

COUNCIL CURRENTS

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Across the Nation

States Adopting Air Monitoring Standard

To date, EPA guidance documents have reflected the premise that there are inherent limitations in the use of air monitoring methods to measure asbestos hazards in buildings. This premise has also been applied in the hazard assessment criteria established by the Asbestos Hazard Emergency Response Act of 1986 (AHERA). This criteria is based on evaluating the existing condition of the asbestos-containing materials (ACM) and the likelihood or potential for fiber release. Measurements of airborne fiber concentrations are not included in this criteria.

Although a "safe level" of exposure to airborne asbestos fibers has not been established, there is a growing number of states using measurements or acceptable levels of airborne asbestos fibers to determine asbestos hazards in buildings. This article provides an overview of the air monitoring standards adopted by several states.

The states that currently have existing non-occupational airborne standards are Colorado, New Hampshire, New Jersey, Rhode Island and North Carolina. There are similar standards pending in Nevada and Montana. The standards in these five states apply to public areas or areas of a building that are not covered under the Occupational Safety and Health Act. The prevalent maximum allowable asbestos concentration in ambient air has been established at 0.01 f/cc. This is consistent with the "clean air standard" required by EPA to complete an abatement project. In all of these states, the

regulations do not require that air sampling be conducted to identify hazards during normal occupancy periods. However, if it is discovered that the standard is exceeded, governing agencies can order that corrective action be taken.

Just as important as the standard itself is the method of measurement. All five states specify phase contrast microscopy (PCM) as an acceptable method to determine whether the standard of 0.01 f/cc is exceeded. The accepted method for sampling and analysis is the NIOSH 7400 method. Two states, Colorado and

New Hampshire, allow the option for a second set of samples to be taken and analyzed by transmission electron microscopy (TEM) before an abatement action is ordered.

In North Carolina, a temporary standard of 0.01 f/cc was established through recent legislation that will become effective Nov. 1, 1989. This temporary standard will remain in effect until a final standard is established by the State Health Commission. Under the temporary standard, either PCM or TEM analysis is acceptable to determine compliance with the standard.

As mentioned earlier, the existence of a non-occupational indoor air standard does not require that buildings be tested

AIR MONITORING continued on page 10

Out of Washington

EPA Bans Asbestos Products

The Environmental Protection Agency has issued a regulation that prohibits the manufacture, importation, processing and distribution of almost all asbestos-containing products in the United States. This ban will take effect in three stages over the next seven years beginning with certain products on Aug. 27, 1990, and with others on approximately the same date in 1993 and 1996. Corresponding bans on distribution will occur in 1992, 1994 and 1997. Within six months after the effective date that a product is banned for distribution, manufacturers, importers and processors will have to dispose of any remaining product in stock. The ban will affect 94 percent of asbestos use in

the United States, based on 1985 production volume estimates.

William Reilly, EPA administrator, commented, "This is pollution prevention. We're eliminating a known cancer-causing substance from the marketplace. Virtually all asbestos-containing products will be replaced with safer alternatives."

EPA initiated its consideration of a ban and phaseout rule for asbestos-containing products with an Advance Notice of Proposed Rulemaking in the Oct. 17, 1979, *Federal Register*. This was followed by a reporting rule in the July 30, 1982, *Federal Register* that was designed to collect information on

continued on next page

industrial and commercial uses of asbestos. This information was used to support a proposed rule published in the July 29, 1986, *Federal Register*. The final rule became effective on Aug. 25, 1989, with the exception of the exemption procedures and recordkeeping requirements, which have not yet been approved by the Office of Management and Budget (OMB). In the preamble to the final rule EPA concluded that the continued commercial manufacture, importation, processing and distribution in commerce of certain asbestos-containing products poses an unreasonable risk to human health under section 6 of the Toxic Substances Control Act (TSCA).

On Aug. 22, 1989, the Asbestos Information Association/North America (AIA/NA) filed a petition with the U. S. Court of Appeals for the 4th Circuit in Richmond, Va., seeking a review of EPA's ban and phaseout rule. "We believe EPA's policy decision is an unfounded, politically convenient attack on an industry that greatly benefits the American public, an industry that currently manufactures vital industrial and consumer products under some of the most stringent safety standards in the world," said B.J. Pigg, the organization's president. The Asbestos Cement Pipe Producers Association and two asbestos/cement pipe manufacturers, CertainTeed and Capco, joined AIA/NA in this challenge.

