FILE NAME: Ford (FD)

DATE: 1971 Aug 27

DOC#: FD044

DOCUMENT DESCRIPTION: Memo RE Proposed Illinois Reg Banning Asbestos in Brake Linings with Attachment

Intra Company

SCIENTIFIC RESEARCH STAFF

August 27, 1971

To: J. M. MacNee III

cc: D. A. Jensen
E. D. Marande
R. L. Gealer

Subject: Proposed Illinois Regulation Banning Asbestos in Brake Linings

The enclosed memorandum from R. L. Gealer summarizes his recent telephone conversation with Dr. Colin Harwood of IIT Research Institute, concerning the survey he is making on behalf of the Illinois Pollution Control Board regarding the potential for elimination of asbestos in brake linings.

Please note that, in order to avoid answering sensitive questions, Dr. Gealer promised that he will identify an appropriate person at Ford Motor Company to whom these questions should be addressed. The nature of the questions is described in the last paragraph of Dr. Gealer's memorandum.

I would appreciate your advice on how to proceed.

Serge Gratch

Enclosure

sg

6000 133E

80.89

Intra Company

SCIENTIFIC RESEARCH STAFF

August 27, 1971

To: S. Gratch

cc: E. D. Marande
J. V. Petrocelli

Subject: Proposed Illinois Regulation Banning Asbestos in Brake Linings

On August 26, 1971, I received a telephone call from Dr. Colin Harwood, IIT Research, Chicago, Illinois, telephone: (AC) 312-225-9630. IIT has been retained by the Illinois Pollution Control Board to assess the technical aspects and implications of the proposed regulations for the State of Illinois which would control sources of asbestos and which, as now written, would prohibit the use of asbestos in the brake linings of vehicles manufactured after January 1, 1975 and sold for use in Illinois. Dr. Harwood learned from Joe Somers of the Air Pollution Control Office of the Environmental Protection Agency, that we are doing some work in the area of brake lining emissions sampling, and was referred by Mr. Somers to me. Mr. Somers is involved in the EPA contract for sampling of brake lining emissions recently awarded to Bendix Research Laboratories. Dr. Harwood is in the process of gathering information pertinent to his assignment—what is known about asbestos in brake lining emissions, what is the state of the art relative to substitutes for asbestos composite brake linings, etc. He had already spoken to people at General Motors and at Mt. Sinai School of Medicine of the City University of New York.

I told him what experiments we are doing and what experimental techniques we had used or planned to use, but indicated that we had no results completed as yet. I indicated that in our narrow scope program (compared with the Bendix EPA program), we had collected the airborne wear dust generated on a brake dynamometer under normal stopping conditions, with peripheral experiments under break-in and high temperature conditions, and that we are in the process of examining the samples for asbestos. I mentioned that the method of preparing the samples for electron microscopic examination is not clear but that we planned to use as one technique a method learned through consultation with the researchers at Mt. Sinai School of Medicine. With this technique, the ability of other wear debris in the sample to conceal asbestos fibers is eliminated, so that a true measure of total mass of asbestos fiber may be expected, but the original fiber bundle size distribution is destroyed.

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Dr. Harwood then asked if we were doing any work on brake lining formulations not containing asbestos. I indicated that we were exploring that area, but that to date, I do not know of any such materials which can satisfy the performance requirements under all operating conditions. He asked specifically about cermets or sintered metals and I had to answer that I had not done enough work with them myself to give him a complete answer, but that I understand that they all have certain performance drawbacks. He asked for the name of someone at Ford who could give him more specific information on these asbestos-free materials and I indicated that I would find out for him whom to contact and see that someone calls him back in the near future.

Roy L. Gealer ✓
Chemical Engineering Department

jcd

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Ford **Transmittal**

To: G. U. Brion
S. Kuntz
E. A. Mc...
J. W. Truett

Please:	See me	Note and:
☐ Sign	☐ Phone me	☑ File
☐ Approve	☐ Reply — my signature	☐ Discard
☐ Comment	☐ Reply — copy to me	☐ Forward
☐ Handle	☐ Type	☐ Return

For your information. Note that Duke Energy is not mentioned.

