board

The Board accepts TransCanada's position that its proposed compressor retirements can be justified on the basis of increasing the reliability of the Central Section. It is also recognized that an increasing number of such retirements are contemplated in the future, and that some replacement facilities may be required.

The Board does not, however, consider that TransCanada requires an order under section 74 (formerly section 63) of the Act in order to implement its proposed compressor retirements.

Subsection 74(1) (formerly subsection 63(1)) of the Act reads as follows:

"A company shall not, without the leave of the Board,

- (a) *sell, convey or lease to any person its pipeline, in whole or in part;*
- (b) *purchase or lease any pipeline from any person;*
- (c) *enter into an agreement for amalgamation with any other company; or*
- (d) *abandon the operation of a pipeline.”*

It is evident that TransCanada, in seeking an order under section 63 of the Act, was requesting leave of the Board pursuant to paragraph 63(1)(d) to retire the above-mentioned compressors. Such leave was therefore only required if the proposed compressor retirements constituted the "abandon[ment of] the operation of a pipeline".

The Board notes that subsection 24(1) (formerly subsection 20(1)) of the Act requires a public hearing prior to the granting of an order under paragraph 74(1)(d) (formerly paragraph 63(1)(d)). In the Board's opinion, it was not intended that a public hearing be held each and every time that a company wishes to retire a component or section of its pipeline.

The words "abandon the operation of a pipeline" as found in paragraph 74(1)(d) are interpreted by the Board as referring to the retirement of a pipeline or part thereof if such retirement will result in a discontinuance of service.

Decision

As TransCanada's proposed compressor retirements will not result in a discontinuance of service, leave of the Board is not required by TransCanada in order for it to implement such retirements. TransCanada's request for an order under section 63 of the Act is therefore denied.

8.2 Accounting Treatment

TransCanada also applied to treat its proposed retirements of the eight compressor units as "ordinary retirements" as defined in the Accounting Regulations. The eight compressors were installed between 1960 and 1964. The units at Stations 68, 95, and 99 are to be replaced by new facilities while the units at Station 123 will no longer be needed to meet the system throughout requirement.

TransCanada's position was that the retirements are not unusual for units that are 25 to 30 years old and that it is reasonable to assume that such retirements were anticipated or contemplated when the service life and depreciation rates for compressors were established.

The CPA, supported by IPAC, submitted that the proposed retirement of the units at Stations 99 and 123 should be treated as "extraordinary retirements". In support of its submission, the CPA stated that these units, for all intents and purposes, have not been operated since 1977. In other words, they have only operated for 15 or 16 years of their 28 year average useful life. The CPA argued that because these units are no longer used and useful and are being retired for reasons other than normal wear and tear, their retirements should be treated as "extraordinary retirement".

TransCanada argued that the compressors at Stations 99 and 123 have been used as back-up.

Views of the Board

As stated in the Accounting Regulations, an "extraordinary retirement" is a retirement resulting from causes not anticipated in prior depreciation provisions, including such causes as fire, storm, flood, premature obsolescence, or unexpected and permanent shutdown of an entire operating assembly for reasons other than ordinary wear and tear.

These compressors have been used and useful until now and their service life was consistent with service periods anticipated when the depreciation rate for compressors was established.

The Board recognizes that, when accounting for like assets in a group, some assets will last longer than anticipated while others will not.

The reasons for the replacement of the units at the compressor Stations 99 and 123 would have been considered in prior depreciation provisions.

Decision

The Board has directed TransCanada to treat its compressor retirements proposed in this proceeding as "ordinary retirements" as defined in subsection 39(1) of the Accounting Regulations.

Chapter 9

Economic Feasibility of Expansion

In setting down TransCanada's application for hearing, the Board decided to examine the manner in which TransCanada saw its role when faced with service requests that required an expansion of its pipeline system, having regard to the economic feasibility of such an expansion. Accordingly, in its List of Issues for the proceeding, the Board included the following matter:

“TransCanada's criteria for determining the economic feasibility of an increase in system capacity.”

In dealing with this issue, the Board requested TransCanada to provide the following information:

- (i) a comprehensive statement of TransCanada's policy with respect to determining the economic feasibility of an increase in pipeline capacity and determining whether and when to proceed with such an increase; and
- (ii) an assessment of the economic feasibility of the currently proposed expansion, in light of the policy identified in (i).

TransCanada took the position that it was not its role to determine the economic feasibility of a project. It expressed the view that doing so would be usurping the role of the Board. However, TransCanada indicated that, in the context of a proposed increase in pipeline capacity, its role was:

- (i) to carry out analyses to assess the financial impact of a proposed expansion on those parties that have requested new service as well as others that would be affected by a system expansion;
- (ii) to provide relevant information to those parties so that they can carry out their own assessments of the impact of the project on themselves using their own projections of natural gas markets, prices, currency exchange rates, etc.;
- (iii) to consult with those parties; and
- (iv) to submit an application to construct the requisite facilities for any project when, in TransCanada's judgement, such an expansion is prudent in view of the anticipated financial impacts on industry participants and the producing provinces.

