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The Government's asbestos policy

No one questions the right of the Québec Government to adopt policies of its choice in respect of economic development and particularly in the field of natural resources, provided that in the process the fundamental rights of others are respected.

State-Industry cooperation

The Quebec Asbestos mining producers welcome the decision of the Government to set up proper means of consultation and cooperation between the State and the Industry so as to maximise the results of the efforts of all concerned and thereby foster optimum development of manufacturing and use of asbestos products in Québec, while at the same time promoting additional industrial and technological research and helping resolve problems of health and hygiene at work.

For many years, the asbestos mining companies were alone in giving tangible interest and concern to such matters, as is demonstrated by the impressive work accomplished by the Institute of Occupational and Environmental Health, founded in 1966 by the Québec Asbestos Min-

ing Association, by the investment of millions of dollars to improve working conditions and the environment, by the commissioning of the first indepth study on the possibilities of manufacturing finished asbestos products in Québec and by the research programs carried out under the auspices of the Association.

Equal partners

The asbestos mining industry, which has been advocating a dynamic cooperation between the mining sector and the public authorities, feels that in these areas, the initiative of the Government offers new perspectives towards the orderly evolution of relations between State and industry. Such cooperation could well produce most constructive and fruitful results, provided however that it is founded on equality of partnership, on mutual trust and good faith and provided also that the State does not unduly take advantage of its position to change the ground rules between the partners.

The Québec Government can count on the cooperation of the Québec asbestos mining producers in the pursuit of realistic and financially viable objectives and in the search

for and the activation of programs of action towards promoting the socio-economic development of Québec.

Questionable decision

As for the proposal of the Government to acquire a controlling interest in Asbestos Corporation Limited, it does not appear founded on an objective evaluation of the best means to insure the development of the asbestos industry for the greater benefit of all Quebecers.

The asbestos mining producers of Québec query the advisability of such a decision, costly for the Québec taxpayers, generating uncertainty and demoralizing private enterprise. In addition, this move is not conducive to the creation of new jobs nor to the improvement of productivity and is not likely to contribute to the betterment of Québec's economy.

The asbestos mining companies will not remain indifferent to the fate imposed on one of them by the Government and, along with financial and business circles, will be following very closely the way in which the Government proceeds to implement its plan and ensure conditions both humanly and financially fair and equitable.

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os policy as announced
, Yves Bérubé,

ment agreements with the mining
companies.

Asbestos and the economic revival

This policy, founded essentially on
the development of primary and sec-
ondary levels of the asbestos sector,
constitutes one of the short and long-
term center-pieces of the Québec
Government's economic revival pro-
gram. The Government feels that
this policy should constitute an im-
portant economic growth factor for
the asbestos regions such as the
Eastern Townships and northwest
Québec.

The Government and private industry

The Government wants its policy
to be indicative of its current option
concerning foreign private enterpri-
ses. The Government states that it

A few thoughts by Minister Bérubé

...on the role of the industry

*"After having thought about the
asbestos problem at length, we came
to certain conclusions. On the one
hand, if the asbestos industry is cur-
rently prosperous, it is largely due
to the fact that the companies have
developed needs for a product which,
a priori, one hundred years ago, had
no usefulness as such.*

*"Therefore, it should be recogni-
zed that the industry has learned how
to develop its potential through fair-
ly rational and well-planned market-
ing, has learned how to avoid econo-
mic fluctuations, and also has
learned how to create needs.*

*"We do not feel that we should try
to build something by writing off
what existed previously, but, on the
contrary, we should try, to the best
of our abilities, to achieve some-
thing along with the industry.*

...on asbestos and health

*"Asbestos is no more toxic than
fibreglass, asbestos is less toxic
than P.C.V., vinyl polychloride,
while being substitute products. As-
bestos is a product which can be
handled safely with the appropriate
precautions.*

...on the future of asbestos

"We are not the Arabs of asbes-

Asbestos mining producers in Québec

Johns-Manville

Johns-Manville is the largest
asbestos-producing company in
Québec. It employs 2695 people
at its Asbestos mining and man-
ufacturing facilities. The Jeffrey
Mine, operated by Canadian
Johns-Manville, is the largest
open-pit asbestos deposit in the
western world. Grade 4, 6 and
7 fibres are mainly mined there.
Mined by various producers
since 1881, the Jeffrey Mine
was purchased in 1918 by its
current owners. Canadian Johns-
Manville, whose production capa-
city is 710 000 tons per year,
is a subsidiary of Johns-Man-
ville Corp.