A primary consideration for determining when a category of products should be banned was EPA's projection of the availability of a safe substitute for each product. For example, by 1994 brakes on new vehicles must be asbestos-free, and by 1996 replacement brakes must be made of non-asbestos materials. Asbestos will be prohibited in most automotive and other gaskets in 1993. The production of asbestos/cement pipe and asbestos shingles will be discontinued by 1996, as well as the use of roof and other coatings.

The ban and phaseout rule also has provisions for labeling, inventory and recordkeeping. Manufacturers, importers and processors of banned products must label them in accordance with the schedule (*see schedule at end of article*)

and retain a copy of the label for three years.

Labels applied to these products must contain the following information:

NOTICE—*This product contains ASBESTOS. The U.S. Environmental Protection Agency has banned the distribution in U.S. commerce of this product under section 6 of the Toxic Substances Control Act (15 U.S.C. 2605) as of (insert the effective date of ban on distribution in commerce). Distribution of this product in commerce after this date and intentionally removing or tampering with this label are violations of Federal law.*

Manufacturers, importers and processors of discontinued asbestos products must make an inventory of the number and locations of product units in stock and retain a record of this inventory for three years. Business and sales records indicating the date and quantities purchased of these banned products must also be maintained for three years after the effective date of the ban.

The rule also has application procedures for exemptions. The EPA has indicated that it does not intend to grant exemptions to applicants seeking to avoid their share of the costs imposed by the actions taken in this rule. Procedures for reviewing exemption applications will place the burden on the applicant to show that a good-faith effort has been made to develop substitutes for the product and that granting the exemption will not pose an unreasonable risk of injury to human health. As mentioned, the provisions for exemptions and recordkeeping are not yet approved by OMB.

For detailed information including a summary of analysis supporting the final rule, regulatory assessment and enforcement see the preamble and rule titled 40 CFR Part 763, Asbestos: Manufacture, Importation, Processing and Distribution in Commerce Prohibitions published in the July 12, 1989, *Federal Register*. Also for more information, call Luke Hester of EPA at (202) 382-4383.

By Eva Clay, The Environmental Management Group, Inc.

SCHEDULE

Status of Asbestos Products Under Ban and Phaseout Rule

First Stage Ban - Aug. 27, 1990

Felt Products

- Pipeline wrap
- Roofing felt
- Flooring felt

A/C Products

- A/C sheet, corrugated
- A/C sheet, flat

Products out of use

- V/A floor tile
- Asbestos clothing

Second Stage Ban - Aug. 25, 1993

Friction Products

- Drum brake linings (OEM)
- Disc brake pads, LMV (OEM)
- Disc brake pads, HV (OEM)
- Clutch facings
- Automatic transmission components

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Industrial and commercial friction products

- Gaskets
- Beater-add gaskets (except some industrial uses)
- Sheet gaskets (except some industrial uses)

Third Stage Ban - Aug. 26, 1996**Coatings**

- Roof coatings
- Non-roof coatings

Paper Products

- Commercial paper
- Rollboard
- Millboard
- Corrugated paper
- Specialty paper

Friction Products

- Brake blocks (OEM)
- Brake blocks (AM)
- Drum brake linings (AM)
- Disc brake pads, LMV (AM)
- Disc brake pads, HV (AM)

A/C Products

- A/C pipe
- A/C shingle

Not Banned

- Missile liner
- Asbestos diaphragms
- Battery separators
- Arc chutes
- Acetylene cylinders
- Asbestos thread
- Asbestos reinforced plastic
- Sealant tape
- Electrical paper
- Asbestos packings
- Some industrial uses of sheet gaskets
- Some industrial uses of beater-add gaskets
- Mining and milling

LMV - Light and Medium Vehicles

HV - Heavy Vehicle

OEM - Original Equipment Market

AM - After Market

Out of Washington

EPA Addresses Asbestos in Public and Commercial Buildings

The EPA began a policy dialogue process in May to address the issues concerning asbestos in public and commercial buildings. The process includes five meetings for the dialogue group and three public meetings.

