PIPELINE

Project Delay Could Affect Industrial Benefits to Canada

Over $200 million have been spent by Foothills Pipe Lines (Yukon) Ltd. in preparation for construction of the mainline of the Alaska Highway gas pipeline, despite the delay to a 1989 completion, says A. Barry Yates, Deputy Administrator, Policy and Programs, of the Northern Pipeline Agency. "This is no fly-by-night project, here today and gone tomorrow," he told the Conference Board of Canada's Annual Western Business Outlook Conference on June 2 in Calgary.

Speaking on the industrial benefits to Canada as a result of the pipeline project, Mr. Yates remarked that many objectives contained in Foothills' (Yukon) procurement program have already been achieved, either through planning for the northern sections or by actual first-phase construction of the Western and Eastern Legs. "Overall, to December 31, 1981, the Canadian content of the Western Leg of the pipeline was 91 percent, and 2,255 person years of direct and indirect employment were generated by its construction. With respect to the Eastern Leg, to the same date, the numbers were 87 percent and 6,050," he reported, adding that the work has been done on time and within budget. Another positive result, Mr. Yates mentioned, has been the creation of mega project management capability in Foothills (Yukon), whereas only a few years ago Canadian companies would hire foreign-owned companies to perform this function.

A. Barry Yates, Deputy Administrator, Policy and Programs

As required under the *Northern Pipeline Act,* Foothills (Yukon) has fostered initiatives in the field of technological research, continued Mr. Yates. His list of examples include:

- the development of a research program and facilities in northern Alberta for the investigation of pipe fracture behaviour on a scale which is not available elsewhere in the world;
- a $15 million research program at Quill Creek, Yukon, for the testing of northern pipeline design and construction methods, a technology particularly appropriate to Canada;
- the establishment of new pipeline supply facilities in Canada such as suppliers of large-diameter valves and fittings and pipe coating;
- the expansion of the capacities of Stelco Inc. and Interprovincial Steel and Pipe Corporation Ltd. (Ipsco) to supply large-diameter pipe of high toughness values;
- increased Canadian research and development and plant facilities for turbo-machinery for use in compressor stations along the pipeline system. In particular Cooper-Rolls Corporation, Westinghouse Canada Inc. and Dresser Clark have contributed to this benefit;
- the practical implementation of new construction techniques such as automatic welding; and
- the development of new specialized equipment for the project such as a self-steering tractor-trailer unit for hauling 23-m (80-ft.) lengths of 1 422-mm (56-in.) diameter pipe.

"Of course not every attempt is successful," Mr. Yates pointed out. "Future markets can be misjudged, new suppliers may not be competitive, a new technology may turn out to be more costly, but these are risks of the marketplace."

New suppliers often need technical support and advice in the early stages, suggested Mr. Yates, and for this reason it is better that private industry provide the impetus, with only general guidelines and encouragement by government such as are expressed in the *Northern Pipeline Act,* rather than by direct government involvement. "The latter course tends to be inflexible and unable to adapt to changing circumstances," he said.

"Although the Alaska Highway Gas Pipeline Project has started well in terms of Canadian content and Canadian industrial benefits, there are some clouds on the horizon," Mr. Yates told his audience. The first potential difficulty relates to the timing of the project. Originally scheduled for completion by January 1983, construction of the pipeline would have fallen into a period of slack economic activity and, hence, its benefits

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Eastern Leg Construction — On Schedule

Since construction resumed March 22 on the remaining 207 km (129 mi.) of the Eastern Leg of the Alaska Highway gas pipeline in Alberta, less than five days have been lost due to poor weather. As of June 1, the contractor, Marine Pipeline Construction of Canada Limited, had completed approximately 50 percent of the welding and pipelaying and about 50 percent of the fabrication and installation of valve assemblies at intervals along the Eastern Leg, including the portions built last year in Saskatchewan and Alberta.

Hydrostatic testing, a process by which a section of the pipeline is filled with water and then pressurized to check for leaks and faults, began May 18 on the completed section running east from Jenner to the South Saskatchewan River. By the end of May, work was nearing completion on the section between a point near Rosebud and Gem and grading, pipe stringing, bending, ditching and welding operations had moved to the westerly section extending from Hicklon Lake to the Rosebud area.

The total work force on the line has averaged 600 crew members, with about seven percent native people and five percent women employed.

