

ALASKA NATURAL GAS TRANSPORTATION SYSTEM

OCTOBER 26, 1977.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. STAGGERS, from the Committee on Interstate and Foreign Commerce, submitted the following

REPORT

together with

MINORITY AND SUPPLEMENTAL VIEWS

[To accompany H.J. Res. 621 which on October 12, 1977 was referred jointly to the Committees on Interior and Insular Affairs and Interstate and Foreign Commerce]

The Committee on Interstate and Foreign Commerce, to whom was referred the joint resolution (H.J. Res. 621) approving the Presidential decision on an Alaska natural gas transportation system, and for other purposes, having considered the same, report favorably thereon without amendment and recommend that the joint resolution do pass.

I. PURPOSE AND BRIEF SUMMARY

The purpose of the joint resolution is to approve the President's decision selecting a transportation system for the delivery of Alaskan natural gas, which was submitted to the Congress on September 22, 1977. Under the Alaskan Natural Gas Transportation Act of 1976, for the President's decision to take effect, the Congress must enact the joint resolution of approval within 60 days of the receipt of the President's decision.

II. BACKGROUND

(A) ALASKA NATURAL GAS TRANSPORTATION ACT OF 1976

The Alaska Natural Gas Transportation Act of 1976 prescribes the process for arriving at a sound decision with respect to the selection of a transportation system for the delivery of Alaskan natural gas to the United States markets. The subject joint resolution to approve the President's decision is specifically provided for in section 8 of that Act.

The Alaska Natural Gas Transportation Act of 1976 established a four-step process for the selection of a system to transport natural gas from Alaska to the lower 48 States.

First, the Federal Power Commission (FPC)—now the Federal Energy Regulatory Commission (FERC)—was directed to report its recommendation on a transportation system to the President. The FPC made its recommendation to the President on May 2, 1977.

Second, an opportunity was provided for Federal officers and agencies, State Governors, other instrumentalities of government and interested persons to submit comments on the FPC's report to the President by July 1, 1977.

The President was directed to review the FPC recommendation, evaluate the comments, and transmit his own decision to the Congress. The President's decision selecting a transportation system for the delivery of Alaskan natural gas was submitted to the Congress on September 22, 1977.

Third, the Congress must review the President's decision under expedited procedures. The decision of the President takes effect upon enactment of a nonamendable joint resolution of Congress within 60 days of the receipt of the decision. If Congress does not approve the decision within 60 days, the President then has 30 days to reach a new decision, which must differ in a material respect from the previous decision if either House has voted down the resolution of approval of the previous submission. The alternative decision must be approved by a joint resolution of Congress within 60 days. If the second joint resolution is not enacted by the Congress to approve the second submission of the President, the selection of a transportation system would be made by the FERC under the Natural Gas Act or by additional legislation enacted by Congress.

For purposes of computing time, the 60-day period is broken only by an adjournment of the Congress sine die or an adjournment of more than 3 days by either House.

The fourth step in the decisionmaking process is implemented only in the event that a decision by the President designating a transportation system receives congressional approval. In this event, provision is made for the expedited consideration and issuance of the authorizations necessary or related to the construction and initial operation of the approved transportation system.

(B) U.S. GAS SUPPLIES

The Nation's demand for natural gas has increased dramatically in recent years. Beginning in 1967 and continuing in each succeeding year up to the present, U.S. natural gas consumption has exceeded additions to proven reserves in the contiguous 48 States. Moreover, due to increasing demand for natural gas and relatively stable rates of production, annual demand for natural gas has exceeded natural gas production since 1973. As a result, many interstate natural gas pipeline companies have been increasingly unable to meet their contractual delivery commitments to customers in many regions of the country.

A substantial reduction or elimination of the natural gas shortage may be achieved by the implementation of a coal conversion program, a reduction in demand through conservation and an expansion of

energy supplies in the lower 48 States. Delivery of Alaskan natural gas to the lower 48 States will help to insure that natural gas shortages are alleviated or do not occur. In addition, the availability of Alaskan natural gas would reduce our dependence on potentially interruptible foreign energy resources.

(C) ALASKA NATURAL GAS SUPPLIES

The Prudhoe Bay field contains the largest accumulation of oil and gas ever discovered on the North American Continent.

In place gas volumes for Prudhoe Bay are in excess of 40 Tcf. The recovery factor is 75 to 80 percent and Prudhoe Bay deliverability is estimated to be 2.0-2.5 Bcf/d within 5 years after commencement of oil production. The Prudhoe Bay field has been unitized to insure prudent operation.

The FPC reports that it is reasonable to expect gas sales of at least 2.0 Bcf/d (from the Main Area Sadlerochit reservoir) and possibly slightly more than 2.5 Bcf/d beginning 4 to 5 years after commencement of oil production and continuing for 25 to 35 years.

The FEA has found that the timing of the commencement of 2.0 Bcf/d of gas pipeline deliveries does not significantly affect ultimate oil recovery under sound reservoir management plans.

The producing mechanisms available in the producing reservoir are depletion drive in the oil zone, gas cap expansion, gravity drainage, and water drive. In producing the reservoir for the first 5 years, the producers anticipate a slowly expanding gas cap and encroaching water (natural or injected) both acting to maintain reservoir pressure. In producing oil fields with gas caps, it is essential that oil not be allowed to invade the gas cap. Should a strong natural water drive develop, gas withdrawal rates would have to be adjusted to prevent oil movement into the gas cap and the resulting loss of oil.

(D) DECISION BY THE FPC

On May 2, 1977, the FPC recommended an overland pipeline route to carry Alaska natural gas to the lower 48 States. Two commissioners recommended the Alcan proposal and two commissioners recommended the Arctic gas proposal.

(E) BERGER REPORT

In March 1974, the Canadian Government established a Royal Commission of Inquiry, headed by Mr. Justice Thomas R. Berger, to examine the socioeconomic and environmental impacts of a northern pipeline. In a report released on May 9, 1977, Justice Berger concluded that: (1) no pipeline should be built across the northern Yukon, as had been proposed by the Arctic Gas Consortium, to attach Prudhoe Bay gas in Alaska, for environmental reasons; and (2) construction of a pipeline south from the Mackenzie Delta in Canada via the Mackenzie Valley to the Alberta border, while environmentally feasible, should be postponed for a period of 10 years to allow time for a just settlement of native claims. Justice Berger indicated that the Alcan route to carry Alaskan gas across the southern Yukon along the Alaska Highway was environmentally preferable to a pipeline crossing the northern

Yukon. Justice Berger declined to specifically endorse the Alcan route because "an assessment of social and economic impact must still be made, and native claims have not been settled."

(F) JULY 1, 1977 REPORTS

1. FEA concluded in its report on supply, demand and energy policy that any of the proposed Alaskan natural gas transportation systems would help to insure that natural gas shortages are alleviated or eliminated. At the same time, the FEA found that the availability of Alaskan gas would reduce our dependence on foreign energy resources.

2. In its report regarding financing, the Department of the Treasury stated that the principal conclusion of the report was that there was good reason to anticipate that an economically viable system to transport natural gas from Alaska to the lower 48 States could be privately financed. The report noted, however, that a private financing would be difficult, if not impossible, to arrange without the prior resolution of a number of issues and that the actual likelihood that a private financing could be accomplished could be determined only after these issues had been resolved.

3. In its report on economic benefits, FEA concluded that net national economic benefits would be positive unless there was: (1) a construction delay longer than 4 years, (2) an increase of more than 100 percent in construction costs or (3) a reduction from 2.4 Bcf/d to less than 1.2 Bcf/d in gas transported through the system. Net national economic benefits according to the report are between \$3.3 billion to \$4.8 billion. The report said the Alcan route would provide the greatest net economic benefit.

4. In its report on socioeconomic impacts, the Office of Coastal Zone Management of the Department of Commerce found that: "The significance of socioeconomic impacts for the overall route decision depends on the weight given to impacts disruptive of social and cultural structure as opposed to economic development considerations. If factors such as adverse effects on native communities and local lifestyles are given primary importance, the Arctic and El Paso routes would tend to suffer in a comparison with Alcan. If more importance is placed on a route which will stimulate the Alaskan economy, the El Paso route clearly has the advantage, followed by Alcan."

5. In its report to the President, the CEQ concluded that:

A. Although they have shortcomings, the environmental impact statements are legally and factually sufficient under the National Environmental Policy Act for purposes of selecting the corridor and basic technology for a gas transportation system.

B. Although the impact statements provide the information necessary to select a corridor and the basic technology for a gas transportation system, they lack the data required for specific decisions concerning route alignments, project designs, mitigation measures, and facility siting.

CEQ said that environmental assessments, EIS supplements, or new impact statements may be required and that major design, engineering or other site-specific decisions that follow the selection of a corridor and technology must be considered in one of these types of NEPA analyses.

CEQ found the Alcan proposal to be "the most environmentally acceptable" of the three proposals. However, CEQ said that some of Alcan's environmental risks are still unknown and specifically mentioned frost heave and thaw settlement as problems whose solutions remain uncertain.

6. The report by the Department of the Interior on environmental issues found that Alcan appeared to promise the least environmental impact if proper mitigative actions were taken. However, the DOI noted that "the data base associated with Alcan's route is generally considered to be inadequate. Additional research and data collection are needed to define site-specific problems and appropriate mitigating measures."

7. The report by the Department of State discussed the United States-Canada international relations aspects of selection of a pipeline route through Canada to carry Alaskan natural gas to the lower 48 States. The State Department concluded that a viable option existed for the transportation of Alaskan natural gas across Canada.

8. The Justice Department report found that antitrust considerations did not militate against selection of any of the proposed transportation systems and that competitive considerations did not indicate the selection of one transportation system proposal in preference to the others. The Justice Department recommended, however, that "an ownership interest, or participation in any form in the transportation system, by one or more gas producers of significant amounts of gas be prohibited."

9. The report by the DOT concluded that "with regard to pipelines, their continuity of service is by far the best of any mode of transportation in the United States and we believe the Canadian experience is comparable".

The report by DOT also found that there was a significant difference in the efficiency of each transportation system on the basis of the quantity of gas needed to operate that system. DOT concluded that there was a "significant efficiency advantage to an all-pipeline system".

10. The report by the Department of the Interior and the Department of Transportation on cost overruns and schedule delays found that overruns on total costs including financing may range from 40 percent to 55 percent and that construction delays would range from 15 to 17 months. Taking expected cost overruns and construction delays into account, the report found that the Alcan proposal had the earliest expected delivery date and the least total cost.

11. The Department of Defense determined that none of the proposed natural gas transportation systems was preferable in terms of military considerations. They found, however, that a system to transport gas from Alaska to the continental United States was necessary to national security since it would enable the United States to reduce oil imports.

(G) CANADIAN NATIONAL ENERGY BOARD

The National Energy Board report released on July 4, 1977, recommended approval of the Canadian portion of the Alcan system (called Foothills (Yukon)), subject to certain conditions. These conditions included: (1) a rerouting of the proposed pipeline through Dawson

in the Yukon so as to facilitate the attachment of Mackenzie Delta gas; (2) an agreement by the Canadian sponsors to construct a so-called Dempster "link" to connect Mackenzie Delta gas reserves to the proposed pipeline at Dawson; (3) a reorganization of the companies constructing the Canadian sections of the project; and (4) payment by Foothills (Yukon) of up to \$200 million to the Government of Canada to cover the socioeconomic costs attributable to the pipeline project north of the 60th parallel.

