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December 3, 1971

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ILLINOIS POLLUTION CONTROL BOARD REGULATIONS ON ASBESTOS

Attached is the "Proposed Final Draft" of the State of Illinois Pollution Control Board regulations on asbestos. Substantial changes of a positive nature have been made in nearly every section of the regulations as compared with the draft published last summer.

Among the most important changes are the following:

1. The section banning the use of asbestos-containing brake linings after 1975 has been eliminated. While it might appear from the comments in the "Explanation" section of the regulations on page 10-11 that this question is not completely settled, it is our belief that the Board will take no further action against brake linings unless the Federal Government does first, in which case any action taken by the state would be rather academic.

2. The plant emission standard has been raised from a level of .5 fibers per cc to a more acceptable level of 2 fibers per cc. In addition, the standard of .05 fibers per cc at the boundary line of a plant has been eliminated completely.

3. A "no visible emissions" standard has been included in various sections of the regulations where enforcement of a stricter standard would have been a problem, if not impossible.

4. The segment of the regulations requiring "total enclosure" of a structure under demolition before toppling of walls could begin has been altered to a more-or-less "do the best you can" standard.

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5. The section requiring the use of a sealant on all "fibrous" materials used inside ducts or plenums has been changed to "asbestos-containing" materials only.

6. The section prohibiting the discharge of asbestos-containing process waste water into the rivers, streams and sewers of the state has been changed to permit such discharge if the waste water "is given the best available treatment consistent with technological feasibility and economic reasonableness."

7. Under the Proposed Final Draft, only manufacturing plants will be required to obtain a permit from the state. The first draft required permits for any operation or activity involving asbestos.

The vast majority of the above and other positive changes in the regulations reflect specific recommendations and corroborative evidence presented to the Board by Dr. F. L. Pundsack of Johns-Manville and Dr. Joseph L. Goodman of Raybestos-Manhattan on behalf of the AIA/NA at the public hearing on the regulations held October 15 in Chicago, and by Dr. George W. Wright and an industry team at a meeting held with Board staff representatives in September. Also participating in the overall cooperative industry effort were NIMA and the Friction Materials Standards Institute.

Attached is a copy of the specific changes submitted by the AIA/NA at Board request following the Chicago hearing. Because of the many changes in the final draft, the section and sub-section numbers on the AIA/NA recommendations do not correspond to those in the final draft. However, as you can see, the basic changes recommended by the AIA/NA have been adopted by the Board.

It is indeed an encouraging sign to find that, in this era of national environmental panic, a well-documented and well-presented industry case can produce results as fair and reasonable as those obtained in the state of Illinois. Much credit must go to the responsible yet fair attitude of the Illinois Pollution Control Board, and to all those in the industry who worked long and hard on this project.

W. P. Raines

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ILLINOIS POLLUTION CONTROL BOARD
November 30, 1971

In the matter of)
) R71-16
ASBESTOS REGULATIONS)

NOTICE OF PROPOSED FINAL DRAFT

Following hearings, the Board on November 23, 1971 authorized publication of the following proposed final draft of asbestos emission regulations for final public comment. Written comment will be accepted until December 15, 1971, with final adoption expected in late December, 1971 or early January, 1972.

ILLINOIS POLLUTION CONTROL BOARD
Rules and Regulations

(Proposed final draft published for public comment November 30, 1971. Not adopted by the Board. Comments are invited and should be directed to Samuel T. Lawton, Jr.)

Chapter V: Hazardous Substances
Title I: Asbestos and Spray Insulation and Fireproofing

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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.

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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 unusual nature of the emission source (spray asbestos at construction sites) a product ban has been resorted to. This prohibition has 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 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, actinolite or anthophilite 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.

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PART II: General Requirements

201. After June 30, 1972 no commercial activity, not otherwise hereinafter prohibited, involving the potential discharge of visible amounts of asbestos fiber or asbestos-containing materials 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:

(a) Personnel shall be designated 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) Each employee engaged in such activity shall complete a 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) Facilities shall be provided and procedures instituted and supervised that prevent the removal from the site of visible amounts of asbestos-containing material on the clothing of the employees.

(d) Asbestos-containing wastes shall be immediately vacuumed or otherwise collected where vacuuming 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 a sanitary landfill.

Section 201(d) shall not apply to the demolition of a structure, except as provided in Section 401 (d) and (e) or to the disposal of sludge waste except as provided in Section 506.

202. After June 30, 1972 the manufacturing or processing of asbestos containing products is prohibited unless the person or entity in charge of such activity has obtained a permit from the Agency. Before obtaining such permit the applicant shall demonstrate compliance with Sec. 201 and such additional standards as are hereinafter specifically required.

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PART III: Construction, Alteration and Repair of a Structure

301. The spraying of asbestos-containing material is prohibited after March 31, 1972.

302. Non-asbestos fibrous matter shall not be sprayed in an area open to the atmosphere unless the following procedures are taken:

(a) 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 material from the working area.

(b) 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.