TransCanada indicated that, to this end, it determines the impact that the requisite facilities will have on TransCanada's cost of service and tolls. Then, by using a projection of market prices, it determines the effect that the expansion will have on the total incremental revenue and volume at the Alberta border and makes this information available to interested parties both in advance of and in conjunction with the public hearing.

TransCanada stated that there are very few instances where it would not proceed with an application for facilities on the basis of lack of economic feasibility. It submitted that the decision to proceed with an application requires a considerable amount of judgement involving consideration of a broad set

of factors including the volumes that are flowing, the likelihood of the gas being taken and the markets being served. It was TransCanada's view that as long as the project did not appear to it to be unreasonable, it would proceed with an application and expect that the Board and intervenors would consider the application to be viable. TransCanada felt, however, that ultimately it was the Board's responsibility to determine if the application is in the public interest and should go forward.

TransCanada indicated that it would not apply for facilities related to any service for which it did not consider it likely that the project sponsors would be able to meet the availability criteria specified in TransCanada's tariff. It also argued that it had adopted a prudent approach to the negotiation of contractual arrangements designed to minimize, to the extent possible, the risk of non recovery of costs from those who have contracted to bear such costs.

In relation to the current application, TransCanada determined that the proposed expansion would increase TransCanada's cost of service in 1990/91 by \$110.6 million with a corresponding increase in Eastern Zone tolls of approximately \$0.02/GJ.

Using its forecast for natural gas market prices, TransCanada also forecasted that the present value of the additional total incremental Alberta border revenue that would result from the proposed expansion and associated incremental sales, would be over \$2.0 billion.

On the basis of these results, TransCanada indicated that, in its judgement, the project netbacks to producers following the expansion would be reasonable and the industry would be better off as a result of the expansion.

In view of TransCanada's stated position in respect of its role in the determination of the economic feasibility of a pipeline expansion, the Board enquired into the following matter:

"...whether, and if so, in what manner TransCanada has assured itself that there is or will be adequate natural gas supplies and viable natural gas markets in the long term to ensure the financial viability of the pipeline as a going concern, having regard to uncertainties relating to renewal of existing licences and contracts and the availability of adequate reserves."

In its response, TransCanada stated that it had concluded that the Canadian demand at the level forecasted for 1989/90 would be sustained in the long term, provided that gas continues to be competitively priced. TransCanada estimated the danger of future underutilization of the system to be minimal, in view of its forecast that the Canadian market will continue to show moderate growth.

TransCanada expressed concern about the importation of United States produced gas into Canadian markets, but concluded that it was unlikely that large volumes of gas would be available in the long term. It also raised the possibility of western Canadian gas moving to central Canadian markets by exchange. In TransCanada's view, however, the cost of any such exchange would likely exceed the cost of movement on TransCanada's system.

In respect of export markets, TransCanada pointed to the established relationship between current customers and Canadian suppliers. Noting that existing exporters were all taking gas at high load factors and had expressed a desire to continue receipts of Canadian gas, TransCanada indicated that it

relied on the intentions of these exporters and ultimate customers as to their continuing need for Canadian gas.

With respect to the adequacy of supply, TransCanada noted that all gas supporting its system was produced in the western Canadian sedimentary basin. It indicated that it relied on studies conducted by WGML, together with plans for development of resources located in the McKenzie River delta and Beaufort to conclude that there was ample supply to ensure the full utilization of TransCanada's system for several years.

The CPA took the position that the Board should approve the applied-for facilities, only if it is satisfied that, *inter alia*, the facilities meet an appropriate test of incremental economics. According to the CPA, such a test is more important now than it has been at any other time in the history of the TransCanada system. It testified that it was unsuccessful in reaching a consensus among its members as to the details of such a test at this time. It submitted that in the absence of any specific proposal for a test of economic feasibility, the Board should defer consideration of this issue until it has the advantage of more detailed submissions from interested parties.

IPAC submitted that, in consultation with others, TransCanada should develop a set of criteria that project proponents would need to meet before TransCanada would consider making an application for facilities. According to IPAC, TransCanada should only apply to the Board if a project is viable and economically sound. However, in IPAC's view, the determination of the economic feasibility of an application must probably be assessed on a case-by-case basis.

Ontario submitted that the adoption of an incremental economics test acceptable to tollpayers, and the adoption of a predetermined set of criteria to assess whether requests for service are ripe for inclusion in a facilities application would be necessary for an orderly expansion of the TransCanada system.

Views of the Board

In considering an application for a certificate, the Board, by virtue of its mandate as established by section 52 (formerly section 44) of the Act, must take into account "all such matters as to it appear to be relevant". In carrying out its responsibilities under the Act, the Board may have regard, *inter alia*, to the economic feasibility of the applied for facilities, as indicated in section 52.