(H) CANADIAN ENVIRONMENTAL ASSESSMENT PANEL

The Environmental Assessment Panel was appointed by the Canadian Government to study the possible environmental impact of construction and operation of the proposed Alcan-Foothills (Yukon) pipeline along the Alaska Highway. It concluded on July 28, 1977, that a Southern Yukon pipeline route is environmentally preferable to a Mackenzie Valley route for transporting Alaska gas through Canada. The panel said the proposed Foothills (Yukon) pipeline can be constructed and operated in an environmentally acceptable manner subject to the following conditions: (1) proper environmental planning, (2) suitable rerouting or other solutions be found for "unique and sensitive areas", and (3) development of effective design and adequate mitigative measures to overcome environmental problems associated with permafrost areas. The panel said that the Dawson diversion suggested by the NEB was potentially acceptable environmentally for construction of a gas pipeline and said further study of this proposal was required to identify all environmental problems and to demonstrate their acceptability. Finally, the panel concluded that available environmental information was insufficient to evaluate the environmental acceptability of a Dempster link from Dawson to Mackenzie Delta gas reserves at this time.

(I) LYSYK REPORT

The last Canadian report, released on August 2, 1977, was prepared by the Alaska Highway Pipeline Inquiry, which was commissioned to assess the socioeconomic impacts of the proposed Foothills (Yukon) natural gas pipeline. This inquiry, headed by Kenneth M. Lysyk, recommended that commencement of construction of a gas pipeline through the southern Yukon—if approved in principle by the Canadian Government—should be deferred at least until August 1981, in order to allow a minimum of 4 years for the conclusion and implementation of a just settlement of Yukon Indian land claims. This deferral of construction, the report added, would also provide valuable time to conduct a study of possible alternative routes through the southern Yukon. The Lysyk report also recommended: (1) payment by Canadian pipeline sponsors of \$200 million into a Yukon Heritage Fund, to be supplemented in the future by a portion of the property taxes levied against the pipeline company, in order to compensate the Yukon people for unquantifiable social and economic costs and to improve their quality of life; (2) an immediate advance payment of \$50 million by the Canadian Government to the Yukon Indians for settlement of land claims; and (3) establishment of a single agency with planning and regulatory responsibility for engineering, social, economic, and environmental aspects of the proposed pipeline.

(J) TRANSIT PIPELINE TREATY BETWEEN THE UNITED STATES AND CANADA

On August 3, 1977, the U.S. Senate ratified a treaty between the United States and Canada concerning "transit pipelines."

This transit pipeline treaty is one of the two documents, the other being the agreement between the United States and Canada, that provides specific protections that will be applicable to the portion of the pipeline that traverses Canada.

Article I of the treaty states that the treaty applies to the transmission by pipeline through the territory of one party of hydrocarbons not originating in the territory of that party, for delivery to the territory of the other party.

Article II prohibits authorities in either country from taking any measures which would impede, divert, redirect or interfere with the transmission of hydrocarbons in transit. It also provides that each country will facilitate the expeditious issuance of permits, licenses, and other authorizations needed for the import or export through its territory of hydrocarbons through a transit pipeline.

Article III deals with nondiscriminatory treatment. It would insure that public authorities in both countries would not impose fees, duties, taxes or other monetary charges on a transit pipeline which would not be placed on a similar pipeline not transiting the national border. (According to the Administration, during the negotiations considerable attention was focused on the question of establishing an objective standard against which taxes on pipelines could be measured for their discriminatory effect. Article III therefore establishes as the basic standard of comparison similar pipelines within taxing governmental jurisdictions.)

Article IV grants to each government jurisdiction over transient pipelines with respect to such matters as: pipeline safety and technical construction and operations standards; environmental protection; rates, tolls, tariffs, and financial regulations relating to pipelines; reporting requirements, statistical and financial information concerning pipeline operations, and information concerning valuation of pipeline properties. It is provided, however, that all such regulations, requirements, terms and conditions imposed "shall be just and reasonable" and "be applied equally to all persons and in the same manner."

Article V contains provisions calling for the equitable sharing of pipeline capacity on a predetermined basis "in the event of an actual or threatened natural disaster, an operating emergency, or other demonstrable need temporarily to reduce or stop for safety or technical reasons the normal operation of a Transit Pipeline." Article V also provides that the country "in whose territory the disaster, emergency or other demonstrable need occurs resulting in a temporary reduction or stoppage of the flow of hydrocarbons shall not unnecessarily delay or cause delay in the expeditious restoration of normal pipeline operations."

Article VI preserves the right of each country to withhold or grant consent for the construction and operation on its territory of any transit pipeline construction which commences subsequent to the entry into force of the treaty, or to determine the route within its territory of such a transit pipeline.

Article VII provides that the two countries, by mutual agreement, may conclude protocols concerning the application of this treaty to a specific pipeline or pipelines.

Article VIII permits the two countries to amend the treaty at any time.

Article IX provides that any dispute regarding the interpretation, application or operation of the treaty shall, so far as possible, be settled by negotiation between the two parties. If a dispute cannot be settled by negotiation, it must be submitted to arbitration at the request of either party. The decision of the arbitrators will be binding on both parties and the costs of arbitration are to be shared equally.

Article X provides that the treaty is to remain in force for an initial period of 35 years, after which it may be terminated by either party giving written notice, not less than 10 years prior to the end of such initial period, of its intention to terminate the treaty. If neither party has given such notice, the treaty will thereafter continue in force automatically until 10 years after either party has given its notice to terminate.

III. SUMMARY OF THE MAJOR FINDINGS IN SUPPORT OF THE PRESIDENT'S DECISION¹

The President submitted his decision to Congress on an Alaskan natural gas transportation system on September 22, 1977. The President selected the overland transportation system proposed by the Alcan Pipeline Company, a route which roughly will follow the Alcan Highway through Alaska and Canada. The President determined that the Alcan Pipeline System will deliver more natural gas at less cost to a greater number of Americans than any other proposed transportation system.

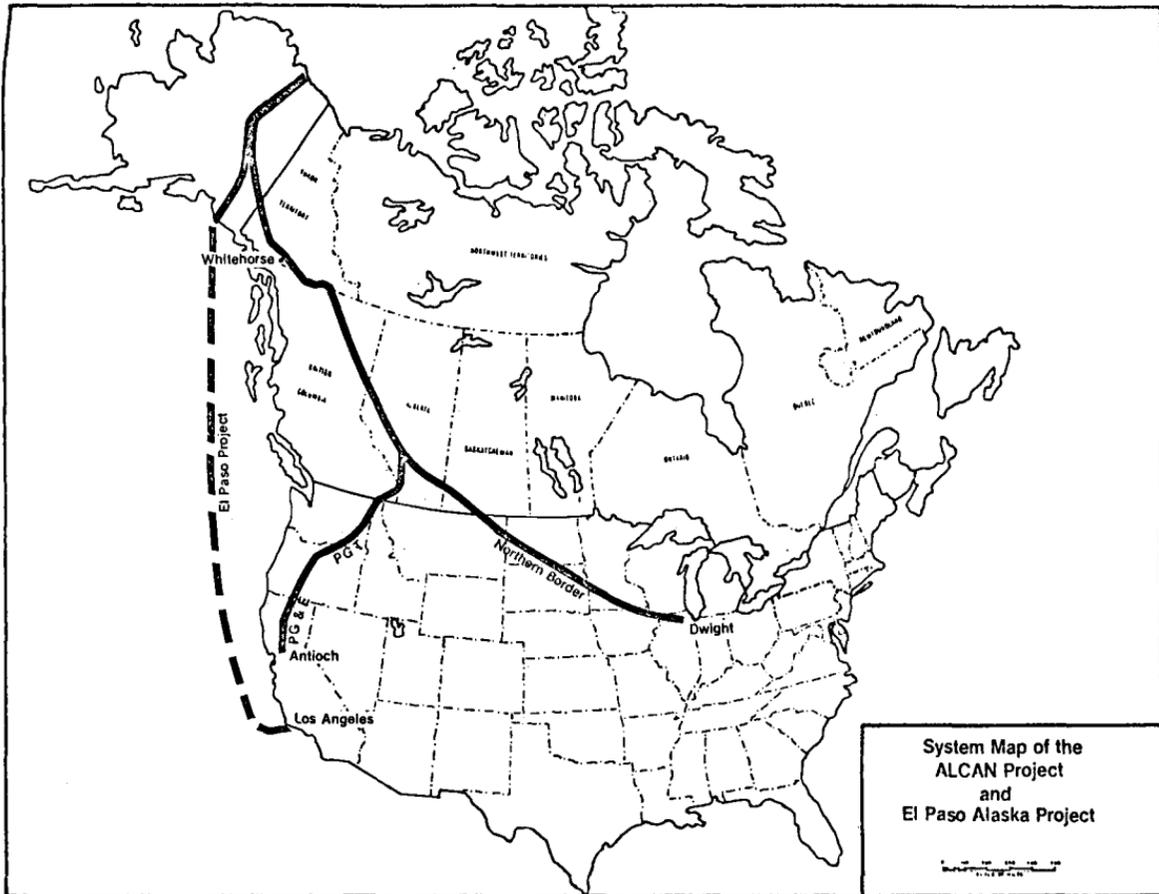
(A) DESCRIPTION OF THE ROUTE

The route agreed on by the United States and Canada (and shown on the map on page 9 of this report) begins at Prudhoe Bay, Alaska. It follows the Trans-Alaska oil pipeline southward past Fairbanks to Delta Junction. At Delta Junction, it departs from the oil pipeline and follows the Alaska Highway into the Yukon Territory. It crosses the northeastern corner of British Columbia and proceeds to Caroline Junction, Alberta, where it splits. The western leg would deliver gas to the Northwest States and to California; the eastern leg to the Midwestern States.

(B) SYSTEM STATISTICS

As presently contemplated, the initial capacity of the Alcan pipeline system would be 2.4 billion cubic feet per day (bcfd) for Alaska gas and 1.2 bcfd for Northern Canadian gas. Its estimated completion date for carrying U.S. gas is January 1, 1983. It could carry larger volumes with additional compression.

¹ Page references herein are to the President's Decision and Report to Congress on the Alaska Natural Gas Transportation System. (U.S. Government Printing Office, stock No. 060-000-0084-1.)



(C) ECONOMIC CONSIDERATIONS

1. Cost of Service

The President's decision states that a cost of service calculation generally includes all transportation charges other than fuel expense (p. 158). The major categories of expense include the return on invested capital (interest and dividends), return of invested capital (through annual depreciation charges), Federal and State income taxes, other taxes, and operating and maintenance expenses. While annual depreciation charges are constant throughout the depreciable life of the project and operating and maintenance expenses tend to increase with the rate of inflation, the other items decline over time as the amount of net invested capital (gross plant less accumulated depreciation) falls.

These declining items usually result in a project cost of service that decreases steadily over time, with the extent of the decrease dependent upon the rate of inflation. Although this decreasing cost of service is customary, a downward sloping service charge to consumers over the life of the project is not essential. Payments from consumers can be adjusted to a more constant or stable level over the accounting life of the project.

The President's decision states that cost of service is the principal factor in determining the value of a project to individual consumers (p. 158). The President's decision found that the cost of service advantage of the Alcan pipeline system was substantial and consequently constituted a crucial element of the decision (p. 158). The President's decision estimates a 20-year average cost of transportation service in 1975 dollars of \$1.04 per million Btu for Alcan, based on a flow rate of 2.4 bcfd (p. 161). The comparable estimate for the El Paso transportation proposal was \$1.21 per million Btu. The 17 cents per million Btu advantage for the Alcan proposal translates into savings for consumers of about \$6 billion (nominal) over the first 20 years, an average of \$300 million per year (p. 163). The estimated 20-year average cost of service for the Alcan project includes adjustments for a 40 percent cost overrun (p. 94).

2. Net National Economic Benefit

The net national economic benefit (NNEB) of a project is the present value of the benefits to be derived less the present value of the resources employed in undertaking the project (pp. 96, 174). The benefit is measured by the cost of alternate fuel displaced by the gas, such as imported oil or LNG (p. 97). The benefit value used for evaluating this project was \$2.62 per mmbtu (1975 dollars) (p. 175). Resource expenditures were measured by the capital and operating expenses. The NNEB of the Alcan project was calculated to be \$5.7 billion. El Paso's NNEB was calculated to be \$4.6 billion (pp. 97, 179). Most of the difference between Alcan and El Paso is attributable to the reduced volumes of gas that El Paso would deliver because of its high fuel consumption (p. 180).

