

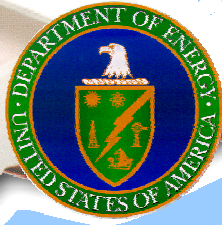


U.S. Department of Energy

Alaska North Slope Gas Task Force

“Future of Fossil Energy in
Alaska Workshop”

Sally Kornfeld
April 11, 2002

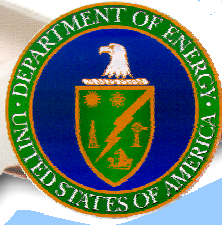


HISTORY

- 1968 Prudhoe Bay Discovery, IP = 1977.
- 1976 Congress passed Alaska Natural Gas Transportation Act (ANGTA)
- 1976 President selected the 'southern route', Congressional Approval.
- 1977 U.S.– Canada Transit Pipeline Treaty & Agreement on Principles
- 1977 FERC issued conditional certificates
- 1979 Office of the Federal Inspector (OFI) established.

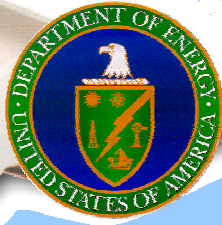
- **...but economics did not allow the project to be completed.**

- **1992 – EPACT eliminated OFI & the Secretary of Energy was given authority for all the functions and authorities of the OFI.**



Recent History

- 1/01 Alaska established Gas Pipeline Office
 - * Alaska considering state Right-of-Way
- 8/01 H.R.4 Passed
- 11/01 MOU signed by ANGTS withdrawn & existing partners
- Producers Completed >\$120 million Feasibility Study
 - * Results not released, but “uneconomic”...
- 12/01 Foothills Consortium proposal to Producers
- 3/02 U.S. Senate passed S. A. 3069 to S. 517, includes:
 - * establishment of Federal Coordinator,
 - * \$8 billion federal loan guarantee, and
 - * Gov’t corporation study under Energy Secty .

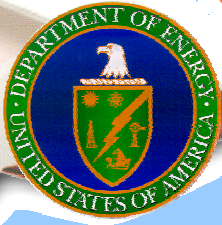


ANGTA – NGA

Agency's roles diverge depending on filing status –

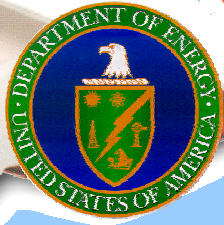
- If NGA filing – FERC lead, DOE Import/Export
- If ANGTA – Secretary of Energy responsible for:
 - General Monitoring and Oversight
 - Permit scheduling and coordination
 - Approval of Systems, Plans, and Design
 - Cost control
 - Enforcement of Federal Laws

Note: Foothills sponsors maintain ANGTA is triggered by Alaska State lands permit process



ANGTA Triggered? Yes!---No!

- Alaska – Gas P/L office - \$5 MM reimbursable
- Canadian NEB – Coordination plan for Arctic Gas Pipeline construction – reimbursable, 1/02
- Foothills proposal to producers, 1/02
- Preliminary finding and decision by Alaska's Division of Oil and Gas to sell Royalty gas to Anadarko/AEC, 3/02
- Foothills applying for state Right-of-Way



The President's National Energy Policy recommended:

“...the President direct the Secretaries of Energy and State, coordinating with the Secretary of the Interior and the Federal Energy Regulatory Commission, to work closely with Canada, the State of Alaska, and all other interested parties to expedite the construction of a pipeline to deliver natural gas to the lower 48 states.”



ALASKA GAS INTERAGENCY TASK FORCE

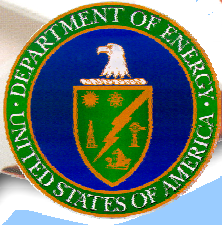
Co-Chairs: DOE & State

Current Members include:

- **DOE**
- **State**
- **Interior (BLM & MMS)**
- **Transportation (Office of Pipeline Safety)**
- **FERC**

Possible Additional Members:

- **Corps of Engineers, EPA, Justice, Treasury, USCG, etc.**



Natural Gas Task Force -- Outreach

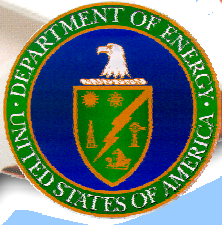
Regulatory Authorities:

- U. S. Federal,
- State of Alaska,
- Canadian Federal and Provincial

Industry:

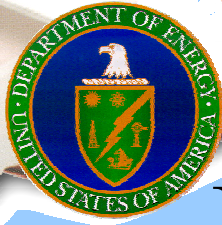
- Alaskan oil and gas producers
- Pipeline companies.