In raising in its List of Issues the question of TransCanada's criteria for determining the economic feasibility of an increase in system capacity, the Board had expressed its clear intention to treat this matter as one of the key determinants of the public convenience and necessity of TransCanada's proposed expansion.

In paragraph 10 of its formal application for a certificate, TransCanada stated that the applied-for facilities are required by the public convenience and necessity. It is this very statement that the public hearing process was intended to test.

In view of the foregoing, the Board is of the view that TransCanada had the responsibility to submit evidence demonstrating, *inter alia*, the economic feasibility of an increase in pipeline capacity. TransCanada should not be perceived as a mere conduit of various information to be submitted and debated at a public hearing.

Although it is ultimately for the Board to decide whether facilities that are applied for under Part III of the Act are and will be in the present and future public convenience and necessity, TransCanada has the onus to demonstrate through its evidence that an expansion is economically feasible. This evidence must demonstrate, among other things, that TransCanada has assured itself that there is or will be adequate natural gas supplies and viable natural gas markets in the long term to ensure the financial viability of the pipeline as a going concern. In view of these considerations, the Board does not concur with TransCanada's statement that, for TransCanada to determine the economic feasibility of an expansion would be to usurp the role of the Board.

Throughout the hearing process, the Board and interested parties tested TransCanada's position that forecasted producer netbacks were reasonable and that the aggregate net revenues at the Alberta border and other factors led to the conclusion that the industry would be better off as a result of the currently proposed expansion. The Board also sought information on the extent to which the cost of providing the proposed new services would be offset by additional transportation revenues received for such services. In addition, TransCanada was requested to demonstrate the existence of long-term supplies and markets to underpin the application.

On the basis of the information provided by TransCanada, either as part of the application itself or further to the Board's and intervenors' information requests, the Board is satisfied that the proposed expansion of the TransCanada system is economically feasible. In making this finding, the Board has regard to the fact that no party took the position that the expansion was not economically feasible. Nor did any party submit that the information provided by TransCanada was insufficient to reach a conclusion on this matter.

Much discussion occurred at the hearing regarding the possibility of defining a series of standard tests to determine economic feasibility. The Board notes that no party put forward such standards. Until specific criteria are proposed for consideration in the context of future facilities proceedings, the Board will continue to assess economic feasibility on a case-by-case basis.

Chapter 10

Disposition

The foregoing chapters, together with Certificates Nos. GC-74, GC-75 and GC-76, and Order Nos. TG-9-88, XG-30-88, XG-31-88 AO-2-XG-6-88 and RO-GC-71, constitute the Board's Reasons for Decision and Decisions on this application.

J.G. Fredette
Presiding Member

J.R. Jenkins
Member

K.W. Vollman
Member

Ottawa, Canada
January 1989

Appendix I

Amended List of Issues

(Exhibit A-6 to the GH-4-89 Proceeding)

This list is intended to assist all parties in defining the key issues to be addressed at the hearing. This will not preclude the Board from dealing with other matters which are normally raised by virtue of the Board's mandate pursuant to Part III of the NEB Act.

At the hearing, the Board will consider, *inter alia*, the following matters:

1. TransCanada's criteria for determining the economic feasibility of an increase in system capacity.
2. The reasonableness of the forecast of requirements for domestic and export sales and transportation service.
3. The appropriateness of providing 2.125 10⁶m³/d (75 MMcfd) of advance capacity for the 1989-90 contract year.
4. TransCanada's rationale for changing the design criterion for the Western Section from winter season to winter peak day.
5. The appropriate combination of looping, compression and aftercoolers for the proposed expansion and the consistency of that combination with the long-term expansion path for the system.
6. The appropriateness of adding facilities to the Central Section as compared to an increased level of service on the Great Lakes system.
7. The consistency of the proposed expansion of the Niagara Line with the long-term expansion plan for that line in light of:
 - i) TransCanada's intention to construct the Kirkwall Line, as stated in GH-2-87; and
 - ii) the integrity of the Niagara Line between MLV 207 and MLV 209.
8. The appropriateness of the proposed retirement of compressor units and TransCanada's plans for future retirements.
9. The appropriateness of the location of the proposed looping in light of emerging urban growth and land use patterns.
10. The appropriate terms and conditions to be included in any certificate or order which may be issued.
11. The extent to which the facilities covered by the three certificates recommended by the Board in its decision dated July 1988 following the hearing held pursuant to Order No. GH-2-87 are

no longer intended to be constructed by TransCanada in light of its application dated 28 July 1988, requiring, as a consequence, amendment or revocation of one or more of the three certificates.

