BY THE COMPTROLLER GENERAL

Report To The Congress

OF THE UNITED STATES

Issues Relating To The Proposed Alaska Highway Gas Pipeline Project

This Project currently is scheduled for completion in 1984--about 2 years later than anticipated in 1977--as an entirely private enterprise. Two key remaining issues concern the requirements that will be included in the right-of-way agreements and how the gas-conditioning costs will be treated.

At this time the sponsors are working to privately finance the Project. Notwithstanding this, the question of Federal financing assistance for the Project's Alaskan segment has been publicly discussed by U.S. officials.

This report emphasizes GAO's prime concern that, if Federal financial assistance is proposed, the Government be in a position to make an informed decision.

UNITED STATES GENERAL ACCOUNTING OFFICE

EMD-80-9
OCTOBER 26, 1979

COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

B-174944

To the President of the Senate and the
Speaker of the House of Representatives

This report discusses the Alaska Highway Gas Pipeline Project and recommends that a framework be established for Government analyses if Federal financial assistance is requested for the Project.

We are sending copies of this report to the Director, Office of Management and Budget; and the Secretaries of Energy, State, and the Interior.

Sincerely yours,

Comptroller General
of the United States

COMPTROLLER GENERAL'S
REPORT TO THE CONGRESS

ISSUES RELATING TO THE PROPOSED ALASKA HIGHWAY GAS PIPELINE PROJECT

D I G E S T

When the President and the Congress approved construction of the Alaska Highway Gas Pipeline Project--a system to transport natural gas from northern Alaska to midwestern and western U.S. markets--in 1977, they specified that the Project should be privately financed; Federal financing assistance was "explicitly rejected" and the administration's official position has not changed. (See pp. 8 and 9.)

However, on January 23, 1979, in response to a question from the Joint Economic Committee, the Secretary of Energy discussed the possibility of $2 billion to $3 billion in Federal loan guarantees for the Alaskan segment of the Project. (See pp. 19 to 21.)

If Federal financing assistance is requested, Project proponents undoubtedly will urge the Congress to quickly provide the needed assistance. At the same time, alternatives may exist which could secure or conserve a similar or greater amount of gas. Among the potential alternatives are

--conservation steps,

--intensified drilling in the lower 48-States,

--liquefied natural gas,

--Mexican and Canadian gas, and

--unconventional domestic resources. (See pp. 25 to 32.)

Chapter 3 briefly discusses data and concepts relevant to the questions that need to be answered before a decision is made. (See pp. 22 and 23.) The data are not GAO predictions; rather, they represent one of several possibilities.

EMD-80-9

GAO has no conclusions on what the congressional decision should be but believes that its recommended analyses should help objective decisionmaking.

THE PROJECT IS DELAYED

The Project's original time frame to deliver Alaskan gas to the lower 48-State markets is delayed from early 1983 to at least late 1984. The sponsors' schedules to deliver Canadian gas by the winter of 1979-80 are delayed to November 1980 for service to the West and November 1981 for deliveries to the Midwest. (See p. 5.)

FURTHER DELAYS ARE POSSIBLE

Two key issues concern the requirements that will be included in the right-of-way agreements and how the gas-conditioning costs will be treated. (See pp. 11 to 13.)

Since the pipeline will be built on public lands, the State and Federal Governments will grant right-of-way agreements which give permission to use these lands. To protect the public interest in these lands, the agreements will include environmental and technical requirements that must be followed when building and operating the system. Based on the Government's experience with the oil pipeline, disagreements may lead to lengthy proceedings.

Before this Project can transport any Prudhoe Bay gas, the gas must be conditioned to remove impurities, compressed, and chilled. Since the conditioning plant may cost about $2 billion, the treatment of the conditioning costs can affect the gas price and marketability--a key to the Project's viability and, thus, its ability to be privately financed.

MATTERS FOR CONGRESS

The Congress should not consider Federal financial involvement until all regulatory procedures are completed and the sponsors show conclusively that the Project cannot be financed privately. Should financial aid for the Project be requested, the Congress should evaluate alternative sources of natural gas as well. If the Congress decides to grant financial aid, it should evaluate all feasible alternatives for Federal financial involvement (not just loan guarantees).

RECOMMENDATION TO THE SECRETARY OF ENERGY

Decisions on the Project cannot be isolated from the Nation's total energy situation. This is especially true in light of developments since the first decision on this Project, the uncertainties noted in this report, and the President's July 16, 1979, Import Reduction Program.

The Department of Energy should analyze and propose how the Project fits in to the overall energy picture and show how the cost of Project gas relates to the cost of alternative sources.

GAO recommends that:

--The Secretary of Energy, within 60 days from the date of this report, provide the Congress an analysis showing how this Project now fits in with the overall national energy plan and strategy to satisfy the Nations' future energy needs. Items included in this analysis should include, for the Project and each feasible alternative, detailed information on the (a) amount of gas that would be supplied, (b) time frame for delivering the gas, (c) costs, and (d) impact of U.S. reliance on foreign energy and international implications.

--In addition, <u>if</u> the sponsors officially state that the Project cannot be privately financed or Federal financing assistance is requested, the Secretary of Energy should provide the Congress, within 90 days of that occurrence, his recommendation on the matter of Federal financial involvement.

The Secretary, in support of his recommendation, should provide a detailed analysis of the Project and alternatives which could secure or conserve a similar or greater amount of gas or equivalent amount of energy. The analysis should

--demonstrate why his recommendation is the best course of action and

--compare the benefits that each source could provide if it received the same amount and type of Federal financial assistance or an amount approximating that requested for the pipeline.

Using this information, the Congress could then make an informed decision on how best to invest Government funds to meet national energy needs.

GOVERNMENT AND COMPANY COMMENTS

GAO received lengthy comments on the draft of this report. (See app. II through IX.) Appendix X contains GAO's detailed responses to these comments.

Government

The Department of State believes that GAO is premature in discussing Federal financial assistance. In GAO's view, being alert to possible events is good public policy. Thus, GAO continues to recommend that a framework be established for Government analyses _if_ Federal assistance is requested. (See app. IV.)

The Federal Energy Regulatory Commission and the Department of Energy (see app. II and III) object to the approach GAO uses in chapter 3 in discussing natural gas supply and demand. GAO uses the difference between estimated demand and supply from conventional domestic supplies. They suggest that the price of imported oil is a more analytically correct approach.

The Department of Energy did not comment on the substance of GAO's recommendations--only the timing.

GAO uses its approach to emphasize the need for indepth analyses of our energy situation in a future increasingly deficient in conventional energy sources. This concept is found in the President's Decision and Report to the Congress on the Alaska Natural Gas Transportation System and in the National Energy Plan (April 1977).

GAO does not accept that using the price of imported oil is more analytically correct. Although important, price is not the sole consideration in national energy policies.

The Department of the Interior focuses on economic issues that it thinks should be a part of this report. Such issues could be a part of the analyses that GAO recommends.

Federal Inspector for the Alaska Natural Gas Transportation System

The Federal Inspector was reluctant to provide detailed comments. However, he had reservations about some of GAO's analyses and recommendations.

Company

The Northwest Alaskan Pipeline Company, the Northern Natural Gas Company, and the Pacific Gas and Electric Company questioned some of the report's data but provided no alternative information.

Contents

ABBREVIATIONS

ANGTA	Alaska Natural Gas Transportation Act
ANGTS	Alaska Natural Gas Transportation System
BCFD	billion cubic feet per day
Btu	British thermal unit
DOE	Department of Energy
EIA	Energy Information Administration
EPB	Executive Policy Board
FEA	Federal Energy Administration
FERC	Federal Energy Regulatory Commission
FPC	Federal Power Commission
GAO	General Accounting Office
IROR	Incentive Rate of Return
LNG	liquefied natural gas
MCF	thousand cubic feet
MMCFD	million cubic feet per day
NEB	National Energy Board
PG and E	Pacific Gas and Electric Company
PGT	Pacific Gas Transmission Company
TAPS	Trans Alaska Pipeline System
TCF	trillion cubic feet

CHAPTER 1

THE ALASKA HIGHWAY GAS PIPELINE PROJECT

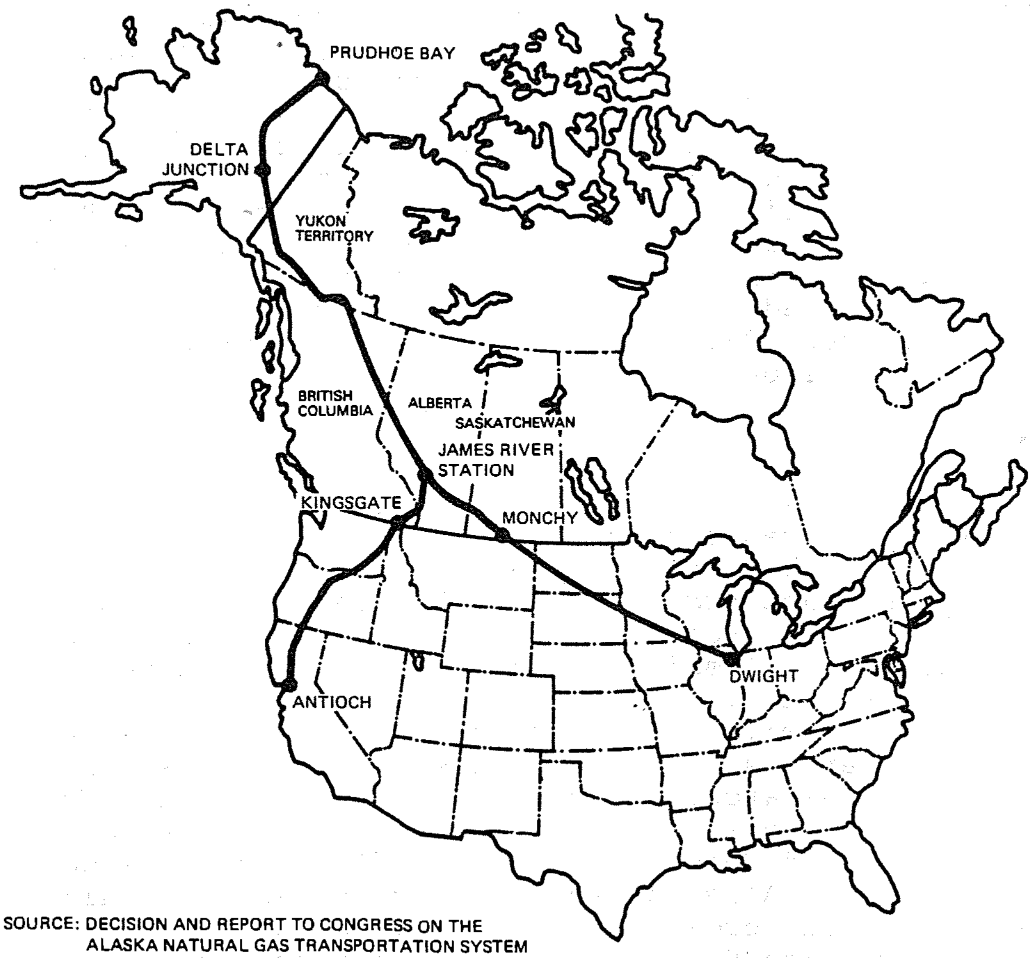
The Alaska Highway Gas Pipeline Project, a 4,800-mile overland pipeline system, is to transport natural gas from northern Alaska through Canada to U.S. markets. The Project's facilities are designed to handle an average daily volume of 2.4 billion cubic feet of natural gas, but it could be enlarged to accommodate additional capacity.

Although the original date to start delivering gas from Prudhoe Bay to lower 48-State U.S. markets was January 1, 1983, the Project's targeted on-line date is late 1984. Similarly, proposals to deliver Canadian gas to the Midwest and West in the winter of 1979-80 have been delayed. The sponsors' proposed in-service date for deliveries to the West is November 1980; deliveries to the Midwest are a year later--November 1981.

ITS ROUTE

The route (see map on p. 2) starts at Prudhoe Bay and parallels the Alyeska oil pipeline to Delta Junction, Alaska. At Delta Junction, the route follows existing rights-of-way eastward to the Alaskan/Canadian border. Once through the Yukon Territory, the route goes southeast through British Columbia to the James River Station in Alberta, where it divides into an Eastern and Western Leg. The Eastern Leg will deliver Alaskan gas to U.S. Midwestern and Eastern markets. It will cross the U.S./Canadian border near Monchy, Saskatchewan, proceed through Montana, North Dakota, South Dakota, Minnesota, and Iowa, and bring the gas just south of Chicago to Dwight, Illinois. The Western Leg will deliver Alaskan gas to the Northwest and California markets. It will cross the U.S./Canadian border near Kingsgate, British Columbia, proceed through Idaho, Washington, and Oregon, and end at Antioch, California.

The Project's sponsors proposed delivering Canadian gas to the U.S. markets about 2 years sooner than Alaskan gas by first completing the Eastern and Western Legs and later completing the remaining Project segments. They proposed that Canadian gas deliveries could reach as much as 1 billion cubic feet per day by the winter of 1979-80. The United States and Canadian Governments agreed that delivering Canadian gas to the U.S. markets in advance of on-line Alaskan gas was beneficial. The U.S. markets



SOURCE: DECISION AND REPORT TO CONGRESS ON THE ALASKA NATURAL GAS TRANSPORTATION SYSTEM could be assured of short- and long-term Canadian gas availability while encouraging Canadian exploration for new reserves and stimulating expansion of its gas industry.

PROJECT SPONSORS

In March 1978, the Northwest Alaskan Pipeline Company and five other companies formed a partnership (the Alaskan Northwest Natural Gas Transportation Company) to plan, design, secure financing for, construct, own, and operate the Project's Alaskan segment and place the line in service on January 1, 1983. Northwest Alaskan is the operating partner. The table below lists the partners, parent companies, and proposed shipper companies involved in the Alaskan Northwest Natural Gas Transportation Company as of February 2, 1978.

Partner company	Parent company	Company proposing to ship gas through line
Northwest Alaskan Pipeline Company	Northwest Energy Company	Northwest Pipeline Corporation
Northern Arctic Gas Company	Northern Natural Gas Company	Northern Natural Gas Company
Pan Alaskan Gas Company	Panhandle Eastern Pipeline Company	Panhandle Eastern Pipeline Company
United Alaska Fuels Corporation	United Gas Pipe Line Company	United Gas Pipe Line Company
Calaska Energy Company	Pacific Gas and Electric Company	Natural Gas Corporation of California
Pacific Interstate Transmission (Arctic)	Pacific Interstate Transmission Company	Pacific Interstate Transmission Company

For the Western Leg, the Pacific Gas Transmission Company will build the pipeline from the Canadian border through Oregon where the Pacific Gas and Electric Company will finish construction into California. The Northern Border Pipeline Company, a partnership, will construct the Project's Eastern Leg. Northern Border's members are

--the Northern Plains Natural Gas Company, the operator, a subsidiary of Northern Natural Gas Company;

--the Northwest Border Pipeline Company, a subsidiary of Northwest Energy Company;

--the Pan Border Gas Company, a subsidiary of Panhandle Eastern Pipeline Company; and

--the United Mid-Continent Pipeline Company, a subsidiary of the United Gas Pipe Line Company.

Foothills Pipe Lines, Ltd., will build the Project's Canadian portion.

The Government is unable to attract additional sponsors for the Alaskan segment

The Alaskan Northwest Natural Gas Transporation Company's membership remains unchanged even though the Government took an action favorable to attracting new members to the partnership. The company's partnership agreement provides an incentive for members to join early by continually reducing the profits of those joining after the partnership's formation--March 1978. Although the Federal Energy Regulatory Commission modified the agreement to grant a 30-day penalty-free period starting June 30, 1978, and limited the reduction in profits in an action tending to attract new members, no additional members joined during the penalty-free period or subsequently, as of September 12, 1979.

In its comments on a draft of this report, the Federal Energy Regulatory Commission states that its action was not an active role in attracting parties to join the partnership. Rather, the intention was to provide "equitable and fair treatment of all potential partners." (See app. II.)

Since April 1978, two members have joined the Northern Border Pipeline Company 1/ and four have dropped out. Northwest Border and United Mid-Continent joined the partnership. Affiliates of the Columbia Gas Transmission Corporation and the Michigan Wisconsin Pipe Line Co., and subsidiaries of Natural Gas Pipeline Company of America and Texas Eastern Transmission Corporation dropped out. Some members dropped out because (1) they could not find consumer commitments for Alaskan gas reserves or (2) the Federal Energy Regulatory Commission would not allow them to recover pre-construction costs by imposing a special charge on their wholesale customers.

1/The company was reconstituted in Aug. 1978.

THE PROJECT IS DELAYED

The overall Project and Canadian gas deliveries are delayed. The January 1, 1983, date 1/ for delivering Prudhoe Bay gas to the U.S. markets is delayed to late 1984. The Western Leg's in-service date has been revised to November 1980; the Eastern Leg's in-service date is slated for November 1981.

The Western Leg proposal

On November 6, 1978, the Western Leg sponsors proposed to build only about 20 percent of the Western Leg outlined in the President's "Decision and Report to Congress on the Alaska Natural Gas Transportation System" 2/ and deliver Canadian gas--starting in late 1980--to southern, rather than central, California through a different pipeline route (see map on p. 6). Under this "pre-delivery arrangement," the companies plan to ship Canadian gas in advance of Alaskan gas by using existing facilities a much as possible. However, additional facilities will be required later on to transport Alaskan gas.

The Eastern Leg proposal

On January 26, 1979, the Northern Border Pipeline Company proposed building about 70 percent of the Eastern Leg for pre-delivering Canadian gas with a completion contingency once the Alaskan segment is completed. The line will initially extend from Port of Morgan, Montana, (near Monchy, Saskatchewan) to Ventura, Iowa, and is scheduled for completion in November 1981. The proposal defers completing the line to Dwight, Illinois, and building the additional facilities needed to transport Alaskan gas.

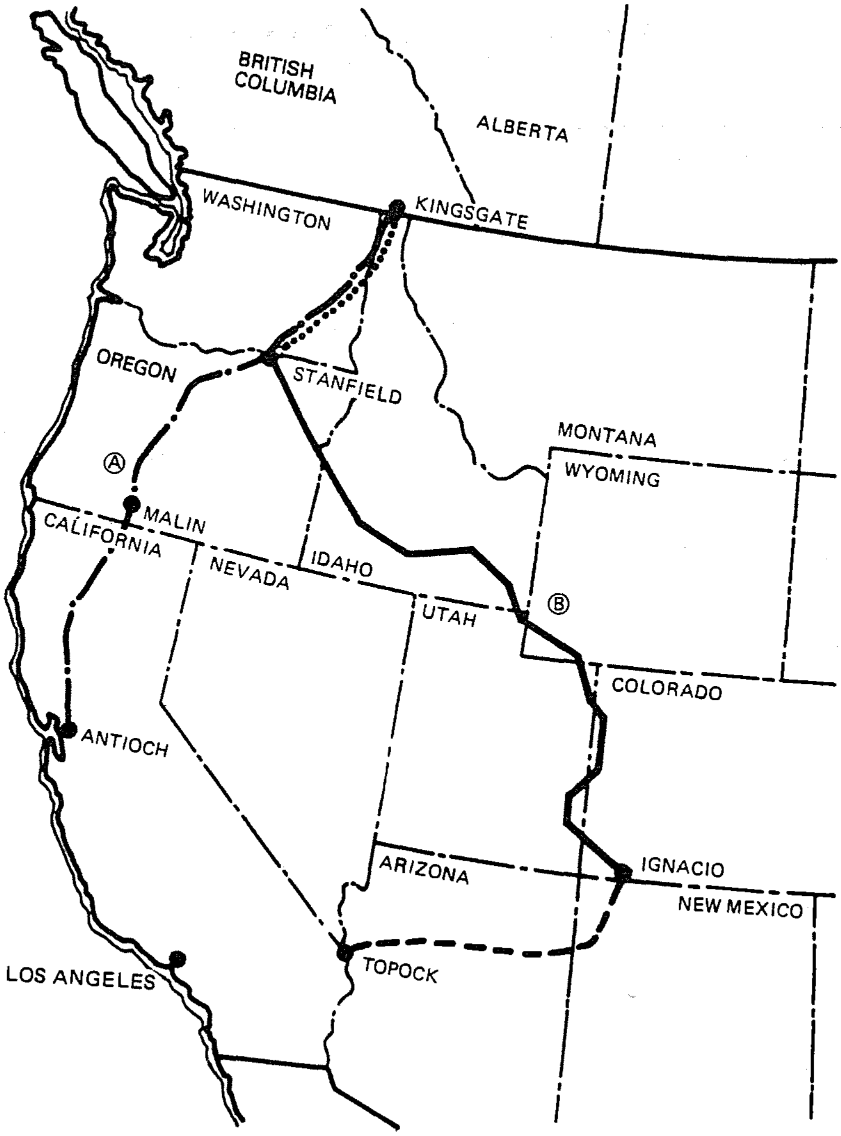
Whether the new targeted in-service dates are achievable will depend on how the issues discussed in chapter 2 are resolved.

1/Initial flow Oct. 1, 1981; full flow Jan. 1, 1983.

2/Executive Office of the President, Energy Policy and Planning, Sept. 1977.

WESTERN LEG PROPOSAL

(PRESIDENT'S DECISION AND PRE-DELIVERY)



Ⓐ ROUTE OUTLINED IN THE PRESIDENT'S DECISION

Ⓑ PREDELIVERY ROUTE

PACIFIC GAS TRANSMISSION CO.

NORTHWEST PIPELINE CORP.

EL PASO NATURAL GAS CO.

DECISION'S PIPELINE ROUTE

SOURCE: Ⓐ DECISION AND REPORT TO CONGRESS ON THE ALASKA NATURAL GAS TRANSPORTATION SYSTEM; Ⓑ FEDERAL ENERGY REGULATORY COMMISION'S DOCKET NO. CP78-125 SUBMITTED BY PACIFIC GAS TRANSMISSION COMPANY

REVIEW SCOPE

We performed our examination of this Project primarily in Washington, D.C. During this assignment, we met with officials of the Federal Energy Regulatory Commission's Alaskan Gas Pipeline Office, the Executive Policy Board, and the Northwest Alaskan Pipeline Company. The report has been updated through September 12, 1979.

CHAPTER 2

IMPORTANT ISSUES REMAIN TO BE RESOLVED

Although the Government has provided incentives believed needed to expeditiously develop the Project, a Federal Inspector was not sworn in until July 13, 1979, and two important issues remain to be resolved which could lead to lengthy administrative and/or judicial review. In addition, the Alaskan sponsors have perceived unusually high risks of Project abandonment and posed questions about the Project's viability.

GOVERNMENT ACTIONS TO BRING THE PROJECT ON-LINE

The Government gave the sponsors an incentive to actively pursue development through the following sequence of events:

--The Alaska Natural Gas Transportation Act of 1976.

--The Administration's National Energy Plan of 1977.

--The 1977 U.S./Canadian agreement applicable to northern natural gas pipelines.

--The President's Decision of 1977.

--Congressional support in passing favorable gas pricing legislation in the Natural Gas Policy Act of 1978 which includes rolled-in pricing for the Alaskan gas, that is, allows the cost of Alaskan gas to be averaged with cheaper gas supplies, as part of its consideration of the President's National Energy Plan.

The Alaskan Natural Gas Transportation Act of 1976 (Public Law 94-586, Oct. 1976) established the decisionmaking process and deadlines for selecting a transportation system to deliver North Slope Alaskan natural gas to U.S. markets. The act expedited presidential and congressional participation to approve such a system and eliminated the potential delays inherent in the normal regulatory approach by establishing time frames and limiting the scope and timing of judicial review. The act stipulated that the President decide whether or not a transportation system delivering Alaska natural gas should be approved and, if so, designate the proposed system to the Congress.

In light of the then-existing energy situation, the act recognized the need for North Slope natural gas reserves. Congressional findings stated in section 2 of the act included (1) a natural gas supply shortage exists in the contiguous States, (2) large natural gas reserves in the State of Alaska could help alleviate this supply shortage, and (3) expeditiously constructing a "viable natural gas transportation system" to deliver Alaska natural gas to the lower 48-States was in the national interest.

The Administration's National Energy Plan of April 1977 stressed increasing our domestic gas supplies. Expecting decreased natural gas production, the Plan stated that the gap between demand and production in the lower 48-States would have to be filled from new sources, such as Alaskan gas. It also promoted a natural gas pricing structure to discourage consumption and, at the same time, encourage production. The Plan proposed to classify the gas as "old gas under a new contract" subject to a wellhead price ceiling of $1.45 per thousand cubic feet (inflation adjusted) and provided for the end user of the gas to pay the full (incremental) delivered price for Alaskan gas.

A September 1977 U.S./Canadian agreement provides further mechanisms to hasten Project completion. Under the agreement, each Government is to take measures to facilitate constructing the pipeline system to transport natural gas from Alaska and Northern Canada. This agreement calls for private financing of the Project. The agreement's timetable views Alaskan construction beginning January 1, 1980, main Yukon pipe laying starting January 1, 1981, and other construction in Canada to provide timely completion by January 1, 1983.

Furthermore, the President in his Decision, which he transmitted to the Congress on September 22, 1977, committed the sponsors to timely Project development. In the Decision, the President endorsed and recommended this Project over two alternative proposals and defined the route. Based on sponsor assurances and an administration financial analysis, he found that the Project could be privately financed. The President (1) opposed "novel regulatory schemes" to shift Project risks to consumers and (2) "explicitly rejected" Federal financing assistance.

The Federal Energy Regulatory Commission notes that the Decision includes the following condition dealing with financing: The successful applicant shall provide for private financing of the Project, and shall make the final arrangement for all debt and equity financing prior to the initiation of construction. It notes that congressional approval of the Decision gave the terms and conditions the force of law and, since the Congress approved this condition, it can only be changed by a further act of the Congress.

Finally, congressional intent for pricing Alaska natural gas provided the sponsors an incentive to actively pursue Project development. In March 1978, House and Senate conferees considering the National Energy Act agreed that Prudhoe Bay gas would be considered "old" gas at a $1.45 ceiling price per thousand cubic feet as of April 1977 with adjustments for inflation. By June 1978, the conferees agreed on rolled-in pricing for the gas. An August 1978 Senate report 1/ justified rolled-in pricing on the grounds that private financing otherwise would not be available. Also, according to this report, rolled-in pricing was to be the only Federal subsidy of any type--direct or indirect--to be provided.

With the signing of the Natural Gas Policy Act (Public Law 95-621) in November 1978, which was based, in part, on the proposed National Energy Act, the Project received a $1.45-per thousand cubic foot wellhead price (inflation adjusted) and rolled-in pricing for the gas. The adjusted price for this gas is $1.75 as of October 1979.

A FEDERAL INSPECTOR IS FINALLY ON THE JOB

Although the Government has provided various incentives and has taken various actions requested by the sponsors in an effort to expeditiously develop the Project, a Federal Inspector required by the Alaska Natural Gas Transportation Act was not sworn in until July 13, 1979, about 20 months after the Congress approved the Decision in November 1977. The Federal Inspector now is in a position to (1) create the Government/sponsor relationship intended to resolve concerns based on the Alaskan oil pipeline's construction and (2) develop and staff the Office of the Federal Inspector to provide a focal point for Federal involvement.

