NORTHERN PIPELINE AGENCY

ANNUAL REPORT 1984-1985

Canada

Northern Pipeline Agency Canada

Administration du pipe-line du Nord Canada

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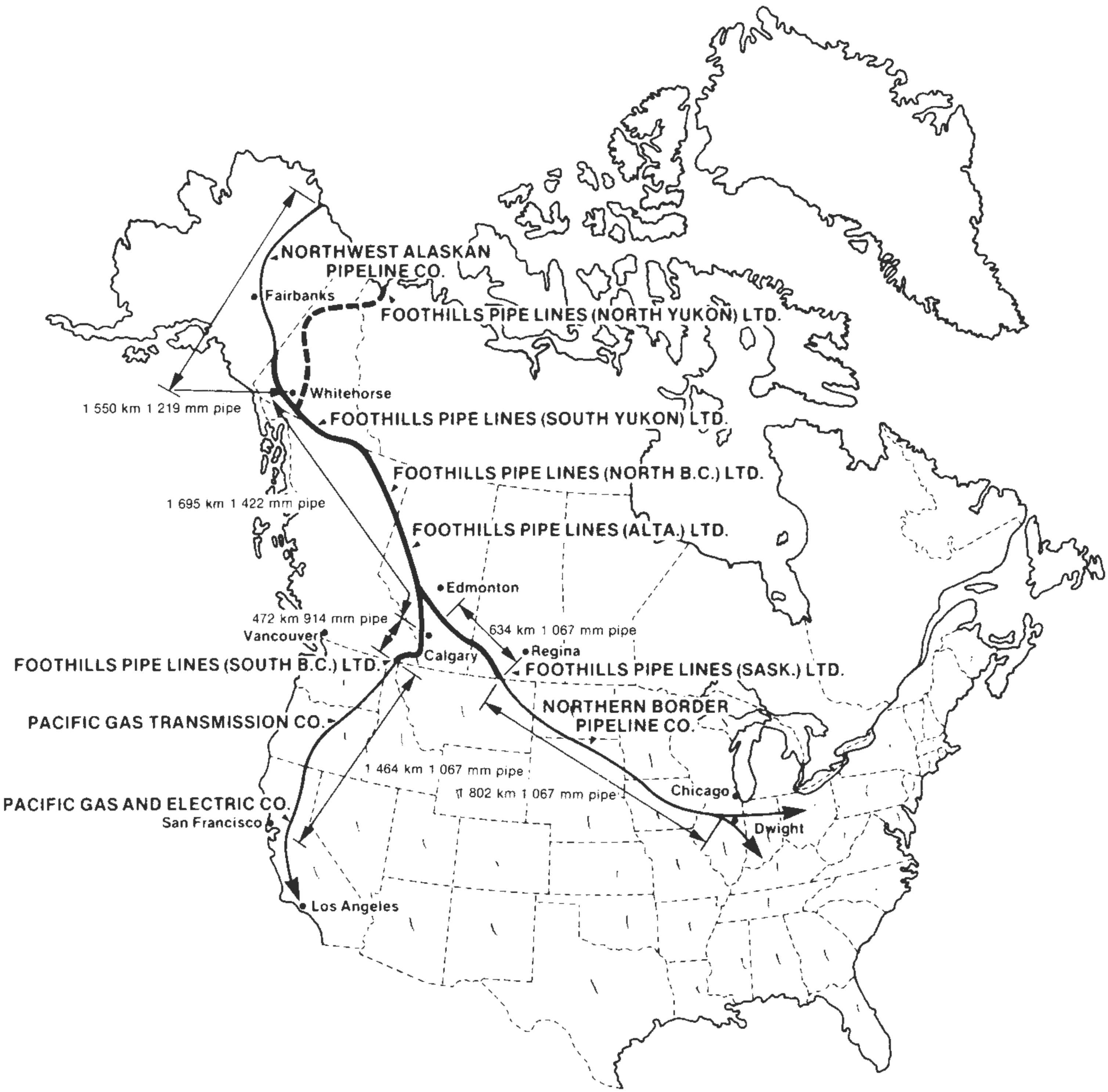
ALASKA HIGHWAY NATURAL GAS PIPELINE PROJECT



See Project Description for imperial measurements

Overview of the Alaska Highway Gas Pipeline Project

Plans for second-stage construction of the northern segments of the Alaska Highway Gas Pipeline Project in Canada and the United States essentially were put on hold during the fiscal year 1984-85 as a result of the continuing dislocation of U.S. gas markets.