303. (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 in an area open to the atmosphere 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 properly sized fabric filter for dust collection or an equivalent device as approved by the Agency.

304. Compliance with Sections 302 and 303 notwithstanding, visible emissions of fiber-containing material in an area open to the atmosphere shall be considered a violation.

305. 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 emission of the asbestos-containing material to the circulating air. Any plenum or other structure coated with or containing asbestos-containing insulation and used in the circulation of air in a building shall be thoroughly cleaned of all debris and waste in accordance

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PART IV: Demolition

401. 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 and steel members insulated or fireproofed 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 201(d).

(b) When demolition by toppling occurs such reasonable enclosure for dust emission control as is compatible with the character of the structure shall be employed.

(c) Before the demolition or toppling of any section or wall 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 shall be enclosed or covered so as to prevent dust dispersion. Asbestos-containing debris shall be disposed by burial at a sanitary landfill.

PART V: Manufacturing

501. (a) After June 30, 1972 a factory, plant or enterprise which engages in the processing or manufacturing of any asbestos-containing product shall discharge no visible emission of particulate matter from such manufacturing or processing into the ambient air and shall emit no concentrations of asbestos fiber in excess of 2 fibers per cubic centimeter of air.

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(1) Sampling of emissions shall be by the membrane filter method and according to the procedures recommended in the ASME Power Test Code 27-1957, or other procedures generally accepted by persons knowledgeable in the state of the art.

(2) Counting shall be according to the procedure outlined in Edwards, G.H., and Lynch, J.R., "The Method Used by the U.S. Public Health Service for Enumeration of Asbestos Dust on Membrane Filters," Ann. Occupational Hyg. (Oxford), 11 (1): 1-6, Jan. '68; with 20 fields per sample, counted at random using phase contrast microscopy at 430 x magnification and counting only fibers 5 microns or greater in length, with a length to breadth ratio of 3 to 1 or greater.

502. Any factory, plant or enterprise which engages in the processing or manufacturing of any asbestos containing product shall enclose all asbestos handling facilities so that exhaust air can be ducted through necessary air pollution control equipment and samples taken of the gases which are emitted into the ambient air.

503. Any factory, plant or enterprise for which a permit is sought or has been granted pursuant to Sec. 202 hereunder shall be subject to inspection by the Agency at any reasonable time, without prior notice.

504. At a frequency to be determined by the Agency, any factory, plant or enterprise which engages in the processing or manufacturing of any asbestos-containing product shall sample the exhaust from such factory, plant or enterprise and submit the emission data to the Agency.

505. A factory, plant or enterprise the manufacturing processes of which add asbestos fiber to water shall not discharge such process waste water to the sewers or waters of Illinois unless such process waste water is given the best available treatment consistent with technological feasibility and economic reasonableness.

506. Waste sludge containing asbestos and collected from settling ponds shall be enclosed during transport and shall be disposed by burial at a sanitary landfill.

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

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508. Nothwithstanding compliance with Sections 506 and 507 the visible emission of particulate matter in the course of such transportation shall be considered a violation.

PART VI: Local Enforcement

601. It shall be the obligation of local governments as well as the Agency to enforce by appropriate means the requirements of Section 201, of Parts III, IV and of Sections 506, 507 and 508.

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R71-16 Asbestos

Explanation of Revision of Proposed Regulation

The regulation proposed and explained in Newsletter #24 on which public hearing was held is generally similar to the proposed final draft. A summary of the significant substantive changes follows:

I. The permit requirement of Part II have been restricted to manufacturing emission sources. This is in accord with the Agency testimony that presently it has inadequate staff to handle the permit load created by a blanket requirement. All manufacturers of asbestos products would have to obtain a permit by June 30, 1972.

II. Parts III and IV of the original proposal have been combined under one heading covering construction uses of asbestos products. A grace period, until March 31, 1972, has been added to the proposed ban on spray asbestos. In the interest of efficient enforcement the numerous restrictions on the spraying of non-asbestos fibrous material have been reduced to requirements for enclosure and for vacuuming. Also this section has been changed to make clear that these safeguards are required only when spraying of non-asbestos materials occurs in an area open to the atmosphere. This "open to the atmosphere" modification has also been added to the section controlling the cutting, trimming, fitting or stripping of asbestos-containing materials at a construction site. Part III now contains a "no visible emission" standard which must be met regardless of adherence to the required procedural safeguards. This should permit easier enforcement and tend to insure greater compliance with the safeguards.

The original proposal contained two regulations controlling the general application of asbestos-containing materials and the application of non-asbestos materials in air ducts or plenums. This has been altered to require that only asbestos-containing materials, used in any construction work, be so installed as to preclude emission of the fiber to the circulating air. There is little medical data available to prove or disprove the toxic effects of the multitude of non-fibrous construction material, although one such product, fiberglass, would appear to be biologically inert. The Board prefers to act on the safe side of health in regard to spraying operations, which can emit large quantities of fiber if uncontrolled. In any event such uncontrolled emissions constitute a nuisance dust and could be controlled on that basis alone. These reasons do not apply with equal force to the non-spray application of non-fibrous materials in construction.