1/Senate Report 95-1126 of Aug. 18, 1978, section 208, p. 103.

As proposed when the President approved this Project, the Federal Inspector was to be the overall Project coordinator for the Government and principal point of contact on matters relating to Federal oversight. This proposal resulted from experiences during the Alaskan oil pipeline's construction where Federal agencies separately prescribed and enforced terms and conditions with minimal coordination.

The Executive Policy Board will advise the Federal Inspector on policy issues. According to Executive Order 12142 (June 21, 1979), the Executive Policy Board shall consist of the Secretaries of the Departments of Agriculture, Energy, Labor, Transportation, and the Interior; the Administrator of the Environmental Protection Agency; the Chief of Engineers of the United States Army; and the Chairman of the Federal Energy Regulatory Commission.

TWO KEY ISSUES REMAIN

In our opinion, two key remaining issues which are currently being considered by the Federal Energy Regulatory Commission and the Department of the Interior could lead to (1) lengthy administrative proceedings and/or (2) judicial review. These issues concern how the gas-conditioning costs will be treated and the requirements that will be included in the right-of-way agreements.

The Federal Energy Regulatory Commission rulemaking 1/ on the variable-rate-of-return mechanism presented in appendix I demonstrates the time and efforts required to resolve differences. The chronology of negotiations over the last year illustrates the difficulty in reaching mutually satisfactory resolutions to one of the many questions that must be answered before the Project is built.

Gas-conditioning costs

Before this Project can transport any Prudhoe Bay gas, the gas must be made to pipeline quality. The gas must be conditioned to remove impurities, compressed, and chilled.

The treatment of the conditioning costs can affect the gas' price and marketability--a key to the Project's viability and, thus, its ability to be privately financed--

---

1/RM 78-12.

since the conditioning plant may cost about $2 billion. Conditioning costs would further increase the cost of Project gas. If the cost is added to the other already high costs, the gas will be harder to market. Alternatively, if the producers absorb some or all of the conditioning cost, the price to the user would be lower. However, the gas producers' margin between their costs and the maximum price allowed for the gas would be less, reducing their net return.

In Order No. 45 1/ (August 24, 1979), the Federal Energy Regulatory Commission concluded that natural gas producers in Alaska should be responsible for "conditioning" the gas for transport through the proposed Alaskan pipeline system. 2/ The three major producer interests in Prudhoe Bay reserves of natural gas are Exxon, Atlantic Richfield, and Standard Oil of Ohio.

The order concluded that the producers should be allowed to receive from purchasers the ceiling price specified by the Natural Gas Policy Act with the potential for one additional allowance. The Commission would allow applications for any extra costs incurred by the producers for removal of carbon dioxide to levels below three percent of total volume transported, should the Commission require it. In addition, the Commission will allow producers and pipelines to ask it for special relief if the order results in inequity or an unfair burden.

According to the Commission, the precise costs of preparing the gas for shipment, including carbon dioxide removal, are not yet known. However, the Commission will permit producers an allowance for carbon dioxide removal below 3 percent because, according to the Commission, a lesser amount of carbon dioxide will result in greater transportation efficiency, which will benefit the pipeline sponsors and customers rather than the producers. 3/

1/RM (rulemaking) 79-19.

2/On July 16, 1979, the President called for the producers to provide debt guarantees against cost overruns to make private financing of the gas pipeline possible.

3/The amount of natural gas liquids carried in the gas stream depends upon the carbon dioxide content of the gas as well as the pressure. Although the Commission established the pipeline pressure on Aug. 6, 1979, the carbon dioxide standard is to be resolved at a later date.

The order does not decide what the amount of the allowance should be or what conditioning costs will be. These depend on the facts of the particular cases still to come before the Commission under the normal application procedures.

The order is scheduled to become final in October 1979. However, petitions for rehearing may be filed. 1/

Stipulations to right-of-way agreements

Since the pipeline will be built on public lands, the State and Federal Governments will grant right-of-way agreements which give permission to use these lands. To protect the public interest in these lands, the agreements will include environmental and technical requirements in the form of stipulations that must be followed when building and operating the system.

A notice that the Government's proposed stipulations were available to the public was published for initial public comment on May 4, 1979. In our opinion, based on the Government's experiences with the oil pipeline, the Government may be less willing to negotiate concessions 2/ in this area. As a result, disagreements between the sponsors and the Government may lead to lengthy proceedings if the sponsors choose to negotiate.

SPONSOR-PERCEIVED RISKS OF ABANDONMENT

The Project's sponsors have estimated a one-in-three chance the Project will be abandoned in 1979. This estimate is almost three times higher than the 1978 estimate.

The sponsors reported 3/ in March 1979 to the Federal Energy Regulatory Commission that, as a pipeline, the Project has an unusually high risk of abandonment for

---

1/On Aug. 31, 1979, the Commission scheduled a public hearing for Sept. 27, 1979.

2/The Department of the Interior does not look at the stipulations as a basis for making "concessions."

3/"Determining the Project Risk Premium for the Alaska Segment of the Alaska Natural Gas Transportation System, prepared by Northwest Alaskan Pipeline Company" (Mar. 7, 1979).

--technical,

--regulatory-political, and

--economic reasons.

The risk, they held, results from the Project's large size, high cost, and location. The sponsors thus pose questions about the Project's viability.

It should be noted that the sponsors prepared this report to justify a high risk premium for their investment. As a result, we present the information in this section of the report without accepting or rejecting what they said.

Technical risks

Technical problems the sponsors cited include (1) major design changes, (2) the need for coordinated development, and (3) gas availability uncertainty. Major design change risks arise partly because the sponsors have not resolved important design aspects for Arctic conditions. As a result, the sponsors said final Project designs could make the Project unexpectedly difficult, costly, or, at worst, infeasible.

The sponsors stated that if they adhere to their current schedule, they must proceed with preconstruction planning before they finish testing system designs. This may result in extensive design changes after construction begins.

Insufficient data and investigations can result in "drawing-board" solutions which later prove unsatisfactory--after construction begins. As the sponsors report,

> "The probability of geotechnical problems occurring during construction is high * * *. For example, unforeseen soil conditions might require a major realignment of the route in selected areas.
>
> "Similarly, major difficulties with equipment logistics or pipeline installations could lead to extended Project delays and major cost increases * * * the risks associated with execution of * * * plans will be high due to the harsh Artic environment and limited construction windows."

It appears to us that this Project may not be benefitting fully from experience gained in building the trans-Alaska oil pipeline. In a previous report 1/ we found that as much "site-specific" data as is economically practicable should be obtained before construction starts to minimize design-change costs. For this purpose also, technical and geological uncertainties should be thoroughly investigated.

In its comments on this report, the Department of Energy noted that

> "a large portion of the cost overruns on the Alaska Oil Pipeline, the Trans Alaska Pipeline System (TAPS), were attributable to the fact that the sponsors did not fully complete the development and testing of system design before construction began. As a result, geological and technical problems were encountered causing major changes to result in the construction phasing with consequent highly escalated costs."

In addition, it pointed out that there is a tremendous reservoir of technical and management material resulting from building and operating the TAPS pipeline: managerial shortcomings and problems in vertical and horizontal integration are documented for the record and could provide a valuable experience base for the Alaskan sponsors. 2/

Coordinating all Project segments and related activities in order to deliver Alaskan gas to lower 48-State markets at the earliest possible time is another potential problem reported by the sponsors. According to them, Project costs could rise significantly if all Project segments are not completed on schedule and close to budgeted costs. In addition, the gas-conditioning plant must be in place before the gas can flow.

Finally, owing to the short Prudhoe Bay reservoir production history and disappointing Alaskan drilling results--no new known reserves as of March 7, 1979--the

---

1/"Lessons Learned From Constructing the Trans-Alaska Oil Pipeline" (EMD-78-52, June 15, 1978).

2/On July 9, 1979, the Alaskan sponsors noted that they may be able to acquire Alyeska subsoil and other data for $55 million but cannot make the expenditure unless the Federal Energy Regulatory Commission modifies Order No. 31. (See app. I.)

sponsors stated that they are still not certain that 2 billion cubic feet a day of Alaskan gas will be available to the Project. This, they said, adds to the risk that the Project might eventually be abandoned.

Regulatory-political risks

Project sponsors believe that the Project is peculiarly vulnerable to adverse regulatory and political actions largely because it is a high-cost project passing through several political jurisdictions in two countries. Unacceptably high costs and Project interference could come, they suggested, from (1) terms and conditions attached to permits, (2) political demands, and (3) delays in Government decisions.

With respect to permit terms and conditions, the

> "Project Sponsors are exposed to an unusually large risk of unacceptable certificate conditions because the cost of the delivered gas will be high. Even if the conditions are not stringent, there are multiple jurisdictions making demands of the Project, and the scope and location of the Project will make compliance with these demands very expensive."

Political demands unrelated to Project permits are, in the sponsors' view, another threat to the Project stemming from multi-governmental jurisdictions. Particularly since the Project will pass through several jurisdictions having no consumer interest in the Project, some jurisdictions, the sponsors believe, may be tempted to make costly political demands on behalf of their citizens. For example, the jurisdictions might support native claims or special proposals to aid impacted communities.

In support of the above, the Department of Energy notes that at the TAPS post-mortem sessions following the opening of the system, dozens of interest groups attended the session

> "for the obvious purpose of planning the development of intensified demands on behalf of their constituents in construction of the natural gas pipeline."

Finally, the sponsors reported that the Project is so dependent on Government decisions that delays could force its abandonment. In addition, according to the sponsors, delay risks are greater for the Project, for unlike

> "* * * other pipelines, Government decisions may be delayed as a result of shifting national priorities * * *, inadequate cooperation at various levels (state v. Federal, agency v. agency, U.S. v. Canada), or the complexity of underlying issues * * *."

Economic risks

The Project sponsors fear that the expected costs of the technical and regulatory-political risks may induce prospective gas purchasers and Project investors to withhold their support from the Project.

The sponsors state that the

> "marketability risks that equity investors must assume are without precedent because of the high cost of delivering the gas to lower-48 markets and the expectation, supported by the TAPS experience, that there will be future real increases in this cost--increases that could reduce or eliminate the price advantage of natural gas over substitute fuels, notwithstanding rolled-in pricing."

Post 1979 risks

If the Project survives 1979 and required permits are eventually granted, the sponsors estimated that, during construction, abandonment risks will continue to be higher than normal for pipelines. Their probability of abandonment estimates diminished from 1 in 8 in the beginning to 1 in 100 in the final construction year. The sponsors attributed the higher-than-usual risks to such potential events as catastrophic occurrences, economically insolvable design and construction problems, restrictive stipulation interpretations, Government and citizen legal challenges, Canadian political conflict, running out of money, and supply contract cancellations.

Investors' 1979 attitude

The sponsors also reported in their March 1979 document "a high assessment of abandonment by potential investors, jeopardizing the Project financing plan." Their own abandonment probability estimates rose from about 1 in 8 in 1978 to about 1 in 3 (35 percent) in 1979. 1/ They ascribe the rise to (1) revised regulatory environment perceptions, (2) growing public awareness of obstacles, (3) optimistic reports concerning alternative natural gas sources, and (4) gas processing plant uncertainties.

Regulatory attitude

The sponsors perceived a change in regulatory attitude contrasting with the active Government support which led to Project approval when gas shortages were forecast. They said this perception led the sponsors in 1978 to curtail equity support during the first half of 1979. They cited the following as evidence: The Federal Inspector had not been appointed, 2/ the reorganization plan had not been implemented, 3/ and Government agencies had not been responsive to their requests for decisions or action.

Public doubts

The sponsors reported that "growing public awareness of the obstacles facing the project is causing the feasibility of [the Project] to be seriously questioned."

Examples they listed include a report to the Alaska State Legislature 4/ that the Project was "floundering" because of "marginal economics" and "abundant uncertainties

---

1/On June 8, 1979, the Federal Energy Regulatory Commission in Order No. 31 (p. 74) rejected these probabilities as being unreasonably high and contradictory to assurances given to the President and the Congress at the time of the President's Decision, that the Project could be privately financed under the conditions imposed by the Decision.

2/The Federal Inspector was sworn in July 13, 1979.

3/By Executive Order 12142 of June 21, 1979, Reorganization Plan No. 1 of 1979, creating the Office of Federal Inspector for the Alaska Natural Gas Transportation System, became effective July 1, 1979.

4/The Alaska Highway Gas Pipeline: A Look at the Current Impasse, a Report to the Alaska State Legislature, Arlon R. Tussing and Connie C. Barlow, Jan. 12, 1979.

and risks." Another cited report 1/ for an Alaskan advisory board stated that

> "Regulatory delays, high transportation costs, and a general negative perception of the business climate in Alaska have resulted in an impasse over the matter of gas production and sale."

The sponsors concluded that

> "the spectre of TAPS delays, cost overruns, and regulatory, engineering and administrative problems never can be removed completely from the investment community's assessments of the Project risks."

Alternate sources

Publicity concerning possible alternate natural gas supplies have further undermined public confidence in the Project's future. The sponsors specifically mentioned optimistic reports about the potentially vast Canadian and Mexican natural gas supplies, the domestic surplus that unexpectedly developed in 1978, and optimism about potentially substantial lower 48-State reserves.

Supplemental segments

Uncertainties over constructing the gas processing plant and supplemental pipelines constitute the fourth reason why the sponsors concluded that abandonment risks rose in 1979.

THE SECRETARY OF ENERGY RAISES ANOTHER ISSUE--THE POSSIBILITY OF LOAN GUARANTEES

Although the sponsors have not finalized a private financing package or officially stated that they cannot do so, the Secretary of Energy, in response to a question from the Joint Economic Committee, recently raised the possibility of $2 billion to $3 billion in Federal loan guarantees for

---

1/A Current Perspective on Use of Natural Gas Liquids for Petrochemical Production in Alaska, prepared for the Royalty Oil and Gas Development Advisory Board of the State of Alaska by Bonner and Moore Associates, Inc., Jan. 10, 1979.

the Alaskan segment of this Project. In doing this, the Secretary and the Committee may have given potential investors including the Project's beneficiaries--the State of Alaska, gas transmission companies, and the gas purchasers--a reason to anticipate that the Government will bear some of the Project's financial burden without cost to them. It should be recognized, however, that without the enactment of specific legislation, the Department of Energy lacks authority to make loan guarantees to the Project.

The dialogue 1/ follows:

Question: Is there any action that the Federal Government can consider any option that we have, any sort of guarantee or any sort of appropriation, even, that might make it (the Project) feasible?

Secretary of Energy: Of course, the Congress, in approving the President's recommendation insisted, wrote in, that it should be privately financeable.

That is a decision that is, of course, reversible by the Congress. But the expectation has been for private financing.

I don't think that it is necessary to provide an appropriation, but certainly the Congress will not wish to reject out of hand the possibility of loan guarantees for the pipeline.

Question: How large would that kind of guarantee have to be, roughly; what is the ballpark?

Secretary of Energy: I think that if it is guaranteed for the first period of pipeline operations, that is the difficult period.

It should be a percentage guarantee of the cost of the pipeline.

1/Transcript of Proceedings, Hearing held before Joint Economic Committee, Annual Hearings on the Economy, Washington, D.C., Tuesday, Jan. 23, 1979, pp. 28-30.

Question: I am thinking of the potential liability to the Federal Government.

How big would it be?

Would it be a $2 billion, $3 billion, $4 billion guarantee? Would it be in that area? Bigger than that? Smaller?

Secretary of Energy: I think that one must look at the pipeline as several pipelines.

There would be no need, for example, for [an] American guarantee of a Canadian portion of that pipeline. The southern portion of the pipeline below the Canadian border that goes into Dwight, Illinois, would not be needed to (be) guaranteed because that is easily financeable.

So, one is dealing only with the component from the North Slope down to the Alaska-Canadian border.

That is the sum you mentioned of $2 or $3 billion, which indeed might be in the right ballpark.

Although the Secretary of Energy spoke of loan guarantees, other options, such as direct equity or debt investment should not be precluded out of hand. Loan guarantees have become popular because their supporters argue that the program is costless in the absence of a default. If the borrower repays the loan, the budgetary impact would be limited to administrative expenses. In case of default, however, the liability to the Government becomes substantial. Since loan guarantees could lead to further Federal financial involvement to ensure Project completion and operation if events force the sponsors to abandon the Project, better alternatives may exist to give the Government appropriate control over and a return on its investment, including possibly a management voice.

In addition, the suggestion for Federal financial involvement raises the question as to whether better alternatives will exist for investing Federal funds for additional gas production in the latter 1980s. The next chapter discusses this.

CHAPTER 3

ALTERNATIVES AND OPTIONS SHOULD BE EVALUATED BEFORE CONSIDERING FEDERAL FINANCIAL INVOLVEMENT

The Project offers a potentially significant domestic gas supply. Therefore, if its sponsors request Federal financing assistance because they cannot finance the Project alone, Project proponents will undoubtedly urge the Congress to quickly provide the needed assistance.

Reiterating his August 1977 condition that the Project is to be privately financed, the President on July 16, 1979, stated that participation from the Project's natural gas producers "* * * in the form of debt guarantees against cost overruns is required to make private financing possible." We do not assume that the oil companies involved will not as the President urged "* * * do their share to make progress on this pipeline possible." However, if they do not or other obstacles to private financing arise, we believe that the Congress needs to consider all its options before it responds to a request for Federal financial involvement in the Project.

If the sponsors seek Federal financial involvement, the Congress should consider the following questions.

1. Will alternative gas sources be available in the late 1980s to supply similar quantities of gas at similar or lower prices?

2. Will a satisfactory gas demand/supply balance in the late 1980s be achievable through (a) Government sponsored or directed restraints on demand and (b) tapping potential alternative gas sources?

3. Will Project gas in the 1980s reduce (a) our reliance on foreign energy and (b) our dollar outflows?

4. Do alternative forms of Federal financial involvement exist which may be superior to loan guarantees in giving the Government control over and a return on the public investment?

This chapter briefly discusses data and concepts relevant to these questions. While the data in this chapter are not our predictions, they do provide a point of departure. For example, we present the tables on pages 26 and 27 not as probabilities but as one of several possibilities.

Further, the data depend upon certain assumptions which time may or may not prove correct. One fundamental assumption in the chapter is that the Government will pursue programs and policies to restrain oil and gas consumption.

In addition, the chapter assumes that the Government will not unduly restrict proposals by private enterprises to augment U.S. gas supplies. Also, it assumes the Government will not begin any new programs for substantial financial assistance for developing unconventional sources of gas, an assumption that will need to be revised if the Congress adopts the President's July 16, 1979, import reduction program proposals. The President's program is oriented toward reducing oil imports. However, data and information presented in the program--such as potential production from unconventional natural gas sources amounting to 1 to 2 trillion cubic feet of gas per year in 1990--suggest that data in this chapter (including 1 trillion cubic feet of natural gas from unconventional sources in 1990) are not outside the realm of possibility.

This chapter presents an incremental approach to gas supply and demand in the 1980s to emphasize the need for indepth analyses of our energy situation in a future increasingly deficient in conventional energy sources. We believe it is not desirable to use, as absolute guidelines, such concepts as the country can use all the energy it can get or can use any energy source which will cost less than imported oil. Nonetheless, we believe that non-cost-related objectives, such as potential economic growth and the need to "back out" (that is, substitute for) foreign energy that would otherwise be imported, are proper considerations in making national energy decisions.

In its analyses, this chapter discusses potential impacts that may not prove to be substantial. This again is done in order to favor indepth analyses rather than oversimplified assumptions.

Finally, this chapter does not assume that the suggested analyses will be unfavorable to Federal financial involvement in the Project if it is needed.

ALTERNATIVES TO PROJECT GAS MAY BE POSSIBLE

The original Federal analyses in 1977 which supported the presidential and congressional actions to favor the Project were based, in part, on the rationale that Alaskan gas was needed immediately to help fill the 1980s gap between domestic natural gas production and demand. However, the energy situation has been altered since then in that it's possible that other sources might be tapped to supply or conserve similar quantities of gas at more reasonable prices. 1/ Conservation steps and domestic production from (1) intensified drilling in frontier areas and (2) unconventional sources might be less costly. In addition, nearby foreign energy sources (Mexico and Canada) and liquefied natural gas might offer gas supplies at less cost than that from the Project.

Further, the Project's gas may only minimally reduce our reliance on foreign oil or improve our dollar outflow for energy. Under the most favorable assumptions based on admittedly preliminary data, the Project's gas in 1985 could reduce energy imports equal to 425,000 barrels of oil a day but at about 20 percent more than the cost for imported oil ($23.50 per barrel in 1979 dollars). Similarly, the Nation's dollar outflow for energy (in 1979 dollars) could improve by up to $10 million a day ($3.7 billion annually). However, for this improvement the American consumer would initially pay American gas suppliers (in 1979 dollars) $12 million a day ($4.4 billion annually) for energy that might be available elsewhere for $10 million. Finally, if the gas stimulates new demand rather than substituting for existing uses, the Project's gas may not back out energy imports (that is, substitute for energy which would otherwise be imported).

THE LONG-TERM OUTLOOK FOR DOMESTIC NATURAL GAS PRODUCTION IS POOR

The general trend in total domestic natural gas output is for a steady decline through the end of the century, with

---

1/The extent to which Alaskan gas might be more expensive than some or all supply increments economically usable in the 1980s is an open question not discussed in this chapter.

a temporary slowing from the 1980s to the mid-1990s. In the 1985-90 period, under a certain set of assumptions, demand for gas could exceed domestic natural gas production from 1 to 3 trillion cubic feet a year, even if Government inflation and gas-use policies restrain total demand. (See tables 1 and 2 on page 26.) 1/

While this Project could supply 800 billion cubic feet of gas a year to help close the 1985-90 gap, conservation and non-traditional domestic sources could possibly produce significantly larger amounts than have heretofore been anticipated. In addition, foreign sources could supply at least 2 trillion cubic feet yearly, assuming favorable Government policies (see table 3 on page 27). Some of these alternate sources might be available at less cost than Project gas.

CONSERVATION'S POTENTIAL IS LARGELY UNTAPPED

Although potential savings from energy conservation are much larger, 2/ a moderately successful program for commercial and residential conservation could reduce demand by 500 billion to 1 trillion cubic feet of gas a year by the late 1980s--a 5- to 10-percent decline in expected consumption. For example, a continuing program to keep thermostats in public buildings at a lower level, consistent with the President's original short-term contingency program submitted to the Congress March 1, 1979, 3/ could save an estimated 400 billion cubic feet of gas annually. Additional

---

1/Some other possible scenarios are given by the American Gas Association in "The Future for Gas Energy in the United States," dated June 1979. For example, it forecasts an "economic" or "not restrained" demand reaching 25.2 to 27.7 trillion cubic feet of gas per year by 1990 and a supply of over 28 trillion cubic feet per year of gas from all sources "under an energy policy which encourages development of supplemental supplies" (p. 22). On page 13, it projects natural gas production from "conventional lower-48" sources amounting to 16 to 18 trillion cubic feet in 1985 and 15 to 17 trillion cubic feet in 1990.

2/See GAO report entitled "The Federal Government Should Establish and Meet Energy Conservation Goals" (EMD-78-38, June 30, 1978).

3/44 FR 12906-12917, dated Mar. 8, 1979.

Table 1

Domestic Natural Gas Supply

(estimated in trillions of cubic feet)

	1977	1985	1990
Lower 48-States	19.3	a/16.4	a/15.1
Frontier (outer continental Shelf and S. Alaska)	0.1	a/0.4	a/1.2
Alaska Highway Gas Pipeline	-	0.8	0.8
Total with the Project	19.4	a/17.6	a/17.1
Total without the Project	19.4	a/16.8	a/16.3

a/Assumes limited success from (1) intensified drilling following gas price deregulation and (2) new Outer Continental Shelf lease sales.

Table 2

U.S. Gas Demand

(estimated in trillions of cubic feet)

	1985	1990
Estimate No. 1 (1978) (note a)	18.7	17.6
Estimate No. 2 (1979) (note b)	19.0	19.0

a/Assumes a 3.1-percent real Gross National Product growth during the 1980s. Also, assumes phasing out of gas for industrial and electrical-utility boilers will be essentially complete by 1990.

b/Assumes a significant reduction in boiler gas use.

NOTE: In these tables, we are not predicting the future. Rather, we present one possibility which would reflect, on the conservative side, current assessments of both (1) energy difficulties facing the Nation and (2) potentials for future improvement.

Table 3

Potential Offsets To Demand/Supply Shortfalls

(in trillions of cubic feet)

	1985	1990
Domestic sources:		
Conservation (note a)	0.5 to 1.0	1.0
Intensified drilling (note b)	0.5	0.5
Unconventional sources (note c)	0.2 to 0.5	1.0
Foreign sources:		
Canada (note d)	1.0	1.0
Mexico (note e)	0.5 to 1.0	1.5
Liquefied natural gas (note f)	1.0 to 1.7	2.0

a/Includes only programs to get "more for less" by reducing waste and improving efficiency in the use of energy without causing economic decline, personal discomfort, or undue restrictions on freedom of choice. For example, the Federal Power Commission estimated in 1977 that a cost-effective $532 investment per household would create 200,000 to 220,000 jobs in the next 10 years and reduce residential gas use 1.13 trillion cubic feet a year. (Marquis R. Seidel, "The Costs of Cold Weather and the Conservation of Residential Heating Gas," Federal Power Commission, Feb. 28, 1977.)

b/Assumes a higher rate of success than table 1.

c/Assumes no special Government incentives and that the Government will not be unduly restrictive in issuing permits and licenses.

d/Assumes that existing contracts will remain firm.

e/Assumes a U.S.-Mexican agreement.

f/Assumes that the Government will change its present restrictive policies in granting licenses.

NOTE: In this table, the alternatives are significant--not the magnitudes. The data presented herein were derived from published sources, briefly from the oil and gas industry. In selecting data for preparing these tables we are not predicting the future. Rather, we present one possibility which would reflect on the conservative side current assessments of both (1) energy difficulties facing the nation and (2) potentials for future improvement.

reductions could come from such steps as improved home and building insulation, reduced commercial lighting, better thermostat control in private homes, and shorter retail store hours.

For maximum savings through conservation, perhaps our cheapest "source" of energy, the Government must develop a clear and consistent conservation program. Although crises, shortages, and price rises tend to reduce consumption, a successful program will depend, to a large extent, on consumers developing attitudes and habits which foster efficient energy use. Without such attitudes and habits, consumption tends to increase as consumers adjust to supply and price situations.