Although a strike in the building trades halted construction in early May on the compressor stations at Piapot, Richmound and Monchy, Saskatchewan, and the meter station at Monchy, approximately 56 percent of the work is completed at Piapot and 63 percent at Monchy. Construction had just begun at the Richmound station prior to the strike. In Alberta, work has continued on the station at Jenner, which was about 80 percent completed as of June 1.

The Eastern Leg is scheduled for a mid-August completion to meet a September 1, 1982, start-up date for the initial delivery of a maximum of 25.48 million m^3 (900 MMcf) of gas a day to midwestern markets in the United States.

Welding crew south of Carstairs, Alberta

Export Tests Eased

The National Energy Board (NEB) announced on May 14 it will adopt more flexible procedures to determine the amount of surplus natural gas in Canada available for export. Under the new system, a Reserves Formula replaces the Current Reserves Test as the means of establishing the maximum exportable surplus of gas. Although the NEB will continue to estimate Canadian requirements based on 25 times the current year's demand, the allowance for export will also be based on gas which is not sold under existing licence conditions. Previously, the NEB included in its calculations the remaining term quantity in the licence, regardless of whether the gas could be exported under existing licence conditions.

With the modified format, the NEB will combine the Current Deliverability Test and the Future Deliverability Test into a Deliverability Appraisal as the guide to determine the annual quantities of gas surplus to foreseeable Canadian requirements. The supply and demand information in the Deliverability Appraisal will include gas that can be delivered not only from established reserves, but also from future additions to reserves, expected Canadian requirements and estimated exports under existing licences. This differs from the former test which did not consider forecast levels of exports under existing licences as a basis for determining the allowance for exports.

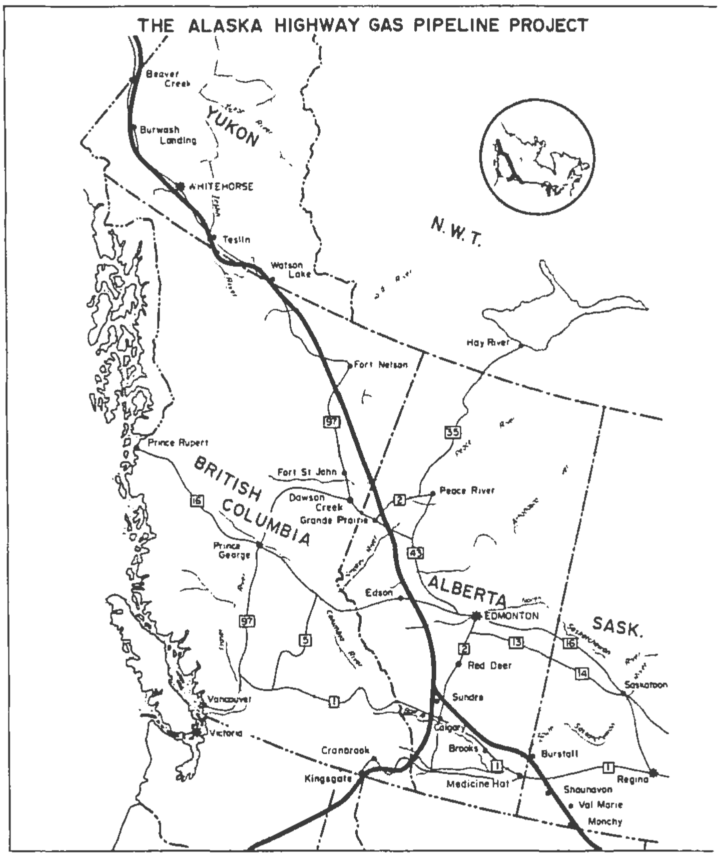
In the past few years, gas exports have been well below licensed quantities, states the NEB report on the decision. Before, the exportable surplus had been the difference between existing deliverability and a demand forecast which assumed a maximum of export sales. Now the surplus will be the difference between forecasted deliverability and a lower demand estimate which no longer presupposes full export sales.

The changes announced by the NEB were based on the first phase of a three-part hearing on natural gas exports held in Ottawa from March 16 to April 6. During the next phase, starting July 13, the NEB will examine about 30 applications for new licences and amendments and extensions to existing licences, involving an estimated total of 719.85 billion m^3 (25.4 trillion cu. ft.).

