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AGREEMENT

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COOPERATIVE AGREEMENT
FOR DESIGN AND ENGINEERING
OF ALASKA GAS PIPELINE AND CONDITIONING PLANT

BETWEEN

The Alaskan Northwest Natural Gas
Transportation Company, a partnership of:

Northwest Alaskan Pipeline Company
Northern Arctic Gas Company
Pan Alaskan Gas Company
Calaska Energy Company
Pacific Interstate Transmission Company
United Alaska Fuels Corporation
American Natural Alaskan Company;

AND

Prudhoe Bay Natural Gas Producers

AND

The State of Alaska

June 1980

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COOPERATIVE AGREEMENT
FOR DESIGN AND ENGINEERING
OF ALASKA GAS PIPELINE AND CONDITIONING PLANT

This Cooperative Agreement (this "Agreement") is made and entered into by the undersigned parties ("Parties") consisting of the Alaskan Northwest Natural Gas Transportation Company ("Partnership") represented herein by its general partners; those persons herein identified and referred to as "Producers", which term means the owners and affiliates of owners of interests in natural gas produced from the Prudhoe Bay Unit of Alaska; and the State of Alaska.

PRELIMINARY RECITALS

X The Partnership owns a conditional certificate of public convenience and necessity issued by the Federal Power Commission (now the Federal Energy Regulatory Commission, the "FERC") in its Order of December 16, 1977, Docket No. CP78-123, et al., for the construction and operation of that portion of the Alaska Natural Gas Transportation System ("ANGTS") which is to be located within the State of Alaska. The Partnership has certain rights and obligations under and by virtue of such certificate, the Alaska Natural Gas Transportation Act of 1976 ("ANGTA"), and the "Decision and Report to Congress on the Alaska Natural Gas Transportation System" ("Decision") issued by the President on September 22, 1977 and subsequently ratified by Congress, which will continue without being affected by this Agreement. The Partnership's objective is to complete construction and commence operation of the ANGTS by November 1, 1985.

The Producers own interests in the natural gas produced from the Prudhoe Bay Unit of Alaska.

The purpose of this Agreement is to describe the terms and conditions under which the Parties shall participate in the design, engineering, construction planning, data gathering and cost estimating of the gas pipeline and the gas conditioning facilities to be constructed within the State of Alaska. For convenience and ease of reading, such pipeline and plant facilities are sometimes referred to collectively herein as the "Project", but such reference shall not be considered for any other purpose.

NOW THEREFORE, in consideration of their common desire to expedite and facilitate the construction and operation of the Project and in consideration of the mutual covenants herein contained, the Parties hereto agree as follows:

ARTICLE I Definitions

1.1 Effect of Definitions.

Unless otherwise required by the context, the terms defined in this ARTICLE I or elsewhere in this Agreement shall have the respective meanings assigned to them.

1.2 Terms.

1.2.1 Affiliate. Any person which, directly or indirectly, through one or more intermediaries controls or is controlled by or is under common control with another person. The Partnership is not an "Affiliate" of any Partner, nor is any Partner an "Affiliate" of the Partnership.

1.2.2 Alaska Natural Gas Transportation System or ANGTS. The natural gas transportation system to be constructed and operated to transport natural gas from Alaska and Canada to the contiguous United States.

X 1.2.3 AFUDC. Allowance for funds used during construction.

1.2.4 Capital Account. The total Capital Investment credited to the account of a Party in accordance with this Agreement, exclusive of any AFUDC which may be reflected on a memorandum basis or otherwise for various purposes of this Agreement.

1.2.5 Capital Investment. The contributions made by a Party pursuant to ARTICLE IV hereof.

1.2.6 Design and Engineering. All of the activities within the scope of this Agreement, including design,

engineering, construction planning, data gathering and cost estimating.

1.2.7 Design and Engineering Board or Board. The Board provided for in ARTICLE V hereof, the "Board".

1.2.8 Operator. The Operator provided for in Section 5.12 hereof.

1.2.9 Partnership Agreement. The General Partnership Agreement effective as of January 31, 1978, as amended on the effective date hereof, for the Alaskan Northwest Natural Gas Transportation Company, a partnership formed under the laws of New York.

1.2.10 Partnership. The Alaskan Northwest Natural Gas Transportation Company formed under the Partnership Agreement.

1.2.11 Partnership Commitment Date. The date as of which the Partnership Commitment Agreement (as that term is defined in the Partnership Agreement) shall have become effective by its terms.

1.2.12 Party. The Partnership, each of the Producers which executes this Agreement and the State of Alaska.

1.2.13 Person. Any individual, corporation or public entity; and the term is used herein without capitalization, as "person".

1.2.14 Pipeline. The gas pipeline and related transportation facilities to be constructed in the State of Alaska as a part of the ANGTS; and the term is used herein without capitalization, as "pipeline".

1.2.15 Plant. The gas conditioning facilities to be constructed in the State of Alaska to condition gas for transportation by the ANGTS; and the term is used herein without capitalization, as "plant".

1.2.16 Plant Commitment Date. The date as of which the participants in the ownership of the plant commit to provide the funds necessary for the construction of the plant; in the absence of any written agreement establishing such commitment, such commitment shall be deemed to have been effected on the first date on which such participants contribute funds for on-site building of the plant or the purchase of the materials and supplies necessary for such building.

1.2.17 Project Advisor. Each person so designated as provided in Section 5.10.

1.2.18 Project Management Contractor. The person or persons having responsibility for performance of Design and Engineering under a Project Management Contract.

1.2.20 Sponsor. A Partner as defined in the Partnership Agreement.

1.2.21 Project. The pipeline and the plant.

ARTICLE II Work to be Performed

2.1 Scope of Agreement.

During the term of this Agreement, the Parties shall assume (a) the responsibilities of the Partnership delegated pursuant to Section 2.2 with respect to the Design and Engineering for the pipeline and (b) the responsibility for Design and Engineering for the plant. The Board may further define the scope of the Design and Engineering to be accomplished under this Agreement.

2.2 Access to Data; Assignment and Delegation from the Partnership.

The Partnership hereby agrees that, prior to the first to occur of payment by Producers of Capital Investments

aggregating \$70,273,000 pursuant to Section 4.1 or the termination of this Agreement, each other Party, except the State of Alaska, may avail itself for the purposes of this Agreement of all benefits, assets and data (subject to any obligations which are related thereto) which have accrued to the Partnership as a result of expenditures to date by the Partnership for Design and Engineering for the pipeline. Effective upon such payment by Producers, the Partnership hereby assigns to the Parties, except the State of Alaska, in undivided interests, the right to use all such benefits, assets and data. By this Agreement, and to the limited extent herein set forth, the Partnership delegates to the Parties, except the State of Alaska, for the term of this Agreement, the responsibility for Design and Engineering for the pipeline which is hereafter to be accomplished. Each of the Parties shall own an undivided interest equal to its percentage share of total participation under this Agreement in all Design and Engineering for the Project hereafter accomplished under and during the term of this Agreement.

2.3 Effect of Assignment and Delegation.

Neither the assignment and delegation set forth in Section 2.2 nor any other provision of this Agreement shall impair or limit the rights of the Partnership or any successor thereto to use at any time and in any manner it deems appropriate, Design and Engineering accomplished prior to or under this Agreement.

2.4 Limitation on Assignment.

No provision of this Agreement shall constitute or be construed as requiring the Partnership to make any assignment of any interest in, or rights under, the Partnership's certificate of public convenience and necessity, the ANGTA, or the Decision.

ARTICLE III Participation

3.1 Initial Participation.

Each of the Parties shall participate in the cost, management and ownership of the Design and Engineering for

the Project accomplished under and during the term of this Agreement on the basis, as follows:

X 3.1.1 The Partnership shall participate to the extent of fifty percent (50%) of such cost, management and ownership. Each of the Sponsors shall have voting representation as to its per capita share of the Partnership's fifty percent (50%) of participation and, with respect to any action which, in accordance with this Agreement, requires the affirmative vote of representatives of persons having a percentage of the total participation in this Agreement, each of the Sponsors shall be considered to have a percentage participation that equals its per capita share of the Partnership's fifty percent (50%) of participation. The term "per capita share", as applied to any Sponsor under this Section 3.1.1, shall mean fifty percent (50%) divided by the number of Sponsors.

^ 3.1.2 Each of the Producers shall participate to the extent of a share (to be determined by the Producers) of fifty percent (50%) of such cost, management and ownership. Appendix "A" attached to this Agreement reflects the initial participation of the Producers. Subject to the provisions of Sections 3.2 and 9.3, at no time may a Producer reduce its participation in this Agreement unless, after giving effect to such reduction and corresponding increases in the participation of one or more of the other Producers, the total participation of all Producers in this Agreement shall continue to be fifty percent (50%).

3.1.3 Notwithstanding the provisions of Sections 3.1.1 and 3.1.2, the Partnership shall continue to own all benefits, assets and data which have accrued to the Partnership as a result of the expenditures to date by the Partnership for Design and Engineering for the pipeline, but the Producers shall have the right to use or own all such benefits, assets and data on the terms set forth in Section 2.2.

3.2 Revised Participation.

The Partnership will attempt to enlarge participation in the Partnership to include others, including persons owning rights to purchase natural gas produced from the Prudhoe Bay Unit, and shall, for a period of thirty (30)

days after issuance of notice by FERC with respect to the application filed by the Partnership on February 6, 1980, in Docket No. CP78-123, et al., permit joinder of the Partnership on terms which, after giving effect to changes in the Partnership's capital accounts after the admission date to the Partnership of American Natural Alaskan Company to the effective date of such joinder, are no less favorable than those extended to American Natural Alaskan Company. The Producers who join herein initially will attempt to include in their participation in this Agreement other owners of the natural gas produced from the Prudhoe Bay Unit, and will attempt to encourage purchasers of Prudhoe Bay natural gas to join the Partnership. Any new producer participant so admitted by the Producers shall have a participation share of the Producers' aggregate fifty percent (50%) of total participation in this Agreement. In the event that any person not initially a Party to this Agreement becomes a Party, the participation of the Producers shall be reapportioned, and Appendix "A" to this Agreement shall be revised accordingly. Further, in the event that any Producer should withdraw from this Agreement, as hereinafter provided, the participating interests of the Producers and Appendix "A" shall be revised accordingly.

3.3 Contributions by New Parties.

Upon the admission of any new Party to this Agreement, such new Party shall be required to contribute funds required thereafter for the work hereunder until the Capital Account of such new Party bears the same proportion to the Capital Accounts of all Parties as its participation share bears to the total participation under this Agreement.

ARTICLE IV Capital Investments

4.1 Initial Capital Investments.

The contributions made by a party under this Agreement shall be credited to its Capital Account established for the purposes of this Agreement. The initial Capital Account balance of the Partnership is agreed to be \$70,273,000, which represents, all Parties agree for purposes of this Agreement, one hundred fifteen percent (115%) of the total direct costs

expended (cash expenditures plus accrued liabilities) by the Partnership through March 31, 1980, for Design and Engineering for the pipeline. The initial Capital Account of each Party other than the Partnership is agreed to be zero. For the period commencing with April 1, 1980, and ending on such date as the Capital Accounts of all Parties, other than the Partnership, shall total \$70,273,000: (a) each Producer agrees to contribute its proportionate share of all funds required for the work under this Agreement up to, but not in excess of, said \$70,273,000; and (b) the Partnership shall not be required to make any contribution of funds under this Agreement. At the expiration of such period, the Partnership's Capital Account shall be credited with one hundred fifteen percent (115%) of all direct costs expended (cash expenditures plus accrued liabilities) by it for Design and Engineering for the pipeline from April 1, 1980, to the effective date of this Agreement, and the amount of such credit shall be applied to reduce the contributions of funds required to be made by the Partnership pursuant to Section 4.2. As used in this Section 4.1, the term "proportionate share", as applied to any Producer, shall mean its percentage participation in this Agreement multiplied by two.

