The Berger Inquiry: An Impact Assessment Process

The Mackenzie Valley Pipeline Inquiry represents an innovation in the Canadian decision-making process.

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Summary. The Mackenzie Valley Pipeline Inquiry, conducted by the Honorable Mr. Justice T. R. Berger, undertook to explore thoroughly the issues surrounding the building of a northern pipeline. In doing so, the Inquiry provided a forum for the interplay of the technical and environmental issues with very personalized social and cultural concerns. As a process, it reached out beyond the direct participants: it became one in which all Canadians, north and south, participated. It touched some of Canada's deepest concerns—concerns about energy policy, resource allocation, the price and priority of industrial development, cultural sovereignty, and self-definition. These have become national concerns, not just regional. And so, no matter what the final decision is about the pipeline, the Inquiry will have a profound and lasting national influence.

The Mackenzie Valley Pipeline Inquiry, headed by Judge Berger, was charged with the responsibility of assessing the social, economic, and environmental impact of a highly complex, massive, and technologically innovative project—a pipeline to bring natural gas from the western Arctic to markets in southern Canada and the United States (Fig. 1). If built, it would be the first large-diameter, high-pressure, thick-walled, chilled gas pipeline. Unlike any previous pipeline, it would be buried in ice-rich permafrost. In terms of capital expenditure the project has been described as the largest ever undertaken by private enterprise. And, according to the 1972 *Expanded Guidelines for Northern Pipelines* (*1*) (which were part of the Inquiry's terms of reference), the gas pipeline corridor could eventually contain a number of other transportation systems such as an oil pipeline, a highway, a railroad, and electrical power and telecommunication facilities.

The pipeline itself would represent a massive intrusion of industrial development into a frontier area with a unique biology and vast wilderness areas. It would pass through lands claimed by Canada's native peoples—Indian, Inuit (Eskimo), and Métis—and through a region in the midst of a struggle for political autonomy. The debate that the project has inspired "is not simply . . . about a gas pipeline and an energy corridor, it is a debate about the future of the North and its peoples" (*2*).

The project's effects and implications are not of concern to the North alone. The pipeline is proposed at a time when concern over damage to the environment has become a matter of widespread interest. It is also a time when the world is faced with what is popularly known as the "energy crisis," a situation that makes the rational, long-term planning of resource development and exploitation absolutely imperative and extraordinarily difficult.

A project such as the Mackenzie Valley pipeline requires close and critical scrutiny. Intelligent decisions on where, when, and how to build the pipeline must be based on an accurate assessment of its impact. Understanding this impact requires thorough information collection. If obtaining such information is a long and tedious process, it is because of the complexity of the issues involved. Nevertheless, a failure to get at the roots of the matters involved could prove disastrous.

Impact assessment is a new field. There is no universally accepted technique for addressing the complex biologic, human, and political issues involved in major development proposals. As the Inquiry set about its task of examining each of these issues, of relating them to one another, and of assessing the significance of the whole, it became evident that the development of an appropriate methodology was crucial in order for the Inquiry to discharge its responsibilities effectively. Examination of how the Inquiry was conducted will reveal that we have crossed an important threshold in the development of a method for assessing the impact of technologically complex projects. The subject matter of the Inquiry, the findings, and the methods used to arrive at them are inextricably linked. This article deals primarily with the assessment process itself. Facts and findings are used mainly to illustrate the basis for the methodology developed by the Inquiry, and the implications of using this approach to acquire sufficient information to make an assessment possible. But before examining the methods employed, a brief look at the circumstances that gave rise to the Inquiry is in order (*3*).

The Government and Industry Framework

The frontier pipeline and related hydrocarbon development proposals currently under consideration are a consequence of the 1968 discovery of oil and gas in Prudhoe Bay, Alaska, and Imperial Oil's discovery, in 1970, of oil in the Mackenzie Delta. Further discoveries of oil and gas, the increasingly urgent need to find and exploit new energy resources, and the growing public pressure to limit potentially harmful impacts on the physical and human environment resulted in government programs designed to assess the long-range effects of frontier oil and gas development. These include:

1) In 1968, an interdepartmental Task Force on Northern Oil Development was formed to compile information on the existing oil situation in the North and on potential transportation routes, to coordinate all pertinent information available from federal agencies and departments, and then to report and make recommendations to the government.

2) In 1970, the Government of Canada responded to the northern pipeline proposals emanating from industry by formulating general guidelines for the con-

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struction and operation of oil and gas pipelines in the Mackenzie Valley and northern Yukon. These guidelines covered such subjects as environmental protection, pollution control, the corridor concept, Canadian content, and the participation, training, and employment of northern residents.

3) In June 1972, the *Expanded Guidelines for Northern Pipelines* (*1*) was tabled in the House of Commons. It was intended to provide more specific direction to industry. Later, it was incorporated in the Inquiry's terms of reference. These guidelines dealt with the corridor concept, the environment, and regional socioeconomic matters and outlined the information that should be contained in an application to build a pipeline. Essentially they required that an applicant demonstrate that its proposed pipeline would be acceptable environmentally and socioeconomically.