Views Sought on Compensation for Loss of Livelihood

The Treaty 8 Tribal Association and the Kaska-Dena Council have signed contracts with the Northern Pipeline Agency to seek the views of northeastern British Columbia's native people on the anticipated effects of the Alaska Highway gas pipeline on traditional areas used for trapping, hunting, fishing and cultural activities. Among the issues addressed during these consultations at the local level will be "compensation for loss of livelihood" — how to compensate individuals whose livelihoods may be disrupted as a result of the pipeline project. A similar contract is under negotiation with the Indian Association of Alberta. In Yukon, the Council for Yukon Indians has carried out research on traditional resources and pursuits in connection with the group's comprehensive land claim, pending settlement with the federal government.

The commitment to provide compensation to hunters and trappers for any losses incurred by project-related activities was one of the undertakings Foothills Pipe Lines (Yukon) Ltd. made before the National Energy Board in 1977. Since the Alaska Highway gas pipeline crosses three provinces and one territory, the company's compensation policy must take into account the differing conditions along the length of the line as well as the concerns of the various governments and hunters and trappers who may be affected, says Dr. John Naysmith, Assistant Administrator in charge of the Northern Pipeline Agency's socio-economic and environmental group. "It's Foothills' job to develop the compensation policy, while it's the Agency's responsibility to ensure that all parties involved have a fair opportunity to comment and contribute their views."



For this reason, a suitable process for developing a compensation for loss of livelihood policy is as essential as the policy itself, Dr. Naysmith remarks. Along with advisor W. Winston Mair, who presided over the Agency's hearings in British Columbia in late 1979, and Ken McKinnon and Robert Hornal, the Agency's Regional Administrators for Yukon and British Columbia respectively, Dr. Naysmith has formed a working group to consult with the company, the various government jurisdictions and the target groups concerned. The working group has already held several meetings with Foothills (Yukon) representatives to discuss in general terms what the compensation policy should comprise.

"We've also met with the Alberta, British Columbia and Yukon governments to bring them into the picture," Dr. Naysmith explains. The next round of discussions, scheduled for this summer, will be tripartite, including the company, the Agency and each government. "Once we have a clear understanding as to the position of each government, we'll approach the target groups — the native community and trappers' and hunters' associations — for their input." Dr. Naysmith emphasizes the importance of consultation at all times and says the compensation policy will take about a year to develop.

"Even at this early stage, everyone has agreed that the first priority is mitigation, which means reducing or preventing environmental impact altogether," notes Dr. Naysmith. The best example of mitigation that pertains to compensation for loss of livelihood is the scheduling of construction activities to avoid disturbance to wildlife or fish populations during sensitive periods of their life cycles. Another form of mitigation is to locate the pipeline right-of-way, access roads and related facilities away from certain areas of prime wildlife habitat or usage and to make sure project personnel and vehicles keep within the pipeline corridor.

"Environmental protection through mitigation is the thrust of the Agency's terms and conditions, which require Foothills to carry out construction in a certain way, at a particular time of year, in particular locations and so forth," says Dr. Naysmith. "We hope mitigation will take care of the concerns with respect to fish and wildlife but, in reality, the company may not be successful in every case. Over a period of several years of construction there could be a situatio where, in spite of mitigation, there's bee a decline of a particular animal popula tion — a muskrat or beaver colony fc instance. If there is a clear loss to a individual or to a group as a result, the the compensation for loss of livelihoc policy will apply and these people w be compensated."

The nature of the compensation ma vary, Dr. Naysmith explains, dependir on the loss. "For example, it could be cash settlement for lost income or cover the costs of relocating trapline It could also involve help in repairing replacing damaged property."

Although compensation is considere only after efforts at mitigation fail, D Naysmith stresses it is essential to ha a policy in place which is acceptable ar fair to everyone. A variety of aspec must be considered — social, cultura economic, political and biological. "Fir of all, we're dealing with a mixture target groups with different attitudes ar aspirations towards trapping and hu ting. To native people these activitie are a way of life; they want to be o there every year, during a certain se son, because they always have beer

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Foothills' Survey Identifies Moose Habitat in Yukon

by Ken Ambrock

Based on aerial surveys conducted in February and March, Foothills Pipe Lines (South Yukon) Ltd. has identified the areas of Teslin, Hazel Mountain and Spencer and Boulder Creeks as the most important wintering grounds for moose along the Yukon section of the Alaska Highway gas pipeline. Moose densities were highest in the burned over area on Hazel Mountain, where over 100 moose were observed on one survey conducted by the company's biologists in February.

Winter is the most critical time of year for moose, especially during severe winters when heavy snow and cold temperatures can result in a significant loss of fat reserves and increased predation. Moose are primarily browsers, with a diet of twigs of deciduous trees and shrubs such as birch, poplar, red-osier dogwood, willow and alder. It has been estimated that an adult moose requires an average of 23 kg (50 lb.) of browse per day to maintain adequate fat reserves over winter.