The dialogue group is made up of approximately 35 individuals representing the diverse interests affected by asbestos in public and commercial buildings including labor unions, building owners and managers, lending institutions, insurance groups, asbestos abatement contractors and consultants, federal and state officials, and asbestos manufacturers.

As envisioned by EPA, the policy dialogue is providing the opportunity for the diverse group to have focused discussions on critical issues. The objectives of the dialogue are:

1. Discuss in detail the issues and potential approaches for addressing these issues.
2. Identify potential implementing mechanisms (e.g., federal, state or local government, private sector companies, associations or coalitions) for the proposed solutions.
3. Identify where parties share similar views on proposed solutions and implementing mechanisms.

The dialogue group has already discussed:

- research that will be conducted by the Health Effects Institute in Cambridge, Mass.
- adequacy of EPA's documents in communicating risk
- EPA's hazard assessment guide
- possible uses and limitations of an air monitoring protocol
- use of dust analysis as supplemental assessment tool
- accreditation and training
- NAC's Model Plan for Reciprocity

- NESHAP enforcement activities
- OSHA's regulatory alternatives
- need for inspection and notification

The public meetings were held Sept. 6 in Kansas City, Mo., and Sept. 7 in San Francisco.

The dialogue process is intended by EPA to benefit all participants by providing a forum for a thorough discussion of the issues and the options for resolving them. Through this process, EPA hopes to find out to what extent affected interests believe EPA can assist in implementing proposed solutions. Similar views by the affected interests on specific actions will prompt consideration by EPA.

NAC members participating in the policy dialogue group are Immediate Past President Brent Kynoch of Asbestos Abatement Services and Board members Douglas Greenaway of Building Owners and Managers Association International; Steve Hays of Gobbell Hays Partners, Inc.; Janet Oppenheim-McMullen of the Asbestos Abatement Council; and Roger Morse of Entek Environmental and Technical Services, Inc. Other NAC members participating are Bill Borwegen of Service Employees International Union; James Brownlee of the New Jersey Department of Health; James Fite of the White Lung Association; Warren Friedman of the General Services Administration; Monie Jensen of R&B Enterprises; and Richard Mendes of the New York City Department of Environmental Protection. Board member William Ewing of the Environmental Management Group, Inc., is an invited observer.

For more information on the dialogue process and the public meetings, call EPA's TSCA Hotline at (202) 554-1404.

By Janet Oppenheim-McMullen, NAC Board Member

Out of Washington

EPA Issues New Guidance Pamphlet

Need answers to questions such as "when is asbestos a problem?" or "what should my school and school district be doing about asbestos?"

The ABCs of Asbestos in Schools was issued by EPA in June to address these questions and more.

Developed in conjunction with the National Education Association (NEA) and the National Parent Teacher Association (PTA), the 16-page pamphlet is designed to help parents and teachers answer questions and learn the facts about asbestos in schools. It also outlines the responsibilities of school boards and other school officials to protect school children and employees from possible exposure to asbestos.

The pamphlet includes a list of EPA regional asbestos coordinators and other contacts for information about asbestos in schools.

For more information about the pamphlet or to order a single copy, call EPA's TSCA Hotline at (202) 554-1404 or your regional asbestos coordinator.

OSHA Stay of Asbestos Standard Extended

OSHA recently announced the extension of its partial administrative stay of its updated asbestos standard for non-asbestos forms tremolite, anthophyllite and actinolite from July 21, 1989, to Nov. 30, 1990.

The agency adopted a revised standard for asbestos for general industry and construction on June 20, 1986. OSHA then stayed the standard for the three minerals on Oct. 17, 1986, to consider new submissions raising questions about the appropriateness of regulating these substances under the new asbestos standard and to conduct supplemental rulemaking on the issue. The stay has been extended twice since then.

Meanwhile, occupational exposures to the non-asbestiform minerals are still covered by the original OSHA asbestos standard. This 1972 standard limits worker exposures to 2 fibers per cubic centimeter of air (f/cc) averaged over eight hours. The 1986 standard limits worker exposure to asbestos to 0.2 f/cc for the same period.

OSHA's original timetable called for publication of a proposal covering occupational exposure to the three

minerals in October 1989. According to Amanda Edens of OSHA's Health Standards Office, that date may be pushed back to November. "I'm not sure we will be able to meet that deadline since the standard is still in our internal review process," Edens said. The agency expects to publish a final standard in the *Federal Register* later in the year.

