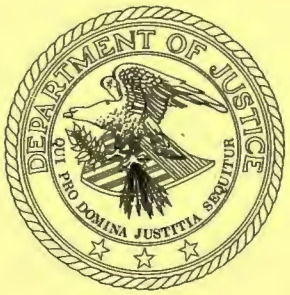

United States
Department of Justice

REPORT OF
THE ATTORNEY GENERAL

PURSUANT TO SECTION 19 OF THE

ALASKA
NATURAL GAS
TRANSPORTATION
ACT OF 1976

REPORT

OF THE

ATTORNEY GENERAL

Pursuant To Section 19

Of The

Alaska Natural Gas Transportation Act Of 1976

July, 1977

TABLE OF CONTENTS

EXECUTIVE SUMMARY

This report is submitted to Congress in compliance with Section 19 of the Alaska Natural Gas Transportation Act of 1976. That provision requires the Attorney General to conduct a thorough study of the antitrust issues and problems relating to the production and transportation of Alaskan natural gas.

Based on our analysis of all information currently available, we find that antitrust considerations do not militate against selection of any of the three proposed projects as the transportation system for moving Alaskan natural gas to the lower 48 states; nor do competitive considerations point to selection of one of the three projects in preference to the other two. Although we have identified several potential antitrust problem areas associated with the projects, these problems may impact on any project that is selected and thus do not make one project seem more desirable than the others.

This report has identified several potential competitive problem areas, which can be addressed through: (1) the imposition of conditions upon the license issued to whichever project is chosen; (2) the enactment of legislation; and (3) collateral action by the Federal Power Commission, or its successor agency. Since some of the identified problems are not directly associated with the transportation of natural gas but are associated with the sale of natural gas, these problems would have to be addressed in the context of the required examination of the gas purchase contracts.

The report first provides a general introduction to the three proposed projects, the methods of transportation and routes proposed and the participants in each proposed project. There are two overland pipeline projects proposed by Alcan and Arctic Gas, and a combination pipeline and liquified natural gas tanker system proposed by El Paso.

(1) The Alcan route follows the Alaska oil pipeline route to Fairbanks and then follows the Alcan Highway through Canada. Alcan has proposed two different sized pipelines. Originally Alcan proposed a 42-inch pipeline but more recently has proposed a 48-inch pipeline similar to that of Arctic Gas.

(2) The Arctic Gas route proceeds east from the North Slope to the Mackenzie Delta of Canada, where it is expected additional gas reserves will be developed. The route then proceeds south through Canada to the United States border.

(3) The El Paso project calls for a pipeline to follow the Alaska oil pipeline to Point Gravina on Prince William Sound. There the gas would be converted to liquid natural gas and shipped by tanker to the coast of California.

The proponents of the three projects are as follows:

(a) Arctic Gas --

Alaska Arctic Gas Pipeline Company
Canadian Arctic Gas Pipeline Company, Ltd.
Alberta Natural Gas Company, Ltd.
Northern Border Pipeline Company
Pacific Gas Transmission Company
Pacific Gas and Electric Company

The first two above are shell companies, formed to construct and operate the pipeline in Alaska and Canada. Owners of the two companies are:

American Members --

Columbia Gas Transmission Corporation
Michigan Wisconsin Pipe Line Company
Natural Gas Pipe Line Company of America
Northern Natural Gas Company
Pacific Gas & Electric Company
Pacific Lighting of California
Panhandle Eastern Pipe Line Company
Texas Eastern Transmission Corporation

Canadian Members --

Alberta Natural Gas Company, Ltd.
The Consumers' Gas Company
Canada Development Corporation
Gulf of Canada, Ltd.
Imperial Oil, Ltd. (a 70 percent owned subsidiary of Exxon)
Northern and Central Gas Company, Ltd.
Shell Canada, Ltd.
TransCanada PipeLines, Ltd.
Union Gas, Ltd.

(b) Alcan --

Alcan Pipeline Company (a wholly-owned subsidiary of Northwest Pipeline Company)
Alberta Gas Trunk Line Company, Ltd.
Alberta Gas Trunk Line (Canada), Ltd.
Westcoast Transmission Company, Ltd.
Foothills Pipeline (Yukon), Ltd.

(c) El Paso --

The El Paso project is proposed by El Paso Alaska Company, a wholly owned subsidiary of El Paso Natural Gas Company.

The gas transportation and distribution industries are not highly concentrated on a national basis at this time. Although standard industry concentration measures are less meaningful in the natural gas industry because it is pervasively regulated

and because pipelines are to a great extent natural monopolies; these ratios and individual company shares do give an indication of the relative industry positions of the prospective Alaskan natural gas participants.

The proponents of the El Paso project control 8.2 percent of gas supplies from all sources (as of 1974), the Alcan American proponent controls 4.3 percent and the Arctic Gas American proponents control 36 percent of gas supplies from all sources. Although there is some danger that the sponsors of the Arctic Gas project, if they were the only purchasers of Alaskan gas, could use their control of Alaskan gas in combination with their control of other gas supplies to manipulate displacement plans to their own advantage or to affect regional competition among pipelines, regulation by the Federal Power Commission minimizes this danger.

Present Federal Power Commission regulation of city gate prices also appears to preclude an opportunity for competitive abuse by the gas producers or transmission companies provided the price ceilings set by Federal Power Commission regulation are effective. However, if the regulation of the wellhead price of gas were relaxed and the Alaskan gas producing areas were workably competitive, producer ownership or control of the transportation system could circumvent Federal Power Commission regulation of the pipeline and monopoly profits could be taken by the integrated company by transferring some or all of the profits stemming from the transportation monopoly to unregulated upstream

production operations through denial of access to non-owners and restricting downstream supply. If the regulation of the wellhead price of gas were relaxed and the Alaskan gas producing areas were not workably competitive, but were instead characterized by producer market dominance, gas supplies could be restricted at the production stage without any need to derive market power from the pipeline. However, such market power is not necessarily permanent and could be reduced by discovery and development of new fields by other producers, creating a situation where an integrated producer/pipeline owner would seek to restrict access and throughput to take monopoly profits. Therefore, we recommend that an ownership interest, or participation in any form in the transportation system, by one or more gas producers of significant amounts of gas be prohibited. The license to be issued to the selected system should contain a condition that prevents participation in any manner by such gas producers.

Ownership of a transportation system by the buyers of gas will not result in any potential anticompetitive conduct as long as Federal Power Commission regulation of city gate prices continues in the present mode, which it appears likely to do. If the regulatory scheme changes, potential monopsony problems can be cured by appropriate regulatory action. Therefore, we do not oppose ownership of the transportation systems by the buyers of the gas.

During the period from 1971 to 1975 the major North Slope producers, Exxon, ARCO and BP/Sohio entered into agreements to

negotiate for the sale of their natural gas with various transmission companies, all members of the Arctic Gas consortium. These agreements called for advance payments from the transmission companies to help the producers develop the North Slope fields. In December, 1975, the Federal Power Commission struck down all advance payment contracts entered into after December 28, 1973, as not in the national interest. Thus, there is currently no plan for distribution of Alaskan gas.

Collateral to these advance payment agreements, the transmission companies entered into a variety of side arrangements with the producers. The side arrangements provided for renegotiation of existing gas sale contracts in the lower 48 states to raise prices or to permit revenue sharing between producer and pipeline with respect to existing production. These side arrangements are clear evidence of evasions of wellhead price regulation and demonstrate the extreme difficulty of holding down the price of a scarce resource. Some pipeline companies would be disadvantaged in seeking to gain access to North Slope gas if these arrangements were to continue, since not all pipeline companies have existing relationships that can be altered or other goods or services to barter in addition to paying the wellhead price. The competitive effects of this disadvantage, if any, are uncertain. It may well be that the Federal Power Commission should require disclosure of all collateral considerations in our gas purchase agreement. The Commission could then carefully examine each Alaskan gas purchase

contract and disapprove or condition any such agreement that it finds not to be in the public interest.

With current Federal Power Commission regulation of well-head gas prices, competitive forces cannot operate to distribute gas in the most efficient manner. If a wide distribution of Alaskan natural gas is deemed important, it may be necessary to create a regulatory allocation mechanism.

Competition among pipelines for existing customers and new customers may exist in regional markets. Regional competition can be an important complement to regulation and its importance has been recognized by Congress, the courts and the natural gas industry. The potential for this competition should be preserved to the greatest extent practicable. Several problems associated with the operation of an Alaskan natural gas transportation system arise because of potential effects on this regional competition.

Equal access to the transportation system, as well as other competition rules, would be required if producers are permitted to participate in the Alaskan natural gas transportation system. Moreover, even where producers are not owners, equal access to a transportation system retains some importance as a means to preserve regional competition among pipeline companies by preventing owners of the transportation systems from denying or restricting access to other pipelines that might compete in regional markets.

Section 13(a) of the Alaska Natural Gas Transportation Act provides for equal access to a proposed transportation system.

Although the Federal Power Commission interprets this provision to mean that an Alaskan natural gas transportation system must be operated as a common carrier, it is not clear this was the intention of Congress. Read literally, the statute merely provides that access cannot be denied based on ownership or the lack thereof. We believe that those facilities (pipelines, LNG facilities, etc.) constructed or utilized as an integral part of the system carrying gas to the lower 48 states should be operated as common carriers, with equal access thereto available to all purchasers and shippers of Alaskan natural gas. Congress ought to clarify the ambiguous language of existing Section 13(a) to clearly state that the Alaskan natural gas transportation system be operated as a common carrier.

Section 13(a) does not require the transportation system to implement a prorationing scheme in the event the system achieves full capacity, nor does it permit or require any government agency to order such prorationing. Such prorationing during the period of construction of additional capacity is necessary to insure no shipper may be competitively disadvantaged. To insure the equal access provided for under Section 13(a), we recommend that Congress consider granting the Federal Power Commission authority, where gas is available in excess of pipeline capacity, to order prorationing of pipeline capacity among shippers.

It has been argued that retaining Section 13(a) may prove to be an impediment to financing. We find that Section 13(a) will not be such an impediment, since pipeline companies will be

willing to invest in order to insure the construction of such a system. In addition, the possibility of receiving the substantial cash flows from the system which would result from ownership is another incentive to invest in the system.

It is likely that much of the Alaskan gas will be delivered throughout the lower 48 states by displacement rather than by direct delivery. Displacement is a process that would allow Alaska gas to be supplied to conveniently located customers of other pipeline systems that, in turn, could use their "displaced" gas to serve customers of other pipelines. Such a displacement scheme provides considerable savings and ease of delivery but also creates two potential problems. First, a transmission company could thwart the displacement plan by refusing to cooperate and displace gas in its system. To remedy this problem we recommend that legislation be enacted to give the Federal Power Commission, or its successor agency, authority to order participation in displacement programs for Alaskan natural gas.

Displacement also presents potential for anticompetitive activity because implementation of a displacement program requires pipeline companies to meet to agree upon supply reallocation. Obviously, the potential for anticompetitive agreements in the implementation of such a process exists, and almost regardless of the actual risks of such agreements being made, the public perception that such possibilities exist requires some antitrust protection.

This is not an insuperable problem. If the companies do no more than is reasonably necessary to effect the displacements, no antitrust issues should be presented. A method of insuring that no anticompetitive discussions or acts take place is to have interested government agencies monitor such meetings, and to have proposed allocation plans subject to government review and approval.

An all-events cost-of-service tariff has been proposed that would guarantee to the owners full reimbursement of all costs associated with the operation of the transportation system. These costs would be passed on to the consumer. These guarantees extend to all unit transportation costs, even if underutilization of the pipeline makes the unit cost excessively high. Guaranteeing these costs would eliminate incentives for the transportation system owners to prudently determine pipeline size and propose the most efficient pipeline based upon expections of deliverability.

The deliverability of the Prudhoe Bay reserves is unsettled and highly disputed. The forecasts vary substantially; however, 2.0 Bcf/d appears to be the most likely rate of deliverability. The producers have stated their oppostition to any form of deliverability guarantee and, since gas and oil production are related, may in the future restrict or eliminate gas production in order to increase the production of higher-priced oil. With the best deliverability estimate being 2.0 Bcf/d and the possibility of less gas production, there is potential for underutilization of

the transportation system. Underutilization will mean higher unit costs of transportation and under the proposed tariff, this higher transportation cost will be borne by the consumer. Deliverability should be carefully evaluated before a system is selected, and the high cost of constructing a system is undertaken. Further, the sizing of the proposed pipelines should be carefully evaluated, since the proposed tariff guarantees may have diminished incentives on the part of the proponents to determine and propose the most efficient pipeline size.

REPORT OF THE ATTORNEY GENERAL PURSUANT TO SECTION 19 OF THE ALASKA NATURAL GAS TRANSPORTATION ACT OF 1976

To the Senate and House of Representatives of the United States of America in Congress assembled:

I have the honor to submit the following report in compliance with Section 19 of the Alaska Natural Gas Transportation Act of 1976. That provision requires the Attorney General to conduct a thorough study of the antitrust issues and problems relating to the production and transportation of Alaskan natural gas and to submit a report to Congress containing his findings and recommendations. */

This report sets forth the principal problems associated with both production and transportation of Alaska gas revealed by our study. Study of these and lesser issues will continue.

Based on our analysis of information currently available, competitive considerations do not point to selection of any one of the three competing projects in preference to the other two.

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*/ Attorney General Bell did not participate in the preparation of this Report due to conflict of interest considerations. Responsibility for this report was delegated by Mr. Bell to Deputy Attorney General Flaherty.

Nor do we believe that antitrust considerations should preclude selection of any one of the projects. There are, however, potential competitive problems associated with operational aspects of all of the proposed projects; this report contains an analysis of these problems and recommendations that, if accepted, would minimize anticompetitive effects. In our view, however, the factors relating to final project selection are so numerous and complex and the competitive distinctions between the competing projects so small, that it would be inappropriate for us to do more than enumerate and evaluate these factors.

The Report is divided into six sections. Section I is a general introduction, containing a description of each of the projects, the project participants, and the positions of the participants in the natural gas industry. Section II reviews the process leading up to a selection of a route and it states our conclusions as to route and project selection. Section III is a discussion of the problems involved in the ownership of the transportation system. Section IV contains a discussion of the problems associated with obtaining access to North Slope gas and access to the transportation system and their impact on the competitiveness of the system. Section V reviews problems involved with the operation of the transportation system and Section VI contains our conclusions and recommendations.