From R. D. Henley Date 10/1/71

Gen'l Adm Jan '71 31 Due Date

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a Houston Ship Channel plant to treat wastes from Champion Paper, Atlantic Richfield, Petro-Tex, Goodyear, Crown Central Petroleum, and perhaps Armco Steel (see *Chementator*, Oct. 4, p. 25, for a glance at Armco's waste woes). A third plant is also under study, likewise for the Ship Channel. And the Authority is looking into bringing Monsanto wastes at Texas City into the plant being built for Union Carbide.

Cracking furnaces and compressors for four future Soviet ethylene plants will be supplied by Czechoslovakia's Kralovo Pole Engineering Works, Brno, under a $48.4-million contract closed last month during the Brno International Engineering Trade Fair. Delivery is to be between 1972 and 1975.

As for the Fair itself, observers say it was composed predominantly of off-the-shelf processing systems, with no significant exhibits of new technology.

Junked glass is moving deeper into asphalt-road construction. Engineers at Toledo, Ohio, have laid a 1,000-ft. stretch of heavily traveled road whose surface and subsurface layers are composed of various mixtures of asphalt, limestone, sand, crushed stone, and crushed waste glass supplied by Owens-Illinois.

It is the longest such segment of road constructed to date, believes the company, and the first to include waste glass in all subsurface layers as well as the top layer. Glass content of the individual layers ranges from 25% to 60%. All in all, 1,450 tons were used.

Besides offering an outlet for discarded glass goods, such highways may promote safety by presenting an unusually skid-resistant surface. Owens-Illinois has been testing glass-containing road surfaces since 1969.

And discarded tires will be a major construction material for an underwater reef to be built 1½ mi. off Fort Lauderdale, Fla., by Broward Artificial Reef, Inc. The company points out that tire casings have already proved to make excellent feeding and spawning grounds for fish. Goodyear Tire & Rubber is donating money for tire-preparation equipment, plus consulting assistance.

The world's largest grass-roots petroleum refinery has been completed, for Gulf Oil at a site 20 mi. south of New Orleans, La. The new 160,000-bbl./day Alliance refinery has a single crude-distillation unit with atmospheric and vacuum stages, a 72,000-bbl./day fluid-catalytic-cracking unit based on Gulf's new riser cracking process, a 37,500-bbl./day catalytic reformer, a 28,000-bbl./day HF-alkylation unit called the largest of its kind, a 22,500-bbl./day aromatics-extraction unit, a 4,600-bbl./day hydrodealkylation unit to convert toluene to benzene, a 40-ton/day sulfur plant, and numerous other units. Brown & Root was general contractor for the refinery. It cost over $200 million.

U.S. air pollution standards on mercury, beryllium and asbestos are almost ready for publication in the *Federal Register*. Pending a current review by the Office of Management and Budget, the Environmental Protection Agency (EPA) has worked out the following positions on these three pollutants:

- Mercury—The proposed standard is a maximum emission of 5 lb./day per plant. This would, EPA believes, achieve an ambient air concentration of no more than 1 microgram/cu.m., on a 30-day-average basis. Ore smelters and caustic/chlorine plants would be the main facilities affected by this standard.
- Beryllium—EPA proposes an emissions ceiling of 10 g./day per plant, to maintain an ambient ceiling of 0.01 microgram/cu.m., 30-day average. This will mainly affect facilities that extract beryllium from ore (which are already under similar strictures imposed by the Atomic Energy Commission).
- Asbestos—Because it is difficult to measure asbestos levels in air, EPA

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proposes that this "standard" consist of (1) a prohibition of visible emissions, and (2) a ban on spraying asbestos insulation in construction, and on using asbestos mine tailings in road construction.

EPA is developing these standards under the Clean Air Act of 1970.

The U.S. Atomic Energy Commission is in a big new environmental muddle. Recent AEC tests at the agency's proposed atomic-wastes-disposal dump near Lyons, Kans., confirm that the site, an abandoned salt mine, may be vulnerable to water seepage and therefore less safe than AEC had originally thought. The agency—already five years behind schedule on its disposal program—has dropped its Lyons plans, pending more tests, and is studying other Kansas salt mines.

