

National Energy Board

Reasons for Decision

IN THE MATTER OF

TransCanada PipeLines Limited

Application Pursuant to Part 111 of the
National Energy Board Act for a Certificate to
Construct Facilities

AND IN THE MATTER OF

**Amoco Canada Petroleum Company Ltd. and
Consolidated Edison Company of New York, Inc.
ICG Utilities (Ontario) Ltd (Gas Export and Reimport)
Indeck Gas Supply Corporation
Western Gas Marketing Limited
Western Gas Marketing Limited as agent for
TransCanada PipeLines Limited
Direct Energy Marketing Limited**

Applications Pursuant to Part VI of the *National Energy Board Act* for Licences to Export
Natural Gas

AND IN THE MATTER OF

**ProGas Limited
Shell Canada Limited**

Applications Pursuant to Part I of the
National Energy Board Act for a Change,
Alteration or Variation of Natural Gas Export
Licences

Volume II - GH-1-89

December 1989

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(i)

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 29 December 1988, as amended, by TransCanada PipeLines Limited, pursuant to Parts III and IV 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 an order in respect of the accounting treatment of certain compressor retirements; filed with the Board under File No. 1555-T1-160;

AND IN THE MATTER OF an application dated 31 January 1989 by Amoco Canada Petroleum Company Ltd. and Consolidated Edison Company of New York, Inc., an application dated 12 October 1988 by Direct Energy Marketing Limited, an application dated 14 February 1989, as amended, by Indeck Gas Supply Corporation, an application dated 15 February 1989 by Western Gas Marketing Limited and an application dated 14 February 1989 by Western Gas Marketing Limited as agent for TransCanada PipeLines Limited, each seeking a licence to export natural gas pursuant to Part VI of the Act; filed with the Board under File No. 1555-T1-160;

AND IN THE MATTER OF an application dated 10 February 1989 by ICG Utilities (Ontario) Ltd, pursuant to Part VI of the Act, for a licence to export and reimport natural gas; filed with the Board under File No. 1555-T1-160;

AND IN THE MATTER OF an application dated 15 November 1988 by ProGas Limited, pursuant to Part I of the Act for a change, alteration or variation of gas export Licences No. GL80 and GL-81; filed with the Board under File No. 1555-T1-160;

AND IN THE MATTER OF an application dated 21 November 1988 by Shell Canada Limited, pursuant to Part I of the Act, for a change alteration or variation of gas export Licence No. GL-100; filed with the Board under File No. 1555-T1-160;

AND IN THE MATTER OF Hearing Order No. GH-1-89, as amended.

HEARD at Calgary April 12,13,14,17,18,19, 20, 21, and at Ottawa April 25, 26, 27, 28, and May 1, 2, 3, 4, 23, 24, 25, 30, 31, and June 1, 2, 14, 15,16,19, 20, 21, 22, 23 and July 10,11,12,13,1989.

BEFORE:

A.B. Gilmour	Chairman
R.B. Horner, Q.C.	Member
K.W. Vollman	Member

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H.R. Ward

Boundary Gas, Inc.

L.E. Smith

Bow Valley Industries Ltd.

K.F. Miller

Canadian Hunter Exploration Ltd.

J.E. Lowe

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Michigan Consolidated Gas Company	A.R. O'Brien
Northeast Energy Associates, a Limited Partnership and North Jersey Energy Associates, a Limited Partnership	S. Klurfeld

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A.S. Hollingworth

NOVA Corporation of Alberta

J. Hopwood, Q.C .

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Ocean State Power II

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K. Simon
L.G. Keough

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M. Grant

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PPG Canada Inc.	W. Fruehauf
St. Clair Pipelines Limited	D.G. Hart, Q.C.
Tennessee Gas Pipeline Company	N.J. Schultz
Texas Eastern Transmission Corporation	J. Weiler
Transcontinental Gas Pipe Line Corporation	J.W. Ebert W.G. Burke-Robertson, Q.C. R.D. Loftin
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Procureur général du Quebec, Le	J. Robitaille
National Energy Board, The	J.A. Vockeroth D. Bursey

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Abbreviations

ABP	adjusted base price
Accounting Regulations	Gas Pipeline Uniform Accounting Regulations
ACQ	Annual Contract Quantity
Act	National Energy Board Act
ADA	ADA Cogeneration
ADQ	Aggregate Daily Quantity
AFFC	Average fossil fuel cost
Alberta and Southern	Alberta and Southern Gas Co. Ltd.
Alcoa	Aluminum Company of America
Algonquin	Algonquin Gas Transmission Company
Amoco	Amoco Canada Petroleum Company Ltd.
Amoco/Con Ed	Amoco Canada Petroleum Company Ltd. and Consolidated Edison Company of New York, Inc.
Amoco Resources	Amoco Canada Resources Ltd.
Ancaster	Town of Ancaster. The
ANE	Alberta Northeast Gas, Limited
ANR	ANR Pipeline Company
AOOC	annual owning and operating costs
APMC	Alberta Petroleum Marketing Commission
Arrowhead	Arrowhead Cogeneration Company Limited Partnership
Bcf	billion cubic feet

Board	National Energy Board
Boise Cascade	Boise Cascade Canada Ltd.
BVI	Bow Valley Industries Ltd.
CanStates	CanStates Gas Marketing
	Canadian

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CETI	Cogen Energy Technology Inc.
CIL	C-I-L Inc.
Champlain	Champlain Pipeline Company
Charlottenburg	Corporation of the Township of Charlottenburg, The
Chesapeake	Chesapeake Resources Ltd.
CNG	CNG Transmission Corporation
Con Ed	Consolidated Edison Company of New York, Inc.
Consolidated	Consolidated Fuels Company
Consumers Gas	Consumers' Gas Company Ltd., The
Contract Year	the 12-month period commencing 1 November
CPA	Canadian Petroleum Association
CPCo	Consumers Power Company
DCQ	Daily Contract Quantity
Direct Energy	Direct Energy Marketing Limited
Domtar	Domtar Inc.
Dupont	E.I. Dupont de Nemours and Company
EIA	Export Impact Assessment
EIL	Environmental Issues List
EJ	exajoule(s)
EME	Energy Marketing Exchange, Inc.
Empire State	Empire State Pipeline Company
ERCB	(Alberta) Energy Resources Conservation Board

Falcon Seaboard

Falcon Seaboard Gas Company

FERC
ommission

(United States) Federal Energy Regulatory

Fort Orange Paper

Fort Orange Paper Company

Foster

Foster Associates, Inc.

FS

Firm Service

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FSC	FSC Resources Limited
FST	Firm Service Tendered
FTA	Free Trade Agreement between the Government of Canada and the Government of the United States of America
GH-2-87	Hearing Order GH-2-87 in respect of TransCanada's application for 1988 and 1989 facilities
GH-4-88	Hearing Order GH-4-88 in respect of TransCanada's application for 1989/90 facilities
GH-8-88	Hearing Order GH-8-88 in respect of export applications of Canterra Energy Ltd., Norcen Energy Resources Limited, Poco Petroleums Ltd., Shell, Vector and WGML/TransCanada
GH-1-89	Hearing Order GH-1-89 in respect of TransCanada's application for 1990 facilities
GHW-3-89	Hearing Order GHW-3-89 in respect of information on gas supply to be provided by TransCanada in support of its 1991 and 1992 facilities application.
General Chemical	General Chemical Canada Ltd.
GIC	gas inventory charge
GJ	gigajoule(s)
GMi	Gaz Métropolitain, inc.
GNP	gross national product
Great Lakes	Great Lakes Gas Transmission Company
Gulf	Gulf Canada Resources Limited
HDGI	Hydro Development Group Inc.
Hydro Engineering	Hydro Engineering, Inc.

ICG Ontario

ICG Utilities (Ontario) Ltd

ICG Resources

ICG Resources Ltd.

ICG Transmission

ICG Transmission Holdings Ltd.

Indeck

Indeck Gas Supply Corporation

Indeck Oswego

Indeck Energy Services of Oswego, Inc.

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Indeck-Yerkes	Indeck-Yerkes Energy Services, Inc.
	Inverness Petroleum Ltd.
IPAC	Independent Petroleum Association of Canada, The
Kamine Milford	Kamine Milford Limited Partnership
KannGaz	KannGaz Producers Ltd.
km	kilometres
kPa	kilopascals
Kraft	Kraft Inc.
Kwh	kilowatt-hour(s)
LDC	local distribution company
LIFS	Limited Interruptible Firm Service
m	metre(s)
m ³	cubic metre(s)
m ³ /d	cubic metre(s) per day
Mcf	thousand cubic feet
mm	millimetre(s)
MCV	Midland Cogeneration Venture Limited Partnership, The
MDCQ	maximum daily contract quantity
MDQ	maximum daily quantity
Megan-Racine	Megan-Racine Associates, Inc.
MichCon	Michigan Consolidated Gas Company
Midwestern	Midwestern Gas Transmission Company

Minnesota Pipelines

Inter-City Minnesota Pipelines Ltd.

MLV

mainline valve

MMBtu

million British thermal units

MMcf

million cubic feet

MMcfd

million cubic feet per day

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MW	megawatts
National Distribution	National Fuel Gas Distribution Corporation
National Fuel	National Fuel Gas Supply Corporation
NEB	National Energy Board
NEPOOL	New England Electric Power Pool
Niagara Gas	Niagara Gas Transmission Limited
Niagara Mohawk	Niagara Mohawk Power Corporation
Niagara Spur	Niagara Spur Loop Line
NIPPS	Niagara Import Point Projects Settlement
North-Canadian Marketing	North-Canadian Marketing Inc.
Northeast Energy	Northeast Energy Associates, A Limited Partnership
Northern Natural	Northern Natural Gas Company
North Jersey Energy	North Jersey Energy Associates, A Limited Partnership
Northridge	Northridge Petroleum Marketing, Inc.
Northstar	Northstar Energy Corporation
NOVA	NOVA Corporation of Alberta
NSP Wisconsin	Northern States Power Company, A Wisconsin Corporation
NYSPSC	New York State Public Service Commission
O.D.	outside diameter
OEB	Ontario Energy Board

Ontario	Minister of Energy for Ontario, The
Ontario Hydro	Ontario Hydro Corporation
OSP II	Ocean State Power II
Pan-Alberta	Pan-Alberta Gas Ltd.
PanCanadian	PanCanadian Petroleum Limited
Part VI Regulations	<i>National Energy Board Part VI Regulations</i>

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Penneast	Penneast Gas Services
PGA	Purchase Gas Adjustment
PJ	petajoule(s)
Power City	Power City Partners, L.P.
PPBR	plan, profile and book of reference
PPG	PPG Canada Inc.
ProGas	ProGas Limited
PURPA Regulations	Regulations issued under the authority of the <i>Public Utility Regulatory Policies Act of 1978</i>
QF	qualifying cogeneration facility
RH-1-88	Hearing Order RH-1-88 in respect of the 1988/89 toll application of TransCanada PipeLines Limited
R/P ratio	reserves to production ratio
Salmon	Salmon Resources Ltd.
Saskatchewan	Province of Saskatchewan, Department of Environment and Public Safety
Shell	Shell Canada Limited
Southeastern	Southeastern Michigan Gas Company
Sproule	Sproule Associates Limited
St. Lawrence Gas	St. Lawrence Gas Company, Inc.
STS	Storage Transportation Service
Supply/Demand Report	<i>National Energy Board Canadian Energy Supply and Demand 1987-2005</i>
1986 Supply/Demand Report	<i>National Energy Board Canadian Energy Supply</i>

and Demand 1985-2005

TCPL	TransCanada PipeLines Limited
Tennessee	Tennessee Gas Pipeline Company
Tetco	Texas Eastern Transmission Corporation
TIPC	total incremental production costs
TQM	Trans Québec & Maritimes Pipeline Inc.

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TransCanada	TransCanada PipeLines Limited
Transco	TransContinental Gas Pipe Line Corporation
TransGas	TransGas Limited
Union	Union Gas Limited
Unitil	Unitil Power Corporation
Universal	Universal Explorations Ltd.
U.S.	United States of America
Vector	Vector Energy Inc.
Vermont Gas	Vermont Gas Systems, Inc.
WAFT	weighted average floating tariff
WCSB	Western Canadian Sedimentary Basin
WGML	Western Gas Marketing Limited
WGML/TransCanada	Western Gas Marketing Limited as agent for TransCanada PipeLines Limited
Winnipeg	City of Winnipeg, The

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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 to the detailed text and tables.)

The Hearing

A public hearing was held in Calgary for eight days from 12 to 21 April 1989, and was continued in Ottawa for an additional 27 days during April, May, June, and July of 1989.

The Facilities Application

By application dated 29 December 1988, as amended on 3 March and 10 May 1989, TransCanada PipeLines Limited ("TransCanada") sought a certificate under Part III of the *National Energy Board Act* ("the Act") in respect of new facilities to increase deliveries to its domestic markets in eastern Canada and to export markets in the United States.

The proposed expansion would enable TransCanada to:

- meet its projected sales and transportation requirements for the 1990/91 contract year (see Table 1-1), including new firm service contracts, changes in load factors for some existing customers, and firm requirements that started late in the 1989/90 contract year;
- restore capability that would be lost due to the retirement of compressor units;
- provide increased minimum delivery pressures of 4 000 kilopascals ("kPa") at St. Maurice and Philipsburg, Quebec, 5 860 kPa at Napierville, Quebec and 5 427 kPa at Emerson, Manitoba; and
- provide loss-of-unit protection.

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The Export Applications

Following a preliminary review of TransCanada's original facilities application dated 29 December 1988, the Board decided that it would be expedient to examine at the same hearing export applications under Part VI of the Act and the need for the proposed facilities under Part III thereof. Accordingly, on 5 January 1989, the Board directed that any prospective export applicant depending upon TransCanada obtaining a certificate to install additional facilities for the 1990/91 contract year file its export application by 15 February 1989.

In response to the Board's directive, 14 applications for export were filed. Eight of these applications were judged to have met the filing requirements as set out in the National Energy Board Part VI Regulations and the July 1987 Surplus Determination Procedures Report. These eight applications were set down for hearing, commencing 12 April 1989:

- Amoco Canada Petroleum Company Ltd. and Consolidated Edison Company of New York ("Amoco/Con Ed") - joint application dated 31 January 1989 for a licence to export natural gas at a point near Niagara Falls, Ontario for use in the New York City area.
- ICG Utilities (Ontario) Ltd ("ICG Ontario") - application dated 10 February 1989 for a licence to export natural gas at a point near Sprague, Manitoba to be subsequently reimported at Rainy River, Ontario for consumption at its cogeneration facility to be constructed at Fort Frances Ontario.
- Indeck Gas Supply Corporation, ("Indeck") - application dated 14 February 1989, as amended, for a licence to export natural gas at a point near Niagara Falls, Ontario for use in two cogeneration facilities to be constructed in the state of New York.
- ProGas Limited ("ProGas") - application dated 15 November 1988 for amendments to existing gas export Licences No. GL-80 and GL-81 or, in the alternative, a new gas export licence to export at a point near Niagara Falls, Ontario for the system supply requirements of Texas Eastern Transmission Corporation and for sale to two cogeneration facilities owned by Northeast Energy Associates, A Limited Partnership and North Jersey Energy Associates, A Limited Partnership.
- Shell Canada Limited ("Shell") - application dated 21 November 1988, as amended, for an amendment to gas export Licence GL-100 that would allow natural gas to be exported at a point near Niagara Falls, Ontario for delivery to a cogeneration plant to be built by Cogen Energy Technology Inc. in New York State.
- Western Gas Marketing Limited ("WGML") - application dated 15 February 1989 for a licence to export natural gas at Cornwall, Ontario for delivery to Megan-Racine Associates, Inc. to serve a cogeneration facility to be constructed in Canton, New York.
- Western Gas Marketing Limited as agent for TransCanada ("WGML/TransCanada") application dated 14 February 1989 requesting a licence to export natural gas at Gananoque, Ontario for delivery to Niagara Mohawk Power Corporation for use in its central New York State market.

· Direct Energy Marketing Limited ("Direct Energy") application dated 12 October 1988, as amended, to export natural gas at a point near Philipsburg, Quebec for sale to Consolidated Fuel Company for use at the Arrowhead cogeneration facility to be built in East Georgia, Vermont. (Direct Energy's export proposal does not rely on facilities applied for by TransCanada in the GH-1-89 proceeding. Rather, the facilities required for the Direct Energy export were reviewed during the GH-4-88 proceeding since the deliveries are scheduled to begin during the 1989/90 contract year.)

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The proposed sales pursuant to these export applications total 6 592 103m³/day (233 MMcfd) and represent 37 percent of the total requirements for which TransCanada proposed to expand its facilities.

Highlights of the Board's Decision

On 21 August 1989 and 20 November 1989, respectively, the Board released its decisions on TransCanada's facilities application and the eight applications for exports of natural gas. The decisions were released in advance of the Reasons for Decision in order to allow TransCanada and other pipeline companies to meet the requirements of their customers in a timely manner.

Supply

The Board was satisfied as to the existence of adequate reserves and productive capacity to support the applied-for facilities. The Board will include in any certificate authorizing construction of the applied-for facilities a condition requiring TransCanada to demonstrate to the Board's satisfaction that gas supply contracts in respect of specific projects have been executed prior to the commencement of construction.

Requirements

The Board found TransCanada's forecasted domestic and export requirements to be reasonable for the purpose of assessing the level of capacity to be provided by the applied-for facilities. The Board recognized that the specific shippers identified in TransCanada's forecast of export deliveries may not achieve their scheduled commencement dates. The Board will allow TransCanada to substitute other "ripe" projects for those projects that may be delayed.

Facilities

The Board was satisfied that the applied-for facilities represent, for the most part, an appropriate expansion of the TransCanada system to serve the forecasted domestic and export requirements for 1990/91 and to allow for the retirement of certain compressor units.

In respect of those proposed facilities that would provide loss of unit protection, the Board was not convinced that the number of coincident peak day nominations projected by TransCanada would actually occur in 1990/91 and noted that there have never been any Firm Service curtailments due to compressor unit outages on TransCanada's Western Section. Accordingly, that portion of the applied-for facilities that would provide loss of unit protection on TransCanada's Western Section was denied.

The Board was not prepared to approve the proposed relocation of a 5.7 megawatt compressor unit to the Kirkwall junction since the relocation would not be required unless the Empire State Project, which was not considered during the GH-1-89 proceedings, were to proceed.

In its 20 November 1989 decision in respect of the associated export applications the Board denied the application of Western Gas Marketing Limited as agent for TransCanada ("WGML/TransCanada") for exports of natural gas to Niagara Mohawk Power Corporation at a point near Gananoque, Ontario. Accordingly, the Board will not certificate the Gananoque Extension and associated metering facilities that TransCanada proposed to construct in order for the WGML/TransCanada export to be made. Therefore, it will not be necessary to reopen the GH-1-89 hearing to consider further evidence in respect of the Gananoque Extension.

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Any certificate to be issued by the Board approving the applied-for facilities will be subject to routine conditions and will require TransCanada to demonstrate that transportation contracts have been executed. In addition, the facilities in respect of new firm export volumes will be conditional upon the receipt of all necessary United States and Canadian federal regulatory approvals. Prior to the commencement of construction of any of the approved facilities, TransCanada will have to satisfy the Board regarding the status of its 1990/91 requirements and will be required to provide flow schematics demonstrating that the approved facilities to be released for construction are necessary to transport those requirements.

Economic Feasibility of Expansion

The Board concluded that social benefit-cost analysis is the best tool to assess the economic benefits likely to accrue to Canada as a result of a facilities expansion and that the best measure of the impact of an expansion on existing shippers is the projected impact of the expansion on tolls.

Based on the evidence in respect of the above and regarding the existence of long term gas supplies and markets, the Board found the proposed expansion of the TransCanada system to be economically feasible.

Environment and Land Use

The Board found that the approved facilities would create only minimal environmental impacts of a local and temporary nature, if the measures for environmental protection proposed by TransCanada are implemented. Any certificate to be issued by the Board will require TransCanada to implement all of the policies, practices, recommendations and procedures for the protection of the environment included in its application.

In respect of the approved facilities, the Board was satisfied with TransCanada's route selection criteria and proposed routing of facilities.

The Board granted TransCanada's request to exempt new facilities to be installed along the existing pipeline infrastructure from the requirements of detailed route proceedings. However, in order to protect the interests of the owners of the 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 found the compressor retirements proposed by TransCanada to be ordinary retirements as defined in the *Gas Pipeline Uniform Accounting Regulations* and directed TransCanada to treat the proposed retirements as such.

Highlights of Export Decisions (As fully discussed in Volume 1)

The Board granted gas export licences to Amoco/Con Ed and to WGML for its sale to MeganRacine Associates, Inc. authorizing exports of some 7.2 10⁹m³ (254 Bcf) over a 15-year period. The Board also issued a new licence to ProGas for its sales to Texas Eastern Transmission Corporation for system supply and to Northeast Energy Associates, A Limited Partnership and North Jersey Energy Associates, A Limited Partnership for use in two cogeneration facilities. However, ProGas' sale does not involve incremental exports insofar as the volumes authorized under the new licence were previously authorized for sale to Texas Eastern under existing Licence GL-81.

(xxii)

The Board also approved a new licence to ICG Ontario for the export and re-import of 3.1 10⁹m³ (111 Bcf) of gas for use in ICG Ontario's cogeneration facility being constructed in northwestern Ontario.

The Board denied the following four applications for export, namely, that of Direct Energy for its sale to Consolidated Fuel Company for use in a cogeneration facility owned by Arrowhead Cogeneration Company Limited, WGML/TransCanada for its sale to Niagara Mohawk Power Corporation for system supply, Indeck for its sale to Indeck Energy Services of Oswego, Inc. and Indeck-Yerkes Energy Services, Inc. for use in two cogeneration facilities and by Shell for its sale to Salmon Resources Ltd. for use in a cogeneration facility owned by Cogen Energy Technology Inc. The total volume for these four applications was 14.7 10⁹m³ (519 Bcf).

Chapter 10

The Facilities Application

TransCanada's application, as amended, describes the proposed expansion of TransCanada's facilities for the 1990/91 contract year. The applied-for facilities consist of 494.9 kilometres ("km") of pipe, 109.5 MW of compression power at three existing and two new compressor stations, relocation of a compressor unit, additional metering facilities, and plant spares, at a total estimated capital cost of \$709 million. As discussed in Section 10.1 of these Reasons, a portion of these facilities was approved by the Board during the hearing pursuant to section 58 of the Act, leaving a balance of \$666.4 million of facilities outstanding at the close of the hearing.

As more fully described in Chapter 12, the appliedfor facilities were stated to be necessary, in part, to accommodate those projects that were the subject of the export applications discussed in Chapters 2 to 8. For that portion of the applied-for facilities, the Board looked to the export applicants for evidence as to the adequacy of supply and the nature of the markets.

TransCanada also applied for orders respecting the accounting treatment for the retirement of certain compressor units and for orders exempting certain facilities from various provisions of the Act.

10.1 Sequence of Events

The 1990 facilities application of TransCanada is its third certificate application in as many years.

1988 and 1989 Facilities Application (GH-2-87)

In an application dated 9 June 1987, as amended TransCanada applied for a certificate for new facilities to accommodate its projected requirements for the 1988/89 and 1989/90 contract years. The Board held a public hearing pursuant to Hearing Order No. GH-2-87 which commenced in November 1987 and dealt with both the application and related toll matters. The Board decided to approve a portion of the applied-for facilities and issued its Reasons for Decision in July 1988.

1989/90 Facilities Application (GH4-88)

By application dated 28 July 1988, TransCanada applied for a certificate for the construction of facilities to meet the forecasted requirements of the 1989/ 90 contract year. These facilities replaced in part and added to those facilities approved by the Board following the GH-2-87 hearing. A public hearing was held pursuant to Hearing Order No. GH-4-88, commencing in October 1988 after which the Board approved the applied-for facilities. The Board's Reasons for Decision were dated January 1989.

1990 Facilities Application (GH-1-89)

Original Application

On 29 December 1988, TransCanada filed its 1990 facilities application for a certificate in respect of facilities to accommodate forecasted requirements for the 1990/91 contract year. Significant revisions to the application were made on 3 March 1989 and then again on 10 May 1989. The applied-for facilities, as revised, are summarized in Table 2 of the Overview, and described in more detail in Chapter 14 of these Reasons.

On 31 January 1989, the Board issued Hearing Order No. GH-1-89 setting out the Directions on Procedure for TransCanada's application. This Hearing Order was subsequently amended by Order No. AO-1-GH-1-89 dated 10 March 1989 which dealt with the procedure for hearing export applications associated with TransCanada's facilities. Accordingly, fourteen applications for export were tentatively set down for hearing.

By Order No. AO-2-GH-1-89 dated 28 March 1989, the Board identified eight of the aforementioned fourteen export applications as sufficiently complete to set down for hearing and included those eight in the GH-1-89 proceedings. That amending Order also established procedures in respect of the 3 March 1989 revision to TransCanada's application.

3 March 1989 Revision

On 3 March 1989, TransCanada revised its application, primarily to include a new pipeline in southern Ontario connecting TransCanada's Dawn Extension to its Niagara Line. TransCanada submitted that, based upon projected increases in transportation requirements for 1990/91 and beyond, the proposed "Dawn Line" was an economic alternative to contracting for increased transportation on the Union system. The amended application also included 570 103m³/d (20 MMcfd) of unallocated requirements. By Order No. AO-3-GH-1-89 dated 18 May 1989, the Board established procedures allowing for interventions in respect of the revised application.

10 May 1989 Revision

On 10 May 1989, TransCanada further revised its 1990 facilities application, removing the Dawn Line. TransCanada submitted that it had entered into an agreement with Union whereby TransCanada would increase its level of transportation on the Union Dawn to Trafalgar mainline and would purchase Union's Kirkwall Line.