The Government's policy on fuel-switching illustrates the need for a clear and consistent program to conserve scarce domestic resources. When the Department of Energy forecasted in 1978 a trillion-cubic-foot natural gas "surplus" or "bubble," the Secretary of Energy abruptly adjusted the Government's program on fuel-switching. He advocated using the trillion cubic feet for such uses as boiler fuel in dual-fired facilities, that is, existing plants with the capability to use both oil and natural gas. In so doing, the Secretary treated an apparently temporary regional market imbalance as a real national surplus and, in addition, countered a well-defined gas conservation effort. The Secretary took the action (1) as "a major element of the response plan to the Iranian crisis" and (2) because "absence of markets for gas will lead to a reduced exploration and development, lower domestic gas supply, and higher energy impacts in the future."

This "bubble" cannot properly be treated as a surplus to the Nation at a time when domestic production has been exceeding new finds, resulting in steadily declining domestic reserves. Instead, the trillion cubic feet represents the difference between (1) the ability of certain regional areas to produce gas under existing field rules and (2) their ability to market their gas at this time. The Secretary chose to have this gas used as soon as possible for immediate short-term goals.

By seizing a short-term opportunity, the Secretary

--obscured longer term goals for domestic gas policy,

--added to public confusion over whether a Government energy policy exists,

--may have discouraged investigation of means to encourage (1) gas exploration and development other than by stimulating demand and (2) storage for the future, and

--may have adversely affected a desirable natural gas conservation trend.

For example, in 1978, the American Gas Association announced an advertising campaign to sell more natural gas. This could turn a so-called temporary "surplus" into permanent demand, intensifying future problems.

Intensified drilling may pay off

Intensified industry drilling programs in lower 48-State frontier areas following recent price rises might add at least an additional 500 billion cubic feet of gas annually to anticipated supplies by the late 1980s, even if drilling is only moderately successful.

Production may begin from unconventional sources

Annual gas production from unconventional sources might reach at least 200 billion cubic feet by 1985 and 1 trillion cubic feet by 1990. Sources could include gas from (1) Devonian shale; (2) synthesis, using coal and other fuels such as peat; (3) marginal resources such as tight sands, coal bed methane and, possibly, geopressurized water zones saturated with natural gas; and (4) agricultural crops, agricultural residues, food and wood-processing waste, and other biomass resources.

Modest amounts from these various unconventional sources could add up to the estimated total and production could conceivably be higher. For example, the Office of Technology Assessment estimates that about 1 trillion cubic feet of gas could become available from Devonian shale in 1990, 1/ and the Department of Energy estimates that

---

1/"Status Report on the Gas Potential from Devonian Shales of the Appalachian Basin," Office of Technology Assessment, Nov. 1977.

unconventional sources could provide 1.3 to 6.2 trillion cubic feet in 1990. 1/ Another study 2/ prepared for the Department of Energy estimates that 1.5 trillion cubic feet of gas would be available from tight sands in 1990. Finally, production from new technologies alone without "appropriate incentives" could yield 100 billion cubic feet of gas in 1985 and 500 billion in 1990, according to the gas industry.

In addition, unconventional sources could supply fuels which could, in part, substitute for gas. 3/ While none of these may develop as major supply sources, in total they could become significant.

Foreign gas sources are increasing

If the United States has to look to foreign sources in the 1980s (world-wide known gas reserves have been increasing), overland Canadian and Mexican natural gas and overseas liquefied natural gas could help meet the domestic supply shortage.

Canada

Canada could continue to export gas to the United States at its current rate of 1 trillion cubic feet a year. Although this supply was somewhat uncertain in the past, recent large discoveries in Alberta and the Canadian Arctic have led Canadian producers to push for additional sales to the United States. This might result in (1) continued supplies and (2) greater assurance of uninterrupted delivery.

However, future Canadian exports will depend on several factors, including Canadian Government policies, future gas discoveries and deployments, and construction of pipelines.

1/"Commercialization Strategy Report for Recovery of Natural Gas from Unconventional Sources," Draft Department of Energy report.

2/"Enhanced Recovery of Oil and Gas," Lewin and Associates, Inc., Feb. 1978.

3/See for example, "Conversion of Urban Waste to Energy: Developing and Introducing Alternate Fuels From Municipal Solid Waste" (EMD-78-38, Feb. 28, 1979).

For example, if, under existing policies, Canada will not consider its Mackenzie Delta gas in determining exports unless the Project is built to transport both Alaska and Mackenzie Delta gas south, Canadian exports to the United States may be affected.

Mexico

Mexico could supply 0.5 to 1.0 trillion cubic feet of gas a year by the mid- to late-1980s. 1/ Large discoveries of both oil and natural gas give Mexico the potential to become a major energy source for the United States.

However, the United States and Mexican Governments must agree on an export program and sale terms. For example, the Mexican national oil company agreed to supply several American companies 800 billion cubic feet of gas annually for 6 years at a price tied to distillate fuel oil price in New York Harbor (about $3 per thousand cubic feet at that time) but with no firm delivery guarantees. These terms were not acceptable to the U. S. Government and have not been approved. Since Mexican gas exports will depend, in part, on oil exports, Mexican gas supply estimates are uncertain until a U.S.-Mexican and other agreements are concluded. 2/

Other foreign countries

If the Government were to grant all pending plant construction proposals as of June 1978, the United States could import up to about 2 trillion cubic feet of liquefied natural gas a year by 1985. 3/ With growing world gas supplies, foreign countries might be able to supply at least 2 trillion

---

1/See for example, "Mexico's Oil and Gas Policy: An Analysis," prepared for the Committee on Foreign Relations, United States Senate and the Joint Economic Committee, Congress of the United States by the Congressional Research Service, Library of Congress, Dec. 1978.

2/In late Sept. 1979, Mexico agreed to export 300 million cubic feet of natural gas daily at $3.625 per million Btu (as of Jan. 1, 1980). This price equates to about $21 per barrel for crude oil.

3/"Status of LNG Supplemental Gas Projects," American Gas Association Gas Supply Review, June 1978.

cubic feet annually during the 1980s at prices competitive with Alaskan gas. For example, in early 1979, Algeria and Indonesia sold liquefied natural gas to American companies at a price equivalent to $12 to $18 a barrel of oil. At these prices, liquefied natural gas would cost less than the expected 1985 cost of Project gas (about $35 per barrel of oil equivalent in 1979 dollars).

PROJECT GAS MAY MINIMALLY AFFECT ENERGY IMPORTS

Project gas theoretically could reduce energy imports by about 5 percent in 1985. However, any reduction may be less than theoretical estimates because (1) substitution opportunities are limited, (2) users may not adopt voluntary import reduction measures, and (3) Government policies may encourage increased consumption instead of import reduction.

Gas may not substitute directly for imported energy

Project gas may not substitute for imported energy on a one-to-one basis since some users may not be able to make substitutions. For example, Alaskan gas can substitute for imported fuel only if it goes to consumers which are directly or indirectly dependent on foreign fuels. Also, gas can substitute for oil as a space heater or boiler fuel only if the user already uses oil and can economically shift to gas.

Users may not adopt needed substitution measures

As long as substitution measures continue to be voluntary, energy users may not take steps to reduce reliance on foreign energy sources. For example, a person burning oil in a boiler may not be willing to replace it with Project gas unless it is a good economic tradeoff.

Furthermore, changing price relationships may cause some users to shift from gas to oil or from non-imported fuels to gas or oil. For example, if gas will no longer be underpriced compared to oil, users may no longer accept gas supply interruptibility and storage difficulty and may shift to oil. Also, in theory at least, relative costs, availability, and environmental considerations could induce some users to substitute gas for coal, our most abundant domestic fuel source.

Finally, Project gas may induce people to start new enterprises, thereby creating new demands for energy instead of reducing imports. For example, by making it possible to extend gas lines into farm and ranch areas, Project gas may enable people to start new suburban residential developments or build new factories or electrical generating plants. Theoretically, enough new demand could be created to burn the Project's entire gas supply.

Government actions may stimulate gas demand

Government policies to (1) assure Project success and (2) encourage development of domestic gas supplies may increase total gas demand. Increases in demand may offset opportunities for reduced reliance on foreign energy sources.

The Government's commitment to the Project creates a political and regulatory interest in it. This interest may result in a desire to assure profitable markets for Project gas so that the Project is viable and its capacity is fully used. Thus, if new customers should be needed to support the market for Project gas, the Government may feel obligated to help create them. For example, the Government might relax environmental standards standing in the way of an activity that would use Project gas. Similarly, if Project revenues prove insufficient to provide adequate returns to investors or owners of the gas deposits, regulators may change the rules to allow revenues to increase.

A Department of Energy position that favors demand increases is the program to prevent "the shutting-in of domestic (gas) capacity or diminishing the domestic incentives for drilling" for gas. For this purpose, for example, the Secretary of Energy has recommended that the trillion cubic-foot gas surplus--which the Department of Energy forecast in 1978--be burned off by substituting gas for oil in dual-fired facilities whenever possible.

This position favors increasing existing demand so that it will continue to press on supplies, the implications of which warrant careful analysis. Opening lower 48-State markets to Alaskan gas will relieve pressure on lower 48-State supplies and discourage, at least in theory, drilling for gas there. To prevent this, the Secretary may have to recommend policies or support actions that will further increase gas consumption enough to absorb Alaskan gas. Such actions could stimulate total demand and further limit the gas' ability to substitute for foreign energy.

PROJECT GAS MAY MINIMALLY AFFECT THE BALANCE OF PAYMENTS

One objective of reducing energy imports is to improve the Nation's balance of payments. Energy imports, primarily oil, in the absence of the President's import reduction program might amount to 9 million barrels a day by the latter 1980s. If oil would then cost about $23.50 a barrel in 1979 dollars, Americans would pay foreigners up to $77 billion a year for this energy. This large dollar outflow could have serious adverse impacts on the dollar's international value and on America's cost of living and economic well-being.

By buying Project gas, based on admittedly preliminary data, the American public would pay in 1985 about $4.4 billion in 1979 dollars for energy that may be obtainable from foreign sources for $3.7 billion. However, whatever the Project gas cost will be, under conventional methods of utility regulation, the transportation portion of the cost would decrease annually as the Project investment is depreciated. Paying any extra amount may not buy the American public any significant improvement in its imbalance of international payments since (1) Project gas may minimally affect imports, (2) the purchase of Project gas would lead to some dollar outflow, and (3) part of the dollars paid to foreigners will flow back to the United States for goods and services.

As Project gas may not significantly reduce energy imports, it may not appreciably reduce the dollar outflow. To the extent that Project gas fails to stem the outflow, America's balance of payments will not improve.

Even if it could reduce imports on a one-to-one basis, Project gas could not decrease dollar outflows by $3.7 billion. This is because the Project would generate its own dollar outflows--mainly payments to Canadian companies transporting Alaskan gas through Canada. The preliminary estimated transportation payments to Canadian companies in the first delivery year would total about $1.4 billion, or 38 percent of what would be paid for a comparable amount of foreign energy. These payments are scheduled to decrease over the life of the Project. However, even under assumptions of no need for additional capital outlays for repairs and maintenance, estimated transportation payments would still amount to about $400 million in the Project's twentieth year. In addition, interest and dividend payments to foreign investors in, and owners of, (1) Alaskan gas 1/ and (2) American pipeline companies will cause the outflow of an unestimated amount of dollars. In addition, products and services purchased abroad will also lead to dollar outflows. Project construction and operations will thus lead to dollar outflows which will offset, at least in part, any savings from import reductions, limiting the potential improvement in the balance of payments.

Part of the dollars spent for foreign energy will return to the United States to pay for goods and services purchased by countries supplying the energy. A larger proportion may promptly return to the United States if the energy payments are made to developing countries rather than to industrial countries. For example, Mexico, which has in recent years been securing about two-thirds of its imports from the United States, needs a great variety of goods and services for its development. If the United States buys gas from Mexico, one logical place for Mexico to spend this money for industrial equipment and supplies is the United States. This would reduce some of the adverse impact that the energy imports have on America's balance of payments.

1/For example, the British Petroleum Company Limited is the majority shareholder in Standard Oil of Ohio.

CHAPTER 4

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

After extensive studies and detailed proceedings, the President recommended and the Congress approved construction of the Project. This recommendation and approval specified that the Project could and would be privately financed. Federal financing assistance was "explicitly rejected."

When the possibility of $2 to $3 billion of loan guarantees to make the Project "feasible" was publicly discussed, we decided to concentrate our review on (1) the administration's current position with respect to Federal financial involvement and (2) if such involvement is proposed, whether further analyses are needed before an informed decision could be made on a proposal.

In this report, we conclude that:

1. The administration's official position on Federal financial involvement has not changed.

2. It is premature at this time to consider Federal financial involvement since (a) it is not known that help will be needed and (b) some important issues have not been resolved.

3. Pressure may build for the Congress to make decisions quickly if such involvement is requested because the Project offers a potentially significant domestic gas supply.

4. Further indepth analyses are needed before a decision on involvement can be made owing to (a) events occurring since 1977 and (b) uncertainties as to the future.

In this report, we have not attempted to determine whether it is in the national interest to build the Project or, if it is built, when construction should start. If the Project is privately financed and constructed without Federal financial involvement, these, of course, will not be public issues. Also, if Federal financial involvement is proposed, the Congress will need to consider what effect its various options would have on the construction of the Project and the role of northern Alaska gas in the national energy picture.

We have reached no conclusions on what the congressional decision should be on the question of Federal financial involvement. We believe that the analyses we recommend should help objective decisionmaking.

The Project's targeted on-line or in-service date has been delayed and the potential exists for further delay. The date for delivering Prudhoe Bay gas to lower 48-State markets has been changed from January 1, 1983, to late 1984. Similarly, proposals to deliver Canadian gas have been delayed from the winter of 1979-80 to (1) November 1980 for deliveries to the West and (2) November 1981 for deliveries to the Midwest.

Further delays are possible while remaining problems and issues are resolved. For example, two key remaining issues (allocating gas-conditioning costs and establishing environmental and technical stipulations) could lead to (1) lengthy administrative proceedings and (2) judicial review. Until these issues are resolved, we question whether a valid decision on private financing or Federal financial involvement can be made. As a result, we believe these matters should be completed <u>before</u> the Government considers any financial involvement.

A number of other uncertainties also exist. For example, although the sponsors have not officially stated that the Project cannot be privately financed, they have reported an unusually high risk of Project abandonment. The risk, they held, results from the Project's large size, high cost, and location. The Federal Energy Regulatory Commission does not agree with the sponsor's risk assessment.

The Alaskan sponsors estimate a 35-percent chance of abandonment in 1979--up from about 12 percent in 1978. The sponsors attribute the 1979 estimate to

--revised regulatory environment perceptions,

--growing public awareness of obstacles,

--optimistic reports concerning alternative natural gas sources, and

--gas processing plant uncertainties.

In addition, there may be more cost-effective alternatives which could secure or conserve a similar or greater amount of gas or the equivalent amount of energy in the 1980s. Among the potential alternatives are

--conservation steps,

--intensified lower 48-State drilling,

--liquefied natural gas, and

--unconventional domestic resources.

Also, while the Project offers a potentially significant future domestic gas supply, it is not now clear compared to alternatives (1) what the price of its gas will be, (2) to what extent it would reduce energy imports, and (3) what its international implications would be. For example, figures now indicate that in 1985, the American consumer would pay Project gas suppliers $4.4 billion (in 1979 dollars) annually for energy that might be available elsewhere for less.

In addition, the Secretary of Energy recently discussed the possibility of $2 to $3 billion in Federal loan guarantees for the Alaskan segment of this Project. This may have given potential investors a reason to anticipate that the Government will bear some of the Project's financial burden.

In any event, Federal loan guarantees, at this time, are inconsistent with (1) the President's 1977 Decision which (a) found that the Project could be privately financed and (b) "explicitly rejected" Federal financing assistance; (2) the U.S./Canadian agreement applicable to northern natural gas pipelines which calls for private financing; and (3) the Senate report which stated that rolled-in pricing was to be the only Federal subsidy of any type, direct or indirect, to be provided. Thus, without specific legislation, the Department of Energy lacks authority to make loan guarantees to the Project.

MATTERS FOR CONGRESSIONAL CONSIDERATION

At this time, Federal financial assistance has not been requested. However, in view of the above, we believe that if assistance is requested for the Project, the Congress should not consider Federal financial involvement until (1) all regulatory procedures are completed and (2) the sponsors show conclusively that the Project cannot be financed privately.

However, if the sponsors demonstrate the need for Federal financial assistance, the Congress should evaluate alternatives to Project gas, including the Secretary of Energy's report called for in our recommendation below, before it considers granting financial aid to the Project.

Finally, if the Congress decides to grant financial aid, it should (1) evaluate all feasible alternatives to Federal financial involvement (not just loan guarantees) and (2) ensure that the public interest is served and that the Government has an appropriate control over and return on its investment.

RECOMMENDATION TO THE SECRETARY OF ENERGY

Although this report concerns only the 800 billion cubic feet of gas the Project could supply annually, decisions on the Project cannot be isolated from the Nation's total energy situation. This is especially so in light of

--the energy developments since the first decision on this Project,

--the uncertainties noted in this report, and

--the President's July 16, 1979, Import Reduction Program, in which he urged the heads of the gas-producing companies to proceed with the financial assistance needed to build the Project.

In our opinion, the President is correct in stressing the need to explore a variety of alternate sources for supplying the Nation's future energy needs. However, at the same time, we would emphasize the importance of indepth benefit/cost analyses for determining the best action courses, both in-kind and amount.

We believe it is incumbent upon the Department of Energy to (1) analyze and propose how the Project fits in to the overall energy picture, (2) show how the cost of Project gas relates to the cost of alternative sources, and (3) evaluate the type of Federal financial involvement that could be used and the tradeoffs to be made. Using this information, the Congress could then make an informed decision on how best to invest Government funds to meet national energy needs.

Therefore, we recommend that:

--The Secretary of Energy, within 60 days from the date of this report, should provide the Congress an analysis showing how this Project now fits in with the overall national energy plan and strategy to satisfy the Nation's future energy needs. 1/ The analyses we recommend should provide a valuable input for congressional consideration of the President's Import Reduction Program that he announced on July 16, 1979. Items included in this analysis should include for the Project and each feasible alternative detailed information on

(1) the amount of gas that would be supplied,

(2) the timeframe for delivering the gas,

(3) the costs, and

(4) (a) the impact on our reliance on foreign energy and (b) the international implications.

--In addition, if the sponsors officially state that the Project cannot be privately financed or if Federal financial assistance is requested for the Project, the Secretary of Energy should provide the Congress, within 90 days of that time, his recommendation on the matter of Federal financing involvement. In support of his recommendation, the Secretary should provide a detailed analysis of the Project and cost-effective alternatives which might secure or conserve a similar or greater amount of gas or equivalent amount of energy. The Secretary's report should demonstrate why his recommendation is the best course

---

1/The Department of Energy Organization Act (Public Law 95-91, Aug. 4, 1977) requires the Secretary of Energy to (1) provide an energy supply/demand projection as a part of the annual report and (2) develop a National Energy Policy Plan which would, in part, estimate energy supplies and evaluate trends in energy prices. While this analysis we recommend could be a part of the required Organization Act report or plan, the situation dictates a separate submission which focuses on the Alaskan gas issue.

of action. In addition to all items listed for the Secretary's first report, this analysis should evaluate

--the amount and kind of Federal financial involvement and

--the benefit to the public that the involvement would buy.

In addition, the analysis should compare the benefits that the alternative sources could provide if they received (a) the same amount and type of Federal financial assistance as the Project would receive or (b) an amount approximating that requested for the pipeline.

CHAPTER 5

AGENCY AND COMPANY COMMENTS AND OUR EVALUATION

In this chapter we attempt to highlight the major concerns that reviewers of the draft of this report noted. Appendices II through IX contain complete copies of the comments; our detailed responses to them are in appendix X.

DEPARTMENT OF STATE

The Department of State points out that it has no reason to expect that the Project will not be privately financed. It notes that the President proposed and the Congress approved the Project on the basis of private financing. In addition, a U.S./Canadian agreement requires private financing. (See app. IV.)

According to the Department, it is highly premature to assume (1) that private financing will not be available and (2) that the Congress needs to consider all of its options before dealing with a request for Federal financial assistance.

The Department's comment is misleading. The report states that the Congress needs to consider all its options only _if_ a proposal is made for Federal financial involvement.

We believe that being alert to possible events is not premature. Events have led to public discussion of a possible need for Federal financial involvement in the Project. We do not believe that it would be good public policy to be totally unprepared for this possibility.

If the sponsors request Federal assistance, Project proponents will undoubtedly urge the Congress to quickly provide the needed assistance. Thus, we have recommended a framework for Government action _before_ any request has been made.

FEDERAL ENERGY REGULATORY COMMISSION

The Commission's main comments relate to our use of the economic concept of a gap between domestic supplies of natural gas and total domestic demand for gas. Instead, they suggest that a more analytically correct approach is to think of all supplemental gas supplies as substitutes for oil, and all should be utilized that are less expensive than imported oil. (See app. II.)

The report uses a gap or incremental approach to emphasize the need for indepth analyses of our energy situation in a future increasingly deficient in conventional energy sources. The concept of this gap can be found in the President's Decision on this Project and the National Energy Plan of April 1977.

We do not agree with the Commission that all supplemental gas supplies should be treated alike except for cost. Each source, together with its socioeconomic, political, and national security impacts, is different. Therefore, decisions on each source must be made within the framework of a comprehensive national energy plan.

Such a plan must rest on a variety of considerations and must deal with (1) supply and demand and (2) the short-and long-term welfare of our country. Some considerations are

--national security,

--economic growth,

--inflation control,

--mutually supportive international relations,

--environmental quality,

--national productivity, and

--gas and other industry stability.

Thus, cost is an important consideration in energy policies but should not necessarily be controlling.

DEPARTMENT OF ENERGY

The Department disagrees with two statements we make concerning actions the Secretary of Energy took. They state that he did not (1) raise the possibility of loan guarantees or (2) abruptly reverse the Government's policy on fuel switching. (See app. III.)

Since we cannot agree with the Department on the use of the phrase "raise the possibility," we have included the colloquy in which the Secretary discussed the possibility (see pp. 19 to 21). In this way, the reader can judge for himself.

We mention the change in the fuel-switching policy to point out the (1) relevance of indepth analyses and (2) the possibility of side effects from actions taken to reach a specific goal--such as oil import reduction. The report recognizes that the Secretary's action was taken as a trade-off between short- and long-term objectives. From a concerned public's viewpoint, however, the change was abrupt and may have undesirable impacts.

THE DEPARTMENT OF THE INTERIOR

Most of the Department's general comments focus on economic issues that it thinks should be in this report. This report stands on its own. However, such issues could be included in the analyses we recommend. (See app. VI.)

In its specific comments, the Department notes that it does not look at the proceedings for the right-of-way agreement as an opportunity for delay or as a basis for making concessions.

In our opinion, the Department, because of its environmental and other concerns, may be reluctant to make concessions in the stipulations. We suggest the possibility of lengthy proceedings only *if* the sponsors choose to negotiate.

The Department was exceptionally late in providing its comments.

THE FEDERAL INSPECTOR FOR THE ALASKA NATURAL GAS TRANSPORTATION SYSTEM

The Federal Inspector was reluctant to provide detailed comments. However, he stated that he had reservations about some of GAO's analyses and recommendations.

He commented that the Project's economic and financial viability are still being evaluated by the free market. In his view, the marketplace should be given an opportunity to work its free will.

We agree that the marketplace should be given the opportunity to work its will before Federal assistance is considered and are pleased that the Federal Inspector is on the job.

NORTHWEST ALASKAN PIPELINE COMPANY

The Northwest Alaskan Pipeline Company expressed concerns over the report's "misstatements and inaccuracies" and articles concerning the draft in the Canadian press.

We specifically requested that the company provide any supporting data to correct the alleged, but unspecified, misstatements and inaccuracies. The company provided none.

NORTHERN NATURAL GAS COMPANY

The Northern Natural Gas Company states that substantially all the problems described relate to the Alaskan segment and believes that there should be additional discussion of the proposal to "pre-deliver" Canadian gas.

The report shows that the question of Federal financial involvement has been raised only for the Alaska segment. The analyses we recommend will require the comprehensiveness the company suggests.

PACIFIC GAS AND ELECTRIC COMPANY

The Pacific Gas and Electric Company commented (1) that the Project stands the danger of being "studied to death," and (2) that speculating on what should be done if the Project were unable to obtain private financing runs the risk of becoming a "self-fulfilling prophecy."

We see no danger that our recommendations will cause the Project to be studied to death. All present activities can continue without regard to the Department of Energy analysis that we suggest.

We did not initiate any actions to question the sponsor's ability to secure private financing. Such questions were raised elsewhere. In addition, we did not institute any suggestion that the Government should or should not get financially involved in the Project. Our prime concern is that the Government should be in a position to make an informed decision if Federal financial assistance is proposed.

We believe that getting prepared for a prompt, informed decision on a public question is fully in the national interest.

FEDERAL ENERGY REGULATORY COMMISSION'S RULEMAKING TO DEVELOP A VARIABLE-RATE-OF-RETURN MECHANISM

The variable-rate-of-return mechanism for the Alaska Highway Gas Pipeline Project is being established through the regular rulemaking procedures used by the Federal Energy Regulatory Commission. In such rulemakings, the Commission first makes a specific proposal in a public notice. Then the Commission permits all interested parties to provide written comments on (1) the proposal and (2) the proposals submitted by the other interested parties. Sometimes the Commission also provides for oral arguments or other proceedings before issuing a final order.

THE COMMISSION'S PROPOSAL

On May 8, 1978, the Federal Energy Regulatory Commission proposed a variable-rate-of-return-on-equity based on how well the Project meets budgeted costs. The Commission proposed that a cost-performance ratio, the ratio of actual to projected costs, be used as a measure. If the performance ratio was 1.0, actual and projected costs would be equal. Similarly a 1.3 ratio would mean that actual costs exceed projected costs by 30 percent, and so on. Actual costs, however, would be adjusted for inflation and certain changes in scope.

THE SPONSOR'S RESPONSE

In their May 31, 1978, response, the Project sponsors contended that the initial proposal, if accepted as proposed, would preclude further sponsor investment, penalize equity capital contributed during a time of cost overruns, and make the entire financing plan infeasible by reducing the rate-of-return on Project equity. The sponsors noted that proceeding with financing would be virtually impossible unless (1) the equity rate-of-return were considerably above normal to compensate investors for their extraordinary risks; (2) the return were as certain as possible at the outset to attract investment; (3) and the rate were within a narrowly prescribed range, that is, not below the minimum level reasonable for this Project.

In June 1978, the sponsors added that the variable-rate-of-return should

--not apply to those portions in the contiguous 48 States, as such construction is conventional pipelining which involves conventional financing and no unusual cost overrun risks;

--not apply to all equity but be limited to varying the allowance permitted for funds used during construction;

--have limits established that are reasonable for Project investors as a practical consideration for securing necessary funds;

--not be used to reward or penalize cost changes outside the sponsors' control such as inflation, dictated scope changes or _force majeure_ reasons; and

--recognize the effect the Government has on ultimate Project costs since governmental supervision "holds the potential for significantly higher costs."