AEC reassessed its $25-million project after Kansas Governor Robert Docking and nearly the entire Kansas delegation to Congress made charges that the agency had been lax in setting up safety precautions for the Lyons facility.

The salt mine was to have been AEC's sole disposal ground for high-level radioactive wastes from 1975 until 2000. Some 770,000 cu. ft. of wastes were to be interred there.

And this atomic-wastes debacle will make licensing nuclear power plants harder, believes Myron Cherry, a Chicago lawyer who represents various environmentalist groups challenging new-plant licenses. "It shows that the AEC has been running down the road too fast, without knowing where it is going." Licensing boards may find it hard to justify any more nuclear power stations until they can be convinced that AEC has viable waste-disposal plans.

Even without this complication, nuclear plants have recently begun facing new hurdles in licensing: Concern about emergency core-cooling systems has led AEC to impose stringent new regulations covering such systems (*Chementator*, July 12, p. 29).

Better ways to forestall oil spills into the Delaware River or Delaware Bay are the goal of a 12-man study committee newly appointed by Delaware governor Russell Peterson. Within a year, the committee will make a specific recommendation on developing and operating terminals that offer low risk of spills.

According to the governor, about 70% of all oil delivered to the U.S. East Coast passes up the bay and river.

Test results look "encouraging" for seawater desalting by reverse osmosis, says Dow Chemical. The company is nearing the end of a contract with the U.S. Office of Saline Water (OSW) to develop a cellulose triacetate hollow-fiber membrane capable of desalting seawater (this material, like others, has already proved suitable for desalting brackish water). In accordance with the contract goal, Dow has developed a fiber with: a flux of 1 gal./sq.ft./day, a salt-rejection performance of greater than 99%, and an ability to operate at above 800 psi. The next step, via a possible subsequent contract, may be to test the fiber in a fairly large seawater-desalting module. Du Pont has also been looking into seawater desalting via hollow-fiber reverse osmosis for OSW (*Chementator*, Apr. 19, p. 53).

Some ethylene producers and consumers on the U.S. Gulf Coast are getting worried about a new threat to the availability of feedstock ethane and propane. Natural Gas Pipeline Co. of America has signed contracts to buy those hydrocarbons from three Gulf-region plants—at prices considerably above the going ethylene-plant-feedstock prices—for injection into the company's natural-gas lines that feed the

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Ford **Transmittal**

To: John Damian

Please:	See me	Note and:
☐ Sign	☐ Phone me	☐ File
☐ Approve	☐ Reply — my signature	☐ Discard
☐ Comment	☐ Reply — copy to me	☐ Forward
☐ Handle	☐ Type	☐ Return

For your information

From: Roy L Gerber | Date: 9/22/71

Due Date:

Genl Adm Jan 71 31

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Washington newsletter

Senator William Spong, Jr. (D., Va.) wants to toughen the Administration's proposed toxic substances control act (S. 1478). The proposal and Spong's suggested extensive amendment were aired in a first round of hearings last week. Tabbed for certain regulation in any case are such substances as mercury, polychlorinated biphenyls and asbestos, says Spong.

The Administration bill would allow the Environmental Protection Agency administrator to restrict or even prohibit use of hazardous chemicals in industry or commerce to protect health and environment. Spong's amendment would require premarket clearance for all new chemicals and for any existing chemical products, as determined by EPA. Russell Train, chairman of the Council on Environmental Quality, opposed Spong's amendment, saying it would impose a "substantial administrative burden on government" and impede technological innovation in industry. The amendment would also give EPA power to summarily seize chemical substances deemed to be imminent hazards. The Administration bill would have the EPA administrator first go to the Attorney General to petition the district court to restrain use or distribution of a hazardous substance.

As expected, representatives of environmental and consumer groups such as Ralph Nader's Center for the Study of Responsive Law, the Sierra Club and Friends of the Earth, were unanimous in their support of the tougher version.