In Yukon, moose tend to spend the winter at higher elevations, usually above the 1 219-m (4,000-ft.) level where they can take advantage of abundant browse and milder conditions caused by temperature inversions. This differs from the situation in northern Alberta where the major river valleys are preferred wintering habitat.

To survive, moose must find adequate winter habitat, particularly where localized disturbances such as pipeline construction could cause the animals to temporarily abandon their accustomed range in the vicinity of the construction activity. If suitable alternate habitat exists away from the right-of-way, the impact of pipeline construction during winter is usually short-term and minor. However, if alternate winter range is limited, construction activities could possibly drive moose onto poorer quality range and, as a consequence, place additional stress on the animals. As a means of mitigation, pipeline construction can often be scheduled to avoid work in winter in the area of concern or delayed until early spring.

During the course of last winter's survey, Foothills (South Yukon) evaluated moose densities and habitat conditions in a 4-km (2.5-mi.) wide corridor along the pipeline route in Yukon. In sections where densities are relatively high, habitat conditions were assessed on the basis of a 12-km (7.5-mi.) wide corridor. This information will be considered in establishing schedules and the location of facilities such as construction camps and compressor stations in environmentally-suitable areas.

Photo courtesy of Government of Yukon

Moose crossing the Haines Road near Kluane National Park.

The winter moose surveys form part of Foothills' (South Yukon) overall wildlife program. The results, along with previously collected data, will contribute to the preparation of the company's wildlife protection plan for the Yukon segment of the pipeline.

Ken Ambrock is the Northern Pipeline Agency's Senior Environmental Scientist, Wildlife.

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Views Sought on Compensation for Loss of Livelihood

observes Dr. Naysmith. "With non-native trappers, there seems to be less of a cultural connotation. The so-called 'white trapper' is a quasi-businessman. If conditions aren't right or fur prices are down one year, he'll do something else."

Dr. Naysmith notes that the Province of Alberta has a legislated compensation policy, the Yukon Territorial Government is developing one and precedents exist in British Columbia, set by B.C. Hydro and Petro-Canada. "Foothills' policy must be in accord with each of these governmental policies insofar as each segment of the pipeline is concerned."

From a biological perspective, Dr. Naysmith says compensation for loss of livelihood is based on a fair assessment of the reductions of available big game and fur-bearing species which may occur as a result of the pipeline project, aside from natural fluctuations in wildlife populations. Furbearer losses can be checked by comparing trapping harvest records from year to year, he explains. "However, with game, it's more difficult to determine whether a certain population of moose or caribou, for instance, has been affected, because no harvest records of hunting activities are kept."

The extent of losses to trappers and hunters should be decided by an arbitration process, suggests Dr. Naysmith, by a small group of people from the community, respected by everyone. "The individual who feels he has been adversely affected would present his case and even if he is unable to supply records, the 'arbitration board' members would reach a conclusion based on their own experience and understanding of trapping and hunting. They would also know whether the person has been a good trapper over the years, or if he never went out on the line at all." Whatever Foothills develops as a compensation policy, it must permit people to come in and make their case, concludes Dr. Naysmith. "It has to function at the personal/community level; it can't be bureaucratic."

...mmissioner Briefs House Committee ... Agency's Plans

...e series of delays in proceeding ...second stage construction of the ...ka Highway Gas Pipeline Project has ...d problems with respect to the man...ment of the Northern Pipeline Agen... affairs, says the Hon. Mitchell Sharp, ...mmissioner.

...peaking on May 12 in Ottawa to the ...nding Committee of the House of ...mmons on Northern Pipelines, Mr. ...rp reported that since Foothills Pipe ...s (Yukon) Ltd. plans to revise the ...e of its activities to conform to the ...w project schedule, the Agency will ...tructure the scale of its operations ...cordingly. "Some downward adjust...ent in expenditures from projected lev... may result," he noted, referring to ... Main Estimates of the Agency for ...82-83 which were prepared some ...nths prior to the recent decision to ...lay completion of the pipeline to ...89. Total expenditures were esti...ated at $9,525,000, an increase of ...out $456,000 — approximately five per...nt — over the comparable figure for the ...st fiscal year. The Commissioner added ...at all costs of the Agency are fully re...overable from Foothills (Yukon) and as ... December 31, 1981, the Agency had ...een reimbursed for expenditures total...ng some $18.3 million.