I. INTRODUCTION

A. Description of Projects and Participants

1. Description of Projects

The Federal Power Commission commenced hearings on April 7, 1975, on proposed applications for authority to transport Alaskan natural gas to the lower 48 states. Initially, two applications had been presented to the Commission, one from the Gas Arctic-Northwest Project Study Group, and one from El Paso Alaska Company. In mid-1976, Alcan Pipeline Company presented its application. An alternative proposal by Alcan Pipeline Company was submitted to the Commission on March 8, 1977. */

The three proposed projects offer significantly different approaches to the delivery of natural gas to the lower 48 states from the North Slope of Alaska. A summary of each project as proposed to the Commission follows.

a. Alaskan Arctic Gas Pipeline Company

This project (hereinafter Arctic Gas), originally proposed under the name of the Gas Arctic-Northwest Project Study Group, was the first formal proposal presented to the Commission for moving North Slope gas. It was filed in March 1974. The Gas Arctic-Northwest Project Study Group is the entity that has done all the planning for this project. It has formed two "shell" organizations -- Alaskan Arctic Gas Pipeline Company and Canadian

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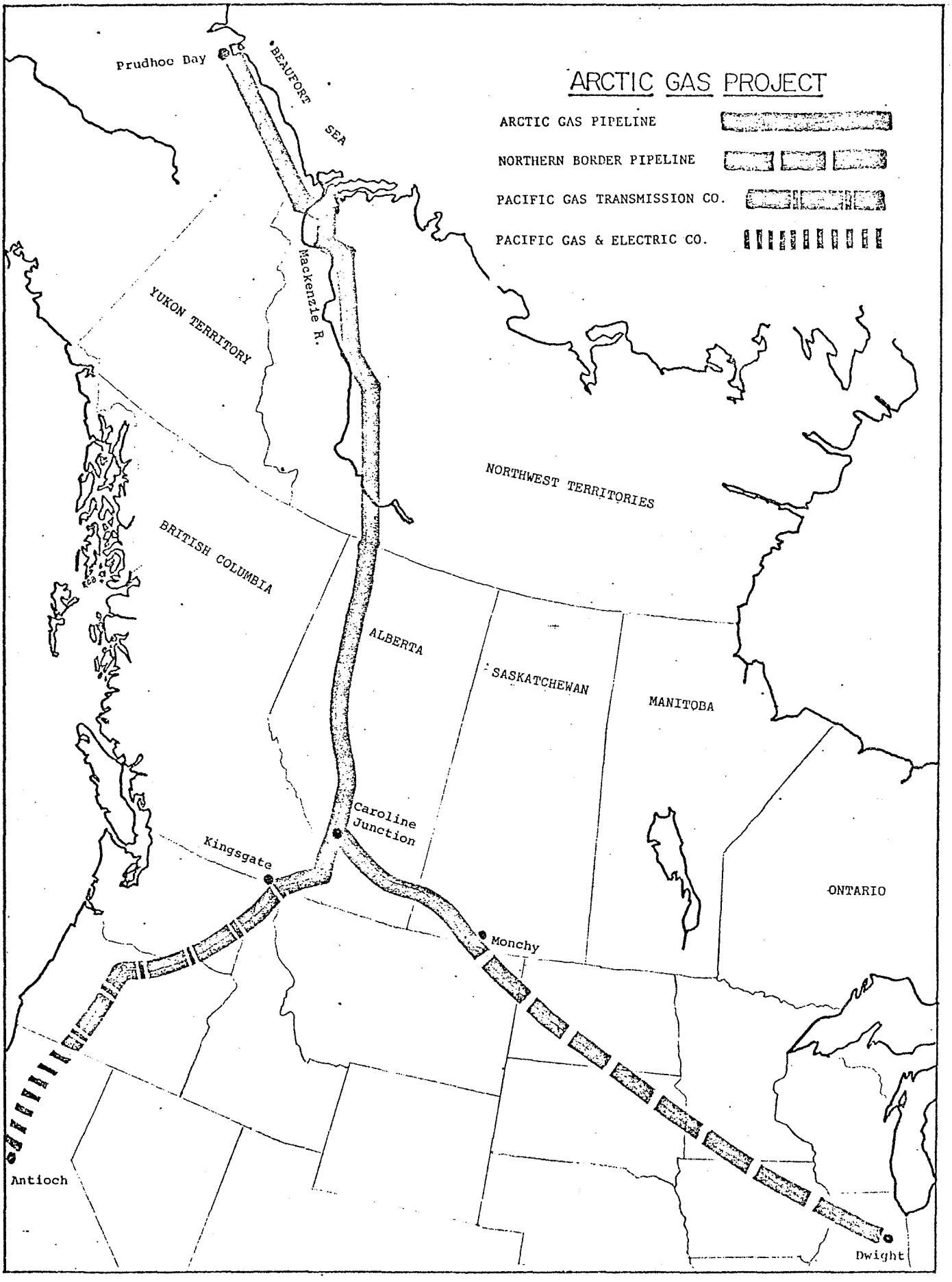
*/ The FPC, by Order No. 558-C, issued March 11, 1977, indicated its willingness to accept the latest Alcan proposal.

Arctic Gas Pipeline, Ltd. -- to build and operate the pipeline in Alaska and Canada, respectively.

The proposal consists of a buried overland pipeline extending east from Prudhoe Bay to the Mackenzie Delta in the Northwest Territories and then down through Canada to the United States border. In the Delta, the line would pick up additional gas reserves produced there.

The line would primarily be a high pressure, 48-inch diameter pipeline (see Map 1). It would be a single pipeline from Prudhoe Bay to Caroline Junction, Alberta, where the line would divide. A 30-inch line would serve the western United States, entering near Kingsgate, British Columbia on the Idaho border. The other branch, a 48-inch line, would deliver gas to the midwestern and eastern United States. This line would narrow to 42 inches at Empress, Alberta and would enter Montana near Monchy, Saskatchewan. The western leg would terminate near San Francisco, California, and the midwest-eastern leg at Dwight, Illinois. Gas to be delivered further east would be delivered by displacement rather than directly. The gas in the midwestern United States would be initially transported by a newly formed partnership, Northern Border Pipeline Company.

The Arctic Gas project (including Northern Border) would require construction of 3,300 miles of new pipeline and 875 miles of looped pipeline. The Alaskan portion of the pipeline would be 195 miles long, the Canadian portion 2,305 miles long.


ARCTIC GAS PROJECT
ARCTIC GAS PIPELINE
NORTHERN BORDER PIPELINE
PACIFIC GAS TRANSMISSION CO.
PACIFIC GAS & ELECTRIC CO.
Prudhoe Bay
BEAUFORT SEA
Mackenzie R.
YUKON TERRITORY
NORTHWEST TERRITORIES
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
ONTARIO
Caroline Junction
Kingsgate
Monchy
Antioch
Dwight

The project calls for authorization to carry 2.25 billion cubic feet of gas per day (Bcf/d), but with additional compression added, the system would be capable of carrying 4.5 Bcf/d, if warranted by future gas deliveries.

Construction of the entire system is estimated by the applicants to require five years and cost approximately 8.52 billion dollars. */

b. El Paso Alaska

El Paso Alaska filed its application for authority to transport Alaskan natural gas with the Federal Power Commission on September 24, 1975.

The El Paso proposal consists of a combination of overland pipeline and shipment by cryogenic tanker to the California coast (see Map 2). El Paso would construct a 42-inch chilled pipeline from the Prudhoe Bay field to a gas liquefaction plant and terminal at Point Gravina, Alaska on Prince William Sound. The 809-mile pipeline would parallel the Alyeska Oil pipeline. Although it would not be within the same right-of-way, 85 percent of the gas pipeline route would be located within 3,000 feet of the existing oil pipeline.

At Point Gravina the gas would be converted to liquid natural gas (LNG). The LNG would then be shipped over a 1900-mile route to a receiving terminal and regasification plant near Point Conception, California. Gas would be transmitted eastward directly by pipeline and by displacement.

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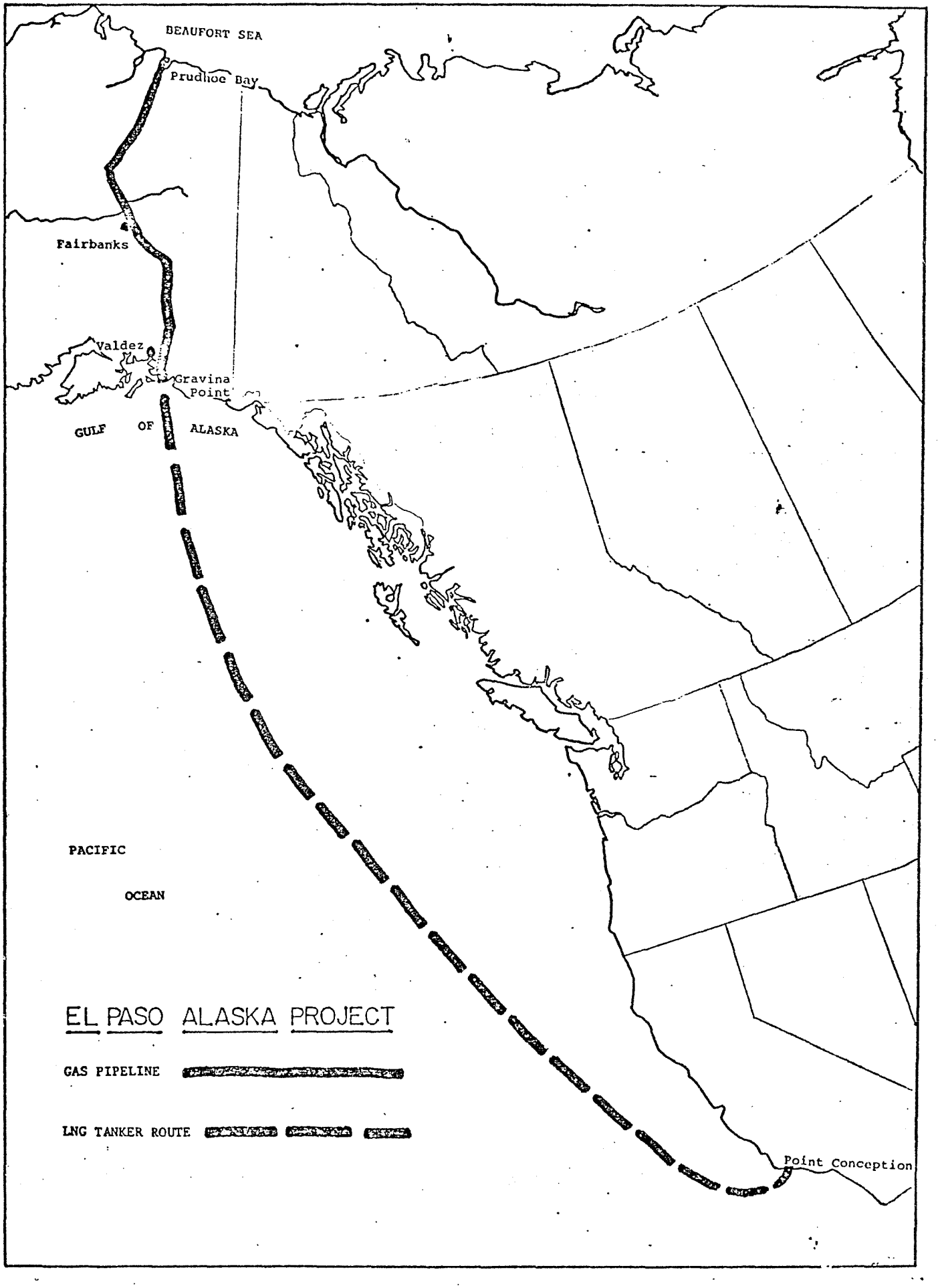
*/ 1975 dollar basis.


BEAUFORT SEA
Prudhoe Bay
Fairbanks
Valdez
Gravina Point
GULF OF ALASKA
PACIFIC OCEAN
Point Conception
EL PASO ALASKA PROJECT
GAS PIPELINE
LNG TANKER ROUTE

El Paso has proposed two alternative operating plans, one based on transporting 3.2 Bcf/d, and one based on transporting 2.4 Bcf/d. The 3.2 Bcf/d system would require construction of eleven 165,000 cubic meter double-hulled LNG tankers. Under the 2.4 Bcf/d alternative only eight tankers would have to be constructed.

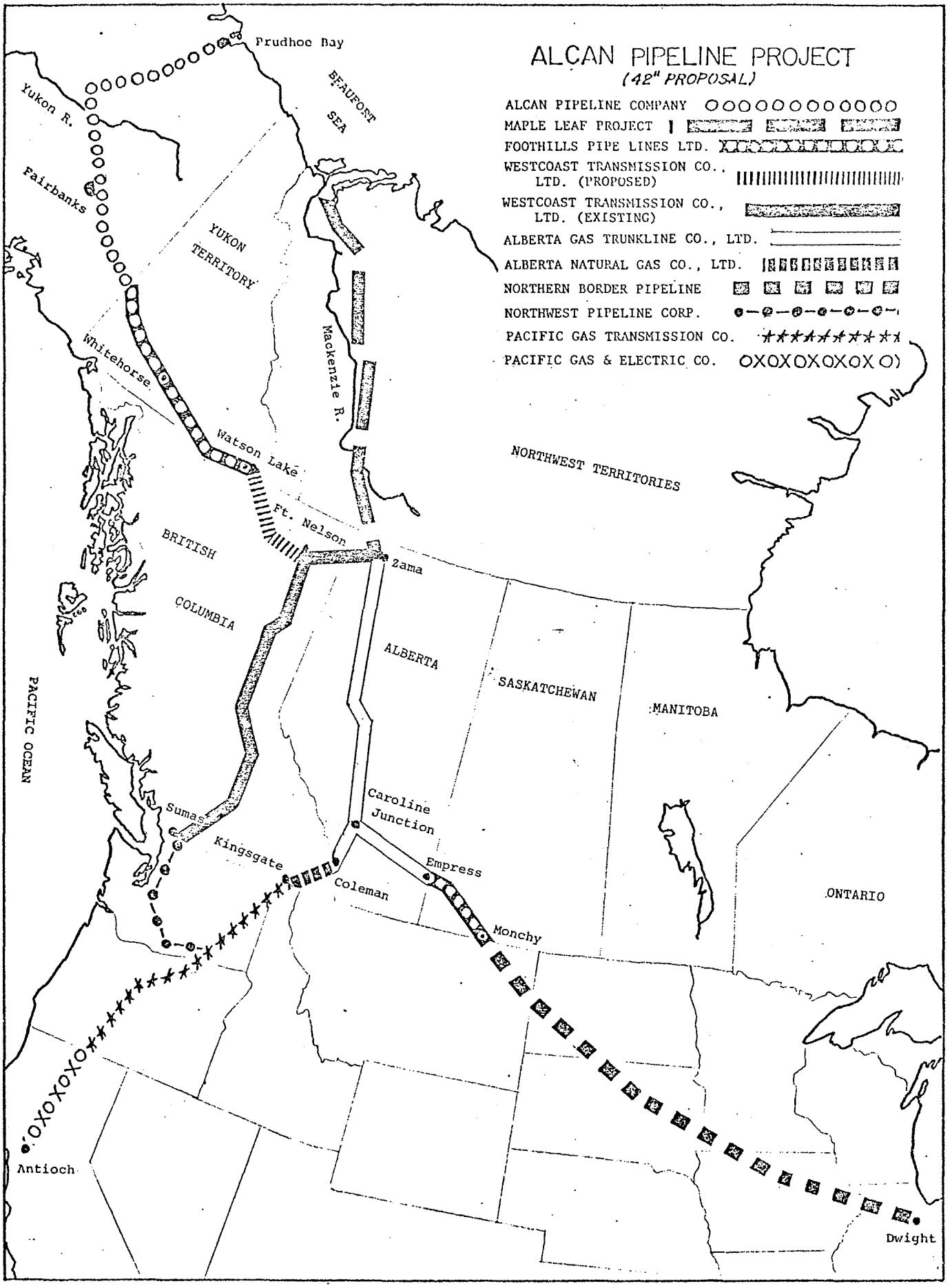
Construction of the pipelines and LNG facilities at Point Gravina and Point Conception is projected to require six and one-half years. The longest period of time is required for construction of the Alaskan pipeline and the Point Gravina facility. The other construction would proceed concurrently. The cost of the project is estimated by the applicant to be 6 billion dollars. */

c. Alcan Pipeline Company

The initial application of Alcan Pipeline was filed with the Federal Power Commission on July 9, 1976. An alternative proposal was filed March 8, 1977.