The Kirkwall Line is a 610 millimetre ("mm") outside diameter ("O.D.") pipeline some 38.4 km in length that links the Union Dawn to Trafalgar mainline with the Union Hamilton Gate Meter Station located near Compressor Station 209 on TransCanada's Niagara Line. On 2 May 1989 TransCanada received the Board's approval for the purchase of Union's Kirkwall Line and exemption under section 58 of the Act for the various modifications necessary to enable the Kirkwall Line to be operated as an integrated part of the TransCanada system.

27 March Section 58 Application in Respect of 1989 Facilities

On 27 March 1989, TransCanada filed an application pursuant to section 58 of the Act for an order in respect of facilities necessary to meet its forecasted requirements for the 1989/90 contract year. These facilities had been included in the 1990 facilities application with an in-service date of 1

November 1990. TransCanada submitted that the facilities should be constructed one year in advance because of an unanticipated increase in requirements and the need to retire a compressor at Station 17A one year earlier than previously planned. To expedite the processing of the section 58 application, the Board incorporated it into the GH-1-89 proceedings. Evidence and argument in respect of this application were heard on 25 April 1989. On 1 May 1989, the Board issued Order No. XG-1-89, the effect of which was to allow construction of the facilities pursuant to section 58 of the Act. A copy of that order and the Board's decision related thereto are contained in Appendix III.

27 March 1989 Section 58 Application: MCV and OSP II-related Facilities

TransCanada also applied on 27 March 1989 for an exemption pursuant to section 58 of the Act in respect of facilities necessary to serve the 1990/91 requirements of the Midland Cogeneration Venture Limited Partnership ("MCV") and OSP II projects. The requirements would fuel two new power plants in the United States. TransCanada submitted that although the pipeline facilities would not be required until 1990, an early decision was required for the timely financing of the power plants. The MCV project commenced late in the 1989/90 contract year and was examined in the GH-4-88 proceedings. The applied-for facilities are necessary to accommodate the MCV requirements on an on-going basis.

The Board heard evidence and argument on this application on 25 April 1989 during the GH-1-89 hearing. On 1 May 1989 the Board issued its decision in respect of the application, approving that portion of the application pertaining to the MCV-related facilities (Order No. XG-2-89, Appendix IV) but denying, without prejudice, the portion in respect of the OSP II volumes. As more fully described in the Board's reasons in respect of that decision (Appendix V), the Board was not convinced of a need to treat the OSP II-related facilities in an expedited manner ahead of other incremental requirements forecast to commence in the 1990/91 contract year.

1 June 1989 Section 58 Application Related to Northridge Petroleum Marketing, Inc. ("Northridge")

On 1 June 1989, TransCanada filed an application pursuant to section 58 of the Act for 1.6 km of loop of the Emerson Extension to accommodate incremental Northridge volumes in the 1989/90 contract year. The application was filed following an 18 April 1989 decision by the Board approving an application by Northridge pursuant to section 71 of the Act for access to the TransCanada system. The Board's decision had ordered TransCanada to provide transportation service to Northridge.

The Board heard evidence and argument in respect of the section 58 application on 14 June 1989 during the GH-1-89 proceedings. On 19 June 1989, the Board found that it was in the public interest to grant the application and issued Order No. XG-889. A copy of the Board's decision and Order No. XG-8-89 are included in Appendices VI and VII.

10.2 Details of the Application

Certification

In its application, as amended on 3 March and 10 May 1989, TransCanada sought a certificate under

Part III of the Act for additional facilities to increase the capacity of its system. The proposed facilities would serve existing markets in eastern Canada and deliver the incremental domestic and export volumes shown in Table 1 of the Overview.

TransCanada applied for approval of the following facilities:

- Western Section - 278.6 km of 1219 mm diameter loop and three 26.1 MW compressor units;
- Emerson Extension - 48.3 km of 1 219 mm diameter loop and a new meter station;
- Central Section - 8.5 km of 1067 mm diameter loop on the Thunder Bay Bypass;
- Dawn Extension - 14.5 km of 914 mm diameter loop and a new meter station;
- Kirkwall Line - 32.5 km of 762 mm diameter pipeline and a 5.7 MW portable compressor unit;
- Niagara Line - 21.4 km of 914 mm diameter loop and a new meter station;
- North Bay Shortcut - one 15.6 MW compressor unit at each of Stations 1211 and 1217;
- Montreal Line - 13.9 km of 914 mm diameter loop downstream of Station 147;
- St. Mathieu Extension - 16.2 km of 508 mm diameter loop upstream of Station 802;
- Napierville Extension - 35.5 km of 323.9 mm diameter line and a new meter station; and
- Gananoque Extension - 25.5 km of 406 mm and a new meter station.

A map and additional details regarding the above facilities are provided in section 14.3 of these Reasons.

Exemption Orders

As addressed in Chapter 17 of these Reasons, TransCanada requested exemption pursuant to section 58 of the Act from the provisions of paragraphs 31(c) and 31(d), and section 33 of the Act for those facilities consisting of line looping. The requested exemption orders would relieve TransCanada from the necessity of filing a plan, profile and book of reference ("PPBR") and from the PPBR procedures set out in sections 34 through 39 of the Act.

During the hearing, TransCanada filed three applications under section 58 of the Act for exemption orders that would have the effect of granting early authorization for some of the proposed pipeline facilities. Those applications are discussed in Section 10.1 of these Reasons.

Toll Orders

TransCanada also applied for orders pursuant to Part IV of the Act respecting the accounting

treatment for the retirement of compressor units at Stations 5, 17 and 75. As explained in Chapter 18 of these Reasons, TransCanada requested that these retirements be treated as "ordinary" under the *Gas Pipeline Uniform Accounting Regulations* ("the Accounting Regulations").

Chapter 11

Supply Matters

In considering TransCanada's application, the Board examined two aspects of supply:

- project-specific supply (discussed in Subsections 11.1.1 and 11.1.2 of these Reasons); and
- overall supply (addressed in Section 11.2).

Project-specific supply refers to the supply in respect of new requests for service associated with the proposed expansion. In this regard, the Board examined whether each shipper had secured or would secure adequate supply to meet its obligations.

Overall supply refers to the total supply of natural gas that will be available to the TransCanada system as well as to other Canadian pipeline systems. In this respect, the Board considered whether there would be adequate gas supply to ensure sufficient utilization of the total TransCanada pipeline capacity in the long term and to ensure the financial viability of the pipeline.

11.1 Project-specific Supply

As shown in Table 1 of the Overview, there are six distinct types of FS requirements supporting TransCanada's proposed facilities:

1. services with a late start in the 1989/90 contract year;
2. changes to existing services;
3. new exports (already licensed);
4. new exports (licences considered in the GH-1-89 proceeding);
5. new exports (licences not yet issued and not considered in the GH-1-89 proceeding); and
6. new domestic services.

With respect to the first three above categories, the Board did not consider it necessary to re-examine project-specific supply during the GH-1-89 hearing. The supply for new exports (category 4) was considered during the proceeding and the Board's findings are provided in Chapters 2 through 8 of these reasons.

The project-specific supply in respect of new exports that have not yet been authorized (category 5) and new domestic services (category 6) is addressed in Subsections 11.1.1 and 11.1.2 of these Reasons, respectively.

11.1.1 Export Projects (licences not yet

issued nor considered in G/1-1-89)

FSC Resources Limited ("FSC") Sale to Falcon Seaboard Gas Company ("Falcon Seaboard")

To provide FSC with the gas supply required for its sale to Falcon Seaboard, WGML has executed a Gas Sales Contract with FSC. Under the contract, FSC is allowed, as a producer, to replace some or all of the WGML supply with its own reserves in return for a penalty/compensation payment to WGML. FSC indicated that any WGML reserves so replaced would be available to backstop the FSC reserves. A program of reserves purchasing in Alberta and Saskatchewan is currently being pursued by FSC.

TransCanada Sale to Hydro Engineering, Inc. ("Hydro Engineering")

TransCanada wishes to sell gas to Hydro Engineering to supply the proposed ADA Cogeneration ("ADA") project. The gas would be provided from TransCanada's general supply pool. In this regard, TransCanada relied upon the information in respect of its general supply pool that was provided in the export licence applications of WGML and WGML/TransCanada that were heard in this proceeding.

Energy Marketing Exchange, Inc. ("EME") Sale to Kamine Milford Limited Partnership ("Kamine Milford")

No gas supply information for this project was filed with the Board during the proceeding.

Power City Partners, L.P. ("Power City")

Power City testified that it had been negotiating for gas supply with two potential suppliers but that supply contracts had not yet been executed. Power City indicated that detailed gas supply information would be provided to support its export licence application. It agreed with TransCanada that the certificate authorizing construction of facilities should be conditional on the Board being satisfied with the adequacy of Power City's gas supply arrangements.

Views of the Board

The Board notes that some shippers appear to have made satisfactory gas supply arrangements, whereas others have undertaken to provide detailed supply information at the time of application for export licences. With respect to the latter, the Board will defer making any finding regarding the adequacy of gas supply arrangements until such time as export applications are being reviewed.

Decision

The Board will recommend to the Governor in Council that any certificate to be issued in respect of the applied-for facilities include a condition requiring TransCanada, prior to the commencement of construction, to demonstrate to the Board's satisfaction that gas supply contracts have been executed and that applicable long-term Canadian export authorizations have been granted.

11.1.2 Domestic Projects

The Consumers' Gas Company Ltd. ("Consumers Gas")

Detailed gas supply data were not provided by Consumers Gas during the hearing. Consumers Gas explained that, in accordance with Ontario

Energy Board ("OEB") directives, it uses a competitive bidding process to procure its gas supply. Under this bidding process, Consumers Gas requests proposals from potential suppliers. The number of potential suppliers is reduced to a short list based on the price quoted for the first two contract years. The potential suppliers on the short list are then requested to provide reserves and deliverability data, which are analysed by Consumers Gas' geological consultants. The final decision on a supplier is based on an evaluation of the reserves and deliverability data, the proposed contractual terms and conditions and the quoted price for the first two contract years.

Witnesses for Consumers Gas appeared twice during the hearing to testify regarding the status of its gas supply procurement program. They indicated that a short list of potential suppliers had been determined, including Northridge, Gulf Canada Resources Limited ("Gulf") and Shell, and undertook to provide gas supply data once gas supply contracts had been executed.

Consumers Gas was of the view that the Board should be satisfied that there will be adequate gas supply in respect of its additional requirements given:

- (i) the established track record of Consumers Gas' 1988 and 1989 gas supply procurement programs;
- (ii) its public utility service obligation; and
- (iii) the relatively small incremental volumes required (2 percent of its transportation entitlement for 1990/91).

Subsequent to the close of the hearing, Consumers Gas filed information indicating that it had selected Gulf and Northridge as its suppliers. Gulf will provide a contract volume of 397 103m³/d (14.0 MMcfd) from its supply pools. Northridge will supply 170 103m³/d (6.0 MMcfd) from dedicated reserves. Detailed information on Northridge's gas reserves was also provided following the close of the hearing prior to the release of the Board's decision of 21 August 1989.

Gaz Métropolitain, inc. ("GMi")

GMi obtains its contractual gas supply from WGML, SOQUIP and Pan-Alberta. GMi's incremental supply requirements for the 1990 contract year total 540 103m³/d. Of this, 231 103m³/d is available from SOQUIP under a long-term contract. The remaining volume of 309 103m³/d is available from WGML under a recent long-term gas purchase contract.

During the hearing, GMi brought a motion requesting that the Board grant TransCanada relief from the necessity of filing detailed gas supply information in respect of GMi's 1990 requirements. The Board denied GMi's initial request for relief but indicated that it would reconsider the decision if GMi were to contract for gas with an aggregate supplier whose reserves are well known to the Board, or if GMi were to backstop its supply arrangements through such an aggregate supplier. The Board granted a second request for relief by GMi, recognizing that GMi had contracted for gas with

suppliers whose reserves are well known to the Board (i.e. WGML and SOQUIP).

ICG Ontario (Sault Ste. Marie Delivery Area)

Although ICG Ontario had not executed a gas supply agreement for the St. Mary's project, it indicated during the hearing that all contractual arrangements were expected to be in place by late summer, 1989. ICG Ontario submitted that the facilities associated with its project should be certificated, conditional on gas supply contracts being provided to the Board.

Views of the Board

The Board is of the view that GMi and Consumers Gas have made satisfactory gas supply arrangements but that ICG Ontario has not demonstrated satisfactory gas supply.

The Board notes that, with the GH-1-89 facilities hearing being held more than a year and a half in advance of the date that new volumes would start flowing, ICG Ontario encountered difficulty in providing detailed information regarding its gas supply arrangements at the time of the hearing or prior to the release of the Board's decision of 21 August 1989.

Information on project-specific gas supply in respect of new requirements supporting the proposed facilities expansion is a factor that was considered by the Board in assessing the public convenience and necessity of the applied-for expansion. Lack of project-specific supply does not preclude the Board from authorizing new facilities, but is one of several factors that may influence the Board's decision whether or not to certificate those facilities.

In appropriate circumstances, the requirement of section 29 of the draft NEB Rules of Practice and Procedure to furnish project-specific supply information may be waived by the Board upon request or of its own volition. Such waiver may take the form of an explicit ruling prior to or during a hearing, or may be implicit in a decision of the Board.

Decision

The overall consideration of the many factors that enter into the determination of public convenience and necessity leads the Board to conclude that it would not be in the public interest to deny a portion of the applied-for facilities because of the lack of evidence regarding ICG Ontario's gas supply arrangements.

The Board will recommend to the Governor in Council that any certificate authorizing construction of the applied-for facilities include a condition requiring TransCanada to demonstrate to the Board's satisfaction that gas supply contracts have been executed prior to the commencement of construction.

11.2 Overall Gas Supply

To demonstrate the adequacy of overall supply, TransCanada relied upon a study of the future natural gas supply capability of the WCSB prepared by Sproule Associates Limited ("Sproule"). The Sproule

study forecasted the natural gas supply that could be expected from the conventional producing areas of the Western Canadian Sedimentary Basin ("WCSB") over the next 20 years under stipulated price and demand conditions. Intervenors did not express views regarding the Sproule analysis.

Views of the Board

A comparison of the supply/demand projections provided in the Sproule study with those in the Supply/Demand Report is provided in Figure 11-1 and Figure 11-2. Sproule adopted the price projections from the Supply/Demand Report and used a demand level intermediate to the high and low cases. Both Sproule's analysis and the Supply/ Demand Report suggest that there is sufficient supply capability in the WCSB to meet the projected range of demand.

The supply capability projected by Sproule is higher than that projected by Board staff in the Supply/Demand Report throughout the period from 1988 to 2005. This is primarily due to differences in the modelling approaches used by Sproule and Board staff and the use by Sproule of a higher estimate of ultimate natural gas potential for the WCSB than that adopted in the Supply/Demand Report.

Sproule's methodology primarily involves defining two relationships. The first is a drilling activity equation, which relates drilling activity to several factors, including energy prices, market conditions and supply costs. The second is a reserves additions model, which relates initial established reserves to cumulative gas-intent drilling effort. The Board recognizes this methodology as an acceptable approach to determining the supply capability of the WCSB. However, in the Board's view, Sproule's formulation of the drilling activity and reserves additions relationships leads to a somewhat optimistic projection of reserves additions. Furthermore, the Board is concerned that there was no geological analysis provided to support the ultimate potential estimate that was implicit in the Sproule study. The ultimate potential estimate of 263 exajoules referenced by Sproule during the hearing was derived from statistical analysis. For comparison, ultimate potential (average expectation) estimate of natural gas in the WCSB was 225 exajoules as stated in the Supply/Demand Report.

Finally, it is the Board's view that TransCanada did not adequately address the manner in which the Sproule study of natural gas supply capability from the WCSB related to the application for facilities expansion. TransCanada did not indicate how the supply needed for the applied-for facilities, along with the supply needed for expiring licences and export contracts currently flowing on its system, would be supported by the supply capability of the WCSB. In addition, adequate consideration was not given to other pipeline systems that will draw upon the same supply sources as TransCanada.

In summary, the Board has some concerns regarding the evidence submitted by TransCanada regarding the adequacy of gas supply capability from the WCSB and its relationship to the application for facilities expansion. However, the Board is satisfied that adequate reserves and productive capacity will be available from the WCSB to support the applied-for facilities.

Figure 11-1

Supply / Demand Projections (Low Case)

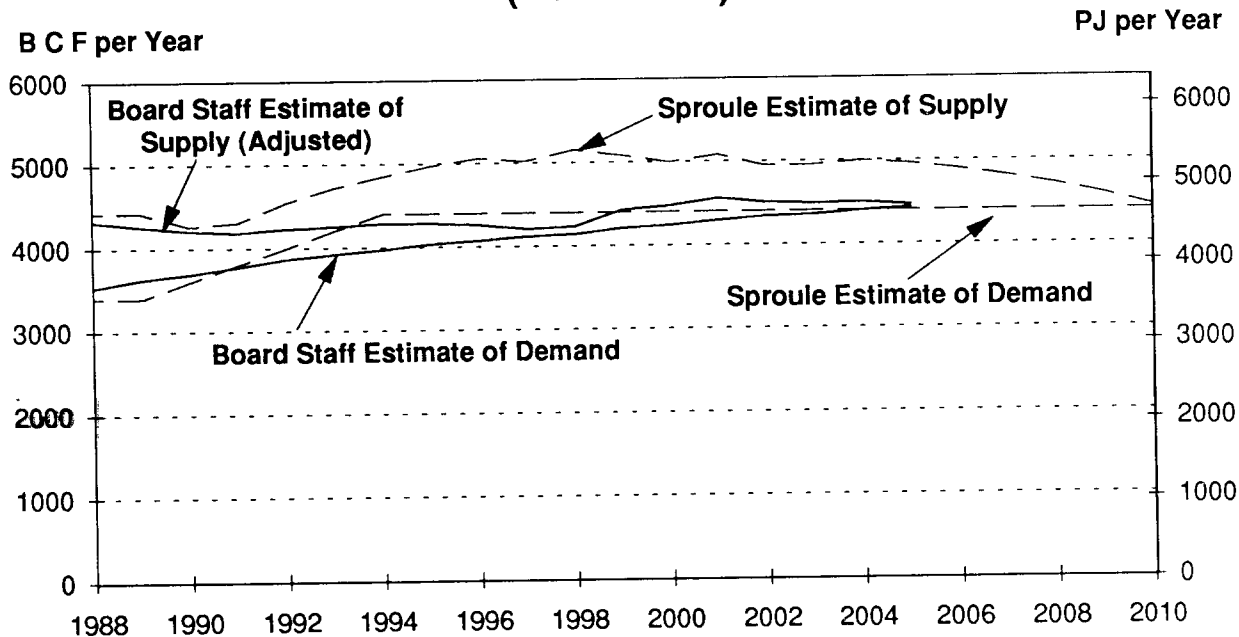
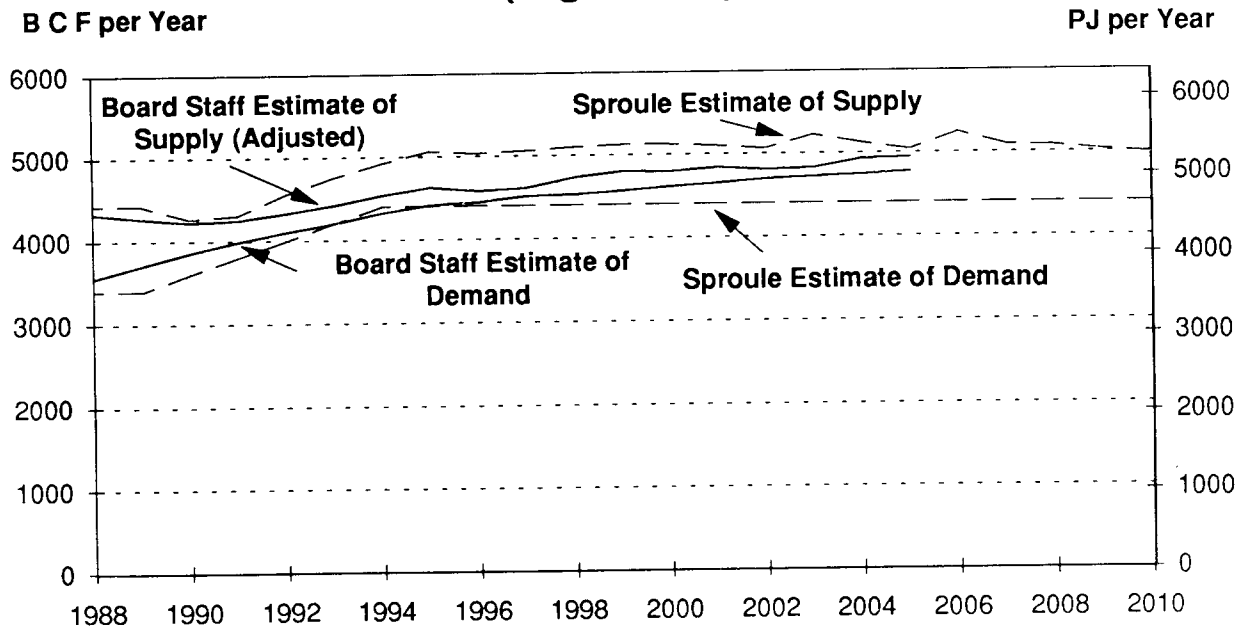


Figure 11-2

Supply / Demand Projections (High Case)



Chapter 12

Requirements

TransCanada indicated that the applied-for facilities would allow it to deliver its forecasted firm requirements for the contract year commencing 1 November 1990. Those requirements consist of growth and new services in domestic and export markets. The proposed facilities would also allow TransCanada to continue deliveries in 1990/91 to those customers forecasted to start service during the 1989/90 contract year. In its 3 March 1989 requirements forecast, TransCanada also included some unallocated capacity which was subsequently allocated to various shippers during the course of the hearing.

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, 1989 and 1990 as well as estimated annual system deliveries for these customers to the year 1999. Table 12-1 shows the actual and forecasted sales and transportation service requirements for the contract years commencing 1 November 1987, 1988, 1989 and 1990.

TransCanada advised that its forecast of domestic and export deliveries shown in the requirements tables of the application is based on existing contracts and discussions with both existing and prospective shippers.

12.1 Canadian Market

TransCanada provided a forecast of:

- (i) contracted Canadian requirements showing forecasted requirements of each shipper; and
- (ii) projected Canadian requirements for Manitoba, Ontario, and Quebec (from an enduse perspective).

The end-use demand forecast, discussed in Subsection 12.1.1 of these Reasons, exceeded the forecasted contracted requirements, thereby indicating the existence of an uncontracted Canadian market.

12.1.1 Total Natural Gas Demand Forecast

TransCanada's application included a long-term forecast of domestic requirements for natural gas in Quebec, Ontario and Manitoba for the period through to the year 2000. This forecast provided an indication of the expected total requirements to be met through both firm and interruptible services.

TransCanada's forecast assumed the world oil price to remain flat in real terms until 1996, after which it was projected to increase by two percent per year in real terms. TransCanada expected the current gas surplus to end by 1991, leading to an increase in the ratio of gas to oil prices in the industrial sector in Ontario. According to TransCanada, this would result in a switching from natural gas to heavy fuel oil in marginal areas such as Sarnia, Ottawa and Cornwall where the heavy fuel oil/natural gas price differential is presently close to five percent. Consequently, the share of gas in the Ontario industrial sector was projected to decline slightly over the forecast period. According to

TransCanada, the expected decrease in dual-fired capacity coupled with constraints on supplies of heavy fuel oil would prevent a larger decline in the industrial market share of natural gas in Ontario. Furthermore, the large decline in heavy fuel oil consumption since 1982 has also constrained the availability of the infrastructure to take heavy fuel oil into industries in the Sarnia area, limiting the extent of switching in that region.

TransCanada also provided three forecasts of natural gas demand illustrating the impact on gas demand of alternative assumptions regarding economic growth, oil prices and fuel efficiencies. Table 12-2 compares TransCanada's high and low forecasts with its base case forecast for selected years.

With regard to factors posing a downside risk to the forecast in the application, TransCanada mentioned slower economic growth, a lower heavy fuel oil/natural gas price ratio in the industrial market in Ontario and uncertainties regarding the natural

Table 12-2

**Comparison of TransCanada's Three
Forecasts of Canadian End-use Demand**

Total Demand Ontario/Quebec

(106m3)

Year	Low	Base	High
1991	28 567	29 321	29 904
1999	32 369	33 591	35 444

gas/electricity competition in the industrial electric boiler market in Quebec. With regard to an economic slowdown, TransCanada mentioned the possibility of a recession in late 1989 or early 1990. In respect of the oil/natural gas price ratio, TransCanada acknowledged that a low price ratio might still be a possibility. It did not consider the downside risk of the last factor to be significant, since its forecast in that area was at the low end of the consensus of forecasts.

Table 12-3 presents TransCanada's forecasts of end-use natural gas requirements for Ontario and Quebec and Firm Service ("FS") volumes currently contracted with Canadian customers in those provinces.

The uncontracted volumes shown include both potential firm and interruptible sales.

Intervenors questioned TransCanada regarding its forecast of oil and gas prices and the potential for interfuel substitution. IPAC referred to the possibility that the expected decline in the quality of crude slates could lead to an increase in heavy fuel oil supplies, resulting in a decline in heavy fuel oil prices vis-a-vis natural gas. TransCanada discounted this possibility on the grounds that improvements in the quality of heavy fuel oil would be required to meet environmental regulations and this could maintain the current competitive relationship between natural gas and heavy fuel oil.

Views of the Board

The reasonableness of a projection is to be judged in the light of the plausibility of background information and of the analysis brought to bear in deriving the forecast. The Board recognizes that uncertainties relating to the outlook for energy prices and for economic growth and its sectoral composition are inherent in the forecasting process. The quantitative assessment of the impact of such factors on future energy use and fuel market shares can lead to a wide range of estimates. The reasons for differences in forecasts of energy use can arise from, among other things, differences in interpreting past trends, in assessing the impact of new and evolving technologies, and in predicting the response of various fuel markets to changes in relative fuel prices. In this respect, the Board believes that the total natural gas demand forecast presented by TransCanada is one of a plausible set of projections.