4.2 Further Capital Investment.

After payment of initial capital contributions as required in Section 4.1, each Party agrees to contribute to the Design and Engineering of the Project over the term of this Agreement, in cash, its participating share of the funds required to defray the expenditures for such Design and Engineering for the Project, provided that each Party shall have the right to withdraw from this Agreement at the times and under the circumstances as described in Section 9.3.

4.3 Payment of Capital Investment.

4.3.1 Within expenditure limitations approved as provided in ARTICLE VI, the Operator shall issue a written request for payment of each contribution to be made under this Agreement at such times and in such amounts as the Operator shall deem appropriate in light of the ensuing thirty (30) days' cash requirements for the Design and Engineering of the Project. All amounts received by the

Operator pursuant to this Section 4.3 on or before the dates specified in 4.3.2(v) shall be credited to the respective Capital Account of the Party as of such specified date and all amounts received from a Party after the date specified in Section 4.3.2(v) by the Operator pursuant to this Section 4.3 shall be credited to such Party's Capital Account as of the date of receipt thereof.

4.3.2 Each written request issued pursuant to 4.3.1 shall contain the following information:

- (i) the total amount of funds requested from all Parties;
- (ii) the amount of funds requested from the Party to whom the request is addressed;
- (iii) the purpose for which the funds are to be applied in such reasonable detail as the Board shall direct;
- (iv) the budget authorization pursuant to which the funds are requested; and
- (v) the date on which payments of the funds shall be made (which date shall not be less than 15 days following the date the request is given) and the method of payment, provided that such date and method shall be the same for each of the Parties.

4.3.3 Each Producer's Capital Account under this Agreement, and the Partnership's Capital Account under this Agreement (to the extent that such Capital Account reflects expenditures for plant Design and Engineering) shall be credited on a memorandum entry basis at least quarterly with an AFUDC calculated at the rate allowed by the FERC to the Partnership or its successor; provided, that no such credit shall be made under this Section 4.3.3 to any Party's Capital Account for any period from and after the first to occur of the date that such Party withdraws from this Agreement or this Agreement terminates.

4.3.4 Each Party agrees that it shall make payments of its respective contributions in accordance with the request

issued pursuant to Section 4.3.1; subject, however, to the right to withdraw from the Agreement as provided in Section 9.3.

4.3.5 Any Producer which does not participate in the ownership of the pipeline (directly or through an Affiliate) on the Partnership Commitment Date shall be entitled to receive compensation for its contributions under this Agreement (to the extent that such are approved by the FERC or its successor for inclusion in the pipeline owner's rate base) from the Partnership or any successor to the Partnership in accordance with this Section. Any such Producer shall be entitled to receive after the ANGTS is completed and has become operational and at a time when the Partnership or its successor determines payment may be made without undue hardship:

(a) an amount equal to such portion of its Capital Account on the first to occur of (i) the date of withdrawal of such Producer from this Agreement, (ii) the Partnership Commitment Date, or (iii) the date of termination of this Agreement as reflects expenditures for pipeline Design and Engineering, plus the AFUDC then applicable to such portion on a memorandum basis; and

(b) return on such amount from the date applicable in (a) above to date of payment, calculated at the rate permitted by the FERC to the Partnership or its successor as such entity's AFUDC. The Partnership agrees that the amounts payable pursuant to clause (a) above and this clause (b) shall be recorded as a contingent liability of the Partnership from and after the Partnership Commitment Date. The right of reimbursement shall be subordinate to the rights of any creditor of the Partnership or its successor.

4.3.6 Any Party which does not participate in the ownership of the plant (directly or through an Affiliate) on the Plant Commitment Date shall be entitled to receive compensation for its Capital Account contributions under this Agreement for plant Design and Engineering (in the event that such Design and Engineering is used to construct the plant) from the owner of the plant in accordance with this Section. Any such Party shall be entitled to receive after the ANGTS is completed and has become operational and at a time when the owner of the plant determines payment may be made without undue hardship:

(a) an amount equal to such portion of its Capital Account on the first to occur of (i) the date of withdrawal of such Party from this Agreement, (ii) the Plant Commitment Date, or (iii) the date of termination of this Agreement as reflects expenditures for plant Design and Engineering plus the AFUDC then applicable to such portion on a memorandum basis; and

(b) return on such amount, from the date applicable under (a) above to date of payment, calculated at the rate, if any, used by the plant owner as an AFUDC component in the determination of its lawfully permitted charges for its services; provided, however, should the plant owner collect for its cost of capital only on a portion of the gas conditioned in the plant, the rate used in calculating the return on the amount included in clause (a) above shall be the product of multiplying the rate (as collected) times a fraction representing gas conditioned as to which the plant owner collects over total gas conditioned. The amounts payable pursuant to clause (a) above and this clause (b) shall be recorded as a contingent liability of the plant owner from and after the Plant Commitment Date, and each Party that participates (or whose Affiliate participates) in the ownership of the plant on such date agrees to make a good faith effort to cause the plant owner to perform as provided in this Section. The right of reimbursement shall be subordinate to the rights of any creditor of the plant owner. If the plant is or becomes subject to the ratemaking jurisdiction of the FERC so that the plant owner's accounts and charges are subject to such jurisdiction, the amounts payable pursuant to this Section in respect of funds contributed for plant Design and Engineering shall be limited to those amounts which must be and are approved by the FERC for inclusion in the plant owner's charges for its services.

ARTICLE V

Management of Design and Engineering

5.1 General Management Structure.

5.1.1 The major decisions of the Parties in performing this Agreement shall be made by a Design and Engineering Board which, except as otherwise expressly provided in this Agreement, and subject to Sections 2.3, 15.1 and 15.2, shall have exclusive authority with respect to all matters to be

performed under this Agreement relating to the Design and Engineering for the pipeline as otherwise, except for this Agreement, would be subject to the control of the "Board of Partners", as provided in Section 8.2 of the Partnership Agreement, and shall also have corresponding authority with respect to all matters to be performed under this Agreement relating to Design and Engineering for the plant.

5.1.2 The day-to-day management and control of the Design and Engineering for the Project, and other activities as determined by the Parties under this Agreement, shall be the delegated responsibility of the Operator subject to redefinition of the Operator's duties by the Board.

5.1.3 The Partnership and the "Operator" for the Partnership have executed contracts for the Design and Engineering of the pipeline, including the Project Management Contract (defined in ARTICLE I), which contracts are listed on Appendix "B" attached hereto. Such contracts shall be binding upon the Parties to the same extent the same are binding upon the Partnership, and during the term of this Agreement the Board, on behalf of the Parties, shall assume responsibility for supervision of the performance of any such contracts whereunder payment is to be made by the Parties hereunder for direct costs of Design and Engineering, to the extent only of the Design and Engineering performed under such contracts during the term of this Agreement. Such supervision will be performed for the Board by the Operator, as provided in Section 5.12.5. During the term of this Agreement, the Partnership agrees that modifications or cancellations of such contracts, including, after the initial effectiveness thereof, the Project Management Contract with Fluor and/or its Affiliates now being negotiated by the Partnership, shall be sought and obtained as the Board may direct, but only with respect to Design and Engineering subject hereto and only if the resulting cost or expense of any such modification or cancellation (including, without limitation, cancellation charges) is borne by all the Parties in accordance with their respective participations in this Agreement, and the Board may authorize additional contracts on behalf of the Parties for the Design and Engineering of the Project.

5.2 Design and Engineering Board.

5.2.1 The Board shall be composed of members designated by the Producers, the Sponsors and the State of Alaska.

Each Producer, each of the Sponsors and the State of Alaska shall designate one representative as its member ("Member") on the Board and shall designate one representative as an alternate ("Alternate"), who shall represent such person on the Board in the absence of the designated Member. Appendix "C" hereto contains the name, address and telephone number of each Member and Alternate on the Board. Each person entitled to representation on the Board reserves the right from time to time to change its Member or Alternate and their respective addresses and telephone numbers by giving written notice of any such change to the Secretary of the Board ("Secretary").

5.2.2 The Chairman of the Board shall be the Member representing Northwest Alaskan Pipeline Company ("Northwest"), and the Board shall designate a Member representing one of the other Sponsors as Co-Chairman. The Board shall designate a Member representing one of the Producers as Vice-Chairman. The Co-Chairman shall preside at meetings of the Board, prepare agendas and perform such other duties as the Board may determine, and the Vice-Chairman shall so preside and act in the absence of the Co-Chairman.

5.2.3 The Board shall hold monthly meetings, and such other meetings as may be requested by any Member or by the Operator, at which meetings the Operator shall present recommendations, reports and information as hereinafter provided in this Agreement. Any request for a meeting shall be made in writing, or by telephone confirmed in writing to the Secretary and shall state the matters to be considered at such meeting. The Secretary shall notify each Member at least three (3) days in advance of any meeting of the date, time, place and purpose of the meeting. If such notice is given by telephone, it shall be confirmed in writing, by telegram, cable or letter, to the Member so notified. Failure to give such notice shall not nullify any action taken at any meeting if each Party not represented at such meeting by its Member or Alternate shall waive such notice in writing signed by said Party's Member or Alternate, either before or after the meeting. The Board shall establish rules and procedures for the conduct of meetings, including but not limited to the tenure for its Chairman and Co-Chairman and attendance of advisors; provided that such rules and procedures shall not contradict any provisions of this Agreement.

5.2.4 It is recognized that matters requiring the immediate decision of the Board may arise from time to time. Any Member may propose that any matter upon which the Board is authorized to act be decided pursuant to the informal procedure established hereunder by giving notice to the Secretary, which notice may be given in writing, by letter, telegram or cable, or by telephone, confirmed in writing. The Secretary shall immediately notify each Member by telephone of the matter to be decided and shall confirm such notice by telegram. If the Secretary is unable to contact a Member by telephone, he shall immediately notify that Member's Alternate, which notice shall be confirmed in writing to both the Member and his Alternate. Each Member or Alternate, as the case may be, shall notify the Secretary in writing, by letter, telegram or cable, or by telephone confirmed in writing, of his approval or disapproval of the matter for decision. As soon as the Secretary shall ascertain that a matter has been approved or disapproved, he shall notify all Members of the result, which notification, if made by telephone, shall be confirmed in writing to each Member.

5.2.5 The Board shall appoint a Secretary, who shall not be an employee or representative of the Operator, and an Assistant Secretary. In addition to the functions assigned to the Secretary in the above subsections of this Section 5.2, he shall prepare and retain custody of the original record book which will contain the minutes of all meetings, notices, written confirmations, certificates and, as the Board shall direct, all other documents and communications relating to the Board. Duplicate copies of all materials in the record book shall be promptly mailed by the Secretary to each Member. The record book shall be kept available for inspection by duly authorized representatives of the Parties hereto at all times and, upon termination of this Agreement, shall be delivered to one of the Parties (or to the Partnership) for safekeeping under such terms as the Board shall approve. All expenses incurred in connection with the performance of the duties of the Secretary shall be borne by the Parties. The Secretary shall serve at the pleasure of the Board. The Assistant Secretary shall perform the duties of the Secretary in the event of the absence of the Secretary.

5.2.6 The Secretary may issue certificates with respect to actions of the Board. Contractors engaged in the Design and Engineering for the Project and other third

parties shall be entitled to rely on such certificates if they are countersigned by any Member or Alternate (other than the Member or Alternate, if any, representing the Party employing the Secretary).

5.2.7 Except as provided in subsection 5.2.5, each Party shall pay all expenses incurred by it relating to its representation on the Board.

5.3 Actions of the Board.

5.3.1 All matters presented to the Board for action shall be approved only upon the affirmative vote of Members or Alternates, as the case may be, representing persons having in the aggregate at least sixty-six and two-thirds percent (66-2/3%) of the total participation in this Agreement; provided, however, that decisions of the Board concerning expansion of the Design and Engineering of the Project to provide access for transportation of gas from other sources or facilities to receive additional gas shall be made only by Members or Alternates, as the case may be, representing Sponsors, and such decisions shall require approval only of the affirmative vote of a majority of such Members or Alternates, as the case may be.