Asbestos Corporation

Asbestos Corporation was
founded in 1926 following an
amalgamation of several compa-
nies. Today, in the Thetford
Mines area, it owns the under-
ground King Beaver mine, the
open-pit mines British Cana-
dian 1 and 2, and the Normandy
mine whose ore reserve is now
exhausted. The annual produc-
tion capacity of Asbestos Corpo-
ration at the Thetford facilities
is 230 000 tons.

Since 1972, the Corporation
has been mining ore at a deposit
at Asbestos Hill in New Québec

grade 3 fibres, employs 2 210
people in Québec. General Dyna-
mics Corporation is the major
shareholder of Asbestos Corpo-
ration with 54,6% of shares.

Lake Asbestos

Lake Asbestos Company, of
Black Lake, has been mining the
Black Lake mine since 1958.
In 1973, it purchased the Na-
tionale mine, near Thetford
Mines. Today, it employs 1 050
people at its two mines and
mills. Its annual production
capacity is 260 000 tons. Lake
Asbestos, of the Asarco Group,
is an important producer of 4,
5 and 6 fibre grades.

Carey-Canadian

Known previously as Québec
Asbestos Corporation, Carey-
Canadian, founded in 1955, car-
ried out its first asbestos ship-
ments in 1958 from its East
Broughton deposit. Today it
employs 550 people and its an-
nual production capacity is
230 000 tons. Carey-Canadian,
a subsidiary of Jim Walter
Corporation, produces short
fibres, particularly grade 7.

Bell Asbestos Mines

ASBESTOS AND ITS MANY USES

Papers and felts

Québec chrysotile asbestos is used in producing several products which adopt its exceptional features of incombustibility, insulation, soundproofing, tension, corrosion and acid resistance. An inert element, asbestos gives these products a high level of dimensional stability, an essential quality in the manufacture of certain papers for specific applications, such as gasket papers, pipe wrapping, flooring and roofing felts.

A wide range

Asbestos papers represent 6 to 8% of the world's consumption of average-length asbestos fibres. The variety of papers is quite large, and in addition to the already listed uses, also includes commercial papers, millboards, corrugated papers and various other specialized papers used in insulating applications for household appliances.

Major markets

The major market for asbestos papers is in roofing and flooring felts applications. Roofing felt is used primarily to cover flat roofs of large buildings.

The North American auto industry uses heat-resistant gasket paper whereas pipe wrapping is mainly used in covering underground and underwater pipelines where they protect against corrosion.

The sole Canadian producer of asbestos papers, Kingsley Falls Papers, is located in Québec in the Eastern Townships.

Québec production

When the three Lemaire brothers, Bernard, Laurent and Alain, owners of *Papiers Cascade* of Kingsley Falls, decided in 1972 to found a new company with Canadian John-Manville Asbestos Company, they had no idea how rapidly their industry would become one of the most important producers of asbestos papers in North America.

Their highly automated plant, which now employs 52 people, has been operating at full capacity since September, seven days a week and 24-hours per day. It should produce more than 33 000 tons of paper in 1977. Last year, production was 27 000 tons and forecasting that production remains the same, it should yield from 45 000 to 50 000 tons in 1978.

Most of the production (85%) is exported to the United States. Relatively to the asbestos content, the paper is produced according to clients' specifications.