The Board agrees with intervenors that future supplies of heavy fuel oil and its price relative to gas prices constitute an area of uncertainty for gas demand in the industrial markets of Ontario and Quebec. The Board believes that TransCanada has adequately assessed the impact of this and similar factors using market information and sensitivity analyses.

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

12.1.2 Canadian Markets under FS

Contract

The proposed facilities were designed to accommodate, *inter alia*, increases in load factors for certain existing domestic customers and incremental services to several new and existing domestic

customers. The incremental domestic services to new and existing customers for the 1990/91 contract year are shown in Table 12-4.

12.1.3 ICG Ontario Sault Ste. Marie Project

TransCanada's 1990/91 requirements forecast included 400 103m³/d (14.1 MMcfd) at an 88 percent load factor for the Sault Ste. Marie Project commencing 1 January 1991.

ICG Ontario testified that a 50 MW gas turbine cogeneration facility will be located at Sault Ste. Marie, Ontario. The facility will probably be owned by a new company called ICG Co-Gen Ltd., which will be a subsidiary of the ICG Ontario holding company, ICG Utilities (Canada) Ltd.

ICG Ontario indicated that all aspects of the project remain under active negotiation and estimated that the necessary contractual arrangements would be concluded by 31 August 1989. ICG Ontario acknowledged that the necessary regulatory authorizations and contractual arrangements related to the supply of the gas, the sale of the steam and power to be produced by the proposed cogeneration facility and the contract for the construction of the facilities were not in place. The steam and power to be produced by the facility would likely be sold to St. Mary's Paper Inc. and Great Lakes Power Co. ICG Ontario subsequently advised that negotiations with respect to the power purchase agreement between Great Lakes Power Co. and ICG Co-Gen Ltd. and the energy sales agreement between St. Mary's Paper Inc. and ICG Co-Gen Ltd. for the sale of process steam were in the final stages.

ICG Ontario advised that negotiations were continuing regarding the execution of a transportation precedent agreement with TransCanada but had been delayed by the incorporation of ICG Co-Gen Ltd., which would be the shipper on TransCanada.

12.1.4 "Unallocated" Deliveries

The March 1989 version of TransCanada's 1990/91 requirements forecast included "unallocated" deliveries of 570 103m³/d (20.0 MMcfd) reflecting the removal of the following services from its initial facilities application:

- EME as agent for Kamine Carthage Cogen Co., Inc. and Beta Carthage Inc. and as agent for Kamine South Glens Falls Cogen Co. Inc. Beta South Glens Falls Inc.;
- Nipigon cogeneration project; and
- a direct purchase by General Chemical Canada Limited ("General Chemical").

TransCanada subsequently testified that it had offered the 20 MMcfd of "unallocated" capacity to the following shippers:

- 170 103m³/d (6.0 MMcfd) to EME for its proposed export sale to Kamine Milford;

·337 103m³/d (11.9 MMcfd) to ICG Ontario to accommodate the restructuring of its transportation arrangements with TransCanada to increase ICG Ontario's level of Storage Transportation Service ("STS") as part of an optimization plan to increase its overall load factor on TransCanada; and

·60 103m³/d (2.1 MMcfd) to Domtar Inc. ("Domtar") to serve a container board plant located at Trenton, Ontario.

12.1.5 Union/Shell Contractual Arrangement

Union testified that it had entered into a contractual agreement with Shell to purchase approximately 400 103m³/d (14.1 MMcfd) of gas for one year commencing 1 November 1990. The Union/ Shell arrangement would allow Union to utilize for one year the capacity initially designed to accommodate Shell's proposed CETI-related export. Should the Shell/CETI export project be delayed beyond 1 November 1991, Shell has the contractual right to extend the term of the Union contract from 1 November 1991 to 1 April 1992 if Shell provides such notice by 1 April 1991. Union advised that it would consider extensions beyond 1 April 1992 upon a five-month notice from Shell.

12.1.6 Union's Firm Service Tendered ("FST") Election

TransCanada advised that Union had elected to increase its FST contracted volumes from 90 to 95 per cent for the 1990/91 contract year. Union indicated that its FST election represented an annual increase of 142 106m³ (5 Bcf) for 1990/91. Union further advised that it had asked TransCanada to convert the additional FST volumes, representing 389 103m³/d (13.7 MMcfd), to FS, subject to the availability of facilities. TransCanada responded that its facilities design had assumed that Union's FST volumes would be taken at a 90 per cent load factor. Consequently, TransCanada was uncertain whether Union's FST election would necessitate additional facilities due to the uncertainty of the in-service dates of various compressor units. TransCanada noted that while Union's FST election placed Union at the top of the queue for 1990/ 91, Union's request that its FST election be converted to FS would be at the bottom of the queue.

Union submitted that TransCanada's forecast of Eastern Zone domestic FS transportation requirements for the 1990/91 contract year was understated by at least the amount of its proposed increase in FST volumes.

12.1.7 Imports

A survey by TransCanada of Canadian distributors during December 1988 indicated that the potential level of gas imports from the U.S. ranges from 142 to 1 020 106m³ (5 to 36 Bcf) for the 1990/91 contract year.

TransCanada's total natural gas demand forecast assumed gas imports of 425 106m³ (15 Bcf) into Ontario and Quebec for the contract years 1988 through 1999. TransCanada submitted that its estimate is reasonable even in light of the actual 1987/88 imports which reached 447 106m³ (15.8 Bcf), recognizing anticipated increases in U.S. gas prices as U.S. supply tightens and lower economic growth in late 1989 and early 1990. TransCanada suggested that the tightness on the NOVA and TransCanada pipeline systems during the summer of 1988 and the development of the Dow-Moore storage pool with imported gas largely explained the import levels achieved in 1987/88.

TransCanada concluded that gas imports into Ontario and Quebec could significantly increase without affecting its forecasted firm requirements for 1990/91, taking into account both its end-use demand forecast and the level of uncontracted demand.

Views of the Board

TransCanada's forecast of domestic FS requirements is supported by its natural gas demand forecast and is reasonable for the purpose of assessing the design of the applied-for facilities.

12.2 Export Markets

TransCanada's forecast of 1990/91 requirements included four categories of exports:

- licensed export services presently flowing or expected to commence flowing before November 1989 (discussed in Subsection 12.2.2 of these Reasons);
- new exports, already licensed and scheduled to commence during 1990/91 (discussed in Subsection 12.2.3);
- proposed new exports for which licences were considered in the GH-1-89 proceeding (discussed in Chapters 2 through 8); and
- proposed new exports for which licences are not yet issued and were not considered in the GH-1-89 proceeding (discussed in Subsection 12.2.4).

For the facilities necessary to accommodate new export requirements, TransCanada indicated its willingness to accept a condition similar to that contained in the certificates issued in respect of the GH-4-88 facilities, namely:

"Unless the Board otherwise directs, TransCanada shall, prior to the commencement of construction of the additional facilities, demonstrate to the Board's satisfaction that (a) all necessary United States and Canadian federal regulatory approvals been granted in final nonappealable form in respect of the anticipated new firm export volumes and any necessary downstream facilities"

12.2.1 Prospective U.S. Natural Gas Markets

TransCanada commissioned Foster Associates, Inc. ("Foster") to prepare a study on U.S. natural gas markets. The study contained an analysis of current and projected natural gas demand, supply and supplemental requirements for the lower 48 states in total, and for three selected U.S. markets, namely, the northeast region, the midwest region, and California. The study concluded that the northeast provides the greatest market potential for Canadian natural gas. TransCanada submitted that the Foster study clearly establishes both the existence and adequacy of long-term northeast U.S. markets.

12.2.2 Export Services Presently Flowing or Expected to Commence before November 1990

TransCanada's forecast of 1990/91 export requirements includes estimated export deliveries for those export services currently flowing pursuant to existing long-term export authorizations. These base case export requirements were projected to increase, particularly in the midwest U.S., during the 1990/91 contract year as a result of more competitive gas pricing and an assumed return to historical weather patterns.

TransCanada acknowledged that several export licences will require amendment or extension in order to permit export deliveries at projected 1990/91 levels and advised that applications will be filed with the Board following completion of negotiations.

TransCanada's base case requirements also included the following export services, reviewed by the Board during the GH-8-88 proceeding, and scheduled to commence during the 1989/90 contract year:

- 2 380 103m³/d (84 MMcfd) to Consumers Power Company ("CPCo") at an 80 percent load factor;
- 2 167 103m³/d (76.5 MMcfd) to MCV at a 90 percent load factor; and
- 904 103m³/d (31.9 MMcfd) sale by Vector Energy Inc. ("Vector") to Altresco Pittsfield Incorporated at a 90 Percent load factor.

The Board's June 1989 decision in respect of the export applications considered during the GH-8-88 hearing approved the exports to CPCo and MCV but denied the proposed export by Vector.

12.2.3 Licensed Exports Scheduled to Commence in 1990/91

The new export services shown in Table 12-5, which have received long-term export authorizations pursuant to previous Board hearings, were included by TransCanada in its 1990/91 requirements forecast.

12.2.4 Proposed Export Services without Licences, for which no Export Licence Application Was Reviewed during GH-1-89

In its 1990/91 requirements, TransCanada included the following requests for export services for which export licence applications had not yet been considered by the Board and were not considered during the GH-1-89 proceedings:

- TransCanada sale to Hydro Engineering, 198 103m³/d (7.0 MMcfd) commencing November 1990;
- EME export to Kamine Milford, 170 103m³/d (6.0 MMcfd) commencing November 1990;
- FSC sale to Falcon Seaboard, 1530 103m³/d (54.0 MMcfd) commencing November 1990; and
- Power City export for use at its cogeneration facility at Massena, New York, 567 103m³/d (20.0 MMcfd) commencing June 1991.

TransCanada Sale to Hydro Engineering

ADA is a limited partnership that proposes to construct a cogeneration facility at Ada, Michigan. Hydro Engineering, Dominion Energy, Inc. and Amway Corporation are ADA's general partners. The ADA facility would receive its gas supply from Hydro Engineering and would sell its power to CPCo and its steam to Amway Corporation.

TransCanada's forecasted 1990/91 export requirements included 198 103m³/d (7.0 MMcfd) in respect of its proposed export sale to Hydro Engineering. This export was forecasted to commence November 1990 at a 90 percent load factor.

The gas would be transported from TransCanada's Emerson, Manitoba export delivery point to the proposed ADA facility via the Great Lakes, ANR Pipeline Company ("ANR") and Michigan Consolidated Gas Company ("MichCon") pipeline systems.

WGML/TransCanada filed an application under subsection 35(2) of the *National Energy Board Part VI Regulations* ("the Part VI Regulations") for approval of the TransCanada/Hydro Engineering gas sales contract. TransCanada proposed to utilize existing gas export Licences No. GL-86 and GL-87 for its export sale to Hydro Engineering.

By letter dated 19 September 1989, the Board advised TransCanada that in order for it to commence long-term exports to Hydro Engineering, either a new gas export licence or amendment to Licence No. GL-86 and/or GL-87 would be required.

EME Sale to Kamine Milford

TransCanada's 1990/91 forecast requirements include 172 103m³/d (6.0 MMcfd) for EME's proposed export sale to Kamine Milford. TransCanada's forecast assumed exports commencing November 1990 at a 90 percent load factor. As explained in subsection 12.1.5 of these Reasons, this proposed sale by EME was allocated a portion of the unallocated capacity that resulted from TransCanada's March 1989 revision to its facilities application.

The gas would be consumed by Kamine Milford at a natural gas-fired cogeneration facility in Milford, New Jersey on the premises of a paper plant owned by James River Paper Company, Inc.1

Although the EME volumes are included with the Transco system expansion proposed in the NIPPS, few of the regulatory authorizations and contractual arrangements associated with this proposed export project are at an advanced stage.

Although a precedent transportation contract had been entered into with EME, TransCanada indicated that this would be terminated if EME did not provide the necessary gas supply assurances referred to in the agreement.

FSC Sale to Falcon Seaboard

TransCanada included in its 1990/91 requirements forecast 1530 103m³/d (54.0 MMcfd) for FSC's proposed export sale to Falcon Seaboard. Exports were forecasted to commence November 1990 at a

90 percent load factor.

FSC proposes to purchase gas from WGML for resale at the Canada/United States border to Falcon Seaboard for use at three gas-fired combined cycle cogeneration projects to be located in the Plattsburg, New York area. Each of these facilities will be designed to produce approximately 79 MW of electricity which is intended to be sold to the New York State Electric & Gas Corporation. The steam produced by these facilities will be sold to Georgia-Pacific Corporation, Tag Agri/Famigro and C & A Wallcoverings, Inc.

The gas would be transported to the export point near Napierville, Quebec via the NOVA and TransCanada pipeline systems. The gas would subsequently be delivered to the three cogeneration projects in the Plattsburg area by a proposed 26 mile pipeline from the Canada/United States border near Champlain, New York. This new pipeline will be owned by the Falcon Seaboard Pipeline Company.

Evidence adduced during the hearing showed that the regulatory authorizations and contractual arrangements associated with the proposed FSC export project are being actively pursued. However, TransCanada advised that it had triggered, on 3 May 1989, the 90-day notice of termination pursuant to its transportation Precedent Agreement dated 31 March 1989 with FSC. TransCanada indicated that FSC had not provided evidence satisfactory to TransCanada respecting the supply assurances referred to the Precedent Agreement.

Power City

Power City intends to export 567 103m³/d (20.0 MMcfd) for use at its proposed 79 MW natural gas-fired cogeneration facility at the Aluminum Company of America ("Alcoa") plant in Massena, New York

The gas would be transported in Canada on the NOVA, TransCanada and Niagara Gas Transmission Limited pipeline systems to the Cornwall, Ontario export delivery point. The gas would then be transported by the St. Lawrence Gas pipeline system to Massena.

1 James River Paper Company, Inc. is a wholly owned subsidiary of James River Corporation of Virginia.

The electricity produced by the proposed project would be sold to Niagara Mohawk and the steam would be sold to Alcoa.

12.2.5 Other Exports Supporting TransCanada's 1990/91 Facilities Application

TransCanada's 1990/91 requirements forecast included increased exports pursuant to the following scheduled contract increases:

- increase of 134 103m³/d (4.7 MMcfd) for WGML/TransCanada sale to Tennessee; and

increase of 1 282 103m³/d (45.3 MMcfd) for KannGaz Producers Ltd. ("KannGaz") sale to Tennessee.

These contract increases represent the final contract increments with respect to the WGML/ TransCanada and KannGaz sales to Tennessee pursuant to export Licences No. GL-84 and GL-77.

TransCanada's requirements forecast also included a total of 1743 103m³/d (61.5 MMcfd) of gas for sale by WGML to Northern Natural Gas Company ("Northern Natural") and Southeastern Michigan Gas Company ("Southeastern") and by WGML/ TransCanada to Northern States Power Company, a Wisconsin Corporation ("NSP Wisconsin"). Capacity for these requirements is to be provided by a decontracting arrangement being negotiated between ANR and WGML. TransCanada testified that if ANR does not reduce its contractual obligations for 1990/91, additional facilities would be required above those being applied for in this proceeding.

TransCanada indicated that WGML/TransCanada will apply, pursuant to subsection 35(2) of the Part VI Regulations, for approval of contractual arrangements between TransCanada and NSP Wisconsin to enable it to export under TransCanada's existing gas export Licences No. GL-86 and GL-87. TransCanada also indicated that WGML/TransCanada will file applications with the Board for licences authorizing TransCanada to export gas to Northern Natural and Southeastern.

12.2.6 Other Service Requests Not Included in TransCanada's Facilities Application

TransCanada testified that it had received many new domestic and export requests for service to the east for the 1990/91 contract year, over and above those included in its requirements forecast. Those additional requests were identified in TransCanada's queues for 1990/91 transportation service. TransCanada concluded that there are sufficient requests for service included in its 1990/91 queue to ensure utilization of the requested 1990 capacity additions.

CanStates Gas Marketing ("CanStates") intervened in the hearing to demonstrate that its proposed export project is mature enough to utilize any 1990/ 91 capacity that may become available because of other projects being delayed or cancelled.

The CanStates project involves the proposed longterm sale of 1 370 103m³/d (48.4 MMcfd) of gas at Niagara Falls to Transco Energy Marketing Company commencing 1 November 1990. The export sale would be destined primarily for a cogeneration facility currently under construction at Hopewell, Virginia.

CanStates outlined the status of the contractual arrangements and regulatory authorizations associated with its project, indicating that it intended to file an export licence application with the Board by mid-August 1989. CanStates submitted that it would be able to utilize capacity on TransCanada's system by 1 November 1990 as the Hopewell facility is expected to be onstream as early as the summer of 1990. CanStates and Transco testified that the necessary downstream facilities were anticipated to be in place by the proposed 1 November 1990 start-up date.

Views of Parties

There was little debate concerning TransCanada's forecasted export requirements. Most parties were of the view that the inclusion of appropriate contractual and regulatory conditions in any facilities certificate issued by the Board would address concerns about the uncertainty of exports achieving their forecasted in-service dates.

Although FSC and Power City did not have firm supply arrangements in place at the time of the hearing, TransCanada argued that the Board should approve facilities related to the projects since TransCanada would not commence construction prior to the execution of proper gas supply contracts. TransCanada submitted that not certificating the facilities required for the FSC and Power City export projects could prejudice other shippers in its 1990 facilities application as TransCanada might be required to reduce the requested level of service on Great Lakes, forcing Great Lakes to amend its FERC application, and possibly delaying approval of the necessary Great Lakes facilities.

Views of the Board

The Foster study on prospective U.S. natural gas markets provides comfort regarding the existence of long-term northeast U.S. gas markets.

The Board finds TransCanada's export requirements forecast to be reasonable for the purpose of assessing facilities requirements for the 1990/91 contract year.

Although the possibility exists that the specific shippers identified in TransCanada's forecast of export deliveries may not achieve their respective scheduled commencement dates, the Board expects that sufficient long-term contracted FS requirements for 1990/91 will materialize in time to replace any export projects that may be delayed or cancelled. The Board will allow the substitution of other "ripe" projects (see Chapter 16 of these Reasons) for those in TransCanada's requirements forecast that are delayed.

In order to ensure that the applied-for facilities are used and useful upon construction, the commencement of construction of the approved facilities will be conditioned upon TransCanada demonstrating to the Board's satisfaction that, in respect of new firm export volumes, all necessary U.S. and Canadian federal regulatory approvals have been received. In addition, TransCanada will be required to demonstrate that, with respect to the transportation of all new firm volumes on its system, all necessary U.S. and Canadian regulatory approvals have been granted in respect of any necessary downstream facilities or transportation services. These necessary approvals include those required for construction of facilities and the necessary implementation of incremental services on the Great Lakes and Union systems.

The Board notes that TransCanada's forecast of 1989/90 and 1990/91 export requirements assumes evergreening of certain export services included in its base case forecast. TransCanada is encouraged to make application in a timely manner for the extension or amendment of these relevant longterm export authorizations.

Decision

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

12.3 Facilities Construction Supported by Volumes Exported under Shortterm Export Authorization

In its 1990/91 requirements forecast TransCanada assumed that WGML and/or WGML/TransCanada would export annual volumes of 295 and 200 106m³ (10 and 7 Bcf) at Emerson and Niagara Falls respectively, pursuant to short-term orders. TransCanada explained that these exports have no impact on the applied-for facilities since there is no winter peak day and only a small winter season requirement associated with them.

Although TransCanada's application did not include facilities supported by volumes to be exported under short-term export orders, several parties offered views regarding the appropriateness of constructing facilities to accommodate new exports that may be authorized by such orders.

Views of Parties

TransCanada indicated that it would be appropriate to construct new facilities for exports that are able to commence under short-term export authorizations if a long-term export licence had been applied for and, in TransCanada's judgment, was likely to be approved. TransCanada advised that:

"In the presence of a transportation contract condition, facilities will not be built until TransCanada has demonstrated to the Board's satisfaction that the firm transportation contracts have been executed.

TransCanada, in turn, will not enter into the firm service transportation contract until the requisite shipper authorizations, including NEB export licence authorization, have been obtained.

In this context, facilities could be approved with conditions relating to, among other things, export licence authorizations."

CanStates testified that it might be prepared to enter into a long-term FS transportation contract with TransCanada on the basis of a short-term export order if a long-term export authorization had been applied for and if all of the essential elements of its export project appeared to be in place.

Amoco/Con Ed advised that Amoco would not be prepared to contract with TransCanada for longterm transportation on the strength of short-term regulatory approvals, since the granting of a shortterm export order, pending the Board's consideration of an export licence application, would not provide sufficient assurance that a long-term sale would be authorized.

Views of the Board

The Board believes that facilities to accommodate new export markets or projects should be supported by long-term arrangements. While specific circumstances associated with normal growth of existing markets may warrant special consideration, long-term export authorizations are a key component of any proposed export project requiring the construction of new facilities.

Decision

Any certificate that the Board may issue in respect of the applied-for facilities will require TransCanada to demonstrate, prior to the commencement of construction of facilities, that applicable long-term Canadian export authorizations have been granted.

12.4 Advance/Unallocated Capacity

In the GH-2-87 and GH-4-88 hearings held in respect of applications by TransCanada for 1988/ 89 and 1989/90 facilities, the issue of advance capacity was the subject of extensive discussion. On page 17 of its GH-4-88 Reasons for Decision the Board distinguished between the concepts of advance and spare capacity as follows:

"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."

Views of TransCanada

In its original application for 1990/91 facilities, TransCanada did not include any allowance for advance capacity for several reasons. First, its experience with the GH-4-88 hearing indicated that advance capacity created planning problems and difficulty in administering a facilities hearing. Secondly, since shippers were now generally aware of the tightness of the TransCanada system, TransCanada had received many new requests for additional service for the 1990/91 contract year. To TransCanada this implied that the gas industry's needs would be met by the level of service requested and therefore a large demand for lastminute service for that contract year was not expected. Furthermore, TransCanada did not think that the gas industry could afford the additional cost of advance capacity.

In its revised application of 3 March 1989, TransCanada reduced its estimate of deliveries for the 1990/91 contract year by 570 103m³/d (20 MMcfd), as a result of withdrawals of requests for service by some shippers or delays in projects underpinning requests for service. Despite the existence of this surplus capacity relative to the original application, TransCanada was reluctant to re-design the applied-for facilities. In TransCanada's view, such a re-design would necessitate a similar modification to the Great Lakes facilities application before the FERC, thereby adversely affecting the timely disposition of that application.

In the March 1989 revision to its application TransCanada stated that outstanding requests for service to the east (i.e. requests that were not included in the application) totalled 2 408 103m³/d (85 MMcfd) and that the 567 103m³/d (20 MMcfd) of unallocated capacity was, therefore, likely to be utilized. During the course of the hearing, TransCanada indicated that it had offered this unallocated

flexibility in the system, citing current forecasting difficulties in a rapidly changing domestic market and the length of time from finalizing requests for service to commencement of deliveries as two reasons in support of their request.

Union stressed that there is a need for advance capacity in an environment where the market is continuing to expand in response to deregulation. It pointed out that difficulties in forecasting requirements due to factors related to free trade, deregulation, and the introduction of new services to a wider market had led to a consistent underestimation of the demand for facilities during the GH-2-87 and GH-4-88 hearings. Union also suggested that TransCanada's reluctance to deal with potential requests for service received after the date it chooses to freeze its design provides a rationale for inclusion of advance capacity. Union added that if the facilities were not fully utilized for FS, they could be used to provide interruptible service.

Union submitted that, as a result of the lack of sufficient allowance for advance capacity in the 1989 contract year, it was, for the first time since 1972, compelled to refuse service to customers in its franchise area. While Union noted that TransCanada cannot be expected to revise its facilities application continuously throughout a hearing, it suggested that TransCanada could include an allowance for advance capacity which could be reduced or withdrawn from an application if the anticipated demand was not forthcoming by the conclusion of the hearing. Union suggested that the Board could issue a certificate for such facilities, conditional on capacity being contracted before construction. Union urged the Board to direct TransCanada to build additional facilities if all of the export applications were approved by the Board or if those denied did not free up sufficient capacity to accommodate currently outstanding requests for service.

IPAC noted that the 567 103m³/d (20 MMcfd) of unallocated capacity could be viewed as advance capacity and took the position that advance capacity was justified if it could be shown that such capacity was likely to be contracted on a firm basis by the time it was constructed.

The CPA was not opposed to the inclusion of advance capacity that is likely to be fully utilized by the in-service date of the facilities. Its concern related to the risk of underutilization of such facilities and the resultant burden of extra demand charges on existing tollpayers. However, the CPA stated that the outstanding requests for additional service and TransCanada's stipulation that facilities would not be constructed if the capacity were not contracted responded to the CPA's concerns in these regards.

C-I-L Inc. ("CIL") and General Chemical recommended that the Board's position with respect to spare capacity and TransCanada's position relating to advance capacity should both be reconsidered. They argued that unexpected changes in TransCanada's estimates of available capacity and sharp reductions in interruptible service in recent years had made it difficult for customers to plan efficient use of the system on an annual basis.

CIL and General Chemical disagreed with the suggestion that those requiring service should contract for FS. They contended that an industrial shipper seeking additional FS to accommodate an increase in demand may find it difficult to establish that the new level will be maintained over the long run, thereby failing to justify the construction of new facilities. They were also concerned that there is essentially no flexibility in the pipeline system, despite TransCanada's forecasts of continued growth

in most markets.

CIL and General Chemical indicated that shippers require some flexibility to meet changes in demand due to weather variations or changes in their markets. They argued that while the responsible use of

provisions on assignment and diversion had ensured maximum system efficiency for a given downturn in demand, considerations of flexibility also require capacity to accommodate upturns. In their opinion, TransCanada should be directed to include spare capacity in its next facilities application to ensure such flexibility. They argued that such spare capacity would mature into advance capacity and contracted capacity in due course.

The Minister of Energy for Ontario ("Ontario") suggested that it would be preferable if TransCanada were to include advance capacity in an application rather than forcing shippers to depend on the availability of unallocated capacity created by the failure of a project. It recommended that TransCanada be required to include in its next facilities application a suitable level of advance capacity, as warranted by the conditions prevailing at the time.