5.3.2 Any and all decisions which the Board is authorized to make under this Agreement shall be conclusively binding on all Parties to this Agreement and shall have the same effect as a separate agreement on the matter by and among all Parties signatory.

5.4 Authority of the Board.

Without modification of its general authority under Section 5.1, the approval of the Board shall be necessary before any of the following actions can be taken by the Operator or contractors or subcontractors on behalf of the Parties:

Subject to the provisions of Section 6.1,
establishment of Design and Engineering
cost estimates and operating budgets
for the work under this Agreement;

Approval of any financial commitment not in an approved budget;

Establishment of accounting, budget and tax policies related to work under this Agreement consistent with the FERC's accounting and tax methodology and generally accepted accounting principles;

Selection of depositories for funds contributed by the Parties and establishment of policy for withdrawal of funds;

Selection and retention of the Project Management Contractor for plant Design and Engineering;

Selection and retention of a Certified Public Accountant;

In addition, the Board shall have exclusive authority, during the term of this Agreement, on behalf of the Parties, under this Agreement, to do the following:

Approve on behalf of the Board the final design and cost estimate for the Project;

Change the scope of the Operator's duties and authorities, and the specific basis for compensating the Operator for services rendered to the Parties;

Change the authority and responsibility delegated in this Agreement to any Committee, to the Project Management Contractor or to the Operator;

Select a successor Operator or Project Management Contractor for pipeline Design and Engineering, if such becomes necessary.

5.5 Committees to Advise the Board.

There shall be an Accounting Committee, Audit Committee, and Technical Committee to aid and advise the Board in the

exercise of the Board's authority under this Agreement. In addition, the Board may establish such other advisory committees as it deems necessary. Each Producer and each Sponsor is entitled to designate one member to serve as its representative on each of the Committees and to designate one alternate who may attend meetings in the absence of the member, except that the Operator shall not have representation on the Audit Committee. The Board shall appoint from the membership of each of the Committees one member to serve as the Chairman of such Committee until his successor is appointed. Each Chairman may designate another member of the Committee to be the Vice Chairman of that Committee. The meetings of each Committee shall be held at such time and place as designated by the Chairman, or the Vice Chairman at the Chairman's request. The Chairman or, in his absence, the Vice Chairman shall record and report to the Board the comments and recommendations that the Committee wishes to submit to the Board, in response to requests from the Board or on the initiative of the Committee. The members of any Committee may submit comments and recommendations to the Board singly or in any combination as they severally shall determine, and no action taken by any Committee or member thereof in his capacity as such shall be binding on the Parties or the Board.

5.6 Accounting Committee.

The purpose of the Accounting Committee shall be to furnish to the Board services and advice as may be requested by the Board from time to time concerning accounting methods, records, support data requirements and the preparation of reports to the Board by the Operator, to assure that each member of the Board (and each Party) will have sufficient financial and statistical data related to the work performed by the Operator.

5.7 Audit Committee.

The purpose of the Audit Committee shall be to render advice and service to the Board regarding the adequacy and reliability of the system of internal controls, financial recording and reporting of transactions, budget administration and contract compliance of the Operator, contractors, subcontractors and consultants engaged in work under this Agreement. The Audit Committee, with the advice of the Operator's audit staff director, shall recommend to the Board the scope and coverage of the audit program, the

staff's plan of operation and activities, and its reporting procedures, giving careful attention to maintaining sound and efficient working relations with the Operator. The scope and coverage so recommended may include, but not be limited to, audit review of proposed and executed contracts and subcontracts, reports on contract provisions and rates, work-performance, and custodial and financial controls and audits by outside agencies. The Committee and the staff shall be mindful of the Operator's responsibilities and needs, will appropriately alert the Operator to any problem areas observed in activities reviewed, and render appropriate assistance to the Operator when requested to do so by the Operator. The Audit Committee shall also submit recommendations to the Board regarding the selection, scope and retention of independent public accounting firms engaged to audit the financial records and reports required under this Agreement.

5.8 Technical Committee.

The purpose of the Technical Committee shall be to advise the Board with respect to the technical aspects of the work hereunder. The Technical Committee shall be composed of the Project Advisors or such other persons as may be designated by the Producers and Sponsors.

5.9 Resident Auditors.

Each Producer and each Sponsor, may assign a qualified auditor to work with Operator's existing audit staff as a resident auditor during the term of this Agreement, but the salary, costs and career administration of each auditor as assigned shall remain with the Producer or Sponsor so assigning such auditor. The Operator shall provide timely, full access by the resident auditors to such records, personnel, facilities, contractors, suppliers, and job sites related to or involved in the Design and Engineering for the Project as the Parties have contributed funds to under this Agreement, and the Operator will cooperate with the resident audit staff by timely response to its reasonable requests. Each of the Producers and Sponsors reserve the unrestricted right as to scope and access hereunder to conduct their own audits, at their sole expense, of any aspect of the costs charged to the Parties for Design and Engineering performed under the terms of this Agreement, provided, however, that written notice of the desire to exercise this right shall be given thirty (30) days in advance to the Audit Committee

members, the resident audit staff director and the Operator. In exercising this right, it will be recognized that it is the intent of this Agreement to minimize duplication of audit coverage to the fullest extent possible. Accordingly, the Audit Committee and resident audit staff are expected to be responsive to the needs of each Producer and Sponsor.

5.10 Project Advisors.

Each Producer and each Sponsor and the State of Alaska may designate a Project Advisor who may serve on the Technical Committee and communicate with the Operator's Project Management Organization and, in cooperation with the Operator, communicate with the Project Management Contractor(s). The Project Advisor so designated by a person will report to such person as to the status of work under the Agreement and will advise the Operator's Project Manager of such person's views on matters affecting the work. When requested by the Operator, any Project Advisor will seek to provide specially qualified persons employed by the person who designated such Project Advisor (or an Affiliate) to assist the Operator or Contractors in carrying out the scope of work being performed under this Agreement. The costs for services of any such specialist used by the Operator shall be billed to the Operator by the person supplying the specialist. Each person shall bear the cost of its Project Advisor.

Each Project Advisor shall have access in cooperation with the Operator to all records and engineering data relative to the work hereunder and may with the concurrence of the Operator communicate with the Operator's managers and supervisors on matters relating to the work. Such access and communications shall not be unreasonably denied. Each Project Advisor shall also be available to perform specific tasks relative to the work as requested by the Operator's Project Manager, to the extent that such does not unreasonably interfere with his primary responsibilities. Each Project Advisor who so requests shall be provided appropriate office space at the location(s) of the Operator's Project Management Organization and at the location(s) of the Project Management Contractor(s), and the cost of such space and facilities provided shall be charged to the person by whom the Project Advisor is designated.

5.11 Costs of Committee Representation.

Each person shall pay all costs related to its representation on Committees established hereunder.

5.12: Operator.

5.12.1 The Operator shall be Northwest; subject to the power of the Board to remove Northwest from the office of Operator upon an affirmative finding by vote of Members representing sixty-six and two-thirds percent (66-2/3%) of total participation in this Agreement that the Operator has failed or refused to carry out its duties hereunder or has otherwise acted in a manner detrimental to the objective of this Agreement.

5.12.2 To the extent that contracts with others are necessary to the performance of work hereunder, the Operator shall negotiate contracts on behalf of the Parties for such services as are required under this Agreement to perform the Design and Engineering for the Project and shall execute the same upon authorization of the Board; provided, however, that the Project Management Contract for the pipeline now being negotiated by the Partnership with Fluor and/or its Affiliates shall not require Board authorization prior to execution by or on behalf of the Partnership.

5.12.3 The Operator shall, on behalf of the Parties, during the term of this Agreement, manage the Design and Engineering for the Project, and shall have all powers and authorities reasonably necessary to the discharge of such responsibilities subject, however, to the requirements for Board approval as described in this ARTICLE V. The Operator shall prepare and submit to the Board the Operator's recommendations with respect to those matters requiring Board approval.

5.12.4 The Operator shall advise the Board regularly with respect to Operator's actions as "Operator" for the Partnership in proceedings with governmental agencies and authorities having jurisdiction over permits, authorizations or certificates necessary for the pipeline. As directed by the Board, the Operator may, on behalf of the Board, establish and maintain liaison with all governmental

agencies and authorities, in the United States and Canada having jurisdiction over permits, authorizations or certificates necessary to the construction and operation of the Project and the ANGTS, for the purpose of obtaining information, rendering reports and coordinating the work hereunder with the work being conducted by the Operator as "Operator" for the Partnership.

5.12.5 Subject to the provisions of Section 5.1.3, the Operator shall, on behalf of the Board supervise the performance of the Project Management Contractor or Contractors and all other independent contractors involved in Design and Engineering for the Project, to achieve contract compliance, timely completion of the Design and Engineering for the Project and to insure the development of acceptable quality and cost control systems.

5.12.6 The Operator shall report fully to the Board at each regular meeting of the Board, and shall render special reports as necessary to inform the Board of the progress of affairs.

5.12.7 The Parties shall reimburse the Operator for all reasonable costs, including overhead and administrative expense, incurred in providing services to the Parties under this Agreement in accordance with Appendix "D" hereto.

5.12.8 The Operator's records for all work performed under the terms of this Agreement shall be retained for audit for a period of no less than twenty-four (24) months after the termination of this Agreement. Any audit claims that may be developed by the resident audit staff or any Party to this Agreement shall be submitted to the Operator within such twenty-four (24) month period.

5.12.9 The Operator shall include in each contract executed under this Agreement that each Party shall have the equal right to audit the contractor's records, but only with respect to Design and Engineering subject hereto and only at the cost of the Party performing such audit. With respect to any contract listed on Exhibit "B" attached hereto, Operator shall use its best efforts to include a similar

provision in such contracts for the term of this Agreement; provided, that the costs of such efforts shall be borne by all the Parties in accordance with their respective participations in this Agreement.

5.13 Operator's Compliance with Applicable Laws.

The Operator shall comply with all applicable laws and regulations in the conduct of the work under this Agreement. All financial settlements, reports of all types, and billings rendered to the Parties will reflect properly the facts about all activities and transactions handled for the Parties. The Operator shall report to the Parties any violations of the foregoing requirements.

5.14 Contractors' Compliance with Applicable Laws.

The Operator shall include in all contracts executed under this Agreement a requirement that all financial settlements, reports of all types, and billings rendered to the Operator or the contractors shall properly reflect the facts about all activities and transactions handled for the Parties; and a requirement that the contractors and sub-contractors will comply with all applicable laws in the performance of services for the Parties.

5.15 Operator's Project Management Organization.

The Operator has established and staffed a project management organization to supervise the Project Management Contractor and other contractors employed to accomplish Design and Engineering of the pipeline, and will make such changes and additions to its organization as necessary to insure coordination and optimization of Design and Engineering for the Project.

It is intended that the Operator's project management organization be staffed with highly qualified persons selected by the Operator. Each Producer and Sponsor will be notified of any vacant or new senior level design and engineering professional position within the project management organization and may nominate a qualified person to fill such job. The Operator may elect to fill any staff position with its own employee or a person nominated by one

of the Producers or Sponsors. If a nominee of a Producer or Sponsor is selected, the nominee will continue in the employment of such Producer or Sponsor, but he will work under the direct supervision of the Operator, and the costs for his services shall be billed to the Operator.

ARTICLE VI Budgets and Accounting

6.1 Submission and Approval of Budgets.

By execution of this Agreement, the Partnership's 1980 budget for the direct costs of Design and Engineering of the pipeline, as reflected on Appendix "E", plus fifteen percent (15%) of such costs, is approved by the Parties, subject to the power of the Board to revise and expand budgets. The Operator shall revise and update the total budget for Design and Engineering of the Project by appropriate budget amendments at least quarterly beginning in the third calendar quarter of 1980 based upon the best information then available as to the ultimate cost to complete the work included within the scope of this Agreement. Except for specific items of expenditure which have been previously approved by the Board, the Operator shall make no commitments for the expenditure of funds under this Agreement, unless the projected expenditure has been included in an approved budget or budget amendment and is within the approved budgeted costs of that component of the work.