Meanwhile, EPA Administrator William Ruckelshaus said he would hold off his decision on whether to uphold the cancellation notice on food crop use of 2,4,5-T until late fall. It was slated to come out this week following receipt by Ruckelshaus of the scientific advisory committee report on the material. Dow and Hercules had requested the study. Ruckelshaus reportedly feels he does not have enough information yet on the benefits and risks of 2,4,5-T to make a decision. Since the public hearings requested by Amchem and Thompson-Hayward Chemical (following the same notice) won't be held until late fall, Ruckelshaus says he will then make a decision regarding all four companies' requests.

A Congressional committee studying the nation's fuels and minerals supply was told last week that the downtrend in domestic oil refining capacity must be quickly reversed or the U.S. will find itself dependent on foreign refineries. John Ricca, acting director of Interior's Office of Oil and Gas, noted that there is a serious deficiency in planned expansion and new refineries and predicted that "by '75 at the latest, we may reach the point when refinery products must be imported instead of crude oil." Ricca says two circumstances are responsible: (1) it's tougher for oil companies to get sites because of environmental concerns, and (2) the prevailing uncertainty on what future energy policy in general will be, especially oil import policy.

It will take a staggering $105.2 billion to clean up pollution in the U.S. The five-year cost estimate ('71-'75) is the key figure in the Council on Environmental Quality's report that's expected to be sent to President Nixon in the next few weeks. The total includes $43.5 billion for solid-waste treatment, $38 billion for water pollution and $23.7 billion for air pollution. About $12 billion of the total estimate will go for private manufacturing water pollution problems. One of the largest individual items cited in the upcoming study is $22.4 billion needed for municipal sewage treatment systems.

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9/9/71

Items to cover in conversation with John Dumas re- asbestos emissions (not necessarily in this order)

- Illinois proposed regulations. IIT Research survey.
- EPA attitude. Binding Research contract.
- Mt. Sinai School of Medicine involvement.
- Our experiments, Status.
- Alternatives to asbestos composites.
- Industrial health standards, deficiencies.
- Health hazards of asbestos.
- Findings of others: airborne asbestos emissions, asbestos in stream dust, asbestos in ferruginous bodies.

8000 1346 PQ

9/26/71

John Dawson called. Asked me to call Colin Harwood at EPA to tell Harwood that Dawson would phone him re - asbestos emissions vis-a-vis the Illinois proposed regulations. I did that, and then confirmed to Dawson that Harwood was expecting his call.

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8/26/71
12:30 PM.

Telephone call received from:
Colin
Dr. Harwood AC 312 - 225 - 9630
IIT Research in Chicago.
Illinois Pollution Control Board
asked to assess their proposed ~~solution~~ regulation.
Referred by Joe Sowers

Knew of our work from Joe Sowers.
I told him we are taking narrow scope look on dispersometer samples, that we are not yet fully experimental designs.
Wanted to know if we are working on substitutes. I said we have begun look, but know of no substitutes allowing performance requirements of today & future.
Wanted to know about ~~additives~~ additives.
I told him I had not done too much on them, but understood there were performance drawbacks. I told him I would contact him with reference to talk him about substitutes.

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O. A. JENSEN
197 JUL 22 AM 10:39

July 19, 1971

TO: GOVERNMENT RELATIONS COMMITTEE
VEHICLE REGULATIONS COMMITTEE
AIR QUALITY COMMITTEE

SUBJECT: Illinois Pollution Control Board Proposed Regulation on Asbestos Brake Linings

The following is an excerpt of newsletter #24, dated June 14, 1971 from the State of Illinois Pollution Control Board:

ASBESTOS HEARINGS SCHEDULED

"Finding that the uncontrolled spraying of asbestos fiber and other fiber-containing material unreasonably interferes with the enjoyment of life and property and presents a severe threat to the public health and welfare, the Board authorized in Danville that hearings be held on detailed proposed regulations which would restrict the commercial use of products containing asbestos. The set of regulations, if adopted, would be the most comprehensive set of controls for the toxic substance ever enacted.

The proposed regulations would, among other things, require a permit for the manufacturing of asbestos products, for the commercial use of asbestos in construction work and for the demolition of asbestos-containing buildings. Demolition of buildings containing asbestos would have to be conducted in accord with strict controls to reduce dust emission. Plants manufacturing asbestos products would be required to meet an emission standard. The spraying of asbestos fiber, done in high-rise construction, would be unlawful. And the use of asbestos in the brake lining of vehicles manufactured after January 1, 1975 and sold for use in Illinois would be prohibited. A copy of the proposed regulation is appended to this newsletter.