The original Alcan proposal was for a smaller, lower pressure pipeline than that proposed by Arctic Gas. Alcan proposed a 42-inch pipeline which would follow the Alyeska oil pipeline route to near Fairbanks where it would begin to parallel the Alcan Highway (see Map 3). The gas would be carried through Canada by a combination of new pipelines built by the Canadian members of the Alcan project and existing Canadian pipelines. The gas would

*/ 1975 dollar basis.


ALCAN PIPELINE PROJECT
(42" PROPOSAL)
ALCAN PIPELINE COMPANY
MAPLE LEAF PROJECT
FOOTHILLS PIPE LINES LTD.
WESTCOAST TRANSMISSION CO., LTD. (PROPOSED)
WESTCOAST TRANSMISSION CO., LTD. (EXISTING)
ALBERTA GAS TRUNKLINE CO., LTD.
ALBERTA NATURAL GAS CO., LTD.
NORTHERN BORDER PIPELINE
NORTHWEST PIPELINE CORP.
PACIFIC GAS TRANSMISSION CO.
PACIFIC GAS & ELECTRIC CO.
Prudhoe Bay
BEAUFORT SEA
Yukon R.
Fairbanks
YUKON TERRITORY
Whitehorse
Mackenzie R.
Watson Lake
NORTHWEST TERRITORIES
Ft. Nelson
BRITISH COLUMBIA
Zama
ALBERTA
SASKATCHEWAN
MANITOBA
PACIFIC OCEAN
Sumas
Kingsgate
Caroline Junction
Empress
Coleman
Monchy
ONTARIO
Antioch
Dwight

be divided at Fort Nelson, British Columbia, and the eastern portion of the gas redivided again at Caroline Junction thus creating three points of entry into the United States; Sumas, Washington; Kingsgate, British Columbia; and Monchy, Saskatchewan.

The project would include approximately 3000 miles of new pipeline and 1600 miles of looped pipeline. The system would have a peak capacity of 2.4 Bcf/d.

Alcan has estimated total construction of the system would require five years; however, the pipeline would be operational at a reduced capacity three years after project approval.

An associated, although independent project, Maple Leaf, would be built to deliver Canadian reserves from the Mackenzie Delta to southern Canadian markets (see Map 3). The total estimated cost by the applicants for this Alcan alternative and Maple Leaf is 6.42 billion dollars. */

The alternative Alcan proposal recently submitted differs from the original primarily as to size and capacity of the pipeline and, to a lesser degree, as to route (see Map 4).

The proposed alternative pipeline would have a 48-inch diameter and have the capacity to transport up to 3.4 Bcf/d. It would follow the same route in Alaska and northern Canada. However, rather than dividing the gas into three portions, the gas would be divided into two portions at James River, Alberta, with 30 percent entering the United States at Kingsgate and 70 percent

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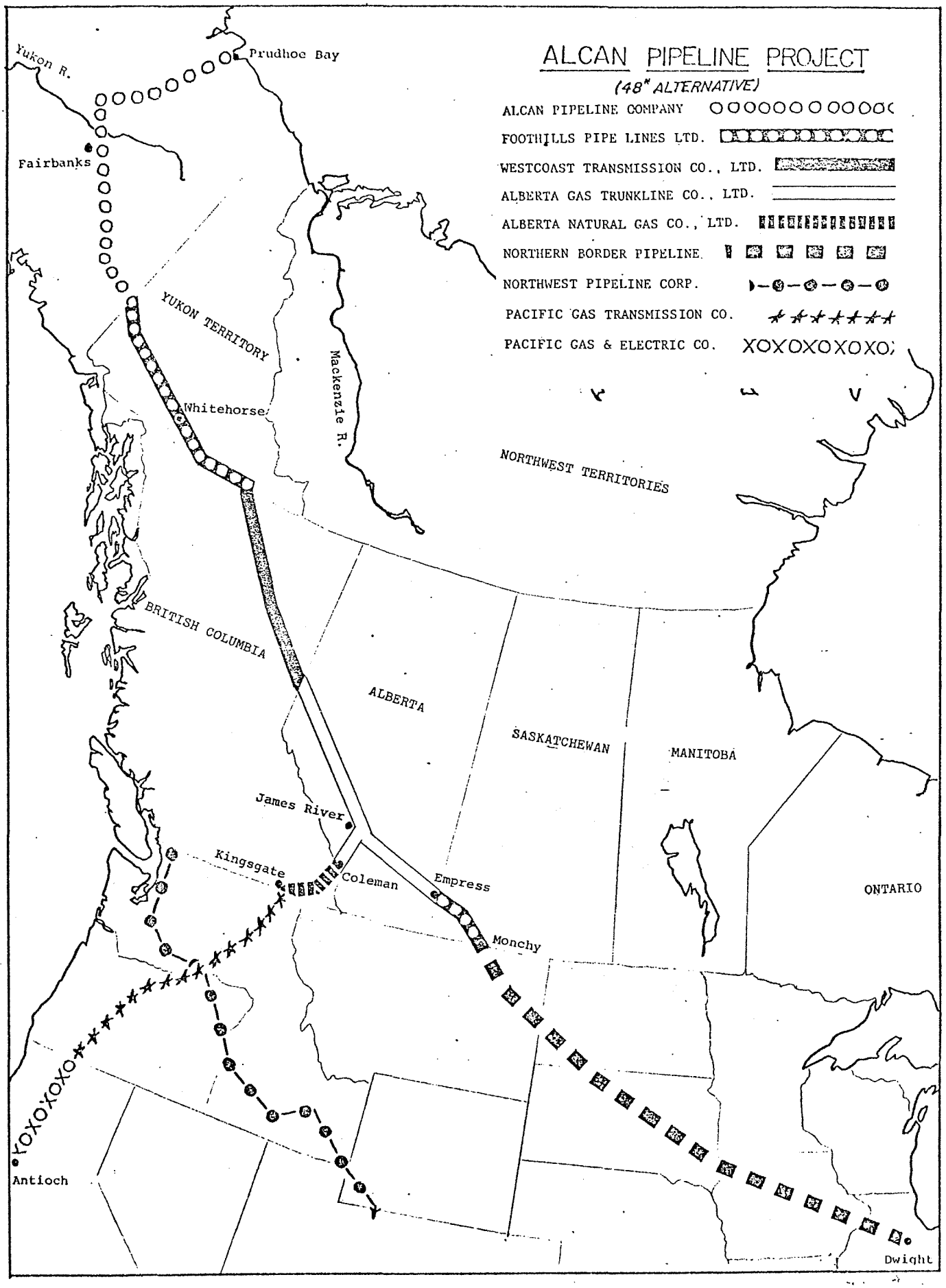
*/ 1975 dollar basis.


ALCAN PIPELINE PROJECT
(48" ALTERNATIVE)
ALCAN PIPELINE COMPANY
FOOTHILLS PIPE LINES LTD.
WESTCOAST TRANSMISSION CO., LTD.
ALBERTA GAS TRUNKLINE CO., LTD.
ALBERTA NATURAL GAS CO., LTD.
NORTHERN BORDER PIPELINE
NORTHWEST PIPELINE CORP.
PACIFIC GAS TRANSMISSION CO.
PACIFIC GAS & ELECTRIC CO.
Yukon R.
Prudhoe Bay
Fairbanks
YUKON TERRITORY
Whitehorse
Mackenzie R.
NORTHWEST TERRITORIES
BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
ONTARIO
James River
Kingsgate
Coleman
Empress
Monchy
Antioch
Dwight

at Monchy. While in transit to the United States, the gas would not be commingled with Canadian gas in existing Canadian pipeline systems.

The alternative proposal would have slightly increased capital costs, estimated by the applicants at 6.7 billion dollars. */ The construction time required is estimated to be the same as that required for the original proposal.

2. Description of the Participants

The various parties who have submitted proposals for transporting Alaskan gas are all companies already involved in the natural gas industry. This section sets forth a cast of the characters, identifying the participants in each project.

a. Arctic Gas

The Arctic Gas project is proposed by six principal applicants -- Alaska Arctic Gas Pipe Line Company, Canadian Arctic Gas Pipeline Company, Ltd., Alberta Natural Gas Company, Ltd., Northern Border Pipeline Company, Pacific Gas Transmission Company, and the Pacific Gas and Electric Company.

The two Arctic Gas companies are "shell" companies that were formed by the Gas Arctic-Northwest Study Group to serve as owners of the Alaskan and Canadian sections of the pipeline. Shares will be available for sale if the Arctic Gas project is certificated

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*/ 1975 dollar basis.

and, thus, the eventual ownership of these two companies remains unsettled. The present members and shareholders are:

American Members

Columbia Gas Transmission Corporation
Michigan Wisconsin Pipe Line Company
Natural Gas Pipe Line Company of America
Northern Natural Gas Company
Pacific Gas and Electric Company
Pacific Lighting of California
Panhandle Eastern Pipe Line Company
Texas Eastern Transmission Corporation

Canadian Members

Alberta Natural Gas Company, Limited
The Consumers' Gas Company
Canada Development Corporation
Gulf of Canada, Limited
Imperial Oil, Limited (a 70-percent-owned subsidiary of Exxon)
Northern and Central Gas Company, Limited
Shell Canada Limited
TransCanada PipeLines, Limited
Union Gas, Limited

At one time, the three major producers on the North Slope -- Atlantic Richfield Company (ARCO), Exxon Company, U.S.A. (Exxon), and British Petroleum/The Standard Oil Company (Ohio)[Sohio] -- were members of the Study Group. Exxon is still involved in the project through its Canadian affiliate, Imperial Oil.

Northern Border Pipeline Company is a partnership made up of subsidiaries of:

Columbia Gas Transmission Corporation
Michigan Wisconsin Pipe Line Company
Natural Gas Pipe Line Company of America
Northern Natural Gas Company
Panhandle Eastern Pipe Line Company
Texas Eastern Transmission Corporation

The parent companies are all members of the Study Group and the Arctic Gas companies.

The fourth and fifth principal applicants, Pacific Gas Transmission Company and Alberta Natural Gas Company, Ltd, are subsidiaries of Pacific Gas and Electric Company (PG&E), the sixth principal applicant. Thus, those companies in the Gas Arctic-Northwest Study Group in fact constitute all of the applicants involved in the Arctic Gas proposal.

b. Alcan

The Alcan project is being proposed in the United States by the Alcan Pipeline Company, a corporation organized under the laws of the State of Delaware, with its principal place of business in Salt Lake City, Utah. Alcan is a wholly owned subsidiary of Northwest Pipeline Corporation, a Delaware corporation engaged in the interstate transportation of natural gas. Northwest Pipeline in turn is a wholly owned subsidiary of Northwest Energy Company, another Delaware corporation. Northwest Energy is a holding company whose principal asset is all of the outstanding common stock of Northwest Pipeline. Northwest Energy and Northwest Pipeline were created in 1974 as a result of the court-ordered divestiture of the northwestern operations of El Paso Natural Gas.

The Canadian sponsors of the Alcan Project are Alberta Gas Trunk Line Company, Ltd., its subsidiary Alberta Gas Trunk Line (Canada) Ltd., Westcoast Transmission Company, Ltd., and Foothills Pipeline (Yukon), Ltd. Foothills is jointly owned by Alberta Gas Trunk Line and Westcoast.

c. El Paso

The El Paso project is submitted by the El Paso Alaska Company. It is a corporation organized under the laws of Delaware. Its principal places of business are El Paso and Houston, Texas, with administrative offices in Anchorage, Alaska. El Paso Alaska Company is a wholly owned subsidiary of El Paso Natural Gas Company, also a corporation organized under the laws of Delaware, with its principal place of business in El Paso, Texas. El Paso Natural Gas is a wholly owned subsidiary of the El Paso Company and it is assumed that El Paso Alaska will also become a wholly owned subsidiary of the El Paso Company. El Paso Alaska has no subsidiaries or affiliates.

B. Industry Overview and Market Structure -- Relationship of Participants to the Industry

1. Industry Overview

More than a quarter of all United States energy consumption is supplied by natural gas. In 1974 a national network of field and gathering, transmission, and distribution pipelines of nearly a million miles delivered gas sales of 15.2 billion dollars (16,000 trillion BTU of energy). By last year, according to estimates of the American Gas Association, natural gas sales had reached 24.3 billion dollars (14,620 trillion BTU).

As recently as 35 years ago, natural gas was primarily an unwanted by-product of oil production, routinely flared at the wellhead. Wartime technological improvements, however, made it

economically practical to build long-distance gas pipelines from Gulf Coast producing areas to heavily populated and industrialized markets in the Northeast, Midwest and Pacific Coast. These interstate pipelines allowed energy markets previously dominated by coal and oil to be penetrated by gas, which because of Federal Power Commission regulatory policies sold for less than the competing fuels. By 1971 (the peak year for gas consumption as a percentage of total energy consumption), gas accounted for 33.2 percent of the nation's total energy requirements, up from 12.6 percent in 1945. Partly because of Federal Power Commission pricing policies, however, which appear unintentionally to have discouraged exploration and development, gas utility volume sales have declined on a year-to-year basis every year since 1972. */ Furthermore, the ratio of gas reserves to production has declined from 1967 to 1975. **/

Aside from regulation and declining production, the most notable feature of the natural gas industry is its three-part segmentation. The industry's three distinct sectors are: (1) search and production, (2) long-distance transmission through pipelines from gas fields to market, and (3) distribution by local gas utilities. Oil and gas companies discover and produce the gas, selling their production to transmission companies with

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*/ Standard & Poor's, Industry Surveys, "Utilities-Gas," March 17, 1977, pp. U66, U63.

**/ American Gas Association.

extensive pipeline systems (around 300,000 miles in 1974). */ It is then piped to retail service areas and sold wholesale to local distributing utilities for resale to their customers. A number of companies are engaged in both transmission and distribution operations. Integration back to the production level, which is dominated by the major oil companies, has been less extensive but has been stimulated somewhat in recent years by supply shortages.