Despite the substantial recovery of the U.S. economy, total gas consumption remained well below the peak reached in the 1970s and there was a significant surplus of domestic gas supplies. The downward pressure on prices resulting from this imbalance in demand and supply was reinforced by legislative and regulatory moves aimed at making the entire natural gas industry from producers to distributors more responsive to the forces in the marketplace.

These developments included new guidelines issued by the U.S. Secretary of Energy in February, 1984, requiring that volumes and prices of gas imports be governed by competitive conditions, and the provisions of the 1978 U.S. Natural Gas Policy Act abolishing all remaining price controls except those on so-called 'old gas' (gas discovered before 1978) as of January, 1985. In addition, the Federal Energy Regulatory Commission (FERC) in December, 1984, launched an extensive series of public hearings as a forerunner to proposals it intended to put forward as a further means of stimulating open competition throughout the gas industry. (In late May, 1985, the FERC issued a Notice of Proposed Rulemaking that involved a long and complex set of proposed new regulatory provisions aimed at achieving its objectives with respect to competition; in October, 1985, the Commission issued an extensive new set of regulations designed to implement the bulk of its proposals.)

As a consequence of the unsettled conditions prevailing in the gas market in the lower 48 states, plans for proceeding with second-stage development of the Alaska Highway Pipeline in order to make additional gas available from the substantial U.S. reserves at Prudhoe Bay on the North Slope of Alaska continued to be held in abeyance. At the same time, however, the principal sponsors of the project in both the United States and Canada remained confident that changing market conditions would make possible the successful conclusion of the undertaking in the foreseeable future.

In a press release issued in December, 1984, The Williams Companies, which controls the U.S. pipeline that is playing the leading role in promoting the Alaskan segment of the system, reiterated its "strong support" for the project. "Planning is continuing and the essential technical work required before final project mobilization is being completed. Industry experts agree that production capacity from the lower 48 states' gas reserves has entered a period of serious decline . . . Williams believes that Alaskan gas will be needed in the lower 48 states by the 1990s . . ." The continuing support for the project by the Canadian sponsor, Foothills Pipe Lines (Yukon) Ltd., was reflected in its application for membership in the consortium created to carry out the planning and construction of the undertaking in Alaska.

The annual report for FY 1983-84 noted that the deterioration in the U.S. gas market had not only caused a setback to planning for second-stage construction of the pipeline, but had also adversely affected the pre-built Eastern and Western Legs that had been undertaken as part of the first stage of the project for the initial purpose of exporting surplus Canadian gas to markets in the mid-west and western U.S. states. As in the case of many other pipeline systems, exports of natural gas had fallen substantially below authorized volumes as a result of falling demand and increased competition from U.S. suppliers – particularly with the development of a growing spot market for gas south of the border. Following a series of reductions in the uniform export price of gas by the Canadian government in response to these changing competitive conditions, the government in July, 1984, announced a new policy under which buyers and sellers had the option of negotiating individual pricing arrangements, effective as of the beginning of November, subject to the consideration of the National Energy Board and, ultimately, to government approval. (While initially it was stipulated that negotiated export prices could not be less that the domestic price for gas delivered at the Toronto city gate, the Canadian government adopted a revised policy in October, 1985, under which it was required only that the export price should not be less than the Canadian domestic price for gas at the nearest export point.)

As a result of the progressive changes in pricing policy to increase the competitiveness of Canadian supplies, exports of gas through the Western Leg rose from 41 per cent of contract in the November to October gas year of 1983-84 to an estimated 100 per cent for 1984-85, while on the Eastern Leg exports rose during the same period from 36 to 46 per cent of contracted volumes.