3. Wellhead Price for Alaskan Natural Gas

The President's decision declares that the natural gas pricing policies which are a part of the National Energy Act are fair and equitable, and should apply to the production and sale of Alaskan gas (p. 46).

Under the National Energy Act is the President's national energy policy legislation which, among other things, would establish uniform wellhead prices for natural gas. The National Energy Act was passed by the House of Representatives as H.R. 8444 and is presently the subject of a conference between the House and the Senate. H.R. 8444, Alaskan natural gas producers would receive \$1.45 per MMBtu for their natural gas. Alaskan natural gas producers have not yet entered into any natural gas sales contracts. Final financing for an Alaskan natural gas transportation project cannot be arranged until the Alaskan natural gas producers execute sales contracts.

4. Processing Alaskan Natural Gas

A processing plant must be built at the head of the pipeline in order to prepare Alaskan natural gas for transportation through the Alcan pipeline. The processing plant would remove liquid hydrocarbons and impurities from the Alaskan natural gas stream prior to its introduction into the Alcan pipeline. In addition, the compression at the outlet of the plant would have to be sufficient to enable the gas to be delivered into Alcan's high pressure pipeline system.

The President's decision states that the U.S. shippers will probably be required to bear a portion of the processing or "conditioning" cost for Alaskan natural gas (p. 95). This is estimated to be between 0 and 30 cents per MMBtu (1975 dollars). Thus, when the cost of service price of the Alcan project is added to a wellhead price of \$1.45 to \$1.75 per MMBtu (depending on the amount the FERC will allow producers for their processing costs) the wholesale, or "citygate" price of Alaskan gas should be about \$2.50 to \$2.80 per MMBtu in constant 1975 dollars (p. 95).

5. Cost Overruns

The President's decision states that the cost overruns that occurred in construction of the Alyeska oil pipeline raise questions about the potential of any Alaskan natural gas transportation system for cost overruns (p. 136). Alcan, like Alyeska, has the potential for "significant cost overruns" (p. 138). The decision, however, concludes that both the Alcan and El Paso projects would be able to avoid or minimize many of the problems that led to high cost overruns for Alyeska (p. 149). Nevertheless, the cost estimates for the Alcan project used in the President's decision allow for a 40 percent increase in the filed costs of Alcan. (p. 151).

6. Pricing and Marketability

The President's decision finds that this Nation needs all the reasonably priced natural gas it can produce and that the addition of Alaskan gas to domestic production would make a substantial contribution toward closing the gap between natural gas supply and demand (pp. 88, 90).

The decision concludes that "even under extreme cost overruns, the delivered cost of Alaska gas will be economically attractive" (p. 105). The decision predicts that the Alcan system will deliver Alaska gas at the lowest cost of service to U.S. consumers—probably below the cost of imported oil and substantially below the costs of other fuel alternatives (p. vii).

The delivered cost of Alcan gas under three different overrun assumptions is (p. 95):

20-YR AVERAGE ALCAN DELIVERED COST

[1975 dollars]

	Filed costs	Expected cost overrun	Worst case cost overrun
Field price.....	1.45	1.45	1.45
Processing.....	0 - .30	0 - .30	0 - .30
Transportation.....	.80	1.04	1.57
Total.....	2.25-2.55	2.49-2.79	3.02-3.32

Costs of imported LNG and other alternative nonconventional gas supplies are projected by the decision to be at least \$3.25 per MMBtu (in 1975 dollars) (p. 96). SNG is projected to be at least \$3.75 per MMBtu (p. 96).

The pricing of Alaskan gas is not specifically addressed in the decision. Alaskan natural gas may be sold by the purchasing pipeline to distribution companies on a rolled-in basis, an incremental basis, or under the provisions of H.R. 8444. Under H.R. 8444, the amount by which Alaskan gas raised the pipelines' average purchased gas costs would be allocated to low priority users until the rates of all low priority users equaled the cost of substitute fuels, at which time all customers would share equally further increases in the average cost of purchased gas. It is assumed that the President's decision intends Alaskan gas to be marketed pursuant to the pricing provisions of H.R. 8444.

The President's decision concludes that even if the coal conversion, conservation and production goals of the National Energy Plan are met, Alaskan gas provides an additional resource needed for helping reduce oil imports by heating more homes and running more factories with a premium domestically produced fuel (p. 98). If the goals of the National Energy Plan are not met, Alaskan gas is essential in the effort to minimize imports and help fill the gap between natural gas supply and demand (p. 98).

(D) DISTRIBUTION

The Alcan system will deliver Alaskan natural gas directly to both the midwest and west coast markets (p. viii). Construction of a western leg and an eastern leg is authorized in order to deliver gas contemporaneously to points both east and west of the Rocky Mountains in the lower Continental United States (p. 20). The decision does not make an irrevocable commitment, however, to construct new capacity that is either too small or too large for projected needs (p. 219). At present, it is not possible to know the quantity of future Canadian exports and the quantity of Alaskan gas contracted for the eastern leg and the western leg. Thus, prior to final certification of both the eastern and western legs, the decision directs the Secretary of Energy to make the precise determination of facility size and volume to account for material changes in the facts, if any, since the Presidential decision (pp. 22, 219). The Secretary's determination is binding on the FERC (p. 234).

The proportion of natural gas that is distributed to a particular region of the country is ordinarily determined by private contract between the producers, on the one hand, and the purchasers, which are usually interstate pipeline or local distribution companies, on the other (p. 220). The President's decision states that a region of the country that is arbitrarily and inequitably deprived of its share of Alaskan gas by this process will have the opportunity to seek relief from the FERC. The decision states, however, that "it is reasonable to assume that 30 percent of the Alaskan gas will be purchased by parties served by the western leg" (p. 220).

(E) ENVIRONMENTAL AND SOCIOECONOMIC CONSIDERATIONS

The President has determined that the required environmental impact statements relative to an Alaska natural gas transportation system have been prepared, that they have been certified by the Council on Environmental Quality and that they are in compliance with the National Environmental Policy Act of 1969 (p. 133). The President's decision finds that the socioeconomic impacts resulting from the Alcan and El Paso proposals are roughly the same in Alaska (p. 133).

(F) SAFETY, RELIABILITY, EXPANSIBILITY AND EFFICIENCY

The President's decision found that the LNG facilities associated with the El Paso proposal presented marginally higher risks of an accident than the overland pipeline proposed by Alcan (p. 181).

With regard to reliability, the decision states that the continuity of service of pipelines is by far the best of any mode of transportation in the United States and that the Canadian experience in the far north is comparable (p. 192).

The fundamental difference between the El Paso proposal and the Alcan proposal is that an overland pipeline system is inherently more efficient than an LNG transportation system (p. 160). Alcan would deliver 92.1 percent of Alaskan gas entering the system, while El Paso would deliver 89.1 percent.

Peak day capacity will be 2.6 bcfd, with an average daily volume of 2.4 bcfd (p. 17). By installation of intermediate compressor stations, the system could be increased to 3.4 bcfd peak capacity, with an average day capacity of 3.2 bcfd (p. 17). The system capacity could be further increased by adding to the compressor horsepower at each station (p. 17).

(G) FINANCING

The decision requires that Alcan provide for private financing of the project, and make the final arrangement for all debt and equity financing prior to the initiation of construction (p. 36). The private financing will require between \$10 billion and \$15 billion by the time it is completed (p. 100). The conclusion that Alcan can be privately financed is founded on the basic economic desirability of Alaska gas and the viability of the Alcan transportation system (p. 106).

To effectuate a private financing, the President's decision proposes the following plan to share the risks and benefits of the Alcan project:

1. The equity investment in the project would be placed at risk under all circumstances and the budgeted equity investment

would be considered the first funds spent. The rate of return on equity would compensate sponsors for bearing this risk (p. 100).

2. Producers and the State of Alaska, as direct and major beneficiaries of the project, should participate in the financing either directly or in the form of debt guarantees (p. 100).

3. The burden of cost overruns should be shared by equity holders and consumers upon completion through the application of a variable rate of return on common equity. This would provide a strong incentive for the project to be constructed at the lowest possible cost (p. 101).

4. Provision of debt service in the event of service interruption would be borne by consumers through a tariff that becomes effective only after service commences (p. 101).

The decision requires that there be a variable rate of return on equity that will provide for a high return if actual costs are near or below budget and a reduced return if actual costs are above budgeted costs (p. 37). The variable rate of return on equity is to be set to provide substantial incentives to construct the project without incurring cost overruns (p. 37).

In addition, the decision requires that Alcan not compel the purchaser or ultimate consumer to pay any charge with respect to the Alaska natural gas transportation system at any time prior to completion and commissioning of operation of the system (p. 38).

Finally, the decision prohibits producers of Alaskan natural gas from participating in the ownership of the Alcan pipeline system.

In view of the size of the project relative to the financing capacity of its sponsors, Alcan has proposed that the required capital be raised and secured by means of "project financing" as distinguished from the more traditional "balance sheet financing" used in the gas pipeline industry (p. 105). That is, a new project entity is created which will be expected in and of itself to generate sufficient revenues to pay for its operating costs, interest and principal on debt, and a return on, and ultimately a return of, equity to its investors (p. 105).

It is anticipated that most, if not all, of the U.S. common equity will come from U.S. shippers (i.e., U.S. transmission or distribution companies) (p. 111). This will constitute a \$1.4 billion investment (p. 108). The natural gas transmission industry has ample capacity to provide the requisite equity commitments to the Alcan transportation project (p. 117).

The Canadian equity is expected to be provided by the four Canadian transmission companies supporting the project in Canada (p. 111). Their equity investment is anticipated to be \$.85 billion (p. 108).

Debt capital will come from a variety of lenders (p. 105). The decision states that Alcan's impact on the U.S. debt market cannot be considered burdensome (p. 112). Alcan's projected U.S. long-term debt requirement in its peak year is only 3 percent of the market (p. 112). Over the 5-year period, 1978 through 1992, U.S. long-term debt is anticipated to be \$5.8 billion (p. 108).

Similarly, Canadian long-term debt expressed as a fraction of all corporate bonds issued in Canada in 1975 is approximately 5 percent for the peak year (p. 113). Canadian long-term debt is anticipated to be \$.4 billion (p. 108).

The risks associated with the construction and operation of the Alcan project must be assumed by creditworthy parties in order to achieve a private financing (p. 102). The decision finds that there is sufficient credit support capacity among the direct beneficiaries of the project to assure completion of the pipeline without assistance from consumers (p. 102). Such beneficiaries are the gas transmission companies, gas producers, and the State of Alaska. Once operation begins, however, the decision specifically states that consumers must expect to pay the "full cost of service" based upon certified expenditures (p. 102).

The assumption of the entire noncompletion risk by the project sponsors and other beneficiaries provides an important incentive for efficient management and cost control that would be foregone if consumers or the Federal Government were to assume noncompletion guarantees (p. 125). In addition, the variable rate of return on equity should provide a strong incentive for the project to be constructed at the lowest possible cost. Finally, the decision does not allow Alcan, without the approval of the Federal inspector, to utilize cost-plus type contracts in the construction of the line (p. 28). These incentives to minimize cost overruns must be ensured because the pipeline tariff will require gas consumers to pay for all costs except those found unreasonable by the FERC (p. 123).

(H) THE FEDERAL INSPECTOR AND THE EXECUTIVE POLICY BOARD

The Alaska Natural Gas Transportation Act of 1976 (ANGTA) provides that an appropriate and qualified individual be appointed by the President to serve as the Federal Inspector, with the advise and consent of the Senate. Under Section 7(a)(5) of ANGTA, the Federal Inspector is required to.