Regulation is pervasive in the industry but varies from sector to sector. In 1936 the Federal Trade Commission announced that gas holding companies were allocating markets among themselves and engaging in other monopolistic acts. Two years later, Congress passed the Natural Gas Act without a dissenting vote. This Act authorizes the Federal Power Commission to regulate interstate pipelines, certificate new or substitute sales and contracts, and approve or disapprove natural gas imports and exports. In 1954, with the Supreme Court's Phillips Petroleum v. Wisconsin **/ decision, the Federal Power Commission began regulating wellhead prices of gas sold in interstate commerce. Interstate sales by pipelines to local gas distributors ("city gate sales") are also regulated by the Federal Power Commission. Although nearly two-thirds of total domestic supply is subject to Federal Power Commission control, most new gas discoveries have been going into

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*/ Ibid.

**/ 347 U.S. 672 (1954).

higher-priced intrastate sales. Jurisdiction over intrastate sales, distribution companies and local utility rates is left to the states and localities. States and municipal utility commissions also grant exclusive franchises to pipelines and distributors. Even in states with no regulatory commission, common law requires that public utilities provide service at reasonable cost and without discrimination.

2. Market Structure -- Relationship of Participants to the Industry

The structure of a market can condition competitive behavior in that market. In general the more concentrated it is and the more interdependence among sellers, the more potential there is for anticompetitive abuse. Concentration ratios showing the share of a market controlled by the largest firms are used as an indication of this potential.

The usefulness of concentration ratios in examining the natural gas industry is limited by three factors. The first is the natural monopoly nature of transmission and distribution. Once we narrow our definition to some relevant geographic market, we know a priori that natural monopoly will present a highly concentrated structure.

The second factor, extensive regulation, limits even those potential effects of anticompetitive structure. In an industry as heavily regulated as natural gas, of concentration measures are extremely ambiguous.

While these two factors probably result in concentration measures overstating the potential for anticompetitive behavior, the third factor, a declining resource stock, has just the opposite effect. Since apparent natural limitations may have begun to retard the expansion of natural gas supply, it may be argued that what little competition exists in the industry is retarded by a lower level of concentration than in other industries. */

The main factor, however, is regulation. In the context of such a comprehensive scheme of regulation, national or even regional concentration ratios have little meaning. If regulation is effective, anticompetitive behavior should be minimized. **/ If regulation is ineffective, then natural monopoly will begin to assert itself.

With the preceding discussion and caveats in mind, it is still useful to examine national concentration ratios in order to assess the relative positions of prospective Alaskan natural gas participants in the industry and to speculate about the state of the industry should regulation be significantly lessened or ended.

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*/ For reference, the four-firm average concentration ratio in all U.S. manufacturing in 1970 was 40.1 Source: U.S. Department of Commerce, Bureau of Census, Annual Survey of Manufacturers, 1970, Value of Shipment Concentration Ratios, M70-9 (1972).

**/ We exclude here those cases where regulation itself becomes an umbrella for anticompetitive practices. Such regulation is not effective in the sense used here.

a. Structure of Production

Natural gas and crude oil are often found together, and most of the major natural gas producers are also major oil companies. The best measure of potential market power in gas production is uncommitted reserves; however, reliable reserves figures simply are not available. Therefore sales data are used instead in Table 1, which shows the 24 largest producers by sales to interstate pipelines along with sector concentration ratios. */ Even if concentration ratios were useful for predicting competitive behavior in this industry, the top 4-, 8-, and 20- firm concentration ratios are 22.48, 38.78, and 65.01 respectively, which hardly would be cause for concern. Furthermore, the presence of auction markets for leases and of relatively low capital requirements indicates that, in most instances, no significant barriers to entry exist in natural gas production. (Of course as natural gas deposits become increasingly more difficult to find, capital requirements will increase, thereby increasing barriers to entry.)

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*/ Because of data source form three Canadian firms are included here. Generally the discussion is limited to U.S. companies.

b. Structure of Transmission

Tables 2 through 4 show the major gas transmission companies ranked by different size measures. Participants in the Alaskan projects are denoted by the letter E (for El Paso), A (for Alcan), and X (for Arctic).

Table 2 shows companies by gas supplies available from all sources in 1974. As in gas production, the concentration ratios are relatively low, the largest four firms have 28.19 percent of the market and the largest eight have 48.35 percent. An examination of sales and throughput in Tables 3 and 4, indicates that while the individual company rankings vary somewhat, the concentration ratios are much the same. On a national basis, this sector appears to be relatively unconcentrated. Aside from increasing capital costs, the principal barriers to entry appear to be Federal Power Commission certification and acquisition of supply. Because of a dwindling resource stock, the latter barrier may significantly discourage entry.

Turning to a comparison of the pipeline participants within the industry, El Paso, the sole domestic sponsor of the El Paso project, ranks 1st in supplies and sales and 3rd in throughput. Northwest Pipeline, the Alcan sponsor, by contrast, ranks 10th in supplies, 16th in sales and 17th in throughput.

The Arctic Gas project is made up of a number of transmission companies. Table 3 shows that six of the top ten transmission companies by supplies are also sponsors of the Arctic Gas project. The Arctic Gas sponsors combined control about 36

percent of gas supplies (El Paso controls 8.2 percent and Northwest only 4.3 percent). The control of 36% of all gas supplies by Artic Gas could signal potential problems to the extent that anticompetitive effects could result from pipeline company ownership of the gas to be transported. These effects would most likely appear in displacement plans, for instance, companies participating in ownership of the pipeline could agree not to work with non-participating companies, or could structure displacement and distribution plans to gain an advantage in regional competition among pipelines. However, in the presence of effective regulation, the membership of the sponsoring groups (except as indicated in the section on producer ownership) does not provide any reason for favoring one applicant over the others.

TABLE 1

1974 Sales to Interstate Pipelines by Major Producers & Importers

Rank		Company	(MCF)	Individual % of Total	Concentration Ratios
1		Exxon Corporation	1115513	8.25	
2		Amoco Production Company	672198	4.97	
3		Texaco Inc.	624610	4.62	
4		Gulf Oil Corporation	619268	4.58	22.42
5		Mobil Oil Corporation	612775	4.53	
6		Phillips Petroleum Company	571498	4.23	
7		Shell Oil Co.	533573	3.95	
8		Union Oil Co. of Calif.	493573	3.65	38.78
9		Atlantic Richfield Co.	457380	3.38	
10		Cities Service Oil Co.	360262	2.66	
11	*	Alberta & Southern Gas Co. Ltd.	357702	2.64	
12		Calif. Co. Div. Chevron	355652	2.63	
13		Tenneco Oil Co.	300132	2.22	
14	*	Westcoast Transmission Co. Ltd.	286746	2.12	
15		Continental Oil Co.	271037	2.00	
16		Sun Oil Co.	262708	1.94	
17	*	Trans-Canada P.L. Ltd.	248326	1.84	
18		The Superior Oil Co.	229490	1.70	
19		Getty Oil Co.	217398	1.61	
20		Skelly Oil Co.	201683	1.49	65.01
21		Pennzoil Producing Co.	167111	1.24	
22		Pan Eastern Exploration Co.	116041	.86	
23		Lone Star Producing Co.	107738	.80	
24		Union Texas Petroleum Div. Allied	100936	.75	68.66
		Total top 24 Companies	9283350		
		Total (All Companies)	13524075		

* Imports from Canada.

Source: Federal Power Commission, "Sales of Gas by producers to Interstate Pipelines 1974" June 10, 1976, No. 22417.

TABLE 2

Gas Supplies Available from All Sources - 1974

			Supplies (000 MCF)	Individual % of Industry	Mkt. Concentration Ratios
1)	E	El Paso Natural Gas Co.	16755556	8.24	
2)	X	Columbia Gas Transmission Co.	16115753	7.92	
3)	X	Texas Eastern Transmission Corp. a/	12519175	6.15	
4)		Teneco, Inc.	11953918	5.88	28.19
5)	X	Northern Natural Gas Co.	10853392	5.33	
6)	X	Panhandle Eastern Pipeline Co. b/	10601672	5.21	
7)	X	Natural Gas Pipeline Co. of America	10037970	4.93	
8)	X	Michigan-Wisconsin Pipeline Co.	9533676	4.69	48.35
9)		Consolidated Gas Supply Corp.	9147456	4.50	
10)	A	Northwest Pipeline Corp.	8835974	4.34	
11)		Texas Gas Transmission Corp.	6906733	3.40	
12)		Cities Service Gas Co.	6444991	3.17	
13)		Transcontinental Gas Pipeline Corp.	6211462	3.05	
14)		Southern Natural Gas Co. c/	5808844	2.86	
15)		United Gas Pipeline (Pennzoil) c/	5611085	2.76	
16)	X	Pacific Gas Transmission Co.	5076604	2.50	
17)		Midwestern Gas Transmission Co.	4647340	2.28	
18)		Colorado Interstate Corp.	4235610	2.08	
21)		Algonquin Gas Transmission	2153776	1.06	
22)		Kansas-Nebraska Natural Gas Co., Inc.	1978962	.97	81.32
		Total of Top 20	165429949		
		Industry Total	203458611		

E = El Paso Project participant; A = Alcan Project participant; X = Arctic Project participant.

a/ Includes Transwestern Pipeline affiliate.

b/ Includes Trunkline Gas Co. affiliate.

c/ Includes 50% of Sea Robin Pipeline Co. affiliate.

Source: FPC, Statistics of Interstate Natural Gas Pipeline Companies, 1974, p. LII, p. 601A (reserves).

TABLE 3

1974 Natural Gas Sales

			Sales (000 MCF)	Individual % of Industry	Mkt. Concentration Ratios
1)	E	El Paso Natural Gas	1356148	7.51	
2)	X	Columbia Gas Transmission Co.	1310269	7.25	
3)		Tenneco, Inc.	1244433	6.89	
4)	X	Texas Eastern Transmission Corp. a/	1150345	6.37	28.02
5)		United Gas Pipeline (Pennzoil) b/	1089641	6.03	
6)	X	Panhandle Eastern Pipeline Co. c/	1082190	5.99	
7)	X	Natural Gas Pipeline Co. of America	1025018	5.67	
8)	X	Northern Natural Gas Co.	908300	5.03	
9)	X	Michigan-Wisconsin Pipeline Co.	837905	4.64	
10)		Southern Natural Gas Co. b/	811282	4.50	
11)		Transcontinental Gas Pipeline Corp.	790737	4.38	
12)		Texas Gas Transmission Co.	710157	3.93	
13)		Consolidated Gas Supply Corp.	684901	3.79	
14)		Cities Service Gas Co.	494140	2.74	
15)		Colorado Interstate Corp.	393654	2.18	
16)	A	Northwest Pipeline Corp.	382918	2.12	
17)	X	Pacific Gas Transmission Co.	346047	1.92	
18)		Midwestern Gas Transmission Co.	324942	1.80	
19)		Mississippi River Transmission Corp.	216861	1.20	
20)		Algonquin Gas Transmission Co.	138094	.76	82.90
		Total Top 20	15297982		
		Industry Total	18068444		

E = El Paso Project participant; A = Alcan Project participant; X = Arctic Project participant.

a/ Includes Transwestern Pipeline affiliate.

b/ Includes 50% of Sea Robin Pipeline Co. affiliate.

c/ Includes Trunkline Gas Co. affiliate.

Source: FPC, Statistics of Interstate Natural Gas Pipeline Companies, 1974. p. 601A, p. LII

TABLE 4

1974 Natural Gas Throughput

			Deliveries (000 MCF)	Individual % of Industry	Mkt. Concentration Ratios
1)		Tenneco, Inc.	2949314	10.43	
2)	X	Columbia Gas Transmission Corp.	2362593	8.35	
3)	E	El Paso Natural Gas Co.	1993755	7.05	
4)		United Gas Pipeline Co. (Pennzoil) a/	1570392	5.55	31.38
5)	X	Natural Gas Pipeline Co. of America	1556868	5.51	
6)	X	Texas Eastern Transmission Corp. b/	1525124	5.39	
7)	X	Panhandle Eastern Pipeline Co. c/	1508981	5.34	
8)	X	Northern Natural Gas Co.	1448300	5.12	52.74
9)	X	Michigan-Wisconsin Pipeline Co.	1432266	5.06	
10)		Southern Natural Gas Co. a/	1272518	4.50	
11)		Transcontinental Gas Pipeline Corp.	1014982	3.59	
12)		Texas Gas Transmission Corp.	962092	3.40	
13)		Consolidated Gas Supply Corp.	889562	3.15	
14)		Lone Star Gas Co.	693287	2.45	
15)		Columbia Gulf Transmission Co.	685929	2.43	
16)		Cities Service Gas Co.	607301	2.15	
17)	A	Northwest Pipeline Co.	504663	1.78	
8)		Colorado Interstate Corp.	492477	1.74	
19)		Great Lakes Gas Transmission Co.	461863	1.63	
20)	X	Pacific Gas Transmission Co.	406929	1.44	86.06
		Total of Top 20	2433797		
		Industry Total	28280578		

E = El Paso Project participant; A = Alcan Project participant; X = Arctic Project participant.

a/ Includes 50% of Sea Robin affiliate.

b/ Includes Transwestern Pipeline affiliate.

c/ Includes Trunkline Gas Co. affiliate.

Source: FPC, Statistics of Interstate Natural Gas Pipeline Companies, 1974 pp. 601A-611A.

II. ROUTE SELECTION

In our opinion, based on currently available information, antitrust considerations do not preclude the selection of any of the proposed routes as the transportation route for moving Alaskan natural gas to the lower 48 states. We have reached this conclusion after analyzing the two Federal Power Commission decisions and after carefully considering the competitive implications associated with each of the projects.

Judge Litt, in his Initial Decision of February 1, 1977, recommended that Arctic Gas be selected. He apparently based his recommendation upon his finding that Arctic Gas appeared to have the lowest transportation cost and was the most suitable system to carry North Slope and Mackenzie Delta gas to the lower 48 states. But Judge Litt's decision was based on his comparison of the Arctic Gas project with the El Paso project and the original Alcan project, each of which he considered substantially inferior. He did not consider the latest project design submitted by Alcan for consideration after the initial decision.

The Federal Power Commission, in its Recommendation to the President of May 1, 1977, was unable to decide between the two overland routes, although it found that an overland route was superior to El Paso's pipeline-LNG ship alternative. The Federal Power Commission compared the Arctic Gas route with the El Paso route and the alternative Alcan route (which Alcan and the Federal Power Commission now consider to be Alcan's primary route) and found that, although Arctic Gas' route was slightly

less expensive on a unit cost of transportation basis, the two routes were basically equivalent on an overall basis. Each had advantages and equivalent benefits to the nation. Thus two Commissioners preferred the Arctic Gas route, but only if the Canadian government authorized the development of the Mackenzie Delta gas fields. If the Mackenzie Delta fields are not to be developed in the near future, then all four would prefer the Alcan route. The Federal Power Commission, therefore, left the final route selection up to the President and Congress.

A large number of factors are relevant to the route selection decision. We have restricted our analysis to competitive policy issues and we defer to others more expert on the weight given to other factors.

On the basis of our analysis of competitive issues, we see no basis for preferring only one proposal. Our analysis of the competitive implications of the various proposals indicates that the choice of route for the Alaskan gas transportation system is not likely to have an impact on competition among pipelines. This is because the primary competition among pipelines is within regions, not among regions, and while the choice of project may impact more favorably on one region than another, it should not affect competition within a region. The competitive issues that do arise are present to various degrees with all of the projects, and are discussed in the remainder of this report.