Finally, the sponsors did not want the variable-rate-of-return tied to cost estimation. Since (1) the cost estimate forms the basis for the capital pool needed before construction begins and (2) the sponsors anticipate that lenders will insist on a commitment pool larger than the estimate to cover possible overruns, assembling the capital pool becomes increasingly more difficult as the cost estimate increases. Further, if the Commission holds that Project sponsors will be penalized by Government-caused cost escalations, the sponsors must consider this contingency when preparing their cost estimate.

In summary, the sponsors stated:

"Our efforts to pull from the comments the foregoing principles does not constitute the Partnership's 'wish list' for this rulemaking, with the partners willing and able to move forward if some--as opposed to all--are accepted by the Commission. As a simple statement of fact, we necessarily advise the Commission that inclusion of all of these principles are essential to a variable rate of return mechanism. They are essential, that is, if the project is to be built with private sector financing."

THE COMMISSION'S SEPTEMBER REVISIONS

On September 15, 1978, the Commission revised its earlier proposal and

--removed the Western Leg from having a variable-rate-of-return;

--noted that, when established, the values may differ for the Eastern Leg and the Alaskan segment;

--defined the cost-performance ratio as the ratio of actual construction costs, including an allowance for funds used during construction (adjusted for inflation), divided by estimated construction costs (adjusted for scope changes); and

--determined that it will separately define what will be allowed as a scope change and the procedure to make any adjustment.

The Commission also provided an illustrative schedule to show how such a schedule could be structured, using a 17-percent rate of return at the 1.3 cost-performance ratio the President's Decision assumed likely to occur.

Rate-of-Return at Specific Performance Ratios

Performance ratio	Rate-of-return on equity (percent)
0.8	22.6
1.0	19.7
1.2	17.8
1.3	17.0
1.4	16.5
1.6	15.3
1.8	14.5
2.0	13.9
2.2	13.3
2.4	12.9

Translating the Commission's example performance ratio into dollar amounts makes the range of costs covered more meaningful. For example, if we inflate the 1975 Alaskan cost figure (assuming 5-percent annual inflation) to base the performance ratio on 1979 dollars, a $2.4-billion 1975 dollar amount becomes $2.9 billion in 1979 dollars. Using 1979 dollars as the basis, the rate-of-return-on-equity for the Alaskan segment would be:

--19.7 percent, at a $2.9-billion adjusted cost level;

--17 percent, at $3.8 billion;

--15 percent, at $4.8 billion; or

--12.9 percent, at $7.0 billion.

If actual and estimated costs after adjustment were equal (1.0 cost-performance ratio), the Commission would allow a 19.7-percent rate-of-return-on-equity. At a 1.67 ratio, the rate-of-return would equal the 15-percent rate that was used in cost-of-service calculations in the President's Decision. The 1.67 ratio was found reasonable in the Federal Power Commission's Recommendation to the President on this Project. Further, an adjusted cost over-run of 140 percent would reduce the return to 12.9 percent, slightly below the 12.94-percent average equity rate the Commission allowed in 1976 and 1977 on natural gas pipeline cases.

THE SPONSORS' OCTOBER RESPONSES

The Alaskan segment's sponsors state that the project will need Federal financial support and assistance if the Commission finalizes its revised mechanism

In October 1978, the Alaskan segment's sponsors said that they could not continue to advance substantial amounts of capital for the Project if the Commission implemented the existing variable-rate-of-return proposal. The Project requires large front-end expenditures for preplanning, engineering, design, and cost estimation. However, the sponsors will not advance the necessary funds until they are reasonably certain that (1) their funds will earn a "just and reasonable return" and (2) invested funds and the interest costs being accumulated on them will be recovered. Without this assurance, the sponsors state that Project work and the in-service date will be delayed again.

If Government-caused delays or other delays beyond the sponsors' control reduce the rate-of-return-on-equity, the sponsors say they will abandon their plan for private financing and limit their equity contributions. The sponsors state that private financing is out of the question if the Commission ties cost-performance to the March 1977 cost estimate, their original cost estimate. They state that under the very best circumstances they could not achieve less than a 60-percent overrun in constant dollars. They base this level of overrun on the combination of (1) the 31-percent cost overrun expected in the President's Decision, (2) including interest payments in the measurement, and (3) governmental delay.

Eastern Leg sponsors allege that the Commission's proposal jeopardizes delivering Canadian gas to the Midwest before the whole project is built

In comments filed in early October 1978, the Eastern Leg sponsors also noted that imposing a variable-rate-of-return mechanism on their segment would delay construction and result in lost gas supplies and increased costs. They stated that since the rate-of-return on the Eastern Leg may be different than the Alaskan segment's rate, there could be no financing plan until the Commission finalizes the rate schedule to be applied to the Eastern Leg. Further, the sponsors believe that the Commission's decisions, when made, will be "so controversial, time-consuming, and therefore delaying as to seriously reduce or eliminate any chance of early building." In the sponsor's estimation, using the variable rate on the Eastern Leg would mean a "crippling and most likely fatal delay" in bringing Canadian gas to the United States. Finally, they state that (1) the Commission's proposals have "thwarted" their filing an application for authorization to build and operate most of its segment and (2) continued delays in resolving the rate-of-return issue may further delay a filing.

The sponsors do not want the Commission to rely on the March 1977 cost estimate because they have not had a chance to update it. Further, changes have occurred since 1975, when the sponsors made their estimate. The sponsors state that new requirements involving new environmental laws, siting laws, scope changes, and different inflation rates combine to "mandate a reconsideration of 1975 assumptions."

THE COMMISSION'S DECEMBER REVISIONS

On December 1, 1978, the Commission reacted to the sponsors' concerns and modified the variable rate-of-return proposal. Specifically, they noted that (1) the March 1977 cost estimate would not be used as the basis for setting the variable rate-of-return and (2) the Commission intends to absolve the Project sponsors of responsibility for delays which are clearly the Government's fault. The Commission did not agree that applying a variable-rate-of-return mechanism to the Eastern Leg would cause delay.

After making some technical changes to the cost-performance ratio, the Commission noted that the cost estimate the sponsors submit prior to final certification will be used as the basis for determining the variable rate-of-return--not the March 1977 cost estimate. However, the Commission will compare this final estimate to the March 1977 estimate to see if the new estimate "materially or unreasonably" exceeds the earlier figure. Further, if overruns are less likely using the final estimate, the relationship between the cost-performance ratio and the rate-of-return allowed may be adjusted to reflect this difference.

The Commission does not intend to penalize the Project sponsors for delays beyond their control, particularly Government-caused delays. Delays prior to certification will not increase the cost-performance ratio or reduce the sponsors' rate-of-return. Penalties for delay would occur only for delays after the Commission grants a final certificate. The Commission intends to start determining the delays and cost increases beyond the Project sponsors' control and, thus, "absolve the project sponsors of responsibility for delays which are clearly the fault of the government."

The Commission does not believe that the variable-rate-of-return mechanism would substantially delay the Project as the Eastern Leg sponsors allege. Before the Commission sets a rate-of-return in a conventional pipeline certification proceeding, an applicant submits a proposed financing plan, cost estimates, proposed tariff, and other information affecting risks borne by investors. The only difference under the variable-rate-of-return mechanism, the Commission states, is that the Commission will set a range of rates-of-return rather than a single rate.

COMMISSION'S MODIFICATION
BETTER--BUT NOT ENOUGH

On December 19, 1978, the Alaskan segment's sponsors stated that the Commission's December 1 modification to the variable-rate-of-return proposal was a constructive improvement--but not enough to create sponsor and lender confidence. They insist that all issues and uncertainties surrounding this proposal need prompt and appropriate resolution.

If the Commission meets their requirements, the sponsors state that they "will have in place one of the many building blocks that must successively be put in place if private financing is to be achieved." However, they state that it would be misleading to suggest that the variable-rate-of-return mechanism is the sole determinant as to whether the Project will be, or can be, privately financed. They state:

> "The obvious truth--which we all must accept--is that private financing hinges upon prompt, supportive, consistent action by all elements of the United States and Canadian governments--day-by-day and issue-by-issue."

To assist Government officials in pinpointing specific actions required, on January 17, 1979, the Northwest Alaskan Pipeline Company supplied the Executive Policy Board with four listings of critical Government actions (and their required timeframes) necessary to complete the Project in the 1984-85 heating season. According to the company, the critical path

> "* * * is marked by a series of key government actions that must be taken in a timely manner. These actions are crucial for two reasons. First, many subsequent planning actions with substantial lead times (e.g., design, cost estimation) hinge on government decisions. Second, a favorable regulatory climate, substantiated by a record of timely and responsive government decisions, particularly on the key issues now pending, is a sine qua non for private sector financing.
>
> * * * * *
>
> "The schedule is tight, largely due to the many * * * steps that must be taken in sequence to"

"obtain financing and to complete the filing with FERC in mid 1980 for a final certification of public convenience and necessity. We believe the schedule is achievable if there is the requisite determination and dedication of resources by all concerned. For our part, we pledge ourselves to make a maximum effort. From the Government, we seek a commitment to overcome obstacles and actively look for ways to help us get the job done. Government actions on a project of this magnitude, in order to be timely and responsive, sometimes must be taken under conditions promising less than complete certainty. We believe there should be acceptance of some degree of risk by the government, in acting promptly, in recognition of both the total risk assumed by the sponsors and of the urgency of this project from a national interest viewpoint."

THE COMMISSION'S FINAL REVISION?

On April 6, 1979, the Commission proposed to finalize its variable-rate-of-return proposal on June 1, 1979. The Commission raised its rates for the Alaskan segment and proposed rates for the Eastern Leg.

The Commission expects the Alaskan segment to be built at a 1.3 performance ratio (a 30-percent overrun); the Eastern Leg, at a 1.1 performance ratio. At these levels, the rate-of-return-on-equity would be 17.5 percent and 15.25 percent, respectively. (See pp. 48 and 49 for the Commission's earlier proposal.) The entire schedule follows.

Rate-of-Return at Specific Performance Ratios

Performance ratio	Rate-of-return on equity Alaska	Rate-of-return on equity Eastern leg
	(percent)	
0.8	23.44	17.97
1.0	20.35	15.98
1.1	19.23	15.25
1.2	18.29	14.65
1.3	17.50	14.13
1.4	16.82	13.70
1.6	15.72	12.98
1.8	14.86	12.43
2.0	14.18	11.99
2.2	13.61	11.63
2.4	13.15	11.32

COMMISSION ORDER NO. 31

On June 8, 1979, the Commission issued Order No. 31 to set the final rate-of-return-on-equity for the Alaska segment and the Eastern Leg. These rates were generally the same for the Alaska portion but were lowered for the Eastern Leg.

However, the Commission noted that the allowed rate-of-return for the Project is competitive with other investments in the gas industry and the economy in general. In addition, according to the Commission, if investors perceive a high probability of such large overruns that the realized rate-of-return will be low, then it would seem to follow that the projected costs and estimates of cost overruns have grown to such an extent since the President's Decision that constructing this Project still may not be in the public interest.

The Commission recognized that the issues related to this order were serious and complex. For that reason, the Commission stayed the effective date of the order for 60 days to afford interested parties the opportunity to apply for rehearing.

The sponsors file a motion for rehearing

On July 9, 1979, 1/ the Alaskan sponsors requested that the Commission reconsider the order. In their motion for rehearing, they stated:

> "On June 21, 1979, the Board of Partners, the governing body of the Alaskan Northwest Natural Gas Transportation Company, discussed and analyzed Commission Order No. 31 (June 8, 1979). The Board, by unanimous vote, concluded that (1) rehearing must be sought; (2) if Order No. 31 is not modified on rehearing, further equity support for the project after August 6, 1979 (the effective date of Order No. 31) will be limited to those funds necessary to discharge already-incurred obligations; and (3) until such time as the President, the Congress, or the courts correct the errors of Order No. 31 (if the Commission fails to do so), substantive work on the project will be held in abeyance."

The sponsors stated that expenditures prudent from the standpoint of the Project would not be made until the "Commission has resolved by appropriate final order, the Partnership's motion for rehearing * * *." Examples of expenditures that would not be made include (1) $55 million for Alyeska subsoil and other data and (2) $150 million for Alyeska work camps.

THE COMMISSION STAYS THE EFFECTIVE DATE OF ORDER NO. 31

On August 6, 1979, the Commission found it appropriate and in the public interest to grant rehearing for the purpose of further consideration. As a result the effective date is stayed and a new effective date shall be prescribed at such time as the Commission issues its order on rehearing.

1/Also on July 9, 1979, Northern Border Pipeline Company and Michigan Wisconsin Pipe Line Company filed separate applications for rehearing. On July 24, 1979, the Commission's staff filed for rehearing.

THE COMMISSION ISSUES ITS FINAL DECISION

On September 6, 1979, the Federal Energy Regulatory Commission issued its final order approving variable-rates-of-return for the Alaska and Eastern Leg segments of the Alaska Natural Gas Transportation System.

The order basically reaffirms the June 8 order, with a few clarifications and modifications.

The Commission stated that applications for rehearing presented no new facts or legal principles which warrant changes in the policies or principles in its June 8 order.

According to this order, the Alaskan sponsors stated that

> "* * * it now appears very clear that a reasonable cost estimate for the Alaskan segment of the project will exceed the March 1977 cost estimate by more than 30 percent."

According to the Commission, it interprets this statement to mean that a "major change" in the Alaskan segment has occurred since the President's Decision.

The order makes clear that the Project sponsors may elect to revise their cost estimate for the Alaskan segment as a basis for the variable-rate-of-return mechanism, rather than using the formula approach based on March 1977 costs contained in the President's Decision. The Commission stated that the base line for the mechanism will not be any less than the final cost estimate submitted by the sponsors. However, the order makes clear that the Commission will carefully review the final estimate and make adjustments, if necessary, before approval is granted.

The Commission stated its intention that the mechanism be applied to both phases of the Northern Border (Eastern lower U.S. leg) project if the Commission approves prebuilding of some facilities to transport Canadian gas. If that happens, the two phases would be considered as separate projects and the mechanism applied to each separately.

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

Mr. J. Dexter Peach
Director
Energy and Minerals Division
U.S. General Accounting Office
Washington, D.C. 20548

JUL 13 1979

Dear Mr. Peach:

We have read your draft report titled "The Alaska Gas Highway Pipeline Project: Status and Issues" (Code 008700) and offer the following comments from the Federal Energy Regulatory Commission (FERC). Our comments are intended to serve as a technical review of the analysis in the draft report. We do not offer herein any views concerning alternative energy supplies or plans. We expect that other agencies within the Department of Energy will provide you with comments on these issues and present the views of the Secretary of Energy on this report. Our comments will refer specifically to the main body of the report but are also applicable to the digest presented at the beginning of the report.

Chapter 1: The Alaska Highway Gas Pipeline Project

Our only comments on this chapter deal with the subsection titled "The Government is Unable to Attract Additional Sponsors for the Alaskan Segment." This section gives a misleading impression of the role of this agency in the regulation of the Alaska gas project. This section states that "[i]n June 1978, the Government tried to attract additional sponsors for the Alaska segment." The report is referring to an order issued by this Commission on June 30, 1978, concerning the partnership agreement submitted by the project sponsors for our approval as required by the President's Decision.

In the partnership agreement, there is a schedule that reduces the share of profits going to each member depending upon the date that the member joins the partnership. Although Northwest Alaska gave public notice of the opportunity of joining the partnership shortly before the date the profit discount was to go into effect, the Commission felt that the President's requirement of open ownership participation without discrimination would best be realized if the date for the initial discount in profit share was postponed for 30 days from the date of the Commission's order to allow additional members to join the partnership without penalty. The Commission's intention in this order was to provide equitable and fair treatment of all potential partners and not, as the draft report suggests, "to attract additional sponsors." This section of the report erroneously implies that this Commission took an active role in attracting parties to join the partnership. This was not the intent of the Commission order.

Chapter 2: Important Issues and Problems Remain to be Resolved.

This chapter states that the Federal Inspector for the project is not yet on the job and that two important issues remain to be resolved which could lead to lengthy administrative or judicial review. In fact, the Federal Inspector was nominated by the President several weeks ago.

In the Section titled "Government Actions to Bring the Project on Line", the report gives a history of past executive and legislative actions affecting the project. We note two important ommissions concerning government participation in financing.

The draft report refers to those sections of the President's Decision opposing novel regulatory schemes to shift project risks to consumers and rejecting federal financing assistance. The Alaska Natural Gas Transportation Act (ANGTA) calls for the President to submit terms and conditions for inclusion in the Congressional authorization for the project. Congressional approval of the President's Decision gave these terms and conditions proposed by the President the force of law. The fourth term and condition dealing with finance states that "the successful applicant shall provide for private financing of the project and shall make the final arrangements for debt and equity financing prior to the initiation of construction." Since Congress approved this condition, it can only be changed by a futher act of Congress. This fact is not made clear in the report.

Also the U.S./Canadian Agreement on Principles for the project calls for private financing both in the United States and Canada. The draft report should indicate that government participation in the financing would probably require an amendment or change to this agreement between the United States and Canada as well as an act of Congress.

The report discusses two key issues that remain unresolved. The first concerns treatment of gas conditioning and processing costs. The Natural Gas Policy Act gives the Commission discretion to increase the maximum lawful price for gas to compensate for conditioning and processing costs at Prudhoe Bay. On February 2, 1979, the Commission issued a notice of proposed rulemaking and statement of policy respecting the treatment of these production related costs for natural gas sold and transported through the System. Initial comments and reply comments from all interested parties have been received, and the Commission expects to issue an order concerning production related costs in the near future. The Commission's decision will be subject to judicial review but only under the expedited procedures required by ANGTA. We doubt that the resolution of this issue will be as lengthy as the draft report implies.

The draft report places a great deal of emphasis on the risk of abandonment given by the project sponsors. Though no source is given for these probabilities in the draft report, GAO Staff has indicated that they are taken from a paper prepared by the Northwest Alaskan Pipeline Company on March 7, 1979 titled "Determining the Project Risk Premium for the Alaska Segment of the Natural Gas Transportation System." This report was submitted to the Alaska Gas Project Office of this Commission which in turn distributed the report to all interested parties in the rulemaking dealing with the Incentive Rate of Return Mechanism. Though we invited the sponsors to provide supporting evidence or justification for these probabilities, the project sponsors in their written comments during the rulemaking provided no justification or support. As a result in Order No. 31, the Commission rejected these probabilities as being unreasonably high.

Chapter 3: Alternatives and Options should be Evaluated Before Considering Federal Financial Involvement.

Chapter 3 attempts to analyze the need for Alaska gas and whether it is in the public interest to build the Alaskan Natural Gas Transportation System. This is an issue that was studied at great length in hearings before this Commission and in the various reports submitted by government agencies and other parties to the President and the Congress pursuant to ANGTA.

The record before this Commission on the Alaska gas project consists of some forty-five thousand pages of transcript and about 1,000 individual exhibits. Also ANGTA called upon this Commission and other Government agencies to submit reports to the Congress and the President concerning the need or benefit of building the project. In addition to other subjects, the Act required the Commission to report to the President on "the projected natural gas supply and demand for each region of the United States and on the projected supply of alternative fuels available by region to off-set shortages of natural gas." This Commission submitted its Recommendation to the President on May 1, 1977. ANGTA called upon other federal agencies to submit reports to the President on a variety of subjects including regional natural gas requirements and the relationship of the proposed transportation system to other aspects of national energy policy. In response to this mandate, the Federal Energy Administration, the Department of Commerce, the Department of Interior, and the Department of Labor submitted a report to the President on June 30, 1977 titled "National Economic Impact of Alaskan Natural Gas Transportation Systems." The Federal Energy Administration, the Department of Commerce, the Department of Interior, (United States Geological Survey), the Department of Transportation, the Department of Treasury, and the Energy Research and Development Administration submitted the "Report of the Working Group of Supply, Demand, and Energy Policy Impacts of Alaska Gas" on July 1, 1977. Based on these reports and on additional analysis, the President's Decision concluded that the project was necessary and desirable and should be built as soon as possible. This decision was approved by Congress by joint resolution on November 8, 1977 (Public Law 95-158).

The President's Decision calls for the project sponsors to submit to this Commission a new cost estimate prior to the granting of the final certificate of public convenience and necessity. If this cost estimate "materially and unreasonably exceeds" the cost estimates submitted by the project sponsors to this Commission and the President in March of 1977, the Commission is not required to issue a final certificate of public convenience and necessity. Until these updated cost estimates are made available to this Commission and the public, or unless the cost of alternative energy supplies has declined since 1977, we doubt that any new report on this project is likely to result in conclusions substantially different from those contained in the President's Decision and approved by the Congress.

The analysis in Chapter 3 of the draft report centers on the concept that cheaper alternatives to Alaska gas may be available to U.S. consumers. This analysis contains a number of weaknesses or deficiencies that should be corrected in the final report.

The draft report projects the future demand and supply for natural gas, and thus estimates a gap or shortfall in gas supply through 1990. The draft report then attempts to determine the cheapest sources of natural gas to fill this gap or shortfall. The report speculates that certain other alternative sources of natural gas may be cheaper than Alaska gas and thus may be preferred over Alaska gas. This approach rests on the questionable assumption that there is a fixed demand for natural gas through the year 1990 that is independent of the price of natural gas or the price of alternatives such as imported oil.

For the foreseeable future, imported oil is likely to be the most important determinent of energy prices and is likely to be the source of energy that will increase or decrease in response to changing domestic energy conditions. Consequently, a more defensible approach to analyzing the need for Alaskan gas or any other supplementary source of natural gas is to compare the cost of the supplemental source with the future cost of imported oil. If, for example, Alaska gas over its lifetime is likely to be cheaper than imported oil, it is likely to be in the public interest to develop the project; and there should be little doubt or concern that gas demand will not be large enough to absorb this additional supply. If this nation should be blessed with an abundant supply of natural gas cheaper than the cost of imported oil, insufficient demand for gas is unlikely since natural gas can already substitute for oil in many industrial and utility applications. If other sources of natural gas such as Mexican gas or imported LNG are cheaper than Alaska gas, access to these sources does not reduce the need for Alaska gas that it is less expensive than imported oil.

The draft report depicts Alaska gas and other sources of supplemental supplies as alternatives to be substituted for each other. A more analytically correct approach is to think of all of these sources of supplemental gas supplies as substitutes for imported oil and all should be utilized that are less expensive than imported oil.

A major weakness of this draft is that the analysis of alternative supplemental gas supply sources as well as the analysis of the Alaska gas project do not give any references to the sources of cost and supply estimates. The draft report itself provides no supporting evidence or calculations showing how costs and supply estimates were arrived at. This makes it impossible for any interested reader to determine the validity of the cost and supply estimates given in this report.

In the brief undocumented comparisons of the cost of Alaska gas with other supplemental gas supplies, the draft report seems to use the first year cost of Alaska gas. This is very misleading since the cost of transporting Alaska gas will decline over time. Under conventional methods of utility regulation, depreciation reduces the rate base of the project, thus reducing capital charges that are included in transportation rates. After ten years the transportation charge (in real terms or constant dollars) will be less than half of the first year charge and after twenty years will be less than one fourth the first year charge. Sources of imported gas such as LNG or Mexican gas likely to be tied to the cost of oil and will increase over time.

Canadian gas exports to the United States is presented in the draft report as an alternative to the Alaska gas project. The report briefly mentions that additional discoveries in Alberta and the Canadian Arctic may allow Canadian authorities to permit continued or even increased exports of gas to the United States. In February of this year, the National Energy Board (NEB) of Canada published a thorough study of natural gas supply and demand in Canada and made a number of significant findings concerning the possibility of exports to the United States.

The report concluded that there is an exportable surplus and that Canada will be able to fulfill its current contracts to export gas to the United States. These existing contracts expire at various times over the next few years. Thus based upon existing export licenses, Canadian exports to the U.S. would decline from the current level of approximately 1.1 trillion cubic feet (TCF) per year to 0.3 TCF by 1990 and would cease entirely after 1995. However, the NEB concluded that the current surplus would allow export commitments to the United States to be increased by a modest 2 TCF or by an amount equal to two years of exports at the current level.

In addition to these specific findings concerning the size of the current surplus of gas in Canada, the NEB Report decribes a new policy with respect to the determination of the size of any gas surplus in Canada and thus the allowed exports to the United States. In particular, the report has determined that a future deliverability test is a key factor in determining the size of any exportable surplus. In order to determine that a specific reserve of gas is deliverable, there must be some method of transporting the gas to market. The substantial reserves of natural gas in the Mackenzie Delta of Canada will not be counted in the determination of the exportable surplus until Canada is assured that a transportation system will be available to move those supplies to market.

The Alaska Natural Gas Transportation System is a joint project between the United States and Canada to transport gas both from Alaska and the Mackenzie Delta. Thus the construction of the Alaska gas project would probably result in a finding by the Canadian Government that the Mackenzie

Delta gas could be included in the calculation of exportable surplus. As a result exports of gas from Canada to the United States could be increased from what it would have been if the Alaska gas project had not been constructed. This draft report fails to recognize the important connection or linkage between the construction of the Alaska gas project and the potential for future exports of gas from Canada.

The last two sections of chapter 3 deal with the impact of the Alaska gas project on energy imports and on the balance of payments. These two sections attempt to show that Alaska gas would not reduce energy imports and would not improve the U.S. balance of payments. Again these are subjects that were explored at considerable length in reports to the President in 1977 by various government agencies. This draft report contains little in the way of hard analysis that would support these conclusions. The arguments given are strained and tenuous at best. We recommend that these two sections be substantially strengthened or else dropped from the final report.

Chapter 4: Conclusions and Recommendations.

We have no comments to offer on this chapter.

Appendix 1: Government Sponsor Negotiations to Develop a Variable Rate of Return Mechanism.

This appendix is a review of the Commission's development of an incentive rate of return mechanism as required by the President's Decision. We have two comments on this appendix. First the Commission in Order No. 31 issued subsequent to the preparation of the draft report resolves most of the outstanding issues concerning the incentive rate of return mechanism. With this order, the Commission feels that is has carried out the requirement in the Decision to develop a variable rate of return mechanism for this project. Such an incentive mechanism has not been attempted previously by this Commission or, to our knowledge, any other regultory agency in the United States. Consequently, the Commission had to develop an entirely new and complicated regulatory mechanism.

Our second comment concerns the way this appendix characterizes the procedures used by this Commission to develop the incentive rate of return mechanism. The title and format of the text describes this Commission's procedures as a series of negotiations or exchanges between the Commission and the project sponsors. This appendix makes it appear that the Commission and the project sponsors negotiated the details of this mechanism. This characterization is very misleading.

The rulemaking procedure used by this Commission to develop the incentive rate of return mechanism is well established and widely accepted. In a rulemaking, the Commission first makes a specific proposal in a public notice. A comment period is specified in the notice giving all interested parties the opportunity to provide written comments on the proposal. Later, all parties are allowed to offer reply comments and thus respond to the initial comments submitted to the Commission by other parties. After review of the initial and reply comments, the Commission may determine that further proceedings such as an oral argument are needed before issuing a final order. In the case of the incentive rate of return mechanism, the Commission instituted two rulemakings. The first rulemaking began on May 8, 1978 and ended with Commission Order No. 17 and developed the basic framework for the incentive rate of return mechanism. On April 6, 1979, the Commission instituted a second rulemaking to develop specific values for the parameters in the incentive rate of return mechanism. Again after an initial set of comments and a set of reply comments, the Commission issued Order No. 31 on June 8, 1979, specifing values for the parameters in the incentive rate of return mechanism.