There is clearly a risk in leaving the exclusive responsibility of demonstrating such acceptability to the party with greatest vested interest. Recognizing this risk, and the fact that adequate data and expertise were lacking, the government established the Environmental-Social Program, which operated from 1971 to 1975. The program's function was to acquire base-line data and assessments of the pipeline corridors under consideration in the Mackenzie Valley and across the northern Yukon. Much of the work was of a pioneering nature since there was little environmental, technical, or sociological information on which to draw. Total funding for the program was $17.5 million. About 200 reports and papers were published, many of which later proved useful to the Inquiry.

To fulfill the requirements of the Pipeline Guidelines, and prior to filing its application in March 1974, the prospective pipeline applicant, Canadian Arctic Gas, undertook studies of the environmental and socioeconomic impact of a pipeline at a cost said to be close to $50 million. The company also provided $3.5 million to establish the Environment Protection Board (EPB) to carry out an independent examination of the pipeline project. The EPB, composed of distinguished scientists and engineers, published a series of reports and later appeared at the Inquiry as a participant. The reports and testimony of the EPB were quite critical of the pipeline proposal; in fact, many aspects of the project were found to be environmentally unacceptable.

In March 1974, Arctic Gas filed its pipeline application backed by its own multimillion dollar studies and documentation (*4*). The application went simultaneously to two Canadian agencies: the National Energy Board (NEB) and the Department of Indian Affairs and Northern Development (*5*). The NEB, which issues the Certificate of Public Convenience and Necessity, considers matters that are of national interest, such as gas supply, demand, project financing, and technical feasibility. The regular NEB quasi-judicial process was set in motion immediately on receipt of the application (*6*). The Minister of Indian Affairs and Northern Development, in his capacity as territorial landlord, issues a right-of-way permit. In response to the application, the Minister established the Pipeline Application Assessment Group and then the Mackenzie Valley Pipeline Inquiry.

The Pipeline Application Assessment Group (PAAG) was composed of sociologists, economists, engineers, and environmental scientists drawn from departments of the federal and territorial governments, assisted by outside experts as needed. After a preliminary assessment of the application, the PAAG prepared 56 questions that related directly to the requirements of the *Expanded Guidelines for Northern Pipelines* (*1*) but were inadequately covered in the application. The PAAG then compiled its assessment report, the first such report produced by government experts after receipt of the Arctic Gas application. This document, *Mackenzie Valley Pipeline Assessment* (*7*), was an examination of the potential socioeconomic, environmental, and technical effects of the proposed pipeline. The PAAG drew heavily on the research compiled by the Environmental-Social Program as well as on other government, industry, and academic research available at the time.

The introduction to the PAAG report contained comments on two problematic aspects of the acquisition of adequate information from which to make an assessment. The first comment was that, despite the considerable amount of information available, there are ". . . some gaps in information. Although many of these involve specific effects of specifications proposed by the applicant, others arise from gaps in basic scientific knowledge" (*7*, p. 3). The second comment refers to Arctic Gas's tendency to give assurances in place of specifics.

Both of these inadequacies (lack of scientific knowledge and of the specifics of the company's intended course of action) plagued not only the PAAG but also the Inquiry. It was not until the Inquiry's hearings were well under way,

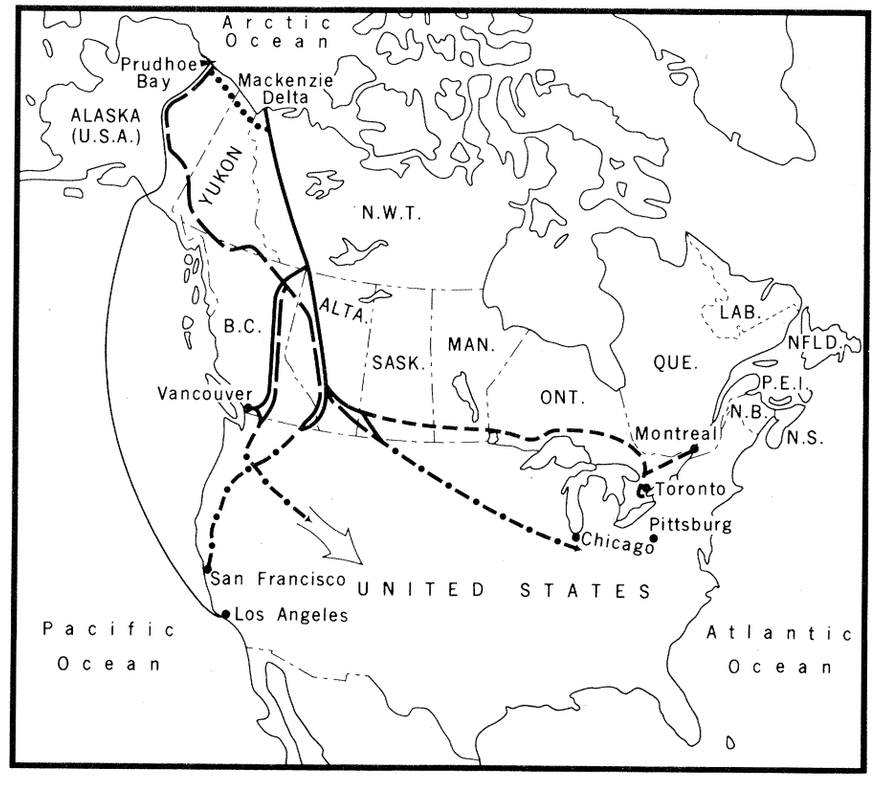


Fig. 1. Possible pipeline routes for northern gas. (———) Mackenzie Valley route (Arctic Gas or Foothills) and connections in Canada. (●●●●●) Prudhoe Bay to Mackenzie Delta route (Arctic Gas). (— —) Alaska Highway route (Alcan project) and connections in Canada. (— — —) TransCanada pipelines, taking Mackenzie Delta gas to eastern Canada. (–●–●–) Connecting pipelines in the United States. (———) El Paso route (pipeline and tanker system).