Canadian and United States Regulatory Activities

During the course of the fiscal year, the regulatory agencies on both sides of the border mainly responsible for overseeing the planning and construction of the Alaska Highway Gas Pipeline Project in their respective countries—the Northern Pipeline Agency in Canada and the Office of the Federal Inspector in the United States—continued to scale down their staffs and the extent of their operations. This development primarily reflected the fact that plans for second-stage construction of the northern portion of the project had basically been put on hold by the U.S. and Canadian sponsors. Following is an outline of some of the major developments involving the two agencies during the year.

The Northern Pipeline Agency

Continuing the move to phase down the Northern Pipeline Agency to stand-by status, the main administrative office at Calgary formally ceased to operate as of March 31, 1985—the end of the fiscal year covered by this report. This followed the earlier closing down in March 31, 1984, of the Agency's Vancouver office and of the subsequent closing in July of the office in Whitehorse as a consequence of the decision by the Canadian sponsor to close down its own office in the Yukon capital.

(The Agency's administrative headquarters in Calgary effectively ceased operations only in late June, 1985. During the intervening period following its official closing on March 31, a small number of remaining staff members were engaged in completing the financial and other records for the FY 1984-85 required for consideration by the Auditor General and for other purposes. In addition, preparations were made to transfer outstanding files relating to the pre-built Eastern and Western Legs of the pipeline to the National Energy Board, which assumed further responsibility for overseeing their operations in keeping with the provisions of the Northern Pipeline Act of 1978. All files relating to the second-stage of the project in Canada were transferred to the head office of the NPA in Ottawa.)

While a number of Agency personnel had earlier been seconded to several other government departments and agencies on a temporary basis in order to ensure their availability if second-stage construction of the project should proceed early in the second half of the 1980s as once anticipated, by the end of the fiscal year most of these arrangements had been terminated and the remaining staff engaged in NPA operations reduced to around half a dozen. (By the fall of the following fiscal year, the remaining staff of the Agency, which was based entirely in Ottawa, was reduced to three; of that number, the Commissioner and the Comptroller served on a part-time basis.) In October, 1984, Harold Millican, who had served since the creation of the Agency in the spring of 1978 as the Administrator in charge of the direction of the Calgary office, resigned his position. William Scotland, an Associate Vice-Chairman of the National Energy Board who had also served both as a Deputy Administrator and as the Agency's Designated Officer—a position established under the NPA's implementing legislation—stepped down from these latter offices at the end of the 1984-85 fiscal year and returned to the Board on a full-time basis. During the present hiatus, it is anticipated that the position of Designated Officer would be filled only on a temporary basis if it should become necessary to exercise the powers conferred on the holder of that position. Barry Yates, also a Deputy Administrator with the NPA based in Calgary, remained on secondment to another federal agency beyond the end of the fiscal year covered by this report.

With the unanimous agreement of its members, the Federal-Provincial-Territorial Consultative Council provided for under the terms of the Northern Pipeline Act undertook to meet only when requested to do so by any Council representative. Membership in the Yukon and Northern British Columbia Advisory Councils was allowed to lapse for the time being in view of the dormant state of the second-stage of the project.

Office of the Federal Inspector

The Office of the Federal Inspector (OFI) maintained a significant level of activity during the course of the fiscal year in processing submissions by the Alaskan consortium of pipeline companies and gas owners aimed at completing most of the design criteria governing construction of the proposed gas conditioning plant and the pipeline in Alaska. These submissions completed a two-year effort to cover some 30 different aspects required as part of the Pipeline Design Criteria Manual. Of particular importance was the completion and approval of the design criteria developed to deal with one of the most critical technical problems confronting the project – the risk of pressures that could cause the rupture of the pipeline as a result of frost heave in areas of moisture-laden permafrost. Previously the OFI had approved design criteria involving telecommunications, compressors and metering stations, the operations control centre and some 70 per cent of the gas conditioning plant to be built at Prudhoe Bay.