Appendix II

Certificate No. GC-74

IN THE MATTER OF the *National Energy Board Act* (hereinafter referred to as "the Act") and the Regulations made thereunder; and

IN THE MATTER OF an application dated 28 July 1988, as amended, by TransCanada PipeLines Limited (hereinafter referred to as "TransCanada") pursuant to Parts III, IV and V of the Act, seeking, *inter alia*, a certificate in respect of certain pipeline facilities; filed with the Board under File No. 1555-TI-157.

WHEREAS TransCanada has represented that its proposed pipeline facilities are required to transport additional volumes of natural gas for domestic and export requirements;

AND WHEREAS a public hearing was held pursuant to Hearing Order No. GH-4-88, in the City of Ottawa, in the Province of Ontario, at which the Board heard TransCanada and all interested parties;

AND WHEREAS the Board has found that the pipeline facilities in respect of which this certificate is issued are and will be required by the present and future public convenience and necessity;

AND WHEREAS the Governor in Council by Order in Council No. P.C. 1988-2815 dated the 22nd day of December 1988 has approved the issue of this certificate;

NOW THEREFORE pursuant to section 52 of the Act the Board hereby issues this certificate in respect of the following facilities:

- a) one new 26.1 MW compressor unit at each of Stations 75, 107 and 112 in the Province of Ontario;
- b) one new 24.8 MW compressor unit at station 95 in the Province of Ontario;
- c) one new 22.8 MW compressor unit at each of the following stations:
 - Manitoba: Station 45
 - Ontario: Station 86;
- d) two new 3.7 MW compressor units at Station 147 in the Province of Ontario;
- e) two 3.4 MW compressor unit upgrades at Station 41 in the Province of Manitoba;
- f) one 3.4 MW compressor unit upgrade at each of Stations 60 and 84 in the Province of Ontario;
- g) one 2.3 MW compressor unit upgrade at Station 92 in the Province of Ontario;
- h) axial inlet compressor conversions at Stations 60, 84 and 102 in the Province of Ontario; and

- i) spare compressor equipment and standby plant items.

The location, design data, internal pressure, and other specifications of the facilities in respect of which this certificate is issued are more particularly described in the application.

This certificate is subject to the following terms and conditions:

1. The pipeline facilities in respect of which this certificate is issued ("the additional facilities") shall be the property of and shall be operated by TransCanada.
2.
 - (1) TransCanada shall cause the additional 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 (2) hereof.
 - (2) TransCanada shall cause no variation to be made to the specifications, drawings or other information or data referred to in subsection (1) 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 its application, its environmental reports filed as part of its application, its Pipeline Construction Specifications, its Environmental Protection Practices Handbook, 1986, or as otherwise adduced in evidence before the Board in the GH- 4-88 proceeding.
4. TransCanada shall, at least 10 days prior to the commencement of construction of the additional 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. During construction, TransCanada shall file with the Board:
 - (1) monthly construction cost reports 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; and,
 - (2) monthly construction progress reports.
6. TransCanada shall, within 21 days from the commencement of pipeline welding, file with the Board copies of the qualified welding procedures and the nondestructive testing procedures to be used during the project together with supporting documentation.
7. TransCanada shall, within six months of putting the additional facilities into service, file with the Board a report providing:
 - (1) a breakdown of the costs incurred in the construction of the additional facilities in the format used in Schedules 9, 10, 11, 12, 13, 14 and 15 of Tab 7 under Tab "Facilities" of Exhibit B-1 to the GH-4-88 proceeding, setting forth actual-versus estimated costs, including reasons for significant differences from estimates; and

- (2) the percentage of Canadian content realized in comparison with that estimated in Schedule 20, of Tab 7 under Tab "Facilities" of Exhibit B-1 to the GH-4-88 proceeding, including reasons for significant differences.
8. Unless the Board otherwise directs, TransCanada shall cause the construction and installation of each of the additional facilities, herein referred to, to be commenced on or before 31 December 1990.

Issued in Ottawa, Ontario, on 22nd day of December, 1988.

NATIONAL ENERGY BOARD

Louise Meagher
Secretary

Appendix III

Certificate No. GC-75

IN THE MATTER OF the *National Energy Board Act* (hereinafter referred to as "the Act") and the Regulations made thereunder; and

IN THE MATTER OF an application dated 28 July 1988, as amended, by TransCanada PipeLines Limited (hereinafter referred to as "TransCanada") pursuant to Parts III, IV and V of the Act, seeking, *inter alia*, a certificate in respect of certain pipeline facilities; filed with the Board under File No. 1555-TI-157.