The partial stay was originally granted in response to requests from R.T. Vanderbilt Co., the National Stone Association and Vulcan Materials Co., among others. Further, a July 17, 1986, letter from the director of the National Institute for Occupational Safety and Health (NIOSH) and NIOSH staff memoranda also raised questions on the nature and extent of the hazards posed by the three minerals.

Notice of the extension of the stay was published in the July 21, 1989, *Federal Register*.

For more information call your OSHA regional asbestos contact. OSHA offices are listed in the U.S. government section of the telephone directory under the U.S. Department of Labor.

Industry News

The OSHA Glovebag Controversy: Resolved?

In a letter dated July 5, 1989, Alan McMillan, OSHA's top administrator, advised The Brand Companies, Inc.: "It is the opinion of the Occupational Safety and Health Administration (OSHA) that the use of 'Negative Air Bags' as described in your letter meets the requirements for establishing a negative-pressure enclosure pursuant to 29 CFR 1926.58 (e)(6), provided that all of the other provisions of the construction asbestos standard are met."

Jim Werner, Brand's vice president of Technical Services, described the

"Negative Air Bag" as a standard glovebag modified to permit continuous exhausting by a HEPA-filtered vacuum during the entire glovebag operation. Make-up air is provided to the bag via a one-way flap valve. The bag may also need a semi-rigid "skeleton" to prevent it from collapsing.

Several cautions are in order:

1. Although OSHA accepts the "Negative Air Bag" concept, state or local government requirements may prevent its use.

2. Workers who use the modified

glovebag must be trained and skilled in its use before attempting to remove asbestos-containing thermal insulation.

3. The "negative-air patent" antici-
pates the elements of this procedure, and contractors may want to review their license status or seek individual patent counsel before implementing.

OSHA maintains that permitting the use of this modified glovebag does not contradict its position that normal glovebag usage is limited to small-scale, short-duration operations and the use of one glovebag. In this application,

asbestos removal is secondary to the maintenance task at hand, (e.g., repairing a valve). OSHA will continue to cite contractors who are found using multiple glovebags for the primary purpose of asbestos removal in areas where a negative-pressure enclosure has not been established.

By Mark F. Durham, CIH, Galson Technical Services, Inc.

Clarification

The article "Analysis Warning to TEM Laboratories," *Council Currents*, July/August 1989, Vol. 2., No. 4, stated that the "MF" filter contains a "surfactant" and "MR" is "untreated." This statement is not completely correct: the "MR" filter contains a non-toxic hydrophilic polymer, whereas the "MR" is specifically formulated to permit clearing by the NIOSH procedure (acetone-triacetin).

The article also stated that the acetone-dissolvable 0.22 μ MR filters are unavailable from Nuclepore. They are not currently listed in the catalog; however, they are available by special order. Nuclepore is considering adding a MR 0.22 μ MCE to its upcoming *Air Monitor Cassette Product Bulletin* reprint.

By Harriotte A. Hurley, CIH, McCrone Environmental Services, Inc.

Correction: The article "Polyethylene Film Manufacturers Form Trade Association," *Council Currents*, July/August 1989, Vol. 2, No. 4, contained an error regarding the measurement of thickness used in polyethylene film production. In two sentences in the article, thickness was stated in milliliters. Milliliters is a metric unit of volume and does not apply as a measurement of thickness. The unit of measure should be stated as mils, which is 1/1000 (1×10^{-3}) of an inch.

Industry News

Asbestos Vitrification: Infant Industry, Wave of the Future

The problems associated with asbestos-containing materials (ACM) have typically been issues of exposure in the workplace, the related health effects of exposure, engineering controls for proper and safe removal, and the safe transportation of the materials to a disposal site. Lately, the issue of where this material is going and who is responsible for it has been raised. Building owners are often surprised when they learn that they still own the ACM and are responsible for any damages caused by it. When this fact is considered along with the ever-increasing difficulty in finding acceptable landfill space, a need for some kind of alternative becomes obvious.

The availability of landfill space varies greatly throughout the United States. EPA regions 1, 2 and 3 (northeastern United States) now have the greatest problems with landfill space. Here, not only are existing landfills scarce, but also the space available in those landfills is limited as are sites for future landfills. As a result, ACM is being trucked to other states where space is more available (e.g., EPA Region 8, which includes Colorado, Utah, Montana, North Dakota and South Dakota).

