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MAR 25 1981

Ms. Joni Repasch
Document Control Officer
Office of Pesticides and Toxic Substances (TS-793)
Environmental Protection Agency
Room E-447
401 M Street, S.W.
Washington, DC 20460

Subject: Document Control Number OPTS 84004
Environmental Protection Agency Proposal on Asbestos;
Reporting and Recordkeeping Requirements

Dear Ms. Repasch:

The Friction Materials Standards Institute is a trade association which includes most of the brake lining and clutch facing manufacturers in the United States. We have other Members worldwide. As friction materials manufacturers, most of our Members use asbestos as a major constitutent in their products. Our comments on these proposals represent the viewpoints of most of our asbestos-using Members.

General Comments

While we will address specific sections of the proposals on reporting and recordkeeping later in this letter, we question the timing and necessity of the proposed requirements. We are familiar with Section 8 of the Toxic Substances Control Act (Public Law 94-469). We understand that this section can require our Members to maintain records and submit reports in great detail, where that information is necessary to regulate substances that may present an unreasonable risk of injury to health or the environment. The friction materials industry agrees that there are health hazards from asbestos in the workplace. These have been addressed by the Occupational Safety and Health Administration (OSHA) and we anticipate further regulation in that area. We do not believe it has been shown there is an unreasonable risk of injury to health or the environment from the sale or use of our products because of the following facts:

1. Asbestos fibers are locked-in to the product in its finished form.

2. There is less than 1% asbestos in the wear debris from used friction materials.

3. Small exposure levels in the general environment have not been established as presenting an unreasonable risk of injury to health and the environment.

We refer you to the enclosed paper "Asbestos & Health in the Friction Material Industry," prepared by the Asbestos International Association in London, England. It summarizes what is known concerning asbestos exposure in the friction material industry, as well as what is known on exposure to friction material wear debris in the general environment. This position paper supports our contention that while asbestos does present a risk to those occupationally exposed, this exposure is now controlled, and that environmental exposure does not present an unreasonable risk--if it presents a risk at all--to the general public.

The Institute suggests that before applying the reporting and recordkeeping requirements of Section 8 of the Act, that EPA demonstrate that asbestos-containing friction materials may in fact present an unreasonable risk. We recommend that action of the type proposed by this notice be deferred until reasonable people can demonstrate the need for the costly and detailed records that in may cases go beyond the needs of the Agency. This proposed regulation would place one more burden on our Members, and particularly the United States manufacturers supplying brake linings, clutch facings and other friction articles to its already depressed automotive, construction, and industrial customers as well as to the energy related industry.

The proposed requirements would not only be burdensome to our Members, but in most cases it is difficult to see how the information can be put to use by the EPA. It calls for a complete documentary on asbestos beyond the needs for purposeful regulation, if indeed that regulation is necessary. Our industry stands ready to help with information-gathering even where the need has not been adequately shown, if the EPA can sharply reduce the amount of information, the old information, information which is mostly confidential, and extraneous information apparently being requested for support of parties other than the Office of Toxic Substances. In fact we suggest that much of the information is available from other Government agencies and it may be of value to have Interdepartmental exchanges between the Government agencies concerned with the asbestos issue.

Section 763.65 - Who must report

In Paragraph (f) the proposals exempt "small manufacturers, processors, or importers as defined in Section 763.65(m)." We agree with the exemption of small manufacturers or processors who employ no more than 10 full-time employees. There seems something inconsistent with the maintaining of jobs in the United States by the exempting of importers, who may be importing from factories with 1,000 employees outside of the United States, where a United States factory with more than 10 employees is not exempt.

One "small importer" could be responsible for more friction products, or other products for that matter, in the United States market than a medium-size United States manufacturer, but the importer would be exempt where the United States manufacturer would not. This exemption would be more equitable if based on dollar value, tonnage, pieces or other like index.

Section 763.70(a) - Customer Lists

Several Members indicate that they will invoke claims of confidentiality on distribution of these lists outside their organizations. We question the need for telephone number and technical contact for each customer. In many cases this information is not available. In other cases, this can create an adversary relationship between a customer and a manufacturer. Claims of confidentiality for this type information are valid, as almost all of our Members are interested in lists of his competitor's customers. We would suggest the EPA reconsider the confidentiality of this type information. We further believe the detail requested should not be required if provision of these lists is actually written into the final rules.