WHEREAS TransCanada has represented that its proposed pipeline facilities are required to transport additional volumes of natural gas for domestic and export requirements;

AND WHEREAS a public hearing was held pursuant to Hearing Order No. GH-4-88, in the City of Ottawa, in the Province of Ontario, at which the Board heard TransCanada and all interested parties;

AND WHEREAS the Board has found that the pipeline facilities in respect of which this certificate is issued are and will be required by the present and future public convenience and necessity;

AND WHEREAS the Governor in Council by Order in Council No. P.C. 1988-2815 dated the 22nd day of December 1988 has approved the issue of this certificate;

NOW THEREFORE pursuant to section 52 of the Act the Board hereby issues this certificate in respect of the following facilities:

- a) 5.9 km of 1219 mm. O.D. loop from MLV 25 in the Province of Saskatchewan to MLV 25 + 5.9 km in the Province of Manitoba;
- b) 270.7 km of 1067 mm O.D. loop at the following locations:

Manitoba:

3.6 km from MLV 41 to MLV 41 + 3.6 km

11.8 km from MLV 45 to MLV 45 + 11.8 km

Ontario:

23.8 km from MLV 49 to MLV 50

8.3 km from MLV 50 to MLV 50 + 8.3 km

24.5 km from MLV 53A to MLV 54

7.0 km from MLV 59 to MLV 59 + 7.0 km

23.8 km from MLV 61 to MLV 61 + 23.8 km

29.8 km from MLV 62 to MLV 63

12.9 km from MLV 67 + 9.9 km to MLV 69

4.0 km from MLV 69 + 6.1 km to MLV 69 + 10.1 km

18.0 km from MLV 75 to MLV 75 + 18.0 km

31.4 km from MLV 86 to MLV 87

3.0 km from MLV 87 to MLV 87 + 3.0 km

5.6 km from MLV 88 to MLV 88 + 5.6 km

31.6 km from MLV 95 to MLV 97

26.6 km from MLV 99 to MLV 99 + 26.6 km

5.0 km from MLV 107 to MLV 107 + 5.0 km; and

- c) 6.3 km of 508 mm O.D. loop in the Province of Quebec from MLV 802 + 11.4 km to MLV 802 + 17.7 km.

The location, design data, internal pressure, and other specifications of the facilities in respect of which this certificate is issued are more particularly described in the application.

This certificate is subject to the following terms and conditions:

1. The pipeline facilities in respect of which this certificate is issued ("the additional facilities") shall be the property of and shall be operated by TransCanada.
2.
 - (1) TransCanada shall cause the additional 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 (2) hereof.
 - (2) TransCanada shall cause no variation to be made to the specifications, drawings or other information or data referred to in subsection (1) 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 its application, its environmental reports filed as part of its application, its Pipeline Construction Specifications, its Environmental Protection Practices Handbook, 1986, or as otherwise adduced in evidence before the Board in the GH-4-88 proceeding.
4. TransCanada shall, at least 10 days prior to the commencement of construction of the additional 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, at least 10 days prior to the commencement of pipeline construction, file with the Board pipeline construction alignment drawings, construction drawings and specifications.
6. During construction, TransCanada shall file with the Board:
 - (1) monthly construction cost reports 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; and
 - (2) monthly construction progress reports.
7. TransCanada shall, within 21 days from the commencement of pipeline welding, file with the Board copies of the qualified welding procedures and the non-destructive testing procedures to be used during the project together with supporting documentation.
8. TransCanada shall, within six months of putting the additional facilities into service, file with the Board a report providing:
 - (1) a breakdown of the costs incurred in the construction of the additional facilities in the format used in Schedules 3, 4, 5, 6 and 8 of Tab 7 under Tab "Facilities" of Exhibit B-1 to the GH-4-88 proceeding, setting forth actual-versus-estimated costs, including reasons for significant differences from estimates; and
 - (2) the percentage of Canadian content realized in comparison with that estimated in Schedule 19 of Tab 7 under Tab "Facilities" of Exhibit B-1 to the GH-4-88 proceeding, including reasons for significant differences.
9. With respect to the Moosomin and Île des Chênes loops, TransCanada shall file with the Board, at least ten days prior to the commencement of construction, the results of the heritage resources survey referred to in evidence in the GH-4-88 proceeding, including any corresponding mitigative measures.
10. With respect to the Falcon Lake loop, TransCanada shall, at least ten days prior to the commencement of site preparation for the crossing of Barren Lake, file with the Board the environmental specifications and detailed drawings for the crossing.
11. With respect to the Kapuskasing loop, TransCanada shall, at least ten days prior to the commencement of site preparation for the crossing of the Groundhog River, file with the Board the environmental specifications and detailed drawings for the crossing.
12.
 - (1) TransCanada shall file with the Board a post-construction environmental report within six months of the date that the last leave to open is granted for the additional facilities.
 - (2) The post-construction environmental report referred to in subsection (1) shall set out the environmental issues that have arisen up to the date on which the report is filed and shall:

- (a) indicate the issues resolved and those unresolved; and
 - (b) describe the measures TransCanada proposes to take in respect of the unresolved issues.
- (3) 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 (2) is filed:
- (a) 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
 - (b) a description of the measures TransCanada proposes to take in respect of any unresolved environmental issue.
13. Unless the Board otherwise directs, TransCanada shall, prior to the commencement of construction of the additional facilities, demonstrate to the Board's satisfaction that transportation contracts with respect to the transportation of the anticipated new firm domestic volumes on the TransCanada system have been executed.
14. Unless the Board otherwise directs, TransCanada shall cause the construction and installation of each of the additional facilities, herein referred to, to be commenced on or before 31 December 1989.