By the end of the 1984-85 fiscal year, the Office of the Federal Inspector had a full-time staff of some 10 people. The Federal Inspector, John T. Rhett, indicated his intention of further reducing significantly the remaining staff of the agency during the côurse of the following year. (Subsequently, a proposal submitted by Mr. Rhett for the transfer of the OFI to the Department of Energy for administrative purposes and the continued exercise of the responsibilities of the Federal Inspector on a part-time basis by the incumbent was approved by the Administration.)

During the course of the year, three U.S. pipeline companies withdrew from the Alaskan Northwest Consortium sponsoring the project in Alaska. The remaining membership numbered eight – five pipeline companies and three owners of the gas at Prudhoe Bay. As noted earlier, Foothills Pipe Lines (Yukon) Ltd., sponsor of the project in Canada, applied for membership in the Alaskan Consortium – an application that was still under consideration by year's end.

Finance, Personnel and Official Languages

Finance and Personnel

Section 12 of the *Northern Pipeline Act* provides for an annual audit of the accounts and financial transactions of the Agency by the Auditor General of Canada and for a report thereon to be made to the Minister. Section 13 of the Act requires the Auditor General's report to be laid before Parliament, together with the Minister's annual report on the operations of the Agency. To comply with these requirements, the report of the Auditor General of Canada on the accounts and financial transactions of the Northern Pipeline Agency for the year ended March 31, 1985, is reproduced as Appendix A.

Estimates for 1984-85 provided $3.8 million and 30 person-years for the operation of the Agency. The full amount of funds and person-years were utilized in carrying out the services of the Northern Pipeline Agency. Included in expenditures were employment termination costs of $620,000 incurred as a result of the further reduction in staff that was undertaken because of the continuing reduction in the activities of the Agency due to the completion of construction of the first stage of the Alaska Highway Gas Pipeline Project and continuing delays in the scheduled commencement of the second stage of the northern segments.

Section 29 of the *Northern Pipeline Act* provides for recovery of the costs of the Agency from the company constructing the pipeline in accordance with regulations made under subsection 46.1(2) of the *National Energy Board Act*. During the year, recoveries totalling $3.4 million were made. Of this total, $2.3 million was recovered from Foothills in keeping with the provisions of the *Northern Pipeline Act,* which represented the unrecovered balance from the previous fiscal year and part of the 1984-85 expenditures by the Agency. The additional recovery of $1.1 million comprises mainly recoveries from various other departments and agencies of the federal government to which certain NPA employees had been seconded as part of the phasing down of Agency activities. All recoveries were credited to the Consolidated Revenue Fund.

Official Languages Plan

Although the Northern Pipeline Agency is a separate employer under Part II of the *Public Service Staff Relations Act* and is not subject to the *Public Service Employment Act*, the language policies and procedures established for other government departments and agencies have generally been applied. In addition, the Agency conforms as fully as possible with the provisions of the Official Languages Act.

These policies are contained in the Agency's Official Languages Plan and are being monitored each year. It is becoming progressively more difficult to comply with the Plan as the staff of the Agency is reduced to a stand-by status pending resumption of planning and construction of the pipeline. However, to the extent possible, the Plan has remained in effect.

In order to allow members of the public to comment on the linguistic aspect of services provided, enquiries may be made by telephoning (613) 993-7466 or by writing to the Head Office of the Northern Pipeline Agency, Station 210, Centennial Towers, 200 Kent Street, Ottawa, Ontario, K1A 0E6.

AUDITOR GENERAL OF CANADA

VÉRIFICATEUR GÉNÉRAL DU CANADA

AUDITOR'S REPORT

The Honourable Don Mazankowski, P.C., M.P.,
Minister responsible for the Northern Pipeline Agency

I have examined the statement of expenditure and receipts of the Northern Pipeline Agency for the year ended March 31, 1985. My examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as I considered necessary in the circumstances.

In my opinion, this statement presents fairly the expenditure and receipts of the Agency for the year ended March 31, 1985 in accordance with the accounting policies set out in Note 2 to the statement, applied on a basis consistent with that of the preceding year.