The lack of available sites has resulted in illegal dumping of asbestos and "fly-by-night" landfill operations. As more generators of ACM face these problems, an alternative means of disposal will look more attractive, especially if a means can be found to end the chain of liability that could eventually come back to haunt the generators.

New methods are now being developed that will enable us to safely and permanently end the hazards associated with ACM. There are several approaches to the problem of how to destroy the asbestos structure cheaply and effectively so that depositing asbestos in a landfill becomes an obsolete method of disposal. Three methods of treating asbestos materials have been proposed and are

currently being developed:

- encapsulation or binding of the material into a non-friable form
- chemical transformation of asbestos into a non-hazardous form
- vitrification of asbestos into a glass-like compound

Of the three methods being developed, only vitrification has been proven to be cost-effective and to result in a non-hazardous substance. Encapsulation of friable asbestos into a solid, resistant mass may be very economical, but the resulting material still contains asbestos fibers and therefore, must be disposed of in a landfill or by another approved method. So, it does not solve the problem except to perhaps reduce the volume of the material or reduce the likelihood of fiber release from the disposal site.

Chemical transformation of asbestos into a non-asbestos form has been proposed to the EPA. However, the developers of these methods are reluctant to divulge their chemical methods and have not been able to prove to the EPA that their methods can successfully transform asbestos into a non-hazardous form.

Asbestos vitrification or the melting of asbestos to form an amorphous solid (glass) seems, at this time, to be the most promising method for not only disposing of asbestos in a safe manner but also ending the chain of liability for generators who are concerned about future damages from their asbestos materials.

The technology being used to transform asbestos materials into glass is not new. Much of the information that is being used in the process comes from the glass-making industry in Europe.

Asbestos is a silicate mineral, and when heated enough it will melt into an amorphous liquid mass destroying the asbestiform structure. The only experimentation that was necessary to refine the process as it applies to asbestos was to determine optimum furnace tempera-

tures, mix ratios of asbestos to cullet (scrap glass used to blend with the asbestos to make a more uniform product), and determine retention times within the furnace to ensure that all asbestos has been transformed into glass. In addition, engineering controls had to be developed to ensure containment of asbestos fibers within the system until they can be rendered non-hazardous.

Within the last few years, several companies have begun to experiment with vitrification. VitriFix of North America, Inc. performed a pilot demonstration of its vitrification method for EPA in June of 1987. Jack R. Farmer, division director of EPA's Emission Standards and Engineering Division, stated, "the process ... continuously produced an asbestos-free product." In a letter dated Nov. 25, 1987, to Dr. David Roberts, executive vice president of VitriFix, EPA stated that it would not be a violation of NESHAP regulations for asbestos waste disposal if a generator delivered ACM to a vitrification facility for processing. As a result of EPA's acknowledgement of the success of the VitriFix demonstration, the door was opened for other companies to enter the vitrification market.

Sites for vitrification plants are being developed in three areas of the United States. VitriFix is developing a site in New York state to commercially vitrify asbestos wastes. This will probably be the first large-scale commercial facility of its kind in this country. Penberthy Electromelt International, Inc. of Seattle, Wash., has a small unit (10 tons per day) that is now operational but has not yet been developed as a large-scale commercial vitrification plant. American Glass Technologies, Inc. of El Toro, Calif., is building a commercial plant in southern California and plans to expand to other large cities nationwide. All three corporations have developed plans for commercial facilities and have spent millions of dollars ensuring a commitment to make this method available within the next several years.

The engineering controls necessary to perform this task successfully vary from company to company, but all are basically concerned with containing the material to prevent fiber escape and with

being able to easily transform the asbestos into glass. After reviewing the methods of each of the corporations, the most difficult aspect seems to be transforming the varied materials that are generated by an asbestos removal project (asbestos fibers, gypsum, ceiling tiles, gridwork, polyethylene, disposable suits and other assorted trash) into a uniform finished product. Both VitriFix and Penberthy propose homogenization of the material via a shredder and/or the separation of metal from the raw wastes. American Glass Technologies offers a plan of "unitized" containers to be provided to abatement contractors whereby the entire container would be fed into the furnace. In theory, at least, this seems to be the method of preference because it eliminates the need for sorting the material and retransportation and disposal of contaminated metallic

materials in a regulated landfill.