With respect to the anticipated total ...ost of the pipeline system, Mr. Sharp ...aid that Northwest Alaskan Pipeline Company, in its submission last fall to the United States Congress on the waiv...er proposals, calculated the actual cost could vary between $39 and $45 billion based on inflation ranging from 7 to 11 percent, interest rates between 10 and 14 percent, and a completion date of 1986. In view of the delay to 1989, Mr. Sharp suggested that while the Incentive Rate of Return (IROR) scheme adopted in both Canada and the U.S. to control project costs may encourage the sponsoring companies to hold down actual expenditures, it also may induce them to inflate the projected costs on which the IROR scheme is based — especially to allow for contingencies. "Another factor," he observed, "is the downward pressure on certain costs that is being reflected in bids being received by the pipeline companies on both sides of the border."

Turning to issues in Yukon, Mr. Sharp provided an update on the review under way by the federal Environmental Assessment and Review Panel. Since February 1981, Foothills (Yukon) has been responding to deficiencies identified in its document submitted to the Panel in 1979 on the potential environmental impact of construction of the pipeline through the territory. Based on hearings held last June in Whitehorse, the Panel concluded the company's preferred route through the Ibex Pass was environmentally sound. However, it recommended that an alternate route avoiding the Ibex be adopted because of the environmental risk of increased public access into the area created by the pipeline right-of-way.

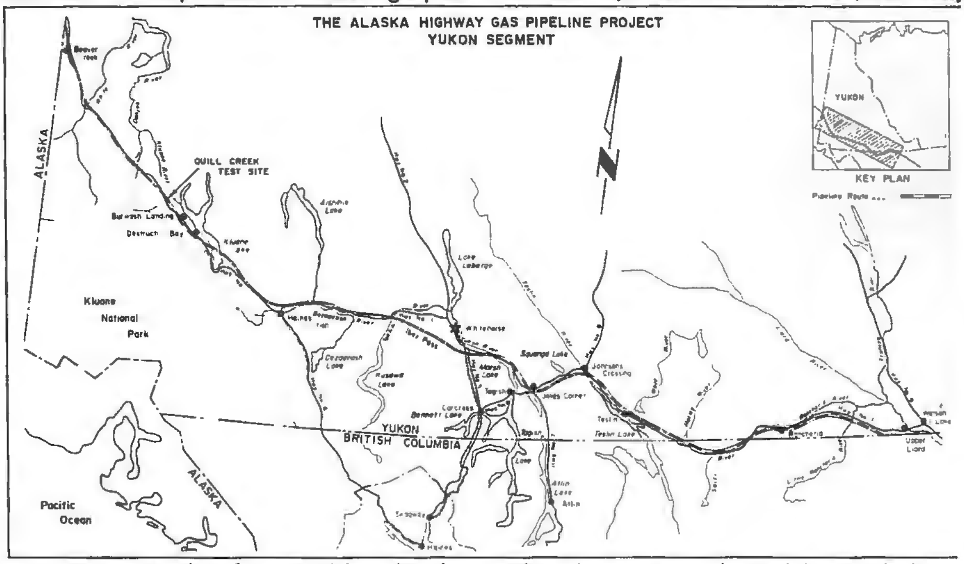
"In view of the fact that Yukon officials are in the process of drawing up a management plan for consideration by the territorial government which is aimed at controlling access to the Ibex regardless of whether the pipeline is built through that area, we in the Agency have deferred consideration of this routing question," Mr. Sharp told the Commons Committee.

At further hearings in Whitehorse this summer, the Panel will consider additional information submitted by the company on other issues, including some routing questions in areas other than the Ibex. Mr. Sharp said he hopes to have the Panel's advice on these routing matters by next fall so that it can be taken into account by the Agency in deciding on the final route of the pipeline in Yukon. "Shortly thereafter it would be our intention to enter into an easement agreement with Foothills, covering the right-of-way of the pipeline through the territory, a document that is essential to underpin the financial arrangements into which Foothills enters with lenders. Once such an agreement has been reached it should also be possible to lift the freeze that has existed for some years on new land developments within a five-mile corridor straddling the prospective pipeline route."

The Commissioner also spoke on the socio-economic and environmental terms and conditions to be applied by Foothills (South Yukon) for planning and construction of the pipeline in Yukon. The federal cabinet has approved the terms and conditions for the other segments of the system in Canada. "However those fo... Yukon have been deferred," explaine... Mr. Sharp, "because of the possibility that the proposed provisions relating ... the preferential training and hiring ... northern residents and the hiring in th... south only of other Canadians might b... in conflict with the mobility provisions ... the new Canadian Charter of Rights a... Freedoms.