(a) establish a joint surveillance and monitoring agreement, approved by the President, with the State of Alaska similar to that in effect during construction of the trans-Alaska oil pipeline to monitor the construction of the approved transportation system within the State of Alaska;

(b) monitor compliance with applicable laws and the terms and conditions of any applicable certificate, rights-of-way, permit, lease, or other authorization issued or granted;

(c) monitor actions taken to assure timely completion of construction schedules and the achievement of quality of construction, cost control, safety, and environmental protection objectives and the results obtained therefrom;

(d) have the power to compel, by subpoena if necessary, submission of such information as he deems necessary to carry out his responsibilities; and

(e) keep the President and the Congress currently informed on any significant departures from compliance and issue quarterly reports to the President and the Congress concerning existing or potential failures to meet construction schedules or other factors which may delay the construction and initial operation of the system and the extent to which quality of construction) cost control, safety and environmental protection objectives have been achieved.

In addition to these duties and responsibilities, the President will submit to Congress, upon approval of the decision, a limited executive reorganization plan to transfer field-level supervisory authority over enforcement of terms and conditions to the Federal Inspector from those Federal agencies having statutory responsibilities over various aspects of an Alaska natural gas transportation system (pp. 42, 199). The respective Federal agencies would retain their existing statutory authority to issue on an expedited basis the necessary certificates, permits, rights-of-way and other authorizations, and to prescribe any appropriate terms and conditions that are permissible under present law (p. 42). Agency Authorized Officers would represent directly the statutory authority of the respective Federal agencies in the field, including the enforcement of stipulations and terms and conditions, on all matters pertaining to construction of the pipeline. However, the Federal Inspector would have the necessary field-level supervisory authority to overrule the enforcement action of an Agency Authorized Officer, whenever the Federal Inspector determined that such a decision was warranted (p. 42). The Federal Inspector and the Agency Authorized Officers would constitute an Alaskan Natural Gas Pipeline Office. This office would consist of administrative, field inspection and monitoring staff working under the "Federal Inspector" (p. 201).

The President's supervision of the Federal Inspector will be delegated to an Executive Policy Board (p. 42). The Board would be made up of the Secretaries of Interior, Energy, Transportation, the Administrator of the Environmental Protection Agency, and the Chief of the Army Corps of Engineers, or their Deputies (or senior officers who have been delegated authority over gas pipeline matters), as well as the Federal Inspector, who would be the non-voting Chairman of the Board. The Board will provide policy guidance to the Federal Inspector and through the Federal Inspector to the Agency Authorized Officers. The Board will also act as an appellate body to resolve differences among the agencies and the Federal Inspector, including differences that may arise when the Federal Inspector overrules an enforcement action of an Agency Authorized Officer. The President will authorize by Executive order the creation of the Executive Policy Board pursuant to his power under section 301 of title 3 and will delegate the necessary authority to the Board to carry out its functions (p. 43).

(I) SUMMARY OF THE AGREEMENT WITH THE GOVERNMENT OF CANADA

The President's decision includes the text of the agreement with Canada with respect to the Alcan pipeline system. This agreement is summarized as follows:

Paragraph 1: Pipeline Route

This paragraph defines the pipeline which is the subject of the agreement as that which will follow the route described in the first annex to the agreement, and requires that all necessary action be taken to authorize the construction and operation of the pipeline consistent with the principles of the agreement.

Paragraph 2: Expeditious Construction; Timetable

Subparagraph (a) lays out a timetable for commencement of construction and commits both Governments to take measures to complete issuance of all authorizations in time to allow initial operation of the Pipeline by January 1, 1983. The timetable calls for construction beginning in Alaska by January 1, 1980, and main line pipelaying beginning in the Yukon by January 1, 1981.

Subparagraph (b) assures that all charges for routine authorizations, such as licenses and certificates, as well as charges for right-of-way, will be reasonable and nondiscriminatory. Subparagraph (c) commits both Governments to facilitating expeditious construction of the Pipeline consistent with the respective regulatory requirements of the two Governments, such as those in the areas of worker safety, environmental protection, and quality control.

Paragraph 3: Capacity of Pipeline and Availability of Gas

Subparagraph (a) deals with the initial capacity of the Pipeline, requiring that this capacity be sufficient to meet the contractual requirements of shippers when those requirements arise. The intention is that it would initially be sized for 2.4 billion cubic feet per day (bcfd) of gas from Alaska, with provision for up to 1.2 bcfd of gas from Canada's Mackenzie Delta at the time the Dempster Highway lateral pipeline (called "the Dempster Line") is built to connect those reserves. It is expected that this intention will be carried out by installing larger-diameter or thicker-walled pipe south of the interconnection point near Whitehorse, then adding additional compressor capacity at the time the Dempster Line is constructed. The choice between larger-diameter and thicker-walled pipe will be made at the conclusion of a testing program to assess the safety and reliability of the two alternatives. The testing program is provided for in paragraph 10.

Subparagraph (a) also provides that authorizations will be granted, subject to regulatory requirements, for the Dempster Line and any further expansions of capacity (such as that which may subsequently be requested to transport additional Alaska gas).

Subparagraph (b) defines and limits an arrangement whereby the pipeline will provide gas service to remote communities, through or near which it passes. Prior to the time when the Dempster Line is in service, the gas provided will be Alaska gas, subject to contemporaneous replacement by equivalent volumes of Canadian gas being made available for export.

There is a limit of \$5 million Canadian on capital costs to be incurred by U.S. shippers for provision of this service. Costs outside that limit will be reflected in the cost of service to the communities involved.

Paragraph 4: Financing

Subparagraph (a) states the understanding of both Governments that the project will be privately financed. It is also recognized that both Governments have to assure themselves that the project can be so financed before construction is allowed to begin.

Subparagraph (b) commits both Governments to use a variable rate of return on pipeline company equity capital as an incentive device to avoid cost overruns and to minimize costs consistent with sound pipeline management. Under this device, a higher-than-usual rate of return on pipeline company equity capital is allowed in the cost of service if

the company is able to meet or better its estimates of capital costs for the project. Conversely, a lower-than-usual rate of return on equity is included in the cost of service if the project overruns its capital cost estimates. The base capital cost estimates which will be used for administering the variable rate of return device in Canada are set forth in the agreement as annex III.

Although the details of the variable rate of return device remain to be worked out by the Federal Power Commission and the Canadian National Energy Board, it will have the effect of insulating the consumer somewhat from the effect of cost overruns in project construction. If the amount of capital costs reflected in the cost of service is relatively low, then the return-on-equity component of that cost is allowed to be higher than usual. On the other hand, if the total capital costs are higher than estimated, the increased cost of service can be offset by reducing that portion of it which is included for return on pipeline company equity capital. The overall effect on the cost of service is to narrow somewhat the expected range by trading off return to the pipeline company against performance by the company in holding down capital costs.

Subparagraph (c) states that neither the variable rate of return on equity nor any unusual provisions in the debt instruments concluded in financing the main line will be allowed to interfere with the financing of the Dempster Line.

Paragraph 5: Taxation and Provincial Undertakings

Subparagraph (a) reiterates the commitments of the two Governments under the Transit Pipeline Treaty and attaches statements by the Governments of the three western provinces expressing their agreement with the principles in the Treaty. In addition to guarantees against interruptions in flow, the Treaty covers fees, duties, taxes or other monetary charges, and assures that such charges will be the same for transit pipelines as for similar pipelines located within the jurisdiction of the responsible public authorities within each country.

As there are no similar pipelines in the Yukon Territory, an understanding was reached on the taxation regime applicable to the pipeline in that Territory. Subparagraph (b) lays out the principles of that taxation regime. Those principles are as follows:

1. The Yukon property tax is defined as property taxes and all other direct taxes which are levied exclusively or virtually exclusively on the pipeline. (Clause i) Under Canadian law, the Yukon Territorial Government can impose only direct taxes. Indirect taxes can only be levied by the Canadian Federal Government, and are, therefore, governed adequately by the Transit Pipeline Treaty.

2. Prior to authorization of initial operation of the pipeline, the Yukon property tax will not exceed the following:

- 1980—\$5 million Canadian.
- 1981—\$10 million Canadian.
- 1982—\$20 million Canadian.

Any year after 1982 during which operation of the pipeline is not yet authorized—\$25 million Canadian. (Clause ii)

3. From the first full year that the pipeline is authorized to open operation through 2008 (or until the Dempster Line is authorized to open, if that occurs earlier), the Yukon property tax will be \$30 million Canadian, subject to several adjustments. The tax may be adjusted

for inflation after 1983 using the Canadian Gross National Product price deflator (the GNP deflator). (Clause i)

4. The \$30 million maximum level of taxation applies to the Pipeline at a throughput of 2.4 bcfd of U.S. gas and 1.2 bcfd of Canadian gas. If the capacity of the pipeline is increased for U.S. gas prior to the connection of the Dempster Line, the \$30 million base figure could be increased by the same proportion as the increase in gross asset values of the Pipeline facilities. (Clause vi)

5. If at the end of 1987 it is found that the per capita revenues received from property taxes, other than the pipeline, plus grants to local governmental units, have increased during the period 1983 through 1987 at a faster rate than the GNP deflator, the Yukon property tax may undergo a one-time adjustment for the year 1987 to raise the permitted maximum to the level it would have been, had it been increasing at the rate of increase of aggregate per capita revenue. (Clause iv)

6. After January 1, 1988, the Yukon property tax is permitted to rise either with the GNP deflator or with the rate of increase in aggregate per capita revenue (excluding tax on the pipeline), whichever is greater. (Clause v)

7. If the Alaska property tax rate on pipelines increases between now and 1983 at a rate faster than the Canadian GNP deflator, an adjustment in the permitted \$30 million maximum is allowed; and after leave to open the pipeline in the Yukon is granted, the permissible Yukon property tax may be adjusted to reflect increases of Alaska property tax on the pipeline greater than increases otherwise permitted in the Yukon Property Tax. (Clauses vii and viii)

8. Clause ix provides that the Yukon socioeconomic fund costs will not be reflected in cost of service to U.S. shippers. No other special fund having an effect on cost of service will be permitted in the Yukon unless such a fund is required by the State of Alaska.

9. If the Dempster Line is connected, the Yukon property tax will be governed by the tax treatment applied to the Dempster Line, under the terms of the Transit Pipeline Treaty (clause iii). In Subparagraph (c) the Canadian Government will endeavor to ensure that tax treatment of the Dempster Line in the Northwest Territory is reasonably comparable to that in the Yukon Territory. (Clause iii and Subparagraph c)

10. If the Dempster Line is not connected, the permissible limit of the Yukon property tax will expire on December 31, 2008 (25 years after the date when the Alaska gas is expected to begin flowing), at which time it will be renegotiated. (Clause iii)

Paragraph 6: Tariffs and Cost Allocation

Subparagraph (a) outlines the general methods of cost allocation for the portions of the pipeline in Canada. The pipeline will be divided into zones (Annex II contains the description of the zones) corresponding to segments of the system delineated by any of the following boundaries:

Gas input and takeout points.

Changes in pipeline ownership.

Cost of service to each shipper in each zone will be determined by allocating the total costs of constructing and operating the pipeline in that zone among the shippers transporting gas through it in proportion to the transportation volumes of gas contracted for by each shipper.

Subparagraph (b) describes the cost allocation method for zone 11 (the extension of the Dempster Line from Dawson to Whitehorse known as the "Dawson Spur") if and when the Dempster Line is constructed. In general, the cost of service for the Dawson Spur is to be shared by Canadian and U.S. shippers. The proportionate sharing is to be linked to the degree of cost overruns sustained in constructing the Canadian segments of the pipeline. In no event is the share to be paid by U.S. shippers less than the fraction of the U.S. gas contracted to be transported by the system after Canadian gas has been connected to the system.