D.L. Meyers, F.C.A.
Deputy Auditor General
for the Auditor General of Canada

Ottawa, Canada
September 16, 1985

NORTHERN PIPELINE AGENCY

Statement of Expenditure and Receipts
for the year ended March 31, 1985

	1985	1984
Expenditure (Note 3)		
Salaries and employee benefits	$3,082,353	$4,119,417
Rentals	448,312	727,907
Professional and special services	136,971	231,508
Travel and communication	97,141	251,987
Materiel and supplies	8,653	29,696
Information	8,000	21,237
Other	5,148	24,471
Furniture and equipment	—	8,160
	3,786,578	5,414,383
Receipts		
Recovery of costs from Foothills Pipe Lines (Yukon) Ltd. (Note 4)	2,350,612	4,300,422
Secondment of Agency staff	918,360	1,354,690
Other recoveries	89,186	27,097
Easement fees	27,594	27,594
	3,385,752	5,709,803
Excess of expenditure out of (receipts deposited to) the Consolidated Revenue Fund over receipts deposited to (expenditure out of) the Consolidated Revenue Fund	$ 400,826	$ (295,420)

Approved by:

Commissioner

Chief Financial Officer

NORTHERN PIPELINE AGENCY

Notes to Statement of Expenditure and Receipts
March 31, 1985

1. Authority and objective

The Agency was established in 1978 by the Northern Pipeline Act (S.C. 1977-78, c. 20). The objective of the Agency is to facilitate the efficient and expeditious planning and construction of the Alaska Highway Gas Pipeline in a manner consistent with the best interests of Canada as defined in the Act.

2. Accounting policies

Expenditure

Expenditure includes the cost of work performed, goods received or services rendered prior to April 1, except for the costs of the employees' contingency and termination plans which are charged to expenditure in the year in which the employee leaves the Agency. Capital acquisitions are charged to expenditure in the year of purchase. Expenditure also includes any costs incurred on behalf of the Agency by government departments, except for contributions to employee benefit plans which are based on budgeted salary costs. All expenditure is financed by parliamentary appropriations and government departments which provided services without charge.

Receipts

Receipts are recorded on a cash basis and are credited to the Consolidated Revenue Fund. Recovery of costs from Foothills Pipe Lines (Yukon) Ltd. is based on quarterly billings.

3. Expenditure

Expenditure for the year was provided for as follows:

	1985	1984
Parliamentary appropriations		
Economic Development		
Vote 5—Program expenditures	$3,488,000	$5,150,400
Statutory—Contributions to employee benefit plans	301,000	426,000
	3,789,000	5,576,400
Amount not required	2,422	162,017
	$3,786,578	$5,414,383

4. Recovery of costs from Foothills Pipe Lines (Yukon) Ltd.

	1985	1984
Costs recoverable for the year		
Expenditure for the year	$3,786,578	$5,414,383
Adjustment in respect of employee benefits	(154,000)	—
Secondment of Agency staff	(918,360)	(1,354,690)
Other recoveries	(89,186)	(27,097)
	2,625,032	4,032,596
Costs to be recovered in the following year	(462,241)	(187,821)
Prior year costs recovered in the current year	187,821	455,647
	$2,350,612	$4,300,422

The Agency's share of employee benefits paid to the government for the last two years has exceeded the actual employer's share. As a result, costs recoverable for the year ended March 31, 1985 have been adjusted accordingly. The 1984 figure for other recoveries has been restated to remove the $27,594 of easement fees which does not affect costs recoverable.

5. Employees' contingency and termination plans

Contingency plan

Senior and certain other key employees who remain with the Agency until completion of their responsibilities and whose service exceeds two years are entitled to an allowance of 13% of accumulated salary received. Based on employees on strength who may become entitled to this benefit in the future, unpaid costs as at March 31, 1985 are estimated at $304,000 (1984 – $228,000).

Termination plan

On July 15, 1982, Treasury Board approved a termination plan for employees who are separated due to the reduction of activities announced on May 1, 1982. The amount of termination allowance is based on years of service and includes an amount for relocation as necessary. For terminations scheduled after March 31, 1985 a total of $51,775 has been prepaid. Based on remaining projected terminations unpaid costs, including relocation costs, as at March 31, 1985 are estimated at $195,000 (1984 – $1,075,000).