Therefore, the Department makes no recommendation on the route selection issue.

III. ANTITRUST ANALYSIS OF OWNERSHIP OF AN ALASKAN NATURAL GAS TRANSPORTATION SYSTEM

The structure of ownership of any of the selected systems may present competitive problems. We discuss in this section those problems associated with ownership structure -- producer ownership and buyer ownership. Our analysis leads us to the conclusion that companies with significant gas production should be prohibited from ownership participation in of the selected project. Thus, if Arctic Gas is selected, Exxon should not be permitted ownership interest through its affiliate, Imperial Oil, currently a member of the Arctic Gas group.

The nature and effectiveness of regulation is crucial to this issue. We consider the present form of regulation, as well as one in which the regulation of the wellhead price of gas is relaxed. The analysis is dependent on certain fundamental economic principles but is sensitive to the mode of regulation of the industry.

Currently, Federal Power Commission price regulation of the natural gas industry is pervasive. The wellhead price and pipeline transmission tariff rate are independently set by the Commission; the city gate price */ is then the sum of those two prices. Where the wholesale price is set in this way, there is little or no opportunity for competitive abuse by either producers or transmission companies, provided both the wellhead and pipeline price ceilings are effective. By "effective", we mean that the respective price

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*/ The price at which the transmission company sells its gas to local distribution companies.

ceilings at the wellhead and for the pipeline do not exceed production and operating costs plus a reasonable return on investment for each. Thus, as we indicated in the previous section, given regulation in its current form, and assuming effective regulation, competitive considerations alone would not lead us to prefer or reject any of the Alaskan natural gas pipeline proposals.

A. Producer Ownership of the Pipeline: Anticompetitive Effects

Given the public debate over this issue, it is appropriate to anticipate the possible relaxation of regulation of the natural gas wellhead price, and to analyze the extent to which this would alter our recommendations. */ The conclusion of the analysis below is that, with relaxed wellhead price regulation, an ownership interest in the pipeline by one or more gas producers of significant amounts of natural gas would be anticompetitive and should be prohibited.

Production of natural gas in Alaska is at present highly concentrated, with three producers controlling 96 percent of the gas, but there may well be opportunities for new entry in the future. Initially, to focus our analysis on the pipeline, we will abstract from any anticompetitive problems in production

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*/ The President's energy proposals with respect to natural gas regulation do not alter our conclusions. Although some relaxation of regulation is proposed, the President's proposals will not lead to a balance between supply and demand; rather excess demand will persist albeit at a somewhat lessened level.

by assuming that entry can occur so as to render workably competitive that stage of the industry. Later we shall drop that assumption to see how our conclusion would be altered by the existence of market power in production.

Pipeline owners, whether or not they are producers, will normally possess market power. An exclusive franchise or regulatory limitation on entry is not necessary to create this power. The barriers to competitive entry are technological or "natural."

In an unregulated environment, economies of scale will usually dictate that only one pipeline survives in any given geographic transportation market. While construction and operation costs in pipelines tend to vary with the pipe's radius, the volume of gas that can be transported varies with the square of the pipe's radius. In other words, total throughput increases at a faster rate than total cost, so unit costs decline as throughput is increased. This phenomenon of falling unit cost is called "economies of scale." It renders a pipeline a "natural monopoly", because any new demand in a pipeline's market area can be served more cheaply by increasing the scale of the existing operation than by creating a new, pipeline.

Although the pipeline is an efficient facility, normal market forces will fail to force the pipeline's cost advantages to be fully passed on to consumers in the form of price reductions. Rather, absent regulation, the cost benefits will accrue as excessive profits to the owners of the pipeline. Those profits will

not be eroded by competitive pipeline entry unless and until market demand becomes sufficiently large to accommodate an at least equally efficient pipeline. Even then, new entry will likely not be forthcoming unless additional economies of scale are unavailable for the existing line due to the limits of technological knowledge, or equivalently, all economies of scale have been exhausted. */

Normally, regulation is the method used to force cost savings based on scale economies to be passed on to consumers. However, in the case of producer-owned pipelines, even well-designed tariff regulation by the Federal Power Commission is doomed to failure under the following conditions. With relaxed wellhead price regulation, producer-owners of a pipeline can circumvent tariff regulation by shifting some or all of the potential profits stemming from the transportation natural monopoly to upstream (i.e., production) operations. Consequently, the public's attempt through tariff regulation to enjoy the cost-saving benefits of efficient transportation will be frustrated. And this problem -- the failure of tariff regulation to eliminate monopoly profits -- is due entirely to vertical integration, i.e., the ownership by producers of the most efficient means of transportation.

For the purposes of isolating and illuminating the vertical problem, we will assume that Federal Power Commission tariff policy

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*/ Of course, as the source of natural gas feeding the pipeline becomes depleted, even economies of scale in transportation will fail to offset the accelerating cost of gas production and the price of gas will rise. Eventually, new fuel supply chains will be able to compete for some final markets with Alaskan gas, just as the Alaskan chain will or has become competitive with Gulf Coast natural gas.

is ideal, i.e., the tariff is designed to permit the pipeline to earn no more than a fair and reasonable return to its owners' and creditors' investments.

Gas from Alaska will not find a downstream market unless its delivered price is equal to or below that of gas from alternative sources (other new fields, extended old fields, imported liquid gas, etc.). For this condition to be met, the incremental cost of production in Alaska combined with the cost of transportation through the pipeline can be no greater than those combined costs for alternative gas supplies. */ Otherwise, regulated distribution utilities downstream would not purchase the more expensive Alaskan gas. **/ If the delivered cost to the distributor of the Alaskan gas is no greater than the delivered cost of the next best alternative supply, the Alaskan gas will sell downstream. Furthermore, if there is exploitable market power based on a cost advantage anywhere in the Alaskan supply chain, the entire difference in delivered cost between the two sources can be captured as monopoly profits when the competing products are sold to distributors at equal prices.

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*/ In the long run, these costs include a reasonable return to investment.

**/ This may not be strictly true. Suppose there is a shortage of alternative supplies because their prices have been artificially held down by regulation. If regulators allow multitiered pricing, the new field's gas might sell at a price above that of alternative supplies. Alternative forms of multitiered city gate pricing by the Federal Power Commission have other implications for the integrated producer-owner and for the public which are discussed below. For the present we assume that the Federal Power Commission sets a market-clearing price downstream.

The incremental cost of producing natural gas rises as more is produced. The lower cost supplies are tapped first and producers will supply higher-cost gas only if the wellhead price at which they sell rises to cover their costs. Thus, more supplies will be forthcoming to meet increased demand only if the wellhead price is permitted to reflect the higher cost of increased production.

Pipelines that transport natural gas from Gulf Coast fields to, say, the Midwest, also possess economies of scale. But as rising Midwestern demand is supplied by the Gulf Coast fields, the incremental production cost in those fields will rise. Furthermore, the economies of scale of the existing pipelines (smaller than those proposed by Alaska) are such that unit costs of transportation will eventually begin to level off as throughput expands. Hence, the incremental delivered cost of Gulf Coast gas in the Midwest will eventually begin to rise rapidly, because the economies of scale in transportation can no longer offset the rising cost of production. */

Consider now the delivered cost to the Midwest of gas from the new field in Alaska. Initially, as lower cost gas is being produced the incremental production cost there will not rise very rapidly; also, as more throughput traverses the Alaskan pipeline,

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*/ The leveling off of economies of scale in the pipeline is not a necessary condition for this result. Sufficiently steep increases in the incremental cost of production could offset even steadily falling incremental pipeline costs.

economies of scale will serve to significantly reduce unit transportation cost. As Midwestern demand for natural gas rises, gas from Alaska could enjoy a growing cost advantage over gas from the Gulf. If the city gate price in the Midwest reflected the incremental delivered cost of all gas going there, increased demand would be met for the most part by less costly Alaskan gas. Consequently, increasing Midwestern demand may cause the price to consumers to rise, but by less than if all additional supplies originated in the Gulf Coast fields.

Now let us see the way in which this desirable market result could be thwarted by producer-owners of an Alaskan gas pipeline. To pinpoint this vertical problem it will be useful to examine the effects of imposing Federal Power Commission tariff rate regulation on the profit maximizing behavior of a previously unregulated pipeline owner.

First consider the profit-maximizing calculus of the pipeline owner who is not also a producer, i.e., a non-integrated pipeline. As he raises his tariff to the Midwest, demand to ship on the pipeline falls off as distributors substitute some supplies from alternative sources, say, the Gulf Coast. The pipeline owner balances the higher tariff rate against diminished volume. His profit margin is the difference between the delivered cost of the alternative supplies from the Gulf and his own "real" cost, including the price he pays the Alaskan producer for the gas.

With the Federal Power Commission forcing the monopoly pipeline to lower its tariff, however, the owner can maximize his total (not unit) transportation profits by maximizing throughput at the regulated tariff. He can be expected to solicit supplies actively from Alaskan producers and, at regulated prices, provide ancillary facilities to accommodate these supplies. Thus, the consequences of proper tariff-rate regulation for a non-producer-owned pipeline are effective tariff reduction, expanded Alaskan throughput relative to Gulf Coast supplies and lower prices to Midwestern consumers, i.e., the desirable market result described above.

If the Alaskan pipeline is owned by one or more vertically integrated producers, these desirable results of tariff regulation may not be obtained. This is because after the Federal Power Commission forces a pipeline to lower its tariff, the producer-owners' profit maximizing strategy is to restrict the pipeline throughput to that which would be shipped at the unregulated monopoly tariff. Having been denied the opportunity to raise the tariff to a monopoly level (with a consequent reduction in the amount shipped over the pipeline) the profit maximizing strategy would be to restrict quantity directly by limiting the throughput of the pipeline.

This strategy maximizes the producer-owners' profit, because the reduced quantity of Alaskan gas flowing through the pipeline causes the Midwestern city gate price to rise as residual downstream market demand is satisfied by Gulf Coast gas with a higher delivered cost. If the integrated pipeline owners can sell their

product downstream at the same delivered price as this more expensive gas, they can pocket excess profits despite the regulated tariff. That is, for any given regulated tariff level, the higher downstream price implies a higher wellhead price in the upstream field. The bookkeeper arbitrarily attributes the excess profits to upstream operations rather than to the pipeline, thereby complying with the regulated pipeline tariff. To some extent, the fact that the producer also ships and sells the gas downstream obscures the fact that his control over pipeline throughput is the source of his monopoly profits. To see more clearly that this is true, it should be noted that a non-producer Alaskan transmission company selling at the same downstream price would earn no extra profit, since it must pay to the Alaskan producer the higher wellhead price upstream. */

In essence, the same factors that determine how high an unregulated, unintegrated pipeline owner would set its tariff -- trading off the higher tariff-rate against the loss of volume to gas shipped from alternative sources -- would govern the decision of the integrated pipeline companies. Producer-owners are, by definition, vertically integrated. When they sell their gas at the same city gate price as shippers from sources with higher delivered costs, they can make excess profits on their sales of gas equal to the difference between the unregulated monopoly

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*/ Later we consider the possibility that nonproducer transmission companies can reap the pipeline profits if permitted to exercise monopsony (buying) power vis a vis the producers.

pipeline tariff and the regulated tariff; in essence, they could continue to collect the unregulated monopoly tariff.

Thus, by shifting pipeline profits upstream, the producer-owners can circumvent tariff regulation. The benefits of efficient pipeline transportation could be pocketed by the producer; resources would be misallocated -- the supply of Alaskan natural gas would be artificially restricted and the relatively inefficient Gulf Coast supply chain would be excessively relied upon for satisfying Midwestern demand.

It is important to realize that upstream profits are available to any Alaskan producer, pipeline owner or nonowner, who supplies the Midwest market via the pipeline at the Federal Power Commission regulated tariff if his natural gas sells at the prevailing downstream city gate price. Because any upstream shipper can share in the excess profits, such supranormal profits should spur new entrants to find and sell Alaskan gas. By increasing downstream supply, new entry would have the effect of lowering distributor prices and, therefore, forcing upstream field prices down to near the competitive level. Such efforts to enter would be frustrated, however, by limitations on the amounts new producers could ship through the monopolized pipeline. Wishing to deny the fruits of their monopoly power to nonowner shippers, the pipeline owners would have to deny pipeline access to nonowner shippers.

Properly observed and enforced, Section 13(a) of the Alaskan Natural Gas Transportation Act should protect present producers

who are not owners of the pipeline from such discrimination. */ (see detailed discussion, infra., pp. 63-72) Under 13(a) the Federal Power Commission is empowered to enforce the pipeline's obligation to provide open and nondiscriminatory access to shipper's, whether or not they are owners. However, even with 13(a), there is no guarantee that capacity will be made available for future entrants into Alaskan production. In fact it would be in the interest of vertically integrated producer-owners to prevent it.

Significantly, we cannot say that the problem has been solved just because initial pipeline capacity seems adequate (indeed, even if initial capacity strains technical construction and operating capabilities). For the case we are concerned with includes future efforts by other producers to enter the Alaskan field and consequential needs for expanded pipeline capacity (e.g., through looping) in the future. The analysis above should make it clear that producer-ownership of the pipeline creates incentives to deny or impede such future capacity expansion.

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*/ It is not clear that Section 13(a) will be easy to enforce. For example, there have been allegations that vertically integrated oil pipelines have employed discriminatory devices to avoid honoring their common carrier obligations under ICC regulation. Such devices include (1) tailored routing and sizing of the pipeline for the sole convenience of the owners; (2) denying input connections; (3) refusing to provide sufficient ancillary facilities to accommodate nonowner shippers; (4) refusing to carry small shipments; (5) granting only irregular shipping dates; and (6) imposing unreasonable commodity quality specifications. Such discrimination in transportation is one way of making upstream and downstream entry more costly, thus removing the profit incentive to enter.

If granted access on nondiscriminatory terms, nonowners, motivated by upstream profits, will demand pipeline transportation until pipeline throughput capacity is reached. The Federal Power Commission could react under 13(a) to this nonowner demand by requiring some form of prorationing (see detailed discussion infra., pp. 68-70). If prorationing is then fair and equitable, has the upstream profit-vertical integration problem been solved? The answer is emphatically in the negative. Ironically, attempting to resolve the capacity problem by prorationing tends to mask and thereby exacerbate it. Although shippers are treated equally, the decision of the owners to restrict pipeline capacity is the ultimate denial of access. */ Prorationing is a symptom of excess demand for pipeline transportation motivated by the still extant upstream profits. Those profits cannot be bid away by newly entering producers until pipeline capacity is expanded. The Federal Power Commission does not have the authority to require such expansions. **/

Because all shippers are presumed to be treated impartially under prorationing policy, the capacity problem may not even be

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*/ It can be shown analytically that, faced with strict adherence to open and nondiscriminatory access for nonowner shippers, producer-owners will size the pipeline such that its capacity is larger than the unregulated monopoly throughput but smaller than the regulated nonintegrated owner's throughput. Provided the owners have a nontrivial share of the upstream market, it is in their best interests to restrict capacity below that of a nonintegrated owner who lacks the upstream profit incentive to limit pipeline throughput.