For a case with system transportation of 2.4 bcfd of U.S. gas and 1.2 bcfd of Canadian gas, the U.S. shippers' share of the Dawson Spur cost of service would be two-thirds if cost overruns were 45 percent. If cost overruns are reduced from 45 percent, the U.S. shippers' share of the cost of service increases on a straight-line basis, until at an overrun level of 35 percent, the U.S. shippers' share is 100 percent.

If U.S. gas is a larger proportion than two-thirds of the total gas carried in the pipeline, the minimum proportion of the cost of service on the Dawson Spur to be paid by U.S. shippers is correspondingly higher. From that minimum, the U.S. shippers' share of the cost of service increases with reduced cost overruns until their share reaches 100 percent at the 35 percent cost overrun level. The degree of cost overrun between 35 and 45 percent always corresponds to the same U.S. shippers' share of the cost of service on the Dawson Spur; only the minimum U.S. shippers' share varies with the proportion of total gas transported which is U.S. gas.

The agreed arrangement allows the Canadians to credit savings achieved on the main line system against cost overruns on the Dawson Spur prior to applying the ceiling. The savings that can be credited against the cost overruns on the Dawson Spur may be either of the following:

- A volumetric proportion of savings achieved in segments through which joint volumes will be transported; and
- 100 percent of savings achieved in segments which will carry only U.S. gas.

At a minimum, the U.S. shippers' share of the cost of service on the Dawson Spur will be the fraction of the total gas contracted to be carried in the pipeline which is U.S. gas.

Subparagraph (c) of this paragraph in general provides for review and subsequent agreement by both Governments on cost allocation methods in the event that volumes of gas to be shipped exceed the efficient transmission capacity of the pipeline. Subparagraph (d) limits costs for the Dawson Spur allocated to U.S. shippers to those that would be incurred for installation of a 42-inch system, plus those installed within 3 years of the date when the system commences operation. Subparagraph (d) also requires the system installed for the Dawson Spur to be the same as that for the Dempster Line, in order to prevent loading of costs onto the Dawson Spur.

Paragraph 7: Supply of Goods and Services

Subparagraph (a) states that contracting for supply of goods and services to the Pipeline will be on generally competitive terms. This provision is intended to prevent cost overruns and time delays due to Canadian source restrictions on procurement for pipeline projects constructed within Canada.

Subparagraph (b) provides a mechanism for presenting grievances when the objectives with regard to competitive terms in subparagraph (a) are not being met. Subparagraph (b) also specifies possible actions to be taken in the event of a favorable determination on a plaintiff's grievance including:

- Renegotiation of contracts, or
- Reopening of competitive bidding.

Paragraph 8: Coordination and Consultation

This paragraph provides for appointment by both Governments of a senior official to represent each Government in periodic consultations on progress in implementing this agreement. The respective senior officials may, in turn, designate additional representatives to work out any particular problems which may arise in the course of constructing and operating the pipeline.

Paragraph 9: Regulatory Authorities—Consultation

This program provides for consultation between the respective regulatory authorities in the United States and Canada, primarily the U.S. Federal Power Commission and the Canadian National Energy Board.

Paragraph 10: Technical Study Group on Pipe

The two Governments agreed that a higher-capacity pipeline system than was proposed by the sponsoring companies is to be installed south of the interconnection point for the Dempster Line at Whitehorse, in order to carry joint gas volumes more efficiently.

Subparagraph (a) establishes a joint technical study group for the purpose of evaluating the relative merits of combinations of pressure and pipe size which might achieve objectives of increased efficiency. Final decisions based on the results of the testing program will remain the responsibility of the respective regulatory authorities in the two countries.

Subparagraph (b) states that whatever higher-capacity system is chosen will be installed from the interconnection point near Whitehorse to the point near Caroline, Alberta, where the Pipeline bifurcates into a western and an eastern leg.

Paragraph 11: Direct Charges by Public Authorities

Subparagraph (a) provides that either Government can request consultations in the event that any public authority seeks to impose a direct charge on the Pipeline which might be considered properly the responsibility of the sponsoring company, rather than an item which should be included in the cost of service.

Subparagraph (b) identifies generally the types of direct charges by public authorities which will be permitted to be included in the cost of service. Such charges will include only:

- Those considered by the appropriate regulatory authority to be just and reasonable on the basis of accepted regulatory practice, and

Those normally imposed on natural gas pipelines in Canada.

A list of examples of direct charges is attached to the agreement as Annex IV and includes:

- Extraordinary highway maintenance due to heavy vehicle traffic,

Airfield and airstrip repairs,
 Drainage maintenance,
 Erosion control, and so forth.

Direct charges will be subject to the tests in the appropriate legislation prior to inclusion in the cost of service.

Paragraph 12: Other Costs

This paragraph provides that no charges will be considered for inclusion in the cost of service other than those:

Imposed by a public authority under the terms of the Agreement or the Transit Pipeline Treaty,

Normally paid by natural gas pipelines in Canada under accepted regulatory practice, or

Caused by Acts of God or other unforeseen circumstances.

Paragraph 13: Compliance with Terms and Conditions

This paragraph provides that each Government will implement the principles directly applicable to construction, operation and expansion of the pipeline through imposition of terms and conditions on the authorizations it issues. In the event that a pipeline owner does not fulfill one or more of the terms and conditions, the Government will not be held responsible for that nonfulfillment, but will take appropriate action to cause the owners to remedy or mitigate the adverse consequences of that nonfulfillment.

Paragraph 14: Legislation

This paragraph commits both Governments to seek expeditiously all legislative authorities which might be required to implement the agreement and to facilitate timely and efficient construction of the pipeline. This provision specifically refers to legislation to remove delays to construction of the pipeline.

Paragraph 15: Entry into Force

This paragraph provides that the agreement will become effective upon signature, and will continue in effect for 35 years and thereafter until terminated on 12 months' notice by either Government. The provisions of the agreement which require legislative action will become effective when the required legislative action has been completed.

At the end of the Agreement there are several Annexes which append specific information or explain a particular feature of the agreement in more detail.

Annex I.—Description of the Route (Self-explanatory).

Annex II.—Zones for the Pipelines in Canada: This annex specifically identifies the zones for cost allocation under the method described in paragraph 6. It gives the boundaries of the zones.

Annex III.—Cost Allocation in Zone 11: This annex describes the cost allocation agreement for the Dawson Spur, which was outlined in Paragraph 6, in more detail. In particular, the computation of the ceiling on U.S. shippers' liability for the cost of service on the Dawson Spur is set forth in some detail.

The annex also contains detailed specification of the filed capital costs for Canadian portions of the system which will be used to determine cost overruns for the purposes of cost allocation for the Dawson Spur. Possible adjustments of those costs in limited circumstances are also covered.

Annex IV.—Direct Charges by Public Authorities: This Annex is a list of typical direct cost items for use with the limitation on direct charges by public authorities in Canada; the limitation is in paragraph 11 of the agreement.

Annex V.—Statements by the Provincial Governments: Public statements by the Governments of the three western provinces are attached in which they agree to the principles of the Transit Pipeline Treaty. Each also undertakes to negotiate a Federal-Provincial Agreement.

IV. COMMITTEE CONSIDERATION

The Subcommittee on Energy and Power of the House Interstate and Foreign Commerce Committee met September 22 and 23 and October 14, 1977, together with the Subcommittee on Indian Affairs and Public Lands of the House Committee on Interior and Insular Affairs, to conduct hearings on the President's decision on an Alaska natural gas transportation system.

On October 12, 1977, H.J. Res. 621, a joint resolution of approval of the President's decision was introduced in the House.

On October 14, 1977, the joint resolution was placed before the Subcommittee and reported favorably. On October 18, 1977, the joint resolution was placed before the full committee for consideration and was reported favorably.

V. COMMITTEE ANALYSIS OF THE PRESIDENT'S DECISION

The committee's concern with respect to the President's decision focused on an assessment of the degree of protection it afforded consumers from exposure to unreasonable and unnecessary charges associated with the Alcan pipeline. This, in turn, led to an evaluation of the potential liability to U.S. consumers under the agreement negotiated with the Government of Canada with respect to the Alcan system. The agreement with Canada creates several potential problem areas which could result in unreasonable and excessive charges to consumers, among which are issues related to tariffs, taxation, the Dawson Spur and the variable rate of return provision.

(A) TARIFF

Tariffs are the mechanisms by which regulated companies seek to recover the costs prudently incurred to provide service to customers. The efficiency of tariff mechanisms in recovering costs varies both with the form of tariff selected and with the substantive terms and conditions written into the tariff. The tariff forms usually employed may be divided into three categories. In descending order of efficiency in recovering costs they are:

(1) a tariff which directly charges costs as incurred and recorded on the company's books of account, commonly called a cost of service tariff;

(2) a demand/commodity tariff states in dollars and cents per unit of demand for gas and actual volumes received (sometimes called a conventional form for pipeline service), in which rate levels are adjusted periodically by a regulatory authority to reflect the cost of service experienced over a selected test period; and

(3) a pure commodity tariff (customarily used in producer sales contracts and most distribution company sales to ultimate consumers) stated in dollars and cents per unit of actual volumes received subject to adjustment periodically by a regulatory authority.

The natural gas producers in Alaska will sell Alaskan natural gas to U.S. interstate pipeline companies and local distribution companies. These companies, known as the U.S. shippers, will arrange to have their natural gas transported from Alaska to the lower 48 States by Alcan. Alcan will not own the natural gas being shipped through its system. The portion of the Alcan system traversing Canada will be owned and operated by a Canadian company, Foothills (Yukon) Limited. The U.S. shippers will have to contract separately with Foothills (Yukon) for the transportation of Alaskan gas through Canada. Canadian regulation will establish the cost of transportation through the Canadian portion of the pipeline. U.S. regulation will establish the cost of transportation through the U.S. portion of the pipeline.

The agreement with Canada provides that the cost of service to each shipper in each zone in Canada will be determined on the basis of volumes as set forth in transportation contracts (pp. 57-58). If a U.S. shipper contracts with the Canadian pipeline company to transport 100,000 Mcf of gas each day, and this represents 10 percent of the capacity of the Canadian pipeline, and if at any time that 100,000 Mcf per day flow of gas ceases, the agreement with Canada commits the U.S. shipper to pay 10 percent of the Canadian pipeline's cost of service. Thus, the charge to the U.S. shipper is not based on a fixed unit rate but is a cost of service tariff described above. The cost of service to each shipper in each zone will be determined by allocating the total costs of constructing and operating the pipeline in that zone among the shippers transporting gas through it in proportion to the transportation volumes of gas contracted for by each shipper (p. 254).

The President's decision reminds us that a cost of service calculation includes the return on invested capital (interest and dividends) as well as return of invested capital (through annual depreciation charges), Federal and State income taxes, other taxes, and operating and maintenance expenses (p. 158).

The President's decision, however, prohibits any tariff on the U.S. portion of the Alcan system which would require the purchaser or ultimate consumer to pay any charge with respect to the pipeline at any time prior to completion and commissioning of operation of the system (p. 38). Once the pipeline operation begins, however, the decision specifically states that "consumers must expect to pay the full cost of service based on certified expenditures". (p. 102).

Specifically, it is the risk of service interruption that is transferred to U.S. customers by the agreement with Canada. A tariff that charges the cost of service according to contract volumes may reflect the requirements of financing the pipeline. In order to service the debt and to provide a return on equity to the owner, payments are based on an allocation of pipeline costs based on the amount of gas that the shipper has a right to put through the line, not the amount of gas that he actually puts through it at any particular time.

The U.S. shippers anticipate that they will have a continuing obligation in the event of a service interruption in Canada to pay only enough to maintain the Canadian company's debt service and some of the operating costs but will not continue to pay an amount that would reflect a return on equity to the owners of the Canadian pipeline. This is called a minimum bill tariff and differs from a cost of service tariff in that it does not provide for a return on equity during periods of supply interruption on the system. This is the kind of tariff proposed by the Canadian pipeline and endorsed for the U.S. by Secretary of Energy Schlesinger. However, the agreement with Canada does not require that the owners of the Canadian pipeline forfeit their return on equity in the event of a supply interruption in Canada after project completion. Thus, the agreement with Canada does not provide adequate protection for U.S. consumers from the future imposition of a cost of service tariff on the pipeline in Canada.