6. Reduction of activities

On May 1, 1982, the United States sponsors of the Alaska Highway Gas Pipeline and Foothills Pipe Lines (Yukon) Ltd. announced that the target date for completion had been set back and all parties were to scale down their activities.

The Agency has been able to reduce staff costs through secondments to other departments and by terminations and in June 1985 the Agency closed their Calgary office.

7. Comparative figures

For comparative purposes, some 1984 figures have been restated to conform with the 1985 presentation.

The Role of the Northern Pipeline Agency

The Northern Pipeline Agency was established with the proclamation of the *Northern Pipeline Act* on April 13, 1978, for the purpose of overseeing the planning and construction of the Canadian portion of the Alaska Highway Gas Pipeline to provide access to the substantial Arctic natural gas reserves of both Canada and the United States.

In addition to creating the Agency, the Act provides the legislative authority required to implement the bilateral agreement of September 20, 1977, between the two nations, which governs the joint undertaking of the 9 000-km (5,500-mi.) system. A brief description of this system can be found in Appendix C.

The Agency was created as the principal instrument for carrying out the objects of the legislation approved by Parliament. The Agency's mandate is twofold. It is required to regulate the project and to facilitate the efficient and expeditious planning and construction of the system in Canada by the Foothills Group of Companies. It is also required to ensure that the project is carried forward in a way that will yield the maximum economic, energy and industrial benefits for Canadians with the least possible social and environmental disruption. In particular, the Agency is directed by the Act to take account of the local and regional interests of residents, especially native residents, in areas affected by the undertaking.

In an unprecedented step, the House of Commons in April, 1978, agreed to the establishment of a Standing Committee on Northern Pipelines to maintain continuing surveillance over the implementation of the *Northern Pipeline Act* and the operations of the Northern Pipeline Agency. The Committee has conducted several meetings following its formation in June of that same year to hear testimony from senior officers of the Agency and of the Canadian and United States project companies, as well as others.

In June, 1978, the Senate also adopted a motion for the establishment of a Special Committee on the Northern Pipeline with authority to "inquire into all matters relating to the planning and construction of the pipeline for the transmission of natural gas from Alaska and Northern Canada...". The Senate Committee also has held a number of hearings related to the project since its formation.

The Northern Pipeline Agency was established to provide a "single window" for the conduct of virtually all dealings at the federal level with the Foothills Group of Companies, which was authorized under the Act to undertake the project in Canada. In keeping with the provisions of the legislation, many of the regulatory powers of other federal departments and agencies relating to the planning, construction and operation of the Canadian system have been transferred to the Northern Pipeline Agency. The principal exception involves responsibilities reserved exclusively to the National Energy Board or shared between the Board and the Agency. In addition, the Agency is responsible for facilitating the co-ordination of activities bearing on the project that involve other arms of the federal government, other levels of government in Canada, and U.S. departments and agencies.

The management and direction of the Agency come under the authority of a Minister designated for this purpose by the Governor in Council. A Commissioner appointed by Order in Council serves under the

Minister as his deputy in charge of the Agency. The Commissioner is based at the head office in Ottawa. The main operational office was located in Calgary and until it was closed during 1985 functioned under the direction of the Administrator appointed by Order in Council, who initially was also responsible for the day-to-day direction of regional offices located in Vancouver, British Columbia, and Whitehorse, Yukon Territory. As provided for under the Act, a member of the National Energy Board serves as its Designated Officer, and also as a Deputy Administrator of the Agency. The Designated Officer exercises the powers of the Board that were delegated by it on July 27, 1978. Following a further delegation of authority from the Board in September, 1981, the Designated Officer also exercises those powers contained in Parts I, II and III of the Gas Pipeline Regulations with respect to the Alaska Highway Gas Pipeline.