"While officials of the Department ... Justice are currently considering whet...er some modifications are required ... the terms and conditions, as they stan... to bring them into conformity with th... provisions of the Charter, I am hope... that our basic objectives can still b... achieved."

Mr. Sharp concluded with commen... on the close liaison the Agency co...tinues to maintain with representativ... from the Alberta, British Columbia, Sas...atchewan and Yukon governments a... with the Agency's counterpart in t... United States, the Office of the Fede... Inspector.



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Project Delay Could Affect Industrial Benefits to Canada

to Canada would have been very substantial, Mr. Yates explained.

With the revised timetable, the majority of construction may take place in 1987, 1988 and 1989. "No one yet knows exactly what other Canadian mega projects will take place during those years or what the state of the economy will be then but, should the volume of construction exceed the capacity of the available resources, then clearly some of the anticipated benefits from the Alaska Highway gas pipeline could be lost," observed Mr. Yates. "Construction during a period when the economy is overheated would be affected by inflationary costs, skilled labour shortages and shortages of key materials." This would not only reduce Canadian benefits but also increase the costs to the American gas consumer, he remarked. "The delay also threatens the credibility of the efforts made by Foothills or the Agency to encourage the creation of new businesses or the expansion of existing ones in anticipation of orders."

The second difficulty Mr. Yates discussed lies in the area of vendor financing. "It is well known that offshore suppliers can offer cheap financing, often provided by their governments, either directly or indirectly," he pointed out. Both the United States and Canadian sponsors of the pipeline intend to seek vendor financing, he stated, and on the surface such action might reduce consumer costs.

"The competition offered by offshore financing is real and a wider examination of its consequences, than would be undertaken by the sponsor companies, should be undertaken by the Canadian and U.S. governments," Mr. Yates said. "Only a clear competitive edge, demonstrated after having taken into account all the related benefits in terms of jobs and spin-off benefits from domestic production, should warrant accepting vendor financing as the determining factor in awarding a contract for the pipeline."

According to Mr. Yates, this appears to be less of a problem in Canada than in the United States because Foothills' (Yukon) procurement program states: "Should it be suspected or should there be any reason to believe that Canadian suppliers may be deprived of a fair and competitive opportunity to supply, the Northern Pipeline Agency shall be notified of the particulars of the situation. Examples of such situations might be suspicion of injurious dumping, injurious subsidization, unusual financing terms, collusive tendering or other similar practice harmful to the competitive process."

The obtaining of industrial benefits from large Canadian projects is an evolving process, noted Mr. Yates, referring to the June 1981 report by the Major Projects Task Force co-chaired by Robert Blair of Nova, An Alberta Corporation, and Shirley Carr of the Canadian Labour Congress. "This report emphasizes above all the need for excellent communications between governments, project sponsors, labour and suppliers." Mr. Yates also mentioned the efforts of the Office of Industrial and Regional Benefits of the federal department of Industry, Trade and Commerce as well as the Canadian Oil and Gas Lands Agency.

"Results will not be immediate: Rather they will be gradual and cumulative," Mr. Yates warned. "Neither is it a free ride. Suppliers must be aggressive and highly competitive to benefit; project sponsors must be generous with their advice and technical support, meticulous in the development of their programs and fair and even-handed in their application; governments must be conscious of the practicality of what they are proposing and avoid unnecessary bureaucratic procedures."

In conclusion, Mr. Yates pointed out that the Alaska Highway gas pipeline remains a challenge. "Substantial industrial and economic benefits have accrued to Canada from the first phase of construction and these can be increased by a magnitude of four times or more in the second phase. They will not be available forever, however, and a long-term setback in getting on with the project could convert these anticipated benefits to disadvantages and destroy the credibility of governments and major project sponsors in their efforts to encourage industrial spin-offs from mega projects."

Senior Surveillance Officer Jim Wallace (left) shows construction underway at Jenner, Alberta compressor station to visiting Swedish journalists. A natural gas pipeline, the first in Sweden, is planned for construction.

Pipeline

The Northern Pipeline Agency was created by Parliament in April, 1978 to oversee the planning and construction of the Alaska Highway gas pipeline project in Canada. Enquiries or suggestions regarding the Agency's publication, *Pipeline*, are welcome and may be directed to:

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