The President's decision recognizes that a cost of service tariff is one of the major causes of cost overruns (pp. 136-37). A cost of service tariff provides little incentive to keep capital costs down or to operate the pipeline efficiently. To combat this, the President's decision places the risk of noncompletion on the project sponsors, provides a variable rate of return on equity and prohibits the use of cost-plus type contracts.

The Administration relies on yet another incentive to keep costs down. Secretary Schlesinger testified that "[t]he consumers of both countries will be adversely affected if the cost of service tariff is unreasonably high." This reliance is misplaced. Increases in Canadian gas transportation charges cannot be flowed through to the Canadian consumer because the price to the consumer in Canada is based on a fixed price commodity value concept. Because the sales price to the consumer is fixed in Canada, the Canadian producers will receive a fluctuating wellhead price depending on variations in the pipeline's cost of service. Thus, Canadian consumers are not adversely affected if the cost of service tariff in Canada is unreasonably high.

(B) TAXATION OF THE CANADIAN PORTION OF THE PIPELINE

The estimated cost of the main pipeline, including the Western leg, is \$9.9 billion in current dollars. Approximately \$4.5 billion of this cost will be for the Canadian portion, not including the Dempster lateral (from Whitehorse to the Mackenzie Delta). The Provincial Governments of British Columbia, Alberta, and Saskatchewan, along with the Government of the Yukon Territory, will each set property tax rates which, under the terms of the recently approved Transit Pipeline Treaty, will be established at comparable levels to that for similar pipelines in each jurisdiction. However, no pipelines similar to the proposed line currently exist in the Yukon Territory. For all other provinces which contain pipelines, the Transit Pipeline Treaty attempts to prevent any arbitrary or discriminatory tax treatment of the Alcan line. But the lack of a firm taxation basis in the Yukon, coupled with the announced policy of the Yukon government to use pipeline tax revenues to significantly expand social and economic services in the territory, makes the issue of the Yukon tax on the pipeline a potential problem area.

A related issue is the \$200 million socioeconomic impact payment recommended by the Canadian NEB in its July 4 decision.

There are precedents in the United States for socioeconomic impact assistance. Normally, however, compensation for such impacts has been through Federal Government loans and subsidies. U.S. negotiators resisted a direct payment of \$200 million to the Yukon government by the Canadian participants in the Alcan project and instead tied the Yukon's socioeconomic impact financial requirements to the level of Yukon property taxes paid by the pipeline. In effect, the pipeline will pay taxes to the Yukon government which may, if it chooses, use this tax revenue stream to obtain a \$200 million loan. Under this arrangement, the Yukon government could meet the revenue needs associated with its desired level of socioeconomic impact assessment, but the cost to U.S. consumers would be reduced because taxes are expensed (not included in the rate base) whereas a \$200 million prepayment would be included in rate base and would, therefore, receive a rate of return in addition to the cost of debt service.

The United States-Canada pipeline agreement establishes the tax liability of the pipeline in the Yukon Territory. The agreed rate of property taxation, according to the administration, "would be levied at the same rate as the property tax in Alaska." Specifically, the Yukon pipeline property tax will be set at \$30 million in 1983 and will increase thereafter at the rate of inflation, as measured by the Canadian GNP deflator. The agreement also provides for an increase in the \$30 million initial tax level in 1983 if the Alaskan pipeline tax rate increases between the date of the agreement and January 1, 1983. The \$30 million would be adjusted by the same percentage increase as any pipeline property tax increase in Alaska. Any Alaskan pipeline property tax increase after 1983 would, if it exceeded the increase in the Canadian GNP deflator, supercede the deflator increase as the basis for adjusting the increase in pipeline property taxes.

The committee was troubled, however, by a third "float" on the rate of increase in Yukon pipeline property taxes as set out in the agreement. This "float" provides that the Yukon pipeline property tax may increase with the percentage increase, after 1983, in aggregate per capita tax revenues (other than pipeline tax revenues) derived from all other property taxes collected by any Yukon governmental authority. Any grants to local governments by the Yukon government are treated as revenues for purposes of calculating the percentage increase. Should this rate of increase be greater than either the increase in the Canadian GNP deflator or the Alaskan pipeline tax rate, the Yukon pipeline property tax would increase at this higher rate.

It is significant that this third "float" on Yukon pipeline taxes is, unlike the other two "floats", subject to the control of the Yukon government. An imaginative Yukon Minister of Finance could raise local (nonpipeline) property taxes in a politically acceptable manner by recycling those tax revenues in the form of expanded services or perhaps even direct assistance. This increase in tax revenues would permit an equivalent percentage increase in pipeline taxes. The Yukon budget is currently about \$90 million per year. Hence, pipeline tax revenues will provide roughly one-fourth of Yukon revenues and revenue increases from 1983 onward.

The potential risks that this tax structure might impose on U.S. consumers were probed at considerable depth during committee hearings. The committee first sought to identify how much of the Yukon pipeline property tax would be borne by U.S. consumers. The agreement addresses this issue. Unless and until the Dempster Line is built, 100 percent of Yukon pipeline taxes will be paid by U.S. consumers because only U.S. gas will be flowing. The agreement (paragraph 5(b)(iii)) provides that if the Dempster Line is built, the \$30 million plus escalation tax formula would no longer determine the maximum Yukon pipeline property tax rate. Instead, the completion of a second large natural gas pipeline in the Yukon would cause the Transit Pipeline Treaty to come into play, and the Yukon government would be free to tax both the main pipeline and the Dempster line at whatever level it desires, subject only to the constraint that the effective tax rates be nondiscriminatory.

The Administration believes that Canada will have a strong incentive to keep taxes low on the Dempster Line (and therefore low on the main pipelines) in order to make the economics of Mackenzie production as favorable as possible. But the committee expressed some doubt as to whether the Yukon government would yield to this pressure. The Mackenzie Delta is in the Northwest Territories, so the Yukon doesn't have significant incentive to keep pipeline costs down in order to maximize producer and royalty revenues. The Yukon's only natural gas-related revenues will be from the pipeline. Hence, Yukon authorities may perceive their self-interest to be served by setting pipeline taxes as high as possible, subject only to the constraint that the taxes be low enough to permit wellhead prices adequate to cover exploration and development costs in the Mackenzie region.

Therefore, while the Administration argues that the Dempster Line will assure reasonable property taxes on the main line, there are no guarantees this will occur. In fact, removal of the pipeline tax ceiling by construction of the Dempster Line may permit the Yukon to move to even higher tax rates on the main line.

The committee also expressed concern over the generous per capita level of pipeline taxation in the Yukon Territory. In particular, there are 21,800 people living in the Yukon. With this population, \$30 million per year pipeline property tax would yield \$1,380 per capita, or more than \$5,000 for a family of four. For at least the first several years, and perhaps thereafter, the total payment of these amounts will be made by U.S. consumers.

The committee was informed that the \$30 million taxation level yields a Yukon tax rate per mile that is less than in Alaska. But since pipeline construction costs and therefore replacement value is considerably less in Canada, the Yukon pipeline tax scheme contained in the agreement cannot be justified solely on the grounds that the result is equivalent to Alaskan pipeline taxes. The committee views the \$30 million tax reference as a negotiated figure that has not been adequately cost-justified. U.S. negotiators may have agreed with the Lysyk Report's view that "funding from the pipeline company should not only enable Yukon communities to react to the stresses and strains associated with the construction of the pipeline, but that it should provide cash for purposes that may not be directly related to these effects."

The committee wishes to state its objection to this view. To the extent that the Yukon economy and revenue requirements grow in the future, this cost should be borne by Yukon residents. It is unreasonable to place financial responsibility for Yukon growth upon U.S. consumers.

A final area of committee concern regarding Yukon taxation is that the agreement does not prohibit the Yukon government from manipulating its internal spending patterns in order to maximum the revenue stream provided by pipeline taxes. Discussions between subcommittee staff and negotiators from both the United States and Canada, subsequent to finalization of the agreement, revealed that this issue was substantially, if not entirely, overlooked during the negotiations. In response to committee suggestions that the agreement invites the Yukon government to invent new spending programs financed largely by U.S. consumers, the administration provided the following exchange of letters between the United States and Canada. The letters, in effect, confirm that Canada will take "due account of any unusual benefits returned to the property taxpayers" in the Yukon and, presumably, will compel the Yukon government to lower pipeline property taxes if Yukon spending grows "unreasonably."

EXECUTIVE OFFICE OF THE PRESIDENT,
ENERGY POLICY AND PLANNING,
Washington, D.C.

His Excellency PETER TOWE,
Ambassador of Canada,
Washington, D.C.

DEAR MR. AMBASSADOR: With reference to subparagraphs 5b(iv) and 5b(v) of the Agreement between Canada and the United States of America on principles applicable to a northern natural gas pipeline, we would appreciate your confirmation of our understanding that those provisions are intended to cover situations where there has been an increase in the Yukon property tax on the pipeline less than proportionate to the increase in revenue derived from the specified property taxes and grants and that the total revenue would be reasonably required for the Governmental needs of the Yukon Territory.

Accordingly, calculations relating to the specified property taxes and grants will be made in the spirit of the foregoing, and due account will be taken by governments of any unusual benefits returned to the property taxpayers.

Sincerely,

JAMES R. SCHLESINGER.

CANADIAN EMBASSY,
AMBASSADE DU CANADA,
Washington, D.C., October 6, 1977.

HON. JAMES R. SCHLESINGER,
Secretary of Energy,
The White House, Washington, D.C.

DEAR MR. SECRETARY: I refer to your letter of October 3 with reference to subparagraphs 5(b)(iv) and 5(b)(v) of the Agreement on Principles Applicable to a Northern Natural Gas Pipeline, and I am pleased to confirm our understanding as set forth therein.

Yours sincerely,

PETER M. TOWE, *Ambassador.*

Unfortunately, the understanding reached in this exchange of information will be difficult to implement. Committee members suggested that the Canadian Federal Government might not be willing or able to distinguish between Yukon spending programs that are reasonable from those that are contrived to increase pipeline tax revenues. May the Yukon government implement a housing allowance program? A food stamp program? A minimum income direct cash assistance program? These programs would drastically raise the level of Yukon pipeline tax revenues if financed by Yukon property taxes or Territorial loans. Yet all are reasonable if judged against existing and proposed programs in the United States.

In addition, if the Yukon government borrows money, such as the \$200 million contemplated in the Lysyk report, and then transfers such funds to municipalities or "local improvement districts," such grants would factor into the revenue base used for calculating maximum pipeline tax increases. In other words, the Yukon government could leverage its pipeline property tax increases with debt, financed largely by those same increases.

(C) UNLIMITED LIABILITY

The agreement provides that U.S. shippers pay most or all of the pipeline cost of service in Zone 11, which will carry only Canadian gas between Whitehorse and Dawson City. U.S. participation in the payment of the cost of service in Zone 11 was agreed to by the U.S. in return for the Canadian agreement to construct the pipeline on a southern route through the Yukon along the Alaska Highway rather than on a northern route through Dawson City and along the Klondike Highway. This northern route, recommended by the Canadian NEB to facilitate deliverability of Mackenzie Delta gas, would have been more expensive to build than the southern route. In return for the reduced cost of service on the main line, the United States has agreed to pay most or all of the cost of service on the Canadian line running from the main line, at Whitehorse, to Dawson City.

The committee does not object to the intent of the agreement to share with Canada the benefits of a lower cost southern route through the Yukon. The committee is concerned, however, that there is no limit to the dollar liability of the United States for the Whitehorse to Dawson spur. The agreement provides that the U.S. share of the cost of service for this spur could be 100 percent and in no event less than 66 $\frac{2}{3}$ percent. The committee believes that it would have been prudent to set U.S. liability at a maximum dollar limit, thereby placing a more effective incentive on the Canadian companies to keep costs down on the Whitehorse to Dawson spur. The present agreement, in effect, provides an open-ended subsidy to Canadian companies regardless of the efficiency of their performance.