for instance, that it became apparent that the critical problem of frost heave was nowhere near solution. This example demonstrates one of the difficulties inherent in attempting to assess projects of this scale and complexity. In small-scale ventures the "bugs" usually become manifest during trial runs, through commercial competition, or because the technology involved is well enough understood to elicit informed criticism from diverse quarters.

In most huge technological projects, such as the Mackenzie Valley pipeline, there can be no trial runs. Problems, even failures, are demonstrable only when the entire system is in place; commercial competition is unlikely; and the only people with the technical knowledge to evaluate the project are its proponents, who are all the more likely to err precisely because of their own vested interest and the lack of independent criticism.

In many ways this particular project has had the unique advantage of having a second applicant, Foothills Pipe Lines, enter the fray (*8*). The adversary position of the two companies meant that there was criticism available from the industry itself. As a result it seems that more technical information became available than would otherwise have been the case.

Technical information, however, was only one type of information required by the Inquiry. If it, and gaps in it, took precedence at the outset of the assessment process, this was because the technological aspects of the project were the foremost concern of the applicant. Naturally, the initial response to the proposal focused on the same aspects. However, the Inquiry's concern with technological matters centered primarily on their relation to the regional, social, environmental, and economic spheres of life. In examining these broader issues, the Inquiry sought to get beyond this or that isolated fact and to assess comprehensively the full impact of the pipeline on the North—that is, to examine the roots of the matter. That this aim was in large measure achieved was due to the procedures employed throughout the assessment process.

Proceeding with the Inquiry

On the day the Arctic Gas application was received by the Department of Indian Affairs and Northern Development, the independent Mackenzie Valley Pipeline Inquiry was established by an Order-in-Council to "inquire into and report upon the terms and conditions that should be imposed in respect of any right-of-way that might be granted across Crown Lands for the purposes of the proposed Mackenzie Valley pipeline having regard to (a) the social, environmental and economic impact regionally, or construction, operation and subsequent abandonment of the proposed pipeline in the Yukon and the Northwest Territories, and (b) any proposals to meet the specific environmental and social concerns set out in the *Expanded Guidelines for Northern Pipelines . . .*" (*9*).

The scope of the Inquiry was thereby defined by the Order-in-Council itself and by the pipeline guidelines. The latter proved to be a significant inclusion, since the guidelines dealt not only with the construction of a gas pipeline but also with the development of a Mackenzie Valley corridor, a far more complex and wide-ranging subject area for impact assessment. This fact is often overlooked by those who are critical of Judge Berger's interpretation of his mandate. It is, for example, on the basis of specific provisions in the pipeline guidelines that Judge Berger was able to make recommendations excluding pipeline development from "geographic areas of specific environmental and social concern or sensitivity" (*1*, p. 11) such as the northern Yukon. The Inquiry was not simply an exercise in developing terms and conditions to be imposed on a pipeline project.

The Inquiry did not start out with a prescribed set of procedures or a preconceived notion of what would transpire. Its form and content were established on the basis of testimony heard during the preliminary hearings. What it did have from the outset was a broad mandate to see what could be done to protect the people, the environment, and the economy of the North. There was an obligation to explore every conceivable way in which the pipeline might affect the North. Only by a thorough and balanced assessment could the sensitive areas be detected and examined.

It was known that the region has a fragile ecosystem and supports a human population directly dependent on the environment. It was also known that the scale and complexity of the pipeline project would place enormous stress on every aspect of life in the region. But because the project itself had no precedent, there was no way of knowing how much of that stress could be absorbed or which aspects could best or least absorb it. Consequently, there was no way of knowing in advance what information would prove relevant and what immaterial. The assumption by Judge Berger that all the information received might be pertinent was essential to the assessment of the complex issues that were raised throughout the Inquiry process.

The procedures employed by the Inquiry had to be sufficiently flexible to incorporate unexpected departures and to respond to findings as they emerged. In order for such a learning process to occur, a forum for discussion had to be provided that was more than merely public; it had to be accessible and inviting to the people whose interests were being so thoroughly scrutinized.

The Preliminary and Overview Hearings

If there were any preconceptions about how the Inquiry should proceed, they lay in the direction of ensuring that it be thorough, fair, flexible, and accessible. This was the view brought to the preliminary hearings, although it was not then clear what influence this view would have later on or how its concepts might be incorporated into formalized proceedings.