In these two rulemakings over twenty interested parties filed comments with the Commission including the project sponsors, the staff of the Commission, various other natural gas pipelines, and the States of Alaska, California, and New York. To characterize this procedure as negotiations between the Commission and the project sponsors is quite misleading and ignores the important role played by other interested parties in the rulemakings.

In conclusion, the draft report contains a number of technical errors, and its analysis of specific issues concerning the Alaska gas project could be significantly strenthened. We hope that this report will be substantially improved before it is issued in final form. Thank you for the opportunity to comment on the draft report.

Sincerely,

Charles B. Curtis
Chairman

Department of Energy
Washington, D.C. 20545

July 12, 1979

Mr. J. Dexter Peach, Director
Energy and Minerals Division
U.S. General Accounting Office
Washington, D.C. 20548

Dear Mr. Peach:

We appreciate the opportunity to review and comment on the GAO draft report entitled "The Alaska Highway Gas Pipeline Project Status And Issues." Our views with respect to the text of the report and recommendations contained therein are discussed below.

Chapter 2

The report, in addressing private financing, does not explicitly distinguish between debt and equity financing in examining the question of the need for government involvement. It does examine the equity financing issue in relation to the variable rate of return. However, there is no mention of the fact that debt holders require a certainty of return on investment.

The report indicates a high probability of abandonment and the lack of certainty that 2 billion cubic feet a day will be available to the project, unless resolved, or guaranteed through tariffs. Both of these factors will prevent debt financing without a government guarantee. The report appears vaguely opposed to Government guarantee without stating a clear reason.

The report seems to require two considerations of Government involvement (1) return on investment and (2) a voice in management. Guaranties are a contingent liability. It is unclear, if this mechanism is used, whether the report is suggesting a return to risk bearing other than the typical user fee charged to a guaranty. Guaranties are not direct liabilities so there would be no return on investment.

It is also not clear why direct investment seems to be a requirement to obtain a voice in management. Management controls can be built-in through provisions in the guaranty instrument in the same way that any lender builds controls into loan documentation.

The report points out that the pipeline sponsors are proceeding with preconstruction planning before they finish testing system design. This mode of construction results in the risk of major design changes because the sponsors have not resolved important design aspects for Arctic conditions before construction. We note that a large portion of the cost over-runs on the Alaska Oil Pipeline, the Trans Alaska Pipeline System (TAPS), were attributable to the fact that the sponsors did not fully complete the development and testing of system design before construction began. As a result, geological and technical problems were encountered causing major changes to result in the construction phasing with consequent highly escalated costs.

The report indicates that the Alaska Highway Gas Pipeline project is not benefiting from the TAPS construction experience, both in terms of the geological data available and the project management and administrative requirements of such a major undertaking. From our knowledge, there is a tremendous reservoir of technical and management material resulting from the Alaska company's experience in building and operating the TAPS pipeline. The managerial shortcomings and problems in vertical and horizontal integration were documented for the record.

The report further indicates that, because the pipeline system will pass through a number of political jurisdictions, these jurisdictions may make costly economic and political demands on behalf of their constituents from the sponsor and the U.S. Government. We note that at the TAPS post-mortem sessions, held in Anchorage, Alaska, following the opening of the TAPS system, dozens of interest-groups from these jurisdictions attended the session for the obvious purpose of planning the development of intensified demands on behalf of their constituents in the construction of the natural gas pipeline.

Chapter 3

In regard to the loan guarantee program, the Secretary of Energy did not "raise the possibility" of loan guarantees for the Alaska gas pipeline project. In testimony before the Joint Economic Committee in January 1979, Senator Proxmire asked Secretary Schlesinger what level of loan guarantees might be appropriate to the project. Secretary Schlesinger responded to the effect that the principal area of risk was in the Alaska segments of the project and that $2 to $3 billion would appear to be an adequate level of guarantee.

The policy of the Administration continues to be as stated in the President's Report to Congress on Alaska Natural Gas Transportation Systems, September, 1977. A private financing is to be preferred to any form of Federal financial assistance.

The evaluative cost comparisons made throughout Chapter 3 appear to use as a basis of comparison the first or second year delivered cost of gas for the Alaska project.

Use of such a figure is misleading, particularly with respect to comparisons with imported energy projects. Under traditional rate making procedures, the Alaska project tariff in the early years is very high but will decline in real terms over time as the rate base of the project is depreciated. When the rate base is fully depreciated, the only charges in the tariff would be operating and maintenance expenses. On the other hand, imported oil or gas have only the prospect of continued real increases in price. To be accurate, therefore, any cost comparison must recognize the life-cycle annuity cost to the respective projects.

The Department of Energy agrees with the comments being filed in their response to GAO by the Department of Energy's Federal Energy Regulatory Commission (FERC) with respect to the "gap" theory of natural gas supply and demand. Projects that can supply domestic energy to the United States at a life cycle cost less than imported oil or imported natural gas are presumptively in the national interest even though other less expensive domestic supplies might also be available. As is further noted hereafter, the Alaska gas is superior in economic and national security terms to any other imported energy project whose prices would be tied to the cost of imported oil.

The Secretary of Energy has not "abruptly reversed" the Government's policy on fuel switching as stated in the report. The long-term policy to substitute this Nation's abundant coal resources for oil and natural gas in large stationary power plants is unchanged. In the short term, however, it is in the national interest to substitute available natural gas supplies for imported oil. To that end, temporary limited public interest exemptions have been issued to permit existing power plants to switch from oil to natural gas. These temporary exemptions are fully in accord with the provisions of the Fuel Use Act ("Coal Conversion") enacted by the Congress in 1978.

Increased natural gas use constitutes a major element of the response plan to the Iranian crisis. Further, there is no benefit to be gained by maintaining a surplus of gas in the producing states. Absence of markets for gas will lead to a reduced exploration and development, lower domestic gas supply, and higher energy imports in the future.

The Department of Energy's Energy Information Administration (EIA) survey referred to by the report was based on EIA Form 52. The analysis report issued by EIA in January 1979 indicated fuel switching of only 375 billion cubic feet or 0.375 trillion cubic feet over the entire period 1973-1978 instead of the "3.75 trillion cubic feet a year" referred to in the report. The EIA Form 52 survey relates only to permanent switching from gas to other fuels, and did not measure temporary alternative fuel use during the period of gas shortage.

The statement that "Wood and coal replaced 60 percent" of the 3.75 trillion cubic feet of natural gas supply reduction between 1973 and 1975 is in error. The data from Federal Power Commission (FPC) Form 69 and Federal Energy Administration (FEA) Form G-101 for 1976 and 1977 reflect 3.3 trillion cubic feet of natural gas curtailments of firm and interruptible users. Only 16 percent of those curtailments were reported to be replaced by coal. Wood was not separately identified, but it must be miniscule. Oil constituted 67 percent of the reported substitution. In reviewing the potential alternatives, the report fails to mention synthetic fuels, imported liquified natural gas, and possible offshore production of natural gas.

There is no evidence that would support the statement that "Mexico could supply 0.5 to 1.5 trillion cubic feet of gas a year through the 1980's," if the statement is intended to indicate the potential level of Mexican gas exports to the United States today. It is possible that gas exports by Mexico could reach 0.5 trillion cubic feet to 1.0 trillion cubic feet sometime during the 1980's but any projection is quite speculative. There is currently no agreement from gas sales in effect between the United States and Mexico. Further, Mexican production plans for oil or gas have not been established beyond 1982.

The statement that the "Mexican national oil company agreed to supply (natural gas) for $2.60 per thousand cubic feet" is not accurate. The Memorandum of Intentions between the Mexican national oil company and the United States pipelines specified that the price should be determined by reference to the distillate fuel oil price in New York Harbor. Today, that formula would provide for prices of $4.00 per mmbtu or more.

Mexican oil production and gas supply are not significantly dependent upon a "United States - Mexican oil agreement." A high percentage of

Mexico's oil exports come to the United States today, but the United States is not the only current or potential market for Mexican oil.

In theory liquified natural gas (LNG) projects could provide a gas at a cost that would rise over time in real terms to a lesser degree than the price of imported oil. Such projects involve substantial capital investment that is depreciated causing the rate base to decline in a manner similar to the Alaska gas project. Liquified natural gas cannot with any degree of confidence be characterized as a less expensive alternative to Alaska natural gas.

The Alaska natural gas need not be delivered to a consumer that otherwise would be directly dependent upon imported fuels for it to achieve a displacement of imported fuels. Any reduction of oil consumption in the United States will lead to a reduction of imported oil since that is the marginal supply.

Natural gas use constitutes a major factor in the response plan to the Iranian crisis. Further, there is no benefit to be gained by maintaining a surplus of gas in the producing states. Absence of markets for gas can lead only to a depression of exploration and development, lower domestic gas supply, and higher energy imports in the future.

Consumers will use natural gas if it is reliable and less expensive than alternative fuels. There is little reason to doubt that the long-run cost of imported oil will be higher than the cost of Alaska gas. Any marketability risk of possibly higher costs of the Alaska gas in the initial years of the project life can be overcome through rolled-in pricing provided by the Congress in the Natural Gas Policy Act, as well as by levelizing the tariff structure, if need be.

Maximization of the development of domestic energy resources is in the highest national interest of the United States. The Alaska gas project could deliver nearly 1.0 trillion cubic feet of natural gas equivalent to 425,000 barrels of oil per day to the lower-48 states by 1985. The project will have no significant impact on drilling for gas in the lower-48 states. Rolled-in pricing will prevent any significant adverse impact in the early years and, indeed, in the later years of the project life it could have the effect of encouraging development of other gas resources by providing a form of subsidy for such resources.

The report accurately notes that the Alaska project would involve some dollar outflows for the Canadian tariff. Such outflows will be small compared with the dollar outflow associated with imported oil or natural gas. Like the United States tariff, the Canadian tariff charges and dollar outflows will decline over time while the cost of imported energy will only continue to increase.

Natural gas purchases from Mexico could have a somewhat lesser adverse economic effect on the United States than purchases of imported oil from most other countries since Mexico is likely to purchase more quickly a higher percentage of United States goods and services than many other oil or gas exporting countries; but any import of energy creates a drain on the resources of the United States whether or not the dollar is quickly "recycled." It is clear that the Alaska gas project will be far superior to any imported energy project in these terms. In terms of real resource costs and benefits, the Alaska project will return many billions of dollars more to the United States over its life than any imported energy project. Reference could be made to the recent study contracted by DOE's Federal Energy Regulatory Commission on Alaska gas, A Review of Alaska Natural Gas Transportation Issues, May, 1979.

The subject draft report recommends that the Secretary of Energy provide Congress with a report within 60 days of the issuance of the final report. The 60 day time frame requirement is much too short an interval. It is requested that this time frame be extended.

We appreciate your consideration of the comments in the preparation of the final report and will be pleased to provide any additional information you may desire. Comments of an editorial nature have been provided to members of your staff.

Sincerely,

for Edward R. Johnson
Donald C. Gestiehr
Director
Office of GAO Liaison

APPENDIX IV

DEPARTMENT OF STATE

Washington, D.C. 20520

August 3, 1979

Mr. J. Kenneth Fasick
Director
International Division
U.S. General Accounting Office
Washington, D.C.

Dear Mr. Fasick:

I am pleased to forward the attached comments on the draft report: "The Alaskan Gas Pipeline Project Status and Issues". The comments were prepared by the Deputy Assistant Secretary for International Resources and Food Policy.

We appreciate having had the opportunity to review and comment on the draft report. If I may be of further assistance, I trust you will let me know.

Sincerely,

Roger B. Feldman

Roger B. Feldman
Deputy Assistant Secretary
for Budget and Finance

Enclosure:
As stated

State Department Comments on Draft GAO Report, "The Alaska Highway Gas Pipeline Project Status and Issues".

Digest

Comments provided for Chapters 1, 2, and 3 apply to the issues summarized in the Digest.

Chapter 1

Page 1-5: The membership of the Northwest Alaskan sponsor partnership is likely to change. American Natural has announced its intention to negotiate an arrangement with the partnership. Others may follow in conjunction with the President's July 16 directive to DOE. The draft should be updated to reflect these changing circumstances.

Page 1-6: The draft does not provide a description of the reasons behind the fact that the project has been delayed, including the 18 months it took Congress to pass the Natural Gas Act of 1978 providing a wellhead price for Alaskan gas. Nor does it acknowledge the deliberative nature of the regulatory determination process, and the time required to take into account associated comments and rebuttals by the Project Sponsors and other interested parties. There is justifiable reasons to proceed deliberately. A project so enormous must be undertaken with full consideration for the risks and benefits, particularly in view of the TAPS experience. This time the effort will be to avoid making similar mistakes. This may require more time in the preconstruction stages of the project.

Chapter 2

Page 2-5: The Federal Inspector has been appointed by the President and confirmed by the Senate. This section of the report is thus overtaken by events and should be deleted.

Page 2-6: While the issues of gas conditioning costs and right-of-way stipulations are important considerations for the Project's viability, there is no evidence to conclude that they represent serious obstacles.

Certainly many "worst-case scenarios" can be developed to cast a pessimistic light on the Project. This brief, two page section of the report is far too shallow to deal with both of these important issues adequately and fairly.

Page 2-8: The report places undue emphasis on Project Sponsor's estimates of the risk of project abandonment. Various project-related interests are being brokered in 1979 as regulatory determinations are finalized, and permitting and approvals procedures go forward. In this atmosphere concern for the viability of the project is bound to be aroused. As the necessary regulatory decisions are concluded, and other related activities, such as establishing the Federal Inspector's operation, and concluding additional gas supplier contracts are accomplished, talk of abondonment will recede.

Page 2-9: Every major construction or manufacturing project carries a variety of risks. Technical and geological uncertainties will, of course, be thoroughly investigated. Project segments must, of course, be fully coordinated with related activities in order to complete the project on a timely basis and close to budgeted costs. There is no basis for the implication that obstacles are insurmountable.

Page 2-10: The Project was developed and approved by Congress on the basis of 26 trillion cubic feet-plus proven gas reserves under the North Slope. Its 25 year life cycle costs are based on those proven reserves. The draft report's questions concerning Prudhoe Bay production history and gas availability would appear beyond the scope of the Project as presented, i.e., the pipeline is designed to carry approximately 2.4 BCF/day for 25 years, or an amount well within the capacity of proven reserves to support.

Page 2-11: The draft report notes that the Project might be vulnerable to adverse regulatory and political actions because it passes through several political jurisdictions in two countries. Adequate protections have been provided to the Project by two international agreements negotiated with Canada--the Transit Pipelines Treaty and the Agreement on Principles Applicable to a Northern Natural Gas Pipeline: In addition to non-discriminatory treatment in Canada of the pipeline and its throughput, these agreements provide a broad range of general and specific assurances, as well as an incentive formula covering the U.S. role in constructing the Dempster line to access MacKenzie Delta gas, in which U.S. sponsorship of the Dempster link declines in proportion to any delays caused on the Canadian side.

Page 2-12: See above comments concerning abandonment risk.

Page 2-12: The comments concerning investor attitudes, like much of the analysis surrounding the issue of private financing, is based on premature assessments. It is clear that several important issues must be decided before the Project can be properly presented for consideration by the financial market. Those issues are being examined now and regulatory determinations will be finalized soon. Until then the draft report's assessments are premature.

Page 2-13: The comments on regulatory attitude are dated. The Federal Inspector is in place, the reorganization plan is being implemented, and both the President and involved government agencies are committed to expeditious treatment of the Project.

Page 2-13: Public awareness of the difficult decisions that are being made as the Project goes forward is not, of itself, detrimental. At the same time, the public is increasingly aware of the dangerous dependence of the United States on imported oil, and the renewed vigor with which domestic resources, like Alaskan gas, must be developed.

Page 2-15: The assertion that the Administration "raised the possibility" of \$2-3 billion in Federal loan guarantees is incorrect. We understand that the Secretary of Energy, responding to a hypothetical suggestion during Senate hearings in January, indicated that a range of \$2-3 billion in guarantees would be adequate--in the hypothetical circumstance suggested.

The Alaskan Gas Pipeline Project was proposed by the President and approved by Congress on the basis of private financing. The US/Canadian Agreement on Principles requires private financing. We have no reason to expect that this Project will proceed other than on those terms. Problems have had to be dealt with, and consequently delays have been encountered.

Page 2-15: The draft report makes the statement that "... a similar investment in coal gasification or other unconventional sources might yield a greater return for each incremental dollar invested". This assertion is highly speculative in our view and in any case requires substantially more detailed explanation and analysis if the concept of unconventional alternatives is to be retained in the study.

Chapter 3

Page 3-1: This chapter suffers most seriously from the problem of being premature. It is highly premature to assume: a) that private financing will not be available and, b) that Congress therefore needs to consider all its options before dealing with a request for Federal financial assistance.

The questions presented in the draft report for Congressional consideration have already been taken into account in the proceedings leading the Presidential Decision, and in testimony before the Federal Energy Regulatory Commission. In addition the Project sponsors must submit a new cost estimate to the FERC prior to granting of the final certificate of public convenience and necessity thus presenting another opportunity to weigh the balance of costs and benefits from the project.

Page 3-2: The fact that other supplies of gas may be available besides project gas does not in any way change the desireability of access to the 26 TCF of proven gas reserves under the Alaskan North Slope. The fact is that we can anticipate increasing real prices for imported oil with consequent impact on energy prices generally. Alaskan gas is likely to be substantially cheaper, over the life cycle of the project, than imported oil. Access to additional Canadian gas, or Mexican gas, or additional LNG would be helpful in and of themselves, but do not reduce the need for Alaskan gas that is less expensive than imported oil. Table 3 includes highly speculative figures for possible imports of foreign gas in the 1980's. The draft report contains no supporting evidence for these supply estimates nor for the cost analyses contained in this section. The cost comparisons appear to use the first year delivered cost of Alaskan gas as a basis of comparison. This is inappropriate because the depreciation formula for Project costs results in a declining real cost over time. Any accurate analysis must therefore base comparison of alternate projects on their life cycle annuity cost.

Page 3-7: The analysis confuses conservation and fuel switching. The key long-term element of the Government's policy on fuel switching is to substitute coal for oil and natural gas. Short term adjustments to that policy, including limited exemptions for industrial and utility use of natural gas, are appropriate. The analysis seems to overlook the fact that surplus gas supplies overhanging the market are not likely to encourage expanded exploration and development of additional reserves, indeed they may discourage it.

Page 3-9: The section on unconventional sources is undocumented, superficial and excessively speculative.

Page 3-10: Anticipated Canadian supplies are not adequately documented.

Page 3-10: The statement that "Mexico could supply 0.5 to 1.5 TCF of gas a year through the 1980s" is not substantiated. This would be 1.4 to 4.1 BCFD. Such numbers are highly speculative, especially since Mexican oil and gas production plans do not extend beyond the current Mexican presidential term ending in 1982. The reference to Pemex' offer of $2.60 per MCF is inaccurate. The 1977 Memorandum of Intentions between Pemex and six U.S. pipeline companies called for reference price based on the price of distillate fuel oil in New York Harbor -- about $4.50 per MCF at current prices. Mexican gas exports to the U.S. are not dependent on conclusion of a U.S./Mexican oil agreement.

Page 3-11: The conclusion that LNG imports in 1985 would be priced at the equivalent of $12 to $18 per barrel of oil ($2-$3 per MCF) is well off the mark. It overlooks the fact that these imports contain escalator linkages to the price of imported oil, and the possibility of their being renegotiated.

Pages 3-11 and 3-12: Since imported oil is the marginal supply element in the U.S. energy system, Alaskan gas will serve to backout imported oil, directly or indirectly, and/or to support U.S. economic growth. Statements in this section reflect a "no-growth" philosophy.

Page 3-14: This section on balance of payments costs for energy is inaccurate and out of date. Energy imports are not expected to be 12 million barrels a day in the late

1980's. Oil already costs more than the $18 per barrel figure used as its cost in 1979 dollars for the mid-1980's. The balance of payments costs (payments to Canada) for transporting Alaskan gas is small compared to the negative effect on the U.S. economy of importing an equivalent amount of oil. These Canadian tariffs also are scheduled to decline over time.

Chapter 4: No comments.

APPENDIX V

FEDERAL INSPECTOR
FOR THE
ALASKA NATURAL GAS TRANSPORTATION SYSTEM
Washington, D.C. 20503

July 30, 1979

Mr. J. Dexter Peach
Director
Energy and Minerals Division
U. S. General Accounting Office
Washington, D. C. 20548

Dear Mr. Peach:

A copy of your draft report, "The Alaska Gas Highway Pipeline Project; Status and Issues" (Code 998700) was routed to my office as part of the distribution made to Agencies belonging to the Executive Policy Board (EPB) of the Alaska Natural Gas Transporation System (ANGTS). It is my understanding that comments, as requested, have been prepared by the various Agencies of EPB.

Based on the information currently available to me, I have serious reservations about some of your analyses and recommendations. I am reluctant at this time, however, to provide detailed comments for a number of reasons. First, many of the issues discussed in the report are related to decisions or negotiations of the Federal Energy Regulatory Commission, Department of the Interior and private companies which took place prior to my appointment as Federal Inspector and prior to the establishment of the Office of Federal Inspector. I was not privy to the rationale behind these discussions. Second, other issues raised by the draft report, especially the matter of economic and financial viability are still being debated or evaluated by forces of the free market. I think the marketplace should be given an opportunity to work its will.

As you can understand, the issues and questions raised in the report relative to the pre-construction, construction and initial operation of the ANGTS are of vital concern to me and my office. Please feel free to call on me if you have any questions or I can be of assistance.

Sincerely,

John T Rhett

John T. Rhett
Federal Inspector

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

In Reply
Refer To:
AL01.0401

SEP 4 1979

Mr. Dexter Peach
Director, Energy and Minerals Division
United States General Accounting Office
Washington, D.C. 20548

Dear Mr. Peach:

We have reviewed your proposed Draft Report on the Alaska Highway Pipeline Project Status and Issues (Code 008700). Our comments fall into two categories: those which deal with this Department's specific responsibilities and those which are general in nature.

Specific Comments

-On page 2-7, it is suggested that proceedings for the Right-of-Way Agreements represent an opportunity for delay. It is unlikely that a delay will be caused by our schedule for issuing the Stipulations. We are scheduled to complete them before October of this year and this fits the companies' schedules. The Agreement and Grant of Right-of-Way documents are being prepared and will be ready for signature when the conditions of Section 28 of the Mineral Leasing Act are met.

-The Department does not look at the stipulations as a basis for making "concessions". There has been extensive discussion with the companies about the environmental and other concerns of the Department vis-a-vis the economics of the project.

-We differ with the conclusion implied on pages 2-8 and 2-9. We believe that the technology exists to build the pipeline in an environmentally acceptable, economical manner. However, we do have a number of major technical concerns in Alaska that must be resolved by the company before the pipeline can actually be constructed.

General Comments - The following is a list of omissions or changes that we suggest be considered before the final report is submitted to Congress.

The economics of the project have been extensively studied for several years and found to be generally acceptable. Recent increases in OPEC oil prices reinforce the justification. It is not apparent what purpose would be served by having the Secretary of Energy undertake another overview.

-The planned facility will have a capacity of 1.163 trillion cubic feet per year with additional capacity possible by looping.

-There is a strong possibility of additional gas being discovered in the north slope area that could be transported by this line.

-The report does not explore what is to be done with the gas in the event that there are no transportation facilities out of the region. Currently, under State Regulation, the gas is being reinjected at Prudhoe Bay. This is costly and consumes a portion of the gas in the process. There are limitations on the useful and non-wasteful continuation of reinjection which should be discussed.

-There is a misleading characterization on page 3-5. If it were obvious that LNG were an economic source of energy, the case against importing would have dissolved. If markets for the gas at incremental cost were apparent, LNG imports would have been authorized. Without some market constraint (such as full-cost or incremental pricing) LNG remains a suspect, unattractive source of fuel. With the appropriate market constraints, it may ultimately become an economical source.

-The economics on page 3-7 are confusing. We doubt that it could be demonstrated that energy users are indifferent to prices. What is it that is going to alter consumers preferences or habits? It sounds as if the authors are advocating forced conservation. This tends to be corroborated by first paragraph, page 3-12.

-The logic on page 3-12 is questionable. Supply does not create demand. Further, if the cost of the Alaskan gas (properly priced) were low enough to warrant increased economic activity, this would seem a desirable, rather than an undesirable, outcome.

-The discussion concerning the lack of impact on importation of OPEC oil is not entirely correct. It is not necessary for someone who burns foreign oil to directly substitute Alaskan gas for displacement of foreign oil to occur. The total energy imported with or without the Alaskan gas is the real basis for comparison.

-The investment tax credit has a substantial impact on the real rate of return on equity capital. We think that this impact should be considered and included in the appendix on the IROR, in order to accurately evaluate the financial prospects for this project.

-Your concerns about marketing may be overstated as most of the proven Prudhoe gas has already been marketed (with certain restrictions). Also, it is unlikely that the companies involved will start construction before they have distribution contracts and commitments.

-In evaluating this project, consideration should be given to its value as an energy "insurance policy" in the event of interruption of overseas' sources.

-Consideration of this marginal increase in supply as a constraint on the price of OPEC oil and/or LNG would be interesting.

-Of very special importance for the Congress to consider are the pre-built projects in the lower 48. These projects will provide Canadian gas at an early date and their import should be considered in an over-all evaluation of this entire project.

I hope the above comments will be beneficial to you in the preparation of the final report. If you have any questions or want elaboration, please contact Mr. William M. Toskey, 343-6932, the Department's Authorized Officer for this project.

William M[...]

for Larry E. Meierotto
Assistant Secretary
Policy, Budget and Administration

NORTHWEST ALASKAN PIPELINE COMPANY

JOHN G. MCMILLIAN
CHAIRMAN OF THE BOARD

SUITE 901
1801 K STREET, N.W.
WASHINGTON, D.C. 20006
(202) 466-5850

July 10, 1979

Mr. Elmer B. Staats
Comptroller General
441 G Street, N.W.
United States General Accounting Office
Washington, D.C. 20548

Dear Mr. Staats:

Mr. J. Dexter Peach's letter of June 19, 1979 to Mr. Arthur J. Miller of Northwest Alaskan Pipeline Company transmitted for comment a purportedly confidential draft of a proposed Report entitled, "The Alaska Highway Gas Pipeline Project Status and Issues." The report contains so many misstatements and inaccuracies that the time and resources which would be required to comment on each cannot be justified in light of its premature release to the Canadian press.