It should be stressed that at this time there are no commercial facilities that perform the vitrification of asbestos materials, and so, the possibility of refinement of these methods exists before the plants come on-line. The future for this industry seems very bright as EPA has acknowledged that vitrification does destroy asbestos and is a feasible alternative method for disposal of ACM. The possibility of ending the potential chain of liability for asbestos generators presents good impetus to pursue vitrification as the future method of choice for state-of-the-art asbestos disposal.

By Chris Gillis, Lawhon and Associates

Editor's note: For more information see "Tests Pave Way for Alternative to Landfill Disposal of ACM," *Council Currents*, May/June 1988, Vol. 1, No. 1)

AHERA Headlines

Initial Results of NSBA Asbestos Survey Announced

Over the past several years, many environmental experts have attempted to predict the economic impact of local school district compliance with the Asbestos Hazard Emergency Response Act of 1986 (AHERA). Often, that impact has been measured by calculating the "average" cost to a "typical" district of undertaking activities mandated by the act. In an effort to ascertain both the actual cost of AHERA compliance and the activities which generate those costs, the National School Boards Association (NSBA) recently conducted a survey of 671 school districts located in 44 states. The results of the survey are detailed below.

Compliance with the Oct. 12 deadline was substantially higher for NSBA survey participants (98 percent) than the national compliance average reported by EPA for all school districts (79.1 percent). However, NSBA believes that the NSBA survey results provide a more accurate reflection of public school

district compliance with AHERA and lend support to the observation that small, private school districts accounted for the non-compliance rate reported by EPA.

The labor-intensive nature of AHERA compliance activities, coupled with the requirement that those activities be undertaken by accredited personnel, raise several questions regarding the personnel school districts utilize to conduct mandated activities (e.g., "in-house" personnel or a private contractor) and the availability of accredited contractors. Therefore, NSBA asked survey participants to tell not only who would be responsible for conducting compliance activities in their district, but also to provide data on the availability of accredited contractors.

NSBA survey respondents overwhelmingly utilized private contractors to conduct inspections (85 percent), develop management plans (83 percent) and perform air monitoring (82 percent).

Alternatively, less than 45 percent of those school districts planned on using private contractors to conduct response actions.

NSBA believes that these figures are representative of the fiscally prudent and efficient contracting practices generally subscribed to by local public school districts as units of government. That is, school districts are inclined to contract with the private sector for technical services that are required on an intermittent (or short-term) basis, and utilize "in-house" personnel for ongoing projects.

Private accredited contractors were doing business in approximately two-thirds of the counties in which respondent districts were located. However, in some instances, districts reported that because those contractors were doing business in more than one county (or state), their response was not necessarily reflective of the actual number of readily available local private contractors.

Because the majority of survey participants relied on private contractors to undertake mandated activities, the fact that many districts are unable to depend on the availability of local contractors raises several issues for both local school districts and EPA. That is, should the inability of a district to retain the services of an accredited contractor to perform activities required under the management plan act as a defense to an EPA enforcement action for non-compliance? Alternatively, under those same facts, should an administrative process be available to districts for the purpose of obtaining a deferral of response actions required under a management plan?

At the current time, these questions remain unresolved. Nevertheless, as districts begin to both implement management plans and conduct statutory re-inspections, it will become increasingly important that EPA address these issues in a coherent and reasonable manner. In that regard, districts (and their state school board associations) should be prepared to work closely with EPA to develop administrative remedies that are responsive to the AHERA mandate, and the unique compliance problem posed by the unavailability of local accredited contractors.

EPA originally estimated the total cost

of local school district compliance with AHERA to be approximately \$3 billion. Although public school districts have consistently maintained that the EPA estimate was understated, prior to the NSBA survey, data in support of that position was unavailable.

The NSBA survey results show that by April 1, 1990, 671 public school districts will have expended nearly one-sixth (over \$464 million) of the total amount EPA estimated AHERA compliance would cost ALL school districts (public and private) over the lifetime of asbestos in school buildings. Survey participants reported that the cost of compliance was attributable to the following activities: Inspections and management plan development (\$55,247,400); AHERA response actions 1986-1988 (\$233,693,000); and AHERA response actions FY 1989-90 (\$175,464,830).