The function of the preliminary hearings was to provide everyone—Judge Berger, Commission Counsel, the applicants, and whoever wished to attend the hearings or make a presentation—with an understanding of the nature of the task ahead. All those who would be affected by the project—or even remotely suspected that they might be—were given an opportunity to explain their concerns, and to make suggestions regarding the procedure for the hearings and what areas the Inquiry should consider.

From what was said during these hearings, the framework for the remainder of the Inquiry emerged: the structure (Fig. 2), the ground rules and procedures, the topics and issues. It became apparent that if the Inquiry were to fulfill its mandate, it would have to continue to do its utmost to be thorough, fair, flexible, and accessible. Thus, the view brought to the preliminary hearings became the foundation for the procedures employed throughout the Inquiry.

After the preliminary hearings and immediately prior to the start of the Inquiry hearings proper, Judge Berger held a week of overview hearings in Yellowknife. The function of the hearings was to set the stage for the main hearings by allowing participants and independent experts to make presentations on engineering, environmental, and socioeconomic issues without undergoing cross-examination (*10*).

The Inquiry Hearings

The Inquiry's main hearings were conducted in two different but equally important ways. Between the two kinds of hearings, formal and community, evidence was heard from everyone who wished to participate—from the teenager in Old Crow, the hunter in Fort Franklin, the president of Arctic Gas in Yellowknife, the fisherman in British Columbia, the member of Parliament in Ottawa to church groups in Halifax.

In the formal hearings, expert witnesses for each participant gave prepared testimony and were cross-examined by all other participants. Each witness was required to explain not only his position but the background studies and material from which it was derived. Although formal, these hearings were intentionally not formidable. Most participants were represented by legal counsel, but some participated without such assistance. For example, the Environment Protection Board was represented by its chairman, the Northwest Territories (NWT) Association of Municipalities and the NWT Mental Health Association by their respective executive directors, and the NWT Chamber of Commerce by its president.

The community hearings were probably the most publicized aspect of the Inquiry. Although conducted informally, the evidence presented was accorded the same respect and consideration as that presented at the formal hearings. The community hearings were a product of the suggestion put forward during the preliminary hearings that, rather than have the people of the North travel great distances to present their concerns, the Inquiry should go to them. The Inquiry traveled over 17,000 miles in the Northwest and Yukon Territories visiting 35 cities, towns, and villages to hear evidence given in eight languages. Nearly 1000 people, in the company of families and neighbors, spoke directly to Judge Berger on every aspect of the project's likely impact. As discussed below, these hearings provided a forum for testimony of a kind that could not have emerged from their formal counterparts.

The formal and community hearings were linked together by the northern broadcasting service of the Canadian Broadcasting Corporation (CBC). Each evening when the Inquiry was in session, the CBC northern network broadcast Inquiry news in English and in the native languages. Everyone in the region was thus able to keep informed and knew, before the Inquiry arrived in their community, which issues had been debated by the experts and what their neighbors in other communities had said.

Radio coverage was not the only means used to make the Inquiry's proceedings accessible. To ensure that there would be a free exchange of all pertinent information, every participant, including the government, was required to provide a list of all relevant documents, even those that might be privileged. And because the pipeline applicants had advantages of expertise and financing over all of the other participants, funding was provided to numerous native and regional organizations to cover various costs of participation in order to help balance the situation (*11*). The criteria set by Judge Berger for those organizations seeking funding were as follows (*12*):

1) There should be a clearly ascertainable interest that ought to be represented at the Inquiry.

2) It should be clear that separate and adequate representation of that interest will make a necessary and substantial contribution to the Inquiry.

3) Those seeking funds should have an established record for concern for, and should have demonstrated their own commitment to, the interest they seek to represent.

4) It should be shown that those seeking funds do not have sufficient financial resources to enable them adequately to represent that interest, and they will require funds to do so.