ICG Ontario stated that TransCanada should not necessarily be required to eliminate unallocated capacity from an application, but should be permitted to include other compatible projects in the queue to find an effective use for the unallocated capacity. According to ICG Ontario, such a stipulation would enable TransCanada to avoid the potentially costly exercise of having to eliminate the capacity, only to be faced with the prospect of including it in the next application.

The APMC supported TransCanada's decision not to construct facilities to accommodate advance capacity. It argued that the magnitude of the application, the uncertainty with respect to certain volumes and the necessity of establishing a date to finalize system design justified TransCanada's position. It also supported TransCanada's decision to "freeze" its design in order to allow its facilities application and that of Great Lakes to proceed in a timely fashion.

Views of the Board

Efficient functioning of a deregulated gas market requires ready access to transportation service for existing and new shippers. Provision of advance capacity imparts flexibility which may be required to ensure availability of transportation services within a reasonable time period and to accommodate changes in the gas market.

The Board acknowledges that there are certain risks associated with the construction of pipeline facilities that are not supported by FS contracts. Throughout this hearing, and during the past two TransCanada facilities hearings (GH-4-88 and GH2-87), concerns of possible underutilization of facilities have been countered by comments on the lack of flexibility in the existing system and a need to include advance capacity to accommodate unexpected market growth and requests for service that materialize after TransCanada's cut-off date.

TransCanada's current forecast of long-term natural gas requirements for Manitoba, Ontario and Quebec supports the need for facilities expansion. TransCanada's outlook for growth in most markets

and the number of outstanding requests for service are evidence that the proposed unallocated capacity will likely be contracted for long-term FS. While TransCanada presented a list of outstanding service requests for 1990/91 for both domestic and export use, it did not provide the Board with an assessment of the completeness of these requests. For example, TransCanada did not indicate whether the outstanding requests for export volumes were backed by export licences or whether the requests were sufficiently mature for TransCanada to assign capacity to them within the short term. Nevertheless, this evidence along with evidence of market growth and the current lack of interruptible service on the system are consistent with TransCanada's long-term forecast and support the Board's expectation that all pipeline capacity applied for will be covered by FS contracts.

TransCanada in this hearing distinguished "unallocated capacity" from "advance capacity". In the Board's view, "unallocated capacity" differs from "advance capacity" only to the extent that unallocated capacity was initially associated with requests for service. The capacity was maintained in TransCanada's application after the requests were withdrawn, at which time it became equivalent to "advance capacity". TransCanada chose to make a further distinction in argument, namely, that "unallocated capacity", if certificated, would only be constructed when contracts were in place. In the Board's view, this does not distinguish such capacity from advance capacity, as unconditional certification of "advance capacity" does not prevent TransCanada from delaying construction until it has contracts in place for such capacity.

The Board sees no reason to review its findings on advance or spare capacity as enunciated in its GH2-87 and GH-4-88 Reasons for Decision. The Board will continue to examine the need for advance capacity on a case-by-case basis, taking account of factors such as prevailing market conditions, expected growth in requirements and risk of underutilization of capacity associated with any particular facilities application.

As explained earlier in these Reasons, the Board has denied four of the export licence applications associated with TransCanada's facilities application. The denied exports, plus proposed new exports for which licences have not yet been issued and which were not considered in the GH-1-89 proceeding, total 4 760 103m³/d (168 MMcfd). Approval of facilities providing this capacity will result in a measure of flexibility on the TransCanada system to meet incremental requirements.

Decision

The Board will recommend to the Governor in Council the issuance of a certificate in respect of, *inter alia*, the facilities to provide capacity as outlined above. The Board's decision dated 21 August 1989 in respect of TransCanada's facilities application (see Appendix VIII) includes conditions requiring that, prior to the start of construction of any facilities, TransCanada satisfy the Board regarding regulatory approvals, transportation and gas supply contracts, and market requirements.

Chapter 13

Transportation Agreements

TransCanada submitted considerable evidence describing the transportation of the various new domestic and export services from the province of production to the burner tip. The routing, the nature and status of the various contractual arrangements and of regulatory authorizations associated with these new services were updated throughout the hearing. TransCanada filed executed precedent agreements with attached *pro forma* FS contracts in respect of most of these anticipated new services on its system.

13.1 Precedent Agreements

TransCanada's precedent agreements are commercial agreements entered into with prospective shippers in respect of the firm transportation of gas on TransCanada's system. The precedent agreement identifies the conditions precedent to the execution of an FS contract. It provides that the parties shall execute an FS contract upon the shipper and TransCanada satisfying the conditions precedent, the shipper satisfying the availability provisions specified in the FS Toll schedule and the completion of applicable agreements regarding financial assurances.

The precedent agreement typically sets out the regulatory authorizations and contractual arrangements necessary for the prospective shipper to utilize the requested transportation service, together with specific dates by which these are to be obtained. It may also identify the information to be provided by a prospective shipper in respect of its gas supply, market, and related transportation arrangements. Such information is required by TransCanada in order to comply with the Board's information requirements for facilities applications.

13.2 FS Contracts

An executed FS contract, together with TransCanada's approved FS Toll Schedule, the

Uniform Toll Schedule and the General Terms and Conditions comprise the totality of the transportation arrangement between TransCanada and any of its shippers. The FS contract typically sets out the commencement date, the volume of gas to be transported, the receipt and delivery points and the term of the contract.

13.2.1 Early Termination

Many of the FS contracts associated with new services underpinning TransCanada's GH-4-88 facilities contain an early termination clause. This clause provides for the early termination of the contract if certain regulatory or governmental authorizations expire prior to the contemplated termination date, despite due diligence of the parties in attempting to maintain the authorizations in effect. In its GH-4-88 Reasons for Decision, released in January 1989, the Board considered the early termination clause and was not persuaded that it should be removed from TransCanada's FS transportation contracts.

Most of the FS contracts associated with new services supporting this facilities application were negotiated prior to the release of the Board's GH-4-88 Reasons for Decision. These FS contracts do not contain an early termination clause. TransCanada explained that it now considers that, prior to entering into a FS contract, each party should satisfy itself that the necessary authorizations and ancillary arrangements are in place for the term of the contract or, alternatively, should be prepared to take the risk of being unable to renew, replace or maintain its initial authorization and arrangements.

13.2.2 Section 2.3 of Article II of the FS Contract

The *pro forma* FS transportation contracts for most of the new services associated with the current facilities application include a revised term of contract provision which is subject to section 2.3 of Article II of the contract. This section provides TransCanada with the unilateral right to temporarily or permanently suspend service if a shipper fails to provide TransCanada with assurances that its gas supply and necessary authorizations remain in place.

TransCanada advised that most of the precedent agreements containing the aforementioned section 2.3 were executed in December 1988. The Board released its Reasons for Decision for Phase I of RH-1-88 in January 1989. That Decision directed TransCanada to remove from its tariff the availability conditions requiring shippers to obtain all certificates, permits or other authorizations and to have assurances of gas supply. TransCanada may include a provision in its tariff to satisfy itself that a valid removal permit is in place when removal of gas from the province begins and to confirm that a valid permit is in place at reasonable intervals thereafter. TransCanada subsequently filed the relevant tariff revisions with the Board on 1 March 1989.

TransCanada suggested that inasmuch as section 2.3 refers to "assurances of shipper's gas supply" and authorizations in addition to removal permits, it conflicts with the Board's RH-1-88 Phase I Decision. Accordingly, the most recent version of the *pro forma* FS transportation contract filed during this proceeding does not include section 2.3.

Views of Parties

TransCanada indicated that, once the conditions precedent contained in a particular precedent agreement are satisfied, section 2.3 will be removed from the corresponding FS contract. Although the removal of section 2.3 is subject to the agreement of the particular shipper, TransCanada anticipated little difficulty, given the nature of the provision. Consumers Gas and ProGas supported the removal of section 2.3 from the FS contract.

The CPA recommended that the Board advise TransCanada that section 2.3 is not contrary to the RH-1-88 Decision, and that it should remain in the FS contracts. The CPA expressed concern that under Article XI of the General Terms and Conditions of TransCanada's tariff, the loss of a regulatory approval could be interpreted as an event of force majeure. The CPA suggested that by leaving section 2.3 in the FS contract, the issue of what happens when a regulatory approval is lost would have been contractually addressed and thus would not be viewed as an event of force majeure.

Alberta Northeast Gas, Limited ("ANE") argued that the Board should direct TransCanada to change

its policy in respect of "regulatory out" clauses to conform with the GH-4-88 Reasons for Decision wherein the Board found it reasonable that parties in an evolving regulatory environment (where gas is being transported by numerous shippers through various regulatory jurisdictions) would attempt to protect themselves from events over which they cannot exercise control. TransCanada responded that it would be inappropriate for the Board to make such a ruling in view of the fact that this issue was not canvassed during the hearing.

Views of the Board

In light of the Board's RH-1-88 Phase I Reasons for Decision, it is reasonable for TransCanada to remove section 2.3 from its FS contracts.

The Board does not accept the CPA's conclusion that dropping section 2.3 (addressing the loss of regulatory approvals) from FS contracts would lead to such an occurrence being considered an event of force majeure. The question of whether the loss of a regulatory authorization would be interpreted as an event of force majeure is a matter that would likely be debated in the courts. The Board expects TransCanada and its shippers to exercise sound judgment in assessing whether to enter into a long-term FS contractual arrangement where there may be risk that the necessary authorizations will not remain in place throughout the full term of the FS contract.

With respect to ANE's argument that TransCanada should be directed to include "regulatory out" clauses in its FS contracts, the Board concurs with TransCanada that it would be inappropriate for the Board to make such a finding since the issue was not addressed during the hearing.

Chapter 14

Facilities

14.1 Need for facilities

TransCanada submitted that the expansion of its system was required in order to:

- (i) meet projected requirements under existing service contracts and to continue service to those contracts that will begin late in the 1989/90 contract year;
- (ii) provide a total of 14 746 103m³/d (520.5 MMcfd) of incremental FS to new and existing customers;
- (iii) restore the capability that would be lost due to the proposed retirement of three compressor units and the use of two other units as stand-by units;
- (iv) provide minimum delivery pressures of:
 - (a) 4 000 kilopascals ("kPa") to GMi at St. Maurice, Quebec, on the TransQuébec & Maritimes Pipeline Inc. ("TQM") system, and to Vermont Gas at Philipsburg, Quebec:
 - (b) 5 860 kPa at Napierville, Quebec, for the FSC export; and
 - (c) 5 427 kPa at Emerson, Manitoba for gas into the Great Lakes system; and
- (v) provide loss of unit protection on the Western Section, Montreal Line/North Bay Shortcut, St. Mathieu Extension and Niagara Line.

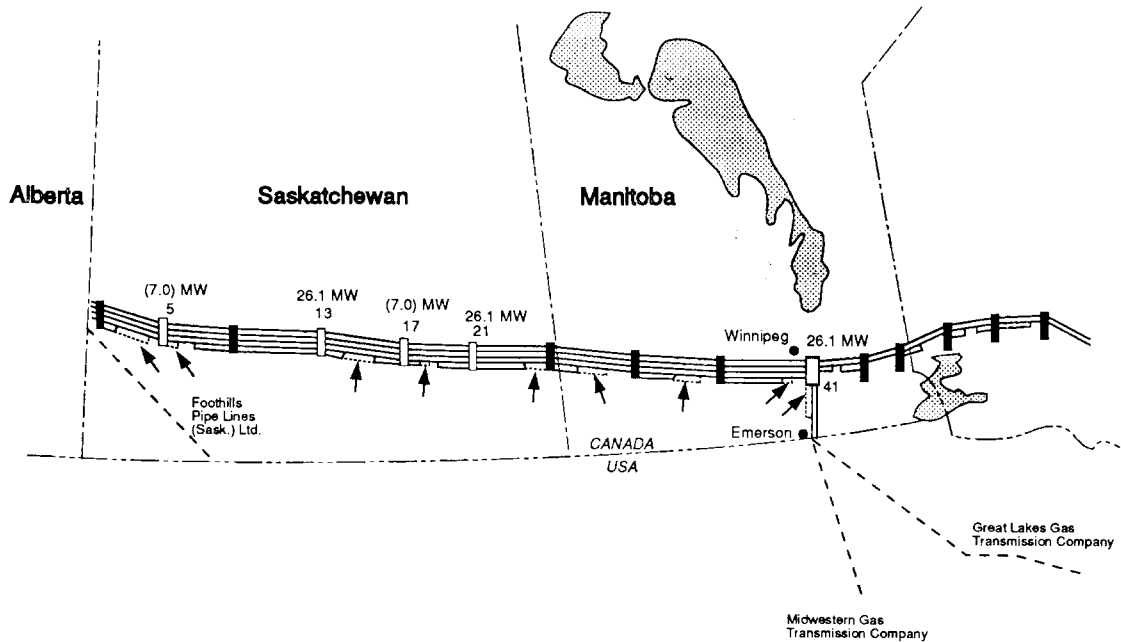
The proposed facilities are listed in Table 2 of the Overview (including estimated capital costs) and shown in Figure 14-1 of these Reasons.

(See Figure 14-2)

TransCanada indicated that the approved 1989 expansion, which was the subject of the GH-4-88 proceedings, would result in "trapped" spare capacity in the Central Section as a result of the installation of compression on the Central Section after the commencement of the 1989/90 contract year. This capacity could be utilized if the following applied-for Western Section facilities were constructed:

- two 26.1 MW units (Stations 21 and 41); and
- 15.7 km of 1 219 mm loop on the Western Section

14.2 Loss of Unit Protection



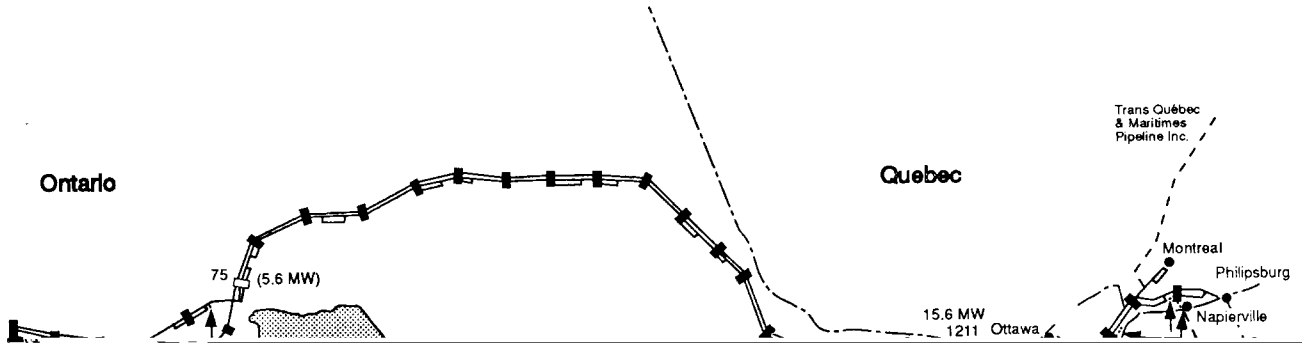
Legend

- Existing and Approved Pipeline
- Proposed Pipeline (Loop)
- Existing Compressor Station
- Existing Compressor Station No. with Proposed Additions (Retirements) in MW
- △ Proposed Compressor Station

Figure 14-1

TransCanada PipeLines Limited

Location of Applied-for Facilities¹



In TransCanada's 1989/90 facilities application, reviewed pursuant to GH-4-88, the Western Section was designed for the first time on the basis of winter peak day requirements, including facilities for loss of critical unit protection. TransCanada stated that although this section had in the past been designed to meet winter seasonal requirements, various factors resulted in the winter peak day becoming the critical design period. These factors included an increase in the seasonal capability factor, and significant decreases in seasonal load factors and the proportion of Annual Contract Quantity ("ACQ") service (now called FST). In its GH-4-88 Reasons for Decision, the Board found it to be appropriate that TransCanada, for the purposes of that application, design the Western Section on a peak day basis and construct facilities to provide 100 percent loss of critical unit protection.

TransCanada's original application dated 29 December 1988 for 1990 facilities maintained the winter peak day design for the Western Section and again included facilities to provide additional capacity so that in the event of an outage of a critical compressor unit, 100 percent of peak day obligations could be met. The 3 March 1989 amendment revised this design downwards to provide for only 99 percent loss of unit protection. The facilities needed to provide this level of protection consisted of 36.4 km of looping (at a total cost of \$44 million), mostly located downstream of Station 2 to protect against an outage of the 21.7 MW compressor unit 2F.

Without the proposed 36.4 km of looping, TransCanada maintained that a peak day shortfall of at least 4 820 103m³/d (170 MMcfd), i.e. 3.3 percent, would result if unit 2F were to fail on a coincident peak day.¹

TransCanada was extensively questioned regarding the reliability of its Western Section and the level of loss of unit protection that is warranted. The evidence showed that no FS curtailments have occurred over the past 14 years as a result of a compressor outage on the Western Section and that only once (in 1988) has there been a reduction in interruptible service. Further evidence described the effects of a major outage of NOVA's Princess Compressor Station, which caused throughputs into the TransCanada system to be reduced from approximately 100 106m³/d (3600 MMcfd) to only 17 106m³/d (600 MMcfd) for three days in February 1980. A substantial portion of TransCanada's deliveries were maintained through temporary gas exchange agreements, curtailments of interruptible service and some FS, and imports from the United States.

Although TransCanada's daily nominations have not exceeded 98 percent of contractual obligations on any day over the last three winters, the company estimated that there could be up to 30 coincident peak days in 1990/91, largely because of increased load factors in the U.S. midwest. TransCanada submitted that past performance would not be representative of the future, and that the forecasted number of coincident peak days combined with compressor unit outages for 1.9 to 3.3 percent of the time, could result in FS curtailments during 15 to 24 days in the 1990/91 winter.

TransCanada indicated that the following benefits associated with the loss of unit looping would offset the estimated additional \$7.5 million in cost of service:

- (i) increased winter seasonal capability of 170 106m³ (6 Bcf) which could be used for interruptible service;
- (ii) reduced fuel consumption of up to \$4.6 million;

(iii) increased operating flexibility which would improve the scheduling of FST deliveries to eastern Canada or allow the switching of some gas receipts from Saskatchewan to Alberta if necessary; and

(iv) avoidance of increased business insurance premiums to cover force majeure claims due to compressor unit outages.

TransCanada stated that the Board's perception of market growth and the positions of customers and shippers regarding reliability of service were important considerations in assessing the proposal to provide facilities for 99 percent loss of unit protection.

As a future alternative to loss of unit protection, TransCanada stated that it was considering the development of a new Limited Interruptible Firm Service ("LIFS") so that a compressor unit outage would not result in an FS curtailment. According to TransCanada, such a service could be available by 1991/92 to obviate the need for loss of unit protection facilities during that year (estimated to cost \$92 million). TransCanada further indicated that it does not intend to include loss of unit protection facilities in its next major facilities application.

Views of Intervenors

The CPA argued that the cost of providing loss of unit protection should be balanced by the benefits of doing so. The level of protection should be determined by assessing the risk of a critical unit outage occurring on a coincident peak day and the associated cost of protection. The CPA pointed to evidence indicating that the risk of curtailment is low and that flexibility already exists to handle minor outages. The CPA suggested that 99 percent as proposed by TransCanada should be the maximum level of protection considered for design of facilities on the Western Section.

IPAC submitted that facilities of this nature should not be approved universally but rather should be assessed on a case-by-case basis. IPAC believed that TransCanada's justification for these facilities was reasonable, given the projected load factors and planned future expansions. However, IPAC urged the Board to carefully consider whether TransCanada's proposal is the most economic means of providing loss of unit protection.

1 A coincident peak day is a day when each of TransCanada's shippers nominate 100 percent of their contract levels.

Consumers Gas argued that TransCanada should be expected to deliver its firm obligations under all foreseen circumstances and that a unit outage represents a foreseeable event. Consumers Gas was concerned that, while a throughput curtailment of one percent of TransCanada's requirements might be manageable, a reduction of 3.3 percent wcal unit

Western Section. Factors cited by these parties were the importance of reliability of service, the relatively low cost associated with these facilities, and side benefits such as fuel savings and interruptible capacity.

The APMC stated that systems downstream of storage should definitely be designed for loss of unit protection. For upstream systems such as the Western Section, the APMC argued that, although the likelihood of a unit outage and a coincident peak day both occurring at the same time is remote based on recent history, the consequences of such an occurrence justify the expenditure necessary for loss of unit protection.

All parties generally supported continued full loss of unit protection for the systems downstream of storage, such as the North Bay Shortcut, Montreal Line, NiagaraLine and St. Mathieu Extension. All parties also advocated the implementation of TransCanada's new LIFS as soon as practicable.

Views of the Board

An assessment of the need for facilities to provide loss of unit protection should consider the cost of the facilities, the probability of a critical compressor unit outage, the probability of a coincident peak day occurring and the likelihood of these two events occurring simultaneously. Other factors should also be taken into account, such as the downstream flexibility of the system, alternative supply options, past operating history coupled with future market projections, and the repercussions of TransCanada not being able to meet its firm obligations.

The Board is not convinced that market demand in the U.S. midwest and northeast will be such that

coincident peak day nominations will occur as often as TransCanada has projected (i.e. that there will be 30 coincident peak days in 1990/91). The combination of a few coincident peak days a year, coupled with an average compressor unit unavailability of 2.5 percent suggests that significant FS curtailments during the winter of 1990/91 would be unlikely.

The Board notes that TransCanada's unit outages on the Western Section have not resulted in any FS curtailments, even during the period 1977 to 1979 when TransCanada experienced relatively high load factors. A significant disruption did occur during a cold week in February 1980 when NOVA's Princess Compressor Station was destroyed. TransCanada lost 80 percent of its receipt capacity for three days and did not regain full receipts from NOVA until the following winter. The ability of the natural gas industry to accommodate such a serious emergency indicates that the effects of infrequent capacity reductions in the order of 3 percent should be manageable.

Factors such as the existence of large quantities of downstream underground storage in southwestern Ontario and in Michigan, several receipt points downstream of Station 2, and the Foothills eastern leg serving U.S. midwest markets, provide significant flexibility to deal with operating problems on TransCanada's Western Section. TransCanada also has several spares for the major components of its large turbo-compressors, to minimize the impact of prolonged unit outages which could affect seasonal capability. The Board encourages TransCanada to come forward as soon as possible with its

proposed new LIFS which would provide additional operating flexibility.

At this time the Board continues to believe that the sections downstream of storage should be designed for full loss of unit protection.

Decision

The Board has decided not to approve facilities to provide peak day loss of unit protection on the Western Section for the design year 1990/91. TransCanada shall ensure that any facilities to be constructed on the Western section include only those facilities necessary to meet peak day contractual obligations or seasonal winter requirements without loss of unit protection.

14.3 Specific Facilities

14.3.1 Western Section

The majority of the facilities proposed by TransCanada will be installed on its Western Section. The 29 December 1988 application included 290 km of 1219 mm loop on Line 100-5, two 26.1 MW compressor units and one 16 MW unit. During the hearing, TransCanada proposed replacing the 16 MW unit with a 26.1 MW unit and installing a compressor axial inlet conversion, thus reducing total loop requirements to 278.6 km. The Western Section facilities proposed in the revised application were estimated to cost \$419.4 million, not including an additional allowance of \$8.6 million for spare equipment for new compressor units.

TransCanada submitted that the proposed facilities would provide:

- (i) the additional capacity necessary to meet the peak day requirements for new firm services and increases to forecasted load factors for services;
- (ii) restoration of capability lost due to the proposed retirement of two compressor units and the use of two other units in a standby mode;
- (iii) loss of critical unit protection for the Western Section on a winter peak day (see Section 14.2 of these Reasons).

The proposed facilities would increase the peak day capability of the Western Section from the 1989/90 level of approximately 134 106m³/d (4 730 MMcfd) to about 153 106m³/d (5 410 MMcfd) in 1990/91 with all compressor units available for service. TransCanada evaluated five alternative designs with various combinations of looping and compression and concluded that the selected alternative had the lowest present worth of annual owning and operating costs ("AOOC"). Inherent in this analysis was the assumption of 17 106m³/d (600 MMcfd) of growth for eastern markets in 1991/92

The planned retirement by 1991 of two Clark 7 MW turbocompressors at Stations 5 and 17 in Saskatchewan (installed in 1960) was necessitated by their low fuel efficiency, poor reliability, obsolescence and lack of spare parts. Consequently, the two 7.5 MW Westinghouse units that must run in parallel at Stations 5 and 17 will be placed in a standby mode. TransCanada's proposed Western Section facilities also include 21.3 km of looping at a total cost of \$23.6 million to restore the section capability after retirement.

Following a high-pressure turbine failure of the Clark unit at Station 17 in December 1988, TransCanada decided to retire this unit one year earlier than planned. Accordingly, TransCanada submitted an application pursuant to section 58 of the Act in respect of looping that would restore capability after the early retirement in 1989 of that unit. The Board approved that application in respect of the 1989 construction of 9.9 km of loop by Order No. XG-1-89 (see Appendix III).

14.3.2 Emerson Extension

TransCanada originally proposed to install 63.8 km of 914 mm Line 400-3 loop on the Emerson Extension and to expand the Emerson Meter Station. The company subsequently amended its application to increase the loop diameter to 1 219 mm and to reduce the length to 48.3 km, thereby reducing the likelihood that a fourth line would be required in the future. The revised total cost was estimated to be \$72.7 million.

The facilities on the Emerson Extension would increase the capacity and the delivery pressure into the Great Lakes system. The increase in delivery pressure from 5 171 kPa to 5 426 kPa was requested by Great Lakes to obviate the need for an additional compressor at its Station 1, just downstream of the international border.

Following the early approval of TransCanada's application pursuant to section 58 of the Act in respect of 6.4 km of loop to be constructed in 1989 for service to Midwestern Gas Transmission Company ("Midwestern") and Northridge, the Board approved the change to the larger loop diameter (Order No. AO-1-XG-1-89).