Based on the initial survey results, NSBA believes that it is not unreasonable to assume that the actual cost of school district compliance with AHERA will

exceed \$6 billion over the lifetime of asbestos in school buildings.

Over the next few weeks, NSBA will continue to analyze the results of the AHERA survey in order to obtain a more complete picture of the impact compliance with the asbestos mandate has had on both the operation and fiscal management of public school systems, as well as on the private sector through statutory creation of a new industry.

Reprinted with permission of School Board Business Briefs, Summer 1989, Vol. 3, No. 1, National School Boards Association. The NSBA is a non-profit organization with the objectives of advancing the quality of education in the nation's public schools, providing up-to-date information and training on education issues to members and their local school boards, and strengthening local citizen control of schools. For more information about NSBA and its survey write or call NSBA, 1680 Duke Street, Alexandria, VA 22314; (703) 838-6722.

Global Outlook

The European Asbestos Experience— A Vendor's Viewpoint

Recently, several U.S. manufacturers had the opportunity to demonstrate their products at A+A '89, an industrial safety and occupational health show in Düsseldorf, West Germany. Working in a large booth spearheaded by Critical Industries, the Isotek Corporation, Pullmann-Hold, Guzzler Manufacturing, Fiberlock Technologies and Critical International shared the European trade experience. Exhibiting at the same show but in a separate booth was Certified Technologies.

The European market appears to be three to five years behind the U.S. market in abatement activities. The methods and regulations adopted in West Germany and other European countries are somewhat different than U.S. methods and regulations. Dry removal and less stringent government standards are

common. However, compared to the U.S. marketplace five years ago, the European approach to abatement does not seem so different. The learning curve has not quite reached the same point in Europe as it has in the United States.

Communication can be a problem. It was interesting to learn that many West Germans are taught English in school yet few will speak English to Americans! The European sales professional prefers to personally explain his or her product line to the customer while the American "expert" merely looks on. There is no need to be offended—it's called credibility, and Europeans very much want to be "credible" to their customer. If attending such a trade show, hire an interpreter!

Business at a West German trade show is conducted differently than business at a U.S. show. "Write it now or forever hold

your peace" may aptly describe the approach in West Germany. Much food and drink is dispersed from each booth, and usually sit-down meetings with clients are the norm. All business activities are conducted at the booth—not at social functions.

Two suggestions I have concerning the European marketplace are:

1. Remember that the European marketplace is young, and U.S. technology does have a place in it.
2. Hire an interpreter and if you are serious about this market, have literature printed in appropriate European languages and present all measurements in metric units.

Overall, this experience opened my eyes to the European market and also gave me a chance to better appreciate my fellow manufacturers. We all worked hard but also had a chance to get to know each other. Seldom do U.S. manufacturers have a chance to visit while not sacrificing valuable time with customers. This experience allowed us to share some time observing and comparing notes, because in Europe, we were Americans first and vendors second!

By Greg Cruice, Isotek Corporation

Training Notes

Electronic Communications With Your Council

The long-awaited Electronic Bulletin Board system has been installed and will be ready to serve NAC members by the end of October. Designed to enhance communication flow within NAC and to provide timely technical information about the asbestos control industry, the bulletin board is being sponsored as a low-cost membership service.

Teleconferencing, placing and receiving electronic mail messages and listing classified ads will be possible on the new system. Electronic mail correspondence and ads placed will remain in the system for up to 30 days. Soliciting input and data by conducting polls and distributing questionnaires is also feasible with the system.

Now, committee functions may be more easily completed through the bulletin board, which assigns each committee a Special Interest Group (SIG)—the committee chairperson serving as SIG-operator. Committee chairs (who are not charged for committee-related time) can write messages, transfer files and review correspondence.

As the technical information efforts of the Council mature over the next year, up-to-the-minute information on current

trends, recent regulatory rulings and essential industry issues will become available. On-line literature searches and other information-providing media may be included.

Using high-quality scanning equipment, relevant industry data and pamphlets (including NAC publications) can be accessed by NAC members with modems at data rates from 300 to 2,400 bits per second.

Live connect time is measured in terms of "credits." One credit equals one second of live connect time. Potential users have been allotted 15 minutes (900 credits) of get-acquainted time. Members will receive a detailed brochure explaining the system and its usage at the end of October. A communications software package and the knowledge of its use are prerequisites for member usage. In addition, a nominal subscription fee will be charged to cover the cost of user manuals.

