FILE NAME: Quebec Asbestos Mining Association (QAMA)

DATE: 1978 Oct-Nov

DOC#: QAMA156

DOCUMENT DESCRIPTION: QAMA Bulletin Vol. 2, No. 7

Bulletin

PUBLISHED BY L'ASSOCIATION DES MINES D'AMIANTE DU QUÉBEC OCT./NOV. 1978 VOL. 2 / NO 7

A document which sets the stage for asbestos research

Results of the study carried out by the Centre de développement technologique of the Ecole polytechnique de Montréal at the request of the Association des mines d'amiante du Québec, have made it possible to better measure the possibilities and means of developing asbestos research in Québec and to define some future practical guidelines based on expert and objective data and analyses.

The CDT report realistically outlines the general direction the development of asbestos research should take, given the major needs and objectives which the study group has identified and the human and material resources available.

Working document

Without being an absolute guide, the CDT report constitutes a most valuable working document, particularly for all those concerned with getting a clear picture of the state of research in Québec.

In this respect, it is interesting to note that the CDT work team has observed the present existence in the university, industrial and paragovernmental centres of human and material resources "which hold great promise", as well as an availability and willingness on the part of researchers to "participate more actively in asbestos research". This indicates that a research development program can and indeed must be designed in view of the rational use of existing means, granted that new acquisitions would progressively increase Québec's research potential.

Priorities

On the other hand, the research priorities as defined by the authors of the report follow a logical reasoning which would be difficult to challenge.

In fact, insofar as the viability of the asbestos industry primarily depends on the capacity to scientifically and medically demonstrate the safety of asbestos-based products, it stands to reason that the essential scope of research should initially respond to this concern. New applications or new products would make little headway as long as the reticence of users and consumers, beset by unfavourable propaganda on the dangers of asbestos, and conditioned to favour substitute products, has not been overcome.

It is not a question of sacrificing innovative research, but of giving precedence to research activities which are more acutely called for, considering the difficulties which confront the industry in several market areas and which must be resolved if, as was stated in a paper submitted by the Bureau de l'amiante to the Cabinet, "one wants to preserve a major industrial potential for asbestos production".

Favourable response

From this standpoint, the observations of the CDT correspond to those made by the industry several years ago, as emphasized by the authors of the report who write: "Our study shows that AMAQ recognized long ago the necessity to create an industrial research centre, formed by the asbestos production industry, to meet its needs concerning production quality and environmental and health problems".

Already very actively conducting research through its Environmental Committee and the Institute of Occupational and Environmental Health, AMAQ subscribes to the objectives stated in the report and favours the idea of the creation by the industry of an asbestos research and development centre: a centre asserting the importance of Québec in the asbestos sector, promoting the development of Québec's expertise in this field and encouraging the expansion of Québec's asbestos manufacturing industry.

SPECIAL

The final report of the Centre de développement technologique

"To propose methods of speeding up the process of developing asbestos research in Québec in order to obtain the best possible performance in an economically viable manner, while making optimum use of human, material and technological resources available" This was the primary objective of the mandate given last June to the Centre de développement technologique (CDT) of the Ecole polytechnique de Montréal by the Association des mines d'amiante du Québec (AMAQ)

The results of the CDT study are found in a final report entitled "Etat de la recherche sur l'amiante au Québec et modalites de son développement" (State of Asbestos Research in Québec and Methods for Its Development)

Comprehensive Report

The 138-page comprehensive report was prepared by the project head, Laurier Juteau, Eng. and Professor at the Ecole polytechnique, and by the two chief participants, Roland Dore, Eng and Professor of Mechanical Engineering, and René Dufour, Eng and Professor of Mining Engineering In addition to the introduction and the study group's conclusions and recommendations, the report contains four chapters which survey asbestos research in Québec and study its prospects and methods of development Fourteen tables and five diagrams illustrate the information given in these chapters

Numerous Consultations

To perform their study, the three experts used the services of specialists involved in various subject areas During its research, the team consulted more than twenty organizations interested in one way or another in the asbestos industry and related activities in the production of asbestos fibre and asbestos-based products. The report lists the governmental, university and industrial laboratories and research centres which were visited, and includes in an appendix the detailed questionnaire they were given, as well as four papers presented by some of these organizations, including one by the AMAQ Environmental Committee