14.3.3 Central Section

The proposed new domestic and export volumes would require a significant expansion of the combined Central Section/Great Lakes system to meet requirements east of Station 41. TransCanada presented three alternative designs for different allocations of the incremental throughput between its Central Section and the Great Lakes system, taking into account additional growth in 1991/92. The comparison of present worth of AOOC for Central Section/Great Lakes allocations of 0/100, 20/80 and 45/55 percent showed the least-cost alternative to be moving all of the incremental 1990/91 throughput, in excess of that which could be accommodated by already approved facilities, through the Great Lakes and Union systems.

Although no specific facilities are required on the Central Section for incremental throughput in 1990/91, TransCanada proposed to construct 8.5 km of looping on the Thunder Bay Bypass (cost \$11.3 million) to restore the capability of that section due to the retirement of a 5.6 MW Orenda compressor unit at Station 75. A parallel Westinghouse unit at Station 75 would be placed on standby service.

14.3.4 Dawn Extension

Consistent with its proposal to accommodate all of the 1990/91 incremental throughput by expansion of the Great Lakes system, TransCanada would require an additional 11.6 km of 914 mm loop on the Dawn Extension. In order to provide increased security of supply, the company proposed to complete the loop of the Dawn Extension by installing a total of 14.5 km of pipe. The total cost of the proposed Dawn Extension facilities, including an expanded Dawn Meter Station, would be \$13.6 million.

14.3.5 Kirkwall Line

TransCanada's application dated 29 December 1988 assumed the construction in 1989 of TransCanada's 914 mm Kirkwall Line, previously approved by the Board in Certificate No. GC-73.

That line would have transported the incremental Niagara exports from the Union system a distance of 31 km to TransCanada's Niagara Line near Station 209. The TransCanada Kirkwall Line would have run parallel to an existing Union Kirkwall Line and would have allowed the derating of TransCanada's existing Line 200-1 between MLV 207 and MLV 209.

TransCanada amended its application on 3 March 1989 to include construction of a \$177 million Dawn Line extending 206 km from Dawn to Neale Junction, upstream of Station 209. Subsequently, negotiations between TransCanada and Union resulted in an agreement between the two companies, which provided for TransCanada's purchase of the 610 mm diameter Union Kirkwall line and its withdrawal of the Dawn Line proposal.

In the 10 May 1989 revision of its application, TransCanada withdrew the Dawn Line and proposed a 762 mm looping of the Kirkwall Line that it intended to acquire from Union. Although only a partial loop would be needed to satisfy 1990/91 requirements, TransCanada did not consider this to be practical. The Kirkwall Line is located within lands owned by Ontario Hydro and TransCanada testified that Ontario Hydro would not likely agree to any above-ground tie-over valve facilities associated with partial looping, due to induced voltage hazards.

The revised application also provided for the relocation of a 5.7 MW compressor from Station 147 to a new station to be constructed near MLV 1301 where the Kirkwall Line joins the Union mainline (estimated cost \$5.8 million). However, TransCanada also indicated that with anticipated delays in the proposed Shell/CETI exports, the relocation would not be required until the 1991/92 contract year. TransCanada proposes to build this facility to serve the additional requirements for the Empire State Pipeline Company ("Empire State") export project, should they materialize for 1990/91.

TransCanada stated that the throughput capability of the existing Niagara/Kirkwall Line was approximately 18.7 106m³/d (660 MMcfd), taking into account the newly acquired 610 mm Kirkwall Line and the derated Niagara Line (Line 200-1). With the addition of the proposed 32.5 km Kirkwall loop and the relocation of a 5.7 MW compressor from the Montreal Line to the Kirkwall junction, the total peak day capability would increase to 30.2 106m³/day (1 066 MMcfd), assuming loss of the critical unit. The estimated cost of the Kirkwall Line facilities would be \$35.1 million.

14.3.6 Niagara Line

TransCanada proposed to construct 21.4 km of 914 mm diameter loop on the Niagara Line downstream of Station 209 to complete Line 200-2 from Neale Junction to the Niagara River (estimated cost \$34.9 million). Together with the Kirkwall facilities, this would result in a high pressure express system from the Union mainline to Niagara Falls, primarily for providing 18.6 106m³/d (655 MMcfd) of export capacity to the U.S. northeast. The original Niagara Line (Line 200-1) would be derated to 4 480 kPa from MLV 207 to MLV 215, thereby eliminating the need for an estimated \$16 million in pipe replacements in the absence of pressure derating. Also included as part of the application was a new meter station at the Niagara export point (estimated cost \$3.5 million), consisting of five new meter runs and two meter runs transferred from the existing station (which will be dismantled and retired).

14.3.7 North Bay Shortcut

TransCanada submitted that projected increases in domestic and export deliveries east of Toronto necessitated an increase in peak day capacity of the combined North Bay Shortcut/Montreal Line system. Based on an evaluation of alternative cases of adding either 9.4 MW units or 15.6 MW units on the North Bay Shortcut, TransCanada decided that the choice of the larger units was optimal. The peak day design for this system also included provision for loss of critical unit protection and a minimum guaranteed delivery pressure of 4 000 kPa (as required by the Board's GH-2-87 Reasons for Decision).

TransCanada originally stated that a new compressor station, consisting of two 15.6 MW compressors, would be required in 1990/91 at MLV 1211. The second unit would be required to protect against an outage of the first unit. In response to the Board's concern regarding the appropriateness of this location for such a large station with only one unit able to operate at a time, TransCanada revised its application to provide for two single 15.6 MW unit stations, one at MLV 1211 and the other at MLV 1217 (estimated cost \$43.9 million).

Although the capital cost of this proposal would be higher than that of one large station, it would result in the following benefits:

- (i) peak day capability would be increased by about two percent;
- (ii) both units could be operated simultaneously to provide operating flexibility;
- (iii) the design would allow the 5.7 MW portable unit downstream at Station 147 to be relocated to the proposed Kirkwall Compressor Station; and
- (iv) the configuration would still be consistent with an optimal long-term expansion of this system.

14.3.8 Montreal Line

TransCanada proposed to construct 13.9 km of 914 mm diameter loop downstream of Station 147 near Cornwall, Ontario at an estimated cost of \$14.8 million. These facilities would guarantee peak day requirements under loss of critical unit conditions and allow for an increase in minimum delivery pressure to GMi at the St. Maurice sales meter station on the TQM system from 2 800 kPa to 4 000 kPa.

Even though the St. Maurice delivery point is on the TQM system, TransCanada maintained that it has an obligation to provide a minimum 4 000 kPa delivery pressure at St. Maurice because of the Board's GH-2-87 decision regarding the minimum delivery pressure specified in TransCanada's tariff.

14.3.9 St. Mathieu Extension

TransCanada stated that it would require 12.1 km of 508 mm diameter loop upstream of Station 802 in order to accommodate increased deliveries to GMi, proposed new exports to Falcon Seaboard, and

minimum delivery pressures of 4000 kPa to Vermont gas at Philipsburg and 5860 kPa to Falcon Seaboard at Napierville. However, TransCanada also proposed to install an additional 4.0 km of pipe to complete that section of looping to provide security of supply to downstream markets. TransCanada therefore included in its application 16.2 km of looping at an estimated cost of \$9.7 million. According to TransCanada, its proposed design had a lower net present worth of AOOC than alternative cases with a combination of loop and compression.

14.3.10 Napierville Extension

The application included a new 35.5 km pipeline from the discharge side of Station 802 to an export point near Napierville, Quebec. The 323 mm diameter line would serve a proposed 1 530 103m³/d (54 MMcfd) export by FSC to Falcon Seaboard. The total cost of this project, including the Napierville Meter Station, was estimated to be \$15.8 million. FSC's application for an export licence has yet to be dealt with by the Board.

14.3.11 Gananoque Extension

TransCanada proposed to construct a new 406 mm diameter lateral, for a distance of 25.5 km from Gananoque, Ontario to the Canada/United States border near Wolfe Island in the St. Lawrence River to serve new exports to Niagara Mohawk of 1440 103m³/d (51 MMcfd). The Canadian portion of the pipeline construction would include two channel crossings and a portion of a third crossing at the international boundary. Including the meter station on Wolfe Island, the cost of this extension was estimated to be \$25.7 million.

During and after the close of the GH-1-89 hearing, the Board received a number of letters commenting on the general routing of and environmental concerns related to the proposed Gananoque Extension. A number of the letters received after the close of the hearing urged the Board to reopen the GH-1-89 hearing to hear further evidence on these issues.

By letter dated 2 August 1989 the Board informed parties that the proposed Gananoque Extension would be required only in the event that the application for export of natural gas to Niagara Mohawk Power Corporation by WGML/ TransCanada were approved. The Board also indicated that if the export application of WGML/ TransCanada were approved, the GH-1-89 hearing would be reopened to hear further evidence related to the proposed Gananoque Extension.

In its decision of 20 November 1989 regarding the export applications (see Appendix II), the Board denied WGML/TransCanada's export licence application. Accordingly, the Board advised TransCanada by letter, also dated 20 November 1989, that its application for a certificate in respect of the Gananoque Extension and associated metering facilities was denied and that the GH-1-89 hearing would not be reopened.

Views of the Board

The applied-for facilities represent, for the most part, an appropriate expansion of the TransCanada system to serve the forecasted domestic and export requirements for 1990/91 and to allow for the retirement of certain aging compressor units.

The Board notes that the 5.7 MW compressor relocation to the Kirkwall junction at MLV 1301 would not be required to meet the design year requirements for the Kirkwall/Niagara system, unless the Empire State project were to proceed. As that export project was not considered as part of the GH-1-89 proceedings and will be the subject of a separate application, the Board is not prepared to approve the construction of the aforementioned 5.7 MW compressor station at this time.

The Board notes that facilities on the Montreal Line are associated with the provision of a minimum delivery pressure off the TQM system. The delivery pressure toll, if any, to be associated with this service will be dealt with at a future toll proceeding.

The Board denied TransCanada's application for a certificate in respect of the Gananoque Extension because WGML/TransCanada's export licence application was denied, thereby obviating the need for the proposed Gananoque facilities.

Had the Board approved WGML/TransCanada's export licence application, the GH-1-89 proceeding would have been reopened in order to hear additional evidence related to the proposed Gananoque Extension. Since the record in respect of those facilities was not completed, these Reasons will not further address the Gananoque Extension and associated metering facilities.

Decision

The Board will recommend to the Governor in Council the issuance of a certificate in respect of all of the applied-for facilities, except:

- (i) the proposed relocation of the 5.7 MW compressor unit to the Kirkwall junction**
- (ii) facilities intended to provide 1088 of unit protection on TransCanada's Western Section:
and**
- (iii) the Gananoque Extension and associated metering facilities.**

The certificate, if issued by the Board, will be subject to the conditions included in the Board's decision of 21 August 1989 (see Appendix VIII).

14.4 Technical Conditions to the Certificate

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

- (i) a detailed construction schedule 10 days prior to the commencement of construction;**
- (ii) pipeline construction alignment drawings, construction drawings and general and project-specific specifications 10 days prior to the commencement of construction;**
- (iii) updates to the construction schedule during construction, if significant changes occur;**

(iv) monthly construction progress and cost reports;

(v) qualified welding and nondestructive testing procedures within 21 days of the commencement of pipeline welding; and

(vi) a cost report, within six months of placing facilities into service, providing a breakdown of the costs incurred during construction and including reasons for any significant differences from preconstruction estimates.

TransCanada indicated that it had no major concerns with any of the technical conditions, but suggested that:

- with respect to item (ii), only three copies of each drawing be filed with the Board; and
- with respect to item (iv), the timing and format of the reports be determined by agreement between TransCanada and the Board issuance of the decision.

Views of the Board

To enable the Board to adequately monitor and inspect the construction of the facilities and to monitor project costs, conditions requiring the submission of construction schedules, schedule updates, drawings, specifications and construction cost reports should be included with any certificate issued in respect of the proposed facilities. The Board will incorporate TransCanada's suggestions regarding the technical conditions.

Decision

The Board will recommend to the Governor in Council that any certificate to be issued in respect of the applied-for facilities be subject to the above-stipulated conditions.

Chapter 15

Transportation on the Great Lakes and Union Systems

TransCanada submitted that the requirements for the 1990/91 contract year could be met at a minimum cost by contracting for increased transportation on the Great Lakes and Union systems rather than expanding TransCanada's Central Section.

15.1 Great Lakes

TransCanada submitted that in order to minimize the costs of construction and operation of the proposed facilities, an increase of 11.836 106m³/d (417.5 MMcfd) in TransCanada's T-4 transportation service on the Great Lakes system would be required. This would bring the level of the service to 35.55 106m³/d (1255 MMcfd) for transportation of gas from the interconnection of the TransCanada and Great Lakes system near Emerson, Manitoba to points on the international border near Sault Ste. Marie and Sarnia, Ontario. The 11.836 106m³/d (417.5 MMcfd) increase was premised upon the receipt of U.S. regulatory authorization of a previous request for a 1.770 106m³/d (62.5 MMcfd) increase in the T-4 level commencing 1 November 1989.

To effect TransCanada's request for increased T-4 service, Great Lakes submitted an application dated 24 February 1989 to the FERC under paragraph 7(c) of the U.S. *Natural Gas Act* for authority to construct a total of 735 km (459.6 miles) of pipe and 25 impellers at an estimated capital cost of U.S. \$438.5 million.

TransCanada submitted that it was critical that timely approval be obtained for the requisite Great Lakes facilities. To this end, TransCanada proposed to freeze its facilities design at a certain capacity level thereby obviating the need for any TransCanada-initiated amendments to the Great Lakes application. It was TransCanada's understanding that any modification to the Great Lakes application could adversely affect the timely examination of that application by the FERC.

TransCanada testified that the expansion of the Great Lakes system could be completed in time to provide the increased service for 1 November 1990 if U.S. regulatory approvals were received by the fall of 1989.

It was further indicated that, if TransCanada were to back-stop the ordering of material necessary for the Great Lakes expansion, the 1 November 1990 in-service date could be met as long as the FERC approval were received by March 1990. TransCanada testified that in September 1989 it would decide whether or not to back-stop Great Lakes. TransCanada further indicated that it might require commitments from the shippers of incremental requirements before undertaking that commitment.

No intervenors commented on the appropriate level of transportation on the Great Lakes system.

Views of the Board

As discussed in Subsection 14.3.3 of these Reasons, TransCanada's evaluation of flow splits between the Central Section and the Great Lakes System indicated that the least cost design would require that the incremental 1990/91 throughputs be transported through the Great Lakes System.

Based on that evidence, the Board is satisfied that the minimum cost design requires an incremental T-4 transportation of 11.826 106m³/d (417.5 MMcfd) in order to meet TransCanada's forecasted requirements. In light of the Board's decision in respect of unallocated capacity in Section 12.4 of these Reasons, in the event that the required level of Great Lakes transportation is reduced due to a corresponding reduction in firm requirements on the TransCanada system, the Board would expect TransCanada to take whatever steps are necessary to reduce its T-4 service and thereby minimize its cost of service.

15.2 Union

TransCanada initially requested an increase of 12.65 106m³/d (446.7 MMcfd) in its level of M12 service on the Union system for the contract year 1989/90, resulting in a total contract level of 25.33 106m³/d (894.3 MMcfd) for transportation from Dawn to Oakville or Kirkwall. During the hearing, TransCanada revised this level to 24.77 106m³/d (874.4 MMcfd), based upon its revised requirements forecast. The required Union facilities, estimated to cost \$95.3 million, were expected to be included in an application to be filed with the OEB.

No intervenors commented on the appropriate level of transportation on the Union system.

Views of the Board

Based on TransCanada's evaluation of flow splits between the Central Section and the Great Lakes system, the Board is satisfied that the required level of M12 transportation on Union is 24.770 106m³/d (874.4 MMcfd). If TransCanada's requirements for the 1990/91 year should change, reducing the required level of M12 service, the Board would expect TransCanada to take whatever steps are necessary to reduce its requested level of M12 service, with the intent of minimizing its cost of service.

Chapter 16

Requirements Conditions

TransCanada indicated that given the number of new shippers (both export and domestic) that underpin the application, the specific facilities required will depend on the particular combinations of services that have obtained all necessary regulatory approvals and executed transportation agreements. Therefore, it was not possible to identify, at the time of the hearing, all of the specific facilities associated with the new exports.

TransCanada indicated that by November 1990 there could be changes in base case requirements, i.e., those which have been assumed to be already flowing at the commencement of the 1990/91 contract year that could affect the applied-for facilities. TransCanada explained that its base case, including estimates of load factors, is the result of historical experience and advice received from customers. It explained that shippers with contracts expiring are under no obligation to express their intentions with respect to renewal earlier than six months before the renewal date, making it difficult to accurately predict the base case requirements.

Views of the Board

The Board appreciates the dynamic state of the deregulated natural gas industry. There are a large number of new requirements forecasted to flow on the TransCanada system, each requiring that specific conditions be satisfied before the gas flows. The requirement to conduct the GH-1-89 facilities hearing at least 18 months in advance of the in-service date compounds the difficulty of accurately forecasting which of the proposed new requirements will be ready to proceed at the scheduled date. Further complicating the situation is the plethora of contracts and shippers that support the base case. Some of these shippers will undoubtedly change their current forecasts of natural gas requirements before the 1990/91 contract year. It is necessary for the Board to allow some flexibility while ensuring that any facilities built are used and useful upon construction.

In order to ensure that the applied-for facilities are used and useful in the long term, the underpinning projects should be "ripe". The Board considers that projects for the 1990/91 contract year will be "ripe

when the following items are in place:

- all necessary regulatory approvals in respect of any necessary downstream facilities or transportation services (including approvals of the necessary Great Lakes and Union services);
- executed transportation contracts;
- executed gas supply contracts; and
- in respect of new firm export volumes, all necessary federal regulatory approvals, including applicable long-term Canadian export authorizations.

The Board accepts the possibility that, in respect of some of the new requirements discussed in the hearing, all of the above items may not be in place for the 1990 construction season. However, given the number of outstanding requests for 1990/91 service not reflected in TransCanada's requirements forecast, it is likely that other requirements will ripen in time for 1990 construction. In these circumstances, the Board would allow TransCanada to substitute those "ripe" requirements.

The Board also appreciates that changes in the base requirements could affect the need for the approved facilities. The Board notes that the six-month renewal notice provision in TransCanada's tariff limits to some extent the ability of the company to precisely determine its requirements prior to the commencement of construction for the 1990/91 contract year. Nevertheless, TransCanada is to monitor its base case requirements and, if these should change materially, the Board would expect TransCanada to revise its facilities requirements accordingly.

Decision

Prior to the commencement of construction of any portion of the approved facilities, TransCanada shall advise the Board on the status of the base case requirements for the 1990/91 contract year and shall demonstrate, to the Board's satisfaction that the new 1990/ 91 requirements are "ripe" as defined above. TransCanada shall also demonstrate that the portion of the approved facilities for which it seeks release for construction is necessary to accommodate the updated 1990/91 requirements. This demonstration should be in the form of output from TransCanada's flow simulation model with sufficient supporting material linking the requirements with flow schematics.

Conditions 8 and 9 attached to the Board's decision dated 21 August 1989 (see Appendix VIII) would require TransCanada to demonstrate these matters.

Chapter 17

Land Use and Environmental Matters

17.1 Land Use

17.1.1 Requirements of the Act in Respect of the Routing of New Pipeline Facilities

Section 52 of the Act provides that the Board may issue a certificate in respect of a pipeline if it is satisfied that the pipeline "is and will be required by the present and future public convenience and necessity". Section 52 also provides that, in considering an application for a certificate, "the Board shall take into account all such matters as to it appear to be relevant..." One such matter that the Board considers to be relevant is the general route proposed for the pipeline.

If the Board is satisfied with the proposed general route of a particular segment of pipeline and issues a certificate in respect of it, the pipeline company must, prior to commencement of construction, submit to the Board a PPBR which, among other things, lays out the detailed route of the pipeline segment. Construction of the pipeline cannot take place unless the Board approves the PPBR.

Section 58 of the Act provides that the Board may exempt a pipeline from the requirement of PPBR approval. TransCanada applied for such an exemption in respect of all the pipeline applied for in its 1990/91 facilities application, with the exception of the Gananoque and Napierville Extensions.

The procedure in respect of approval of the PPBR is as follows:

- the PPBR is submitted by the pipeline company to the Board; (section 33 of the Act);
- the pipeline company serves a notice (describing the proposed detailed route of the pipeline) on all owners of lands proposed to be acquired and publishes the notice in one or more publications (chosen by the Board) that
are in general circulation within the area in which said lands are situated; (subsections 34(1) and (2));
- a landowner served with the aforementioned notice or any other landowner who anticipates that his lands may be adversely affected by the proposed detailed route of the pipeline may, within 30 days of service or publication of the notice, file with the Board a written objection to the proposed detailed route; (subsections 34(3) and (4));
- if the Board receives any written objections of an unfrivolous nature within the 30-day time limit, it must hold a detailed route hearing in the area where the lands of the person objecting are situated; (subsection 35(1) and paragraph 35(5)(b));

- at the hearing the Board may allow any interested person to make representations; (subsection 35(3));
- in deciding whether or not to approve a PPBR, the Board must consider all written objections, if any, and all representations made at the detailed route hearing, if such a hearing is held; (section 36); and

the Board may require a pipeline company to pay all reasonable expenses incurred by any participant in a detailed route hearing (section 39).

Sections 31 through 39 of the Act are reproduced in Appendix IX of these Reasons.

17.1.2 Route Selection

The line pipe applied for by TransCanada consists of 26 loop sections and two extensions covering a total distance of 494.9 km in the provinces of Saskatchewan, Manitoba, Ontario and Quebec. The locations of the loop sections, extensions and their respective land requirements are set out in Table 17-1.

TransCanada elected to place all the new loop sections either within or adjacent to existing easements or within utility corridors. The Napierville Extension requires a new pipeline route and, if certificated, will be subject to detailed-routing examination before construction may commence (see Subsection 17.1.1 of these Reasons).

17.1.2.1 Facilities Within Existing Easements

It was TransCanada's view that new facilities that require only temporary workspace and that will be located within existing easements do not present any route-related issues. Such facilities consist of the following loops: Burstall-Liebenthal, Cabri, Moose Jaw, Vibank, Moosomin, Miniota, Carberry, Winnipeg and Niagara, totalling 300.0 km.

Views of the Board

In respect of the above-mentioned loops, the Board is satisfied with TransCanada's proposed use of existing easements with associated temporary work space and considers that the general routes proposed by TransCanada for the above-noted loop sections are acceptable.

17.1.2.2 Facilities Located Adjacent to Existing Easements

Where new facilities could not be located on existing easements due to easement width constraints, TransCanada proposed that they be located adjacent to the existing easements for the following reasons:

- (i) landowners along the existing easement are already familiar with TransCanada's procedures;
- (ii) multiple line facilities are preferable in all cases where they are viable from environmental,

socio-economic, construction and engineering perspectives: and

(iii) lines adjacent to existing easements minimize the length of the loop.

The proposed facilities in this category consist of the Emerson, Eaglehead, Dawn, Niagara, Cornwall, and St. Mathieu loops, totalling 101.4 km.

With respect to the Niagara looping, TransCanada considered alternative routes requiring new easements for the loop from MLV 215 to the Canada/ United States border with the aim of avoiding disruption of a prime fruit-producing area. However, in the final analysis, TransCanada proposed that new facilities for the Niagara looping be installed adjacent to the existing easement, reflecting the recognition that a minimal amount of land would temporarily be taken out of production, landowners along the existing easement would be familiar with TransCanada's procedures, and the route would minimize the length of the looping.

The Corporation of the Township of Charlottenburgh ("Charlottenburgh") had concerns regarding TransCanada's construction procedures with respect to maintaining the integrity of municipal drains. TransCanada agreed to undertake measures to ensure that township drains affected by pipeline construction will be restored to the satisfaction of Charlottenburgh. Such measures include rehabilitation of the drains in question using rock and/or other materials as appropriate to prevent erosion.

Views of the Board

The advantages associated with installing new facilities adjacent to existing easements are recognized by the Board as being applicable to the Emerson, Eaglehead, Dawn, Niagara, Cornwall, and St. Mathieu loops and the routes selected for these facilities. The Board accepts the routes proposed by TransCanada in respect of these facilities.

With respect to the concerns of Charlottenburgh, the Board accepts TransCanada's undertaking to maintain the integrity of municipal drains.

17.1.2.3 Facilities Within Utility Corridors

For the 32.5 km looping of the Kirkwall Line, TransCanada intends, for the most part, to utilize an Ontario Hydro corridor¹ that it proposed in the GH-2-87 proceedings to use for the TransCanada Kirkwall Line which was authorized by Certificate No. GC-73 but never constructed. TransCanada relied on the Environmental and Socio-Economic Assessment for the Kirkwall Line that was filed in the GH-2-87 proceedings.

1 Approximately 5.1 km of new easement outside the Ontario Hydro corridor will also be required.

The Town of Ancaster ("Ancaster") had three concerns about the proposed Kirkwall looping. First, it wanted TransCanada to provide unrestricted construction access adjacent to the proposed loop. The second concern related to maintaining municipal rights-of-way and the third concern related to

appropriate siting of the proposed meter station.

TransCanada met with Ancaster and resolved the concerns raised by making a minor route deviation to allow construction access, by agreeing to consult with Ancaster about municipal road and right-of-way crossings and by locating the proposed meter station in an area presently not designated for development.

Views of the Board

The Board is of the opinion that the environmental assessment completed for the GH-2-87 proceedings still accurately reflects the physical condition of the Ontario Hydro corridor today. The Board's views therefore have not changed from those expressed on page 59 of its GH-2-87 Reasons for Decision:

"The principal route selection criterion of TransCanada, namely the advantage associated with the multiple-use of existing utility corridors, is well recognized by the Board. The rights of affected landowners, however, must not be ignored ...".

In respect of the concerns expressed by Ancaster, the Board is satisfied that TransCanada has resolved those concerns appropriately.

17.1.2.4 Gananoque and Napierville Extensions

TransCanada proposed to construct two pipeline extensions that are not associated with existing easements. These extensions, referred to as the Gananoque Extension and the Napierville Extension, would require a total of approximately 61 km of new easements.