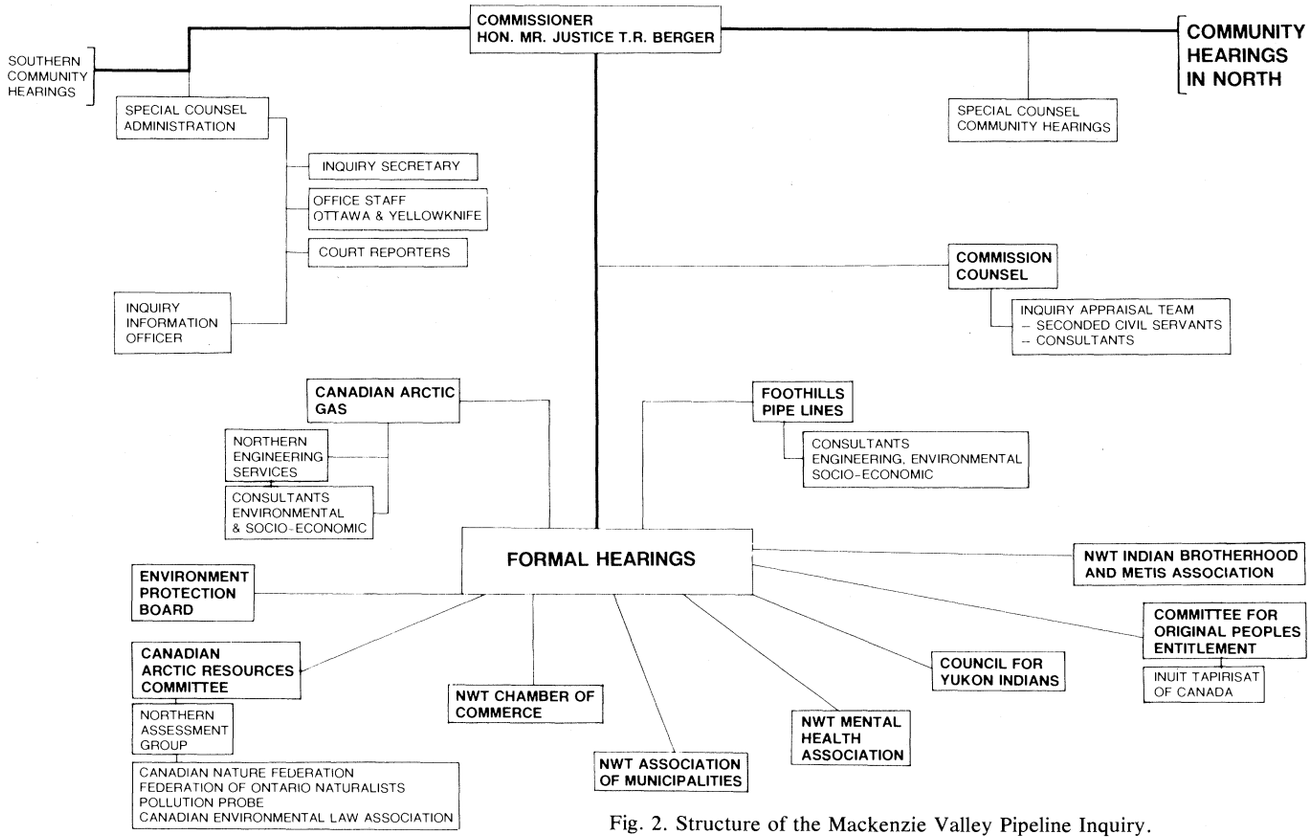


Fig. 2. Structure of the Mackenzie Valley Pipeline Inquiry.

5) Those seeking funds should have a clearly delineated proposal as to the use they intend to make of the funds and should be sufficiently well-organized to account for the funds.

Before looking at the Inquiry in action, there is one final procedural aspect that deserves mention. Early in the Inquiry, all of the participants, including Commission Counsel, were asked to prepare arguments in support of the socioeconomic and environmental terms and conditions they felt should be attached to the granting of a pipeline right-of-way permit. These arguments were to be presented publicly at the end of the hearings. Asking Commission Counsel to prepare such a document was a novel departure in the history of Canadian inquiries and commissions. Judge Berger made such a request because he felt that all views, including those of his staff, all of whom worked for Commission Counsel throughout the hearings (Fig. 2), should be made public and that everyone should have a chance to rebut them in public. It was a logical extension of the full and fair inquiry principle that prevailed throughout.

The Inquiry in Action

Once the hearings began, it became clear that something unique was taking place. Perhaps the most strikingly innovative element of this inquiry lay in the two kinds of hearings, each taking place in a different forum. Both the formal and the community hearings were designed to gather information, and they did. It was known that the two would vary widely from one another in tone and in the perceptions of the witnesses; that was the intention. What was far from obvious was the extent to which the two would alternately supplement, complement, reinforce, or negate each other, providing at all times a thorough, well-rounded perspective on the issues at hand.

The Inquiry's mandate, it will be recalled, was to assess the impacts of the proposed pipeline project and of the subsequent transportation corridor that might include, amongst other things, an oil pipeline, a highway, a railroad, and electrical power transmission and telecommunication facilities. From the beginning, the Inquiry sought to assess the impact of exploration and development that would follow approval of a pipeline, that is, the cumulative effects of the increased activity that would be triggered by the pipeline. This examination was lacking in the pipeline companies' application, despite the fact that the pipeline guidelines required it.

For local residents, however, the cumulative aspect of development is of the utmost concern. They know that a process, once started, always seems to push forward, first by small increments, then by large ones, and that the end result is never what was originally intended. Vince Steen, an Inuit resident of Tuktoyaktuk, speaking at the community hearings, gave the historical perspective of the cumulative effect of the white man's intrusion into the North—an intrusion that is traditionally regarded by southern people as limited to mutually exclusive ventures. In concluding his assessment, Mr. Steen said (*13*):

> Now they want to drill out there. Now they want to build a pipeline, and they say they're not going to hurt the country while they do it. They're going to let the Eskimo live his way, but he can't because . . . the white man has not only gotten so that he's taken over, taken everything out of the country and everything, but he's also taken the culture, half of it anyway.
>
> For the Eskimo to believe now that the white man is not going to do any damage out there with his oil drilling and his oil wells is just about impossible because . . . he hasn't proven himself worthy of being believed any more.

Such expressions of divergent views surfaced over and over again during the hearings. The experience was not always a pleasant one, but Judge Berger believed that an integral part of the Inquiry process was to find out what people were really thinking. Suppressing differences and pretending there were no divisions would not, he said, lead to a proper assessment of impact (*14*).