**/ Note that capacity consists of two elements, pipe size and operating pressure. Therefore capacity can be restricted even with a large-sized pipe by holding down operating pressure.

recognized as a denial of access. Nevertheless, restriction of pipeline capacity necessitating extended prorationing constitutes denial of access simultaneously to all shippers and, therefore, to consumers. The public is denied expanded use of the most efficient supply chain and is forced to pay for the substitution of higher cost, less efficiently supplied natural gas.

This analysis shows how even perfectly designed and implemented tariff regulation can be thwarted by vertically integrated pipeline owners. By restricting pipeline throughput and, consequently, the downstream supply of natural gas and so allowing its upstream field price to rise, integrated owners can pocket resulting upstream profits at the expense of the consuming public. */

Let us now drop our original assumption that the Alaskan field is open to new entry and is potentially workably competitive. If present Alaskan producers have market power in that field not derived from the pipeline (e.g. if they already control all the

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*/ The analysis above assumes that regulators endeavor to set a market clearing city gate price. Instead, they may attempt to set the distributor city gate price of different gas supplies at different levels, i.e., multitiered pricing. If this proves to be the case and regulators do not permit Alaskan pipeline capacity restrictions to force up the downstream Alaskan price, then to the extent there is a capacity shortage in the pipeline, excess demand would persist for the Alaskan field's lower cost gas. Hence, in conjunction with a multitiered schedule of downstream distributor prices, regulators would have to impose some kind of rationing scheme to allocate the restricted supply of the Alaskan field's gas. Monopoly gains would be denied the integrated producer/pipeline under such a regulatory scheme, but there would still be social losses resulting from the inefficient capacity choice in the pipeline. Of course, if the intergrated producer/pipeline knew in advance that such a policy of rationing would be employed, it may never even attempt to restrict pipeline capacity.

high-quality, low-cost reserves to be found in the area), they can merely restrict gas supplies directly at the production stage rather than indirectly via restraints on transportation. There is no need in this case for them to tinker with the pipeline stage in order to exploit their market power (except, ironically perhaps, to encourage the lowest-cost line available to insure the delivered cost advantage margin of their gas). Integration by producers into the pipeline stage under these circumstances would produce no worse performance than would already result.

Nevertheless, it is not clear that existing producer market power will persist in the absence of pipeline control. And, even if the regulator does engage in multitiered, cost-based city gate pricing, there is no assurance that such a policy will not change in the future to market-clearing pricing. Therefore, neither of these exceptions to the producer-owner problem is sufficiently persuasive to allay the competitive concerns created by such ownership.

A nonintegrated owner cannot earn upstream profits -- he has no upstream operations; he is motivated by pipeline profits only. Regulation forces him to expand throughput with the result that, absent market power in production, a properly designed Federal Power Commission tariff would eliminate all excess profits -- upstream, downstream and in the pipeline. The clean solution to the vertical integration problem is to place all pipelines in the position of the nonintegrated owner -- prohibit producer ownership in the pipeline.

The current regulatory system, whatever its other adverse effects, if effective, should prevent competitive abuses in the transportation of Alaskan gas. Relaxation of wellhead price regulation, however, combined with city gate pricing to clear the downstream market (a regulatory initiative that may be preferable to the current scheme) creates a situation in which pipeline ownership by Alaskan producers would entail an unacceptable danger of anticompetitive behavior. Under such a regulatory regime, vertically integrated producer-owners could circumvent pipeline tariff and city gate regulation by restricting pipeline capacity (and consequently access) while achieving monopoly profits in their upstream operations. Initial sizing of the pipe for large capacity does not necessarily solve this problem, since it will be in the interest of producer-owners to resist future expansion and thus discourage future entry into Alaskan gas production. Therefore, companies which are significant producers of natural gas should be prohibited from participating in ownership of the proposed Alaskan natural gas transportation system. Among the three proposals, only Arctic Gas currently has a producer of substantial amounts of gas as a member. We would recommend, therefore, that if Arctic Gas is selected Exxon's subsidiary, Imperial, (and Gulf Canada, Shell Canada and Union Gas, Limited, if they will be producers of significant amounts of gas delivered through the pipeline from Mackenzie Delta) be prohibited from participating in the transportation system.

B. Buyer-Owner Vertical Integration

A situation somewhat analogous to producer ownership is created by current transmission marketing practice. Since transmission companies actually take title to gas in the field and then ship it for resale downstream, it might be argued that even the unintegrated pipeline, once it has taken title to the gas upstream, is in the same position as a producer-owned pipeline to restrict supply and earn monopoly profits. The only difference, under this analogy, is that the pipeline would make profits by monopsonistically holding down the price it pays for wellhead gas for resale at the higher (because of pipeline-restricted supply) downstream price, rather than attempting to drive up the wellhead price of gas.

Such anticompetitive performance will not occur under current regulation, however, because the Federal Power Commission presently adds the wellhead price and the pipeline tariff to arrive at the city gate price at which transmission companies sell to distributors. Any monopsonistic reduction in the wellhead price would be passed on to downstream customers and could not be captured by the pipeline. Consequently, whether or not wellhead prices remain regulated, the transmission companies currently lack the profit incentive to attempt to force down the wellhead price and restrict the supply of Alaskan gas. Rather, as noted earlier, they will maximize their transmission profits at the regulated tariff by encouraging more, not less, throughput.

If this formula of city gate price regulation were ever changed, such that a monopsonistic reduction could be captured by the pipeline owner, the monopsony scenario would be applicable and problems like those presented by vertically integrated producer-pipelines would pervade the industry. The solution to this buyer-owner problem would lie in the application of a "commodities clause" and common carrier status to natural gas pipelines. That is, common carrier pipelines would be forbidden to transport gas in which they had an ownership interest. Distributors would have to buy directly from producers.

The possibility of such a change in the form of regulation appears remote, because all regulatory reform proposals have focused on relaxation of wellhead regulation and not on alteration of the present mode of city gate price regulation. We mention this issue only as an indication of what might happen if the present downstream price regulation scheme is changed. Because this problem can be cured by adoption of common carrier status, for the Alaska Natural Gas Transportation System (as we recommend below) and application of a "commodities clause" if and when downstream regulation occurs, no further prophylactic measures are necessary. This discussion should not be taken as a recommendation that common carrier status with a commodities clause be applied to <u>all</u> gas pipelines at this time. Such a change, in our opinion, is not necessary or desirable.

IV. IMPACT OF RULES REGARDING ACCESS TO ALASKAN GAS AND TO AN ALASKAN GAS TRANSPORTATION SYSTEM

As indicated earlier the choice of route for the Alaskan gas transportation system is not likely to impact on competition among pipelines. This is because the primary competition among pipelines such as it exists is within regions (regional) not among regions, (national) and while the choice of project may impact more favorably on one region than another, it should not affect competition within a region, i.e., regional competition.

Given the route, however, there are decisions that must be made regarding access to (i.e., ability to purchase) Alaskan gas and access to the transportation system for those who would seek to transport Alaskan gas (or its equivalent through displacement) to local markets. These decisions can affect competition among pipelines within a region and hence need to be made with an eye toward those competitive effects.

We begin this section with a discussion of regional competition, since it is not obvious that at the present time regional competition is a significant force. Most of our recommendations therefore contemplate a future change in the supply-demand balance such that regional competition reassumes an important role. Following that discussion we raise individual issues regarding access to Alaskan gas and the operation of the Alaskan transportation system.

A. Regional Competition

The Natural Gas Act imposes a comprehensive regulatory scheme upon the gas industry, yet both Congress and the courts have recognized that competition has a complementary role to play along with regulation. Competition among pipeline companies in particular marketing areas for sales to existing or new customers (hereinafter referred to as regional competition) has been and may be in the future an important part of the natural gas industry.

Despite the economies of scale inherent in gas transmission, more than one pipeline company serve most marketing areas. Some competition exists among these companies to serve existing customers and to serve new customers. Competition often is sporadic since most customers are tied to suppliers under long-term contracts. But the opportunity to compete for existing sales at the termination of such contracts, or for incremental sales to new customers, has been recognized by Congress, the courts and the industry. */ Even though local distribution may be characterized

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*/ Justice Douglas in United States v. El Paso Gas Co., 376 U.S. 651 (1964) recognized this situation:

> This is not a field where merchants are in a continuous daily struggle to hold old customers and to win new ones over from their rivals. In this regulated industry a natural gas company (unless it has excess capacity) must compete for, enter into, and then obtain Commission approval of sale contracts in advance of constructing the pipeline facilities. In the natural gas industry pipelines are very expensive; and to be justified they need long-term contracts for sale of gas that will travel them. Those transactions with (footnote continued)

by regulated monopoly, regional transmission is characterized by oligopoly. Although there is some incentive in such markets for the sellers to arrive at a price that will offer the maximum profits to all of them, in practice it has been observed that in many markets the monopoly result has not been achieved and regional competition has been an important element in the industry.

Congress recognized the importance of regional competition by including in the Natural Gas Act Section 7(g), which provides

> Nothing contained in this section shall be construed as a limitation upon the power of the Commission to grant certificates of public convenience and necessity for service of an area already being served by another natural gas company. 15 U.S.C. § 717(g).

The courts have recognized the importance of regional competition as a factor to be considered by the Federal Power Commission in its determination of the public convenience and necessity. Regulation and competition are viewed as complementary

(footnote continued)

> distributors are few in number. . . . Once the Commission grants authorization to construct facilities or to transport gas in interstate commerce, once the distributing contracts are made, a particular market is withdrawn from competition: The competition then is for the new increments of demand that may emerge with an expanding population and with an expanding industrial or household use of gas. 376 U.S. at 659-660. (Emphasis in original.)

The Court in Atlantic Seaboard Corp. v. Federal Power Commission, 397 F.2d 753 (4th Cir. 1968) made clear that competition was not limited to incremental sales as Justice Douglas implies, but extends to all sales. 397 F.2d, at 758-759.

rather than mutually exclusive, */ with the policies underlying the antitrust laws another tool that a regulatory agency can employ to give understandable content to the broad statutory concept of the public interest. **/

Actual experience by pipeline companies points to the sometimes fierce nature of regional competition. During the period of rapidly expanding natural gas markets in the 1950's and 1960's various regional markets benefited from vigorous struggles for new markets and incremental sales. Although this competition has become attenuated in recent years because of gas shortages and slower growing markets, it still exists and continues to be a factor in regional marketing strategies. Certainly, if natural gas supplies become more plentiful as a result of relaxed regulation, or because conservation measures make gas more readily available for higher priority customers, regional competition could take on increased importance.

B. Access to North Slope Gas

In an unregulated market, Alaskan natural gas would go to those pipeline companies that were prepared to bid the most for

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*/ United States v. El Paso Gas Co., 376 U.S. 651 (1964); Northern Natural Gas Co. v. Federal Power Commission, 399 F.2d 953, 959-960 (D.C. Cir. 1968) and cases cited therein.

**/ Northern Natural Gas Co. v. Federal Power Commission, supra., at 961.

it and for whom that gas was presumably most valuable relative to gas from other sources. Under regulation, if the price is held below a free market level, an excess of quantity demanded over quantity available for sale is created. This carries with it the necessity for some discretionary choice of buyers. This choice can be left to the gas producers or can be taken over by regulators. Either way there is the possibility for an impact on competition among pipelines if such competition exists.

Originally, the discretion had been left with the producers of Alaskan gas. As should have been expected, producers attempted to enter into contracts that would yield more than simply the yet-to-be determined regulated field price of Alaskan natural gas. Contracts required sizeable advance payments and frequently involved various side agreements generally concerning renegotiation of existing contracts for non-Alaskan gas.

Each of the major producers, ARCO, Exxon and BP/Sohio, made arrangements for the sale of all their Prudhoe Bay reserves. These Alaskan advance payment agreements were in effect until December 31, 1975, when the Federal Power Commission issued its Order */ terminating the advance payment program with respect to all areas of the country including Alaska. The Alaskan

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*/ Federal Power Commission Order in Docket Nos. R-411 and RM 74-4, December 31, 1975.

termination applied to all leases entered into after December 28, 1973. Thus, most of the agreements have been terminated.

The Federal Power Commission decision covered advances throughout the United States; however, the portion of the Order with respect to the Alaskan advances is particularly illuminating. There was much support for the program from those companies with agreements, but there was some strong opposition from a group known as the Arizona Group, (comprised of The Arizona Commission, Tucson Gas & Electric Co. and The Arizona Public Service Company). This group alleged that the major pipelines were tying up all of the producer reserves in Alaska as well as prejudging the certification proceedings before the Federal Power Commission. Arizona argued that geographic areas not served by pipelines making Alaska advances would be precluded from getting any Alaskan gas. The Arizona Group received support from several groups in California. The California Public Utilities Commission (CPUC), among others, argued that the producers, namely Exxon and ARCO, were trying to "blackmail" the CPUC into approving interest payment arrangements between California intrastate distributors and the producers on the threat that, if such arrangements were not approved, the producer would terminate the agreement and seek an arrangement from another company not serving California.

As noted, the Federal Power Commission agreed with the Arizona Group and ended the arrangements. In its order, the

Federal Power Commission stated:

> Furthermore, we agree with those parties who in their comments, and at oral argument, opposed this Commission's Alaskan advance payment program as being contrary to the national interest in permitting a few pipelines, among others, to tie up almost all of the Alaskan natural gas reserves, to the exclusion of others, through advance payments with little or no benefit to the ultimate consumer.

Similar efforts were made to extend the advance payment arrangements to the sale of Mackenzie Delta gas. At one time, the producers in the Mackenzie Delta had contracts with several participants in the Arctic Gas group. These contracts no longer are effective, although American companies have a secondary claim for the gas if there is sufficient gas for export purposes.

Despite the termination of the advance payment agreements, the episode is important for the insight it provides concerning the manner in which these contracts were negotiated. Our review of the advance payment agreements leads us to the conclusion that the many side arrangements that have been entered into during the advance payment negotiating process are clear evidence of attempts to evade wellhead price regulation. They demonstrate the extreme difficulty of holding down the price of a scarce resource.

Market distortion results from existing regulatory control over the wellhead price of gas. Since potential buyers of the gas do not have the ability to bid up the price in order to obtain the gas, the only alternative in an auction market for gas

supplies has been to sweeten the pot with various side arrangements, which give the gas producers additional forms of consideration above and beyond the monetary remuneration obtained from the sale of the gas. If the price of gas were to be deregulated, it is likely that these side arrangements would disappear, and prices would rise. Without the relaxation of regulation, side arrangements will continue to proliferate as a price substitute. Producer documents indicate that such side arrangements will continue to play a major role in their marketing strategy.

Not surprisingly, given the depressed wellhead price, obtaining additional consideration was an integral part of each producer's past marketing strategy. The producers had well planned marketing strategies to select those pipeline companies which possessed the abilities to enter into side arrangements involving matters other than Alaskan gas. One pipeline company said about its negotiations with a producer:

> It is clear that the successful bidder for all or part of the gas will be the company who offers the largest capital contribution for development and pipeline and/or the most downstream profit opportunities.