Gananoque Extension

As explained in Section 14.3.11 of these Reasons, the Board has denied TransCanada's application for a certificate in respect of the Gananoque Extension.

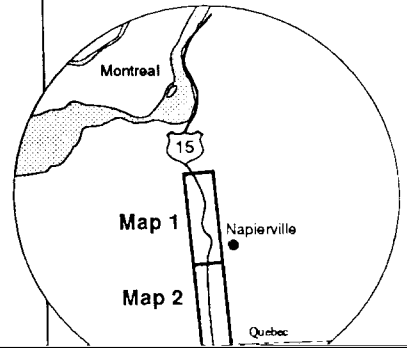
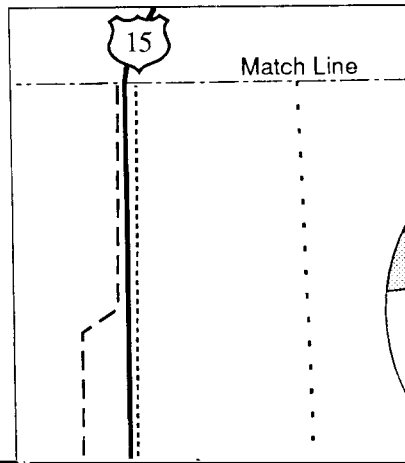
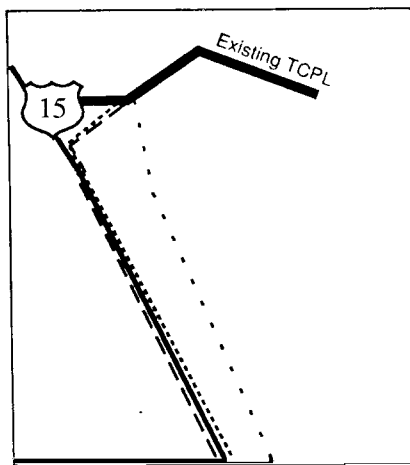
Napierville Extension

The proposed Napierville Extension, which would extend for a distance of 35.5 km from MLV 802 to the Canada/United States border in the vicinity of Plattsburgh, New York, is also not associated with any existing TransCanada easements.

TransCanada found three routes within a fourkilometre wide study area (see Figure 17-1) to be viable, based on environmental, socio-economic, construction, engineering, cost and land acquisition perspectives. There were 16 constraints and criteria (listed in Table 17-2) of importance covering agricultural, socio-economic, environmental and technical considerations used to examine the feasibility of the alternative routes. Because the lands included in the study are intensively cultivated, agricultural considerations weighed most heavily in route selection.

TransCanada indicated that its preferred route avoids areas of high archaeological potential, as well

Figure 17-1
Three Proposed Alternative Routes for the Napierville Extension



as important hydrogeological zones, and is expected to have the least impact with respect to socio-economic factors such as proximity to urban and residential developments. It was felt that any of the anticipated impacts were minor and could be addressed adequately via appropriate engineering and construction, as well as environmental mitigative measures.

No parties objected to the proposed routes during the hearing.

Views of the Board

The Board finds the 16 route constraints and criteria to be appropriate and is of the opinion that they have been applied adequately to the three routes reviewed.

Based on TransCanada's route feasibility studies, the Board is satisfied with the four-kilometer-wide general corridor proposed by TransCanada for the Napierville Extension.

The specific routing of the Extension within that corridor will be determined pursuant to the detailed route procedures provided in sections 34 through 39 of the Act. As detailed in Subsection 17.1.1 of these Reasons, should any affected landowner object to TransCanada's detailed route, a procedure exists whereby such an owner may send his or her written objections to the Board, thereby initiating a detailed route hearing in the Napierville area.

17.1.3 Land Requirements, Temporary Work Space and Notifications

Because of the potential impact on affected landowners, the amount of land (fee simple and easements) and 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 the requirements and a description of its existing easements, the pipe location within those easements, and the specific terrain conditions.

17.1.3.1 Land Requirements

Fee Simple Land

TransCanada indicated that fee simple land will be required for the proposed Napierville, Quebec meter station.

Easements

Additional easements, generally ranging in width from 3.1 to 25.0 m, are required by TransCanada along six of its proposed loop sections. A new easement of 20.0 m width will be required for the Napierville Extension.

17.1.3.2 Temporary Work Space Requirement

TransCanada requires from 9.0 to 50.0 m width of temporary work space for machinery movement,

for the storage of soil, and to ensure that no environmental or landowner considerations are jeopardized. This is in accordance with TransCanada's Construction Specifications (March 1988).

17.1.3.3 Notifications

TransCanada filed a line list setting out those areas where new easement and/or temporary work space will be required and indicated that a second sequential listing would be provided to identify owners who have been served with notices of proposed acquisition as required under section 87 of the Act.

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. In respect of fee simple land and easements, the Board encourages TransCanada to serve section 87 notices of proposed acquisition on all applicable owners at the earliest opportunity. As long as TransCanada's acquisition of temporary work space continues to be a short-term commercial transaction that does not create an interest in land, section 87 of the Act does not pertain thereto.

17.1.4 Exemptions from Paragraphs 31(c) and 31(d) and Section 33 of the Act

In its application, as amended, TransCanada requested, *inter alia*, that certain of the applied-for line pipe sections be exempted, pursuant to section 58 of the Act, from the provisions of paragraphs 31(c) and 31(d) and section 33 thereof. Such exemptions would relieve TransCanada from the necessity of filing PPBRs and, as a consequence, from the procedures involved in obtaining Board approval thereof. These exemptions were not requested for the Napierville Extension.

Views of the Board

In deciding whether or not to exempt facilities from the provisions of paragraphs 31(c) and 31(d) and section 33 of the Act, the Board has been mindful of the rights of neighbouring landowners. The Board is of the opinion that due to the nature of the facilities' locations, i.e., on existing easements or new easements adjacent thereto, those landowners would not be adversely affected by the proposed construction.

In order to protect the interests of the owners of lands proposed to be acquired by TransCanada, the Board is only prepared to exempt the facilities from the provisions of paragraphs 31(c) and 31(d) and section 33 of the Act on condition that all necessary option or easement agreements be executed by such landowners prior to the commencement of construction.

17.2 Environmental Matters

17.2.1 Environmental Assessments

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 also undertook to follow the policy statements and mitigative measures and procedures provided in its Environmental Protection Practices Handbook, 1986, and its revised Pipeline Construction Specifications, 1988.

The environmental descriptions, assessments and recommendations contained in TransCanada's Environmental and Socio-Economic Assessment provided information regarding agricultural capability, soils, crop production, fish and wildlife, water crossings, environmentally sensitive areas, recreational use and heritage resources. A wide range of environmental concerns was identified in respect of the proposed construction.

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

17.2.2 Agriculture

TransCanada evaluated the environmental sensitivity associated with each of the proposed pipeline sections. The environmental issue of most concern was the potential loss of agricultural capability that can occur as a result of the compaction and rutting of topsoil, the mixing of topsoil with subsoil, erosion, and increased stoniness and weed problems. In general, TransCanada proposes to construct during the late summer and early fall months when agricultural soils tend to be less sensitive to disturbance. TransCanada has identified the areas of most concern and has outlined reclamation techniques as well as measures for mitigating soil compaction and erosion.

A portion of the pipeline looping would be constructed immediately north of the City of Niagara Falls in the Niagara fruit belt, a region that is ideally suited to tender fruit and grape production. TransCanada recognized the concerns associated with disturbance of soils in this area and recommended detailed mitigative measures to minimize the anticipated impacts.

TransCanada indicated that it has discussed construction impacts and routing constraints related to the proposed Napierville Extension with representatives of the Union des Producteurs Agricoles and La Commission de Protection du Territoire Agricole. Important deposits of organic soils which are intensively used to produce cash crops are located along part of the proposed route. After submitting its environmental assessment, TransCanada conducted further investigations which indicated that winterconstruction may be preferable for the Napierville Extension because it may offer better access and decreased potential for disturbance to the black organic soils.

17.2.3 Niagara River Crossing

TransCanada indicated that detailed construction and environmental specifications for the proposed

Niagara River crossing would be submitted to the Board. Detailed reclamation plans for the forested Niagara Parks Commission lands at the proposed landfall of the Niagara River would also be filed with the Board prior to construction.

17.2.4 Heritage Resources

Many of the proposed new and existing easements have a high potential for archaeological and historical resource disturbance. TransCanada undertook to further examine, through field surveys and sampling programs, those areas where the potential for disruption of artifacts exists. If additional sites are located, qualified consultants will be available to determine the optimal mitigative techniques.

17.2.5 Environmental Inspection

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

17.2.6 Interested Parties

Winnipeg

The City of Winnipeg ("Winnipeg"), by letter of comment, raised a number of concerns about TransCanada's proposed Winnipeg Loop. Among the concerns were:

- the short time provided to city officials to review TransCanada's application;
- the probable requirement that TransCanada obtain a provincial licence for the proposed facilities pursuant to the Environment Act 1;
- the lack of information about TransCanada's environmental practices included in the application;
- the lack of assurances from TransCanada that the La Salle River and floodway dyke would be crossed during low water periods; and
- four errors in TransCanada's Environmental and Socio-Economic Statement.

Winnipeg also requested that TransCanada be required to fully consult with it as a condition of any Winnipeg Loop approval.

Subsequently, TransCanada met with Winnipeg to discuss outstanding issues and concerns. As a result of that meeting, Winnipeg was satisfied that its concerns would be resolved, and therefore withdrew its objections to the Winnipeg Loop.

Saskatchewan

The Province of Saskatchewan, Department of Environment and Public Safety ("Saskatchewan") had concerns with a portion of the proposed Burstall-Liebenthal Loop that would traverse the Great Sand Hills, an environmentally sensitive area. Saskatchewan indicated that an alternative route bypassing the Great Sand Hills would present fewer and less significant environmental impacts.

TransCanada maintained that past restoration efforts with respect to the four existing lines through the area had been successful and that land disturbed by construction of a fifth loop could be restored to the satisfaction of interested parties. Furthermore, TransCanada noted that avoidance of the Great Sand Hills would require extensive rerouting and would pose difficulties with rejoining the main corridor at the prescribed point.

1 S.M. 1987-88, c-26, as am. by S M. 1988-89, c-13

TransCanada recognized that work on the sensitive terrain would require a comprehensive reclamation plan. Phase I of the plan was filed with TransCanada's environmental assessment while the second phase, which will provide greater detail, is still to be completed. The reclamation plan will contain input from parties that have experience in dealing with the restoration of sands.

Saskatchewan submitted that it was its responsibility to ensure that all major development projects within its boundaries proceed in an environmentally acceptable manner. It therefore sought assurances from the Board that the final reclamation plan would require the approval of the province prior to its implementation. Saskatchewan also requested that the Board ensure that the province be party to any final decision regarding the acceptability of reclamation activities undertaken by TransCanada across the province. TransCanada, in turn, indicated that it was confident that it could work together with Saskatchewan in resolving any restoration concerns.

The Minister of Energy for Ontario

TransCanada agreed to a number of requests made by Ontario to provide additional information to the Chairman of the Ontario Pipeline Coordinating Committee or to regional ministry offices, prior to construction. TransCanada stated that it would provide information identifying construction supervisors and environmental inspectors, as well as additional information and commitments pertaining to the proposed water crossings in Ontario. Ontario submitted that the Board should include the undertakings as general terms and conditions in any certificate to be issued.

Views of the Board

If the measures for environmental protection are implemented, the project should create only minimal environmental impacts of a local and temporary nature. TransCanada will be required to submit to the Board detailed environmental information regarding the proposed Niagara River crossing prior to construction. The Board will also require that TransCanada submit the results of any heritage resource surveys, including any proposed mitigative measures, for those areas where artifacts may exist.

Regarding TransCanada's position with respect to the possibility of winter construction for the proposed Napierville Extension, the Board agrees that construction in frozen conditions may help to minimize disturbances through the organic soils. If winter construction were proposed, TransCanada would have to demonstrate to the Board that the soils had a sufficient depth of frost penetration to bear the weight of heavy equipment and to allow construction to proceed in an environmentally acceptable manner. The Board would favour any construction schedule that reduces the potential environmental impacts.

The Board is pleased that TransCanada resolved the concerns of Winnipeg, but notes that such meetings should have taken place prior to the commencement of the GH-1-89 hearing.

The Board believes that the Great Sand Hills of Saskatchewan can be restored in an environmentally acceptable manner in light of the fact that four pipelines have previously been successfully installed on existing easements through this area. TransCanada will be required to submit to the Board, for approval, its final reclamation plan for the Great Sand Hills. The Board encourages TransCanada to discuss any matters of concern with Saskatchewan, and to reach agreement regarding the final reclamation plan. The Board believes that any issues on this matter can be resolved through the exchange of views between the parties.

The Board will cooperate with Saskatchewan in determining the environmental acceptability of reclamation activities undertaken by TransCanada across the province. Monitoring of the pipeline easement may be carried out through joint environmental inspections by Board staff and Saskatchewan. It is noted that the time required for successful restoration of the disturbed right-of-way may vary greatly across the province depending on a number of variables including soil type, farming practices, climate, vegetation and topography.

Regarding the extensive commitments that TransCanada made to Ontario, the Board will recommend to the Governor in Council that any certificate issued include a general condition requiring TransCanada to respect those undertakings.

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 all undertakings made to the Board during the hearing. These measures should, if properly applied throughout construction, result in a high standard of environmental protection and right-of-way rehabilitation.

To determine whether 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. That report should discuss all the issues that have been identified up to that point in time, along with a statement of their status, as well as 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 18

Retirement of Compressors

In its 29 December 1988 application, TransCanada applied for an order pursuant to Part IV of the Act to treat the retirement of compressor units Number 2 at Station 5A, Number 2 at Station 17A and Number 1 at Station 75A as "ordinary" under the Accounting Regulations.

On 27 March 1989, TransCanada applied for an early decision regarding the retirement of compressor unit Number 2 at Station 17A. The early decision was required as TransCanada decided to retire the unit one year earlier than scheduled. By Order No. TG-5-89 dated 1 May 1989 (see Appendix X), the Board approved the treatment of that retirement as "ordinary".

The two compressors at Stations 5A and 75A are 26 and 29 years old, respectively, and each has provided over 130 000 hours of service since installation in the early 1960's. TransCanada proposed to retire these units because of poor reliability and difficulty in obtaining spare parts.

Views of the Board

The compressor units Number 2 at Station 5A and Number 1 at Station 75A are substantially depreciated and the Board is satisfied that they have provided the number of years of service that was anticipated when the depreciation rates were established. The Board has directed TransCanada to treat the retirement of the two compressor units as "ordinary retirements" as defined in subsection 39(1) of the Accounting Regulations.

Chapter 19

Economic Feasibility of Pipeline expansions

There was considerable discussion at the hearing about the question of what should constitute an appropriate test to be used by the Board for the purposes of determining the economic feasibility of proposed new pipeline facilities. Discussion by parties focussed on the following considerations of a finding of economic feasibility of an expansion:

- (i) the distribution of benefits and costs among affected parties;
- (ii) the likely net economic benefits associated with an expansion; and
- (iii) demonstration of adequate gas supplies to support the applied-for increase in pipeline capacity and of the existence of a viable long term market.

The first consideration refers to the way in which parties affected by a facilities expansion could be either beneficially or adversely affected. TransCanada applied to the Board to expand its pipeline facilities in order to accommodate requests from shippers for additional firm transportation service on its system. The gas producers that would produce the gas for these new sales would be beneficiaries of the expansion, as would be the end-users that would benefit from the additional supplies. In addition, TransCanada could benefit from the expansion because of the opportunity to expand its rate base and, ultimately, generate increased profits for its shareholders.

The effects of a facilities expansion on producers that supply gas for existing firm sales on the TransCanada system is more uncertain. If toll payments by new shippers exceeded the cost of providing the new services, existing shippers could benefit from increased throughputs on the system. On the other hand, if the payments for transportation service by new shippers did not recover the cost of constructing the requested new facilities, existing shippers could have to pay increased tolls

for a number of years. Increased tolls could force producers to accept lower netbacks; hence, producers that supply existing markets served by TransCanada could be negatively affected by a new facilities expansion. There was extensive discussion about what type of test could be implemented to ensure that new facilities expansions would not unduly adversely affect these producers.

The second consideration above refers to the question of whether or not a facilities expansion would, on balance, yield net benefits to affected parties. Most parties agreed that, regardless of the distribution of gains and losses, it would not make sense to build additional facilities that would result in an overall loss. The discussion in this area focussed primarily on the appropriate viewpoint from which a net economic benefits test should be conducted.

The third consideration of the appropriate economic feasibility test refers to the question of whether there is likely to be adequate gas supply and long-term market demand to support the use of the additional facilities. The potential upward impact on tolls resulting from the construction of new

facilities may be exacerbated if new facilities were under-utilized. Most parties felt that it was important to consider market data on supply and demand to aid the Board in its determination of whether the additional facilities would likely be used and useful in the long term.

The arguments presented by the participants at the hearing and the views of the Board on each of these components of a test of economic feasibility are discussed below.

19.1 The Distributional Effects of a Pipeline Expansion

The measures suggested at the hearing to measure the potential distributional impact of the new facilities expansion on producers included:

- (i) a proposal by the CPA to deny any facilities expansion that would result in a notional incremental toll more than 1.2 times greater than existing tolls;
- (ii) the impact on tolls over the forecast period;
- (iii) the impact on aggregate producer revenue at the Alberta border.

The views of interested parties and of the Board on each of these possible tests or measures is reviewed in turn below.

19.1.1 The CPA "1.2" Proposition

Several parties argued that there is a need to ensure that producers are not unduly adversely affected by a new facilities expansion. However, only the CPA proposed a specific test designed to limit these potential negative impacts.

The CPA proposed that the following guideline be adopted by the Board:

"If the notional incremental toll resulting from a proposed expansion exceeds the existing toll by a factor of more than 1.2, a presumption arises that the expansion is uneconomic and should not proceed. To rebut this presumption the proponents of the expansion must satisfy the Board that special circumstances exist justifying an exception".

The CPA explained that the 1.2 guideline would be applied to any TransCanada facilities application as follows:

"The total cost of service, including fuel, for the existing TCPL system without new facilities (Base Case) and the TCPL system costs with new facilities (Application case) would be determined for each of the first three years of the expansion. The incremental cost of service (Incremental Case) would be the difference between the Application Case cost of service and the Base Case cost of service".

The notional incremental toll or incremental unit cost would be determined by functionalizing and

classifying the incremental cost of service, and using the incremental allocation units (fixed, fixed volume/distance). If the incremental unit costs exceed the Base Case unit costs by more than 1.2 times, the project would be deemed to be not economically feasible.

In this event, the proponent would have to make arrangements to reduce the incremental cost of service to the tolerable level determined under the proposed guideline or satisfy the Board that special circumstances existed which supported an exemption for the applicant. The CPA suggested that these arrangements could be in the form of a payment in aid of construction, contracting on other pipelines or any other arrangement that would reduce the notional incremental toll to the point that the guideline would be satisfied.

The 1.2 figure was arrived at by a consensus of the CPA members as to what would constitute a tolerable level of cross-subsidization of new shippers by existing shippers.

The CPA considered benefit-cost analysis to be a test to be applied in addition to its proposed 1.2 guideline. In other words, a facilities application would have to both yield expected net benefits to Canada under the benefit-cost analysis and satisfy the 1.2 guideline before it could be approved. Failure to meet either criterion would result in a denial. (Parties' views on benefit-cost analysis are reviewed in Section 19.2).

The CPA argued that the deregulation of both domestic prices and export prices, combined with the introduction of direct sales in the Canadian and United States markets, have led to the development of an extremely competitive natural gas market. These developments, combined with the steep fall in natural gas prices, have sharply reduced natural gas producers' profit margins. Given this increasingly competitive market, there will be mounting pressure on all producers and shippers to minimize natural gas transportation costs.

In this environment, the CPA argued that there is a greater need to ensure that new expansions by TransCanada do not result in increased toll charges to existing shippers. If tolls were to increase, the resultant reduction in producer netbacks from sales off the TransCanada system would act as an incentive for shippers to consider selling gas in markets served by other delivery systems or by selling gas into markets served by TransCanada via displacement exchange mechanisms. In either case, the TransCanada system would be bypassed. This would lead to a reduction in throughputs on TransCanada and to further increases in gas transmission costs. Producers would then have a further incentive to seek alternative markets, thereby leading to what the CPA termed a "death spiral" in which tolls increased and throughputs fell. In light of this possibility, the CPA argued that there is a need to ensure that proposed facilities expansions are truly economically viable.

The CPA also argued that the danger of overexpansion is exacerbated by the existence of the rolled-in toll methodology on the TransCanada system. Under this methodology, shippers requesting additional capacity may not, over the lifetime of the new sales contracts, pay a toll that would be sufficient to recover the costs of constructing the new facilities. The increase in cost of service is recovered from a general increase in tolls and, hence, new shippers will be cross-subsidized by existing shippers. The existence of this cross-subsidization acts to encourage incremental sales to markets served by the TransCanada system. Thus, producers may make incremental sales that would not be beneficial to the producing sector as a whole, when the potential impact on tolls and netbacks

to existing shippers is considered.

In summary, the CPA argued that because of the increasingly competitive market environment and the existence of the rolled-in toll methodology, there is a need for a rigorous test that will impose economic discipline upon the proponents of expansion and reduce the possibility of long term underutilization of the TransCanada system.

In the CPA's view, its major concerns can be addressed through the proposed guideline. The guideline would give all potential shippers the freedom to assess the risks and rewards associated with their applications, given that some markets may be attractive to certain sellers but not to others. By ensuring that proponents of new sales would not transfer too much of the cost and the risk of their individual commercial decisions to other shippers, the guideline would limit crosssubsidization and protect existing tollpayers against uneconomic expansions.

In response to criticisms by most intervenors suggesting that the arrangements to be made to pass its test were in fact incremental tolls, the CPA argued that these arrangements, regardless of their nature, would not constitute a toll as defined in section 2 of the Act. The CPA argued that according to section 2 of the Act, a toll is a contribution to be charged for the use of a pipeline that is ready for service and, therefore, the definition could not be applied to its guideline because the guideline would be a pre-construction matter.

The CPA also stated that its proposed guideline had been introduced for the purpose of preventing expansions that could hurt the long-term health of the industry and not to protect existing shippers. It maintained that arguments by some intervenors that implementation of the guideline would be equivalent to recognizing that existing tollpayers had proprietary rights to the system were unjustified.

The CPA acknowledged that the proposed 1.2 ratio was arbitrary but argued that, in the event that the Board rejected the guideline, the problems that the guideline was intended to address would still remain. It argued that the only viable alternative to its guideline that could address its concerns would be the implementation of incremental tolls. However, as the Board's GH-2-87 Reasons for Decision indicated that the Board would not reconsider incremental tolls, the CPA felt that the GH1-89 proceedings constituted the only practical opportunity for the Board to address the CPA's concerns. In lieu of incremental tolls, the CPA argued that its proposed guideline would be a reasonable tool for the Board to use in assessing the desirability of proposed new facilities expansions.

Views of Other Parties on the CPA's "1.2" Test

PPG Canada Inc. ("PPG") and C-I-L and General Chemical were the only interested parties to the hearing that supported the adoption of the CPA's guideline. PPG agreed with the CPA's proposed test but argued that the test should be applied to each rate zone and that no net increase in transmission costs due to the construction of new facilities would be acceptable. In its view, TransCanada should bear all the risk of under-utilization of new facilities. C-I-L and General Chemical agreed with the CPA about the need for a rigorous economic feasibility test of proposed new facilities. C-I-L and General Chemical did not suggest that 1.2 was the appropriate figure to use but expressed the view that the CPA's test should be utilized in addition to a social benefit-cost analysis or a discounted cash flow analysis that estimates the net economic benefits of proposed facilities expansions.

A number of parties, including IPAC, Consumers Gas, Champlain and Ontario, agreed with the CPA that the possibility of undue cross-subsidization and the risk of under-utilization of the TransCanada system were reasons why the Board should carefully assess the economic viability of pipeline expansions. However, these intervenors did not agree that the CPA's proposed 1.2 test was an appropriate component of an economic feasibility test.

All other parties that expressed a position were opposed to the implementation of the CPA's 1.2 test.

TransCanada expressed the view that the 1.2 test was completely arbitrary since the choice of the 1.2 figure was not derived from any logical criteria but was arrived at simply through a consensus of the CPA's members. There were also concerns expressed by intervenors that the CPA did not have the support of all of its members since Amoco and PanCanadian Petroleum Limited ("Pan Canadian"), both members of the CPA and two of Canada's largest gas producers, did not support the proposed guideline.

The guideline was described by TransCanada and various parties as being discriminatory because it would protect existing shippers against toll increases while new shippers would have to pay a contribution in aid of construction or make other special arrangements. In either case, they maintained that this would give existing shippers an unfair advantage over new shippers. To the extent that shippers requesting new services were actually required to make arrangements to bring their applications below the 1.2 limit, the guideline would constitute a barrier to access to the pipeline system for new shippers. IPAC argued that because companies have different abilities to raise funds, the adoption of the CPA's proposal could effectively deny access to the system to smaller producers.

Ontario submitted that the implementation of the CPA's guideline could discourage new direct sales. End-users, faced with the prospect of having to make special arrangements to pass the 1.2 test, might prefer to simply contract with their LDCs. Union argued that if this occurred it would be contrary to the goals of deregulation in the domestic market.

The guideline was also considered by many intervenors to assume that existing shippers had proprietary rights to the system. The Procureur Général du Québec indicated that granting existing

shippers any such rights was precluded by the GH-2-87 Reasons for Decision which stipulated that shippers that have used the pipeline in the past are not entitled to continue using the existing facilities without being affected by new circumstances.