Input from nontechnical people played a key role in the Inquiry's deliberations over even the most highly technical and specialized scientific and engineering subjects. For example, in volume one of his report, Judge Berger discusses the biological vulnerability of the Beaufort Sea based not only on the evidence of the highly trained biological experts who testified at the formal hearings but also on the views of the Inuit hunters who spoke at the community hearings. The same is true of seabed ice scour and of oil spills, both complex technical subjects the understanding of which was nonetheless greatly enriched by testimony from people who live in the region. To the experts' discussions of problems and solu-

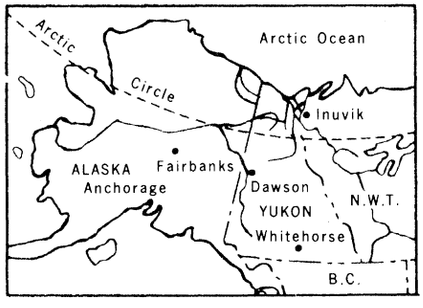
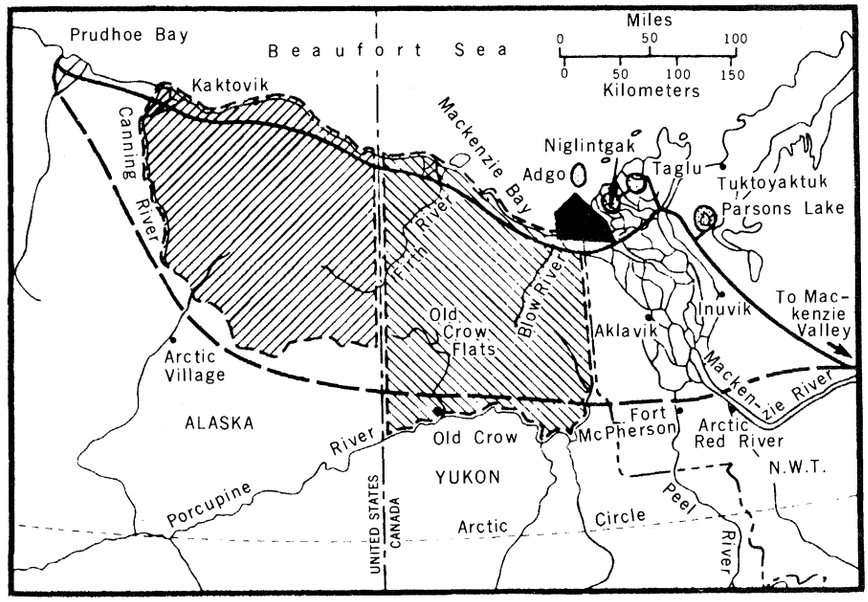


Fig. 3. Major environmental proposals of Judge Berger, ( ) Existing Arctic National Wildlife Range in Alaska. ( ) Proposed Northern Yukon Wilderness park. ( ) Proposed white whale sanctuary in Mackenzie Bay. ( ) Major natural gas fields of Imperial Oil, Gulf, and Shell. (———) Arctic Gas preferred route along coastal plain of the Yukon. (— —) Arctic Gas alternate route across interior of Yukon.



tions local residents were able to add comprehensive and vivid descriptions of the meaning of an issue in their daily lives. Their perceptions provided precisely the kind of information necessary to make an impact assessment.

When discussion turned to matters that were nontechnological, but still technical—such as the complex socioeconomic issues of social and cultural impact, land claims, and local business involvement—it became apparent that the people who live their lives with the issues are in every sense the experts. Take the issue of native peoples' land claims, for instance. At the formal hearings, crucial land use and occupancy evidence was presented using prepared testimony and map exhibits. There the evidence was scrutinized and cross-examined by counsel for the various participants. By contrast, at the community hearings, people spoke spontaneously and at length of their traditional and current use of the land and its resources. Their testimony was often detailed and personal, illustrated with tragic and humorous anecdotes. The transcripts of this evidence are in themselves a major contribution to Canadian history and culture (*15*). It was this testimony that drove home the essence of the claims issues.

The Inquiry linked together the many aspects of a particular issue. It became increasingly obvious that the whole issue of impact assessment was much greater than the sum of its constituent parts. Only in this way, through the input of all people, could the whole picture be put together, and only in this way could a rational impact assessment be made. The blending of expert evidence with the thoughts of the ordinary citizen is the hallmark of the Berger Inquiry process and of Judge Berger's report. It is also the key to the thoroughness of the Inquiry assessment and its value as a learning process.

Implications

Despite the fact that both government and industry had spent millions of dollars and assembled tens of thousands of pages of backup materials and had, in fact, made a substantial contribution to Canadian science and technology, it became evident during the assessment process that neither had grasped the essence of the whole picture—the sum of all the issues involved and studies undertaken. Within the terms of reference of the work that was done, the effort was commendably thorough but gaps in information did appear during the assessment process and some, like the means of controlling the frost heave of a buried chilled gas pipeline, were obviously critical. The operative belief seems to have been that if enough studies were done, if enough documentation presented, somehow all would be well and the project could proceed as originally planned. It was a belief that implied a choice—a choice so thoroughly expected that many people in industry, government, and the population at large are now bewildered at the findings of the Inquiry and its recommendations.