Outreach efforts have resulted in identification of significant issues.



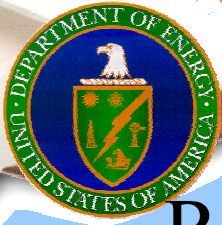
Is there a commercial project?

- Foothills moving forward under ANGTA
- Resource owners evaluations (“not economic”)
- Energy legislation provisions
- Indigenous peoples/Canadian process?
- Steel Tariffs Excluded on 48-52” X-80
- Canadian Lumber issue – trade sanctions/tariffs?
- Producers to meet with Foothills, etc. on April 16.
- Project uncertainty is main issue!



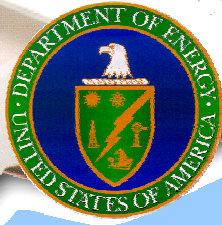
Planning with Uncertainties

- Route
- Legislative Basis (ANGTA or NGA)
- Timing of Application
- Applicant (s)
- U.S. and Alaska Pending Legislation



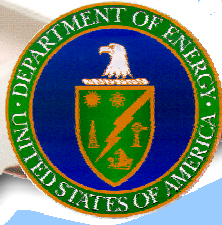
Research Needs for the Alaska Gas Pipeline

- **R&D areas identified by Industry**
- Industry is interested in partnering with U of A Fairbanks
- Alaska Gas Pipeline is of the highest priority to Alaska, its elected congressional officials, and President George W. Bush.
- These are **immediate R&D needs** to support the EIS and construction planning “These are areas that if we had the answers, we would use the information today”.
- Issues are varied, requiring cooperation between many departments of the University.



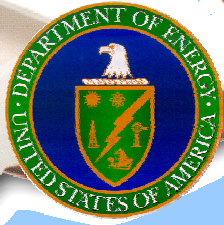
R&D Areas for Gas Pipeline

1. Mitigating Proximity to existing TAPS & permitted TAGS P/Ls
2. Stream crossings
3. Construction Engineering
 - a) Cost factors for constructing facilities in Alaska
 - b) Logistics – transportation of materials to and within Alaska
 - c) Trenching rates in permafrost
 - d) Design optimization of snow & ice pads and road construction
4. Economic/Social
 - a) Alaska workforce capabilities
 - b) Railroad viability from Lower 48 & Canada to Alaska

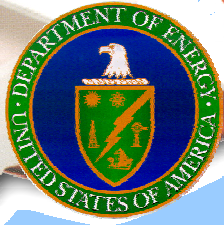


R&D Areas for Gas Pipeline (continued)

5. Identification and mapping of geotechnical regimes:
 - a) Remote sensing capability for permafrost & transition zones,
 - b) Ground-penetrating radar for trenching to locate boulders, etc.
 - c) Make useable GIS database w/ available geotechnical info
6. Soil/pipe interaction forces generated by freeze/thaw cycles.
 - a) Thermal modeling of ice heave & frost bulb dev't in streams
 - b) Design of insulation systems to avoid frost bulb development.
7. Statistical trending and forecasting of expected seasonal weather
8. Pipeline security/ Optical monitoring of pipelines



*The End –
or the beginning?*



ALASKA NATURAL GAS

Resource Base:

North Slope discovered resource = 35 TCF Proved
(likely greater – e.g. Point Thompson)

Ultimate Resource Estimate = 100 TCF

Cost Estimates:

Foothills “Lite” proposal at \$8 Billion

Producers estimate ANGTS route at \$18 Billion;