Section 763.71 - Schedule for Reporting

The schedule for reporting by our Members, who are all Primary Processors and Bulk Asbestos Importers, and in many cases are Secondary Processors, is unduly harsh. Rather than the 60 days required in sub-sections (a) and (c), and the 30 days required in sub-section (b), we recommend a standard 90 days schedule. Our Members have facilities at more than one location, and records are in many cases at a location other than the Factory. A 90 day requirement is more realistic when one considers the considerable detail asked by this proposal. Further, many of our Members do not have ready access to in-house Professionals to review and approve reports before submission. Our Members are entitled to have their reports reviewed by Outside Safety, Health and EPA Consultants, Legal Counsel, and other Professionals as to its adequacy and to assure that our Members are not harmed by their reporting.

Form B(2) - Quantity of Bulk Asbestos Imported.

The comments on Form B(2) apply to Form B(3) - Quantity of Bulk Asbestos Obtained. Our major concern is with Form B(2), as almost all our Members use Canadian chrysotile.

All Members of the Institute import asbestos, primarily from Canada. The EPA form asks for quantities of asbestos, by type, and chrysotile by grade. The form lists quantities for 10 years, from 1971 through 1980. In most cases, the older the records the more difficult the search. Some Members no longer have data from which to develop quantities before 1976. As the EPA is asking for information on asbestos emissions at the present time, we question the need for 10 years of data, and particularly that of more than two or three years ago. If the EPA were to have information on current consumption that should give sufficient information for estimating current exposures without the extra work involved in going back over ten years. We suggest, if the data is considered actually of value, that the EPA limit the request to that for 1980.

The notice asks for details on types of asbestos and grades of chrysotile. We understand the EPA is searching for information on other types of asbestos, but question the need for grades of chrysotile. This involves considerable searching of records on the part of our Members, if in fact the information exists. We do not believe that anyone to this time has alleged or inferred that the hazards of asbestos are dependent on the grade of chrysotile. We

suggest that the form be revised to ask only on quantities of chrysotile, and that reference to grades be removed.

Form C - Primary Processor Production

Our comments on Form C apply in most cases to Form D - Secondary Processor Production. Many of our Members are Secondary Processors in attaching linings to steel shoes or where they perform other assembly operations. We again state that the older the information is, the more difficult it is to develop. We suggest that production figures for the last year only, 1980, be used. These are available. The manufacturer's efforts in compliance with the requirements of this form would be reduced in almost the proportion that the years are removed. Again, we believe the EPA is searching for current exposure information, and that while history is interesting, the requirement to gather it is not necessary to the task.

Still further, in the instructions for this form, under "End Product Shipped," the form calls for information listing the trade name under which the product is marketed, and calls for a listing of all "private brands" under which the product is sold. We fail to see where listing of trade names or "private brands" is pertinent to developing information on emissions or exposures to asbestos. This information is much more difficult to develop for posting to forms such as these. It would multiply the combinations which would have to be listed, when the only relevant information is a product listing such as we suggest below: Drum Brake Lining (light-medium vehicle), etc.

On Page 8225 of the Federal Register notice, "Typical Terms for Products Made From Bulk Asbestos" are listed. Ten different terms are listed under Friction Materials. Most of those are not relevant to exposures in the general environment. We suggest reducing the 10 terms to 7 as follows:

Drum Brake Linings (light-medium vehicle)
Disc Brake Pads (light-medium vehicle)
Brake Blocks (heavy vehicle)
Disc Brake Pads (heavy-vehicle)
Clutch Facings (all applications)
Automatic Transmission Friction
Components (automotive)'
Friction Materials (industrial and commercial)

There are no woven disc or drum brake linings for light vehicle use.

For other applications, we question whether information on molded verus woven is pertinent to the question of exposure to asbestos in the general environment. We feel there is but limited usage of asbestos-containing friction materials in consumer products. Still further, all units of measure should be "Pieces."

We question particularly whether information on quantities sold under "Private Labels" will be available even in recent years, without painstaking one-by-one analysis of individual invoices. In addition, there may be claims of confidentiality in this area.

Form H - Summary of Current Worker Exposure

This particular section of the reporting form would cause an undue burden for large facilities which have several hundred workers and a diversity of production operations. Records on worker exposure levels are not maintained in a manner which would permit easy retrieval of the data requested.

To simplify this section, it is recommended that Column 2 - Total Person Hours Per Year at TWA, and Column 3 - Number of Measurements Used, be eliminated as this data serves no useful purpose and is extremely time intensive in its preparation.