6.2 Budget Details and Changes.

The budgets required hereunder will provide projected expenditures separated or broken down and approved by components. The Board shall advise the Operator of the components to be included in the initial 1980 budget for plant Design and Engineering and of the additions thereto for pipeline Design and Engineering, and shall advise the Operator of the components to be included in subsequent annual budgets. The Operator, with the approval of the Board, shall select a Project Management Contractor to perform Design and Engineering for the plant. The Operator will cause the Project Management Contractor for plant Design and Engineering to recommend to the Board a site for plant location and the process which the plant is to employ.

Upon determination by the Board of the plant location and process, the Operator shall prepare and submit to the Board for approval a final budget for plant Design and Engineering in 1980, as soon as possible; provided, however, that such budget shall not exceed \$12 million in expenditures and commitments, and provided further that a budget for 1981 shall not contain authorizations for expenditures or commitments in connection with plant Design and Engineering in an amount in excess of \$43 million, unless the Board shall authorize the Operator to prepare and submit such a 1980 or 1981 budget for plant Design and Engineering in excess of such amounts.

6.3 Maintenance of Accounts: Monthly Statements.

The Operator shall maintain accurate accounts of all expenses, costs and liabilities incurred by it during the term of this Agreement on behalf of the Parties in the Design and Engineering of the Project. During the term of this Agreement, on or before the thirtieth (30th) day of each month, the Operator shall transmit to each Party a statement showing the total charges and credits to the account of the Party during the preceding calendar month. Such statement shall be sufficiently detailed to set forth the basis of allocation of such expenditures and liabilities between the Parties and to permit each Party to charge its proportion thereof to its proper account. Any Party shall have the right to question the accuracy of the statement. In addition, the Operator will submit, by the thirtieth (30th) day of each month, a report indicating, for each major component of the work hereunder, the commitment against budget and expenditures (cash expenditures and accrued liabilities) for the year to date.

6.4 Allocation of Charges.

Subject to Section 6.7, all expenses, costs and liabilities incurred hereunder shall be allocated monthly among the Parties in accordance with their respective participation during the period such expenses, costs and liabilities accrued. In the event any Party's participation in this Agreement changes during the accrual period of any expense, cost or liability, such expense, cost or liability shall be prorated accordingly.

6.5 Advances.

Each Party shall advance its contributions to the performance of the work hereunder when requested to do so by the Operator in accordance with Section 4.3 of this Agreement.

6.6 Audits.

The Board shall have an audit made of the Operator's accounts under this Agreement, as to each calendar year's work, during which this Agreement is in force. Each Party shall be furnished a copy of the report of each calendar year's audit on or before March 15 of the year following the year covered by such audit. The audit shall be made by a certified public accounting firm selected by the Board, and the expense thereof shall be charged to the Parties on the basis of their respective participation in this Agreement.

6.7 Allocation of Expenditures.

The Operator shall maintain books of account under this Agreement which segregate the costs of pipeline Design and Engineering from the costs of plant Design and Engineering. The Parties agree that the costs of pipeline Design and Engineering (including all costs reflected in the Partnership's initial Capital Account balance as provided in Section 4.1 and the amount to be credited against the Partnership's Section 4.2 contributions as provided in Section 4.1) shall be deemed to have been paid, first, through contributions by the Partnership and, then, through contributions by the other Parties in proportion to their respective participations in this Agreement.

ARTICLE VII Timetable

7.1 Timetable.

The Parties will make a good faith effort to reach agreement upon a final design and cost estimate for the Project by July 1, 1981.

ARTICLE VIII
Expansion of Design and Engineering

8.1 Approval of Expansion.

Section 5.3.1 of this Agreement permits the Design and Engineering of the Project to be expanded upon an affirmative vote of Members or Alternates, as the case may be, of the Board representing a majority of the Sponsors. Any such expansion, however, shall be accomplished in accordance with the provisions of this ARTICLE VIII.

8.2 Participation in Expansion.

In the event that a majority of the Sponsor Members of the Board approve an expansion of the Design and Engineering of the Project to provide access for additional gas, such decision shall be binding upon the Parties hereto; provided, however, that each Producer shall have the right to elect not to participate in the cost and management of the Design and Engineering for the additional facilities necessary for such expansion. If any Producer elects not to participate, such Producer shall give notice of its election to the other Parties within sixty (60) days following the decision to expand, and thereafter the additional facilities for expansion shall be treated as a separate and distinct project, not within the scope of this Agreement, and the participation in the Design and Engineering for such additional facilities for expansion shall be determined by agreement of the participants in such additional facilities.

ARTICLE IX
Termination and Right of Withdrawal

9.1 Term of Agreement.

This Agreement shall continue from the effective date until terminated pursuant to the provisions of this ARTICLE IX.

9.2 Withdrawal Rights.

A Party may not withdraw from this Agreement except as provided in Section 9.3 of this Agreement.

9.3 Right to Withdraw.

9.3.1 Each Party shall have the right to withdraw from this Agreement at the times and under the circumstances as follows:

- (i) after receipt of notice of the anticipated cash requirements for the calendar year 1981 or any year thereafter (such notice to be given on or before December 1 of 1980 and each year thereafter) by notice of withdrawal given on or before the December 15 preceeding 1981 or any year thereafter; or
- (ii) following future governmental or judicial action which will have significant adverse effect upon the financing or economic viability of the Project.

9.3.2 A Producer shall have the further right to withdraw from this Agreement at the times and under the circumstances as follows:

- (i) following future governmental or judicial action which, in the opinion of the Producer, finally excludes the plant from the ANGTS; or
- (ii) following future governmental or judicial action which excludes Producers from participation in ownership of the ANGTS.

9.3.3 The Partnership shall have the further right to withdraw and terminate this Agreement at any time.

9.3.4 A Party exercising its right to withdraw under this Agreement shall give fifteen days' advance notice of such withdrawal to the other Parties. If any obligations shall be incurred by or on behalf of the Parties during such notice period pursuant to the budget hereunder (including any amendments thereto) as approved by the Board prior to the giving of such notice for the calendar year in which such notice is given, the Party giving such notice shall be obligated to contribute funds hereunder to pay its proportionate share of such obligations for work performed prior to the effective date of withdrawal as if such notice had not been given, but shall not be obligated to contribute any funds required to meet obligations arising after the expiration of such notice period; provided, however, that if the withdrawal of such Party results, in and of itself or in combination with withdrawals by other Parties, in a termination of this Agreement, such Party shall be obligated to pay that portion of any cancellation or other charges required to be paid to third parties by reason of such termination which equals its percentage participation in this Agreement immediately prior to such Party's withdrawal. Upon withdrawal by any Producer, the participation of the Producers in their respective aggregate fifty percent (50%) of total participation shall be reapportioned among them so that the entire fifty percent (50%) shall be held by the remaining Producers. Withdrawal by any Producer or Producers holding more than a fifteen percent (15%) share of the Producers' aggregate fifty percent (50%) of the participation in this Agreement shall automatically entitle each other Party to withdraw from this Agreement at any time thereafter, after fifteen (15) days' advance notice to all other Parties. A withdrawing Party shall have those rights stated in Section 4.3.5 and Section 4.3.6 hereof. Withdrawal from this Agreement shall relieve the withdrawing Party from further liability and obligations, except for payment for work then performed, and shall forfeit all of such Party's voting rights under this Agreement and terminate all of its representation on the Board, committees and management staff. Subject to Section 2.2, any such withdrawing Party shall have the right to use or license any Affiliate of such withdrawing Party to use the Design and Engineering accomplished to the date of withdrawal, but shall not be entitled to access to Design and Engineering thereafter accomplished, and shall not have any claim or right with respect to use of the Design and Engineering by the Parties or the Partnership.

9.4 Termination.

This Agreement shall be terminated, except for certain rights and obligations hereinafter stated, upon the happening of one of the events as follows:

9.4.1 Mutual agreement of the Parties.

9.4.2 Withdrawal, pursuant to Section 9.3, of all of the Producers or of the Partnership.

9.4.3 Completion of the Design and Engineering for the Project and approval by the Board of the final design and cost estimate.

9.5 Continuing Rights and Obligations.

Notwithstanding withdrawal from or the termination of this Agreement, the obligations of any Party incurred during the term of the Agreement, and unsatisfied, shall continue as obligations enforceable under this Agreement; provided, however, that, subject to the provisions of Section 4.3.4, any obligation of a Producer to make initial capital contributions under Section 4.1 shall cease upon such withdrawal or termination. Further, the entitlement of any Party to payment for its contributions pursuant to Sections 4.3.5 and 4.3.6 shall continue as an enforceable entitlement under this Agreement. Except as provided in this Section 9.5, termination of this Agreement shall terminate the delegations of authority and responsibility made herein and liabilities and obligations assumed under this Agreement.

ARTICLE X Relationship of Parties

10.1 No Partnership.

The duties, obligations and liabilities of the Parties hereto are intended to be several and not joint or collective. This Agreement is not intended to create, and shall not be construed to create, an association or trust, or to impose a Partnership duty, obligation, or liability with

regard to any one or more of the Parties hereto. Each Party hereto shall be individually responsible for its own obligations as herein provided.

10.2. Liabilities.

Any liability incurred hereunder to contractors and third parties shall not be joint or joint and several, but each Party hereto shall be separately liable for a portion of such liability calculated in accordance with its participating interest. Except as otherwise provided in this Agreement, no Party shall have the right or power to bind any other Party without the other's express written consent.

10.3 Indemnification.

The Parties shall indemnify and save harmless the Members of the Board, the members of the Accounting, Audit and Technical Committees and of other committees as may be designated, and the Operator against all actions, claims, demands, costs and liabilities arising out of the acts (or failure to act) of such persons in good faith within the scope of their authority in the course of the performance of their duties under this Agreement, and such persons shall not be liable for any obligations, liabilities or commitments incurred by or on behalf of the Parties as a result of such acts (or failure to act).

10.4 Contracts to Limit Liability.

Without the written consent of all Parties, no contract or other obligation on behalf of the Parties shall be entered into unless there is contained therein an appropriate provision limiting the claims of all parties to such instrument and beneficiaries thereunder to the assets created or established under this Agreement and expressly waiving any rights of such parties and other beneficiaries to proceed against the Parties or the Sponsors individually.

ARTICLE XI
Federal Income Tax Election

11.1 Election to be Excluded from Partnership Regulations.

Each Party hereto hereby elects that it and the operations covered by this Agreement be excluded from the application of Subchapter "K" of Chapter 1 of Subtitle "A" of the Internal Revenue Code of 1954, as permitted and authorized by Section 761 of such Code and the regulations hereinafter enacted or promulgated; provided, however, that nothing in this ARTICLE XI shall, or shall be construed to, affect in any way the treatment of the Partnership as a partnership for federal income tax and other similar purposes. The Parties hereby agree to execute such evidence of the election as may be required by regulations issued under said Subchapter "K". Should the regulations require each Party to execute additional evidences, each Party agrees to execute or join in the execution thereof. The election hereby made and the other provisions of this Section shall apply in like manner to applicable state laws, regulations and rulings now in effect or hereafter enacted that have an effect similar to the Federal provisions referred to herein.