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Asbestos-containing products have, in recent years, been widely used, especially in the fireproofing of buildings and in the lining of automobile brakes. These uses and others contribute annually to the discharge of asbestos fiber into the atmosphere. The fiber, once released, is thought to be virtually indestructible, resulting in a gradual, irreversible increase in the amount of asbestos fiber present in the ambient air. Medical evidence has shown that heavy, prolonged exposure to asbestos fiber can cause a lung disease known as asbestosis and a very rare cancer of the lining of the lungs, mesothelioma."

Attached for your information is the proposed regulation 71-16, "Asbestos and Spray Insulation" (Ref. I) and background history on this problem (Ref. 2).

There has been no definite hearing date set at the present time.

J. Olan Cooper
Manager
State Relations Department

Prepared by:
Henry M. Vanderstek

Attachment

R 71-16
Asbestos and Spray Insulation

EXPLANATION OF PROPOSED REGULATIONS

Science is pointing its medical finger at asbestos and describing the "miracle fiber" as a mineral whose commercial blessings can exact a rather costly toll. Asbestos insulation and factory workers exposed to heavy concentrations of asbestos fiber over prolonged periods have suffered devastating consequences. They are visited with an alarmingly high incidence of asbestosis, which produces a diffuse fibrosis of the lower lung, of lung cancer and of an extremely rare cancer of the lining of the lung and abdomen, mesothelioma. The rates of lung cancer are extraordinarly high especially among asbestos workers who are smokers, indicating the synergistic potential of the mineral fiber.

The medical evidence is indefinite as to why asbestos is carcinogenic, with three theories in vogue: (1) The fibers once ingested or inhaled act as a continous physical irritant, inducing a tumor after 20 to 30 years; (2) The fibers contain carcinogens such as benzo(a)pyrene; (3) Fibers accumulate in the lung and remain immobilized as "asbestos bodies" which cause cancer upon disintegration.

Similarly, while the adverse effect of prolonged exposure to heavy concentrations of asbestos is clearly documented, the medical data is disturbingly vague as to the results of long-term exposure to low and moderate concentrations. Nor is there a clear dose-time relationship for exposure to heavy concentrations. In short, as with many other environmental contaminants, the public has discovered too late that asbestos is potentially dangerous and too little of the extent of that threat.

But two depressing facts are agreed upon: That millions of Americans are likely to contain "asbestos bodies" in their lungs and that asbestos fiber once released is relatively indestructible. That is, the qualities of durability and of resistance to normal chemical and physical stress, which make asbestos such a commercial success, render it potentially dangerous to present and future generations because of the tendency of the fibers to accumulate in the atmosphere and in the lungs.

In light of these facts, the PCB has proposed the nation's most comprehensive set of asbestos controls. To ban all uses of asbestos would be "alarmism" at its most clamorous. But ignoring

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the need to explore and, perhaps, to adopt controls for the significant contributors to a swelling volume of asbestos fiber in our air would constitute a foolish complacency.

To this end, the suggested regulations would identify these "significant contributors" as the commercial use of asbestos in construction work; the demolition of asbestos-containing structures; the manufacturing and processing of asbestos-containing products; the transportation of certain asbestos-containing products; the disposal of asbestos-containing waste; and the use of asbestos in the brakes of millions of vehicles.

Part II would impose several general requirements upon all commercial construction, repair, alteration, demolition, manufacturing or processing activity from which asbestos fiber is discharged into the environment. The persons responsible for such activity must obtain a permit from the EPA. The permit system will serve to produce the advanced assurrance of compliance with the applicable control regulations and will thus reduce the cost and burden of in-the-field enforcement.

In addition these commercial activities would have to provide facilities to prevent the removal of asbestos fibers from the site of such activity on the clothing of employees. Indeed, this poses a rather new concept of air pollution control. Those who have died from lung ailments induced by long, close association to an asbestos worker may be powerful proof of the need for novelty.