Ottawa—Head Office
The Hon. Mitchell Sharp, P.C., Commissioner,

Centennial Towers (Station 210)
200 Kent Street,
Ottawa, Ontario,
K1A 0E6

Project Description

The Alaska Highway Gas Pipeline Project is a large-diameter system that will initially transport natural gas from the North Slope of Alaska across Canada to the lower 48 states. It will also provide access through the Dempster Lateral to Canada's own reserves in the Mackenzie Delta-Beaufort Sea area of the Northwest Territories as and when they are required.

In 1980, Canadian and U.S. authorities approved the early construction of the Western and Eastern Legs that make up the southern portions of the system initially to permit the export of surplus Canadian gas to U.S. markets. A brief outline of this first-stage construction is given below.

Foothills Pipe Lines (Yukon) Ltd. of Calgary, Alberta, is the parent company responsible for the Canadian portion of the project. It is owned equally by Nova, an Alberta Corporation, of Calgary, Alberta, (formerly known as the Alberta Gas Trunk Line Company Ltd.), and Westcoast Transmission Company Ltd., of Vancouver, British Columbia.

The mainline system in Canada has been or will be built in five segments by the following subsidiary companies:

Foothills Pipe Lines (South Yukon) Ltd.
Foothills Pipe Lines (North B.C.) Ltd.
Foothills Pipe Lines (Alta.) Ltd.
Foothills Pipe Lines (South B.C.) Ltd.
Foothills Pipe Lines (Sask.) Ltd.

A sixth subsidiary, Foothills Pipe Lines (North Yukon) Ltd., will build the Dempster Lateral if and when it is approved by the National Energy Board.

In the United States, the Alaskan segment will be built and operated by the Northwest Alaskan Pipeline Company on behalf of the Alaskan Northwest Natural Gas Transportation Company. South of the 49th parallel, Northern Border Pipeline Company, a consortium made up of four U.S. transmission companies and one Canadian company, TransCanada PipeLines Ltd., has already constructed most of the planned Eastern Leg of the system. Two California companies – Pacific Gas Transmission Company and its parent corporation, Pacific Gas and Electric Company – have completed first-stage construction on the Western Leg in the United States.

The mainline project will comprise almost 7 720 km of pipe in the two countries. The diameter of the pipe will be of 1 422, 1 219, 1 067 and 914 mm. A total of approximately 3 270 km will be in Canada, 1 180 km in Alaska and 3 270 km in the United States south of the 49th parallel.[1] An additional 1 200 km of 860 mm pipe will be laid when and if the Dempster Lateral is approved.

[1] The total project will comprise almost 4,790 miles of 56-, 48-, 42- and 36-inch pipe. Approximately 2,030 miles will be in Canada, 730 miles in Alaska and 2,030 miles south of the 49th parallel. The Dempster Lateral would comprise approximately 746 miles of 34-inch pipe.

The mainline through Canada will consist of the following lengths and diameters.[2]

Yukon	375 km of 1 219 mm
	443 km of 1 422 mm
B.C. (North)	715 km of 1 422 mm
Alberta	634 km of 1 422 mm
	377 km of 1 067 mm
	301 km of 914 mm
Saskatchewan	258 km of 1 067 mm
B.C. (South)	171 km of 914 mm

The pipeline in Alaska will be approximately 1 180 km of 1 219 mm pipe. In the lower 48 states, the Eastern Leg will consist of almost 1 800 km of 1 067 mm pipe and the Western Leg will involve about 1 470 km of 1 067 mm line.[3]

The system is designed so that when fully powered it would be able to carry 68 million cubic metres per day (2.4 billion cubic feet per day) of Alaskan gas and, if the Dempster Lateral is approved, an additional 34 million cubic metres per day (1.2 billion cubic feet per day) of Canadian Mackenzie Delta-Beaufort Sea gas.

The capital costs for the entire system, excluding those for the Dempster Lateral from the Mackenzie Delta and the gas conditioning plant at Prudhoe Bay, Alaska, were originally estimated to be $10.7 billion (Cdn.). This estimate reflected a cost of $4.3 billion for the Canadian segments and $6.4 billion for the U.S. segments. These estimates were based on the assumption that the entire system would be completed and ready to go into operation by January, 1983, as provided for in the timetable envisaged in the Canada-United States Agreement.