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III. Part IV controlling demolition remains unchanged except for a rewording of the requirement for enclosure. The final proposal is intended to require an enclosure only when necessary to prevent dispersion of dust and only an enclosure which is reasonably compatible with the structure to be demolished. In some cases total enclosure can be feasibly achieved. With other structures, a ground level enclosure may be the limit of compatibility.

IV. Part V, controlling manufacturing sources, is changed to require an emission standard of 2 fibers per cubic centimeter and no visible emissions. While some testimony indicated the difficulty in measuring compliance with a numerical emission standard, overall the evidence establishes both the need (protection against the great proportion of invisible fiber) and the ease of measurement of such a criterion. A "no visible emission" standard has been added to the numerical standard to simplify enforcement against exceptionally dirty emission sources. A grace period, until June 30, 1972, has been added to permit acquisition of the necessary control equipment to attain the emission standard.

References are made to the method to be used in collecting and counting emission samples. The sampling method is that generally used in sampling particulate emissions. The counting method is that reliably used by the U.S. Public Health Service.

A requirement has been added, at the Environmental Protection Agency's suggestion, to channel all asbestos emissions inside the plant through control equipment and to exhaust such emissions through points where samples can be taken. This is intended to prevent venting through windows or doors or other avenues of escape on which sampling cannot be adequately performed. The Agency is also given the power to inspect manufacturing premises at reasonable times to determine compliance. Also, the manufacturer must engage in monitoring and reporting. The latter two additions are in keeping with the Board's practice in most areas of regulation.

The waste water discharge provision now requires no discharge of process water to which the manufacturer has added asbestos unless best available treatment technology is first utilized.

A "no visible emission" standard has been added to the transportation regulation.

The original proposal to ban asbestos brake lining has been dropped for the time being. While the evidence shows that brake lining decomposition is a significant source of background levels of asbestos, these ambient air levels are quite small and have not been shown to be a health hazard (although they have not been shown not to be). In addition adequate alternatives to asbestos-lined brakes are not yet available, although closed

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braking systems, preventing the emission of asbestos dust are possible. The Board will follow the medical and engineering aspects of this problem and, possibly, may return to it.

IV. Finally, local governments are obliged to enforce these regulations, except for the manufacturing provisions. Much of the problem arises from numerous construction activities, and the Agency cannot adequately supervise these many emission sources. The "no visible emission" standard has been added especially to facilitate local government and citizen assistance in enforcement.

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RECOMMENDED CHANGES IN ILLINOIS POLLUTION CONTROL BOARD REGULATIONS ON ASBESTOS

PART II: GENERAL REQUIREMENTS

No commercial activity, not otherwise hereinafter prohibited, involving the potential discharge of visible amounts 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. (No recommended changes)

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

203. (No recommended changes)

PART III: SPRAY FIREPROOFING AND INSULATION

301. (No recommended changes)

302. (No recommended changes, Sections (a) thru (f)

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

PART IV: CONSTRUCTION, ALTERATION AND REPAIR OF STRUCTURE

401. (a) Visible emissions from the cutting, trimming, fitting or stripping of asbestos-containing material in an area open to the atmosphere are prohibited.

(b) Visible emissions of asbestos-containing particulate matter into the atmosphere from the construction, alteration or repair of a structure are prohibited.

402. Loosely-bound asbestos-containing insulation materials used 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.

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PART V: DEMOLITION

501. Where the risk of public exposure to asbestos fiber from the dislodging of asbestos-containing insulating or fireproofing materials is present, no demolition of a structure shall be initiated unless all safeguards necessary and practical to prevent the emission of visible amounts of dust are taken.

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

(a) Boilers, pipes and steel members insulated or fireproofed with asbestos-containing material shall be wetted and stripped before toppling of walls is begun. This procedure shall be followed, where practical, as to all other asbestos-containing insulating products. Asbestos waste from such products shall be immediately bagged and disposed of in accordance with section 203.

(b) (Eliminate this section as unnecessary)

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

(d) (No recommended changes)

(e) (No recommended changes)

502. (No recommended changes)

PART VI: MANUFACTURING

601. (a) Emissions to the atmosphere from any factory, plant or enterprise which engages in the processing or manufacturing of any asbestos-containing product shall be controlled as follows:

(1) All direct forced gas streams containing particulate matter resulting from the manufacturing or processing of asbestos-containing products shall be treated in fabric bag filter installations or, where special process conditions exist, in high energy wet collectors.

(b) Visible emissions of particulate matter from any manufacturing or fabricating operations in an area directly open to the atmosphere are prohibited.

602. (Eliminate this section as unnecessary)

603. Visible emissions from waste sludge containing asbestos collected from settling ponds are prohibited during transport. Such waste sludge shall be disposed by burial at an approved site.

PART VII: ASBESTOS-CONTAINING PRODUCTS

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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 visible emission of asbestos fiber into the ambient air.

702. (Eliminate this section as unnecessary)