Reference Document

The CDT report constitutes an important reference document for all those interested in asbestos research in Quebec. In the first chapter, which is in fact an introduction, the authors pinpoint the Quebec asbestos industry and its place in the world They describe the structure of the industry at both a Québec and a global level They then bring up the subject of asbestos and health and emphasize that *"the very strong reaction to all products incorporating asbestos ( ) goes far beyond a rational approach, and if it is not remedied by an objective outlook, it could considerably limit the use of asbestos fibre"*

Survey

The second chapter of the CDT report presents a survey of asbestos research in Québec and Canada The state of research in Québec has been synthesized into a series of tables accompanied by a detailed description of the various research group's activities and of available equipment. The CDT experts who have summed up investments provided for this field since the early 70's and identified the strongpoints of asbestos research in Québec, have concluded that *"those available for asbestos research in Québec centres are highly qualified and have the enthousiasm needed to undertake all research which a dynamic primary and secondary industry could require"*

Another chapter is entirely devoted to research needs in Québec The authors of the report believe these needs stem from factors which have influenced the development of asbestos fibre production and asbestos manufacturing such as adverse publicity, lack of coordination in the field of research, and the rush to find substitutes etc

The fourth and last chapter discusses the objectives, priorities, organization, operations and financing of an asbestos research centre, the creation of which constitutes the main recommendation of the CDT



In the usual order, the main participants in the CDT study, René Dufour, Laurier Juteau, project head, Roland Doré, and the Director of the CDT, Robert Hey.

The creation of an asbestos research centre in Québec

Main recommendation of the report

The main recommendation by the authors of the CDT report on the state of asbestos research in Québec and the methods of its development is directed towards the creation, by the asbestos producers, of a research centre designed to concurrently meet the needs of Québec's economic policies, the needs of abestos producers' expansion and development policies, and the needs of asbestos consumers.

Major priorities

The CDT group considers and recommends that the objectives of the Centre be based on two main priorities:

First priority: An understanding of the properties of asbestos fibre, measurement of the amount of fibre emission in the environment by existing and new asbestos-based products, and research on methods aimed at its elimination

Second priority: Greater use of asbestos-based products in Québec and innovations in the development of new asbestos-based products which could lead to the establishment in Québec and elsewhere of new industries using asbestos fibre

In establishing these priorities, the CDT experts point out that because of *"the impression given the public by an anti-asbestos campaign"*, research aimed at developing new applications and designing new asbestos-based products is contingent upon research directed towards the healthy and safe handling of asbestos fibre and its products.

Fields of research

After having determined the objectives and priorities of research as they see it, the authors have identified the four main fields of research to which a centre should be devoted They are: health research, fundamental research, environmental research and innovative research

Taking into account the existence of several centres in Québec having highly sophisticated laboratories and equipment, the presence of specialists in various areas of expertise, the CDT recommends that the research programs to be developed or approved by the centre be implemented, depending on the purpose and nature of the work involved, by one or another of the various university, industrial and governmental research centres, *"centres which will have previously been identified as first-rate centres."*

Furthermore, considering that AMAQ subsidizes two research organizations already having well-structured activities, the work group suggests that the activities of the Institute of Occupational and Environmental Health (IOEH) and the Environmental Committee be incorporated with those of the proposed centre

Status and structure

With regard to the status of the centre, the authors have opted for an independent, non-profit organization which would be governed by a Board of Directors consisting of representatives of the bodies involved with its implementation, namely the producing companies and representatives from the manufacturing industry and government

Financing

While suggesting that the creation of the centre be the responsibility of asbestos producers who would be called upon to take up the major part of financing, the CDT proposes that financial backing provided by the Québec government equal 30% of the centre's total budget, and that the manufacturing industry also make a contribution

The sums needed for the centre's operations including the implementation of research projects should, according to the report, be ensured by a subsidy guaranteed in a five-year plan, and budgeted annually

As it is obvious that the budget evaluation is difficult to predict as long as the five-year programs have not been adopted, the authors of the report have nonetheless established a hypothetical budget They estimate that once the centre will have reached normal operating conditions, its financial needs could amount to about 3 million dollars, divided amongst research, administration and services, and including activities which are, at present, under the auspices of the Institute of Occupational and Environmental Health of Montréal and the AMAQ Environmental Committee.