Eight different products

The plant manufactures eight different categories of papers of which roofing felt constitutes 80% of the



Photo at above left: asbestos millboards which are often used as fireproof doors and insulators. They contain 97% asbestos. Bottom left photo: bags of raw asbestos are thrown in a vat where they are mixed with water and chemical products, a basic mixture in the production of asbestos paper. Photo at upper right: pipe wrapping paper is covered with asphalt before being shipped to Canadian markets. Right lower photo: rolled asbestos paper ready to be shipped to world markets.

company's production. Other products manufactured are pipe wrapping, used mainly for large-scale projects such as construction of

pipelines, millboards and commercial papers used as insulators by manufacturers of household appliances.

One-half-inch thick millboards contain the largest proportion of asbestos, 97%. They are used as fireproof doors and are also used to insulate building and plant furnace rooms.

The process

Roofing felt, which has an 85% asbestos content, is covered with asphalt for Canadian clients and is exported in raw form to other markets. The paper is made up of several layers of an asbestos mixture run through a series of giant cylinders before arriving to the dryers from where it comes out at a rate of 260 feet/min.

Production is diversified and varies often daily according to the type of paper in demand in order to meet market fluctuations quite important for several products, namely, pipe wrapping whose sales depend to a great extent on the implementation of large projects.

Wet process production methods are used at the Kingsley Falls plant to avoid dust emission. The asbestos utilized in the paper production is emptied directly into a water and chemicals vat. The protective wrapping of asbestos is not removed and the mixture circulates in watertight tubes before arriving at the cylinders section. All torn paper is removed and immediately recycled in the

aqueous mixture to avoid contamination of the areas.

Expansion

Expansion work is currently being carried out at the plant to add 9 000 sq. ft. to the existing surface area to allow installation of new equipment for future development.

Management of Kingsley Falls Papers is aiming specifically at developing the market for roofing felt whose qualities of durability and unflammability are often ignored by Canadian buyers.

The Sorès report

The report on Phase I of the study of the potentialities for manufacturing asbestos products in Québec, concludes that more thorough studies should be continued on the economic profitability of three types of asbestos papers: roofing felts, gasket papers and pipe wrapping.

According to the Sorès report, 25% of total Canadian consumption of roofing felt occurs in Québec and, with a well-orchestrated marketing program aimed at improving the product in relation to users' needs and a market promotion, asbestos-content roofing felt should seize a larger part of the total asphalt-impregnated roofing felt market. As far as pipe wrapping is concerned, Sorès feels it is difficult to make predictions for the future of the market.

Asbestos, the best fire insurance

Where fire protection is concerned, the roof of a building must be paid particular attention. If neighbouring buildings catch fire, it can be dangerously exposed to sparks carried by the wind. During the fires which ravaged the California forests last summer, several houses located near the blazes went up in flames, but most of those that had asbestos-shingle roofs were spared.

This is a good example of how the use of fire-proof construction materials can be a preventive measure which stops or slows down the fire from spreading, saves lives and reduces material losses caused by fires. In 1975, 69 881 fires were recorded in Canada causing 822 deaths and material damage amounting to \$416 814 403. Several deaths are attributed to highly inflammable decrepit buildings and properties.

Preventive standards

Nowadays, new standards and requirements in force in the construction sector regarding fire protection, have led to an important market for asbestos products, especially for asbestos-cement products.

Due mainly to its insulation and heat resistant properties, asbestos today is used in the composition of over 3 000 different products. Thus, asbestos plays a role in insulating electrical wires and a large number of household appliances where it contributes to eliminate sources of fires.

Asbestos is also often used in the confection of fireproof curtains for theatres and cinemas. It enters in the manufacturing of products and equipment found in municipal fire



Metalized aluminum asbestos clothing protects workers against extreme heat

departments, airports and several industrial sectors.