Finally, Part II would provide for careful waste disposal procedures, as wind-blown refuse heaps and scrap piles contribute to the volume of asbestos fiber in our air. The simple steps for control eliminate any excuse for such dangerously sloppy housework.

Part III would prohibit the spraying of asbestos-containing insulation and fireproofing. Experience has indicated that procedural safeguards are inadequate and their enforcement is an overtaxing burden. Chicago has banned spray asbestos, and New York city and Philadelphia are considering doing so.

Procedural safeguards designed to reduce fiber emissions would be required to spray non-asbestos insulation. The biological effects of these fibers is unknown. Prudence would seem to dictate reasonable efforts to soften the potential future blow from spray fiber aspiring to asbestos' status.

Part IV suggests that various asbestos-related activities at construction sites be done within an enclosure. It would also require that asbestos construction products be so installed as to preclude the emission of fiber into the circulating air.

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nically, what may be a key reason for
It would require that procedural safe-
order to demolish a structure whose destruction
pose members of the public to asbestos fiber.
are often raised by demolition work. The facts
umbers of the persons may be exposed to this dust in
as and that the post-war generation of high-rises
first buildings to use asbestos insulation extensively
in favor of some such regulation.

Part VI suggests an emission standard for manufacturers
of asbestos products. The standard is believed to be within
the capture efficiency of baghouse filtration. The proposed
boundary standard is thought to be a method for preventing
dilution of exhaust gases.

The standard would measure only fibers longer than five microns.
The justification for this seems to be the administrative con-
venience of avoiding difficulties in measuring fibers from
.5 to five microns in length. Medical evidence has indicated
that the very small fibers may be the most dangerous. And
the Board will seek extensive evidence on this point.

Part VII would prohibit the use of brake lining in vehicles
manufactured after January 1, 1975 and sold for use in Illinois.

If brake lining decomposition emits asbestos fiber, then the
tremendous number of vehicles using asbestos, and the impract-
icality of controlling these numerous small emission sources
would appear to speak to the need for a product ban. The pro-
hibition is carefully worded to avoid the necessity of fitting
vehicles produced prior to 1975 with non-asbestos brakes. It
is contemplated that the ban will necessitate design changes,
probably to disc brakes, and it is thought that requiring the
individual vehicle owner to undergo this expense is unreasonable.
The time lag of over three years is thought to be sufficient for
vehicle manufacturers to accomplish any necessary design changes.

Proposed Regulation Only
June 9, 1971
CHAPTER V: TOXIC SUBSTANCES
ASBESTOS; SPRAY INSULATION

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PART I: INTRODUCTION

101. Authority

Pursuant to the authority in Sections 9, 10 and 13 of the Environmental Protection Act which empower the Board to adopt regulations forbidding the "sale, offer, or use for reasons of air pollution control" of any article, and to set "standards specifying the maximum amounts or concentrations of various contaminants that may be discharged into the atmosphere"; and to set standards for the issuance of permits for the operation of any equipment or facility capable of causing or contributing to air pollution; and to promulgate "conditions regarding the... use of any....article determined by the Board to constitute an air pollution hazard"; and to adopt effluent standards limiting the amounts of contaminants that may be discharged into the water of Illinois, the Board adopts the following rules and regulations:

102. Policy

It is the purpose of the General Assembly in adopting the Environmental Protection Act to maintain and enhance the purity of the air and water of Illinois in order to protect health, welfare and the quality of life. Accordingly, it is hereby determined that the uncontrolled discharge of asbestos fiber into the environment tends to severely endanger the public health and welfare and that the uncontrolled spraying of fiber-containing materials unreasonably interferes with the enjoyment of life and property.

It is the purpose of these regulations to control the amount of asbestos fiber released into the environment from the major sources of emission. Such control is necessary not only to protect those members of the public who are in proximity to heavy concentrations of asbestos fiber but also to safeguard the health of future generations endangered by the continuous discharge of asbestos fiber which can be toxic and which tends to be cumulative both in the atmosphere and in the human body.