Schedule

The report contains recommendations dealing with the structure and organization of the centre. The "schedule of operations" or critical path, prepared by the authors of the report, foresees that the centre will reach its "normal operations phase" in five years' time

The state of asbestos research

Resources which hold great promise

scientific and technical assistance for the mining industry in general Its creation was preceded in 1960 by the setting up of a pilot plant. Since its inception, the activities of the centre have mainly focused on metallurgical mining, mineral processing, sample analysis and testing, and piloting on a semi-industrial scale Some of this research has dealt directly with asbestos

The CRM offices and laboratories are located ir the Complexe scientifique in Ste-Foy, Québec, where more than ore quarter of the floorspace is set aside for asbestos-related research The pilot plant uses about 18% of its total space for asbestos, and has equipment used exclusively for processing and analyzing this mineral. The sums spent by the CRM for asbestos testing and research totalled $938 477 over the last five years

The CRIQ

Like the CRM, the Centre de recherche industrielle du Québec (Québec' Industrial Research Center) is an organization devoted to industrial research in general, with a part of its activities and resources set aside for asbestos The CRIQ has been interested in this particular field since 1973 In 1977, it carried out five projects for the CRM and two others for private industry The bulk of its work has centred on the utilization and manufacturing of asbestos and its residues

The AMAQ

The two other organizations described by the CDT team in its asbestos research survey in Québec are associated with the Association des mines d'amiante du Quebec which set them up

The Testing and Research Laboratory was created in 1961 to meet the common needs of AMAQ member companies. Until present, its activities have centred on fibre classification and production standardization The AMAQ laboratory is located at the Université de Sherbrooke, its equipment, which is valued at $250 000, remains the property of AMAQ, and is at the disposal of PRAUS researchers Financing for the laboratory, which totalled $578 900 over the last five years, is entirely provided by AMAQ

The activities of the AMAQ Environmental Committee which was created in 1966 to "protect health at the work site in the chrysotile asbestos primary industry in Québec and in Canada as well", are also financed by AMAQ. The Committee's expenditures for the past three years have totalled $237 300 The Committee has a permanent office in Thetford Mines headed by the AMAQ technical advisor The latter coordinates the work of two subcommittees which are assigned to identify and control harmful agents through the development of new technology, and to evaluate the various methods of measuring fibre and their application in the environment

Research outside Québec

With respect to research outside Quebec, the authors of the report explain that they are not trying to "paint a complete picture of asbestos research throughout the world", since such an undertaking is not called for in their mandate However, they do briefly describe the activities of some Canadian laboratories and organizations whose work has an influence on research carried out in Quebec, as well as the activities of the Johns-Manville Research and Development Center in Denver, Colorado

At the Government level, the report mentions five projects concerning 1) the development of a wet process of separating and classifying asbestos fibre (Federal Ministry of Energy, Mines and Resources), 2) the analysis of asbestos fibre content in drinking water throughout Canada (Environment Canada), 3) the development of methods to reduce asbestos fibre content in drinking water (Canadian Centre for Inland Waters); 4) national standards for emission control in mines, mills and manufacturing plants for asbestos-based products (Environment Canada), and 5) the development of standards with respect to asbestos-cement *(Canadian Government Specification Board)*

Ontario Research Foundation

The authors of the report go on to describe the activities of an important Ontario centre, the *Ontario Research Foundation*, which they consider to be a "first-rate centre in the field of asbestos". This non-profit organization, created in 1928, offers laboratory and pilot plant services on a contractual basis. Its main clients are industry and government

During the last five years, the Ontario Research Foundation has spent a total of $1 349 000 on asbestos research This research has mainly dealt with the measurement of airborne asbestos fibre, the evaluation of asbestos fibre and asbestos-based products, and the development of new products and methods of recovering asbestos fibre

Research aimed at four key sectors

According to the CDT report, asbestos research in Québec should be oriented towards four main fields health, environment, innovations and fundamental research