The full extent of the damage and delay caused by the unethical and premature release of the draft to the press cannot be fully assessed at this time. We are enclosing for your information copies of articles from several newspapers to illustrate how an ill-conceived and misleading report can be further misinterpreted by the press. The impact of such articles with their inflammatory rhetoric, especially on the financial community, are particularly damaging to this vital energy project.

We believe the distortions, inaccuracies, and incompleteness of the already published and released report will be readily discernible to the careful reader, and that this will be our best defense against such irresponsibility. By copies of this letter, we are informing members of Congress and the Administration of our comments and opinions on this matter.

Very truly yours,

John G. McMillian

John G. McMillian

GAO note: The supplementary newspaper articles referred to in these letters have not been reproduced.

A SUBSIDIARY OF NORTHWEST ENERGY COMPANY

 APPENDIX VIII

2223 Dodge Street
Omaha, Nebraska 68102
Telephone 402-348-4000

Northern Natural Gas Company

July 12, 1979
JCP:106:79

Mr. J. Dexter Peach
Energy and Minerals Division
United States General Accounting Office
Washington, D.C. 20548

Dear Mr. Peach:

In response to your request for comments on the General Accounting Office's draft report, "The Alaska Highway Gas Pipeline Project Status and Issues", my reply as Project Manager for the Northern Border Pipeline Company contains observations pertinent to the Eastern Leg of the Alaska Natural Gas Transportation System also known as the Northern Border Segment.

On January 26, 1979, Northern Border filed an application with the Federal Energy Regulatory Commission for permission to prebuild 809 miles of the Eastern Leg to transport 800 MMCFD of Canadian Gas to U.S. consumers beginning two to three years in advance of when Alaska gas will be available. This service proposed by Northern Border would begin in November, 1981, and continue for a period of 12 years, providing substantial volumes of gas to the Midwestern and Eastern U.S. markets. This proposed prebuilding or Phase I construction of the Northern Border System is predicated on the receipt of acceptable certificates and permits from both the United States' Federal Energy Regulatory Commission and the Canadian National Energy Board.

When Alaskan gas becomes available Northern Border will file additional applications requesting permission to expand its system by adding 308 miles of pipeline and more compressor stations to accommodate the combined volumes of Alaskan and Canadian gas volumes. This expansion of the Northern Border system will be timed to coordinate its completion with completion of the other segments of the total system.

Our basic comment on your draft is that substantially all of the problems described are peculiar to the Alaskan segment (or perhaps in some part the Canadian segment), and have little bearing on Northern Border's prospects for financing and construction <u>in light of the "pre-build" proposal</u> to transport Canadian gas. Had the FERC not chosen to impose the IROR mechanism on Northern Border, the financing and "pre-build" construction would have proceeded routinely upon issuance of satisfactory export-import licenses by the two governments, and a satisfactory Certificate by the FERC.

The only unusual obstacle Northern Border now faces is satisfactory resolution of the IROR mechanism. It still faces the "usual" obstacles of satisfactory "pre-build" authorizations from the two governments involved. Whether those obstacles will be overcome, and when, is peculiarly within the control of the two governments. However, given such action on a timely basis and acceptable terms, we have no concern over our ability to finance Northern Border privately and construct the "pre-build" segment on the projected time schedule (assuming the expected cooperation of the Federal Inspector during final design and construction). Neither would we have any concern, once the "pre-build" is completed, over our ability to finance privately and to construct timely the expansion required to accommodate Alaskan gas when it begins to flow.

We believe our presentation before the FERC should make it clear that only satisfactory regulatory approvals for the "pre-build" (including IROR in that context) are needed to bring Northern Border into being as a privately financed pipeline. This represents over 1100 miles of the 4800 mile total system, and an investment (for both Canadian and Alaskan gas) of approximately $2 billion.

Moreover, as our presentation to FERC documents, successful completion of the Northern Border "pre-build" will benefit the financing and construction of the Alaskan and full Canadian segments enormously. Further assistance will accrue from "pre-building" the Canadian southern segments and the Western Leg. The unit cost of transportation of Alaskan gas will decline significantly, and obviously financing requirements will be greatly reduced within the same time period.

We suggest addition of a comprehensive explanation of the effects of "pre-building" on completion of the entire Alaskan system, and re-examination of some concerns expressed in light of that expectation, and the recent OPEC price increases. Above all, it should be made clear that Northern Border can be and will be privately financed barring adverse regulatory actions in the U.S. or Canada.

Yours truly,

J Conrad Pyle

J. Conrad Pyle
Project Manager

JCP/nj

PACIFIC GAS AND ELECTRIC COMPANY

77 BEALE STREET · SAN FRANCISCO, CALIFORNIA 94106

JOHN A. SPROUL
EXECUTIVE VICE PRESIDENT

July 12, 1979

Mr. J. Dexter Peach, Director
United States General Accounting Office
Energy and Minerals Division
Washington, D.C. 20548

Dear Mr. Peach:

This will reply to your June 19, 1979 letter which invited comment on the General Accounting Office draft report entitled "The Alaska Highway Gas Pipeline Project Status and Issues."

This response is made on behalf of Pacific Gas and Electric Company (PGandE) and Pacific Gas Transmission Company (PGT). As you are no doubt aware, PGandE, through its subsidiary Calaska Energy Company, is participating in the partnership that will build the Alaska portion of the Alaska Natural Gas Transportation System (ANGTS), and PGT and PGandE have been designated by the President to build the western delivery leg of the ANGTS. Thus, both companies take a keen interest in the subject matter of the draft report, and appreciate this opportunity to provide comments thereon.

In reviewing the draft we have, as you asked, taken care to prevent the report's premature release or unauthorized use, knowing that the publication of the preliminary draft, before it has been checked for inaccuracies and misleading statements could do unjustifiable harm to public and investor confidence in the Alaska Project. We were, therefore, dismayed to learn that, despite your caution, the draft, without the benefit of corrections, was the subject of some premature stories in the press. This is particularly unfortunate, for the draft in its present form is misleading to the public and to the Congress, and will do nothing to advance general understanding of the project, its promise, or its problems.

The Project has been approved and found in the national interest by the President and the Congress. The draft report gives scant attention to this fact and seems instead to proceed on the assumption that the national need for this new domestic energy supply should be restudied. The Project is in danger of being studied--and restudied--to death.

The draft report contains a great deal of superficial and completely unsubstantiated speculation about the possible availability of alternate energy supplies. This speculation covers ground which has been covered many times before. All of the mentioned alternatives are not truly alternatives to the Alaska Project but are instead other possible sources of energy that will in all likelihood be needed <u>in addition</u> to the Alaska Project, <u>if</u> they can be brought to fruition. Alternatives to the Project were considered and a decision has been made at the highest levels of our Government and the Government of Canada to move forward with the Project. The time for studies of alternatives is past.

If any study is necessary at this time, there should be an analysis of ways to clear government roadblocks and delays which are the single greatest threat to the Project's timely and economic completion. In our opinion the GAO's draft study should be revised to give close attention to this problem. The report could perhaps help to achieve the expressed will of the Congress that this Project be built if the report were to examine closely the delays and uncertainties caused by the governmental regulatory process, and to recommend ways of rectifying the situation.

The report spends a great deal of time speculating what should be done if the Project were unable to obtain private financing. This sort of speculation unnecessarily runs the risk of becoming a self-fulfilling prophecy. Investor and lender confidence are being eroded day by day by regulatory delays which raise the question of the U.S. Government's commitment to the Project. The draft report will cause further erosion of confidence. The partnership has stated its belief that the Project can be privately financed, but we will not know until we are allowed by government decisions to go forward. We do know that until that occurs, speculation about possible failure, especially from a responsible agency of the Federal Government, is to say the least, unnecessary and very much contrary to the national interest.

We sincerely hope that these comments, although general in nature, will aid your Office in its review and modification of the draft report. We stand ready to provide further information and assistance.

Very truly yours,

John A. Sproul

JOHN A. SPROUL

DEG:nw

AGENCY COMMENTS AND GAO'S DETAILED RESPONSES

FEDERAL ENERGY REGULATORY COMMISSION

Agency comment

"We have read your draft report * * * and offer the following comments from the Federal Energy Regulatory Commission (FERC). * * *."

Chapter 1

"Our only comments on this chapter deal with the subsection titled 'The Government is Unable to Attract Additional Sponsors for the Alaskan Segment.' This section gives a misleading impression of the role of this agency in the regulation of the Alaska gas project. This section states that '[i]n June 1978, the Government tried to attract additional sponsors for the Alaska segment.' The report is referring to an order issued by this Commission on June 30, 1978, concerning the partnership agreement submitted by the project sponsors for our approval as required by the President's Decision.

"In the partnership agreement, there is a schedule that reduces the share of profits going to each member depending upon the date that the member joins the partnership. Although Northwest Alaska gave public notice of the opportunity of joining the partnership shortly before the date the profit discount was to go into effect, the Commission felt that the President's requirement of open ownership participation without discrimination would best be realized if the date for the initial discount in profit share was postponed for 30 days from the date of the Commission's order to allow additional members to join the partnership without penalty. The Commission's intention in this order was to provide equitable and fair treatment of all potential partners and not, as the draft report suggests, 'to attract additional sponsors.' This section of the report erroneously implies that this Commission took an active role in attracting parties to join the partnership. This was not the intent of the Commission order."

GAO reponse No. 1

The report now reflects these Commission views.

Agency comment

Chapter 2

"This chapter states that the Federal Inspector for the project is not yet on the job and that two important issues remain to be resolved which could lead to lengthy administrative or judicial review. In fact, the Federal Inspector was nominated by the President several weeks ago."

GAO response No. 2

The report now notes that the Federal Inspector is on the job. He was sworn in July 13, 1979, about 20 months after Congress approved the Decision in November 1977.

Agency comment

"In the Section titled 'Government Actions to Bring the Project on Line', the report gives a history of past executive and legislative actions affecting the project. We note two important ommissions concerning government participation in financing.

"The draft report refers to those sections of the President's Decision opposing novel regulatory schemes to shift project risks to consumers and rejecting federal financing assistance. The Alaska Natural Gas Transportation Act (ANGTA) calls for the President to submit terms and conditions for inclusion in the Congressional authorization for the project. Congressional approval of the President's Decision gave these terms and conditions proposed by the President the force of law. The fourth term and condition dealing with finance states that 'the successful applicant shall provide for private financing of the project and shall make the final arrangements for debt and equity financing prior to the initiation of construction.' Since Congress approved this condition, it can only be changed by a further act of Congress. This fact is not made clear in the report."

"Also the U.S./Canadian Agreement on Principles for the project calls for private financing both in the United States and Canada. The draft report should indicate that government participation in the financing would probably require an amendment or change to this agreement between the United States and Canada as well as an act of Congress."

GAO response No. 3

The report now recognizes (1) that the agreement calls for private financing, (2) the fourth term and condition on financing, and (3) FERC's statement on the need for congressional approval. (See pp. 8 and 9.)

Agency comment

"The report discusses two key issues that remain unresolved. The first concerns treatment of gas conditioning and processing costs. The Natural Gas Policy Act gives the Commission discretion to increase the maximum lawful price for gas to compensate for conditioning and processing costs at Prudhoe Bay. On February 2, 1979, the Commission issued a notice of proposed rulemaking and statement of policy respecting the treatment of these production related costs for natural gas sold and transported through the System. Initial comments and reply comments from all interested parties have been received, and the Commission expects to issue an order concerning production related costs in the near future. The Commission's decision will be subject to judicial review but only under the expedited procedures required by ANGTA. We doubt that the resolution of this issue will be as lengthy as the draft report implies."

GAO response No. 4

We have no difference in fact. The actual time required will be determined as events unfold.

Agency comment

"The draft report places a great deal of emphasis on the risk of abandonment given by the project sponsors. Though no source is given for these probabilities in the draft report, GAO Staff has"

> "indicated that they are taken from a paper prepared by the Northwest Alaskan Pipeline Company on March 7, 1979, titled 'Determining the Project Risk Premium for the Alaska Segment of the Natural Gas Transportation System.' This report was submitted to the Alaska Gas Project Office of this Commission which in turn distributed the report to all interested parties in the rulemaking dealing with the Incentive Rate of Return Mechanism. Though we invited the sponsors to provide supporting evidence or justification for these probabilities, the project sponsors in their written comments during the rulemaking provided no justification or support. As a result in Order No. 31, the Commission rejected these probabilities as being unreasonably high."

GAO response No. 5

The report recognizes these facts; this section of the report is clearly attributed to the sponsors, and we neither accept nor reject what they said.

Agency comment

Chapter 3

> "Chapter 3 attempts to analyze the need for Alaska gas and whether it is in the public interest to build the Alaskan Natural Gas Transportation System. This is an issue that was studied at great length in hearings before this Commission and in the various reports submitted by government agencies and other parties to the President and the Congress pursuant to ANGTA."

GAO response No. 6

This comment misstates the purpose and nature of the analysis in Chapter 3. Chapter 3 presents its "raison d'etre" as follows:

> "The Project offers a potentially significant domestic gas supply. Therefore, if its sponsors request Federal financing assistance because they cannot finance the project alone project proponents will undoubtedly urge the Congress"

> "to quickly provide the needed assistance * * *. * * * We believe that the Congress needs to consider all its options before it responds * * *."
>
> "If the sponsors seek Federal financial involvement, the Congress should consider the following questions."

The report then poses four questions relating to (1) alternative gas sources to supply similar quantities of gas at similar or lower prices, (2) the possibility of achieving a satisfactory gas demand/supply balance through restraints on demand or supplies from alternative sources, (3) the effect of project gas on reliance on foreign energy and dollar outflows, and (4) alternative forms of Federal financial involvement. The report then states that "this chapter discusses briefly, data and concepts relevant to these questions."

The chapter thus deals with the question of Federal financial involvement and not the "need for Alaska Gas" or "whether it is in the public interest to build the Alaskan Natural Gas Transportation System." We do not assume that it is certain that the Project sponsors will need or seek Federal financial aid or that, if aid is requested, the suggested analyses will be unfavorable to Federal financial involvement in the Project.

<u>Agency comment</u>

> "The record before this Commission on the Alaska gas project consists of some forty-five thousand pages of transcript and about 1,000 individual exhibits. Also ANGTA called upon this Commission and other Government agencies to submit reports to the Congress and the President concerning the need or benefit of building the project. In addition to other subjects, the Act required the Commission to report to the President on 'the projected natural gas supply and demand for each region of the United States and on the projected supply of alternative fuels available by region to offset shortages of natural gas.' This Commission submitted its <u>Recommendation to the President</u> on May 1, 1977. ANGTA called upon other federal agencies to submit reports to the President on a variety of subjects including regional natural gas requirements and the relationship of the proposed transportation system to other aspects of"

"national energy policy. In response to this mandate, the Federal Energy Administration, the Department of Commerce, the Department of Interior, and the Department of Labor submitted a report to the President on June 30, 1977, titled 'National Economic Impact of Alaskan Natural Gas Transportation Systems.' The Federal Energy Administration, the Department of Commerce, the Department of Interior, (United States Geological Survey), the Department of Transportation, the Department of Treasury, and the Energy Research and Development Administration submitted the 'Report of the Working Group of Supply, Demand, and Energy Policy Impacts of Alaska Gas' on July 1, 1977."

GAO response No. 7

We are familiar with the studies and proceedings which preceded the President's Decision and its approval by the Congress. The report in no way denigrates them.

However, no matter the intensity and quality of this previous work, too much has occurred since 1977 for us to assume that all prior findings and conclusions are necessarily still valid. At least where new initiatives are contemplated or new proposals made, we believe they should be reviewed in the light of the best information currently available.

Agency comment

"Based on these reports and on additional analysis, the President's Decision concluded that the project was necessary and desirable and should be built as soon as possible. This decision was approved by Congress by joint resolution on November 8, 1977, (Public Law 95-158)."

GAO response No. 8

The specific language used by the President in his Decision readily supports a conclusion that he found the project "desirable" (pp. 87 ff). The issue, however, is what you do under changed circumstances.

Agency comment

"The President's Decision calls for the project sponsors to submit to this Commission a new cost estimate prior to the granting of the final certificate of public convenience and necessity. If this cost estimate 'materially and unreasonably exceeds' the cost estimates submitted by the project sponsors to this Commission and the President in March of 1977, the Commission is not required to issue a final certificate of public convenience and necessity. Until these updated cost estimates are made available to this Commission and the public, or unless the cost of alternative energy supplies has declined since 1977, we doubt that any new report on this project is likely to result in conclusions substantially different from those contained in the President's Decision and approved by the Congress."

GAO response No. 9

One conclusion in the President's Decision is that the Project could and should be built by private enterprise without any Federal financial involvement. In his Decision, the President "specifically rejected" Federal financing assistance. Therefore, a substantially different conclusion could be made if Federal financing aid is to be granted.

However, we do not believe that the Commission should prejudge that any new report on the Project is "likely" to result in the same or different conclusions. Consistent with this, our report recommends indepth analyses before action is taken on any proposal for Federal financial involvement in the Project, notwithstanding the President's 1977 Decision.

Agency comment

"The analysis in Chapter 3 of the draft report centers on the concept that cheaper alternatives to Alaska gas may be available to U.S. consumers. This analysis contains a number of weaknesses or deficiencies that should be corrected in the final report.

"The draft report projects the future demand and supply for natural gas, and thus estimates a gap or shortfall in gas supply through 1990."

GAO response No. 10

The comment about projecting future demand and supply and estimating a gap or shortfall is misleading in that it suggests that the report makes a specific prediction. The report clearly states that "data in this chapter are not predictions" and that the chapter tables are presented "not as probabilities but as one of several possibilities." Further, the report states that "the data depend on certain fundamental assumptions which time may or may not prove correct."

We believe that the uncertainties of the future make specific predictions (whether optimistic or pessimistic) hazardous. These same uncertainties make continuing indepth analyses essential, which is a position this report takes.

The report uses a "gap" or "incremental" approach as the report states, "to emphasize the need for indepth analyses of our energy situation in a future increasingly deficient in conventional energy sources." As we discuss elsewhere in our responses to comments on this report, we have been taken to task for this approach. We believe the approach is appropriate for this analysis. Suffice it to say at this point that the concept of "gap" between domestic supplies of natural gas and total domestic demand for gas can be found in the President's Decision (pp. 87 ff), The National Energy Plan of April 1977 (pp. 16 ff), the American Gas Association's The Future for Gas Energy in the United States of June 1979, and elsewhere.

Agency comment

> "The draft report then attempts to determine the cheapest sources of natural gas to fill this gap or shortfall. The report speculates that certain other alternative sources of natural gas may be cheaper than Alaska gas and thus may be preferred over Alaska gas."

GAO response No. 11

This comment does not accurately reflect what is in the report. The report does not attempt to "determine" the cheapest sources "to fill this gap or shortfall." The report's statements on relative costs refer to current estimates of the cost of Alaska gas compared to "similar quantities of gas" from other sources. The report says that it is possible that some of these might supply, or conservation might "provide" such quantities at more reasonable prices.

The FERC comment also misleads when it states that the report says that because an alternate source is cheaper, it "thus may be preferred over Alaska gas," suggesting that we consider price alone as controlling. The report takes a different position. For example, it recognizes that the disadvantage of paying any extra money for Alaska gas might be offset at least in part by benefits in terms of reducing (1) imports of foreign energy and (2) dollar outflows.

As the report states, we believe that non-cost related objectives, such as (1) economic growth and (2) need to "back out" (that is, substitute for) foreign energy that would otherwise be imported are proper considerations in making national energy decisions.

Agency comment

> "This approach rests on the questionable assumption that there is a fixed demand for natural gas through the year 1990 that is independent of the price of natural gas or the price of alternatives such as imported oil."

GAO response No. 12

The report clearly shows that we have not made this assumption. For example, the data in chapter 3 tables are presented "not as probabilities but as one of several possibilities." Also, "the data depend on certain fundamental assumptions which time may or may not prove correct." The report mentions some of these assumptions. In addition, it points out that the American Gas Association has produced higher estimates of both demand and supply based on different assumptions.

We do not assume that there is a "fixed demand for natural gas" during any period. At the same time, we do believe that the demand for gas is not unlimited. In fact, we believe that under certain sets of circumstances, supply could exceed demand even in periods of shortage. Economic conditions, governmental regulations, technological limitations, and other factors could contribute to this result. For example, the current domestic gas "bubble" may be a temporary manifestation of this phenonenon.

Agency comment

> "For the foreseeable future, imported oil is likely to be the most important determinent of energy"

"prices and is likely to be the source of energy that will increase or decrease in response to changing domestic energy conditions. Consequently, a more defensible approach to analyzing the need for Alaskan gas or any other supplementary source of natural gas is to compare the cost of the supplemental source with the future cost of imported oil. If, for example, Alaska gas over its lifetime is likely to be cheaper than imported oil, it it likely to be in the public interest to develop the project; and there should be little doubt or concern that gas demand will not be large enough to absorb this additional supply. If this nation should be blessed with an abundant supply of natural gas cheaper than the cost of imported oil, insufficient demand for gas is unlikely since natural gas can already substitute for oil in many industrial and utility applications. If other sources of natural gas such as Mexican gas or imported LNG are cheaper than Alaska gas, access to these sources does not reduce the need for Alaska gas in that it is less expensive than imported oil."

"The draft report depicts Alaska gas and other sources of supplemental supplies as alternatives to be substituted for each other. A more analytically correct approach is to think of all of these sources of supplemental gas supplies as substitutes for imported oil and all should be utilized that are less expensive than imported oil."

GAO response No. 13

We have already discussed our belief that assumptions must be constantly tested against developments to ensure their continuing validity.

We do not agree that treating all supplemental gas supplies as substitutes for imported oil is a more analytical approach. Nor do we agree that all supplemental sources should necessarily be utilized just because they are less expensive than imported oil. Conversely, we do not believe that a supplemental source should not be utilized just because it is more expensive than imported oil.

The Commission's suggested approach cannot be more analytically correct since it treats all supplemental sources as being alike except for cost. This is not true. Each source, together with its socioeconomic, political, and national security impacts, is different. Therefore, decisions on each supplemental source must be made within the framework of a comprehensive National energy plan. Such a plan must rest on a variety of considerations and must deal with both supply and demand and with the long- and short-term welfare of our country. Some of these considerations are

--national security,

--economic growth,

--inflation control,

--mutually supportive international relations,

--environmental quality,

--national productivity, and

--gas and other industry stability.

Thus, cost is an important consideration in energy policies but should not necessarily be controlling.

Agency comment

> "A major weakness of this draft is that the analysis of alternative supplemental gas supply sources as well as the analysis of the Alaska gas project do not give any references to the sources of cost and supply estimates. The draft report itself provides no supporting evidence or calculations showing how costs and supply estimates were arrived at. This makes it impossible for any interested reader to determine the validity of the cost and supply estimates given in this report."

GAO response No. 14

If the report were an attempt to predict conditions in 1985 and 1990--which it is not--this comment would be appropriate. The report clearly indicates that "the alternatives are significant--not the magnitudes." We have, however, noted our sources where appropriate.

We believe that it is incumbent upon the Department of Energy to keep the Congress supplied with the up-to-date, reliable energy data it needs. The data in this report indicate that further analysis is justified before making a decision on Federal financial involvement. The data are not sufficient for making that decision.

In this regard, we recommend that the Department of Energy provide such data to Congress on this Project and viable alternatives if Federal financial assistance is requested.

Agency comment

> "In the brief undocumented comparisons of the cost of Alaska gas with other supplemental gas supplies, the draft report seems to use the first year cost of Alaska gas. This is very misleading since the cost of transporting Alaska gas will decline over time. Under conventional methods of utility regulation, depreciation reduces the rate base of the project, thus reducing capital charges that are included in transportation rates. After ten years the transportation charge (in real terms or constant dollars) will be less than half of the first year charge and after twenty years will be less than one fourth the first year charge. Sources of imported gas such as LNG or Mexican gas likely to be tied to the cost of oil and will increase over time."

GAO response No. 15

The report makes only such comparisons as are relevant to the question discussed in the report--whether further analyses are needed if Federal financial involvement is proposed. Therefore, there has been no need in the report for comprehensive cost comparisons. The report recognizes that accurate comprehensive information is needed for decisions. Furthermore, it is incumbent on the Department of Energy to compile and supply the energy data and analyses the Congress and the executive branch need.

Further, it is not clear at this time what the cost of Alaskan gas in the future will be in relation to imported oil or gas. A number of factors will influence the relationships, including

--possible legislation to amend existing natural gas policies, including those specifically applicable to the Project;

--future international energy agreements and arrangements;

--actual construction and operating costs of the Project; and

--availability and costs of alternative sources.

Because of such uncertainties as to the future, we recommend indepth analyses before a decision is made on Federal financial involvement in the Project.

Agency comment

"Canadian gas exports to the United States is presented in the draft report as an alternative to the Alaska gas project. The report briefly mentions that additional discoveries in Alberta and the Canadian Arctic may allow Canadian authorities to permit continued or even increased exports of gas to the United States. In February of this year, the National Energy Board (NEB) of Canada published a thorough study of natural gas supply and demand in Canada and made a number of significant findings concerning the possibility of exports to the United States.

"The report concluded that there is an exportable surplus and that Canada will be able to fulfill its current contracts to export gas to the United States. These existing contracts expire at various times over the next few years. Thus based upon existing export licenses, Canadian exports to the U.S. would decline from the current level of approximately 1.1 trillion cubic feet (TCF) per year to 0.3 TCF by 1990 and would cease entirely after 1995. However, the NEB concluded that the current surplus would allow export commitments to the United States to be increased by a modest 2 TCF or by an amount equal to two years of exports at the current level."

GAO response No. 16

The report discusses the possibility only of continuance of the "current" rate of 1 trillion cubic feet a year. It does not discuss increased exports.

We are aware of recent National Energy Board deliberations and actions. For the purposes of this report in looking at possible future sources of natural gas, we did not feel it realistic to adopt a "worst case" position, that is, that exports would decrease to zero as existing licenses expired. Nor did we believe that we should not look beyond the latest action since the National Energy Board will continue meeting from time-to-time to act on export applications. The numbers we use appear within the realm of possibility.

Agency comment

> "In addition to these specific findings concerning the size of the current surplus of gas in Canada, the NEB Report describes a new policy with respect to the determination of the size of any gas surplus in Canada and thus the allowed exports to the United States. In particular, the report has determined that a future deliverability test is a key factor in determining the size of any exportable surplus. In order to determine that a specific reserve of gas is deliverable, there must be some method of transporting the gas to market. The substantial reserves of natural gas in the Mackenzie Delta of Canada will not be counted in the determination of the exportable surplus until Canada is assured that a transportation system will be available to move those supplies to market.
>
> "The Alaska Natural Gas Transportation System is a joint project between the United States and Canada to transport gas both from Alaska and the Mackenzie Delta. Thus the construction of the Alaska gas project would probably result in a finding by the Canadian Government that the Mackenzie Delta gas could be included in the calculation of exportable surplus. As a result exports of gas from Canada to the United States could be increased from what it would have been if the Alaska gas project had not been constructed. This draft report fails to recognize the important connection or linkage between the construction of the Alaska gas project and the potential for future exports of gas from Canada."