In testimony prepared for the congressional committee hearings on the U.S. legislation waivers in October, 1981, John G. McMillian, Chairman of the Alaskan Northwest Natural Gas Transportation Co., indicated that approximately $38.7 billion to $47.6 billion (U.S.) would be required to construct the entire system in both countries, including the gas conditioning plant and the $2.4 to $2.7 billion estimated for first-stage construction. Estimates of the amounts needed for financing purposes were based on a range of inflation and interest rates in the United States from 7 per cent to 11 per cent and 10 per cent to 14 per cent, respectively, and on a revised-in-service date of late 1986.

A submission by Foothills Pipe Lines (Yukon) Ltd. to the congressional committee hearings estimated that approximately $17.6 billion on an escalated basis would be required to finance the entire Canadian section, based on a late 1986 completion date. Foothills subsequently indicated in testimony before the Special Committee of the Senate on the Northern Pipeline in May, 1982, that the Canadian sections would cost approximately $19 billion (Cdn.) in as-spent dollars given a 1987 completion date.

The pipeline sponsors in Canada and the United States had yet to file revised cost estimate with their respective regulatory authorities by the end of the fiscal year under review to reflect the further extension of the completion date to late 1989.

The map found on page vi provides a description of the proposed pipeline route.

First-Stage Plan for Construction of the Southern Sections

The first-stage plan provided for construction in Canada and the United States of all or part of the proposed Western and Eastern Legs of the system from the point where they branch off from the main line 105 km (63 mi.) north of Calgary, Alberta.

The first-stage program involves the laying of some 2 992 km (1,858 mi.) of pipe in Canada and the United States, of which 850 km (526 mi.) are in Canada. Capital costs are estimated at approximately $1.4 billion (U.S.) for the American section and $928 million (Cdn.) for the Canadian. Costs for the Canadian sections include provision for actual funds used during construction, as well as certain other expenses associated with regulatory charges. The system will be capable of transporting some 32.11 million cubic metres (1.14 billion cubic feet) of Alberta gas a day to U.S. markets, rising to a possible peak flow between 1983 and 1986 of 38.03 million cubic metres (1.35 billion cubic feet).

Construction of the Western Leg in Canada, which began in August, 1980, involved the installation of seven loops over a distance of 215 km (132 mi.) of pipe, 914 mm (36 in.) in diameter. Work on this section was completed in the spring of 1981.

[2]

Yukon	233 mi. of 48 in.	Saskatchewan	160 mi. of 42 in.
	275 mi. of 56 in.		
B.C. (North)	444 mi. of 56 in.	B.C. (South)	106 mi. of 36 in.
Alberta	334 mi. of 56 in.		
	234 mi. of 42 in.		
	187 mi. of 36 in.		

[3] The pipeline in Alaska will be approximately 730 miles of 48-inch pipe. In the lower 48 states, the Eastern Leg will consist of almost 1,120 miles of 42-inch pipe and the Western Leg will involve about 911 miles of 42-inch line.

Construction of the U.S. Western Leg, which began in December, 1980, involved the installation of 258 km (160.5 mi.) of loops to the Pacific Gas Transmission pipeline from the Canadian border point at Kingsgate, B.C., to Stanfield, Oregon. From Stanfield, the Canadian gas is being transported to southern California through the addition of some 565 km (361 mi.) of loops to Northwest Pipelines and El Paso Natural Gas, which has been designated the Western Delivery System. For purposes of transmission of Alaskan gas on the Western Leg, the Pacific Gas Transmission and Pacific Gas and Electric systems will be further extended from Stanfield to Antioch, California, which is close to San Francisco. On October 1, 1981, gas began to flow through the Western Leg to U.S. markets.

The Eastern Leg, in Canada and the United States, is comprised of 1 956 km (1,215 mi.) of 1 067-mm (42-in.) pipe. Construction began in both countries in May, 1981, and was to be completed over a two-year construction period. Gas began to flow through the system on September 1, 1982.