This pipeline company indicated that if the Federal Power Commission limited capital contributions (as it later did)

> . . . then the bidding will need to concentrate on the downstream profit opportunities.

The most important of the side arrangements noted in our study were renegotiations of existing gas purchase contracts in

lower 48 state fields in order to upgrade the price. Such upgrading would benefit the producer immediately in the lower 48 fields. Also, it would benefit the producer with respect to its Alaskan gas, since the price of the Alaskan gas would be affected by the amount of the upgrades allowed on lower 48 gas. Another type of renegotiation would permit revenue sharing between the producer and the pipeline with respect to existing production, thereby increasing the amount of money received by the producer.

Another "side" consideration was the ability of the pipeline company to deliver more gas to existing facilities of the producer. This often took the form of a reservation by the producer of a fixed percentage of the Alaskan gas for redelivery to its facility.

Other additional considerations included: the commitment of natural gas liquids or crude oil to the producer from companies affiliated with the pipeline; the offer of partnerships with the producer in facilities for the production of natural gas liquids or crude oil; and the provision of additional services associated with the transportation of gas from lower 48 fields.

It should be clearly stated that there is no evidence that the producers extorted these arrangements from the buyers. On the contrary, it is clear that both sides were anxious to make these side arrangements a part of the bargaining process.

Some pipeline companies would be disadvantaged in seeking to gain access to North Slope gas if these arrangements were to continue, since not all pipeline companies have existing relationships that can be altered or other goods or services to barter in addition to paying the wellhead price. The competitive effects of this disadvantage, if any, are uncertain.

There are methods to mitigate the problems caused by side arrangements. Perhaps the most practical way to ameliorate the situation would be for the Federal Power Commission or its successor agency to require that agreements for the purchase of gas disclose all collateral considerations. The Federal Power Commission could analyze the collateral agreements and disapprove any gas purchase agreement that it finds not to be in the public interest. The greatest difficulty with this latter course is its ambiguity, but that is perhaps inherent in any similar regulatory scheme.

The Department will continue to analyze the competitive implications (if any) of these arrangements.

C. Distribution of North Slope Gas

With the cancellation of the advance payment contracts, a question arises as to how the gas will be distributed among prospective buyers. In a normal market situation competitive forces would dictate how the gas would be distributed -- the gas would go to those areas willing to pay the most for it. But in a setting where the wellhead price of gas is regulated, there

is no opportunity for market forces to operate to allocate the gas in the most efficient manner.

The regulatory scheme distorts the market mechanism; thus, allocation is imperfect from an economic perspective and in fact may be influenced by a variety of factors, only some of which might be perceived as meeting national energy policy goals. If widespread distribution is thought to be important from a national energy program perspective, a regulatory allocation mechanism will probably be required.

The Federal Power Commission's recommendation -- a limitation on the amount of gas that can be purchased by any particular pipeline company -- appears to be a plan that would bring about as widespread a distribution of the Alaskan gas as possible; and since no individual pipeline would gain access to large quantitites of Alaskan gas, the current competitive balance among pipelines would be preserved.

As long as the price of Alaskan natural gas is held below an equilibrium level, it becomes virtually impossible to determine who, in some efficient resource allocation sense, is "most deserving." It is certainly not obvious that a plan that distributes gas widely and preserves the current balance among pipelines is necessarily optimal from an economic perspective. The best we might hope for is that the wellhead price will be sufficiently close to a market clearing level as to make this issue of trivial importance.

D. Access to Transportation Facilities

The discussion concerning the ownership structure of the selected transportation system indicated that equal access to the transportation facilities would be important if the producers owned or controlled the transportation system, but would be less important if the buyers of the gas owned the system. Even in this latter case, however, equal access to facilities may be important in order to preserve regional competition or to achieve an equitable distribution of the gas.

In a producer-owner situation, we indicated that an anti-competitive result could be achieved even with regulation if the producer-owners denied access to the transportation system. Equal access, as one element in a set of procompetitive rules, must be preserved. */

If producer-ownership is not permitted, then equal access to the transportation system is less important, since there is an incentive on the part of the owners to maximize throughput through the system and encourage use of the system. Full use of the system will mean lower transportation costs for the pipeline owners. Moreover, rate of return is based upon the investment in

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*/ The Department's recent report on Deepwater Ports elaborates on the other rules required in addition to equal access. These include an ability to require expansion of the facilities, periodic adjustments in the ownership of the system and open ownership of the system.

the system creating an incentive to maximize investment in order to maximize rate of return. The owners, therefore, have an incentive to expand their system when necessary.

Nevertheless, from the perspective of regional competition, equal access provisions may retain some importance. If transmission companies are to be the owners of the transportation system, it might be advantageous for them to deny access to their competitors in regional markets with the expectation of obtaining some advantage in their regional competition. Protection of regional competition and its potential, therefore, would support the ability of all pipeline companies desirous of using the transportation system to be able to do so.

Section 13(a) of the Act provides for equal access to the pipeline facilities. The inclusion of Section 13(a) in the Act has generated considerable comment from those associated with the proposed transportation systems. They express concern over the immediate and long-range effects of Section 13(a) regarding the financing, construction, and ultimate operation of the pipeline.

Section 13(a) states:

> There shall be included in the terms of any certificate, permit, right-of-way, lease, or other authorization issued or granted pursuant to the directions contained in section 9 of this Act, a provision that no person seeking to transport natural gas in the Alaska natural gas transportation system shall be prevented from doing so or be discriminated against in the terms and conditions of service on the basis

of degree of ownership, or lack thereof, of the Alaska natural gas transportation system.

There is little doubt that this provision represents a substantial departure from the traditional mode of operation of the gas transmission industry. Normally, gas pipelines are owned by a single transmission company, primarily transporting its own gas with nonowner shippers contracting with the owner for space in the line. Since common carrier principles do not apply to the operation of existing pipelines, there is no obligation upon the pipeline owner to accommodate a shipper, except for the economic incentives that full utilization of capacity yield to the owner. If the pipeline is full and a new shipper wants to utilize the line, it must wait until space is available in the line. The pipeline owner is under no compulsion (other than its own economic incentives) to expand the pipeline or prorate the line to accommodate the new shipper. */ In fact, prorationing is not used at all in the gas transmission industry, since shippers on pipelines usually enter into long-term commitments for use of the line with the expectation that capacity will be available to meet its downstream commitments.

The inclusion of Section 13(a) changes the manner in which

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*/ The Federal Power Commission cannot, under the Natural Gas Act, order a pipeline to expand its facilities or institute a prorationing scheme. The Alaska Natural Gas Transportation Act confers no additional powers.

the Alaskan pipeline will be operated. The literal language of the section indicates that no shipper can be denied access to the pipeline, nor can nonowner shippers be discriminated against in the terms and conditions of service, on the basis of ownership or lack thereof. Thus no shipper, owner or nonowner, can be prevented from utilizing the system through the imposition of arbitrary conditions.

Section 13(a) has been interpreted by the Federal Power Commission to impose common carrier obligations upon the pipeline, requiring equal access to its facilities. **/ It is not clear to us, however, that the language of Section 13(a) clearly imposes common carrier obligations upon the pipeline. Thus, we would recommend that this ambiguity be clarified through additional legislation which would clearly indicate that the Alaskan natural gas transportation system is to operate as a common carrier.

Common carrier status is an important safeguard necessary for this transportation system. Arbitrary conditions for use of the line may disadvantage some users of the line. In our experience with common carrier oil pipelines, conditions relating to product specification, product cycles, batch size, tankage owner-

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**/ This interpretation of Section 13(a) was adopted by the Federal Power Commission in its May 1, 1977, Recommendation to the President. See Recommendation, at X-19-20.

ship and the like, may have acted to preclude use of the line to some shippers even with common carrier obligations imposed on the system. Without such common carrier obligations, nonowners shippers would be in a more disadvantageous position. The Alaskan transportation system should not be operated to accommodate the desires of the owners to the exclusion of others. Imposition of full common carrier obligations would help alleviate our concerns, although diligence would be required to make sure the transportation system was abiding by its obligations.

We do not advocate, however, that common carrier obligations be imposed on all natural gas pipelines. The Alaskan natural gas transportation system is unique in that it will be the only transportation system transporting gas from the North Slope. In addition, it will be one of the few joint ventures in the gas transmission segment of the industry. Its sponsors should not be given the opportunity to use their ownership position to their advantage in competing with nonowner pipelines in regional markets. Environmental concerns may impact heavily upon future expansibility of the system. Thus, safeguards not normally required for other natural gas transportation systems are appropriate for the Alaskan system. Given the ambiguity of the current language of Section 13(a), clarification by Congress of its intentions in this respect is important.

The Alaskan natural gas transportation system will be built in a hostile environment, making expansion of the system difficult, at best. Thus an equal access provision assumes even

greater importance for the future, if the capacity of the pipeline may be limited due to other factors.

In the remainder of this section we discuss the impact of the equal access provisions of Section 13(a) on the pipeline system, on the assumption that our recommendation for clarification of the common carrier issue is accepted.

1. Scope of Section 13(a)

It is unclear what is meant by the "Alaska natural gas transportation system". In the absence of any contrary indication in the statutory language or the legislative history that Congress intended to apply this provision to existing domestic pipelines, common carrier requirements should be applicable only to those new facilities that are constructed to transport Alaskan natural gas, or those existing facilities that will form an integral part of the transportation system carrying gas to the lower 48 states.

2. Prorationing -- Legislative Recommendation

An important application of the equal access concept of Section 13(a) would occur once the pipeline is operational. Assume that the pipeline has reached capacity; additional gas can be accommodated only by looping the line or construction of additionally compression stations. A discovery of a new Alaskan field is made, contracts are executed, and gas purchasers obviously desire to transport the gas they have contracted for.

Either new facilities must be built or the existing shippers must be prorated to accommodate the new shipments. */

As previously noted, the Federal Power Commission currently has no authority to order the construction of additional facilities. Nor does the Commission have the jurisdiction to allocate capacity to shippers on the pipeline. Therefore, the Commission would be powerless to remedy such a "bottleneck" during the time it would take to construct additional facilities.

The Act's legislative history gives some indication of the Congressional foresight of such a contingency. The Joint Report of the Senate Committees on Commerce and the Interior, in its discussion of the intended effects of the equal access provision, referred to the Mineral Leasing Act of 1920, § 28(r)(2)(B), P.L. 93-153, November 16, 1973, 30 U.S.C. 185(r)(2)(B). Under the latter Act, the Secretary of the Interior may determine the proportionate amounts to be accepted, conveyed, transported, or purchased for pipelines transporting gas from federal lands. The Secretary may, after a full hearing, require the certificate holder to apportion shipments of other shippers in order to accommodate the additional production where additional pipeline capacity

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*/ We have indicated in the section on producer control of the pipeline the importance of prorationing as well as its limitations. Although it is not a solution to the capacity problem, it is an equitable and procompetitive short-term "band-aid" response to conditions that cannot be effectively dealt with until expansion takes place.

is unavailable. As the Joint Report makes clear, this provision would apply to any Alaskan natural gas transportation if gas would be shipped from Federal Lands. */

A similar provision is contained in the Outer Continental Shelf Lands Act, 43 U.S.C. 1334(c) (1953). Access to offshore pipelines may be apportioned by the Federal Power Commission for gas pipelines and by the Interstate Commerce Commission for oil pipelines. Pipelines leased under this Act must accept and transport offshore gas and oil without discrimination. Similarly, there are requirements of notice and public hearings before the respective agencies.

There is no similar provision contained in the Alaska Natural Gas Transportation Act of 1976. The inability of the Federal Power Commission to respond to a situation where prorationing would be required may be a serious deficiency in the current Act and might vitiate the beneficial effects of Section 13(a). We believe that Congress should consider enacting legislation which would confer authority upon the Federal Power Commission or its successor agency to apportion access to the Alaskan gas transportation system.

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*/ Sen. Rep. No. 1020, 94th Cong., 2d Sess. (1976), p. 23.

3. Effects on Financing

Our analysis of the impact of Section 13(a) on the ability to finance any of the proposed systems has led us to the conclusion that Section 13(a) will not be an impediment to financing. Our conclusion differs from those of several of the parties associated with the proposals, which have contended that the retention of Section 13(a) will cripple efforts to attract investors. This concern was shared by Judge Litt in his Initial Decision, where he indicated that no equity investors would be willing to come forward and invest in any system if nonowners would have an equal ability to utilize the system without contributing equity. */

Our study of the effects of Section 13(a) on financing refute these contentions. Interviews with various participants have indicated that their desire to obtain the Alaskan gas is their overriding consideration. Since the pipeline companies need the gas and the only way to obtain the gas is through the construction of a pipeline system, they are willing to invest in it to insure that a pipeline in fact will be constructed to give access to this sorely needed resource. The desire to obtain the gas outweighs any consideration that some companies may be able to utilize the system without a contribution to equity. These potential owners

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*/ Initial Decision, at 426.

have indicated to us that in their view Section 13(a) is not a problem at the initial investment stage.

Another possible incentive for investment in the system is the potential for substantial cash flows as a result of ownership. The investors know that federal regulation will guarantee them a rate of return. Our study indicates that few, if any, of the potential investors are in the project solely for this rate of return, but the possibility of receiving the cash flow makes the investment even more attractive. The cash flow would be generated from depreciation and various tax credits and would be available only to owners.

4. Conclusion

We do not support the proposition that Section 13(a) should be repealed. */ The specter of nonfinanceability of the system due to this equal access provision is just that - a ghost. We recommend that Section 13(a) be clarified to confer clearly common carrier status on the Alaska natural gas transportation system and that Congress consider giving the Federal Power Commission power to apportion capacity in the line.

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*/ Judge Litt has recommended its repeal in his Initial Decision, at p. 426.

V. ANTITRUST ANALYSIS OF OPERATION OF AN ALASKAN NATURAL GAS TRANSPORTATION SYSTEM

A. Displacement Practices

The perceived need to move gas to consumer markets within the lower 48 states through displacement may create some competitive problems. Such delivery, in which a pipeline company would utilize Alaskan gas available at its service borders to satisfy its delivery obligations and "displace" its own gas supply to another pipeline company, which would use that gas to satisfy its obligations, creates sizable cost savings over actual delivery of the Alaskan gas to distant markets. Delivery by displacement is not a new practice in the gas industry; however, the displacement program for Alaskan natural gas will be particularly elaborate and complex.

Two problems may arise with respect to such displacement programs. The first is the danger that the program could be thwarted by a few recalcitrant pipelines which would refuse to cooperate in the necessary interconnections and allocations. Although the Federal Power Commission must approve all such interconnections, it does not currently have the power to order such interconnections. */ Thus, a pipeline company cannot be forced to participate in a displacement program.

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*/ See, Manufacturers Light and Heat Co., 39 FPC 294 (1968).

The most attractive solution to this problem would be for Congress to give the Federal Power Commission or its successor agency the authority to order such interconnections for the delivery of Alaskan gas.