Form K - Pollution Control Equipment

We question the need for the Month and Year under the "When Installed" column. Some installations go in over a long period--in some cases as long as 12 months from delivery to final usage. Do you wish the date ordered? The date delivered? The date installed? The date first used? The date put into use on a full-time basis? The year of installation should be sufficient. We believe a definition should be presented so as to clarify what is wanted or needed.

Where there is more than one piece of pollution control equipment, even where there are two, three or more installed, the form calls for a separate listing. We suggest that the form be redesigned to permit listing of any quantity of a particular piece of equipment where that equipment is identical to another piece. The quantities could be listed per piece of equipment, with a total column for all equipment of that same type. The purpose of our recommendation is to reduce the paper work burden.

* * * * *

We question the need for this proposed reporting from manufacturers of friction materials based on the reasons stated under our "General Comments." We suggest a deferral of the proposals on reporting and recordkeeping until reasonable people can demonstrate the need.

We suggest that if the reporting and recordkeeping requirements in this proposal will not be deferred that the proposal be revised to simplify and reduce the paper work burden on our industry. This can be done in three ways:

1. Cancel the study of history--ask for information for 1980 only.

2. Reduce the detail--such as grades of chrysotile, month and year of installation, etc.

3. Eliminate or re-write the proposal on information requests where confidentiality will likely be claimed

Respectfully submitted,

FRICTION MATERIALS STANDARDS INSTITUTE

EWD/erc
Encl: Asbestos & Health in the Friction Material Industry

E. W. Drislane
Executive Director

ASBESTOS INTERNATIONAL ASSOCIATION

(Limited by Guarantee)

68 GLOUCESTER PLACE, LONDON W1H 3HL

MEMORANDUM

TO: Member Associations AIA/7/3/PROD

FROM: Director General 12 February 1981

"Asbestos & Health in the Friction Material Industry"

The attached position paper on Asbestos & Health in the Friction Material Industry is forwarded for information. It has been authorised by the Executive Committee who recommend that it should be used as a background reference paper to help members deal with questions in asbestos and health which may arise.

for Director General

FMSI 03568

AIA/7/3/PROD

ASBESTOS AND HEALTH IN THE FRICTION MATERIAL INDUSTRY

The Problem

Exposure to asbestos dust is recognised as a potential occupational hazard. Among work people exposed to high concentrations of respirable asbestos dust, (such as is known to have occurred before present day dust control measures and work procedures were introduced) cases of cancer and asbestosis have been reported throughout the world.[1,2,3] The difficulty of reliably identifying the occupational history of those whose health has been affected many years after has resulted in any contact with asbestos being regarded with caution and all materials containing asbestos being attacked indiscriminately.

Since friction material is widely recognised as one of the products for which asbestos is an important ingredient, it has attracted such attention. Indeed, the asbestos industry, in reminding everyone of the vital role played by asbestos in brake linings, has stimulated such attention. Nevertheless the occupational health record of the asbestos friction material industry is good and only a few cases of asbestos-related disease are on record. However, the widespread use of friction material in all types of vehicles has raised the question of potential pollution of the environment with an assumed consequent danger to the health of the general public.

The friction material industry, therefore, has two basic problems. The first, the occupational health problem, has in many areas been resolved. However, the industry must continue to ensure that those employed in the manufacture of these materials are not exposed to dust levels which are harmful. An extension of this problem is the need to ensure that workers employed in the subsequent use of friction materials, either in the fitting of the products or the maintenance of vehicles, are not exposed to harmful dust levels.

(This page retyped at FMSI because of weakness of original copy)

The other problem for the industry, that of possible environmental pollution, is more difficult to resolve, based as it is on emotional anxieties (which are in no way justified by the evidence). A climate of concern for the effect on the environment of expanding towns and industries has led to the motor vehicle being included as a significant factor in this pollution. This fact together with the publicity given to asbestos and its classification as a carcinogen,[4] have all combined to lead people to question the use of asbestos-based components in motor vehicles.

The automotive industry is also under attack for a number of other reasons, (e.g. pollution, waste of resources and congestion) and would gladly be without the asbestos problem although it must accept that for some years, current models of motor cars will need asbestos-containing material for replacements. The friction material industry itself must therefore dispel anxieties about asbestos-containing products in motor vehicles by ensuring that the existing reassuring evidence is made manifest and is properly understood.