GAO response No. 17

The report contains a statement relating to the linkage between Mackenzie Delta gas and the Project. However, because of the number of factors involved in export decisions, the report does not speculate on what would "probably" happen if the Project is or is not built.

Future Canadian exports will depend on such matters as Canadian Government policies, new Canadian discoveries, construction of pipelines, and internal gas demand. Thus, we believe that it is not now certain whether the Project will or will not be essential for continuing the current rate of Canadian exports.

Agency comment

> "The last two sections of chapter 3 deal with the impact of the Alaska gas project on energy imports and on the balance gas would not reduce energy imports and would not improve the U.S. balance of payments. Again these are subjects that were explored at considerable length in reports to the President in 1977 by various government agencies. This draft report contains little in the way of hard analysis that would support these conclusions. The arguments given are strained and tenuou at best. We recommend that these two sections be substantially strengthened or else dropped from the final report."

GAO response No. 18

This comment misstates the purpose of the analysis in the last two sections of chapter 3. The analysis does not attempt to show that "Alaska gas would not reduce energy imports and would not improve balance of payments." The discussion indicates why we cannot assume that delivery of Alaska gas to the lower 48-States would automatically reduce imports by a comparable volume of foreign energy or reduce the outflow of dollars equal to the cost of that foreign energy.

Although the report finds that under certain conditions, Alaska gas might represent a small percentage of the import problem, that is not the significant thrust of these sections. The discussion relates to the rationale on a need to rely on indepth analysis rather than general assumptions.

Agency comment

Appendix I

"The appendix is a review of the Commission's development of an incentive rate of return mechanism as required by the President's Decision. We have two comments on this appendix. First the Commission in Order No. 31 issued subsequent to the preparation of the draft report resolves most of the outstanding issues concerning the incentive rate of return mechanism. With this order, the Commission feels that it has carried out the requirement in the Decision to develop a variable rate of return mechanism for this project. Such an incentive mechanism has not been attempted previously by this Commission or, to our knowledge, any other regulatory agency in the United States. Consequently, the Commission had to develop an entirely new and complicated regulatory mechanism.

"Our second comment concerns the way this appendix characterizes the procedures used by this Commission to develop the incentive rate of return mechanism. The title and format of the text describes this Commission's procedures as a series of negotiations or exchanges between the Commission and the project sponsors. This appendix makes it appear that the Commission and the project sponsors negotiated the details of this mechanism. This characterization is very misleading.

"The rulemaking procedure used by this Commission to develop the incentive rate of return mechanism is well established and widely accepted. In a rulemaking, the Commission first makes a specific proposal in a public notice. A comment period is specified in the notice giving all interested parties the opportunity to provide written comments on the proposal. Later, all parties are allowed to offer reply comments and thus respond to the initial comments submitted to the Commission by other parties. After review of the initial and reply comments, the Commission may determine that further proceedings such as an oral argument are needed before issuing a final order. In the case of the incentive rate of return mechanism, the"

"Commission instituted two rulemakings. The first rulemaking began on May 8, 1978 and ended with Commission Order No. 17 and developed the basic framework for the incentive rate of return mechanism. On April 6, 1979, the Commission instituted a second rulemaking to develop specific values for the parameters in the incentive rate of return mechanism. Again after an initial set of comments and a set of reply comments, the Commission issued Order No. 31 on June 8, 1979, specifing values for the parameters in the incentive rate of return mechanism.

"In these two rulemakings over twenty interested parties filed comments with the Commission including the project sponsors, the staff of the Commission, various other natural gas pipelines, and the States of Alaska, California, and New York. To characterize this procedure as negotiations between the Commission and the project sponsors is quite misleading and ignores the important role played by other interested parties in the rulemakings."

GAO response No. 19

The report now reflects that the variable-rate-of-return mechanism is being established through the Commission's regular rulemaking procedures and involves a variety of interested parties. It also shows that (1) the Commission, on June 8, 1979, issued Order No. 31 to set the final rate-of-return on equity; (2) the Alaskan and Eastern Leg sponsors, on July 9, 1979, filed motions for rehearing; and (3) on September 6, 1979, the Commission finalized the variable-rate-of-return mechanism.

DEPARTMENT OF ENERGY

Agency comment

Chapter 2

"The report, in addressing private financing, does not explicitly distinguish between debt and equity financing in examining the question of the need for government involvement. It does examine the equity financing issue in relation to the variable rate of return. However, there is no mention of the fact that debt holders require a certainty of return on investment."

GAO response No. 1

The Department is correct in stating that we do not distinguish between debt and equity financing. However, in discussing the Secretary of Energy's limitation of Federal involvement to just loan guarantees, we note that there are various options and that none should be arbitrarily precluded. An indepth analysis such as the one we recommend if Federal financial assistance is requested should be made. We would expect that the Secretary would explore all avenues for Federal financial involvement before making his recommendation on the best course of action.

Agency comment

> "The report indicates a high probability of abandonment and the lack of certainty that 2 billion cubic feet a day will be available to the project, unless resolved, or guaranteed through tariffs. Both of these factors will prevent debt financing without a government guarantee. The report appears vaguely opposed to Government guarantee without stating a clear reason."

GAO response No. 2

The report clearly shows that the estimates relating to "a high probability of abandonment" were made by the Alaskan sponsors, not by us. Also, the report makes no statements to justify the phrases "unless resolved, or guaranteed through tariffs," the meaning of which is not clear to us. Finally, the Department's interpretation that the report is "vaguely opposed to government guarantees" is in error. We take no position on that question.

Agency comment

> "The report seems to require two considerations of Government involvement (1) return on investment and (2) a voice in management. Guaranties are a contingent liability. It is unclear, if this mechanism is used, whether the report is suggesting a return to risk bearing other than the typical user fee charged to a guaranty. Guaranties are not direct liabilities so there would be no return on investment."

"It is also not clear why direct investment seems to be a requirement to obtain a voice in management. Management controls can be built-in through provisions in the guaranty instrument in the same way that any lender builds controls into loan documentation."

GAO response No. 3

The report states that there may be better alternatives to give the Government appropriate control over and return on its investment. However, it takes no position as to the best alternative. Further, it recommends that the Congress should evaluate all feasible alternatives before it makes any decision on Federal financial involvement.

Although loan guarantees may not be direct liabilities, they do involve a financial risk. In the private sector, insurers are compensated for assuming such risks. We believe that the Government should be compensated for the risks it takes.

The report does not assume that direct investment is needed to obtain a voice in management.

Agency comment

"The report points out that the pipeline sponsors are proceeding with preconstruction planning before they finish testing system design. This mode of construction results in the risk of major design changes because the sponsors have not resolved important design aspects for Arctic conditions before construction. We note that a large portion of the cost over-runs on the Alaska Oil Pipeline, the Trans Alaska Pipeline System (TAPS), were attributable to the fact that the sponsors did not fully complete the development and testing of system design before construction began. As a result, geological and technical problems were encountered causing major changes to result in the construction phasing with consequent highly escalated costs.

"The report indicates that the Alaska Highway Gas Pipeline project is not benefiting from the TAPS construction experience, both in terms of the geological data available and the project" "management and administrative requirements of such a major undertaking. From our knowledge, there is a tremendous reservoir of technical and management material resulting from the Alaska company's experience in building and operating the TAPS pipeline. The managerial shortcomings and problems in vertical and horizontal integration were documented for the record.

"The report further indicates that, because the pipeline system will pass through a number of political jurisdictions, these jurisdictions may make costly economic and political demands on behalf of their constituents from the sponsor and the U.S. Government. We note that at the TAPS post-mortem sessions, held in Anchorage, Alaska, following the opening of the TAPS system, dozens of interest-groups from these jurisdictions attended the session for the obvious purpose of planning the development of intensified demands on behalf of their constituents in the construction of the natural gas pipeline."

GAO response No. 4

These comments have been incorporated into the report. (See p. 15.)

Agency comment

Chapter 3

"In regard to the loan guarantee program, the Secretary of Energy did not 'raise the possibility' of loan guarantees for the Alaska gas pipeline project. In testimony before the Joint Economic Committee in January 1979, Senator Proxmire asked Secretary Schlesinger what level of loan guarantees might be appropriate to the project. Secretary Schlesinger responded to the effect that the principal area of risk was in the Alaska segments of the project and that $2 to $3 billion would appear to be an adequate level of guarantee."

GAO response No. 5

Since we cannot agree with the Department of Energy on the use of the phrase "raise the possibility," we have included the discussion from the official transcript of proceedings. In this way, the reader can be the judge. (See pp. 19 to 21.)

Agency comment

"The policy of the Administration continues to be as stated in the President's Report to Congress on Alaska Natural Gas Transportation Systems, September, 1977. A private financing is to be preferred to any form of Federal financial assistance."

GAO response No. 6

We note that the Department states that the Administration's position is as stated in the President's Decision and then states that a private financing is to be "preferred to any form of Federal financial assistance." The Department seems to misstate the Decision.

The President's Decision includes the following statements:

(1) The successful applicant shall provide for private financing of the project (p. 36).

(2) It is understood that the construction of the Pipeline will be privately financed (p. 50).

(3) As indicated by the terms and conditions in Section 5 of the Decision, the * * * project is required to be privately financed (p. 100).

(4) Federal financing assistance is also found to be neither necessary or desirable, and any such approach is explicitly rejected (p. 127).

Agency comment

"The evaluative cost comparisons made throughout Chapter 3 appear to use as a basis of comparison the first or second year delivered cost of gas for the Alaska project.

"Use of such a figure is misleading, particularly with respect to comparisons with imported energy projects. Under traditional rate making procedures, the Alaska project tariff in the early years is very high but will decline in real terms over" "time as the rate base of the project is depreciated. When the rate base is full depreciated, the only charges in the tariff would be operating and maintenance expenses. On the other hand, imported oil or gas have only the prospect of continued real increases in price. To be accurate, therefore, any cost comparison must recognize the life-cycle annuity cost to the respective projects."

GAO response No. 7

In the few places in Chapter 3 where these "evaluative cost comparisons" are made, the report specifically shows that they are made in 1979 dollars for the year 1985. The report also shows that, under conventional methods of utility regulation, the transportation cost for Alaskan gas is expected to diminish. The report also shows that the financial data used are "admittedly preliminary."

The report makes only such comparisons as are relevant to the question discussed in the report--whether further analyses are needed if Federal financial involvement is proposed. Therefore, there has been no need in the report for comprehensive cost comparisons. The report recognizes that accurate comprehensive information is needed for decisions. Furthermore, it is incumbent on the Department of Energy to compile and supply the energy data and analyses the Congress and the Executive Branch need.

It is not clear at this time (1) whether Alaskan gas will or will not be supplied to the lower 48-State markets without any "real increases" in price or (2) what the cost of Alaskan gas in the future will be in relation to imported oil or gas. A number of factors will influence the relationships, including

--possible legislation to amend existing natural gas policies, including those specifically applicable to the Project;

--future international energy agreements and arrangements;

--actual construction and operating costs of the Project, and

--availability and costs of alternative sources.

Because of such uncertainties as to the future, we recommend indepth analyses before a decision is made on Federal financial involvement in the Project.

Agency comment

"The Department of Energy agrees with the comments being filed in their response to GAO by the Department of Energy's Federal Energy Regulatory Commission (FERC) with respect to the "gap" theory of natural gas supply and demand. Projects that can supply domestic energy to the United States at a life cycle cost less than imported oil or imported natural gas are presumptively in the national interest even though other less expensive domestic supplies might also be available. As is further noted hereafter, the Alaska gas is superior in economic and national security terms to any other imported energy project whose prices would be tied to the cost of imported oil."

GAO response No. 8

As stated in our response to the letter from the Federal Energy Regulatory Commission, we do not agree with its comments with respect to the "gap" theory. Also, we believe that the Department of Energy should be in a position to demostrate convincingly to the Congress what action would be in the national interest. In essence, that is what the report recommends.

Agency comment

"The Secretary of Energy has not 'abruptly reversed' the Government's policy on fuel switching as stated in the report. The long-term policy to substitute this Nation's abundant coal resources for oil and natural gas in large stationary power plants in unchanged. In the short term, however, it is in the national interest to substitute available natural gas supplies for imported oil. To that end, temporary limited public interest exemptions have been issued to permit existing power plants to switch from oil to natural gas. These temporary exemptions are fully in accord with the provisions of the Fuel Use Act ('Coal Conversion') enacted by the Congress in 1978."

GAO response No. 9

The report recognizes that this action was taken as a trade-off between short- and long-term objectives. However, we feel that from the point of view of the concerned public, the change was abrupt and may have had undesirable impacts.

We have not tried to evaluate whether, on balance, the results were good or bad. We mention the incident to point out the (1) relevance of indepth analyses and (2) the possibility of side effects from actions take to reach a specific goal, such as oil import reduction.

Agency comment

"Increased natural gas use constitutes a major element of the response plan to the Iranian crisis. Further, there is no benefit to be gained by maintaining a surplus of gas in the producing states. Absence of markets for gas will lead to a reduced exploration and development, lower domestic gas supply, and higher energy imports in the future."

GAO response No. 10

The report raises a question whether it could be possible to encourage domestic gas exploration and development without preventing "a surplus of gas." We believe that the Department of Energy should investigate whether there are ways to maintain gas reserves in a manner that will not discourage needed exploration and development--rather than assume that none exists.

Agency comment

"The Department of Energy's Energy Information Administration (EIA) survey referred to by the report was based on EIA Form 52. The analysis report issued by EIA in January 1979 indicated fuel switching of only 375 billion cubic feet or 0.375 trillion cubic feet over the entire period 1973-1978 instead of the '3.75 trillion cubic feet a year' referred to in the report. The EIA Form 52 survey relates only to permanent switching from gas to other fuels, and did not measure temporary alternative fuel use during the period of gas shortage."

"The statement that 'Wood and coal replaced 60 percent' of the 3.75 trillion cubic feet of natural gas supply reduction between 1973 and 1975 is in error. The data from Federal Power Commission (FPC) Form 69 and Federal Energy Administration (FEA) Form G-101 for 1976 and 1977 reflect 3.3 trillion cubic feet of natural gas curtailments of firm and interruptible users. Only 16 percent of those curtailments were reported to be replaced by coal. Wood was not separately identified, but it must be miniscule. Oil constituted 67 percent of the reported substitution. In reviewing the potential alternatives, the report fails to mention synthetic fuels, imported liquified natural gas, and possible offshore production of natural gas."

GAO response No. 11

The agency is correct. We discovered our error after we provided the draft for comment. We have deleted all references to this study.

Agency comment

"There is no evidence that would support the statement that 'Mexico could supply 0.5 to 1.5 trillion cubic feet of gas a year through the 1980's,' if the statement is intended to indicate the potential level of Mexican gas exports to the United States today. It is possible that gas exports by Mexico could reach 0.5 trillion cubic feet to 1.0 trillion cubic feet sometime during the 1980's but any projection is quite speculative. There is currently no agreement from gas sales in effect between the United States and Mexico. Further, Mexican production plans for oil or gas have not been established beyond 1982."

GAO response No. 12

This comment is misleading. At our meeting with Department of Energy and Federal Energy Regulatory Commission representatives, we pointed out our intention to (1) revise the data to "0.5 to 1.0 trillion cubic feet" to be consistent with Table 3 of the draft report and (2) make clear that the statement covered the mid- to late-1980s. Also, as the report shows, we stated that (1) the figures we use are possibilities and not predictions and (2) there is currently no gas sales agreement between the U.S. and Mexico. (See footnote 2 on p. 31.)

Agency comment

"The statement that the 'Mexican national oil company agreed to supply (natural gas) for $2.60 per thousand cubic feet' is not accurate. The Memorandum of Intentions between the Mexican national oil company and the United States pipelines specified that the price should be determined by reference to the distillate fuel oil price in New York Harbor. Today, that formula would provide for prices of $4.00 per mmbtu or more."

GAO response No. 13

The price of $2.60 represents the approximate price of the gas at the time the agreement was made. We have revised the report to show also the pricing formula that would have applied in the agreement.

Agency comment

"Mexican oil production and gas supply are not significantly dependent upon a 'United States - Mexican oil agreement.' A high percentage of Mexico's oil exports come to the United States today, but the United States is not the only current or potential market for Mexican oil."

GAO response No. 14

The report refers to the gas supply that might be available to the United States. Because much Mexican gas is associated with oil, the report points out a relationship between oil production and gas availability. We revised the text to make clear that Mexican gas availability to the United States will depend on oil export agreements with other countries as well as with the United States.

Agency comment

"In theory liquefied natural gas (LNG) projects could provide a gas at a cost that would rise over time in real terms to a lesser degree than the" "price of imported oil. Such projects involve substantial capital investment that is depreciated causing the rate base to decline in a manner similar to the Alaska gas project. Liquefied natural gas cannot with any degree of confidence be characterized as a less expensive alternative to Alaska natural gas."

GAO response No. 15

In discussing the potential of liquefied natural gas, the report points out the growing world natural gas reserves and some prices paid in early 1979 by American pipelines. It does not attempt a thoroughgoing analysis of the competitive, investment, and other factors which will influence in 1985, and thereafter, the relative cost of liquefied natural gas compared to (1) imported oil and (2) Alaska gas. We believe that establishing the facts with the required degree of confidence is the Department of Energy's duty.

Agency comment

"The Alaska natural gas need not be delivered to a consumer that otherwise would be directly dependent upon imported fuels for it to achieve a displacement of imported fuels. Any reduction of oil consumption in the United States will lead to a reduction of imported oil since that is the marginal supply."

GAO response No. 16

Our statement has not been limited to consumers who were "directly" dependent on imported fuels. The agency makes a valid point which may be an exception to the rule. However, if oil released by one consumer or group of consumers flows to another consumer or group not then using oil, it is theoretically possible that existing import rates will not be reduced.

For its purposes, the report deals with many questions on a theoretical basis. We believe that it is incumbent on the Department of Energy to develop and demonstrate what the facts are in practice.

Agency comment

"Natural gas use constitutes a major factor in the response plan to the Iranian crisis. Further," "there is no benefit to be gained by maintaining a surplus of gas in the producing states. Absence of markets for gas can lead only to a depression of exploration and development, lower domestic gas supply, and higher energy imports in the future."

GAO response No. 17

See GAO response No. 10 on page 112.

Agency comment

"Consumers will use natural gas if it is reliable and less expensive than alternative fuels. There is little reason to doubt that the long-run cost of imported oil will be higher than the cost of Alaska gas. Any marketability risk of possibly higher costs of the Alaska gas in the initial years of the project life can be overcome through rolled-in pricing provided by the Congress in the Natural Gas Policy Act, as well as by levelizing the tariff structure, if need be."

GAO response No. 18

This and the remaining Department of Energy comments which follow relate to matters discussed in the report on theoretical grounds. As we have said, we believe that the responsibility for establishing and demonstrating the facts in practice rests with the Department of Energy.

When the Department notes that consumers will use natural gas if it is reliable and less expensive than alternative fuels, it fails to mention that use-opportunities and reliability may depend on governmental programs and regulations, as well as other factors.

Although the Department may now have little reason to doubt that the long-run cost of imported oil will be higher than the cost of Alaskan gas, there are many uncertainties as to what the actual costs of Alaskan gas will be and future energy supplies and costs. As we state on page 141, because of uncertainties as to the future, we recommend indepth analyses before a decision is made on Federal financial involvement in the Project.

The Project's sponsors asserted a "marketability risk," among other risks, in a report to the Federal Energy Regulatory Commission to justify a high risk premium for their investment. That report notes on page 26 that the Commission in Order Number 31 rejected the sponsors' overall risk assessments as unreasonably high. Also, although the report does not attempt to evaluate the sponsors' risk statements, it mentions that rolled-in pricing and regulatory arrangements can adjust for possibly higher costs of Alaska gas.

Agency comment

> "Maximization of the development of domestic energy resources is in the highest national interest of the United States. The Alaska gas project could deliver nearly 1.0 trillion cubic feet of natural gas equivalent to 425,000 barrels of oil per day to the lower-48 states by 1985. The project will have no significant impact on drilling for gas in the lower-48 states. Rolled-in pricing will prevent any significant adverse impact in the early years and, indeed, in the later years of the project life it could have the effect of encouraging development of other gas resources by providing a form of subsidy for such resources."

GAO response No. 19

Although undue reliance on foreign energy is contrary to the national interest, "maximization" of domestic energy resource development may or may not be. As we indicate in our response to the Federal Energy Regulatory Commission's comments, other national goals may affect the timing and extent of domestic development. (See pp. 138 and 139.) For example, budgetary or international relationships, at times, might favor energy imports under certain conditions.

Agency comment

> "The report accurately notes that the Alaska project would involve some dollar outflows for the Canadian tariff. Such outflows will be small compared with the dollar outflow associated with imported oil or natural gas. Like the United States tariff, the Canadian tariff charges and dollar outflows will decline over time while the cost of imported energy will only continue to increase.
>
> "Natural gas purchases from Mexico could have a somewhat lesser adverse economic effect on the

> United States than purchases of imported oil from most other countries since Mexico is likely to purchase more quickly a higher percentage of United States goods and services than many other oil or gas exporting countries; but any import of energy creates a drain on the resources of the United States whether or not the dollar is quickly 'recycled.' It is clear that the Alaska gas project will be far superior to any imported energy project in these terms. In terms of real resource costs and benefits, the Alaska project will return many billions of dollars more to the United States over its life than any imported energy project. Reference could be made to the recent study contracted by DOE's Federal Energy Regulatory Commission on Alaska gas, A Review of Alaska Natural Gas Transportation Issues, May, 1979."

GAO response No. 20

We do not disagree that undue reliance on foreign energy may be harmful to the national interest. However, the validity of the statement that "any import of energy creates a drain on the resources of the United States whether or not the dollar is quickly 'recycled'" needs analysis. There may be advantages to the United States in importing some energy as there are benefits from international trade in other commodities. We, therefore, recommend indepth comparative analyses before a decision is made on Federal financial involvement in the Project.

Agency comment

> "The subject draft report recommends that the Secretary of Energy provide Congress with a report within 60 days of the issuance of the final report. The 60 day time frame requirement is much too short an interval. It is requested that this time frame be extended."

GAO response No. 21

Our recommendations reflect our sense of urgency in the matter.

DEPARTMENT OF STATE

Agency comment

Chapter 1

"Page 4: The membership of the Northwest Alaskan sponsor partnership is likely to change. American Natural has announced its intention to negotiate an arrangement with the partnership. Others may follow in conjunction with the President's July 16 directive to DOE. The draft should be updated to reflect these changing circumstances."

GAO response No. 1

The report describes the current status of the Project and does not speculate on companies joining or leaving the partnership.

Agency comment

"Page 5: The draft does not provide a description of the reasons behind the fact that the project has been delayed, including the 18 months it took Congress to pass the Natural Gas Act of 1978 providing a wellhead price for Alaskan gas. Nor does it acknowledge the deliberative nature of the regulatory determination process, and the time required to take into account associated comments and rebuttals by the Project Sponsors and other interested parties. There is justifiable reasons to proceed deliberately. A project so enormous must be undertaken with full consideration for the risks and benefits, particularly in view of the TAPS experience. This time the effort will be to avoid making similar mistakes. This may require more time in the preconstruction stages of the project."

GAO response No. 2

Since this part merely reports the current status of the Project's time "schedule," it should not be interpreted as criticism. In other portions the report describes major

(See GAO note on page 143.)

events which have taken place. In addition, it describes the proceedings involved in establishing the variable rate-of-return mechanism which "illustrates the difficulty in reaching mutually satisfactory resolutions to * * * questions that must be answered before the Project is built."

Agency comment

Chapter 2

"Page 10: The Federal Inspector has been appointed by the President and confirmed by the Senate. This section of the report is thus overtaken by events and should be deleted."

GAO response No. 3

The report appropriately notes that the Federal Inspector was sworn in on July 13, 1979, about 20 months after the Congress approved the Decision in November 1977. (See p. 14.)

Agency comment

"Page 11: While the issues of gas conditioning costs and right-of-way stipulations are important considerations for the Project's viability, there is no evidence to conclude that they represent serious obstacles.

"Certainly many 'worst-case scenarios' can be developed to cast a pessimistic light on the Project. This brief, two page section of the report is far too shallow to deal with both of these important issues adequately and fairly."

GAO response No. 4

In giving the current status of the Project, the report states and briefly describes two important issues remaining to be resolved. The report notes that these issues could lead to lengthly administrative and/or judicial review. Also, appendix I demonstrates the time required to resolve important issues. How this equates to "worst-case scenarios" is not clear, since we are merely presenting a factual summary of the current status.

Agency comment

"Page 13: The report places undue emphasis on Project Sponsor's estimates of the risk of project abandonment. Various project-related interests are being brokered in 1979 as regulatory determinations are finalized, and permitting and approvals procedures go forward. In this atmosphere concern for the viability of the project is bound to be aroused. As the necessary regulatory decisions are concluded, and other related activities, such as establishing the Federal Inspector's operation, and concluding additional gas supplier contracts are accomplished, talk of abondonment will recede."

GAO response No. 5

The report now shows that the Federal Energy Regulatory Commission, in Order Number 31, rejected the sponsors' risk evaluating as being unreasonably high. (See p. 26.)

Agency comment

"Page 14: Every major construction or manufacturing project carries a variety of risks. Technical and geological uncertainties will, of course, be thoroughly investigated."

GAO response No. 6

This assurance does not fully satisfy our recommendation, which urges that these uncertainties be thoroughly Investigated before construction starts. In addition, page 2 of the Department of Energy letter commenting on this report supports the need to complete the development and testing of system design before construction. (See app. III).

Agency comment

"Project segments must, of course, be fully coordinated with related activities in order to complete the project on a timely basis and close to budgeted costs. There is no basis for the implication that obstacles are insurmountable."

GAO response No. 7

In the report, we present the sponsors' statements. We do not suggest that the alleged obstacles are insurmountable.

Agency comment

"Page 15: The Project was developed and approved by Congress on the basis of 26 trillion cubic feet-plus proven gas reserves under the North Slope. Its 25 year life cycle costs are based on those proven reserves. The draft report's questions concerning Prudhoe Bay production history and gas availability would appear beyond the scope of the Project as presented, i.e., the pipeline is designed to carry approximately 2.4 BCF/day for 25 years, or an amount well within the capacity of proven reserves to support.

"Page 16: The draft report notes that the Project might be vulnerable to adverse regulatory and political actions because it passes through several political jurisdictions in two countries. Adequate protections have been provided to the Project by two international agreements negotiated with Canada--the Transit Pipelines Treaty and the Agreement on Principles Applicable to a Northern Natural Gas Pipeline: In addition to nondiscriminatory treatment in Canada of the pipeline and its throughput, these agreements provide a broad range of general and specific assurances, as well as an incentive formula covering the U.S. role in constructing the Dempster line to access MacKenzie Delta gas, in which U.S. sponsorship of the Dempster link declines in proportion to any delays caused on the Canadian side.