Asbestos-cement

However, asbestos products are used mainly in the construction materials which explains why asbestos-cement represents more than 70% of the world's consumption of Québec produced fibre. Asbestos also enters in the manufacture of tiles, shingles, flat or corrugated sheets and asbestos-cement sheets — all products which contribute to fire prevention due to their incombustibility. According to its thickness and composition, an asbestos-cement product will withstand intense flames for periods of 11 to 30 minutes. For example, a ¾" thick asbestos-cement sheet will withstand flames for more than 27 minutes.

Thicker sheets and panels are primarily used in furnace rooms of large buildings to prevent unsuitable heat dispersion.

Conclusive tests

Submitted to test ASPM-M84, which classifies fire hazards as compiled by the Underwriters Laboratories, asbestos-cement obtained the following results: flame spreading nil; energy contribution to supply of flame nil; smoke production nil.

Asbestos materials have been the object of numerous tests and experiments aimed at improving their

fire resistance. In 1932, during construction of the Queen Mary, different types of building materials were experimented on. Experimental cabins made of asbestos products withstood the flames longer. For several years, thick asbestos panels have been used in shipbuilding where a fire could create dramatic consequences in short time. Ceilings, doors and corridors are covered with panels whose asbestos content varies between 30 to 40%.

Increased protection

Asbestos-cement sheets, molded or prefabricated, are often used, especially in Europe, to cover columns and beams of public buildings. An assembly of this type can often provide up to two hours protection to a building infrastructure in case of fire.

Asbestos-cement tiles often used in suspended ceilings, efficiently withstand flames, according to the thickness of the product and suspension system which must maintain its rigidity under intense heat conditions.

In Canada, the use of asbestos-cement boards and sheets in the construction field, with the exception of industrial projects, is relatively recent, whereas in Europe, these materials have been used for a long time in commercial buildings, plants, schools and apartment buildings.

Asbestos-cement sheets can be incorporated in floor structures where they prevent flames from spreading whereas asbestos-cement sheets, in addition to their incombustibility can be adapted for movable partitions, they are light, un-inflammable and aesthetic.

Considering all the advantages of using asbestos products for fire prevention, durability and aesthetic qualities, constructors, architects and engineers should without a doubt anticipate using a larger number of asbestos products, inasmuch as there is a strong desire to develop the manufacturing of asbestos products in Québec.

Ambitious research program at University of Sherbrooke

The University of Sherbrooke has just begun a vast pluridisciplinary research program which will call for investments in the order of \$5 million over the next five years. Under the direction of Professor Jean-Marc Lalancette, the research program will deal with three specific aspects of asbestos mining: technology, health, socio-economics.

An information support module will assist researchers by collecting all basic documentation necessary for research in the three fields. This data bank, under the supervision of Roger B. Bernier, will be available to Québec industries and researchers interested in Asbestos.

41 projects

The program is made up of specifications for 41 research projects. Six are to be conducted this year, five by the technology unit. In order to carry out these projects, the Québec Ministry of Natural Resources has made a \$350 000 grant to the University, while Environment Canada has contributed \$7 000.

The technology unit, under the direction of Marcel Cossette, will study the potential of mining short asbestos fibre using a wet process. The majority of mining companies use the dry process to recover the

fibre and researchers feel that the use of a wet process, in addition to decreasing dust emission would permit to recuperate a greater amount of short fibres.

The physical-chemical composition

Mr. Cossette will work jointly with five researchers on a research project dealing with a new theory regarding the biological effects of asbestos, a theory which stresses the fibre's structure rather than its length. Researchers will attempt to verify certain scientific observations which imply other causes, of either a morphological or even a chemical nature than those that have been known to date. Professor Jean-Marc Lalancette pointed out that greater knowledge of the physical-chemical composition of the fibre's surface would lead to a better understanding of the pathogenic action of asbestos.

Concerning examination of the physical-chemical composition of the fibre's surface, the second focus-point of the health research program, Mr. Lalancette added that although asbestos properties are well known, the study of its pure structure is hardly developed. "More advanced research on the chemical and physical composition of the fibre's surface would lead to greater understanding and rationalization of its properties," he stated. Furthermore, this research could over the long term, uncover new applications for asbestos.