Tackling the Problem

In order to tackle the problem most effectively, it is important that the origins, investigations and remedial measures involved should be well understood. This is especially necessary since the existence of the friction material environmental problem is to a large extent based on confusing two very different phenomena; on the one hand the occupational health experience and dust exposure data related to manufacture (and the subsequent fitting and servicing operations sometimes called "para-occupational") and on the other hand an assumed emission of similar dust into the general environment as a result of the daily wearing down of brake linings and clutch facings. An example of this confusion may be seen in the evidence given to the UK Asbestos Advisory Committee, where claims that the general public are at risk are supported solely by reference to a survey of motor vehicle maintenance workers.[5]

It is therefore important to recapitulate the facts relating to health hazards and the conditions which are believed to give rise to them.

These facts will be reviewed under three headings, the first two covering the Occupational areas of Manufacturing and Servicing, and the third heading covering that of the General Environment.

Manufacture of Friction Materials

There is ample evidence to suggest that, in the manufacture of friction materials, the concentration of asbestos dust compares favourably with that found in most other modern asbestos operations. Within the last ten years efforts to observe a 2 f/ml* standard have led to further improvements in dust control and there are now many operations where levels well below this maximum allowable concentration are achieved[6]. Very few cases of asbestos-related disease arising from friction materials manufacture have been reported.

In evidence presented to the UK Advisory Committee,[5] Ferodo Limited, who have been using asbestos in brake and clutch linings since 1910, reported 8 cases of mesothelioma and 5 cases of asbestosis. The mesothelioma cases had all been exposed in the manufacture of railway brake blocks between 1928 and 1933 or during the war years up to 1943, to crocidolite as well as to the chrysotile asbestos more generally used throughout the plant. The asbestosis cases were all involved in mixing processes where masks should have been worn.

In the same volume of evidence, a report from the two Cape Industries' factories manufacturing both textiles and friction material (one since 1901 and the other since 1923) cites 9 cases of asbestosis and no case of mesothelioma.

Ferodo report that "many millions of man hours have been worked on finishing operations of asbestos-based materials; though the dust concentrations associated with these were at one time very high, there

* f/ml = (asbestos) fibres per millitre

has not been a single diagnosis of asbestosis as a result of this exposure". In more recent years (1968 - 1976) however, average concentrations were well below 2 f/ml following continuous improvements in dust extraction methods.

An investigation in 1975 by Heidermanns, Kuhnen, Schutz and Prochazka[9] into dust hazards which might be associated with the manufacture and use of asbestos-containing friction materials (updated in the Research Report of the German Berufsgenossenschaften[7] quotes concentrations of micro-dust in the range of 0.09 to 0.20 mg/m^3 during grinding, drilling, sawing, turning and milling operations (the current TRK* value is 0.10 mg/m^3 or 2 f/ml;[8] on this basis the current range is 1.8 f/ml to 4 f/ml), on average just below or just above 0.15 mg/m^3 or 3 f/ml.

Such operations, unless subject to dust control, will emit dust containing asbestos. A number of surveys of such operations have been carried out in Germany [7,9], UK [10,11,12], USA [13,14,15,16,17] and elsewhere [3,5,8] and it is clear that, under some conditions of working and where such operations are carried out continuously, dust concentrations above 2 f/ml (or the TRK of 0.10 mg/m^3) can be reached. There is some evidence of effects on health among men engaged for a long period on such work. Medical and epidemiological investigations by Professor Woitowitz, Valentin and others [7] on workers who had been continuously exposed for at least 10 and up to 25 years to asbestos dust suggests a similar risk level for men employed on finishing operations (mainly grinding and drilling) in the automotive industry, to the risk level of workers in the manufacturing industry [7,9]. +

It was noted that the automotive industry group studied had had long exposure from a very early age. [9] A group of men carrying out brake

* TRK = Technical Control Limit

+ Out of 94 workers (including 43 women) in manufacturing, there were 3 probable cases of asbestosis and 11 "possible". Among 63 men employed in finishing operations on brake linings in the automotive industry, 2 probable asbestosis cases were found and 10 "possible". ("Possible" means showing effects on the lung which might be fibrogenic.)

maintenance services with exposure primarily during the cleaning and brushing out of brake drum dust gave little evidence of inhalation effects in spite of long years of exposure.