A more serious anticompetitive problem is raised by the need for various pipelines, which might normally compete for the right to provide service in adjoining areas, to meet together to reallocate existing supplies of gas in order to implement a complex displacement scheme. Obviously, the potential for anticompetitive agreements in the implementation of such a process exists. Regardless of the actual risks of such agreements being made, the public perception that such possibilities exist requires some antitrust protection.

This is not an insuperable problem. If the companies do no more than is reasonably necessary to effect the displacements, no antitrust issues should be presented. A method of insuring that no anticompetitive discussions or acts take place is to have interested government agencies monitor such meetings, and to have proposed allocation plans subject to government review and approval.

Displacement is often the most economically feasible method for transporting the gas in the lower 48 and therefore should be incorporated into any plan for transporting the gas. With the minimal safeguards described above, the process should work effectively without adverse competitive effects.

B. Tariff Guarantees

It has been recommended by all applicants that the tariff for the Alaskan natural gas transportation system be a cost-of-service all-events tariff. Such a tariff provides that shippers enter into service agreements, presumably having a term of twenty years, which would bind them to pay monthly their allocated share of the total dollar cost of service of the transportation system, including operating costs, all taxes, depreciation charges, and a composite rate-of-return on rate base, whether or not the service actually is provided.

This would guarantee to the owners of the pipeline that all unit costs for transporting gas would be paid by the shippers, whether the unit cost is the low unit cost associated with efficient pipeline use or is higher due to underutilization of the pipeline. */ Since these costs are guaranteed, there is no incentive for the pipeline owners to analyze carefully the amount of gas to be shipped and propose a pipeline sized to operate at maximum efficiency. There is, in fact, an incentive to build the largest possible pipeline "just in case" more gas becomes available. The proposed tariff would remove management incentives to act in a prudent manner and would impose on federal regulation a more precise monitoring of the business judgment of the proponents.

Is there any possible danger that the pipelines currently

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*/ Higher costs also could result from excessive cost overruns in construction of the pipeline or long term interruptions of service.

proposed here will be underutilized? To determine that we must look to the Alaskan reserves and their deliverability.

Gas reserves in Alaska are found in several regions. The largest concentrations are found on the North Slope. The North Slope contains the Prudhoe Bay Field, Naval Petroleum Reserve No. 4 (N.P.R. No.4) */ and the Arctic National Wildlife Range, all of which have been determined to contain oil and gas reserves. In addition, the area immediately offshore in the Beaufort and Chukchi Seas may contain large reserves. There are some possible gas-producing areas in the interior of Alaska but they are of little significance.

The North Slope has been intensively studied since it contains the major-gas and oil-producing area, the Prudhoe Bay Field. This field has been found to contain three separate geological formations, the most productive of which is the Prudhoe Oil Pool, containing the Sadlerochit Formation. The Sadlerochit, the primary area to be served by the Alaska natural gas transportation system, has been estimated to contain 35.1 to 41.9 trillion cubic feet (Tcf) of in-place gas reserves. The salable recoverable reserves in the Sadlerochit are estimated to be 20.5 to 24.3 Tcf of gas. */

The other areas of the Prudhoe Oil Pool and future discoveries in the Sadlerochit are expected to produce approximately another

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*/ Effective June 1, 1977, this Reserve will be known as the National Petroleum Reserve in Alaska.

9 Tcf of salable reserves. It is expected that the other Prudhoe Bay Field formations will be proved to contain 4.9 Tcf of in-place reserves by 1985.

There is disagreement as to the extent of gas reserves that may be found in other areas of the North Slope. The amount of additional gas to be discovered on the North Slope remains speculative. The most likely areas for discovery are in the Beaufort and Chukchi Seas and under the Wildlife Range. Both of thse areas present questions as to whether the gas there will ever be producible -- the offshore areas because of technical problems, and the Wildlife Range because of environmental problems.

Although an analysis of the reserves gives one indication of the amount of gas which will flow from Alaska, the deliverability of those gas reserves is even more crucial. Deliverability is the measure of that amount of gas that can be produced daily in accord with good reserve practices, i.e., the amount that will lead to maximum reserve recovery.

At the present time, it is impossible to determine exactly the level of daily deliveries from the Prudhoe Bay Field. There is no production history for the reservoir, the reservoir is rate-sensitive (the rate of gas recovery will affect ultimate oil recovery), and a final production plan for the field has not been

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*/ Salable recoverable reserves are the amounts of gas that can be recovered from the reservoir reduced by the removal of carbon dioxide and liquid by-products.

approved by the State of Alaska. (Such a plan must be submitted and approved before production can begin.) Nonetheless, all of the applicants and many other participants have submitted analyses of estimated deliverability, as well as the pipeline system capacity necessary to transport such production. These estimates are controversial, since the pipeline proposals have varied depending upon the estimates.

Arctic Gas, relying on tentative estimates by the three major producers that 2.0 to 2.5 Bcf/d will be available for sale, developed a production plan that called for 2.0 Bcf/d to be produced from 1980 to 1982 and 2.25 Bcf/d to be produced from 1983 to 1995.

El Paso used available published reserve data and information from industry sources to develop a three-dimensional computer model of the reservoir to schedule production. The production forecast by this model showed a gradual build-up from 1.6 Bcf/d in the fourth year after oil production started to approximately 3.2 Bcf/d in the seventh year after the start of oil production. This level would be maintained for 16 years before starting to decline.

In large part, El Paso relied on a projection by the Department of the Interior that by 1985 gas sales volumes from the Prudhoe Bay Field and surrounding leasable areas could equal 4.4 Bcf/d. El Paso also prepared an alternative production plan

based on sales of 2.4 Bcf/d, should the Department of the Interior's projected additions to these fields not develop and the Prudhoe Bay Field be unable to support El Paso's 3.2 Bcf/d projected gas sales rate.

Alcan had a study prepared by Core Laboratories which used a two-dimensional computer model and 21 various operating plans. These plans varied as to rate of gas recovery, rate of oil recovery, whether produced water was re-injected, and whether additional water or "source" water was injected into the reservoir. The Core study showed that oil recoveries would range from 30.5 percent of original oil in place to 42.8 percent of original oil in place. The lowest oil recovery would result from the highest gas production rate (4 Bcf/d) with reservoir pressure maintenance. The highest oil recovery would occur when all the available gas was re-injected; however, this same oil recovery level would be approached by a combination of limited gas sales and water injection. Projected ultimate gas recoveries varied from a low of 16 to 17 Tcf (40 percent of original gas in place) to a high of 28 to 29 Tcf (69 percent of original gas in place). The highest recovery was found with gas sales rates of 3.0 and 4.0 Bcf/d, and the lowest recovery was found with sales rates of 1.2 Bcf/d.

Based on this analysis, Alcan developed a production plan that calls for initial delivery of 1.2 Bcf/d, 1.6 Bcf/d the second year, and 2.4 Bcf/d thereafter, with a maximum capacity of 2.567 Bcf/d. If the field should be unable to support more

than 2.0 Bcf/d with a maximum recovery of oil, then build-up of sales could be stopped at that point. */

The State of Alaska had a similar reservoir simulation study prepared by Van Poollen. This study also showed that ultimate oil recovery was sensitive to the rate of production of gas. Van Poollen found that a gas sales rate in excess of 2.0 Bcf/d would result in a reduced ultimate oil recovery and that the highest ultimate oil recovery was achieved by no gas sales and water injection. Van Poollen also found, however, that the highest oil recoveries could be approached by gas sales of 2.0 Bcf/d and water injection and that gas sales could be increased above 2.0 Bcf/d, with little oil recovery loss, if source water injection were undertaken.

The producers have submitted a preliminary technical report on their proposed plan of operation to the State of Alaska. **/ In that plan, they note that until the necessary gas pipeline and conditioning plant are constructed, approximately four and one-half to five years after oil production commences, all gas produced will be re-injected into the gas cap. Once the pipeline and conditioning plant have been constructed, the producers state

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*/ As a result of Alcan's lower deliverability estimates, its initial pipeline proposal of 42-inch pipe with 1250 psi of pressure would have sufficient capacity. Criticisim of both Alcan's deliverability rates and pipeline proposal resulted in Alcan's 48-inch alternative proposal.

**/ Report: Technical Considerations Prudhoe Bay Unit Operating Plan North Slope -- Alaska submitted to the Alaska Oil and Gas Conservation Committee.

that gas deliveries of at least 2.0 Bcf/d will begin. The producers say that this planned 2.0 Bcf/d rate is conservative and can clearly be supported by the reservoir. Initial gas deliveries of up to 2.5 Bcf/d may be justified without affecting ultimate oil recovery. The plan does note that all studies of gas rates above 2.0 Bcf/d were conducted without economic analysis and that justification for gas sales rates above 2.0 Bcf/d will depend upon actual production, performance, and economic considerations. */

The producers are, however, intensely opposed to any guaranteed delivery clause in any of their gas sales contracts, either 2.0 Bcf/d or any other amount. In oral argument before the Commission on April 6, 1977, the Exxon Corporation representative stated that Exxon was categorically opposed to any minimum guaranteed deliveries by producers. He also stated that, as a practical matter, because of the nature of oil and gas production, the imposition of deliverability guarantees would fly in the face of economic and production realities. Moreover, he said that could arise from such guarantees could be catastrophic to the pipeline, its lenders, its customers and ultimate consumers. He argued that it was the responsibility of the interested parties (pipeline proponents) to make their own judgments as to the quantity, quality and producibility of the reserves based on data

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*/ Ibid., p. 31.

made available to them by Exxon. */

As stated by Judge Litt, **/ there was some discussion on the record that all produced gas could be re-injected for an indefinite period after the gas pipeline is completed. It is clear that such re-injection would not be detrimental, but would actually increase oil recovery. The Federal Power Commission staff expressed concern about whether any gas would be available for purchase,

> Because Prudhoe Bay is primarily an oil field and the producers have spent enormous amounts of money for the exploration, production and transmission of its oil for marketing, it can be assumed that oil production will be foremost in the minds of the producers. From both the Core Laboratory and Van Poollen reports the highest oil recoveries occur when all of the available gas is injected and pressure is maintained in the aquifer. Economics though plays a key role in the selection of an operating agreement for the field in the sense that the cost of reinjecting high gas volumes in the absence of gas sales must be closely considered along with the decision whether to provide for liquid recovery for gas cap processing. . . . ***/

If the wellhead price of natural gas remains regulated and is set, as it now appears to be, artificially low in relation to the price of oil, and the price of oil continues to rise unregulated, then a point will be reached where it is economically wiser for the producers to reinject all of the low-priced gas in favor

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*/ Official Stenographers' Report before the Federal Power Commission, In the Matter of El Paso Alaska Company, et al Docket No. CP75-96, et al. Oral Argument pp. 45,080-45,082.

**/ Initial Decision, pp. 31-32.

***/ Commission Staff Gas Supply Brief, pp. 4-5.

of increased recovery of the higher-priced oil. This fact undoubtedly explains (at least in part) the producers' extreme reluctance to have minimum deliverability clauses imposed on their gas sales contracts. Therefore, as long as the present system of wellhead price regulation continues, there is a possibility that gas production will not measure up to today's expectations. In such a situation a pipeline based on these expectations will be underutilized, with higher unit costs to be passed on, eventually to the consumer, through the all-events cost-of-service tariff.

Further, although it currently appears likely that some gas will be sold by the producers, it does not appear likely that the producers will opt for sales above the 2.0 Bcf/d level until reservoir performance demonstrates that higher sales levels will not damage oil recovery. This conclusion was reached by Judge Litt in his Initial Decision, and under the present state of uncertainty, we agree that the most likely immediate production level will be 2.0 Bcf/d.

Thus, with pipeline proposals based on deliverability levels in excess of 2.0 Bcf/d, it is clear that there is potential for underutilization and that such underutilization could occur, under the present regulatory scenario, at any time during the life of the reservoir. This underutilization could arise either because of the production capabilities of the reservoirs or from

an economic decision by the producers. It is more likely to occur if the wellhead price remains regulated and artificially low in relation to wellhead oil prices. */

The producers have left the judgment as to producibility of the reserves and the corresponding pipeline size and capacity to the pipeline proponents. However, those proponents have an incentive to over-estimate deliverability and necessary capacity, since all increased unit costs caused by underutilization may be passed on through the tariff as proposed. Of course, another factor to be considered in the proposed capacity is the ability to expand the pipeline in the future. If expansibility is a desired goal and if environmental factors may limit the ability to loop the line in the future, then initial oversizing and underutilization may be the price to be paid to achieve these goals.

These possibilities must be recognized and considered when weighing the merits of each transportation proposal. If such an all-events cost-of-service tariff is viewed as necessary to the creation or operation of the pipeline, then it should be done with full appreciation that the guarantees it affords and the incentives it creates for underutilization of capacity with higher unit costs will lessen incentives on the part of management to use prudent business judgment in evaluating necessary pipeline capacity. A system without guarantees would create strong

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*/ This should not be confused with the potential for underutilization presented by vertical integration of producer/pipeline ownership discussed previously.

incentives for prudent managerial decisions with respect to investment and capacity. If wellhead regulation of gas continues at artificially low prices in relation to oil, then the consequences of such regulation must be considered and a decision reached that takes into account the deterrence of prudent decision-making and the creation of undesirable incentives.

VI. CONCLUSION

Antitrust considerations do not militate for or against the selection of any of the three proposed projects as the transportation system for moving Alaskan natural gas to the lower 48 states. Although we have identified several potential antitrust problem areas associated with the projects, the problems are not of such magnitude as to require a recommendation that a particular project not be selected.

This Report has identified several potential competitive problem areas which can be addressed through: (1) the imposition of conditions upon the license issued to whichever project is chosen; (2) the enactment of legislation; and (3) collateral action by the Federal Power Commission or its successor agency. Since some of the identified problems are not directly associated with the transportation of natural gas, but are associated with the sale of natural gas, these problems would have to be addressed in the context of the required examination of the gas purchase contracts.

We recommend that the following steps be undertaken to ensure that no anticompetitive effects flow from the selection or operation of an Alaskan natural gas transportation system:

(1) An ownership interest, or participation in any form in the transportation system, by producers of significant amounts of natural gas, or their subsidiaries or affiliates, should be prohibited. The license to be issued to the selected system should contain a condition that prevents participation in any manner by such gas producers.

(2) If market forces are not permitted to operate or allocate gas in the most efficient manner bcause of continued wellhead price regulation, then the possibility of a regulatory allocation mechanism should be examined, if widespread distribution of Alaskan natural gas is believed in the national interest.

(3) Section 13(a) of the Alaska Natural Gas Transportation Act of 1976 provides for equal access to the gas transportation system. It is unclear whether this provision was intended to create common carrier status for the transportation system. Common carrier status for all facilities constructed or utilized as an integral part of the system carrying gas to the lower 48 states is desirable, and Section 13(a) should be clarified to unambiguously create such status.

(4) To ensure the equal access provided for by Section 13(a), Congress should consider legislation to grant the Federal Power Commission, or its successor agency, the authority to order prorationing of pipeline capacity among shippers when gas is available in excess of pipeline capacity.

(5) If a system requiring displacement of gas is authorized, government agencies should monitor any meetings of the transmission companies concerning reallocation. The plans for the meetings and the displacement programs