ARTICLE XII
Technical Information, Inventions & Patents

12.1 Technical Information.

During the term of this Agreement, each Party shall have access to all Technical Information generated or received by the Operator under this Agreement or by any Party, contractor or agent performing work under this Agreement. As provided in Section 2.2, the Parties shall have the right to use Technical Information of the Partnership heretofore acquired, subject to a limitation on such use until the Producers shall have contributed the aggregate amount required under Section 4.1 hereof. Technical Information hereafter acquired relating to the Design and Engineering of the Project shall be owned by the Parties in undivided interests. Each Party shall own an undivided interest in such Technical Information equivalent to its participation share in this Agreement and shall have

the right to use and dispose of said Technical Information in any manner it, in its sole discretion, deems appropriate. Any Party may provide, in writing, its proprietary Technical Information for use in the Design and Engineering of the Project and shall identify such information as proprietary and confidential. With regard to such proprietary information of any Party, the other Parties each agree:

- (i) to maintain said proprietary Technical Information in confidence so long as it is not part of the public knowledge or not otherwise available to a Party or Parties and to exercise the same degree of care regarding said proprietary Technical Information as it exercises with regard to its own proprietary Technical Information;
- (ii) to disclose said proprietary Technical Information referred to herein only to those of its Affiliates which are obliged to exercise the aforesaid degree of care;
- (iii) to disclose said proprietary Technical Information referred to herein only to third Parties who are participants in a joint operation (which is directly related to the Project) with said Party or its Affiliates and who are obligated to exercise the aforesaid degree of care; and
- (iv) to disclose said proprietary Technical Information to a representative of the government, as required by statute, regulation, rule, or order.

Nothing in this Section 12.1 shall grant or convey or be deemed to grant or convey any right whatsoever under any patent.

12.2 Patent Infringement.

With reference to, but only with reference to, the work conducted pursuant to this Agreement, each Party agrees

to hold each other Party free and harmless from any and all claims of patent infringement which are based on any patents owned or controlled by it or any of its affiliates and which are based upon inventions conceived or made prior to or during the period that it is a Party to this Agreement. Such undertaking to hold harmless shall remain in effect after the granting Party ceases, for any reason, to be a Party to this Agreement.

12.3 Inventions by Third Parties.

Each Party agrees that any patent or patent application covering an invention, discovery or improvement which arises out of any research or development program carried out for the Parties and paid for by the Parties by any contractor or other agent (but as to Fluor Corporation and its Affiliates, subject to contractual commitments binding upon the Parties) for the Design and Engineering of the Project shall belong jointly to the Parties and each of said Parties shall have an undivided interest in each such patent and patent application equivalent to each Party's participation in this Agreement. The ownership interests in patent rights acquired under this Section 12.3 by any Party which ceases to be a Party shall pass to such Party's transferee, as provided in ARTICLE XIV of this Agreement; provided, however, that in assigning its ownership interest in such patents the Party may reserve for itself and its Affiliates a royalty free license to use in its own operations the inventions covered by such patent rights. The Parties agree that title to any such patent or patent application may be held in the name of one Party for the benefit of all Parties.

12.4 Inventions by Parties.

The Parties agree that any patent or patent application covering an invention, discovery or improvement which arises out of any separate research or development program carried out by one of the Parties or one of its Affiliates, the costs and expenses of which have been paid for by the Operator as agent for all the Parties, shall belong to said Party or said Affiliates but each of the other Parties shall have:

- (i) a nonexclusive, world-wide, irrevocable, royalty free, nontransferrable right under said patents and patent applications

to use the inventions or discoveries or improvement covered thereby in such of its own operations including oil and gas production, pipeline and related operations; and

- (ii) an irrevocable right to extend to its Affiliates a nonexclusive, world-wide, irrevocable, royalty free, non-transferable right under said patents and patent applications to use the inventions or discoveries or improvements covered thereby in such of its own operations, including oil and gas production, pipeline, and related operations.

12.5 Party Employees.

To facilitate the procurement of an experienced staff, it is contemplated that employees of the Parties and of their respective affiliates may be assigned to work for the Operator pursuant to service contracts between the Party and the Operator. Each Party hereto agrees on behalf of itself and its Affiliates that any and all of its employees who become Party Employees will be released from such portion of such Party Employees' obligation to assign inventions to such Party or Affiliates as may be required to enable such Party Employee to accept the obligation imposed by Operator upon its employees with respect to inventions conceived or made by the Operator's employees relating to or useful in the Project during their term of employment by the Operator.

12.6 TAPS License To Sponsors.

The terms and obligations of that certain license agreement dated August 17, 1978, as amended prior to the effective date hereof, between the Partnership and certain Producers or Affiliates of certain of the Producers shall not be altered or construed as altered in any way by this Agreement.

ARTICLE XIII
The State of Alaska

13.1 Special Status.

The State of Alaska is included as a Party to this Agreement, but its participation shall be limited as provided in this ARTICLE.

13.2 Representation on the Board.

The State shall designate a Member on the Board as its representative, and also designate an Alternate who shall represent the State in the absence of the State's Member. The State's Member, or its Alternate, shall not be entitled to vote on any matter presented to the Board for decision. Except for the absence of a vote, the State's representative may participate as any other Member in the business of the Board.

13.3 Representation on Committees.

The State may designate a Project Advisor and Alternate (to act in his absence) as its representative, who shall serve on the Technical Committee established pursuant to Section 5.8 of this Agreement and participate in its work. The State's representative shall participate as any other Member in the work and responsibilities of the committee, but shall not be entitled to vote on any matter presented for decision. The State shall not be entitled to representation on the Accounting and Audit Committees and shall not be entitled to designate a Member of the audit staff, unless it elects to participate fully in this Agreement in accordance with Section 13.8.

13.4 No Capital Investments.

The State shall not contribute, and shall not be obligated to contribute, any Capital Investments or any other funds with respect to the efforts undertaken pursuant to the Agreement. Accordingly, the State will not have nor will it acquire any ownership rights with respect to the Design and Engineering, including Technical Information

acquired by reason of, or prepared pursuant to, the Agreement.

13.5 Access to Information.

The State shall have the same access as any Party to all Technical Information received by the Operator or by any Contractor performing work under this Agreement, except that, with respect to material identified as proprietary and confidential within the meaning of Section 12.1, the State shall be provided access to such material after it has furnished satisfactory assurances that it can maintain the confidentiality of such material.

13.6 No Liability.

In view of its special status in the organization established by this Agreement, the State shall not have any liability with respect to the acts or omissions performed by the Board, the Committees established hereunder, or by Contractors or third parties hereunder. The State shall not be bound, except as provided herein, without its express written consent. Only the Governor of the State or its Attorney General may grant its consent.

13.7 Commitments.

The State pledges its support for, and its cooperation and good faith in the exercise of its regulatory functions with respect to, the Project, the ANGTS and related facilities. The State shall continue its study of forms in which it may participate financially in the pipeline, plant or both. The State may elect to pursue its present intention to develop a plan for financing the plant within the time frame of this Agreement.

13.8 Option to Change Status.

Should the State so elect, it may participate fully with respect to this Agreement pursuant to the terms of Sections 3.2 and 3.3, and, if it so elects, it shall have the full rights and responsibilities of any other Party, including the right for its representative to vote as a Member of the Board.

ARTICLE XIV
Transfer of Participation

14.1 Limitation on Transfer.

Except with the consent of the Board or as permitted by Section 14.2 or as contemplated by Section 3.2, a Party may not sell, assign, pledge, hypothecate or otherwise transfer in any manner all or any part of its right, title or interest in this Agreement; provided, that any assignment or transfer of any right or interest of a Partner of the Partnership in this Agreement which may result from the admission of a Partner to the Partnership or the withdrawal of a Partner from the Partnership or the transfer by any Partner in the Partnership to any other Partner in the Partnership of any of its rights, title of interest in the Partnership may be effected, and shall be effective, without obtaining the consent of or giving prior notice to any Party (other than the Partnership) or the Board.

14.2 Permitted Transfers.

Nothing herein shall prevent the transfer by any Party of all of its right, title and interest in the Design and Engineering of the Project and in this Agreement to an Affiliate of such Party.

ARTICLE XV
Relation to Partnership Activities

15.1 Partnership Activities to Continue.

The Parties hereto anticipate that the Partnership shall continue its operations with respect to ANGTS and pursuant to its certificate, and that Northwest shall continue to function as Operator for the Partnership.

15.2 Partnership Regulatory Filings.

It is anticipated that the Partnership shall make such filings with governmental authorities as it determines are

necessary and appropriate to the conduct of its activities, including but not limited to supplements in pending Department of Interior and FERC certificate proceedings (such as the Certification Cost Estimate required by FERC Order No. 31).

ARTICLE XVI
General

16.1 Effective Date.

This Agreement shall be effective upon its execution by all of the Sponsors for the Partnership and such of the Producers as follows: Atlantic Richfield Company, Exxon Corporation, and The Standard Oil Company (Ohio), or Affiliates of such companies. The Effective Date shall be the latest of the dates of execution by the required Parties.

16.2 Notices.

Any written notice or other communications shall be sufficiently given or shall be deemed given on the third (3rd) business day following the date on which the same is mailed by registered or by certified mail, postage pre-paid, addressed to each of the Parties and Sponsors at the address set forth in Appendix "C" or at such other address as may be designated from time to time by any Party or Sponsor by written notice to each other Party and Sponsor.

16.3 Applicable Law.

This Agreement shall be governed by and interpreted in accordance with the laws of Texas.

16.4 Counterparts.

This Agreement may be executed in counterparts each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

16.5 Headings.

The headings contained in this Agreement are for reference purposes only and shall not affect the meaning or interpretation of this Agreement.

16.6 Waiver.

No waiver by any Party of any default by any other Party or Parties in the performance of any provision, condition or requirement herein shall be deemed to be a waiver of, or in any manner release the other Party or Parties from performance of any other provision, condition or requirement herein; nor deemed to be a waiver of, or in any manner a release of the other Party or Parties from future performance of the same provision, condition or requirement. Any delay or omission of any Party to exercise any right hereunder shall not impair the exercise of any such right, or like right, accruing to it thereafter. No waiver of a right created by this Agreement by one or more Parties shall constitute a waiver of such right by other Parties except as may otherwise be required by law with respect to persons not Parties hereto. The failure of one or more Parties to perform its or their obligations hereunder shall not release the other Parties from the performance of such obligations.

16.7 Time for Execution.

This Agreement shall be submitted for review by the Department of Energy and the Department of Justice, and shall be signed after approval thereof by such Departments. Further, it is understood that the Department of Energy shall arrange for the review of this Agreement by the FERC.

IN WITNESS WHEREOF, the Parties have executed this Cooperative Agreement on the dates indicated below.

ALASKAN NORTHWEST NATURAL GAS
TRANSPORTATION COMPANY

By each of its Partners:

ATTEST:

NORTHWEST ALASKAN PIPELINE COMPANY

By _____
Date: _____

ATTEST:

NORTHERN ARCTIC GAS COMPANY

By _____
Date: _____

ATTEST:

PAN ALASKAN GAS COMPANY

By _____
Date: _____

ATTEST:

CALASKA ENERGY COMPANY

By _____
Date: _____

ATTEST:

PACIFIC INTERSTATE TRANSMISSION
COMPANY (ARCTIC)

_____ By _____

Date _____

ATTEST:

UNITED ALASKA FUELS CORPORATION

_____ By _____

Date: _____

ATTEST:

AMERICAN NATURAL ALASKAN COMPANY

_____ By _____

Date _____

PRODUCERS

ATTEST:

ATLANTIC RICHFIELD COMPANY

_____ By _____

Date _____

ATTEST:

EXXON CORPORATION

By _____

Date _____

ATTEST:

THE STANDARD OIL COMPANY (OHIO)

By _____

Date _____

ATTEST:

MOBIL OIL CORPORATION

By _____

Date _____

ATTEST:

PHILLIPS PETROLEUM COMPANY

By _____

Date _____

ATTEST:

CHEVRON U.S.A., INCORPORATED

By _____

Date _____

• ATTEST:

AMERADA HESS CORPORATION

_____ By _____

_____ Date _____

ATTEST:

GETTY OIL COMPANY

_____ By _____

_____ Date _____

ATTEST:

HUNT INTERESTS

_____ By _____

_____ Date _____

ATTEST:

MARATHON OIL COMPANY

_____ By _____

_____ Date _____

ATTEST:

LOUISIANA LAND & EXPLORATION COMPANY

_____ By _____

_____ Date _____

ATTEST:

PLACID OIL COMPANY

By _____

Date _____

AND

THE STATE OF ALASKA

Date _____

By _____

AND

NORTHWEST ALASKAN PIPELINE COMPANY
(as Operator under this Agreement)

ATTEST:

By _____

Date _____

APPENDICES
TO
COOPERATIVE AGREEMENT

**PLEASE NOTE: THE PRECEDING PAGES WERE TREATED
AS A UNIT IN THE ORIGINAL DOCUMENT.**



STATE OF ALASKA
OFFICE OF THE GOVERNOR
JUNEAU

Instate

JHC

ANG-TS

October 26, 1978

The Honorable John Carlson
Borough Mayor
Fairbanks North Star Borough
Box 267
Fairbanks, Alaska 99707

Dear John:

I am writing in reply to your letter of October 11, 1978, to me.