(D) COST OF SERVICE

The President's decision estimates the 20-year average transportation cost of service on the Alcan system to be \$1.04 per million Btu's in 1975 dollars. It is important to recognize that the actual cost of service will vary over time. The transportation cost of service in 1983, for example, is estimated to be \$1.96 in 1975 dollars. As the pipeline is amortized, the cost of service will drop. In the year 2003 the cost of

service is \$.57 in 1975 dollars. The following chart provides cost of service estimates in constant 1975 dollars and in nominal (inflated) dollars over the first 20 years of service.

COST OF SERVICE

[Million Btu]

Year	1975	Nominal at 6 percent per year inflation
1983.....	\$1.96	\$3.12
Average:		
1983-88.....	1.71	3.15
1988-93.....	1.13	2.79
1993-98.....	.77	2.54
1998-2003.....	.57	2.52

The price of natural gas delivered to shippers in the lower 48 States will consist of three components: (1) the wellhead cost of the gas; (2) the cost of processing the gas to make it suitable for pipeline transportation; and (3) the cost of service for pipeline transportation. The President's decision intends Alaskan gas to be priced pursuant to the provisions of H.R. 8444 as "old gas under new contracts" at a price of \$1.45, plus inflation, per million Btu's.

Processing costs have not been clearly identified. During hearings, the cost of processing was estimated by various witnesses to range anywhere from \$.20 to \$.90 per million Btu's. Administration analysis, based on 1975 data, calculates the cost of processing as \$.325 per million Btu's in 1975 dollars. On the basis of these assumed costs, the following prices of gas delivered to shippers in the lower 48 States would result:

COST OF GAS TO SHIPPERS

Year	1975	Nominal at 6-percent inflation
1983.....	\$3.74	\$5.96
Average:		
1983-88.....	3.49	6.43
1988-93.....	2.91	7.18
1993-98.....	2.55	8.42
1998-2003.....	2.35	10.38

The delivered price of gas to final consumers has historically averaged about \$1 per million Btu's above pipeline acquisition cost. Therefore, another \$1 should be added to the above shipper cost calculations to reflect typical consumer costs of Alaskan natural gas.

Delivered prices of Alaskan gas in the range of \$7 per million Btu's in 1983 raise obvious questions of marketability. Number 2 fuel oil, even assuming a 10 percent per year rate of price increase, would cost about \$5.30 per million Btu's, significantly less than Alaskan natural gas. Unless Alaskan gas is incrementally priced, or unless natural gas prices are deregulated, the marketability of this high cost Alaskan gas will be enhanced by rolling it in with lower-priced conventional gas produced in the lower 48 States. Moreover, even at \$7 in 1983, Alaskan gas may well prove considerably less expensive than synthetic natural gas or imported liquefied natural gas.

(E) FINANCING

The form of tariff paid by gas consumers is particularly central to financing the project privately. The project applicants originally requested an "all events, full cost of service" tariff. This tariff would have reimbursed the project company for its costs, including the return on and of equity, under any and all possible circumstances, including noncompletion. It was argued that such a tariff was necessary to induce sufficient private lending for this project.

Alcan's financial advisers have recently concluded that such a tariff will not be necessary. Alcan states that it is prepared to finance its project with a tariff commencing only after the project has been completed. One of Alcan's financial advisers testified that Alcan does not seek a tariff which solves all questions of ultimate financial responsibility by pushing them over on the shoulders of the consumer.

The committee finds no evidence to suggest that the Alcan project cannot be financed with a minimum bill tariff which does not provide for a return on equity during periods of supply interruption on the system. A minimum bill tariff will ensure that there is an incentive on the part of the owners of the pipeline to operate it in a prudent and efficient manner.

In addition, the committee wishes to reaffirm the President's requirement that the Alcan project be financed without any participation or guarantees by the Federal Government. The committee views the matter of private financing as a critical feature of the President's decision and, accordingly, intends to stay well-informed regarding the progress of the financing of the Alcan system.

(F) VARIABLE RATE OF RETURN ON EQUITY

The agreement with Canada commits both Governments to use a variable rate of return on pipeline company equity capital as an incentive device to avoid cost overruns. Under this arrangement, a higher than usual rate of return on pipeline company equity capital is allowed in the cost of service if the company is able to meet or better its estimates of capital costs for the project. Conversely, a lower than usual rate of return on equity is provided for if the project overruns its capital cost estimates. The details of the variable rate of return remain to be worked out by the FERC and the Canadian National Energy Board.

The infirmity of the agreement with Canada on a variable rate of return is that it lacks the degree of specificity required to qualify it as an incentive to reduce costs and to justify the Administration's reliance upon it as a meaningful incentive to avoid cost overruns. The Committee does not know whether the variable rate of return mechanism would be operative only during the construction period or whether it would be operative throughout the life of the project. Likewise, the committee does not know how much the rate of return would vary with cost overages or underages. It is axiomatic that a range of rate of return of 16 percent for cost underages and 15 percent for cost overages applicable only during the construction period is much less of an incentive than a range of rate of return of 16 percent for cost underages and 10 percent for cost overages applicable throughout the life of the project. The Administration now states that its

current thinking is that the variable rate of return mechanism should only be operative during the construction period. Thus, until the details of the variable rate of return concept are developed further, it is extremely difficult to assess its effectiveness as an incentive to avoid cost overruns and the reliance placed on it by the Administration may be exaggerated.

(G) FEDERAL INSPECTOR AND THE EXECUTIVE POLICY BOARD

The President's decision proposes that the Federal Inspector possess field-level supervisory authority over enforcement of the terms and conditions imposed by the Federal agencies having statutory responsibilities over various aspects of the Alaskan natural gas transportation system. The supervision of the Federal Inspector will be delegated to an Executive Policy Board made up of the Secretaries of Interior, Energy, Transportation, the Administrator of the Environmental Protection Agency and the Chief of the Army Corps of Engineers. The Chairman of the Federal Energy Regulatory Commission is conspicuously absent from membership on the Executive Policy Board. The committee anticipates that the terms and conditions attached to the certificate of public convenience and necessity issued by the FERC will constitute a significant element of the project. Inasmuch as the Federal Inspector can overrule any FERC initiatives to enforce the terms and conditions of its certificate of public convenience and necessity, it is the committee's belief that, at a minimum, the FERC should be formally represented on the Executive Policy Board.

The committee expects and anticipates that the Federal Inspector and the Executive Policy Board will cooperate fully with the committee in the exercise of its oversight responsibilities with respect to the Alaskan natural gas transportation system.

(H) DELIVERABILITY OF NATURAL GAS FROM PRUDHOE BAY

According to the FPC's May 1, 1977 recommendation to the President:

Most studies conclude, and the producers' recent reservoir management plan states, that sales of at least 2.0 Bcfd can be made without adversely affecting the ultimate recovery of oil and gas from the field. (p. I-16).

Accordingly, the FPC concluded that "it is reasonable to assume 2.0 to 2.5 Bcfd from Prudhoe Bay oil pool within 5 years after the commencement of oil production." (p. I-17).

On June 1, 1977, the State of Alaska's Division of Oil and Gas Conservation concluded the following:

The plan of operations proposed by the applicants which includes average annual offtake rates of 1.5 million barrels per day for oil plus condensate production and 2.7 billion cubic feet per day for gas are consistent with sound conservation practices based on currently available data.

After the field and local fuel requirements and the removal of carbon dioxide and liquids from the produced gas, it is

estimated that a gas production rate of 2.7 billion standard cubic feet per day will yield 2.0 billion standard cubic feet per day of pipeline quality gas.

The offtake rates approved by the committee at this time must be established without the benefit of production history. Therefore, these offtake rates may be changed as production data and additional reservoir data are obtained and analyzed.

In its report on supply, demand and energy policy, the FEA states that:

* * * the U.S. Geological Survey of the Department of the Interior concurs with * * * the FPC findings on gas production potential for Alaska's North Slope * * *. Because of the lack of field production experience, assessments of reservoir behavior involve some uncertainty. The unit production plan submitted to the State of Alaska by the Prudhoe Bay producers requests authorization for the sale of a minimum 2.0 bcfd of gas to a pipeline, on the ground that such sales can be made without a significant reduction in oil recovery over the life of the field * * *. There is a small risk that gas deliveries from the Prudhoe Bay oil pool would have to be reduced after production has begun, but that risk is considered negligible, particularly as other reserves are available to make up any possible shortfall from the main pool. (pp. 1, 2).

The FEA report quotes from a report by H. K. van Poolen and Associates, Inc. to the State of Alaska as follows:

The offtake rates of 1.5 million barrels for oil and 2.0 bcfd for gas sales, as proposed in the plan of operations submitted to the State by the operators, appear to maximize the oil recovery according to the results of this study.

The FEA report states that:

In summary, van Poolen's simulation studies for the State and statements by the operators at the unit hearings support the position that injection of produced gas into the reservoir for longer than five years will not further increase ultimate oil recovery. No contrary data has been presented. (p. 14).

The FEA and the DOI accepted the estimates of 2.0 bcfd of gas sales from the Prudhoe Bay pool.

The President's decision states that:

The certain increase in supply from an Alaska gas project is estimated to be 0.7 Tcf per year (2.0 bcfd) by 1985. By 1990, a volume greater than 0.9 Tcf per year (2.4 bcfd) might be produced. (p. 90).

Prudhoe Bay production at 2.4 bcfd of gas will include production from other reservoirs which have been identified in the field, the Kuparek and the Lisburne. (p. 89).

Despite the speculative nature of the decision's deliverability estimate of 2.4 bcfd for 1990, all of the capital cost and cost of service data assume that the input volumes of gas will be 2.4 bcfd for the United

States for the life of the project (pp. 162, 173). Should the administration's optimistic, albeit reasonable, deliverability estimate of 2.4 bcfd not materialize, and 2.0 bcfd is delivered to the Alcan pipeline, the administration's unit cost figures would have to be increased by approximately 20 percent.

The Federal Energy Regulatory Commission (FERC) concurs in and supports the views and conclusions related to gas supply expressed in the President's decision and report.

The committee is aware that Mr. Todd M. Doscher, has recently testified that there was

a danger that a decision now to construct a pipeline to withdraw gas from the Prudhoe Bay field will reduce the total amount of oil that may ultimately be recovered from the Sadlerochit Reservoir.

Mr. Doscher stated that the conclusion of the operators that

early gas withdrawals will not diminish oil recovery is in contradiction to the lore of reservoir engineering

and that

[n]o one will know for at least 2 and perhaps 5 years from now how effective the expanding gas cap is in displacing crude oil and therefore whether gas can be safely withdrawn from the reservoir without affecting the ultimate recovery of crude oil.

Mr. Doscher raised the possibility that should the pipeline be constructed at this time and should it subsequently become clear that early gas withdrawal will reduce the recovery of crude oil, the Nation would have an expensive white elephant on its hands. Finally, Mr. Doscher said that pipeline construction should be deferred because other sources of natural gas would be available at prices significantly less than the cost of Prudhoe Bay gas and because a delay in withdrawal would allow Alaskan gas to be used for superior purposes.

Representatives from Exxon U.S.A., Atlantic Richfield and Sohio testified before the committee and were asked to respond to Mr. Doscher's testimony. Mr. L. G. Rawl, executive vice president of Exxon testified that Mr. Doscher's testimony was "very poorly done and not based on sufficient study." Mr. C. O. Goldsmith, vice president financing for Atlantic Richfield testified that Arco had a "high degree of confidence in its predictions of the Prudhoe Bay reservoir performance" and that "from a reservoir performance standpoint, early gas sales would be noninjurious." Both Exxon and Arco witnesses testified that they were anticipating 2.0 bcfd of deliverability from Prudhoe Bay. These same producers, however, were unwilling to guarantee the delivery of 2.0 bcfd to the Alcan pipeline system.