Many intervenors, including TransCanada, argued that the implementation of the guideline would be an indirect way of introducing incremental tolls any up-front payment to be made by new shippers in order to pass the 1.2 guideline would constitute an incremental toll because it would not be paid by other shippers receiving the same transportation services. These intervenors argued that the incremental toll concept had already been rejected by the Board in the GH-2-87 Reasons for Decision and that incremental tolls should not be reintroduced through the back door.

There were also concerns expressed about the fact that the notional incremental toll would be calculated only over a three-year term. This was considered to be a time frame too short to provide an indication of the long-term viability of a pipeline expansion. IPAC and Champlain argued that the selection of a three-year term for the calculation of the notional toll meant that the guideline focussed only on the years in that an incremental toll would be highest and, hence, overstated the degree of cross-subsidization that would in fact occur in the long run. Other parties noted that, with TransCanada's tolls based on a depreciating rate base, the notional incremental toll associated with a proposed expansion was almost certain to exceed the 1.2 guideline if based on the first three years following an expansion. TransCanada further argued that as a result of this inherent severity, the adoption of the CPA's 1.2 test could effectively prevent any future expansion of the TransCanada system.

Champlain argued that there was also a degree of capriciousness in the guideline because a proponent's chances of passing the CPA's test would depend upon whether the required expansion facilities involved looping or less costly compression facilities. Furthermore, the guideline could encourage TransCanada to design facilities in order to pass the guideline, rather than in the most economically efficient manner.

IPAC argued that the CPA's proposed guideline was inconsistent because it would only be applied to the TransCanada system and not to other natural gas pipelines or oil pipelines. IPAC's view was that the guideline was not applicable for other pipelines and therefore inappropriate. IPAC submitted that principle and policy objectives ought to be transferable from one pipeline to another.

Some intervenors argued that it would be difficult for the Board to determine the special circumstances that could justify an exemption from the 1.2 guideline. Union and IPAC submitted that discussion about whether or not special circumstances existed in a particular case could significantly extend the hearing process. This could occur because there might be a need for a lengthy proceeding to first judge the merits of any special circumstances associated with a particular request for new services. The Board would have to rule on these special circumstances before the applicant would be required to rebut the presumption that the pipeline application would be uneconomic. The facilities hearing could only proceed after these matters were satisfactorily resolved.

Finally, most of the intervenors argued that the CPA's proposed guideline did not constitute an economic efficiency test to be applied to pipeline expansions. The parties argued that an appropriate economic feasibility test of a facilities expansion must assess all the benefits and costs associated

with an applied-for expansion and that the guideline fails to meet this objective because it focuses only on the distributional effects that would result from a pipeline expansion. The intervenors also expressed concern that the guideline focussed only on the effects on the producing sector and, therefore, did not provide sufficient information to help the Board assess a proposed expansion in the context of the overall public interest, as required under section 52 of the Act.

Views of the Board

The Board shares the CPA's concern that, with the growing use of displacement and exchange sales, there is an increased danger that any toll increases on TransCanada could encourage new shippers to bypass the TransCanada system. The Board also recognizes that, under the rolled-in toll methodology, shippers making new sales may not pay a toll that would generate sufficient revenue to recover the full cost of facilities that were constructed to accommodate their requests for service. Consequently, the producers and marketing agents supporting these incremental sales may not perceive the full economic costs of selling natural gas to markets for which additional facilities must be constructed.

In light of these circumstances, and in light of the increasingly competitive nature of the North American natural gas market, the Board agrees with the CPA that proposed pipeline expansions require close scrutiny and that there is a need for an appropriate testing of the economic feasibility of these expansions.

Notwithstanding the above, the Board concurs with the majority of the parties to the hearing that the CPA's proposed 1.2 test would not be an appropriate test of the economic feasibility of proposed pipeline expansions on the TransCanada system.

Although new shippers may not pay a toll that reflects the incremental cost of providing transportation service, the Board notes that it is a characteristic of all jointly-used systems including, for example, municipal water systems, telephone networks and electricity networks, that the marginal cost of expansion generally exceeds the average imbedded cost of service. The reason for this is that because the value of the existing system depreciates over time, the marginal cost of providing new service will normally exceed the average existing cost of service.

Given the characteristics of the TransCanada pipeline as a jointly-used gas transportation system, the Board is of the view that the terms of access for new shippers should be consistent over time. Although new shippers may not pay a toll that reflects incremental transportation costs, this is not sufficient reason to introduce at this time a more severe guideline for new entrants than has been in effect in the past.

The Board is of the view that the proposed guideline would result in undue discriminatory treatment of new shippers. As previously found at page 73 of the GH-2-87 Reasons for Decision, the Board does not find it appropriate to implement a test that would result in different treatment being accorded to new shippers than to existing shippers when both would receive the same service on the TransCanada pipeline system.

The Board notes that the 20 percent tolerable increase in the cost of service allowed under the CPA's

proposed guideline is arbitrary and is not supported by any empirical derivation.

The Board also agrees that the 1.2 test could possibly distort TransCanada's system planning decisions for the construction of new facilities.

Finally, the Board concludes that the CPA proposal only addresses the distributional effects associated with a facilities expansion and that the overall net benefits of a facilities expansion should constitute the major component of an appropriate test of the economic feasibility of proposed pipeline expansions.

19.1.2 Other Measures of the Distributional Effects of a Pipeline Expansion: The Impact on Tolls, the Impact on Producer Netbacks and the Impact on Aggregate Producer Revenue at the Alberta Border

Although most intervenors did not support the implementation of the CPA's proposed 1.2 guideline, many did agree that the impact of a proposed facilities expansion on TransCanada's tolls should be a relevant factor in assessing the economic feasibility of an expansion. However, rather than focussing on the first few years following a new expansion, as proposed by the CPA, these parties argued that the projected increase in tolls over a longer time period would be a better measure of the true impact of a new expansion on existing shippers. In general, these parties felt that TransCanada's projections of tolls with and without the applied-for facilities, are a good indicator of the likely distributional effects.

MichCon noted that, because increased tolls could be passed on to customers served by the TransCanada system, the potential impact of a new expansion on tolls was also a relevant factor to end-users. Consumers Gas argued that a complete distributional analysis should include the impacts on segments of the industry other than producers.

PanCanadian agreed that the impact on tolls was an important consideration when assessing the desirability of a proposed facilities expansion. However, in its view, the impact on tolls is a purely distributional effect of a new expansion and should not be considered as a measure of economic feasibility.

The CPA argued that the total dollar value of the increased tolls paid by existing shippers was a relevant measure of the distributional impact of a proposed new expansion.

Some parties argued that an increase in tolls would result in a decrease in producer netbacks and, hence, the estimated impact on netbacks should be a measure of the economic feasibility of a proposed pipeline expansion. Champlain suggested that the impact of a facilities expansion on the value of sales to producers in a netback pricing scenario or on the market price in an add-on pricing scenario should be the main factor in assessing economic feasibility. Champlain also argued that the resultant net effect on aggregate producer revenues at the Alberta border was a relevant factor to be considered.

Finally, several intervenors suggested that the distributional effects of proposed facilities expansions

could be considered by the Board through a complaints procedure. ProGas indicated that any party that believed that it would be negatively affected by a pipeline expansion should have the opportunity to come before the Board and present evidence as to how it would be affected. The Board could thereafter determine if such effects were important enough to outweigh any economic benefits likely to result from the pipeline expansion.

TransCanada expressed the view that each individual party is in the best position to determine if a facilities expansion could result in an undue burden to it. Therefore, it should be the responsibility of those parties to evaluate these effects instead of TransCanada performing the task of determining the effects on all parties resulting from its system expansions.

Views of the Board

In the Board's view, the most revealing measure of the impact of a new facilities expansion on the producing sector is the projected impact on tolls over a reasonable forecast Period.

The net present value of the projected increase in toll payments by existing shippers is also a revealing measure of the potential negative impact of a facilities expansion on affected parties. However, in the Board's view, this is a better measure of the combined impacts upon both producers and end users, rather than a measure of the impact on producers alone.

The Board agrees with MichCon that some portion of a toll increase will be passed on to natural gas consumers. It is true that in a netback pricing regime producers will initially absorb the brunt of increased tolls through reduced netbacks. However, as time passes and sales contracts are renegotiated, at least some portion of a toll increase must be passed on to consumers. Producers must recover both their production costs and the costs of delivering their product to end-markets; when transportation costs rise, end-user prices will inevitably also increase, although the price increase in any specific market will depend upon the degree of competition in that market and upon the extent of alternative market opportunities available to producers. For this reason, the net present value of the projected increase in toll payments by existing shippers is most correctly viewed as a measure of the combined impact of a toll increase on both existing producers and existing end-users.

The Board does not believe it is necessary for TransCanada to submit an analysis of the projected distributional impacts on all affected parties. The primary negative impact of a facilities expansion is the resultant increase in toll payments. As explained above, this impact may be shared between producers and end-users, but the projected increase in toll payments should capture the sum total of the negative distributional effects.

Any party that believes that it would be unduly prejudiced by the potential for higher tolls would, as always, be free to submit evidence in support of its position.

The Board does not believe that projections of the impact on producer netbacks would aid in the determination of the economic feasibility of new facilities. Similarly, a projection of the increase in aggregate producer revenues at the Alberta border, in and of itself, would add little useful information. Additional sales will normally yield additional revenues; the question relevant to the public interest is whether or not these additional revenues will be sufficient to recover all additional

costs.

19.2 Social Benefit-cost Analysis

There was considerable discussion at the hearing both about the role of social benefit-cost analysis in assessing the economic feasibility of proposed new pipeline facilities, and about the appropriate methodology to be used in the social benefit-cost analysis of new facilities.

The role of social benefit-cost analysis in proposed pipeline expansions is discussed below. A discussion of the appropriate methodology for benefit-cost analysis is found in Appendix I of Volume I of these Reasons.

The majority of parties to the hearing supported the continued use of social benefit-cost analysis as a tool with which the Board should assess the economic feasibility of proposed facilities expansions. A number of these parties, including TransCanada, argued that only a comprehensive social benefit-cost analysis could provide an indication of whether or not an expansion would provide net economic benefits to Canada.

A number of parties, including Consumers Gas, GMi and Amoco/Con Ed, agreed that the Board should continue to use social benefit-cost analysis to assess the likely expected net economic benefits from a proposed facilities expansion but that it should also use other information, such as the impact on tolls, to help assess the distributional impacts associated with these expansions. Champlain and IPAC were of the view that an assessment of the distributional impacts could be incorporated into the social benefit-cost analysis, whereas others, including the APMC and Consumers Gas, were of the view that these impacts should be assessed separately.

Although the CPA and IPAC agreed with the general concept of an economic analysis of new facilities, in their view the analysis should be undertaken from the viewpoint of the producing sector in aggregate, rather than from the national viewpoint. They contended that this would be more appropriate because the producing sector would be most directly affected by an expansion. IPAC further argued that, in the future, an aggregate discounted cash-flow analysis from the producer perspective should be used in place of a social benefit-cost analysis. As previously explained, the CPA considered social benefit-cost analysis to be a test to be applied in addition to its proposed 1.2 guideline. In other words, a facilities application would have to both yield expected net benefits to Canada under the social benefit-cost analysis and satisfy the 1.2 guideline before it could be approved. Failure to meet either criterion would result in a denial.

Certain intervenors, including PPG and MichCon, expressed the view that social benefit-cost analysis, as currently done, does not constitute a strict enough test of economic viability because the degree of flexibility in the underlying assumptions is so great as to always allow the analyst to demonstrate a positive result. It was suggested by Champlain and the APMC that social benefit-cost analysis be combined with a discounted cash flow analysis from the producer's perspective to provide an additional test. It was PPG's view that social benefit-cost analysis was appropriate for assessing public projects but not for assessing private investment decisions such as a facilities expansion on TransCanada.

There was also some discussion at the hearing about the inter-relation between the assessment of

export licence applications under Part VI of the Act and the assessment of facilities applications under Part III of the Act. Both PanCanadian and ProGas were of the view that separate social benefit-cost analyses should be submitted for Part VI and Part III applications. PanCanadian argued that the decision to be made in an export licence application centred more on the question of whether the applied-for exports were surplus to Canadian needs, whereas the decision in respect of a facilities application should be based on the expected net benefits to Canada of the expansion. Thus, because the nature of the decisions was different, separate analyses should be submitted for each type of application. ProGas suggested that, in the event that the overall social benefit-cost analysis of a facilities expansion did not indicate net benefits, it would be appropriate to disaggregate a facilities application and assess the supporting export licence applications on an individual basis. PanCanadian suggested that requests for additional firm services for domestic sales should be subject to both a Part VI type and Part III social benefit-cost analysis; in other words, it advocated that no distinction be made between incremental domestic and export sales.

Finally, most parties agreed that the Board should continue to have regard to any other factors that appeared to it to be relevant to any specific facilities application, as enjoined by section 52 of the Act.

Views of the Board

In the view of the Board, social benefit-cost analysis is the most useful tool with which to assess the likely economic benefits to accrue to Canada as a result of the increase in gas sales made possible by a facilities expansion. This analysis is most appropriately conducted from the national viewpoint, rather than from the viewpoint of any one sector of the industry.

Although social benefit-cost analysis provides a measure of the expected net economic benefits to Canada, i.e. a measure of the economic efficiency effects, it does not provide an indication of the distributional impacts of a facilities expansion among affected parties. Distributional impacts are most appropriately assessed separately from the overall economic efficiency effects of a facilities expansion. As previously stated, it is the Board's view that the estimated impact on tolls is the best measure of the impact of a facilities expansion on existing shippers.

In assessing the merits of a facilities expansion, the Board must weigh the evidence on the expected net benefits to Canada against any adverse impacts of toll increases on existing shippers. It would be inappropriate to assess any trade-off between economic benefits and negative distributional impacts through the application of a rigid rule or formula. Rather, the Board must continue to use judgement in weighing all the evidence both in favour and against applied-for facilities expansions. Any party that believes that it would be unduly adversely affected by a facilities expansion may appear before the Board and submit evidence to support its position.

The Board is of the view that an economic assessment of a proposed facilities expansion is closely related to an economic assessment of incremental requests for firm service to export and domestic markets that underpin a facilities application. It is the demonstration of economically viable new gas sales to either export or domestic markets that justifies the construction of new facilities. The benefits that flow from a facilities expansion are the increased revenues from the additional gas sales

made possible by the expansion. The associated costs include the incremental social costs of producing and transporting the incremental gas sales volumes over the expected duration of the new sales arrangements. In the case of a facilities expansion serving only new exports, these benefits and costs would normally be equivalent to the benefits and costs associated with the export licence applications under Part VI of the Act. There could be instances in which this would not hold, for example, if there were changed circumstances between the time at which the export licence applications were evaluated and the time at which a facilities application was heard by the Board. However, barring changed circumstances, a favourable economic assessment of an export licence application under Part VI of the Act is indicative of a favourable economic assessment of an application to construct the associated required facilities under Part III of the Act.

The Board is of the view that social benefit-cost analyses should be submitted to support requests for additional firm service to accommodate incremental sales to domestic markets. These analyses would normally be submitted as part of a TransCanada facilities application under Part III of the Act. Similarly, if changed circumstances warrant a revision to benefit-cost analyses of the existing export licences underpinning a facilities application, such revised analyses would also be submitted by TransCanada as part of its application.

19.3 Demonstration of an Adequate Supply of Natural Gas and a Viable Long-term Market

Only a few parties to the hearing discussed the relevance of requiring TransCanada to demonstrate through its evidence that there will be both adequate long-term gas supply to support the forecasted increased throughputs and viable long-term markets to be served by the applied-for new facilities.

With respect to the question of whether it is necessary to require TransCanada to demonstrate the long-term adequacy of gas supply to support a facilities application under Part III of the Act, and to also require shippers to demonstrate the adequacy of their individual supply pools to support their export licence applications under Part VI of the Act, the APMC was of the view that both should be required. First, TransCanada should ensure that all export licence applicants have adequate supply arrangements to support the construction of new facilities to satisfy their requests for incremental service. Second, a "macro" analysis should be submitted that would assess the longterm availability of Canadian natural gas.

The APMC also argued that export licence applicants should be required to demonstrate that they have all necessary downstream sales contracts in place, and that TransCanada should undertake a macro analysis of any new markets to be served, before certificates be approved for construction of new facilities. PanCanadian agreed that the strength of the market to be served by a proposed facilities expansion was of prime importance to ensuring the long-term viability of facilities expansions and, hence, TransCanada should be required to submit a market analysis in support of its facilities applications under Part III of the Act.

Views of the Board

TransCanada should assure itself that satisfactory gas supply arrangements and adequate downstream

sales contracts are included in each of the requests for new FS underpinning facilities applications. The Board also believes that, for major facilities expansions, TransCanada should provide an assessment of the availability of long-term gas supplies and the long-term viability of the markets to be served. The Board notes that issues regarding information to be filed in respect of projectspecific and overall supply for TransCanada's next facilities applications were addressed in depth in the GHW-3-89 hearing.

With respect to the need to demonstrate that a viable long-term market exists, evidence that indicates that there is likely to be strong long-term demand for natural gas in the market area to be served by the facilities enhances the likelihood that gas will flow through the applied-for facilities for a reasonable time span. Demonstration of strong overall market demand provides assurances that, in the event that a particular end-user ceases to purchase Canadian gas, producers will be able to shift their sales to other end-users in the same general market area. Therefore, TransCanada should continue to submit an overall market analysis in support of applications for major new facilities additions.

19.4 Economic Feasibility of the Proposed Facilities Expansion

In support of its argument that the proposed pipeline expansion would be economically feasible, TransCanada submitted an assessment of the following:

- the impact of the proposed expansion on tolls;
- the extent to which the cost of providing the new services would be recovered from additional transportation revenues received for those services;
- the revenues to producers net of transportation costs at the Alberta border;
- the existence of viable long-term markets and adequate supplies; and
- the net economic benefits to Canada associated with the expansion.

The views of TransCanada and the Board on each of these elements of a determination of economic feasibility are reviewed below.

TransCanada provided a projection of the tolls that would result from the proposed expansion. The analysis showed that in 1990/91, the Eastern Zone and Niagara tolls would increase by \$0.05/GJ while the Emerson tolls would increase by \$0.02/GJ. TransCanada further submitted that the increase in cost of service resulting from its proposed expansion and the associated increase in tolls would not impose an undue burden on shippers.

TransCanada also indicated that by the 1991/92 contract year, the toll revenue generated by the new services in that year would recover 80 percent of the cost to provide those services.

TransCanada indicated that the proposed expansion and associated incremental sales would yield

Alberta border revenues of \$386 million in 1990/ 91, escalating thereafter. TransCanada performed sensitivity analyses to higher natural gas prices which indicated that revenues at the Alberta border could be as high as \$440 to \$533 million in 1990/91.

With regard to the existence of long-term viable natural gas markets, TransCanada indicated that both the Canadian and export markets served by its pipeline system are expected to sustain the current levels of growth in the long term. In addition, TransCanada provided a market study prepared by Foster which indicated that demand for natural

gas in the northeast United States is expected to continue to grow to the year 2005. Consequently, TransCanada submitted that the risk of underutilization of its system was minimal.

In examining the matter of adequate long-term gas supplies, TransCanada relied on the Sproule study (see Section 11.2) which indicated that, under the anticipated market conditions in the Canadian and

economic feasibility of the proposed pipeline expansion.

With regard to the evidence of long-term supply and markets, as discussed previously in this Report, the Board is satisfied that adequate supply exists and that long-term demand in both domestic and export markets will likely be strong enough to ensure that the applied-for pipeline facilities will be used and useful.

As discussed in Section 19.2 of these Reasons, the Board considers that the economic assessment of a proposed facilities expansion is closely related to the economic assessment of the associated individual incremental export and domestic requirements. The Board did not evaluate the economic feasibility of the facilities expansion on the basis of the aggregate benefit-cost analysis submitted by TransCanada. Rather, in assessing the economic feasibility of TransCanada's proposed expansion, the Board considered the net benefits to Canada that would likely result from:

- the proposed new exports for which licences were considered in the GH-1-89 proceeding;
- new exports for which export licences have already been issued; and
- new domestic service.

With respect to the proposed new exports considered in the GH-1-89 proceeding, the Board has largely relied on the benefit-cost analyses of the associated export licence applications. These analyses include a provision for incremental facilities costs. Therefore, where earlier in these Reasons the Board has found that an export licence should be granted, it is satisfied that the building of the associated pipeline facilities has been demonstrated to be economically viable.

With respect to the pipeline facilities needed to deliver the exports for which export licences have been previously issued, the Board finds that there have been no significant changes in circumstances that would warrant a review of these licence applications. The Board is therefore satisfied that the new facilities required to accommodate these previously licensed exports are economically feasible.

The Board is satisfied that the incremental domestic sales associated with the proposed expansion would provide netbacks to producers comparable to those generated by most of the gas export projects associated with the facilities expansion for which the Board has granted new export licences. Therefore, the additional revenues from these domestic sales should be sufficient to recover the associated incremental costs to Canada. Moreover, increased domestic sales provide additional benefits to Canadians to the extent that they displace the consumption of more expensive forms of energy. In summary, the Board is satisfied that the incremental domestic gas sales will likely provide net benefits to Canada.

Chapter 20

Disposition

The foregoing chapters constitute our Decisions and Reasons for Decision in respect of the applications heard by the Board pursuant to Hearing Order No. GH-1-89, as amended.

A.B. Gilmour
Presiding Member

R.B. Horner, Q.C.
Member

K.W. Vollman
Member

Ottawa, Canada
December 1989

Appendix III

ORDER NO. XG-1-89

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 27 March 1989 (hereinafter referred to as the "1989-90 Section 58 Application"), by TransCanada PipeLines Limited (hereinafter referred to as "TransCanada") pursuant to section 58 of the Act for exemption from the provisions of sections 30 and 31 of the Act in respect of certain pipeline loop; filed with the Board under File No. 1555-T1-160.

BEFORE the Board on 1 May 1989.

WHEREAS TransCanada has an application dated 3 March 1989, as amended, pursuant to Parts III, IV and V of the Act, seeking, *inter alia*, a certificate in respect of certain pipeline facilities to be constructed for the 1990-91 contract year;

AND WHEREAS TransCanada has represented that certain of its proposed pipeline facilities (the "additional facilities") are required in the 1989-90 contract year to accommodate increased requirements for that year and to enable TransCanada to retire a compressor at station 17 without a corresponding drop in system capability;

AND WHEREAS TransCanada has included the additional facilities in the 1989-90 Section 58 Application;

AND WHEREAS the Board heard the evidence of TransCanada and the argument of TransCanada and all interested parties in respect to the 1989-90 Section 58 Application during a public hearing held pursuant to Hearing Order No. GH-1-89, in the City of Ottawa, in the province of Ontario;

AND WHEREAS the Board considers it to be in the public interest to grant the relief sought by TransCanada in its 1989-90 Section 58 Application;

AND WHEREAS TransCanada represented that the applied-for facilities would be constructed in conjunction with those facilities approved by the Board pursuant to Certificate Nos. GC-75 and GC-76;

IT IS ORDERED that pursuant to section 58 of the Act, the additional facilities (described in Schedule "A" attached to and forming part of this order) are exempt from the provisions of paragraph 30(1)(a), subsection 30(2) and section 31 of the Act upon the following conditions.

1. For the purposes of construction and postconstruction monitoring TransCanada shall include the additional facilities in documentation to be submitted to the Board pursuant to conditions 4, 5, 6, 7, 8 and 9 of Certificate No. GC-76.

2. TransCanada shall implement or cause to be implemented all of the policies, practices, recommendations and procedures for the protection of the environment included in or referred to in its 1989-90 Section 58 Application, its environmental reports referred to in its application, its Pipeline Construction Specifications, its Environmental Protection Practices Handbook, 1986, or as otherwise adduced in evidence before the Board.

3. Unless the Board otherwise directs, TransCanada shall, prior to the commencement of construction of those additional facilities indicated in Schedule "A" by an asterisk (*), demonstrate to the Board's satisfaction that:

(1) all necessary United States and Canada 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.

4. 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 December 1989.

NATIONAL ENERGY BOARD

Louise Meagher Secretary

SCHEDULE "A"

TransCanada's Estimated

Description	Capital Costs
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9.9 km of 1219 mm O.D. Pipeline from MLV 13 + 13.7 km to MLV 14	
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\$21,104,000

6.4 km of 1219 mm O.D. Pipeline from MLV 14 to MLV 14 + 6.4 km	
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4.8 km of 914 mm O.D. Pipeline from MLV 401 to MLV 401 + 4.8 km	
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\$ 6,688,000

Appendix IV

ORDER NO. XG-2-89

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 27 March 1989 (hereinafter referred to as the "MCV-related Section 58 Application"), by TransCanada PipeLines Limited (hereinafter referred to as "TransCanada") pursuant to section 58 of the Act for exemption from the provisions of sections 30 and 31 of the Act in respect of certain pipeline facilities to be constructed in 1990; filed with the Board under File No. 1555-T1-160.

BEFORE the Board on 1 May 1989.

WHEREAS TransCanada has an application dated 3 March 1989, as amended, pursuant to Parts III, IV and V of the Act, seeking, *inter alia*, a certificate in respect of certain pipeline facilities to be constructed for the 1990-91 contract year;

AND WHEREAS TransCanada has represented that certain of its proposed pipeline facilities ("the additional facilities") are required in order to continue service on a year-round basis to the Midland Cogeneration Venture Limited Partnership project (hereinafter referred to as the "MCV Project");

AND WHEREAS TransCanada has represented that due to the need to obtain timely financing for the MCV Project, early approval of the additional facilities is required;

AND WHEREAS TransCanada has included the additional facilities in the MCV-related Section 58 Application;

AND WHEREAS the Board heard the evidence of TransCanada and the argument of TransCanada and all interested parties in respect to the MCV-related Section 58 Application during a public hearing held pursuant to Hearing Order No. GH-1-89, in the City of Ottawa, in the province of Ontario;

AND WHEREAS the Board considers it to be in the public interest to grant the relief sought by TransCanada in its MCV-related Section 58 Application with respect to the additional facilities;

IT IS ORDERED that pursuant to section 58 of the Act, the additional facilities (described in Schedule "A" attached to and forming part of this order) are exempt from the provisions of paragraph 30(1)(a), subsection 30(2) and section 31 of the Act upon the following conditions.