Insulators

Two other projects, under the direction of Professor Pierre-Claude Aitcin, deal with the manufacturing of thermic and acoustic asbestos-based insulators and with the construction of trails and paths using asbestos residue. Environment Canada is supporting this project in particular.

According to the researchers concerned with insulators, the insulating properties of asbestos-based products are of primary importance at a time when society is more and

more concerned with energy conservation. The project also will deal with two types of existing thermic and acoustic insulators, asbestos felt and an asbestos and cement based porous material, in order to perfect their manufacturing techniques and reduce costs. As for felt, whose properties are more interesting than mineral wool, attempts at accelerating the drying method and decreasing the processing cost are being undertaken. As for asbestos-cement sheets, whose major market is in gypco covering, Professor Aitcin and his team will try to discover methods of accelerating its manufacturing stages in order to make it more competitive.

Electrical insulators

The University is already conducting, within the framework of a program which was implemented some time ago, a project aimed at converting asbestos residue into electrical circuit insulating material. The University's hypothesis is that production of such elements could become quite competitive with existing products made usually to a large extent of resin. The process developed by Professor Lalancette is patented in Canada and the United States. A profitability study will determine the success potential of the product on the market.

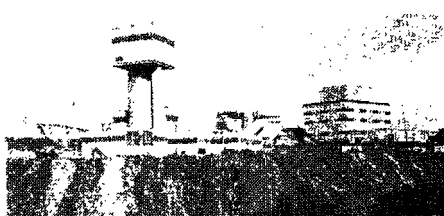
Trails and paths

The use of asbestos residue in the construction of trails and paths has also been entrusted to the technology unit. The behaviour of this material on a 100-foot trail, including the degree of asbestos dust emission, is currently being studied at the campus of the University.

Finally, Professor Lalancette will continue his research on the extraction of magnesium from asbestos residue. Now in its experimental stage, it is hoped that the current research will allow recovery of metal in the form of magnesium carbonate or oxide, two products in demand in the chemical and ceramic industries.

Expansion program at Bell Asbestos Mines

Bell Asbestos Mines Ltd, a member of the Turner & Newall Group, is investing a further \$3,7 million in its facilities at Thetford Mines in order to increase its production of fibre by 28%. This follows the successful completion of a \$10 million mill modernization program and the installation of \$1,7 million unit which has improved tailings disposal facilities. The company expects increased profitability as a result of lower operating unit costs when the project is completed.



Bell Asbestos Mines Ltd. facilities at Thetford Mines.

Increased flexibility

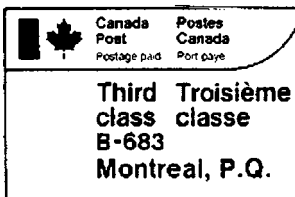
The current erection of a \$2,2 million wet ore bin, with a capacity of 35 000 tons, will enable greater operating flexibility between mining and ore processing activities. The mine will be operated on a 15-shift instead of an 11-shift a week basis.

On the other hand, \$1,5 million is to be spent on improvements underground and on modification to the crushing and drying stages of the mill, enabling to process the increased volume of ore to be mined. Approximately fifty new jobs will be created following completion of the projects.

Anticipated demand

The expansion program was drawn up in accordance with the anticipated needs to increase production in order to meet the demand for fibre in the grades used in asbestos-cement building materials and pipes for which the market is forecasted to increase in the late 1970's and early 1980's. The demand for asbestos fibre has substantially progressed on markets in the Far East, Central and South America, the Middle East and Africa.

It should be noted that Atlas Asbestos Company Ltd. of Montreal, another subsidiary of Turner & Newall, has been manufacturing asbestos-cement building materials and pipes in Québec for 29 years and has capacity available for an increase in its present rate of production. It is studying other new projects which would utilize asbestos fibre and will invest in them if they promise a satisfactory return.



Bulletin

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