Issued in Ottawa, Ontario, on 22nd day of December, 1988.

NATIONAL ENERGY BOARD

Louise Meagher
Secretary

Appendix IV

Certificate No. GC-76

IN THE MATTER OF the *National Energy Board Act* (hereinafter referred to as "the Act") and the Regulations made thereunder; and

IN THE MATTER OF an application dated 28 July 1988, as amended, by TransCanada PipeLines Limited (hereinafter referred to as "TransCanada") pursuant to Parts III, IV and V of the Act, seeking, *inter alia*, a certificate in respect of certain pipeline facilities; filed with the Board under File No. 1555-TI-157.

WHEREAS TransCanada has represented that its proposed pipeline facilities are required to transport additional volumes of natural gas for domestic and export requirements;

AND WHEREAS a public hearing was held pursuant to Hearing Order No. GH-4-88, in the City of Ottawa, in the Province of Ontario, at which the Board heard TransCanada and all interested parties;

AND WHEREAS the Board has found that the pipeline facilities in respect of which this certificate is issued are and will be required by the present and future public convenience and necessity;

AND WHEREAS the Governor in Council by Order in Council No. P.C. 1988-2815 dated the 22nd day of December 1988 has approved the issue of this certificate;

NOW THEREFORE pursuant to section 52 of the Act the Board hereby issues this certificate in respect of the following facilities:

a) 42.9 km of 1219 mm O.D. loop at the following locations:

Saskatchewan:

3.4 km from MLV 2 to MLV 2 + 3.4 km

13.7 km from MLV 13 to MLV 13 + 13.7 km

Manitoba:

25.8 km from MLV 25 + 5.9 km to MLV 27; and

b) 8.4 km of 508 mm O.D. loop at the following locations in the Province of Quebec:

4.7 km from MLV 707 to MLV 707 + 4.7 km

3.7 km from MLV 802 + 17.7 km to MLV 803.

The location, design data, internal pressure, and other specifications of the facilities in respect of which this certificate is issued are more particularly described in the application.

This certificate is subject to the following terms and conditions:

1. The pipeline facilities in respect of which this certificate is issued ("the additional facilities") shall be the property of and shall be operated by TransCanada.
2.
 - (1) TransCanada shall cause the additional 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 (2) hereof.
 - (2) TransCanada shall cause no variation to be made to the specifications, drawings or other information or data referred to in subsection (1) 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 its application, its environmental reports filed as part of its application, its Pipeline Construction Specifications, its Environmental Protection Practices Handbook, 1986, or as otherwise adduced in evidence before the Board in the GH-4-88 proceeding.
4. TransCanada shall, at least 10 days prior to the commencement of construction of the additional 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, at least 10 days prior to the commencement of pipeline construction, file with the Board pipeline construction alignment drawings, construction drawings and specifications.
6. During construction, TransCanada shall file with the Board:
 - (1) monthly construction cost reports 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; and
 - (2) monthly construction progress reports.
7. TransCanada shall, within 21 days from the commencement of pipeline welding, file with the Board copies of the qualified welding procedures and the non-destructive testing procedures to be used during the project together with supporting documentation.
8. TransCanada shall, within six months of putting the additional facilities into service, file with the Board a report providing:
 - (1) a breakdown of the costs incurred in the construction of the additional facilities in the format used in Schedules 3, 4 and 8 of Tab 7 under Tab "Facilities" of Exhibit B-1 to the GH-4-88 proceeding, setting forth actual-versus-estimated costs, including reasons for significant differences from estimates; and

- (2) the percentage of Canadian content realized in comparison with that estimated in Schedule 19 of Tab 7 under Tab "Facilities" of Exhibit B-1 to the GH-4-88 proceeding, including reasons for significant differences.
9.
 - (1) TransCanada shall file with the Board a post-construction environmental report within six months of the date that the last leave to open is granted for the additional facilities.
 - (2) The post-construction environmental report referred to in subsection (1) shall set out the environmental issues that have arisen up to the date on which the report is filed and shall:
 - (a) indicate the issues resolved and those unresolved; and
 - (b) describe the measures TransCanada proposes to take in respect of the unresolved issues.
 - (3) 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 (2) is filed:
 - (a) 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
 - (b) a description of the measures TransCanada proposes to take in respect of any unresolved environmental issue.
10. With respect to the Caron and Moosomin loops, TransCanada shall file with the Board, at least ten days prior to the commencement of construction, the results of the heritage resources survey referred to in evidence in the GH-4-88 proceeding, including any corresponding mitigative measures.
11. Unless the Board otherwise directs, TransCanada shall, prior to the commencement of construction of the additional facilities, demonstrate to the Board's satisfaction that:
 - (1) all necessary United States and Canadian federal regulatory approvals have been granted in final non-appealable form in respect of the anticipated new firm export volumes and any necessary downstream facilities; and
 - (2) transportation contracts with respect to the transportation of the anticipated new firm export volumes on the TransCanada system have been executed.
12. Unless the Board otherwise directs, TransCanada shall cause the construction and installation of each of the additional facilities, herein referred to, to be commenced on or before 31 December 1989.