Since I discussed this matter last week in Fairbanks I believe it not necessary for me to go into considerable detail here. It should suffice to say that we are not postponing our efforts to include a sale of royalty gas if such sale is feasible. Commissioner LeResche's statement does indicate that a delay in the original timetable projected is likely and I must concur with that conclusion in light of the considerable delay taken by Congress in passing federal legislation relating to gas pricing. It is of course true that at the time the solicitation was announced gas prices were unknown as well, but the limitation on our ability to put together a sale is not so much ours as it was the reluctance of purchasers to engage in anything more than conceptualization until the pricing matter was resolved by Congress.

I have asked Commissioner LeResche to work closely with you and others from the Fairbanks North Star Borough in evaluating all potential gas sales projects, and hope that through such cooperative action we will be able to determine what projects are feasible and what projects are not.

Sincerely,

A handwritten signature in dark ink, appearing to read "Jay S. Hammond".

Jay S. Hammond
Governor

MEMORANDUM

TO: John A. Carlson, Borough Mayor

FROM: Ben Harding, Community Information

THROUGH: Tom Dean, Staff Director

SUBJECT: Relocation of State Pipeline Coordinator's Office to Fairbanks

DATE: October 25, 1978

Amos Matthews, State Pipeline Coordinator, was in Fairbanks this (Wednesday) morning to talk to the Fairbanks media about the relocation of his office to Fairbanks.

Matthews had interviews with the News-Miner, KTVF/KFRB, KFAR, and supplied a previously taped interview to KIAK on this subject. (I have a taped copy of the interview.)

He said the reason for his being in Fairbanks was seek consolidated office space for Pipeline Office personnel already in town. The personnel are: Larry Dietrich (detailed from Environmental Conservation), Dick Scheider (detailed from Fish and Game) and Al George (detailed from the University to work on land management). Matthews is looking for an office that would hold these three, plus a secretary, and have space for Margaret Ferrant (socio-economic research) and himself when he visited Fairbanks.

Some of Matthews' other comments--

- 1) His office moving to Fairbanks is "totally dependent" on Northwest's activity. When Northwest's activity is predominantly in Fairbanks, he will move up.
- 2) At its peak during gas line construction, the State Pipeline Office will employ "around 80 people" but the majority of those will be field surveillance workers, most of whom will work out of Fairbanks.
- 3) There will be a sizeable Fluor engineering staff in Fairbanks for the gas line and the combined corporate/operating staff for Northwest in Fairbanks should be "in the hundreds."
- 4) The tentative timetable for the completion of the gas line has now slipped from the winter of 1983/84 by a year to 1984/85, but he needs to see a definitive schedule.
- 5) Northwest would probably not move to Fairbanks in any size until, at most, a year before construction start-up, and probably less than a year before start-up. (Note: Northwest is now estimating an early 1981 start-up. BPH)
- 6) The State Pipeline Coordinator probably won't move up to Fairbanks until that time.

Oct. 23, 1978

To: Mayor Carlson

From: Ben Harding, Community Information

Through: Tom Dean, Staff Director

Subject: Meeting with Gov. Hammond Oct. 20 on Royalty Gas Sale

A large turn-out of businessmen and political candidates turned up Friday morning to hear Governor Hammond talk to the Economic Development Committee on the postponement of the State's Royalty gas sale.

The Governor indicated that he had not been aware at the time that LeResche had in fact postponed the sale until he received your letter and the letter sent by North Pole Refinery. At that time, he said he talked to LeResche, who assured him that the delay in the royalty gas sale was the result of congressional delay in passing President Carter's Energy Bill and that the Department of Natural Resources had no intention of delaying the gas sale indefinitely.

Hammond came under considerable criticism for LeResche's actions and he, Hammond, was unable to answer most of the procedural and technical questions involved in royalty gas sale and use in Alaska. He urged that the group talk instead to LeResche directly about this. As a result, a meeting has been arranged with Le Resche for this Thursday, October 26, from 3:00 to 5:00 PM, presumably in the Polaris Building Arctic Room.

Some of the points Hammond made:

- 1) The State was determined to use the Royalty gas in-state, and he expressed anger that any other State officials would say otherwise. However, on further questioning, he said that the State would only agree to in-state gas use if in fact additional studies showed it to be economical.
- 2) The State would locate its Pipeline Coordinator's Office in Fairbanks in the near future. If Matthews objected, he would be out of a job. In the interim, Hammond would see if some of Matthews' staff could be established in Fairbanks.
- 3) The State would attempt to schedule more construction projects in Fairbanks before the start-up of the gas line project to take up employment slack, and to avoid over-burdening the Fairbanks economy during gas line construction.

Phil Younker and I were present from the Borough side. Bob Dempsey gave Hammond a run-down on the Borough's efforts to secure local petrochemical use.

MEMORANDUM FOR THE FILES

SUBJECT: LeResche Remarks on State Royalty Gas Sale

DATE: October 26, 1978

PLACE: Fairbanks Chamber of Commerce Log Cabin

Commissioner LeResche came to Fairbanks to speak to residents concerned by newspaper accounts of his postponement of the sale of State royalty gas sales until next year.

LeResche made the following points:

- 1) The sale had not been actually postponed; this had been inaccurately reported by the Associated Press.
- 2) The State "in the past two weeks" had been working to put together a potential contract for the sale of the royalty gas.
- 3) The replies the State had received to its bid requests had indicated the need to have further information, such as gas composition, construction of the gas conditioning plant, and gas line specifications.
- 4) The State does not know the delivery point of the gas and the details of the gas conditioning plant are still unknown.
- 5) If State sells the gas prematurely, it could lose "leverage" over the purchaser to insure that the gas is used in-state.
- 6) The State has notified the FERC that it intends to use royalty gas in-state and utilize paragraph 13(b) of the Natural Gas Transportation Act.
- 7) The State has told Northwest that it intends to use the royalty gas in-state and that the gas line design should take this into account.
- 8) The State is completely committed to in-state use of the gas and any statements to the contrary by state officials such as the Pipeline Coordinator are incorrect.

LeResche said that preliminary ARCO designs for conditioning the gas call for the field consumption as fuel of 50% of all ethane, 63% of all propane, and 13% of the butane. In response to questions, he did acknowledge that the State could stipulate in its gas contract where the purchaser would take off and utilize the gas. He also agreed to the repeatedly expressed need that a time-table was necessary for private business to be able to determine the feasibility of in-state gas use. He said he would sit down with the 4 or 5 "serious bidders" to work out such a time table and that his Department would look into the possibility of any early commitment of the gas to a private purchaser provided general conditions were met. He noted in that regard that the State lack the flexibility to draw up a detailed plan for gas use for companies to bid on, such as was done in the ALPETCO situation.

bfharding

Status Report on the Northwest Alaskan Gas Pipeline Project

Northwest Alaskan Pipeline Company has been buoyed by congressional passage of President Carter's Energy Bill which makes it possible for the gas line project to proceed with its financing and design arrangements.

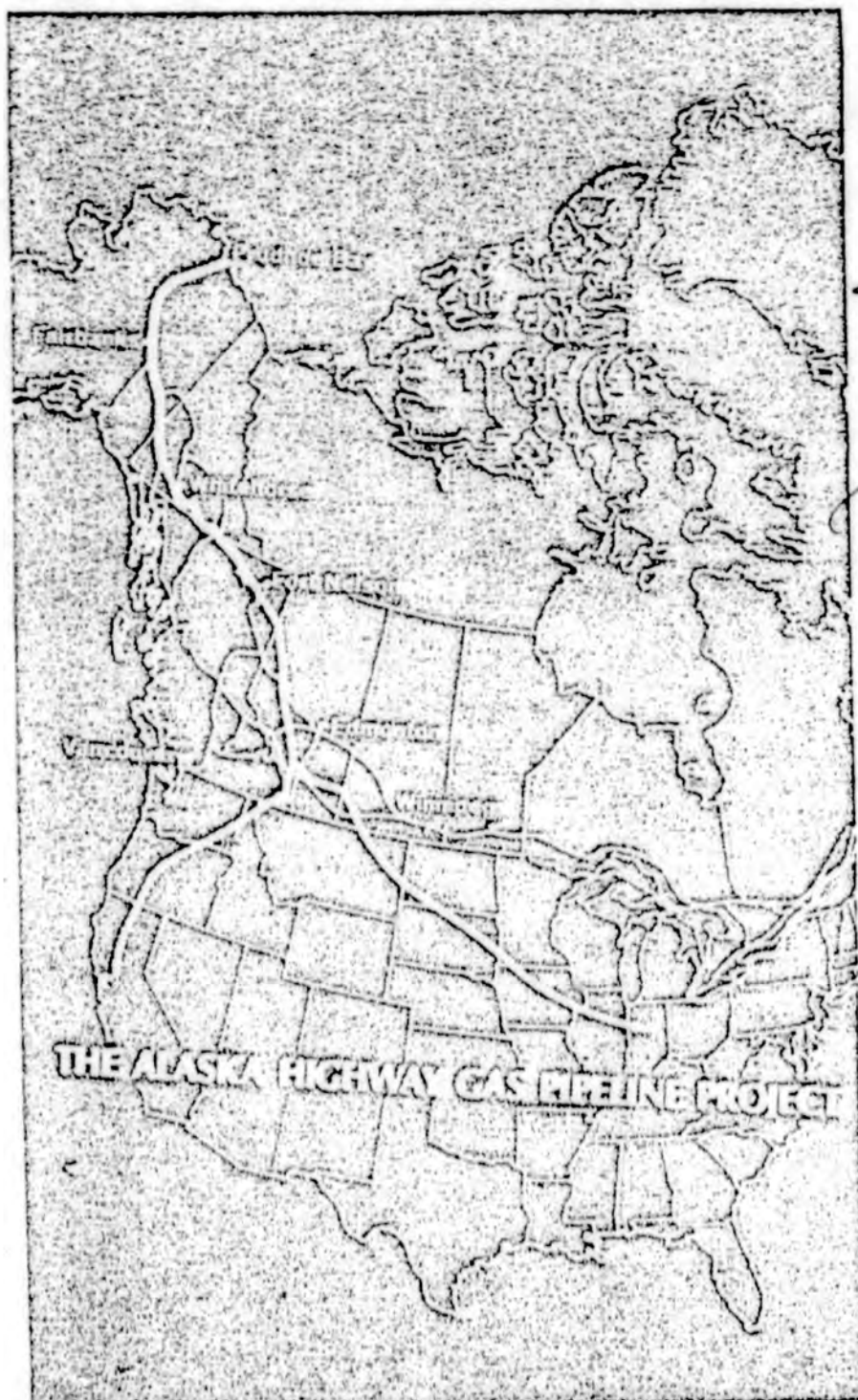
However, the delay of Congress in acting on the Energy Bill has had an impact on the project's timetable which is currently being assessed by Northwest and its partners. At the present time, Northwest plans its design work for 1979-80; civil construction (roads, work pads, material movement, etc.) for early 1981; actual pipeline construction in 1982; and the project to begin moving gas by early 1984.

Peak construction work force estimates call for 2,180 for the first year of construction; 7,000 the second; and 6,500 for the third and final year. These figures are considerably lower than the construction levels for the oil pipeline, which were approximately 28,000 for 1975; 27,000 for 1976; and 15,000 for 1977. Northwest presently plans for a post-construction personnel level of around 300 to 500 employees to operate and maintain the completed gas line.