Professor Selikoff's investigations [19] quoted indications of abnormalities in 32 out of 87 motor vehicle mechanics (6 out of 29 with five or more years intermittent exposure showed signs on X-ray of changes consistent with asbestosis). Another report of the same investigation quoted 24% of 93 brake service mechanics showing chest abnormalities not necessarily asbestos-related and it is emphasised that there were no confirmed cases of asbestos-related disease. Dust levels quoted in connection with this investigation (in USA) [20,21], refer to mean concentrations for blow-out of brake drums, grinding of used linings and bevelling of new linings of 15.9, 3.8, and 37.3 f/ml respectively - much higher than any found by any other researchers. No information is provided as to the duration of those samples - they are frequently referred to as peak concentrations or the mean of a number of such measurements. It is also clear that in the case of blowing out of brake drums, no asbestos fibres were visible by optical microscopy; some chrysotile was identified by X-ray diffraction. Fibres identified by electron microscopy were all below the minimum size specified in the definition of asbestos fibre (i.e. 5 μm in length)[8]. It should be noted that the methods of sampling and the criteria for measurement of occupational environments did not conform to the methods used by governmental agencies and by other investigators in Germany and UK.

For comparison, concentrations of asbestos dust during brake maintenance reported by Hickish and Knight [10] showed an average daily exposure of 0.68 f/ml (range 0.21 to 1.12) during brake service of 11 cars. During truck brake service, the average was 1.75 f/ml, with peak, during cleaning of the brake drum, of 7.09 f/ml.

The German investigation in 1975 [9] (now incorporated in the Berufsgenossenschaften report [7]) recorded high concentrations* in the brake service department and

* 0.03 to 0.79 mg/m^3 and with background workshop atmosphere of 0.03 to 0.05 mg/m^3.

where machining was done without dust extraction. Although high concentrations of dust were observed during blowing out, no chrysotile asbestos could be detected by infra-red spectrometry, and the individual fibres which could be detected optically could not be identified as asbestos.

The General Environment

During the application of drum brakes, disc pads or clutch facings, small quantities of the surface of the friction material are worn away. These materials contain between 30% to 60% of asbestos, and it has been assumed by some that thereby large quantities of dangerous asbestos dust are being regularly discharged into the atmosphere. This, it is argued, creates a dangerous atmosphere akin to that which has produced asbestos-related disease (especially cancer) in some working environments. Since the estimated consumption of asbestos in friction material is annually over 40,000 tons [22] for Europe and over 50,000 tons in the USA the amounts involved are substantial. An estimate carried out by the Bendix Corporation with the support of the US Environmental Protection Agency (EPA) calculated that the amount of friction material worn away in brakes and clutches annually in the USA is around 60,000 tons, [13] (of which 37,000 tons is the asbestos content i.e. 60%. In Europe the content of brake linings is nearer 30%). However it is clear from measurements made at a number of locations with heavy road traffic that insignificant quantities of respirable asbestos dust are so emitted. [23,24]

The most important factor in dispelling anxiety is that the asbestos content of the wear products of friction material is not emitted into the atmosphere in the form of respireble asbestos dust. Indeed, a number of ambient air investigations indicate that it is difficult nowadays to find asbestos fibres in any significant quantity, regardless of size, in the atmosphere - even in the vicinity of asbestos manufacturing plants. [24]

Measurements of the ambient air even in heavy traffic conditions do not show any significant level of asbestos. Again, in underground railway systems, where fierce application of asbestos-containing brakes in the

confined tunnel environment might be thought to create the worst conditions, no significant build-up of asbestos dust has been detected.[24,25,26]

The explanation is simple and is confirmed by a number of careful scientific investigations. The heat generated in the process of applying the brakes or the clutch (the reason in fact why asbestos is such a vital component) is sufficient to destroy the original structure of the asbestos fibre. From a temperature of 450°C the chrysotile structure begins to convert to a non-crystalline amorphous phase, leading to a loss of stability of the fibre structure. The mechanical strain applied during the braking process has a pulverising and grinding effect, leading to disintegration of the fibre structure. The German report [7] calls it "a kind of micro-milling so that the dust no longer contains any fibres".

From a temperature of 650°C a new crystalline structure develops called Forsterite, which will be fully developed at temperatures of above 700°C. Generally, forsterite cannot be traced in brake lining dusts. This means that temperatures beyond 650°C either do not occur or are only very short-lived. The decrease of the chrysotile content, however, indicates that temperatures beyond 450°C are reached because the amorphous phase of the chrysotile cannot be traced analytically (by either infra red-spectrometric or X-ray diffratomatic methods).