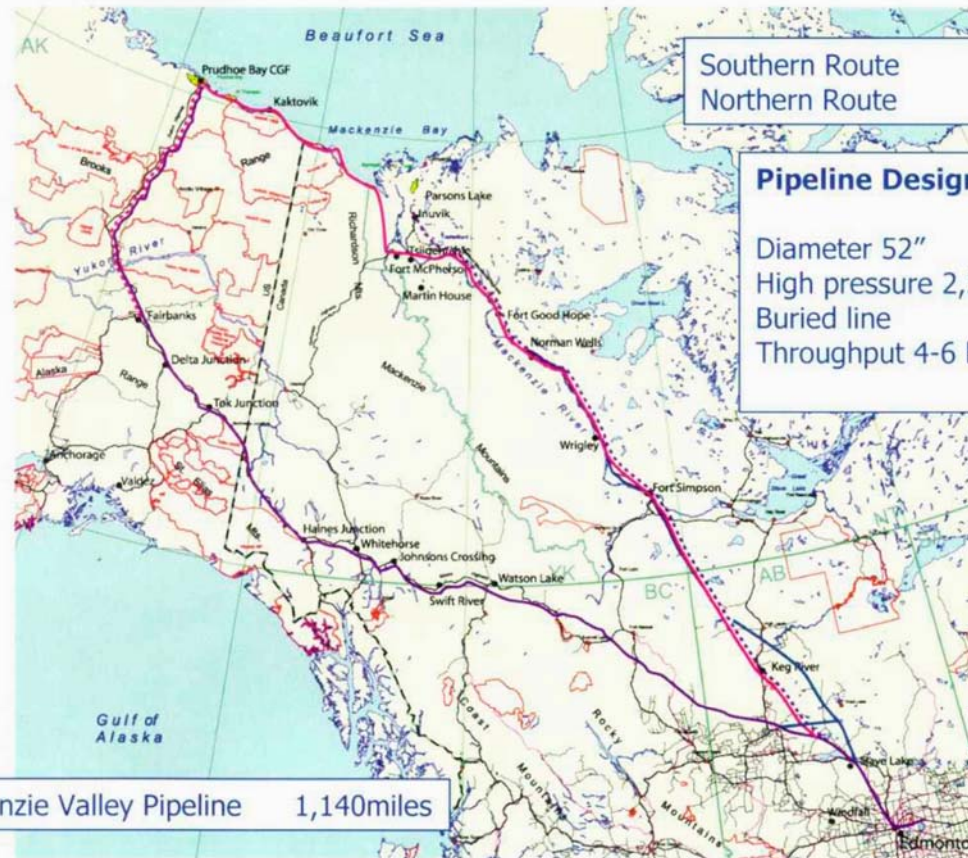
Producers estimate Over-the-Top route at \$15 Billion;
(both include Pt. Thompson dev’t & gas treatment plant)

ARC estimate (Over-the-top) = \$7.8 billion



ALASKA NATURAL GAS INTERAGENCY TEAM

Preliminary Comparison of Two Pipeline Routes

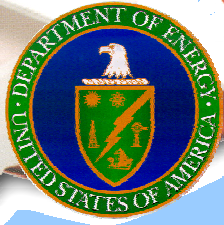


Southern Route	2,139miles
Northern Route	1,803miles

Pipeline Design Basis
Diameter 52"
High pressure 2,500 psi
Buried line
Throughput 4-6 bcf/d

Note: Mackenzie Valley Pipeline 1,140miles





Stakeholders

Producers: Prudhoe Bay = Phillips, BP, Exxon-Mobil, State of Alaska
Other North Slope = Anadarko, AEC

Pipeline interests: ANGTS MOU participants: Foothills, Williams, Duke Energy, Sempra Energy, Enron, PG&E Corp., El Paso, Westcoast Energy, TransCanada Pipelines

Over-the-top route: Arctic Resources Company

State of Alaska (12.5 % production royalty)

Gas Pipeline Office, State Legislature, Governor's Office

Natural Resources Defense Council (& Environmental NGOs)

Native Alaska groups

Senate Committee on Energy and Natural Resources

House Committee on Energy and Commerce (H.R. 4)

Canadian interests-National Energy Board, Provincial and local