Where health can be protected by the adoption of an emission standard or of procedural safeguards, such a course has been pursued. In those instances where restriction is unfeasible because of the tremendous number of small, uncontrollable emission sources (automotive)or because of the unusual nature of the emission source (spray asbestos at construction sites), a product ban has been resorted to. These prohibitions have been made with full consideration given to the available alternative materials.

It is also the purpose of these regulations to reduce the emission of non-asbestos particulate from spray-fireproofing and

REF. # 2

insulation. To protect against these emissions, the biological effects of which are unknown, procedural safeguards have been enacted.

103. Definitions

Agency - The Illinois Environmental Protection Agency

Asbestos - Any fiber or any mixture containing fiber of hydrated silicate mineral, which, on the basis of its crystalline structure, falls into one of two categories:

(1) pyroxenes - chrysotile fiber;
(2) amphiboles - crocidolite, amosite, tremolite, actinolyte or anthophylite fiber.

Board - The Pollution Control Board of Illinois.

Commercial Activity - Any activity done for hire or having financial profit as a primary aim.

Debris - Asbestos-containing waste produced by the demolition of a structure.

Spraying - The pneumatic application of material used for fireproofing or insulation.

Waste - Any asbestos-containing matter which has been or is intended to be discarded.

PART II: General Requirements

No commercial activity, not otherwise hereinafter prohibited, involving the discharge of asbestos fiber into the environment from the construction, alteration, repair or demolition of a structure or from the processing or manufacturing of asbestos-containing products, shall be conducted unless the person or entity in charge of such activity complies with the following regulations:

201. A permit shall be obtained from the Agency to engage in such activity. Before obtaining such permit, the applicant shall demonstrate compliance with the following safeguards:

(a) The designation of personnel to exercise full-time supervisory authority over all aspects of the activity from which the release of asbestos fiber into the environment could result, in such a manner as to insure compliance

with the pertinent asbestos control regulations.

(b) That each employee engaged in such activity has completed or will complete a satisfactory course of instruction on the potential hazards of exposure to asbestos fiber including the precautions that must be observed to prevent or restrict the dispersion of asbestos fiber into the environment.

(c) That such additional safeguards as are hereinafter specifically required and such precautions consistent with the purpose of these regulations as the Agency deems necessary under the circumstances shall be complied with.

202. Facilities shall be provided and procedures instituted and supervised that prevent the removal of asbestos-containing material from the site on the clothing of employees.

203. Asbestos-containing wastes shall be immediately vacuumed or otherwise collected where vacuming is impossible, and shall be placed in a container resistant to tearing or breaking under normal handling conditions, which shall be tightly sealed and clearly marked as containing asbestos waste. Such containers shall be placed directly upon a vehicle for disposal by burial at an approved site.

Section 203 shall not apply to the demolition of a structure, except as provided in Section 501(a), (d) and (e) or to the disposal of sludge waste except as provided in Section 603.

PART III: SPRAY FIREPROOFING AND INSULATION

301. The spraying of asbestos-containing material is prohibited.

302. Non-asbestos particulate matter used for insulation or fireproofing shall not be sprayed unless the following procedures are taken:

(a) Before the start of spraying operations, all floor areas shall be swept clean and cleared of all objects, material and equipment other than that employed in the application of the fiber-containing material, or, in the alternative, all such objects, material and equipment shall be covered with plastic or plastic-coated tarpaulins.

(b) The entire floor or area to be sprayed shall be enclosed with plastic or plastic-coated tarpaulins in a manner which shall preclude the escape of fiber-containing material from the enclosure. All interior open areas such as elevator shafts and stairwells shall be enclosed in a manner which shall prevent the escape of fiber-containing

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material from the working area. "Stack effect" of the shafts, stairwells and comparable spaces shall be considered in providing proper enclosures.

(c) Regardless of adherence to the stated control practices, any visible emission of fiber-containing materials beyond the building perimeter will be considered a violation.

(d) In case of visible emission of fibrous material from the construction site, immediate steps shall be taken to cause the cessation of such emissions by either effective control measures or work stoppage at the source of the emissions. There shall then be immediate and complete cleanup of all material that has escaped the construction site, and measures shall be taken that will insure that no further dispersal of any fibrous material into the atmosphere can occur.