"Page 17: The comments concerning investor attitudes, like much of the analysis surrounding the issue of private financing, is based on premature assessments. It is clear that several important issues must be decided before the Project can be properly presented for consideration by the financial market. Those issues are being examined now and regulatory determinations will be finalized soon. Until then the draft report's assessments are premature.

"Page 18: The comments on regulatory attitude are dated. The Federal Inspector is in place, the reorganization plan is being implemented, and both the President and involved government agencies are committed to expeditious treatment of the Project.

"Page 18: Public awareness of the difficult decisions that are being made as the Project goes forward is not, of itself, detrimental. At the same time, the public is increasingly aware of the dangerous dependence of the United States on imported oil, and the renewed vigor with which domestic resources, like Alaskan gas, must be developed."

GAO response No. 8

The report clearly shows that the Alaskan sponsors made all the above claims in their document "The Project Risk Premium for the Alaska Segment of the Alaska Natural Gas Transportation System." (See p. 13.) Further, we have noted that the Federal Energy Regulatory Commission rejected the sponsors' abandonment evaluations. Since these statements were made in connection with regulatory proceeding we have avoided any judgment as to their merits.

Agency comment

"Page 19: The assertion that the Administration 'raised the possibility' of $2-3 billion in Federal loan guarantees is incorrect. We understand that the Secretary of Energy, responding to a hypothetical suggestion during Senate hearings in January, indicated that a range of $2-3 billion in guarantees would be adequate--in the hypothetical circumstance suggested."

GAO response No. 9

The report shows that the Secretary of Energy responded to a question from the Joint Economic Committee. Also, it gives that portion of the official transcript which covers the colloquy over the "possibility" of loan guarantees. (See pp. 19 to 21.)

Agency comment

"The Alaskan Gas Pipeline Project was proposed by the President and approved by Congress on the basis of private financing. The US/Canadian Agreement on Principles requires private financing. We have no reason to expect that this Project will proceed other than on those terms. Problems have had to be dealt with, and consequently delays have been encountered."

GAO response No. 10

This assessment may be correct. However, since the question of possible Federal financial involvement has been publicly raised in official quarters and elsewhere, we believe that it is incumbent on the Department of Energy to prepare itself for that contingency.

Some Department of State comments which follow are discussed in greater detail by the Federal Energy Regulatory Commission and the Department of Energy. Therefore, we refer to our responses to those agencies, rather than respond to State's briefer remarks. In addition, we comment specifically on certain State Department remarks.

Agency comment

Chapter 3

"Page 22: This chapter suffers most seriously from the problem of being premature. It is highly premature to assume: a) that private financing will not be available and, b) that Congress therefore needs to consider all its options before dealing with a request for Federal financial assistance."

GAO response No. 11

This comment is misleading. The report states clearly that the Congress needs to consider all its options only if a proposal is made for Federal financial involvement.

We believe that being alert to possible events is not being premature. As the report indicates, events have led to public discussion of possible need for Federal financial involvement in the Project. For this and other reasons, we believe it would be poor public policy to be totally unprepared for this possibility; instead, we have established a framework for Government action. As we state in this report, if the sponsors request Federal financing assistance, Project proponents will undoubtedly urge the Congress to quickly provide the needed assistance.

Agency comment

> "Table 3 includes highly speculative figures for possible imports of foreign gas in the 1980's. The draft report contains no supporting evidence for these supply estimates nor for the cost analyses contained in this section."

GAO response No. 12

See our response to the Federal Energy Regulatory Commission on this point (response 14, pp. 99 and 100).

Agency comment

> "The cost comparisons appear to use the first year delivered cost of Alaskan gas as a basis of comparison. This is inappropriate because the depreciation formula for Project costs results in a declining real cost over time. Any accurate analysis must therefore base comparison of alternate projects on their life cycle annuity cost."

GAO response No. 13

See our response to the Federal Energy Regulatory Commission on this point (response 15, pp. 100 and 101).

Agency comment

> "The questions presented in the draft report for Congressional consideration have already been taken into account in the proceedings leading the Presidential Decision, and in testimony before the Federal Energy Regulatory Commission. In addition the Project sponsors must submit a new cost estimate to the FERC prior to granting of the final certificate of public convenience and necessity thus presenting another opportunity to weigh the balance of costs and benefits from the project."

GAO response No. 14

See our responses to the Federal Energy Regulatory Commission on these comments (response 7, p. 94; response 9, p. 95).

Agency comment

"Page 24: The fact that other supplies of gas may be available besides project gas does not in any way change the desirability of access to the 26 TCF of proven gas reserves under the Alaskan North Slope. The fact is that we can anticipate increasing real prices for imported oil with consequent impact on energy prices generally. Alaskan gas is likely to be substantially cheaper, over the life cycle of the project, than imported oil. Access to additional Canadian gas, or Mexican gas, or additional LNG would be helpful in and of themselves, but do not reduce the need for Alaskan gas that is less expensive than imported oil."

GAO response No. 15

See our responses to the Federal Energy Regulatory Commission on these comments (response 10, p. 96; response 13, pp. 98 and 99).

Agency comment

"Page 28: The analysis confuses conservation and fuel switching. The key long-term element of the Government's policy on fuel switching is to substitute coal for oil and natural gas. Short term adjustments to that policy, including limited exemptions for industrial and utility use of natural gas, are appropriate."

GAO response No. 16

The analysis treats "fuel switching" as a "conservation' measure. We see no confusion there.

See also our response to the Department of Energy on this comment (response 9, p. 112).

Agency Comment

"The analysis seems to overlook the fact that surplus gas supplies overhanging the market are not likely to encourage expanded exploration and development of additional reserves, indeed they may discourage it."

GAO response No. 17

See our response to the Department of Energy on this comment (response 10, p. 112).

Agency comment

"Page 29: The section on unconventional sources is undocumented, superficial and excessively speculative.

"Page 30: Anticipated Canadian supplies are not adequately documented."

GAO response No. 18

See our response to the Federal Energy Regulatory Commission on these comments (response 12, p. 97; responses 14 through 17, pp. 99 to 103).

Agency comment

"Page 31: The statement that Mexico could supply 0.5 to 1.5 TCF of gas a year through the 1980s is not substantiated. This would be 1.4 to 4.1 BCFD. Such numbers are highly speculative, especially since Mexican oil and gas production plans do not extend beyond the current Mexican presidential term ending in 1982. The reference to Pemex' offer of $2.60 per MCF is inaccurate. The 1977 Memorandum of Intentions between Pemex and six U.S. pipeline companies called for reference price based on the price of distillate fuel oil in New York Harbor--about $4.50 per MCF at current prices. Mexican gas exports to the U.S. are not dependent on conclusion of a U.S./Mexican oil agreement."

GAO response No. 19

See our responses to the Department of Energy on these comments (responses 12 to 14, pp. 113 and 114).

Agency comment

"Page 32: The conclusion that LNG imports in 1985 would be priced at the equivalent of $12 to $18 per barrel of oil ($2-$3 per MCF) is well off the mark. It overlooks the fact that these imports contain escalator linkages to the price of imported oil, and the possibility of their being renegotiated."

GAO response No. 20

The report has not said that liquefied natural gas imports in 1985 would be priced at the equivalent of $12 to $18 per barrel of oil. It states that at a price equivalent to $12 to $18 a barrel of oil, liquefied natural gas would cost less than the 1985 cost of Project gas.

See also our response to the Department of Energy on this point (response 15, p. 115).

Agency comment

"Pages 32 and 33: Since imported oil is the marginal supply element in the U.S. energy system, Alaskan gas will serve to backout imported oil, directly or indirectly, and/or to support U.S. economic growth. Statements in this section reflect a 'no-growth' philosophy."

GAO response No. 21

It is gratuitous to charge that the "statements in this section reflect a 'no-growth' philosophy." They merely report that, to the extent that Alaskan gas stimulates new growth, it will not "back out" foreign energy then being imported. Nothing in the report suggests that new growth is undesirable.

See also our responses to the Department of Energy (response 16, p. 115) and the Federal Energy Regulatory Commission (response 18, p. 103).

Agency comment

"Page 34: This section on balance of payments costs for energy is inaccurate and out of date. Energy imports are not expected to be 12 million barrels a day in the late 1980's. Oil already costs more than the $18 per barrel figure used as its cost in 1979 dollars for the mid-1980's. The balance of payments costs (payments to Canada) for transporting Alaskan gas is small compared to the negative effect on the U.S. economy of importing an equivalent amount of oil. These Canadian tariffs also are scheduled to decline over time."

GAO response No. 22

This comment supports the report's conclusion that continuing indepth energy analyses are essential. The data used in the report reflect the understandings current at the time it was prepared and provided for comment. In fact, the oil cost of $18 a barrel was made at a time when the OPEC price was less than $15. The report has been updated consistent with more recent events.

FEDERAL INSPECTOR FOR THE ALASKA
NATURAL GAS TRANSPORTATION SYSTEM

Inspector's comment

"Based on the information currently available to me, I have serious reservations about some of your analyses and recommendations. I am reluctant at this time, however, to provide detailed comments for a number of reasons. First, many of the issues discussed in the report are related to decisions or negotiations of the Federal Energy Regulatory Commission, Department of the Interior and private companies which took place prior to my appointment as Federal Inspector and prior to the establishment of the Office of Federal Inspector. I was not privy to the rationale behind these discussions. Second, other issues raised by the draft report, especially the matter of economic and financial viability are still being debated or evaluated by forces of the free market. I think the marketplace should be given an opportunity to work its will.

GAO response No. 2

The report does not suggest that the stipulations would be "a basis for 'making' concessions." It suggests that the the Government's overall Project coordinator and primary point of contact relating to Federal oversight. As the report also shows, we agree that the marketplace should be given the opportunity to work its will before Federal financial involvement is considered.

DEPARTMENT OF THE INTERIOR

Agency comment

> "On page 13, it is suggested that proceedings for the Right-of-Way Agreements represent an opportunity for delay. It is unlikely that a delay will be caused by our schedule for issuing the Stipulations. We are scheduled to complete them before October of this year and this fits the companies' schedules. The Agreement and Grant of Right-of-Way documents are being prepared and will be ready for signature when the conditions of Section 28 of the Mineral Leasing Act are met."

GAO response No. 1

The report suggests the possibility of lengthy proceedings only _if_ the sponsors choose to negotiate.

Agency comment

> "The Department does not look at the stipulations as a basis for making 'concessions.' There has been extensive discussion with the companies about the environmental and other concerns of the Department vis-a-vis the economics of the projects."

GAO response No. 2

The report does not suggest that the stipulations would be "a basis for 'making' concessions." It suggests that the Department of the Interior, because of its environmental and other concerns, may be reluntant to make concessions in the stipulations.

Agency comment

"We differ with the conclusion implied on pages 14 and 15. We believe that the technology exists to build the pipeline in an environmentally acceptable, economical manner. However, we do have a number of major technical concerns in Alaska that must be resolved by the company before the pipeline can actually be constructed."

GAO response No. 3

As indicated in our responses to comments from the Federal Energy Regulatory Commission and others, the Alaskan sponsors--not GAO--made the risk-of abandonment evaluations in chapter 2. The report does not attempt to determine whether the technology exists to build the pipeline in an environmentally acceptable, economical manner. It states that technical and geological uncertainties should be thoroughly investigated; such investigations may be necessary to resolve the Department's unspecified major technical concerns in Alaska.

Agency comment

"The economics of the project have been extensively studied for several years and found to be generally acceptable. Recent increases in OPEC oil prices reinforce the justification. It is not apparent what purpose would be served by having the Secretary of Energy undertake another overview."

GAO response No. 4

We recommend further study only if Federal financial involvement is requested.

Agency comment

"The planned facility will have a capacity of 1.163 trillion cubic feet per year with additional capacity possible by looping.

"There is a strong possibility of additional gas being discovered in the north slope area that could be transported by this line."

GAO response No. 5

The report deals only with the natural gas proposed to be transported from Prudhoe Bay. It will be appropriate to consider additional supplies and total capacity of the Project in the detailed analyses we have suggested.

We are aware of U.S. Geological Survey and other estimates of potential natural gas resources in northern Alaska. The report does note that, so far, there have been no new discoveries outside of Prudhoe Bay. The analyses we suggest should take into consideration possibilities of additional supplies.

Agency comment

"The report does not explore what is to be done with the gas in the event that there are no transportation facilities out of the region. Currently, under State Regulation, the gas is being reinjected at Prudhoe Bay. This is costly and consumes a portion of the gas in the process. There are limitations on the useful and non-wasteful continuation of reinjection which should be discussed."

GAO response No. 6

We do not assume that the gas will not be transported out of the region. That is beyond the report's scope. The issue is that indepth analyses are needed before a decision is made on Federal financial involvement.

Agency comment

"There is a misleading characterization on page 27. If it were obvious that LNG were an economic source of energy, the case against importing would have dissolved. If markets for the gas at incremental cost were apparent, LNG imports would have been authorized. Without some market constraint (such as full-cost or incremental pricing) LNG remains a suspect, unattractive source of fuel. With the appropriate market constraints, it may ultimately become an economical source."

GAO response No. 7

We cannot identify any "misleading characterization." Apparently, the Department of the Interior refers here to the footnote relating to Government policies in granting licenses. The report indicates that quantities of LNG over and above what is now being imported might be brought to the United States if, among other developments, the Government granted licenses to applicants more freely than it does now. As indicated in the report, it deals with possibilities, not predictions. The fact is that LNG is now being imported and additional import applications have been filed.

Agency comment

"The logic on page 32 is questionable. Supply does not create demand. Further, if the cost of the Alaskan gas (properly priced) were low enough to warrant increased economic activity, this would seem a desirable, rather than an undesirable, outcome."

GAO response No. 8

The logic is consistent with views that latent natural gas demand could absorb substantially larger amounts of gas annually than is now consumed. Although we do not believe that this latent demand is unlimited, it seems probable that new gas supplies could stimulate additional demand. Further, the report does not state that increased economic activity is undesirable. It merely states that if new activity absorbs the Alaskan gas, the Alaskan gas probably would not reduce imports.

Agency comment

"The economics on page 28 are confusing. We doubt that it could be demonstrated that energy users are indifferent to prices. What is it that is going to alter consumers preferences or habits? It sounds as if the authors are advocating forced conservation. This tends to be corroborated by first paragraph, page 32."

GAO response No. 9

The Department of the Interior is unquestionably confused. Nothing in the report suggests that energy users are indifferent to prices. However, it is possible for consumers to adjust to energy price rises by responses other than reducing energy consumptions. For example, they may forego recreational expenditures rather than diminish their consumption. Also, consumers may, in some cases, need to be told how to conserve energy.

The report does not necessarily advocate forced conservation. The report recommends that the Government develop a clear and consistent conservation program directed to helping consumers develop conservation attitudes and habits.

Agency comment

"The discussion concerning the lack of impact on importation of OPEC oil is not entirely correct. It is not necessary for someone who burns foreign oil to directly substitute Alaskan gas for displacement of foreign oil to occur. The total energy imported with or without the Alaskan gas is the real basis for comparison."

GAO response No. 10

The report recognizes both direct and indirect substitution. Further, it suggests that detailed analysis is needed before it can be determined what total energy imports would be with or without the Alaskan gas.

Agency comment

"The investment tax credit has a substantial impact on the real rate of return on equity capital. We think that this impact should be considered and included in the appendix on the IROR, in order to accurately evaluate the financial prospects for this project."

GAO response No. 11

Appendix I illustrates the difficulty in reaching mutually satisfactory resolutions. It does not discuss the investment tax credit because this credit is not considered as a part of the Federal Energy Regulatory Commission's rulemaking.

Agency comment

> "Your concerns about marketing may be overstated as most of the proven Prudhoe gas has already been marketed (with certain restrictions). Also, it is unlikely that the companies involved will start construction before they have distribution contracts and commitments."

GAO response No. 12

The Alaskan sponsors--not GAO--stated that marketability was a factor in their evaluation of abandonment risks.

Agency comment

> "In evaluating this project, consideration should be given to its value as an energy 'insurance policy' in the event of interruption of overseas' sources."

GAO response No. 13

We recognize that "national security" is an important element in establishing national energy policies and should be considered in the indepth analyses we recommend.

Agency comment

> "Consideration of this marginal increase in supply as a constraint on the price of OPEC oil and/or LNG would be interesting."

GAO response No. 14

It would be proper to evaluate this in the indepth analyses we recommend.

Agency comment

> "Of very special importance for the Congress to consider are the prebuilt projects in the lower 48 states. These projects will provide Canadian gas at an early date and their import should be

considered in an overall evaluation of this entire project."

GAO response No. 15

We agree.

NORTHWEST ALASKAN PIPELINE COMPANY

Company comment

"Mr. J. Dexter Peach's letter of June 19, 1979 * * * transmitted for comment a purportedly confidential draft of a proposed report * * *."1/

GAO response No. 1

Our policy is to provide parties having responsibilities concerning the subjects discussed in the draft an opportunity to comment on the draft. Consistent with this practice, we sent copies of the draft of this report to the companies and Federal agencies involved. Each copy had highlighted in red on the cover that the draft was restricted to official use and included the following language also in red:

"Recipients of this draft must not show or release its contents for purposes other than official review and comment under any circumstances. At all times it must be safeguarded to prevent publication or other improper disclosure of the information contained therein."

In addition, each copy contained a transmittal letter referring to the use limitations highlighted on the cover.

Company comment

"The report contains so many misstatements and inaccuracies that the time and resources which would be required to comment on each cannot be justified in light of its premature release to the Canadian press."

1/Mr. Peach is the Director of the Energy and Minerals Division, GAO.

GAO response No. 2

At our meeting with the company representative after receiving this letter, we specifically requested that the company provide any supporting data that would correct the alleged, but not specified, "misstatements and inaccuracies." The company provided none.

Company comment

> "The full extent of the damage and delay caused by the unethical and premature release of the draft to the press cannot be fully assessed at this time. We are enclosing for your information copies of articles from several newspapers to illustrate how an ill-conceived and misleading report can be further misinterpreted by the press. The impact of such articles with their inflammatory rhetoric, especially on the financial community, are particularly damaging to this vital energy project.
>
> "We believe the distortions, inaccuracies, and incompleteness of the already published and released report will be readily discernible to the careful reader, and that this will be our best defense against such irresponsibility. By copies of this letter, we are informing members of Congress and the Administration of our comments and opinions on this matter."

GAO response No. 3

On August 8, 1979, the company's Washington, D.C. press office informed us that it had obtained no articles concerning this report other than those provided with this letter. By comparing the draft copy we sent to them with those articles, the company could easily determine that the articles, in fact, did not disclose all the contents of the draft.

Substantial portions of one article related to opinions expressed to newspaper representatives by people outside our organization. Further, the articles correctly report that they were referring to a draft report which was not final.

NORTHERN NATURAL GAS COMPANY

Company comment

"On January 26, 1979, Northern Border filed an application with the Federal Energy Regulatory Commission for permission to prebuild 809 miles of the Eastern Leg to transport 800 MMCFD of Canadian Gas to U.S. consumers beginning two to three years in advance to when Alaska gas will be available. This service proposed by Northern Border would begin in November, 1981, and continue for a period of 12 years, providing substantial volumes of gas to the Midwestern and Eastern U.S. markets. This proposed prebuilding or Phase I construction of the Northern Border System is predicated on the receipt of acceptable certificates and permits from both the United States' Federal Energy Regulatory Commission and the Canadian National Energy Board.

"When Alaskan gas becomes available Northern Border will file additional applications requesting permission to expand its system by adding 308 miles of pipeline and more compressor stations to accommodate the combined volumes of Alaskan and Canadian gas volumes. This expansion of the Northern Border system will be timed to coordinate its completion with completion of the other segments of the total system.

"Our basic comment on your draft is that substantially all of the problems described are peculiar to the Alaskan segment (or perhaps in some part the Canadian segment), and have little bearing on Northern Border's prospects for financing and construction in light of the 'pre-build' proposal to transport Canadian gas. Had the FERC not chosen to impose the IROR mechanism on Northern Border, the financing and 'pre-build' construction would have proceeded routinely upon issuance of satisfactory export-import licenses by the two governments, and a satisfactory Certificate by the FERC."

"The only unusual obstacle Northern Border now faces is satisfactory resolution of the IROR mechanism. It still faces the 'usual' obstacles of satisfactory 'pre-build' authorizations from the two governments involved. Whether those obstacles will be overcome, and when, is peculiarly within the control of the two governments. However, given such action on a timely basis and acceptable terms, we have no concern over our ability to finance Northern Border privately and construct the 'pre-build' segment on the projected time schedule (assuming the expected cooperation of the Federal Inspector during final design and construction). Neither would we have any concern, once the 'pre-build' is completed, over our ability to finance privately and to construct timely the expansion required to accommodate Alaskan gas when it begins to flow.

"We believe our presentation before the FERC should make it clear that only satisfactory regulatory approvals for the 'pre-build' (including IROR in that context) are needed to bring Northern Border into being as a privately financed pipeline. This represents over 1100 miles of the 4800 mile total system, and an investment (for both Canadian and Alaskan gas) of approximately $2 billion.

"Moreover, as our presentation to FERC documents, successful completion of the Northern Border 'pre-build' will benefit the financing and construction of the Alaskan and full Canadian segments enormously. Further assistance will accrue from 'pre-buidling' the Canadian southern segments and the Western Leg. The unit costs of transportation of Alaskan gas will decline significantly, and obviously financing requirements will be greatly reduced within the same time period.

"We suggest addition of a comprehensive explanation of the effects of 'pre-building' on completion of the entire Alaskan system, and re-examination of some concerns expressed in light of that expectation, and the recent OPEC price increases. Above all, it should be made clear that Northern Border can be and will be privately financed barring adverse regulatory actions in the U.S. or Canada."

GAO response

The report identifies and discusses the Eastern Leg as a separate segment of the system. Also, it shows that the question of Federal financial involvement has been raised only in comments with the Alaska segment. Although we have limited our discussions in this report, the Department of Energy analyses which we recommend will require the comprehensiveness suggested by the Northern Natural Gas Company.

PACIFIC GAS AND ELECTRIC COMPANY

Company comment

"In reviewing the draft we have, as you asked, taken care to prevent the report's premature release or unauthorized use, knowing that the publication of the preliminary draft, before it has been checked for inaccuracies and misleading statements could do unjustifiable harm to public and investor confidence in the Alaska Project. We were, therefore, dismayed to learn that, despite your caution, the draft, without the benefit of corrections, was the subject of some premature stories in the press. This is particularly unfortunate, for the draft in its present form is misleading to the public and to the Congress, and will do nothing to advance general understanding of the project, its promise, or its problems."

GAO response No. 1

We note that the company does not identify specifically in what way the report was "misleading" or recommend specific revisions.

Company comment

"The Project has been approved and found in the national interest by the President and the Congress. The draft report gives scant attention to this fact and seems instead to proceed on the assumption that the national need for this new domestic energy supply should be restudied. The Project is in danger of being studied--and restudied--to death."

GAO response No. 2

In the report, we show that the Project was approved and found in the national interest by the President and the Congress. We recommend further study only in connection with a possibility that a proposal may be made to waive one condition of that approval. That condition requires that the Project be privately financed without any Federal financing assistance.

We see no danger that our recommendations will cause the Project to be "studied to death" or even delayed. All present activities can continue without regard to the Department of Energy analyses that we suggest.

Company comment

> "The draft report contains a great deal of superficial and completely unsubstantiated speculation about the possible availability of alternate energy supplies. This speculation covers ground which has been covered many times before. All of the mentioned alternatives are not truly alternatives to the Alaska Project but are instead other possible sources of energy that will in all likelihood be needed in addition to the Alaska Project, if they can be bought to fruition. Alternatives to the Project were considered and a decision has been made at the highest level of our Government and the Government of Canada to move forward with the Project. The time for studies of alternatives is past."

GAO response No. 3

These points are discussed in some detail in our responses to the Federal Energy Regulatory Agency and Department of Energy. Further, in discussing alternate energy supplies, the report is not seeking to identify alternatives to the Alaska Project. Instead, it seeks to identify options that the Congress may have if Federal financial involvement is proposed. The report does indicate that the United States will have to look to a variety of energy sources for its future gas supplies. It does not suggest that the Project will not be one of them.

Company comment

"If any study is necessary at this time, there should be an analysis of ways to clear government roadblocks and delays which are the single greatest threat to the Project's timely and economic completion. In our opinion the GAO's draft study should be revised to give close attention to this problem. The report could perhaps help to achieve the expressed will of the Congress that this Project be built if the report were to examine closely the delays and uncertainties caused by the governmental regulatory process, and to recommend ways of rectifying the situation."

GAO response No. 4

Governmental efficiency, in general, and the processes with respect to the Project, in particular, have been receiving our continued attention. We note that both depend on the attitude and efforts of the interested parties as well as of the Government. For example, appendix I describes the procedures for determining the variable rate-of-return for the Project.

In addition, as pointed out by the Northwest Alaskan Pipeline Company in its statement to the Federal Energy Regulatory Commission on determining the Project risk premium for the Alaska segment of the Project, the general public and other third parties can affect rates of progress in public matters.

Company comment

"The report spends a great deal of time speculating what should be done if the Project were unable to obtain private financing. This sort of speculation unnecessarily runs the risk of becoming a self-fulfilling prophecy. Investor and lender confidence are being eroded day by day by regulatory delays which raise the question of the U.S. Government's commitment to the Project. The draft report will cause further erosion of confidence. The partnership has stated its belief that the Project can be privately financed, but we will not know until we are allowed by government decisions to go forward. We do know that until that occurs, speculation about possible failure, especially from a responsible agency of the Federal Government, is to say the least, unnecessary and very much contrary to the national interest."

GAO response No. 5

We did not initiate any actions to question the sponsors' ability to secure private financing. Such questions were raised elsewhere, including the Northwest Alaskan Pipeline Company's statement on determining Project risk premiums.

In addition, we did not institute any suggestion that the Government should or should not get financially involved in the Project. Although once that possibility was raised, there was a risk that it would become "a self-fulfilling prophecy," our prime concern is that the Government should be in a position to make an informed decision *if* Federal financial involvement is proposed.

We believe that getting prepared for a prompt, informed decision on a public question is fully in the national interest.

GAO note: Page numbers referring to draft report were changed to correspond with those in this final report.

(008700)

Single copies of GAO reports are available free of charge. Requests (except by Members of Congress) for additional quantities should be accompanied by payment of $1.00 per copy.

Requests for single copies (without charge) should be sent to:

U.S. General Accounting Office
Distribution Section, Room 1518
441 G Street, NW.
Washington, DC 20548

Requests for multiple copies should be sent with checks or money orders to:

U.S. General Accounting Office
Distribution Section
P.O. Box 1020
Washington, DC 20013

Checks or money orders should be made payable to the U.S. General Accounting Office. NOTE: Stamps or Superintendent of Documents coupons will not be accepted.

PLEASE DO NOT SEND CASH

To expedite filling your order, use the report number and date in the lower right corner of the front cover.

GAO reports are now available on microfiche. If such copies will meet your needs, be sure to specify that you want microfiche copies.