Issued in Ottawa, Ontario, on 22nd day of December 1988.

NATIONAL ENERGY BOARD

Louise Meagher
Secretary

Appendix V

Order No. TG-9-88

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

IN THE MATTER OF an application, dated 28 July 1988, as amended, by TransCanada PipeLines Limited ("TransCanada") pursuant to Parts III, IV and V of the Act for, *inter alia*, an order treating the retirement of certain compressor units as "ordinary" under the *Gas Pipeline Uniform Accounting Regulations* ("the Accounting Regulations"); filed with the Board under File No. 1555-T1-157.

BEFORE the Board on 12 December 1988.

WHEREAS a public hearing was held pursuant to Hearing Order GH-4-88, in the City of Ottawa, in the Province of Ontario, at which the Board heard TransCanada and all interested parties;

AND WHEREAS the Board considers TransCanada's proposed compressor retirements to be "ordinary retirements" as defined in subsection 39(1) of the Accounting Regulations;

IT IS ORDERED THAT TransCanada shall, for accounting, tollmaking and tariff purposes, treat the retirement of compressor units at Stations 68A5, 95A, 99A and 123A as "ordinary retirement" as defined in subsection 39(1) of the Accounting Regulations.

NATIONAL ENERGY BOARD

Louise Meagher
Secretary

Appendix VI

Order No. AO-2-XG-6-88

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

IN THE MATTER OF Order No. XG-6-88

BEFORE the Board on 12 December 1988.

WHEREAS TransCanada has represented that it consents to the amendment of Order No. XG-6-88 in respect of the four aftercoolers referred to therein;

AND WHEREAS the Board considers it to be in the public interest to amend Order No. XG-6-88 accordingly;

IT IS ORDERED THAT pursuant to subsection 21(l) of the Act, Order No. XG-6-88 is amended by deleting therefrom Schedule "A" attached to and forming part of that order and by substituting therefor Schedule "A" attached to and forming part of this order.

NATIONAL ENERGY BOARD

Louise Meagher
Secretary

Schedule "A"

Description

**TransCanada's
Estimated Direct**

**Costs
(1988 Dollars)**

Upgrade of Existing
Turbine/Compressor Units

3.4 MW Compressor Unit
Upgrade at station 52

3.4 MW Compressor Unit
Upgrade at Station 43

3.4 MW Compressor Unit
Upgrade at Station 88

3.4 MW Compressor Unit
Upgrade at station 102

TOTAL

\$9,820,000

Appendix VII

Order No. XG-30-88

IN THE MATTER OF the *National Energy Board Act* (hereinafter referred to as "the Act") and the Regulations made thereunder; and

IN THE MATTER OF an application, dated 28 July 1988, as amended, by TransCanada PipeLines Limited (hereinafter referred to as "TransCanada") pursuant to Parts III, IV and V of the Act, seeking, *inter alia*, an order exempting certain proposed pipeline facilities from the provisions of certain sections of the Act; filed with the Board under File No. 1555-TI-157.

BEFORE the Board on 22 December 1988.

WHEREAS a public hearing was held pursuant to Hearing Order No. GH-4-88, in the City of Ottawa, in the Province of Ontario, at which the Board heard TransCanada and all interested parties;

AND WHEREAS with the approval of the Governor in Council, the Board on 22 December 1988 issued Certificate No. GC-75 in respect of the following facilities:

- (a) 68.8 km of 1067 mm O.D. loop at the following locations in the Province of Ontario:
- 23.8 km from MLV 61 to MLV 61 + 23.8 km
 - 31.4 km from MLV 86 to MLV 87
 - 3.0 km from MLV 87 to MLV 87 + 3.0 km
 - 5.6 km from MLV 88 to MLV 88 + 5.6 km
 - 5.0 km from MLV 107 to MLV 107 + 5.0 km; and
- (b) (i) 5.9 km of 1219 mm O.D. loop from MLV 25 in the Province of Saskatchewan to MLV 25 + 5.9 km in the Province of Manitoba;
- (ii) 201.9 km of 1067 mm O.D. loop at the following locations:
- Manitoba
- 3.6 km from MLV 41 to MLV 41 + 3.6 k m
 - 11.8 km from MLV 45 to MLV 45 + 11.8 km
- Ontario
- 23.8 km from MLV 49 to MLV 50
 - 8.3 km from MLV 50 to MLV 50 + 8.3 km
 - 24.5 km from MLV 53A to MLV 54