Fairbanks has been designated as the headquarters for the Northwest Alaskan gas line project, but the bulk of Northwest's activity and most of its personnel will continue to be located in Salt Lake City and in Washington, D.C., for design work, financing arrangements, and environmental studies until about a year before start-up of civil construction.

In Canada, the partners of Northwest for the Canadian portion of the project, Foothills Ltd., plan an earlier start-up of construction on the southern end of the project. Early completion of the southern half of the gas line (or approximately the portion from Edmonton, Alberta to distribution centers in the northern U.S.) would allow Foothills to export surplus Alberta gas to American markets and create a cash flow to help finance the construction of the northern (or the Alaska/Yukon) segment. That policy is presently opposed by competing Canadian gas transportation groups which want either to export surplus Alberta gas on existing gas line systems or to move the excess Alberta gas to eastern Canadian markets in the Toronto/Montreal urban areas. The Foothills construction start-up for the gas line in Canada has recently been postponed from early 1979 to 1980.

Source: Northwest Alaskan Pipeline Company and Canadian press articles.



THE ALASKA HIGHWAY gas pipeline figures largely in most of the sessions at the Sixth Northern Resources Conference. The pipeline, and its construction will have an enormous impact on all phases of development and on life in the Yukon. The project has passed the last of its legislative hurdles and now the companies building the pipeline must find financing and confirmed markets before construction can begin. Scheduled completion is still set for late 1983.

PIPELINE TIMETABLE

Survey of right of way and facilities location	Start April 79
Confirm centre-line of right of way and compressor station locations	Start May 79
Civil earthwork (access roads, stockpile sites and borrow pits)	Start May 80
Camp installation	Start July 80
Clearing right of way	Start Feb. 81
Grading right of way	Start Nov. 81
Stringing pipe along right of way	Start Jan 82
Welding pipe	Start Feb. 82
Ditching	Start Feb. 82
Wrapping and lower-in	Start Feb. 82
Backfilling ditch	Start Feb. 82
River crossings	Start June 82
Testing Pipe	Start June 82
Clean-up and revegetation	Start June 82
Start up	Nov. 83

Presumably in Canada only

✓
F4T
Tom D ✓
Ron HV
Phil R ✓
John Harding
Gertie
Polmer K 72

Pipeline delays 'concern' Alberta partner

By MARJORIE NICHOLS
Sun Washington Bureau

WASHINGTON — The head of Alberta Gas Trunk said Wednesday he is "concerned but not nervous" about developments in the U.S. that could create further delays in the construction schedule for the Alaska natural gas pipeline.

Robert Blair, who is also chief spokesman for Alberta Gas Trunk and Westcoast Transmission, sponsors of the Canadian portions of the pipeline, said the Canadians "have to be concerned because of the amount of preconstruction" already undertaken.

"We've got our necks out a long way, in an awful lot of ways," Blair said, but added that the Canadians do not anticipate any immediate "change in tempo" of their own pre-construction plans.

On Monday, the chief U.S. partner in the

project announced it was suspending further large investment on the U.S. portions of the pipeline pending clarification of financial proposals. Northwest Alaskan Pipeline Co., of Salt Lake City warned that unless there are drastic changes to financing proposals set down by U.S. regulators, the partnership would be unable to raise the private capital necessary to build the U.S. sections.

Blair refused to comment directly on the difficulties of the U.S. partner. He emphasized, however, that the two Canadian companies would not require any financial assistance from government.

Before consummation of the pipeline pact, both U.S. and Canadian governments agreed that the entire project would be privately financed.

Though he declined to pass judgment on the financial state of Northwest Alaskan,

Blair pointed out that the two Canadian companies have a much larger equity base than does the Salt Lake City firm.

The Canadian companies, he said, "are not apprehensive at all about our ability to raise equity."

Should the federal energy regulatory commission, the U.S. agency charged with overseeing construction of U.S. segments of the pipeline, refuse Northwest Alaskan's requests for major alterations to financing arrangements, there would be further delays in construction.

Because of delays by the U.S. Congress in passing legislation approving the pipeline, the target date for completion has already been extended about a year, to the fall of 1983.

Asked what the Canadian partners would do if the FERC refuses to accommodate the U.S. partner, Blair said: "I don't think we'd pull down the blinds." But he said later that the Canadians were less concerned about the dispute between Northwest Alaskan and the FERC than they were about the reaction of the other U.S. partners.

He said that if other companies involved in pre-construction work changed their schedules, the Canadians would have to seriously review their situation because the project must be synchronized in the two jurisdictions. He stressed that the Canadian partners have not changed their hiring and work schedules.

In its brief to the U.S. regulatory agency, Northwest Alaskan says it cannot finance the Alaska sections of the pipeline under a proposed formula, which would hold the company accountable to its original \$10 billion cost estimate and impose financial penalties on equity investors for large cost overruns.

Foothills reviews pipeline progress

Sun Business Writer

WHITEHORSE — Foothills Pipe Lines (South Yukon) Ltd. has dismissed allegations by critics that it will neither be able to finance the \$2-billion Alaska Highway pipeline nor complete it on schedule.

Foothills vice-president G.J. Pollock told the opening session of the sixth Northern Resources Conference Wednesday that while the critics are voicing pessimism "the Foothills group becomes stronger and clearer".

After finally receiving U.S. Congressional approval last week, Pollock said negotiations are now under way between Alaska natural gas producers and U.S. utilities to set price and volume levels. Subsequent to those negotiations, Foothills and its U.S. partner, Northwest Pipeline, will negotiate transportation contracts which will form the basis for financing the pipeline.

"We anticipate that all this can be accomplished such that the targetted date of fall, 1983, for the entire project can be met," Pollock said. Because of U.S. legis-

lative delays, that date is nine months behind the original target of January 1, 1983, for the start of gas deliveries.

The pipeline's costs were originally estimated at \$10.7 billion in 1976 constant dollars. They have now been revised to \$14 billion.

Foothills' major focus now is preparing for an application to prebuild the southern Alberta, B.C. and Saskatchewan sections of the pipeline. It plans to export about one billion cubic feet a day of Alberta gas to the U.S. midwest and California until the rest of the line is completed.

Pollock said prebuilding of the line would improve cost efficiencies by lengthening the project time frame, provide a market for surplus Alberta gas, contribute to exploration and assist Canada's balance of trade payments.

He said prebuilding could begin to move Alberta gas to market by the end of 1979 if speedy approval is received from the National Energy Board.

In updating the \$30 million worth of work already completed or under way, Pollock gave this progress report:

- Saskatchewan: The route has been located away from the Great Sand Hills for environmental and esthetic reasons.
- Alberta: A right of way has been located, several water crossings are under geotechnical study and pipeline design and environmental assessment has started.

- Southern B.C.: Right of way located, environmental assessment and pipeline design under way.

- Northern B.C.: Right of way being surveyed, environmental surveys and field studies under way, archeological and geotechnical field work and preliminary pipeline design under way.

- Yukon: Under way are fisheries surveys at potential water crossings, caribou habitat and migration studies, archeological survey of proposed right of way, waterfowl and raptor surveys, revegetation experiments.

Foothills has located an operations head office in Whitehorse with a staff of 10, which will increase to about 100 permanent Yukon employees during and after construction.

Pollock said the company is continuing a series of community visits along the route in the Yukon with a view of receiving comments and suggestions from citizens.

He said a major Foothills concern in the Yukon centres on negotiation and settlements of native land claims. "Although we are not party to these negotiations, the outcome is of great interest to us as well as to all Yukoners."

"We can proceed with the project without a settlement. However we would prefer to have this situation resolved."

The natives have said they will block construction if land claims are not settled before work starts.

Alaska gas pipeline still not certain despite U.S. approval of financing

By MARJORIE NICHOLS
Sun Washington Bureau

WASHINGTON — The euphoria surrounding the passage on the weekend of legislation to enable the construction of the 3,200-kilometre Alaska natural gas pipeline was short-lived.

On Monday, barely 24 hours after the U.S. Congress passed President Jimmy Carter's natural gas pricing bill, the U.S. builder of the proposed Alaska line warned that it still may not be able to raise the private capital necessary to finance the multi-billion dollar project.

The builder, Northwest Alaskan Pipeline Co., of Salt Lake City, Utah, said in a brief to the U.S. Federal Energy Regulatory Commission that unless drastic changes are made to financing proposals, the company will have to "curtail its activities on the Alaskan segment of the Alaska natural gas transportation system and seek federal financial assistance and support."

In granting approval last year for the construction of the proposed pipeline, both Carter and the Congress were adamant the entire project would have to be privately financed, that there would be no financial guarantees forthcoming from U.S. governments.

However, Northwest Alaskan says in its brief to FERC that the proposed financial rewards are inadequate and unless there are changes, there will be no pipeline.

The company brief was drafted in response to a proposed rule-making handed down by the energy commission on Sept. 15. In that ruling, the FERC proposed a formula which would establish a variable rate of return for equity investor in the project.

The rate of return would be tied to the cost performance on the project.

If, for example, Northwest Alaskan could bring the project in at its original \$10 billion estimate, equity investors could receive up to 22.6 per cent. On the other hand, large cost overruns would result in penalties, which would lower the rate of return to as little as 13 or 14 per cent. The company says this proposal is unacceptable, and

asks the regulatory agency to establish both upper and lower limits.

The company also argues it would be unacceptable to use the original cost estimate provided to the Congress in the spring of 1977 for purposes of calculating the cost of the project. However, the FERC said it would hold the builders to their original estimate.

The company also claims in its brief that there is inadequate protection in the proposed financial formula to compensate the builder for delays caused by governmental foot dragging or other delays beyond the company's control.

Although the FERC proposals, to which Northwest Alaskan has taken such strenuous objection, are not final, the commission made clear when it handed down the proposals last month that it did not expect to make changes. But there must be public hearings before the proposals become final. A firm date has not yet been set, but it is expected the hearings will take place

within a month to six weeks.

In the brief, Northwest Alaskan accuses the federal regulatory commission of flirting with novel and unrealistic concepts.

Ever since the commission published its proposed financial formula in September, Northwest Alaskan says, the entire project has been shrouded in uncertainty.

Northwest Alaskan also accuses the commission of "incomplete analysis" in selecting 13 per cent as the rate of return for the operating phase of the project. The company argue that a higher operational phase is required by the Alaskan project to offset the peculiar operating and construction risks.

The company also takes strong objection to the commission's proposal to set the marginal rate of return at eight per cent.

Ironically, at its September hearings, where it established eight per cent as the marginal rate, FERC heard objections from commission experts that this rate was unreasonably high.

Gloves off in energy confrontation

CONTROVERSY WAS the keynote of the Financial Post's oil and gas conference, "Critical Decisions Now for Prosperity in the Eighties," last week in Calgary.

The contentious issues of gas reserves, prices and markets were given a thorough airing as the Alberta and federal governments shape up for another dispute.

By Peter Foster

CALGARY

THE ONLY cloud on Alberta's otherwise sunny horizon, it seems, is the potential for another federal-provincial wrangle on energy, so it was appropriate that the first person to approach the podium — somewhat uncomfortably — at The Post's Calgary conference on oil and gas last week was Ralph Toombs, assistant deputy minister in the Federal Department of Energy Mines & Resources.

Toombs' task was to defend Ottawa's recent about-face on energy pricing. Although he may have made few converts, he did, nevertheless, provide some clarification on the recently announced but little understood federal policy of "gas price deregulation."

He said some form of "incentive pricing" would be necessary if gas sales were to be made in new Eastern markets. What Ottawa was proposing, he said, was that Alberta and the producers should make available a block of gas at lower prices for a "totally new market," (presumably eastern Quebec and possibly the Maritimes). This block of gas would be 250 billion cubic feet annually, phased in over six years, and then subsidized for a further six-year period.

