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Alaskan Oil

Beginning in the summer of 1977, the North Slope of Alaska will become available to the "lower 48." During a testing period, Alyeska, the operator of the Alaska pipeline, will pump oil through at a slow rate. As the total system including pumping stations is proved reliable, the flow will increase to 1.2 million barrels (160,000 metric tons) per day by the end of 1977 and later may reach 2.0 million barrels a day. This addition to the nation's production comes at a time when other output has dropped below 8.0 million barrels a day, while imports recently peaked at 10.4 million barrels a day. Ultimately, further exploration on land and in the Beaufort sea together with exploitation of the Naval oil reserve will lead to additional supplies of petroleum and natural gas. The Prudhoe Bay field is already known to have natural gas totaling 26 trillion cubic feet (728 million cubic meters). Elsewhere on the North Slope are vast reserves of coal.

During early March, I visited three areas of the Alaska pipeline—the terminal in the south at Valdez, a construction camp in the north at Galbraith in the Brooks Range, and the production facilities at Prudhoe Bay. While considerable work remains to be done at Valdez, the temperatures there are mild and no difficulty in meeting schedules is anticipated. At Prudhoe Bay, operating staffs have taken over many of the facilities and one official said he could be ready to put oil in the pipeline in 2 weeks. Such suspense as remained concerning completion of the pipeline was centered in the vicinity of Galbraith where temperatures were often -35°C or below. Work to be completed included repair of some welds, pressure testing of the line, and installation of a natural gas line from Prudhoe Bay. A few years ago a construction camp geared to such work would have been a Spartan place populated by unkempt males. What a shock to encounter a large number of attractive women, well-groomed men, nine Xerox machines (with collators), and a computer printout listing all the tasks (most of them trivial) remaining to be done at 35,000 locations on the pipeline.

Seldom has a major project received as much attention, publicity, and monitoring as has the pipeline. Environmental controversies delayed construction for about 4 years, and the costs of meeting environmental demands have been estimated as high as \$2 billion. Design and construction procedures were established with a view to limiting environmental impact and at present federal employees from nine agencies are monitoring the work closely. After the cleanup and revegetation following the end of construction, little evidence of human activity will remain except the pipeline and a road.

During the past year and a half, considerable publicity has been given to faulty or poorly documented welds. The public has the impression that once the pipeline is in use, the landscape will be deluged with oil. But thus far 640 miles (1024 kilometers) of the line have been tested with water pressures exceeding by 25 percent the ultimate operating pressures. No leaky welds have been found. On one occasion, a faulty test procedure led to extreme overpressuring of a part of the line. A section of pipe ballooned out, but the welds held. Before oil goes into the line, questionable welds will be repaired and the remaining sections will be hydrotested.

In any job as complex and unique as the pipeline, subject as it is to extreme conditions, there is always the hazard of the unexpected. However, Alyeska management engineers and inspectors have plenty of incentive to attempt to foresee and prepare for contingencies. In the event of a failure leading to shutdown of the line, the total revenue forgone by the oil companies and by Alyeska would range between \$13 million and \$22 million per day. Costs such as taxes and interest on construction expenditures would continue. Thus, Alyeska has little incentive to spill oil or to create any other nuisance leading to a shutdown.

But more than money is involved. Those who have participated in this great enterprise are proud people who are determined that it will be a success.—PHILIP H. ABELSON