The committee finds that the preponderance of evidence indicates that it may be reasonably anticipated that deliveries of natural gas from the Prudhoe Bay Reservoir will amount to 2.0 bcfd. The committee recognizes that actual field production data is needed to check the validity of the various natural gas deliverability estimates. Thus, it is anticipated that the FERC will so condition its certificate of public convenience and necessity issued to Alcan that, should actual

field production data indicate a deliverability of natural gas incompatible with Alcan's proposed facilities, the public interest will be adequately protected.

(I) ENVIRONMENTAL FINDING OF THE COMMITTEE

The committee finds that the environmental impact statement submitted by the President is legally and factually sufficient.

VI. CHANGES IN EXISTING LAW

House Joint Resolution 621 does not change any existing law.

VIII. AGENCY REPORTS

No formal agency reports have been received by the committee relating to House Joint Resolution 621.

VIII. BUDGETARY OUTLAYS

In accordance with clause 7(a) of Rule XIII of the Rules of the House of Representatives, the committee estimates that no additional budgetary costs will be incurred as a result of the adoption of House Joint Resolution 621.

IX. COST ESTIMATE

House Joint Resolution 621 does not authorize the expenditure of any Federal moneys. The only authorizations currently associated with the construction of an Alaskan natural gas transportation system derives from the Alaska Natural Gas Transportation Act of 1976 which provides for the appointment of a Federal Inspector. Costs associated with the Federal Inspector were estimated in 1976 by the Congressional Budget Office to be \$4.5 million for fiscal year 1978 and the same amount for each of the next 5 fiscal years.

X. INFORMATION SUBMITTED PURSUANT TO RULES X AND XI

A. Pursuant to clause 2(b)(2) of rule X of the House of Representatives, the committee states that no Report has been received from the Committee on Government Operations respecting oversight findings and recommendations.

B. Pursuant to clause 2(b)(1) of rule X, no oversight findings and recommendations with respect to House Joint Resolution 621 have been made by the Subcommittee on Oversight and Investigations of the Committee on Interstate and Foreign Commerce.

C. No new budget authority for fiscal year 1978 is provided.

D. Pursuant to clause 2(1)(4) of rule XI, the committee concluded that there will be no measurable inflationary impact on the national economy. The Report accompanying the President's decision indicates that the net national economic benefit (NNEB) over the life of the proposed pipeline project is \$5.7 billion. This benefit is measured as the difference between the resource cost of the project and the resource cost of alternate fuel displaced by Alaskan natural gas deliveries made

possible as a result of the pipeline project. The positive NNEB indicates that long-run consumer costs of delivered energy will be lower if Alaskan natural gas is made available than if the Alcan pipeline were not built. So the economic impact of House Joint Resolution 621, to the extent that it facilitates construction of the President's decision, will be slightly anti-inflationary.

In addition, the committee concludes that private capital markets can accommodate the capital requirements of the project without any measurable increase in interest rates.

MINORITY VIEWS ON HOUSE JOINT RESOLUTION 621—
RESOLUTION APPROVING THE PRESIDENTIAL DECISION
ON AN ALASKA NATURAL GAS TRANSPORTATION
SYSTEM

The question of approving this resolution to permit construction of a natural gas pipeline from Alaska through Canada to bring Alaskan natural gas to the Midwest of the Lower 48 States poses a "Hobson's choice" issue on which it will be almost impossible to cast a "right vote."

This 4,787-mile project will be the ninth wonder of the world (if you consider the Alyeska oil pipeline as the eighth), and it will cost accordingly. The most conservative cost estimate is \$9.3 billion—by comparison to the original cost estimate in 1968 of \$900 million for the 800-mile Alyeska line that finally wound up costing \$8 billion before it was completed in 1977. But updated estimates of the Alaskan natural gas pipeline have suggested it could cost as much as \$13 to \$15 billion based on anticipated cost overruns and conservatively predictable inflation between now and the prospective 1983 completion date.

The prospective builders and operators of this pipeline have already indicated their inability to finance this amount without help from some other source of revenues than their own. Financing from private money markets in the United States or Canada may be difficult, they have indicated, because of both the size of the undertaking and the almost total dependence on the cooperation of several governments to assure the economic viability of the project. Depending on the constancy of one government is risky enough, but when both United States and Canadian National Governments are thrown in, along with the provincial and territorial governments in Canada that are much more autonomous than the State governments in the United States, the risks tend to multiply. Each Government will have right-of-way and licensing controls over the building of the line in its jurisdiction, as well as taxing and tariff control over the use of the pipeline in its area when completed, according to the treaty agreement between Canada and the United States. Thus the impact of future costs which could affect the price of the gas to the consumer is almost unpredictable at this point.

Also unpredictable is the allowable Alaskan wellhead price that will be set by the Federal Energy Regulatory Commission (FERC). Under present law permitting the establishment of wellhead prices for natural gas, the level of that price will determine the return on investment of the three companies which have been most responsible for the development of oil and gas resources in Alaska. Spokesmen for the present administration have hinted broadly that a more generous wellhead price might be permitted if the State of Alaska (which would benefit from royalties on the gas sold) or the three corporations producing most of the Alaskan gas (Exxon, Arco, and Sohio) would undertake to guarantee the loans of the consortium of pipeline companies which wishes to build and operate the Alaskan gas pipeline.

At first blush this may appear to be an easy way out of the financing problem. But the three producers have the same healthy mistrust of Federal Government regulation and control that other potential private financiers have and have unanimously said they want no part of any such guarantor role—particularly since it is envisioned that they would have no say in the construction or operation of the pipeline. (The three companies are part of the consortium which built and operates the Alyeska oil pipeline, and its overruns in construction cost them heavily. Now the Interstate Commerce Commission has ruled that their return on investment in operating the pipeline is not to be permitted to be as high as the return of usual pipeline owners. Rather than be so stung again—particularly without any controls over construction and operation—they have said, “No, thank you.”)

And two of the companies have indicated that they could not guarantee the loans for construction of the pipeline even if they wished to. Arco testified that its legal obligations to preferred stockholders make its corporate charter prohibit carrying any more debt than it now has obligated (primarily as a result of its past Alaskan resource development borrowing); and Sohio testified that its debt obligations (also primarily for Alaskan development) are so high now that its guarantee of such a substantial loan might cause the collapse of its whole credit structure. The third company (the largest in the United States) testified that it has neither legal limitations nor debt leverage problems which would prohibit its participation in loan guarantees of the debt of others for the pipeline, but in its judgment it would be imprudent to do so because of the heavy dependence on the quixotic nature of Government regulation that would be involved.

Officials of the State of Alaska have also testified they doubt that the legislature of their State can be persuaded to obligate Alaskan taxpayers to guarantee the financing of the pipeline. Their reasoning seemed to follow the same logic as the producing companies: Without any participation in the project through control of construction decisions, the prospect of massive cost overruns, absent participation in management of the finished gas line and with no assurances about prices and tariffs, they simply conclude that the risks are too great to obligate their taxpayers.

This leaves the alternative of letting taxpayers of the whole United States guarantee the loans for financing the pipeline or obtaining assurances in advance from the Governments involved that the tariffs to be paid by consumers of gas from the pipeline will be high enough to guarantee adequate returns to pay off guarantors of the pipeline loans no matter what.

Now this is why it becomes difficult for Members of Congress to vote right on this resolution. If no one else will guarantee the possible \$15 billion cost of this project, do Members want to commit to this project now and then vote to require their constituents to guarantee the loans? Administration officials testified they have no intention of asking U.S. taxpayers to guarantee the project—any more than Alaskan officials intend to commit their taxpayers or producing companies want to obligate their stockholders. In fact, the President's September 1977 *Decision* on the pipeline on page 36 says that among the terms and conditions attached to his choice of this pipeline route is the assurance that “the successful applicant shall provide for private

financing of the project." However, on page 118 of the *Decision* it is suggested that private financing will be possible if the producers of the gas in the State of Alaska participate in the financing of the project "most likely in the form of debt guarantees." This recommendation flies in the face of the July 1977 Report of the Attorney General to the President of the United States on the pipeline which said, on page 2, "participation, in any form, in the transportation system by producers * * * should be prohibited." But by the time the President's *Decision* was published in September, it was possible to include in it an August 9 letter to the White House energy staff from the Justice Department which stated:

We understand that gas producer participation in financing of the selected project may be essential to the success of the project. We believe, therefore, that consistent with our recommendations producers could be involved in the guarantee of a portion of the project debt.

The necessity to choose a route and system for delivery of Alaskan natural gas arose from the fact that three different groups sought to bring the gas to the Lower 48 States by different routes. One was the Arctic Gas consortium, made up of nine pipeline companies,¹ which wanted to bring the gas from Alaska east to the Canadian Arctic gas area and thence south and east along the McKenzie River and through central Canada. This route had both environmental, native land and cost problems because it involved crossing designated wildlife areas, et cetera. The other route was south along the Alyeska oil pipeline through Alaska to Valdez and into ships to bring the gas into ports in the Western United States. This so-called All American route also had cost problems which its sponsors² conceded might have required loans to be guaranteed by the Federal Government. But that route would have obviated the Canadian-United States treaty which was criticised in our hearings for being so loosely drawn as to allow the Canadians great discretion in setting a tariff for their part of the pipeline.

Without some delivery system for the Alaskan gas, it will not be available for use in the Lower 48 States which badly need it as a result of the shortages which have developed in the interstate market in the past few years of Federal price regulation. But one also has to wonder whether this costly Alaskan pipeline might not have to be built now if the price of all domestic natural gas were deregulated. If such deregulation encouraged production of supplies adequate to fill all the existing pipelines in the Lower 48, it might be many years before the question of financing the ninth wonder of the world would have to be answered.

SAMUEL L. DEVINE.
CLARENCE J. BROWN.
JAMES M. COLLINS.
EDWARD R. MADIGAN.
W. HENSON MOORE.
DAVE STOCKMAN.

¹ Northern Natural, Columbia Gas, Texas Eastern, Panhandle Eastern, Peoples, American, Tenneco, Southern, El Paso.

² Northern Natural, Columbia Gas, Texas Eastern, Panhandle Eastern, Peoples, American, El Paso, Tenneco, Southern, United, Northwest.

SUPPLEMENTAL VIEWS OF HONORABLE W. HENSON MOORE

I support passage of this resolution because I support the building of the Alcan gas pipeline. I hasten to warn, however, that our support of this resolution should not be interpreted by anyone now or later as being support for the building of this pipeline regardless of how it is financed.

On page 127 of the President's report to the Congress which this resolution approves, the last sentence on the subject of financing reads as follows: "Federal financing assistance is also found to be neither necessary or desirable, and any such approach is herewith explicitly rejected." Therefore, the action of the House in approving this resolution is approving that specific language of this report as to the involvement of the Federal Government in financing the construction of this pipeline.

I am very skeptical that this pipeline can be constructed with private financing due to the governmental regulation of the price of the product being carried in the pipeline and the operation of the pipeline itself. These two factors are so depressive, that the small amount of private capital available today will not be attracted to this project. That being the case, the corporations constructing the pipeline will surely turn to Congress seeking Federal grants, loans, or loan guarantees. Any such Federal participation is not necessary. If this pipeline cannot be financed with private capital, it is due to excessive governmental regulation. The solution is not further Federal involvement (Federal financing), but less (regulatory reform).

Therefore, we should vote for this resolution, we should build the pipeline without Federal financing, and we should do whatever is necessary to insure the availability of private financing. I fear though that we shall soon see the day when a request for Federal money is presented to us, and we should not vote for this resolution without a clear commitment that we do not intend now or later to have the Federal Government participate in the construction of this pipeline.

W. HENSON MOORE.