The examination process used by the Inquiry was inextricably linked to the findings. Throughout the Inquiry, for example, the pipeline was viewed in the context of the transportation corridor and the triggering effect it would have on a host of other ventures. From this perspective it became clear that in certain places, such as the northern Yukon and the mouth of the Mackenzie Delta, no pipeline should be built and no corridor should be established because of the threat to whole populations of birds, caribou, and white whales (Fig. 3). The Berger report highlighted the dangers of proceeding with full-scale hydrocarbon development in the Mackenzie Delta and Beaufort Sea before satisfactory technology to clean up oil spills is developed. It also contains the conclusion that there is no environmental impediment to a pipeline and a corridor in the Mackenzie Valley, but that construction should proceed only after settlement of the native land claims issue.

The desire of native people to achieve self-determination by resolving their land claims was the overpowering message conveyed to the Inquiry throughout the community hearings, and the subject of much attention in Judge Berger's report. This is an issue where the background studies from both industry and government were especially vague. This may be due to the highly sensitive political and legal issues involved, but to have ignored them while assessing the impact of the pipeline would have constituted a serious evasion of responsibility. The Inquiry, because of its broad assessment perspective, was really the only vehicle capable of tackling this issue—the paramount issue as far as native people were concerned.

As a result of the Inquiry process and Judge Berger's report, Canadians were exposed to a diverse and complex range of development issues. Through that exposure they have begun to recognize that the core issues are problems for the entire country.

The process that evolved from the exchange of expertise that occurred during the formal and community hearings no longer depends on Judge Berger. Already the Royal Commission on the Northern Environment in Ontario, the West Coast Oil Ports Inquiry in British Columbia, and the Alaska Highway Pipeline Inquiry in Yukon have been described as having elements of a Berger style. Also, there may now be changes in the operation of ongoing regulatory bodies in Canada. These have long been regarded as the exclusive domains of lawyers and highly specialized experts.

The Inquiry has shown that it is possible to acquire and disseminate information about highly complex technological projects and that it is possible to do so while maintaining a human balance, a concern for things nontechnological. It has shown how the vital role of the technical expert can be blended with the input of all people who are affected by a venture, directly or indirectly. It was really an example of a participatory technology, a way of assessing a superstar technology while still maintaining a human perspective.

The Berger Inquiry's methodology reveals the extent to which information is the key element of an assessment process. Its developers recognized the fact that the group that controls the information, controls all else, and that the control of information should not rest exclusively with experts. Indeed it demonstrates that the obligation of the expert in industry and government is to expose, at a very early stage, the whole range of issues to the "expert" scrutiny of all citizens. The citizens' input has now been shown to be essential to an assessment process.

References and Notes

1. Government of Canada, *Expanded Guidelines for Northern Pipelines* (Canada, Department of Indian and Northern Affairs, Ottawa, 1972).
2. T. R. Berger, *Northern Frontier, Northern Homeland: Report of the Mackenzie Valley Pipeline Inquiry* (Minister of Supply and Services Canada, Ottawa, 1977), vol. 1, p. 1.
3. Also see P. Anglin, *Aspects of the Canadian Review of Proposals to Deliver Arctic Natural Gas* (Department of Indian and Northern Affairs, Ottawa, 1975).
4. Up to the end of April 1977, Arctic Gas reports that it has spent about $140 million on its application.
5. The international character of the Arctic Gas proposal necessitated their applying to the United States Federal Power Commission as well. That Commission's hearings ran concurrent with those of the NEB and the Inquiry. Its report was made public in early May 1977.
6. After the NEB hearings got under way, there was a major setback. After a successful legal challenge by several participants alleging that there was a reasonable apprehension of bias on the part of Mr. M. Crowe, one of the original panel members and chairman of the Board, the