(e) The entire sprayed area, all ledges and surfaces including tarpaulins within the enclosure shall be thoroughly vacuumed upon completion of the spraying operation and immediately before the enclosure is dismantled. The vacuum cleaner shall contain a strong, single-service, disposable inner bag of durable material which shall be removed from the vacuum cleaner and tightly sealed. The bag shall then be placed in a container and disposed of at an approved site in accordance with Section 203.

(f) All areas used for opening bags containing fibrous material or the changing of hoppers shall be enclosed so as to prevent the escape of such material from the immediate area in which such activity occurs.

(g) Any plenum or other structure coated with or containing fibrous insulation and used in the circulation of air in a building shall be thoroughly cleaned of all debris and waste insulation. All applied fiber-containing insulation within a plenum or duct shall be coated with a sealant which precludes exposure of the fiber-containing material to the circulating air.

PART IV: CONSTRUCTION, ALTERATION AND REPAIR OF STRUCTURE

401. (a) The cutting, trimming, fitting or stripping of asbestos-containing material in the construction, alteration or repair of a structure which is done at the site of such structure shall be conducted within a special enclosure designed to preclude the escape of asbestos fiber from the immediate area of such enclosure.

(b) The mechanical exhaustion of dust from such enclosure to the ambient air is prohibited unless such exhaust system is equipped with a fabric filter for dust collection.

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402. Asbestos-containing material applied in the construction, alteration or repair of a structure shall be coated with a sealant, provided with a cover or installed in some other manner so as to preclude exposure of the asbestos fiber to the circulating air.

PART V: DEMOLITION

501. Where the risk of public exposure to asbestos fiber from the dislodging of asbestos-containing materials is present, no demolition of a structure shall be initiated unless all safeguards necessary and practicable to reduce the emission of dust are taken.

Such procedures shall include, but are not necessarily limited to:

(a) Boilers and pipes insulated with asbestos-containing material shall be wetted and stripped before toppling of walls is begun. This procedure shall be followed, where practicable, as to all other asbestos-lined surfaces. Such asbestos waste shall be immediately bagged and disposed of in accordance with Section 203.

(b) Demolition by toppling of walls is prohibited except within an enclosure approved by the Agency as part of the permit granted for demolition of that structure.

(c) Before the demolition of any section of the structure, adequate wetting to suppress the dust shall be employed.

(d) Asbestos-containing debris shall not be dropped or thrown from any floor but shall be transported by dust-tight chutes or buckets. Asbestos-containing debris in chutes or buckets shall be sufficiently wetted to preclude dust dispersion at the point of discharge.

(e) All asbestos-containing debris shall be thoroughly wetted before loading into trucks, other vehicles or containers. During transport such waste shallbe enclosed or covered so as to prevent dust dispersion. Asbestos-containing debris shall be disposed by burial at an approved site.

502. In the event asbestos-containing matter becomes air-borne beyond the property boundaries or in the event freezing temperatures preclude the use of water for dust suppression, demoliton work shall cease until adequate alternate measures can be taken.

PART VI: MANUFACTURING

601. (a) No factory, plant or enterprise which engages in the processing or manufacturing of any asbestos-containing product shall emit asbestos fiber into the ambient air in excess of .5 fiber per cubic centimeter of air. The ambient

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air quality at the boundary of such factory, plant or enterprise shall not exceed .05 fiber per cubic centimeter of air.

(b) Only fibers of 5 microns or greater in length with a length to breadth ratio of 3 to 1 shall be counted.

(c) Sampling shall be determined by the membrane filter method with phase contrast microscopy at 430 X magnification.

602. No water used in processing or manufacturing which contains concentrations of asbestos fiber shall be discharged into sewage systems or to the waters of Illinois.

603. Waste sludge containing asbestos collected from settling ponds shall be enclosed during transport and shall be disposed by burial at an approved site.

PART VII: ASBESTOS-CONTAINING PRODUCTS

701. No product which may emit asbestos-fiber during its transportation shall be transported unless such product is enclosed in such a manner as to preclude the emission of asbestos fiber into the ambient air.

702. The use of asbestos in the brake lining of vehicles manufactured after January 1, 1975, and sold for use in Illinois is prohibited.

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