1. TransCanada shall implement or cause to be implemented all of the policies, practices, recommendations and procedures for the protection of the environment included in or referred to in its

application, its environmental reports referred to in said application, its Pipeline Construction Specifications, its Environmental Protection Practices Handbook, 1986, or as otherwise adduced in evidence before the Board.

2. 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.

3. 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.

4. 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.

5. (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.

6. 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 Canada 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.

7. Unless the Board otherwise directs, TransCanada shall cause the construction and installation of the additional facilities, herein referred to, to be commenced on or before 31 December 1990.

NATIONAL ENERGY BOARD

Louise Meagher Secretary

SCHEDULE "A"

**TransCanada's
Estimated
Capital Costs
Description**

5.1 km of 1219 mm O.D.
Pipeline from MLV 27 to MLV
27 + 5.1 km

\$ 8,087,000

Board Ruling of 1 May 1989 Regarding TransCanada's Applications for: (a) Relief from Condition 11 of Certificate No. GC-76; (b) Section 58 Exemptions regarding 1989-90 facilities; (c) Section 58 Exemptions for MCV and OSP II-related facilities.

TransCanada Application Dated 29 March 1989 for Relief from Condition 11 of Certificate No GC-76 - Board Ruling:

TransCanada has requested relief from condition 11 of Certificate No. GC-76 in respect of a portion of the certificated facilities.

This condition requires TransCanada to provide the Board with evidence of executed transportation contracts and receipt of all necessary United States and Canadian federal regulatory approvals.

The relief was requested due to changes in the base case requirements to which the incremental requirements were added in determining the required facilities that were approved under Certificate No. GC-76.

The Board has reviewed TransCanada's application and evidence and the arguments adduced in the GH-1-89 proceedings and considers it to be in the public interest to grant TransCanada's request for relief.

Accordingly, the Board hereby directs that 28.9 kilometres of loop on the Western Section, specifically identified as Mainline Valve 2 to Mainline Valve 2 + 3.4 kilometres, Mainline Valve 13 to Mainline Valve 13 + 13.7 kilometres, and Mainline Valve 25 + 5.9 to Mainline Valve 25 + 17.7 kilometres are released from the provisions of condition 11 of Certificate No. GC-76.

The Board notes that the remaining 14.0 kilometres of Western Section loop remain subject to condition 11 of Certificate No. GC-76.

Section 58 Application Dated :27 March 1989 Regarding 1989-90 Facilities - Board Ruling:

TransCanada has applied under section 58 of the Act for exemption from sections 30 and 31 of the Act in respect of 21.1 kilometres of Western section loop necessary to accommodate unanticipated increased requirements for the 1989-90 contract year to enable TransCanada to retire a compressor at Station 17 without a corresponding drop in system capability.

In respect of the latter, TransCanada also requests an order under Part IV of the Act to treat the retirement of the Station 17 "A" plant, Unit Number 2, as "ordinary" under the *Gas Pipeline Uniform*

Accounting Regulations.

Upon review of TransCanada's application and evidence and the arguments presented in these proceedings, the Board concludes that it is in the public interest to grant the requested relief.

Accordingly, the Board will issue an exemption order in respect of 16.3 kilometres of 1 219 millimetre loop on the Western Section and 4.8 kilometres of 914 millimetre loop on the Emerson Extension .

Approval of 11.2 kilometres of the loop will be conditioned upon the receipt of all regulatory authorizations and signed transportation agreements prior to the commencement of construction.

Also, the Board finds that the proposed retirement of compressor 17A2 would be "ordinary", as defined by the *Gas Pipeline Uniform Accounting Regulations*.

The Board will issue a toll order reflecting this decision.

**Section 58 Application Dated 27 March 1989
for MCV and OSP II-Related Facilities -
Board Ruling:**

TransCanada applied under section 58 for exemption from sections 30 and 31 of the Act in respect of facilities necessary to accommodate MCV and OSP II in the 1990-91 contract year.

Although the construction of the facilities is not to commence until 1990, TransCanada submitted that early approval of these facilities is necessary to enable these two projects, both involving the construction of major power plants, to obtain the necessary financing in a timely manner.

The delivery of volumes for the MCV project is to commence in May 1990; however, in order to continue the service into the 1990-91 season, an additional 5.1 kilometres of loop on the Western Section is required for 1 November 1990.

OSP II deliveries are scheduled to commence in May 1991. However, TransCanada proposes to install the applied-for 34.1 kilometres of loop by 1 November 1990.

MCV Facilities

The Board has reviewed the application and evidence and the arguments set forth last week during these proceedings, and finds the application in respect of the MCV-related facilities acceptable.

The fact that these facilities are relatively limited in scope and will be necessary to continue an existing service on a year-round basis, and that the requirements supporting the facilities have been extensively examined in a previous Part III proceeding, allows the Board to find the MCV-related facilities to be in the public interest.

Accordingly, the Board will issue an exemption order in respect of the MCV-related facilities.

OSP II Facilities

With respect to the OSP II facilities, the Board is not persuaded that it is in the Canadian public interest to issue a section 58 order for the pipeline facilities involved in the application concerning OSP II, rather than to consider those facilities, as well as the remainder of the GH-1-89 facilities, under section 52 of the Act.

In particular, the Board has admitted into the record the evidence of the CPA which recommends the application of a test of economic feasibility to incremental facilities. While it has not yet been established that such a test is appropriate, the issuance of a section 58 order in respect of the facilities for OSP II would effectively preclude the Board from subjecting these facilities to such a test, thus providing this project with an unfair advantage over other projects.

Such an evasion of a possible test of economic feasibility by one project might make the application by the Board of any test of economic feasibility to other projects impractical and could be seen as conferring preferred treatment on one project vis-à-vis others.

The principal reason given by TransCanada for seeking a section 58 order in respect of these facilities - i.e., to satisfy a requirement of U.S. lenders does not appear to the Board to be sufficient reason to persuade it to foreshorten the examination of these facilities pursuant to section 52.

Consistent with past practice, the Board will be prepared, upon the conclusion of this Hearing, to consider, on a case-by-case basis, any request for an early decision in respect of the facilities related to any specific project.

Appendix VI

Board Ruling of 19 June 1989

Board Ruling of 19 June 1989 Regarding TransCanada's Section 58 Application to Accommodate Northridge Volumes:

TransCanada has applied under section 58 of the Act for exemption from sections 30 and 31 of the Act in respect of the construction of 1.6 kilometres of 1 219 millimetre diameter loop from Mainline Valve 401 + 4.8 kilometres to Mainline Valve 401 + 6.4 kilometres in order to provide firm transportation of natural gas for Northridge Petroleum Marketing Inc.

Upon review of TransCanada's application and evidence, and the arguments presented in these proceedings, the Board concludes that it is in the public interest to grant the requested relief. In particular, the Board notes that a section 71(2) order has been issued to TransCanada requiring it to provide firm service to Northridge, and that no concerns have been expressed regarding construction of the proposed facilities.

Accordingly, the Board will issue an exemption order in respect of 1.6 kilometres of 1 219 millimetre diameter loop on the Emerson Extension.

Approval of the 1.6 kilometres of 1 219 millimetre loop will be conditioned upon the receipt by the Board of evidence of backstopping arrangements between TransCanada and Northridge.

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

IN THE MATTER OF an application dated 1 June 1989 by TransCanada PipeLines Limited ("TransCanada") pursuant to section 58 of the Act, for exemption from the provisions of sections 30 and 31 of the Act in respect of certain pipeline facilities; filed with the Board under File No. 1555-T1-160.

B E F O R E the Board on 19 June 1989.

WHEREAS TransCanada has represented that 1.6 km of 1219 mm loop extending from MLV 401 + 4.8 km to MLV 401 + 6.4 km is required in the 1989-90 contract year to provide firm transportation of natural gas for Northridge Petroleum Marketing, Inc. ("Northridge");

AND WHEREAS TransCanada has represented that said facilities would be constructed in conjunction with those facilities approved by the Board pursuant to Certificates No. GC-75 and GC-76;

AND WHEREAS the Board heard the evidence of TransCanada and the argument of all interested parties in respect of the application during a public hearing held pursuant to Hearing Order No. GH-1-89, in the City of Ottawa, in the province of Ontario.

AND WHEREAS the Board considers it to be in the public interest to grant the relief sought by TransCanada in its application;

IT IS ORDERED that pursuant to section 58 of the Act, the above-referenced 1.6 km of 1 219 mm diameter loop are exempt from the provisions of paragraph 30(1)(a), subsection 30(2) and section 31 of the Act upon the following conditions:

1. For the purposes of construction and postconstruction monitoring TransCanada shall include the 1.6 km of 1219 diameter loop in documentation to be submitted to the Board pursuant to conditions 4, 5, 6, 7, 8 and 9 of Certificate No. GC-76.

2. TransCanada shall implement or cause to be implemented all of the policies, practices, recommendations and procedures for the protection of the environment included in or referred to in its application, its environmental reports referred to in its application, its Pipeline Construction Specifications, its Environmental Protection Practices Handbook, 1986, or as otherwise adduced in evidence before the Board.

3. Unless the Board otherwise directs, TransCanada shall, prior to ordering materials necessary for the construction of the 1.6 km of 1 219 mm loop, demonstrate to the Board's satisfaction that

Northridge and TransCanada have entered into a backstopping agreement in respect of these facilities.

4. Unless the Board otherwise directs, TransCanada shall cause the construction of the 1.6 km of 1 219 mm diameter loop to be commenced on or before 31 December 1989.

NATIONAL ENERGY BOARD

Louise Meagher Secretary

Appendix VIII

NEB Decision Issued 21 August 1989 Regarding TransCanada's 29 December 1988 Application as amended

NEB Decision Regarding TransCanada's 1990/91 Facilities

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 29 December 1988, as amended, by TransCanada PipeLines Limited ("TransCanada") pursuant to Parts III and IV of the Act, for a certificate in respect of certain proposed facilities, for orders exempting some of those facilities from the provisions of certain sections of the Act, and for an order respecting the retirement of certain compressor units; filed with the Board under File No. 1555-T1-160; and

IN THE MATTER OF National Energy Board Directions on Procedure GH-1-89, as amended.

DECISION

Having considered the evidence adduced at the public hearing held pursuant to Hearing Order No. GH-1-89, as amended, and the arguments and submissions made by all parties, the Board will recommend to the Governor in Council to approve the issuance of a certificate by the Board in respect of the proposed facilities included in TransCanada's application dated 29 December 1988, as amended, with the following exceptions:

- (1) the proposed relocation of a 5.7 MW compressor unit to the Kirkwall junction at MLV 1301;
- (2) facilities intended to provide loss of unit protection on TransCanada's Western Section; and
- (3) the Gananoque Extension and associated metering facilities.

Copies of the conditions to which the certificate will be subject, if approved by the Governor in Council,

are attached hereto. With respect to the proposed looping of existing line pipe facilities, the Board is prepared to exempt those facilities, pursuant to section 58 of the Act, from the provisions of paragraphs 31(c) and (d) and section 33 of the Act on the condition that all necessary option or easement agreements be executed by the applicable landowners prior to commencement of construction.

With respect to the proposed retirement of compressor units at stations 5A and 75A, the Board has issued Order No. TG-7-89 directing TransCanada to treat the proposed compressor retirements as "ordinary retirement" as defined in the *Gas Pipeline Uniform Accounting Regulations*.

Ottawa, Ontario September 1989

**Certificate Conditions in Respect of Certain
Pipeline Facilities
(described in attached Schedule A)**

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-1-89 proceeding.

4. With respect to the Burstall-Liebenthal loop, TransCanada shall, at least 21 days prior to the commencement of construction, file with the Board, for its approval, the final reclamation plan for the Great Sand Hills.

5. 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.

6. TransCanada shall file with the Board, at least ten days prior to the commencement of construction, the results of the heritage resources surveys referred to in the GH-1-89 proceeding, including any corresponding avoidance or mitigative measures.

7. TransCanada shall, at least 10 days prior to the commencement of site preparation for the crossing of the Niagara River, file with the Board:

(i) the environmental specifications and detailed drawings for the crossing; and

(ii) a copy of the detailed reclamation plan for the parklands at the Canadian landfall.

8. 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) in respect of new firm export volumes, all necessary United States and Canadian federal regulatory approvals, including applicable long-term Canadian export authorizations, have been granted; and

(2) with respect to the transportation of new firm volumes on the TransCanada system:

(a) transportation contracts have been executed;

(b) all necessary United States and Canadian regulatory approvals have been granted in respect of any necessary downstream facilities or transportation services; and

(c) gas supply contracts have been executed.

9. Unless the Board otherwise directs, TransCanada shall, prior to the commencement of construction of any of the approved facilities, submit for Board approval:

(1) requirements tables in the same format as Tables 2, 3, and 5 of subtab 1 under tab "Requirements" of Exhibit B-1 from the GH-1-89 proceeding, showing the anticipated base case

requirements and those requirements for which condition 8 has been satisfied; and

(2) flow schematics of the TransCanada system demonstrating that those approved facilities which are to be released for construction are necessary to transport the requirements referred to in subsection (1).

10. During construction, TransCanada shall file with the Board monthly construction progress and cost reports, in a format to be determined through consultation with Board staff, providing a breakdown, by location and facility, of costs incurred during that month, the percentage complete of each activity and an update of projected costs to complete the project.

11. 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.

12. 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 through 22 of subtab 10 under tab "Facilities" of Exhibit B-1 to the GH-1-89 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 23, of Tab 10 under Tab "Facilities" of Exhibit B-1 to the GH-1-89 proceeding, including reasons for significant differences.

13. (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 totake 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.

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 1990.

Schedule "A"

PIPE

Location	Facilities
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Saskatchewan	· 28.1 km of 1219 mm O.D. loop MLV 2 + 3.4 km to MLV 3
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· 29.6 km of 1219 mm O.D. loop
MLV 3 to MLV 4

Location Facilities

Saskatchewan · 10.4 km of 1219 mm O.D. loop
MLV 5 to MLV 5 + 10.4 km

· 21.5 km of 1219 mm O.D. loop
MLV 14 + 6.4 km to MLV 15

· 23.4 km of 1219 mm O.D. loop
MLV 15 to MLV 15 + 23.4 km

· 3.5 km of 1219 mm O.D. loop
MLV 18 to MLV 18 + 3.5 km

· 27.6 km of 1219 mm O.D. loop
MLV 24 to MLV 25

Manitoba · 19.7 km of 1219 mm O.D. loop
MLV 27 + 5.1 km to MLV 28

· 19.8 km of 1219 mm O.D. loop
MLV 28 to MLV 28 + 19.8 km

· 27.1 km of 1219 mm O.D. loop
MLV 32 to MLV 33

· 11.8 km of 1219 mm O.D. loop
MLV 33 to MLV 33 + 11.8 km

· 18.1 km of 1219 mm O.D. loop
MLV 401 + 6.4 km to MLV 402

· 23.8 km of 1219 mm O.D. loop
MLV 402 to MLV 402 + 23.8 km

Ontario · 8.5 km of 1067 mm O.D. loop
MLV 69 + 10.1 km to MLV 69 +
18.6 km

· 13.9 km of 914 mm O.D. loop
MLV 147 to MLV 147 + 13.9 km

· 10.1 km of 914 mm O.D. loop
MLV 210 to MLV 211

· 9.4 km of 914 mm O.D. loop
MLV 213A to MLV 214

· 1.6 km of 914 mm O.D. loop
MLV 215 to MLV 216

· 0.3 km of 762 mm O.D. loop
MLV 216 to U.S. Border

Location

· 14.5 km of 914 mm O.D. loop
MLV 501 + 8.8 km to Dawn Meter Station

· 32.5 km of 762 mm O.D. loop
Kirkwall to Neale Jct.

Quebec

· 35.5 km of 323.9 mm O.D. pipe
MLV 802 to U.S. Border

· 16.2 km of 508 mm O.D. loop
MLV 707 + 4.7 km to MLV 802

COMPRESSORS

Location

Saskatchewan
Manitoba

Facilities

Three 26.1 MW compressor
units (Stations 13, 21
and 41)

Ontario

Two 15.6 MW compressor sta-
tions (Stations 1211 and 1217)

METER STATIONS

Location	Facilities
Manitoba	One meter station (Emerson)
Ontario	One meter station (Niagara)
Ontario	One meter station (Dawn)
Quebec	One meter station (Napierville)

ORDER NO. TG-7-89

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

IN THE MATTER of an application dated 29 December 1988, as amended, by TransCanada PipeLines Limited ("TransCanada") pursuant to Parts III and IV 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-T1-160.

B E F O R E the Board on 21 August 1989.

WHEREAS a public hearing was held pursuant to Hearing Order GH-1-89, in the Cities of Calgary, Alberta, and Ottawa, Ontario, at which the Board heard TransCanada and all interested parties, with respect to the requested retirements;

AND WHEREAS the Board considers TransCanada's proposed compressor retirements to be "ordinary retirement" 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 number 2 at Station 5A and number 1 at Station 75A as "ordinary retirement" as defined in subsection 39(1) of the Accounting Regulations.

NATIONAL ENERGY BOARD

Louise Meagher
Secretary

Appendix IX

Excerpts from the National Energy Board Act

LOCATION OF PIPELINES

Approval of Board

31. Except as otherwise provided in this Act, no company shall begin the construction of a section or part of a pipeline unless

- (a) the Board has by the issue of a certificate granted the company leave to construct the line;
- (b) the company has complied with all applicable terms and conditions to which the certificate is subject;
- (c) the plan, profile and book of reference of the section or part of the proposed line have been approved by the Board; and
- (d) copies of the plan, profile and book of reference so approved, duly certified as such by the Secretary, have been deposited in the offices of the registrars of deeds for the districts or counties through which the section or part of the pipeline is to pass, R.S., c. N-6. s. 27:1980-81-82-83, c. 116, s.9.

Application for certificate; material to be filed

32. (1) On an application for a certificate, the company shall file with the Board a map showing the general location of the proposed line, the termini, and all cities, towns, villages, railways and navigable waters through, under or across which the line is to pass, together with such further or other plans, specifications and information as the Board considers necessary.

Notice to provincial attorney general

(2) The company shall file a copy of the application and of the map referred to in subsection (1) with the attorney general of each province to which the application relates in whole or in part, and the Board shall require notice of the application to be given by publication in newspapers or otherwise. R.S., c. N-6, s. 28.

PLAN, PROFILE AND BOOK OF REFERENCE

Plan, etc.. of pipeline

33. (1) When the Board has issued a certificate, the company shall prepare and submit to the Board a plan, profile and book of reference of the pipeline.

Details

(2) The plan and profile shall be drawn with such detail as the Board may require.

Description of lands

(3) The book of reference shall describe the portion of land proposed to be taken in each parcel of land to be traversed, giving the numbers of the parcels, and the area, length and width of the portion of each parcel to be taken, and the names of the owners and occupiers in so far as they can

Further information

(4) The plan, profile and book of reference shall be prepared to the satisfaction of the Board, and the Board may require the company to furnish any further or other information that the Board considers necessary. R.S., c. N-6, s. 29; R.S., c. 27 (1st Supp.), s. 9.

DETERMINATION OF DETAILED ROUTE AND APPROVAL

Notice to owners

34. (1) Where a company has prepared and submitted to the Board a plan, profile and book of reference pursuant to subsection 33(1), the company shall, in a manner and in a form to be determined by the Board.

- (a) serve a notice on all owners of lands proposed to be acquired, in so far as they can be ascertained; and
- (b) publish a notice in at least one issue of a publication, if any, in general circulation within the area in which the lands are situated.

Contents of notices

(2) The notices mentioned in subsection (1) shall describe the proposed detailed route of the pipeline, the location of the offices of the Board and the right of the owner and of persons referred to in subsection (4) to make, within the time referred to in subsection (3) or (4), as the case may be, representations to the Board respecting the detailed route of the pipeline.

Written statement of interest and grounds for opposition

(3) Where an owner of lands who has been served with a notice pursuant to subsection (1) wishes to oppose the proposed detailed route of a pipeline, the owner may, within thirty days of being served, file with the Board a written statement setting out the nature of the owner's interest in the proposed detailed route and the grounds for his opposition to that route

Opposition by persons adversely affected

(4) A person who anticipates that his lands may be adversely affected by the proposed detailed route of a pipeline, other than an owner of lands referred to in subsection (3), may oppose the proposed detailed route by filing with the Board

within thirty days following the last publication of the notice referred to in subsection (1) a written statement setting out the nature of that person's interest in those lands and the grounds for the opposition to the proposed detailed route of the pipeline. 1980-81-82-83, c. 80. s. 2.

Public hearing

35. (1) Where a written statement is filed with the Board pursuant to subsection 34(3) or (4) within the time limited for doing so under that subsection, the Board shall forthwith order that a public hearing be conducted within the area in which the lands to which the statement relates are situated with respect to any grounds of opposition set out in any such statement.

Notice of public hearing

(2) The Board shall fix a suitable time and place for the public hearing referred to in subsection (1) and cause notice of the time and place so fixed to be given by publishing it in at least one issue of a

Where written statements disregarded

(5) The Board is not required to give any notice, hold any hearing or take any other action pursuant to this section with respect to any written statement filed with the Board pursuant to subsection 34(3) or (4) and may at any time disregard any such written statement, if

- (a) the person who filed the statement files a notice of withdrawal thereof with the Board; or
 - (b) it appears to the Board that the statement is frivolous or vexatious or is not made in good faith.
- 1980-81-82-83, c. 80, s.2.

Matters to be taken into account

36. (1) Subject to subsections (2) and 35(5), the Board shall not give approval to a plan, profile and book of reference unless the Board has taken into account all written statements filed with it pursuant to subsection 34(3) or (4) and all representations made to it at a public hearing in order to determine the best possible detailed route of the pipeline and the most appropriate methods and timing of constructing the pipeline.

Exception

(2) The Board may approve a plan, profile and book of reference in respect of any section or part of a pipeline where no

written statement under subsection 34(3) or (4) has been filed with the Board in respect of that section or part. 1980-81-82-83, c.80, s.2.

Terms and conditions

37. In any approval referred to in section 36, the Board may impose such terms and conditions as it considers proper. 1980-81-82-83, c. 80, s.

Notice of decision

38. Where the Board has held a public hearing under subsection 35(3) in respect of any section or part of a pipeline and approved or refused to approve a plan, profile and book of reference respecting that section or part, it shall forthwith forward a copy of its decision and the reasons therefor to the Minister and to each person who made representations to the Board at the public hearing.

1980-81-82-83, c.80, s.2.

Costs of making representations

39. The Board may fix such amount as it deems reasonable in respect of the actual costs reasonably incurred by any person who made representations to the Board at a public hearing under subsection 35(3) and the amount so fixed shall be payable forthwith to that person by the company whose

pipeline route is affected by the public hearing. 1980-81-82-83, c.80,s.2.

Appendix X

ORDER NO. TG-5-89

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

IN THE MATTER OF an application dated 27 March 1989 (the "1989-90 Section 58 Application"), by TransCanada PipeLines Limited ("TransCanada") pursuant to Parts III, IV and V of the Act for, *inter alia*, an order treating the retirement of compressor unit 17A2 as "ordinary" under the *Gas Pipeline Uniform Accounting Regulations* ("the Accounting Regulations"); filed with the Board under File No. 1555-T1-160.

BEFORE the Board on 1 May 1989.

AND WHEREAS the Board heard the evidence of TransCanada and the argument of TransCanada and all interested parties in respect to the 1989-90 Section 58 Application during a public hearing held pursuant to Hearing Order No. GH-1-89, in the City of Ottawa, in the province of Ontario;

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 unit number 2 at station 17, 'A' Plant, as "ordinary retirement" as defined in subsection 39(1) of the Accounting Regulations.

NATIONAL ENERGY BOARD

Louise Meagher
Secretary

Appendix XI

Revised List of Part III Issues

Exhibit A-92 to the GH-1-89 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 Act.

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

Issue III-1 The reasonableness of TransCanada's forecast of domestic and export requirements, particularly for the 1990-91 design year. This would include, among other things, consideration of the potential impact of increased gas imports into Canada on TransCanada's forecast requirements.

Issue III-2 The reasonableness of TransCanada's long term forecast of domestic end-use natural gas demand.

Issue III-3 The economic feasibility of the proposed expansion, having regard, *inter alia*, to:

- a. whether or not the revenues from the proposed gas sales would be sufficient to recover all costs, taking into account incremental facilities costs associated with the incremental sales (i.e. whether or not there will be net benefits to Canada);
- b. aggregate net revenues at the Alberta border;
- c. the extent to which the cost of providing proposed new services would be offset by additional transportation revenues received for such services;
- d. the existence and adequacy of long term markets and supply of gas; and
- e. alternative toll methodologies to recover costs associated with the Gananoque and Napierville

Issue III-4 The appropriateness of building facilities to provide for transportation of unallocated volumes of 20 MMcfd in 1990-91.

Issue III-5 The appropriate level of transportation service to be contracted for by TransCanada on the Great Lakes system, and the likelihood that such service will be available in a timely manner.

Issue III-6 The appropriate level of transportation service to be contracted for by TransCanada on the Union system, and the likelihood that such service will be available in a timely manner.

Issue III-7 The incremental capacity required on upstream and downstream pipeline systems, and the likelihood that such service will be available in a timely manner.

Issue III-8 The continued appropriateness of designing the Western Section on the basis of peak day

requirements with provision for loss of critical compressor unit.

Issue III-9 The appropriate combination of looping, and compression for the proposed expansion, and the consistency of that combination with the long-term expansion path of the system.

Issue III-10 The appropriateness of the location of the proposed looping in light of emerging urban growth and land-use patterns.

Issue III-11 The appropriateness of the proposed routes for the Gananoque, Ontario and Napierville, Quebec, extensions.

Issue III-12 The potential environmental impacts of the proposed additional facilities, including the Niagara River and St. Lawrence River crossings.

Issue III-13 The appropriate terms and conditions to be included in any certificate or order which may be issued.