The price charged would be \$1.70 a thousand cubic feet (mcf), vs the present Toronto City Gate price of \$2.00 an mcf. To calculate the Alberta border price of this gas, not only would TransCanada Pipelines charges of 39¢ an mcf have to be subtracted, but also 10¢ for the cost of service of new pipeline facilities.

In other words, whereas the current border price is \$1.41 (\$2 less 39¢ transportation) the border price for new market gas would be just \$1.01 (\$1.70 less 39¢ and also minus 10¢ for new transportation facilities). However, Toombs said that if the old and new markets were rolled together, along with transportation charges, the reduction in the Alberta border price would be only 9¢, bringing it to \$1.32.

Barry Mellon, deputy minister for energy resources at the Alberta Department of Energy & Natural Resources, was quick to point out that subsidies still would not take care of the main barrier to market gas penetration in the east — residual oil. He quoted the recent study from the National Energy Board that clearly spelled out that gas extension into eastern Quebec would only exacerbate the residual oil problem.

This theme was one taken up later by Gordon Leslie, vice-president of customer relations and planning for TransCanada PipeLines, who said that gas had a price disadvantage against residual oil in serving residential, industrial and commercial markets throughout Quebec.

Nevertheless, the federal government did have one at least partial ally present in the shape of William Stewart, president of Union Gas Ltd. He said the fundamental objective of Ottawa should be to reduce reliance on imported oil as rapidly as possible and to encourage the use of natural gas and other forms of energy.

The most effective way of doing this is through the price mechanism. However, he too had a brickbat for Ottawa. If residual oil is really the problem, he asked, why is the federal government doing nothing about it?

Toombs declared the government was looking at a number of solutions, such as upgrading eastern refineries and reducing government-owned Petrosar's output of residual oil.

The key issue of Canada's gas reserves was approached in typically forthright fashion by James Gray, vice-president of Canadian Hunter Exploration Ltd. Gray, whom many regard as the prophet of the Western gas boom, declared that gas potential was a matter of relatively

The potential for further conventional oil finds, such as West Pembina, became a topic of argument; while the pitfalls of further synthetic oil development, the limitations on financing huge energy projects and controversy over the Alberta Heritage Fund all provided topics for heated discussion.

At today's producer price of \$1 an mcf, 50 trillion cubic feet (tcf) could be established as an economic reserve in the "Deep Basin." The whole industry could add between 60 and 120 tcf over the next 20 years. If markets were restricted — by, for example, not permitting additional gas exports — then there would be no incentive to go out and find the reserves. Said Gray: "Restricting markets out of fear of supply shortages is a self-fulfilling prophecy."

Gordon Leslie went on to corroborate Gray's views that the outlook for gas supply and demand had changed dramatically in just a few years. He noted that TransCanada now projected that domestic demand, plus export commitments, could be met until 1997.

Not only that, but there were also estimated to be a surplus of 300 billion-500 billion cubic feet a year for most of the period.

Following Gray and Leslie, Charles Hetherington, president of Panarctic Oils Ltd., seemed very much like a voice crying in the northern wilderness. His claims that Arctic Islands gas would be needed in Canadian markets by the late 1980s seemed very out of line with Leslie's supply-demand projections and with Gray's economics.

Nevertheless, he pointed out that when they were needed, the Arctic Islands' 12.8 tcf of proven reserves, and potentially a great deal more, would be there.

Blair's optimism

The most optimistic gas supply picture was painted by Alberta Gas Trunk Line's president, Robert Blair. He not only confidently estimated current surplus deliverability at 500 billion cubic feet annually, but went on to count Arctic Islands gas, Mackenzie Delta gas, Beaufort Sea gas — where no results have yet been released — and East Coast gas — where technology has still not been established — to come up with a grand total of additional gas of one trillion cubic feet by 1985 and two trillion cubic feet by 1990.

He went on to prove, with a logic somewhat shakier than Gray's, that since domestic markets could not absorb all this gas, then it had to go to the U.S. The most economic means of transport was without doubt; first the Alaska Highway gas pipeline's prebuilt southern portion, second, its subsequent overall spare capacity and finally its possible looping.

Rivals who sought to export gas via other facilities — most notably the Progas group — were, said Blair, a "self-interested impediment."

Gordon Cameron, president of AGTL affiliate Pan-Alberta Gas Ltd., announced there would be no trouble selling the gas in the U.S., while John Sproul, of giant Pacific Gas & Electric Co., declared from a U.S. point of view that, with certain reservations, there was enthusiasm to buy it.

John Silcock, a director of leading British merchant banker N. M. Rothschild & Son Ltd., came down firmly on the side of Alberta in the gas dispute. Referring to the Western gas surplus, he said: "I am sure it must be right for the Western provinces to set their sights on the market south of the border. I believe there is already far too much nationalism in what is essentially an international trade. The natural market for these resources is in the U.S. and, surely, it must make much more sense to sell them there for much-needed foreign exchange than suffer the diseconomies of piping them to the Eastern provinces to displace cheaper imports."

The conference session on the conventional oil outlook highlighted the differences of opinion over oil discoveries of the type and size of West Pembina, the new Alberta field that sparked frenzy on the stock market in the final quarter of 1977.

John Taylor, president of PanCanadian Petroleum Ltd., drawing a somewhat pessimistic picture for conventional oils, said that total production from West Pembina over the next 20 years was likely to be somewhat less than 500 million barrels, equivalent to just one year's current domestic production.

However, Gerald Henderson, head of exploration for Chevron Standard Ltd. — the company that discovered the new field four years ago and drilled the first discovery well on it 20 months ago — outlined brighter prospects.

"Our best estimate," he said, "is that the ultimate recoverable reserves... will range from a low 400 million barrels to something in excess of two billion barrels." Thus West Pembina could increase present production potential by up to five years.

Even more significantly, Henderson told the conference that West Pembina could be the first of many similar discoveries in the deeper parts of the Western sedimentary basin. If the potential of the frontiers was included, then the certainty and size of reserves to be found would be increased considerably.

However, he went on to stress that geological optimism had to be tempered by the adverse impact of certain government regulations, citing the lack of activity during the 1970s in Manitoba and Saskatchewan, despite the undoubted potential of these provinces.

Despite his apparent disagreement with Henderson over conventional prospects, Taylor went on to strike a responsive chord throughout the audience in his call for a truly national energy policy-making body that would comprise both federal and provincial government representatives and also members of the industry.

This, he said, would be preferable to the present imposition of energy policy by a federal government.

He suggested four desirable tactics for this body: a rapid increase of Canadian oil prices to world levels; removal of the oil import subsidy; increasing the capacity of the Sarnia-Montreal oil pipeline; and introducing suitable legislation to encourage the orderly development of non-conventional oil reserves.

Ralph Brooks, associate vice-chairman of the National Energy Board, then came forward to give a lucid explanation of the evolution of Canadian energy policy, stressing in the process that the NEB was not an instrument of the federal government.

He also pointed out that the board did not agree with Taylor's desire to expand the capacity of the Sarnia-Montreal pipeline to increase eastward shipments of Alberta crude. He said that the board's recent supply and demand projections had concluded that the throughput of this line should not be increased so much as to jeopardize the viability of the pipeline for oil imports between Portland, Me., and Montreal.

A session on tar sands and heavy oil provided some cautionary remarks from the man who is running the world's largest synthetic crude production facility, Brent Scott, president of Syncrude. He told his co-panelists, Arden Haynes, president of Esso Resources Canada Ltd., and William Menzel, senior vice-president of Shell Canada Ltd. — the men who head teams planning to build two more synthetic oil plants — that their "super energy projects" would require considerable planning to be constructed within the same geographic area and within a similar time frame.

He said: "Two synthetic crude plants under construction at exactly the same time would have to recruit construction workers from the same pool, and purchase much of their raw material and some of their components from the same suppliers. . .

"Without a process of collaboration, without definite objectives of each party known in advance, the cost, the delay in acquiring goods and services and the delay in acquiring skilled manpower will eventually lead to an unviable situation, bordering on economic disaster."

Without such consultations and without federal-provincial co-operation over taxation and royalties, Scott said the likelihood of achieving the national target of one million barrels of synthetic crude a day by 1990 was "very remote."

Financing

The Alaska Highway pipeline was in the forefront of most people's minds as the session on financing the energy industry began. Robert Pierce, executive vice-president and financial wizard of Alberta Gas Trunk Line Co. — the company heading the Canadian end of the Foothills consortium that plans to build the line — enumerated the considerable financial successes and innovations that Trunk Line had made in recent years, for example, in financing its leading involvement in the Alberta petrochemical industry.

However, the other panelists, Richard Davis, senior vice-president of Moody's Investors Service, Inc., and Blake Ashforth, vice-president and general manager of Royal Bank of Canada in Calgary, stressed that the pipeline's financing would be no shoo-in.

Davis said that although Alaska had passed a bill that would allow the issue of \$1 billion of tax-exempt bonds to finance the state's portion of the line, both the Canadian and U.S. governments had stated that no federal guarantees would be made.

As far as the market for the gas is concerned, Davis said there is a prevalent belief in the U.S. that Alaskan gas is going to cost domestic consumers at least \$5 an mcf, vs a present-top price for imported liquefied natural gas of \$3.40.

Davis noted that despite statements from the Mexican government, Mexico's abundant gas supplies plus the Alberta surplus and potential discoveries off the U.S. East Coast are seen as large potential sources of additional supplies to the U.S.

"The net result of all this then," he told the conference, "is that, from our standpoint, there could well be a sufficient available supply of natural gas in the next decade or so that could well raise questions as to the economics of Alaskan gas."

Royal Bank's Ashforth noted the extent to which large projects are vulnerable, in the financing they require and in the time needed to make them operational, to developments over which they have no control.

He also indicated the unsettling effect of constant changes in government policy and regulations, such as the recent moves by Ottawa on gas pricing.

In an obvious reference to the importance of prebuilding to the financing of the Alaskan highway line, he said: "For the industry to obtain the funds it needs, particularly for large projects, there must first be the assurance of a consistent and credible policy for its future development."

"That policy, further, has to make

provision for the export of energy surplus to domestic requirements."

The final session was given over to what may be considered the very visible bottom line of Alberta's relatively recent, and enormous wealth — the Heritage Fund. The fund, standing now at about \$4 billion, has come under increasing attack both within and without the province, so the man in the hot seat was inevitably Allan "Chip" Collins, Alberta's deputy provincial treasurer and the man who runs it.

Having gone through a relatively straightforward listing of the fund's origins — the province's oil and gas revenue and, increasingly, income from the fund itself — and its objectives, he came under immediate fire from Reginald Basken, western co-ordinator for the Oil Chemical & Atomic Workers International Union.

Basken said that the fund's objectives of improving the quality of life of Albertans and diversifying the provincial economy were simply not being achieved.

Richard Bonnycastle, head of Calgary-based Cavendish Investing Ltd., laid the blame at the door of the fund's investment committee, the provincial cabinet, and pointed to the need for far better qualified team of investment professionals. At the moment, he told the conference, the fund is like a rudderless ship.

Stanley Roberts, colorful president of the Canada West Foundation, provided perhaps the stoutest defense of the fund's existence. Counter-attacking what he saw as a preoccupation of Eastern bureaucrats, politicians and the media, he said the \$2 billion of the fund in short-term securities did not greatly worry Albertans.

He accused critical easterners of being irrational in perceiving the fund as the source of investments potentially more threatening to Canada than those of foreign powers.

In particular, he was seething of Federal Energy Minister Alistair Gillespie's recent remarks that: "It would be bad in principle for one province to own facilities . . . on which other provinces depend." Why? asked Roberts. Was it better that foreign multinationals own the facilities, or that they not be built at all?

Nevertheless, he went on to agree that more long-term investments would be desirable, both to make the fund less highly visible and to enable it to play a greater role in the prosperity of the West.

He highlighted the part the fund could play in boosting research and development, an area where Canada lags; in rationalizing key water resources; and in the development of pipeline transportation of commodities such as coal.

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