7.0 km from MLV 59 to MLV 59 + 7.0 km

29.8 km from MLV 62 to MLV 63

12.9 km from MLV 67 + 9.9 km to MLV 69

4.0 km from MLV 69 + 6.1 km to MLV 69 + 10.1 km

18.0 km from MLV 75 to MLV 75 + 18.0 km

31.6 km from MLV 95 to MLV 97

26.6 km from MLV 99 to MLV 99 + 26.6 km; and

- (iii) 6.3 km of 508 mm O.D. loop in the Province of Quebec from MLV 802 + 11.4 km to MLV 802 + 17.7 km.

AND WHEREAS the Board considers it to be in the public interest to exempt said facilities from the provisions of paragraphs 31(c) and 31(d) and section 33 of the Act;

Appendix VIII

Order No. XG-31-88

IN THE MATTER OF the *National Energy Board Act* (hereinafter referred to as "the Act") and the Regulations made thereunder; and

IN THE MATTER OF an application, dated 28 July 1988, as amended, by TransCanada PipeLines Limited (hereinafter referred to as "TransCanada") pursuant to Parts 111, IV and V of the Act, seeking, *inter alia*, an order exempting certain proposed pipeline facilities from the provisions of certain sections of the Act; filed with the Board under File No. 1555-TI-157.

BEFORE the Board on 22 December 1988.

WHEREAS a public hearing was held pursuant to Hearing Order No. GH-4-88, in the City of Ottawa, in the Province of Ontario, at which the Board heard TransCanada and all interested parties;

AND WHEREAS with the approval of the Governor in Council, the Board on 22 December 1988 issued Certificate No. GC-76 in respect of the following facilities:

- (a) i) 13.7 km of 1219 mm O.D. loop from MLV 13 to MLV 13 + 13.7 km in the Province of Saskatchewan;
- ii) 4.7 km of 508 mm O.D. loop from MLV 707 to MLV 707 + 4.7 km in the Province of Quebec; and
- (b) i) 3.4 km of 1219 mm O.D. loop from MLV 2 to MLV 2 + 3.4 km in the Province of Saskatchewan;
- ii) 25.8 km of 1219 mm O.D. loop from MLV 25 + 5.9 km to MLV 27 in the Province of Manitoba;
- iii) 3.7 km of 508 mm O.D. loop from MLV 802 + 17.7 km to MLV 803.

AND WHEREAS the Board considers it to be in the public interest to exempt said facilities from the provisions of paragraphs 31(c) and 31(d) and section 33 of the Act;

IT IS ORDERED THAT pursuant to section 58 of the Act, the facilities described in the aforementioned paragraph (a) are exempt from the provisions of paragraphs 31(c) and 31(d) and section 33 of the Act.

AND IT IS FURTHER ORDERED THAT pursuant to section 58 of the Act, the facilities described in the aforementioned paragraph (b) are exempt from the provisions of paragraphs 31(c) and 31(d) and section 33 of the Act upon the following condition:

Unless the Board otherwise directs, TransCanada shall prior to the commencement of construction of any specific loop section referred to in the aforementioned paragraph (b), demonstrate to the Board's

satisfaction that all necessary option or easement agreements have been executed by the landowners through whose property that loop section passes.

NATIONAL ENERGY BOARD

Louise Meagher
Secretary

Appendix IX

Order No. RO-GC-71

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

IN THE MATTER OF Certificate No. GC-71 dated 19 September 1988 (approved by Order in Council No. P.C. 1988-2035 dated 15 September 1988).

B E F O R E the Board on 18 January 1989.

WHEREAS Certificate No. GC-71 was issued in respect of one 12.5 MW compressor unit at each of Stations 45, 75, 86, 95, 107 and 112 on the natural gas pipeline system of TransCanada PipeLines Limited ("TransCanada");

AND WHEREAS TransCanada consented on 19 October 1988 to the revocation of Certificate No. GC-71 conditional upon issuance of a certificate in respect of certain larger compressor units at each of the six aforementioned stations;

AND WHEREAS the Board has issued Certificate No. G-C-74 dated 22 December 1988 (approved by Order in Council No. P.C. 1988-2815 dated 22 December 1988) in respect of, *inter alia*, one 26.1 MW compressor unit at each of the aforementioned Stations 75, 107 and 112, one 24.8 MW compressor unit at the aforementioned Station 95 and one 22.8 MW compressor unit at each of the aforementioned Stations 45 and 86;

AND WHEREAS the Board concludes that it is in the public interest to revoke Certificate No. GC-71;

IT IS ORDERED THAT pursuant to section 56(3) of the Act, Certificate No. GC-71 is revoked.

NATIONAL ENERGY BOARD

Louise Meagher,
Secretary