Fulfilling the needs

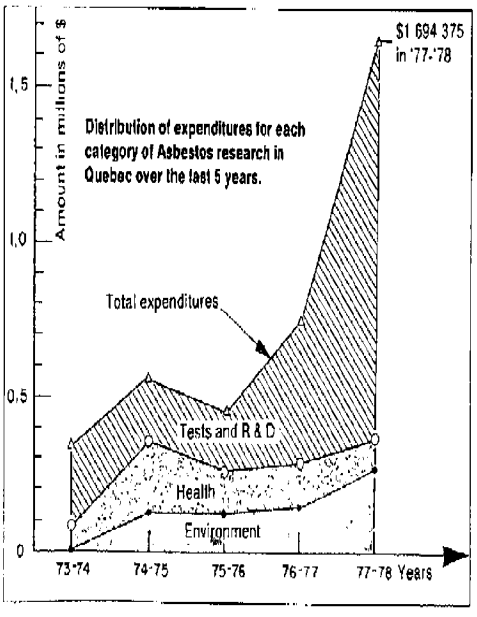
At the beginning of the chapter dealing with Québec's research needs, the authors define the difficulties facing the asbestos industry at present. They also emphasize the poor reputation given asbestos in some parts of the world, as well as the ensuing tendency to use substitute products Furthermore, they establish some of the deficiencies which they feel are afflicting the field of research such as lack of coordination, insufficient technological data with respect to product safety, a weak innovation sector, and lack of understanding of the fibre surface tension phenomena that is slowing down technological development

Specific fields

The fields of research defined by the CDT team are directly associated with the problems which have already been defined. According to the report, the most crucial problem is that of occupational health Thus, health is a primary field of research at the medical and epidemiological level

As a corollary to medical and epidemiological research, the CDT emphasizes the need to intensify research on the work environment and on the safe handling of asbestos-based products The report considers that this research should deal in particular with dust emission control, fibre measuring methods, and ways of reducing emission levels and providing for the safe handling of asbestos fibre and asbestos-based products.

To remedy the "rush to find asbestos substitutes", the authors of the report have proposed the development of two other fields of research: innovatrice research and fundamental research The first should strive to find new products using asbestos as raw material, as well as new applications for products already in existence However, such activity cannot be carried out successfully without fundamental research, which, according to the CDT, forms the basis of all technological innovation



Research units

In the asbestos research centre's organization chart presented in the next chapter, the four fields of research are grouped into three separate units 1) Health Unit, divided into Epidemiology and Medical Research, 2) Environmental Unit, divided into Emission Control and Technical Services; 3) Research and Development, divided into Fundamental Sciences, Technical Innovations and New Applications.

Information

In addition to these three units governing the various types of research, there is an Information Unit which, among other things, is responsible for promoting research and its financing, for publicizing the researchers' achievements, and for providing public relations on a national and international scale

Canada Post Postage paid / Poste Canada Port payé
Third class / Troisième classe
B-683
Montreal, P.Q.

The report favours the use of existing human and material resources

Parallel to their main proposal aimed at the creation of an asbestos research centre in Quebec, the authors of the CDT report strongly recommend that research work be assigned to existing university, industrial and governmental centres.

CDT experts prefer this format to that of a centre equipped with permanent laboratories and staffed with specialists in all the subject areas that need to be covered to ensure full-scale research.

Favorable Situation

"If it were not possible", they write, "to identify first-rate centres where the staff can be exclusively involved in asbestos research, or if it were judged impossible to easily promote the creation of such centres, it would be deceptive to think that researchers, taken individually, could carry out, project by project, the work needed to implement the programs".

As it happens, the situation is completely different

Indeed, the survey made by the CDT work group indicates the availability of specialists working in first-rate centres already in existence, and the availability in these same centres of highly specialized equipment. The group reckons that close to 200 people have already carried out asbestos research in 10 different Quebec centres. It estimates the value of available equipment at about 12 million dollars, and figures that 25 000 sq ft. of laboratory space can be used at present.

The authors of the report have also noted the growing interest expressed by universities in all matters concerning health and safety at work Such an interest can only prove beneficial to the asbestos sector In addition, they noted "the willingness of the interviewed researchers to participate more actively in asbestos research"

Logical Choice

Within this context, the report clearly favours the use of existing human and material resources "which would facilitate certain types of research, such as technological innovations, in which the interests of the centre's members might differ"

"It will always be easier", as the authors conclude in this chapter, "for the centre's Board of Directors to decide at a later date to invest in laboratories, should it prove necessary, than for them to make the reverse decision. In this matter, it is necessary to follow the example of the Pulp and Paper Institute which made its start in a university and later constructed its own laboratories. The Pulp and Paper Institute, at present, has more students registered in graduate chemical engineering studies than any other Québec university".

SPECIAL

Bulletin

This BULLETIN is published by l'Association des mines d'amiante du Québec, 1130 Sherbrooke Street West, Suite 410, Montreal H3A 2M8

The Post-Office Department in Ottawa has authorized postage paid in cash and forwarding of the publication by third class mail