panel hearing the application was changed and the hearings started over in April 1976. The Board's report was released on 4 July 1977.
7. Pipeline Application Assessment Group, *Mackenzie Valley Pipeline Assessment* (Department of Indian and Northern Affairs, Ottawa, 1974).
8. The application of Foothills Pipe Lines to build a pipeline from the Mackenzie Delta along the Mackenzie Valley was received by the government in March 1975. On 4 July 1975, the Minister of Indian and Northern Affairs referred the application to Judge Berger "with the view to examining any areas of significant difference [from Arctic Gas]." Foothills is reported to have spent about $25 million on its Mackenzie Valley application. In addition, it has spent about $17 million on its Alaska Highway (Alcan) application, which is being assessed by the Lysyk Inquiry. That Inquiry held hearings from May to July 1977 in the Yukon Territory.
9. Order-in-Council designating the Honorable Mr. Justice Thomas R. Berger as Commissioner of the Mackenzie Valley Pipeline Inquiry, under the provisions of the Territorial Lands Act (1-7378B, 21 March 1974).
10. E. L. Knowles and I. G. Waddell, Eds., *Preliminary Materials* (Mackenzie Valley Pipeline Inquiry, Yellowknife, 4 November 1975).
11. The Mackenzie Valley Pipeline Inquiry was funded $3.2 million from March 1974 to March 1977 by the Department of Indian and Northern Affairs. At Judge Berger's request, the department also provided funds to enable the native organizations, the environmental groups, northern municipalities, and northern business to participate in the work of the Inquiry. The four native organizations—NWT Indian Brotherhood/Métis Association of the NWT, Committee for Original Peoples Entitlement, Inuit Tapirisat of Canada, and Counsel for Yukon Indians—received $1.2 million. The other interest groups—Canadian Arctic Resources Committee, NWT Association of Municipalities, NWT Chamber of Commerce, and NWT Mental Health Association—received $540,000.
12. T. R. Berger, *Queen's Q.*, **83** (No. 1), 6 (1976).
13. V. Steen, *Community Hearings Transcripts, Mackenzie Valley Pipeline Inquiry* (Allwest Reporting, Ltd., Burnaby, British Columbia, 1976), vol. C-44, pp. 4200–4202.
14. T. R. Berger, *Queen's Q.*, **83** (No. 1), 8 (1976).
15. A full record of the evidence presented to the Inquiry is contained in the Inquiry transcripts. The formal hearings have yielded 906 exhibits and 32,353 pages of testimony bound in 204 volumes. The community hearings have been transcribed in 77 volumes with a total of 8436 pages and 661 exhibits. The exhibits include such documents as the application and supporting materials submitted by Arctic Gas and Foothills (which run into many volumes), the Land Use and Occupancy maps prepared by the Indian Brotherhood of the Northwest Territories and by the Committee for Original Peoples Entitlement/Inuit Tapirisat of Canada, the 1974 report of the federal government's Pipeline Application Assessment Group, publications of the Environment Protection Board, and a number of the reports prepared for the Environmental-Social Program, Northern Pipelines, and the Beaufort Sea Project.

NEWS AND COMMENT

Policy Recommendations to VA Leave NAS at Odds with Congress

The National Academy of Sciences has gotten crosswise with Congress over a report on the Veterans' Administration health care system. Congressional ire is directed mainly at a recommendation that the VA system be phased into the general health care system, but the phrasing of an Academy press release with a headline suggesting that the VA system was "obsolete" particularly inflamed the VA's patrons on Capitol Hill.

Both Senate and House veterans' affairs committees have held hearings focused on the report.* Senator Alan Cranston (D-Calif.), chairman of the Senate Committee on Veterans' Affairs, went on record as being fully committed to an independent VA health care system and strongly opposing "any dismantling or phase out of the VA medical system." The strongest reaction, however, came from Representative David E. Satterfield III (D-W.Va.), chairman of the House Veterans' Affairs subcommittee on medical facilities and benefits, who denounced the report for not answering the questions which prompted the study in the first place while at the same time making uncalled-for policy recommendations. Satterfield went on to ask for an audit of the contract to determine whether the $6 million expended on the study by the National Research Council, the research arm of the Academy, had been properly spent. The General Accounting Office (GAO) investigation is just under way and findings are not expected for several months.

The furor has distracted attention from the fact that the VA concurred with many of the specific recommendations made in the report and has moved to implement a number of them. Despite this and a public apology from Academy president Philip Handler on the wording of the press release, the incident stands as the Academy's most serious collision with Congress over a report.

Why did the policy recommendation provoke such a powerful reaction? The VA, of course, has a unique clientele and a history of special treatment by Congress. There are roughly 28 million veterans who, with their families, constitute a potentially formidable voting bloc. Veterans' interests are championed by veterans' organizations which form a highly effective single-interest lobby. The 171 Veterans' Administration hospitals, which are distributed fairly evenly across the country, provide valued services and, in many areas, are a significant source of jobs. Probably most important, veterans' causes have historically exercised a strong claim on public sympathy and support. The veterans' constituency is politically supersensitive and interpreted the NAS report as an attack on its institution, threatening to deprive veterans of needed care and even prompting fears that disabled vets would be wheeled out in the street.

Ironically, the blowup resulted from the Academy doing what its critics have frequently complained in the past that it was unwilling to do—to look beyond the narrow technical issues on which it was asked to comment to the policy implications raised by these issues.

The committee's main assignment as expressed in the 1973 legislation authorizing the study was "to determine a basis for the optimum numbers and categories of personnel and other resources needed to provide eligible veterans high quality care." As the study committee chaired by Saul J. Farber, chairman of the department of medicine, New York University School of Medicine, came to grips with the problem, its members decided they could not provide hard number estimates on staff without knowing much more about the current mix of patients and types of care and also about VA plans and expectations for the future. The NAS, therefore, negotiated a major expansion of the study involving an increase in funding from the original $1.5 million to $6 million for use over a 3-year period.

The report's controversial policy recommendation grew out of the committee's conviction that the VA has to face up to changes in the veteran population and in the general health care system. About half of the nation's 28 million veterans saw World War II service. The average age of these veterans is now over 56. Very shortly this group will require drastically increased acute-care and long-term care services. The report estimates that if these veterans turn to the VA for care, VA services will have to be roughly tripled in 20 years. The report notes that the spread of prepaid medical care through private health insurance,

*"Study of Health Care for American Veterans" and "Veterans' Administration's Response to the Study of Health Care for American Veterans" were published by the U.S. Government Printing Office.

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