Examination of the residue of wear products in brake drums confirms that the asbestos content is usually less than 1% of the residue.[27] It has been suggested that the dust escaping into ambient air may contain a higher proportion of the fine respirable asbestos than dust left in the drums but careful studies designed to entrap this escaping portion of the wear product show that this is not so. Various investigations into the amount of asbestos remaining in the residues from friction processes have been carried out which indicate how minute is the fraction of asbestos released in the application of friction. The latest report, [7] from Germany, confirms that technical investigations in recent years have repeatedly shown that the dust generated by friction of the linings in use - as opposed to dust created

during the finishing and handling of new linings - as a rule contains only traces of free chrysotile fibre, i.e. of the order of 1%. The working party was unable to provide clearer infra-red spectrographical evidence of chrysotile. Under phase-contrast and electron-microscopic scrutiny, the dust contained just a few isolated fibres which could not even be definitely identified as asbestos. This is consistent with the investigation by UK government and industry investigations in 1969 [10,27] which reported that the free asbestos content of wear products of drum brake linings rarely exceeded 1%. (In disc brakes the content was even lower.)

The Bendix investigations for NIOSH in USA in 1973 gave a range from 1.65% to 0.003% - only three tests were above 1% and the overall average was 0.23%. This study also determined that only 3.2% of the asbestos content of all the wear products over the whole range of US motor vehicles became airborne - estimated at 5060 lbs. annually.[13]

The Ford Motor Company carried out a study [28] based on dynamometer tests which showed that during brake usage less than 0.02% of the lining wear was released in the form of free asbestos. The study estimated that concentrations of asbestos fibre in the urban atmosphere in the US due to brake usage was less than 0.07×10^{-9} g/m^3 (.07 nanograms) (less than one millionth of the 2 f/ml occupational control standard).

Measurements carried out at points of heavy traffic concentrations in the UK by the Asbestosis Research Council, under the observation of the TUC Centenary Institute of Occupational Health, also found no greater concentration. Even in the underground railway system, this survey found the asbestos content to be of the order 10^{-8} g/m^3 to 10^{-7} g/m^3. (10 ngs to 100 ngs/m^3)[24]

Finally, some observations made within the last three years by two eminent occupational health experts, on occupational risks and risks to the general public, are worth quoting.

Dr. John Gilson,[29] reviewing asbestos as an occupational hazard in a general group in which he includes friction materials, says "Despite the thousands of products containing asbestos, evidence of ill effects from their use is very small". He adds the qualification that occupations involving brake shoe maintenance have been shown to be at risk in the past. "Although most of the asbestos in brake shoes is degraded, the dust in the brake drums still contains a small percentage of asbestos". "The magnitude of the risk (of asbestosis and mesothelioma in those working regularly in this employment) is not known but is likely to be small." Professor Wagner,[22] in his report on public health risks, concludes "There is evidence of no excess risk of mesothelioma from asbestos pollution which has existed in the neighbourhood of chrysotile and amosite mines. There is no evidence of a risk to the general public at present". Later he repeats this view in his general conclusion "There is no established evidence that true ambient exposure, as prevalent in Western European countries, at this moment carries such a definite risk; however, there exist too many uncertainties to deny such a risk, though if the risk was substantial it is likely it would have been detected by now".

CONCLUSIONS

Manufacture

There can be an occupational health risk in the manufacture of asbestos-based friction materials. However, experience has shown that this is a very limited health risk and that it can be effectively controlled by well tested equipment and work procedures.

Standards based on extensive experience in the industry have been established and equipment is available to maintain these standards so that the occupational health risk can be controlled. In many countries these standards are enforced by legislation, but in any case trade and industry have an obligation, as with any occupational safety problem, to implement the effective risk prevention measures which have been developed by competent and experienced technicians.

Maintenance Work (Servicing)

In certain conditions involving servicing, etc., there may be a para-occuptional hazard. The industry can provide information to ensure that users understand under what circumstances such risks can arise and how they can be avoided.[30,31,32,33].

The General Environment

The available data indicate that the general public is not at risk and means should be found to tell them so.

ANNEX - Bibliography

14th January 1981

(Page 10 retyped at FMSI because of weakness of original copy)

ANNEX

ASBESTOS AND HEALTH IN THE FRICTION MATERIAL INDUSTRY

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*Former Director General, AIA

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