NAC members are offered 10 minutes (600 credits) a day and up to five hours (18,000 credits) per month usage at no cost. Time limits were set to reflect an average time spent on the system and to allow as many users as possible. Addi-

tional time is available at a nominal fee.

If a member uses more than 10 minutes per day, monthly credits will, of course, be expended. Additional credits will be available at a rate of \$10 per hour with a minimum connect-time purchase of five hours.

By Mark Weber, NAC Training Department media coordination manager

Council Activities

NAC Service Provides Health- Risk Information

Do you think or know that you have been exposed to asbestos and are concerned about the health risks involved? There is now a service available to NAC members that provides fast and accurate answers to questions about asbestos-related health issues.

In February 1989, the NAC established an information service that deals with health problems caused by asbestos and includes problems not directly caused by asbestos, such as health effects of substitute materials and respirators.

The service is available through the University of Texas Health Center at Tyler. It is funded by the NAC and is available to all Council members.

The program was initiated by Richard Kronenberg, M.D., and Ronald Dodson, Ph.D., at the health center. According to Dr. Kronenberg, "We were getting a steady stream of inquiries about asbestos-related health issues. We thought an information service would be a good program for the NAC and would be beneficial to its members."

The responses are, in general, brief answers to *specific* questions. Examples of inquiries include: a school principal inquiring about the health hazards involved with exposure to flaking asbestos in classroom ceilings; an asbestos abatement contractor asking

about the increased risk of lung cancer for abatement workers who smoke; and a consultant inquiring about the relationship between health risks and the size of asbestos fibers.

Members should receive a written response to their inquiry within five working days of receipt at the health center. Questions should be submitted in writing to:

**Program Director
NAC Consult
University of Texas Health Center
at Tyler
P.O. Box 2003
Tyler, TX 75710**

By Laura Tener

Regulatory Service Offers Regional Subscription

Having trouble staying on top of all the changes in regulations impacting the asbestos abatement industry? The NIAC-NAC *Asbestos Abatement Regulatory Service (AARS)* provides subscribers with 18 volumes of asbestos-related federal, state, county and local laws and regulations. The service also includes federal and case law summaries and a "hotline" service.

Subscribers to AARS now have the option of receiving a single region for \$500 or the entire 10-region national package for \$1,400 (\$1,950 after Dec. 31, 1989). All subscribers, regional or national, receive the federal and case law books and the use of the hotline service.

Renewal for a national subscription is \$1,400; regional renewal is \$350.

For more information about subscribing to AARS, contact the National Insulation and Abatement Contractors Association at 99 Canal Center Plaza, Suite 222, Alexandria, VA 22314; (703) 683-6422.

Council Activities

Chapter Boom Continues

The Pennsylvania Chapter, which was approved at the June 23 Board of Directors meeting in Indianapolis, is the most recent addition to a growing list of NAC chapters.

The NAC now has 10 established chapters with numerous prospects being reviewed and considered. Prospective chapters include Arizona, Illinois, Metropolitan New York, Kentucky, Washington state, Wisconsin and West Virginia.

Current established chapters are California, Canadian, Capitol Region (Washington D.C., Virginia and Maryland), Florida, Louisiana, New England, North Carolina, Oregon and Southwest Washington, Pennsylvania and Texas.

NAC's chapterization efforts are being coordinated by the Chapter Development Committee, chaired by President-Elect William Smith.

A chapterization packet is available for those interested in forming an NAC chapter. For more information call or write the NAC at 1777 Northeast Expressway, Suite 150, Atlanta, GA 30329; (404) 633-2NAC.

For information about any of the chapters listed above call:

Arizona
Vic Moran
(602) 820-4445

California
James McClung, Jr.
(714) 757-0500

Canadian
George Davidson
(613) 596-9665

Capitol Region
Lester Komaroff
(301) 337-5551

Florida
Stephen Linkous
(407) 352-0590

Illinois
Dave Carter
(618) 377-1824
(618) 676-8018

Kentucky
Irvin Maze
(502) 587-1823

Louisiana
Paul Kenneth Talbot
(504) 296-5464

Metropolitan New York
Joe Donnolo
(212) 921-0600

New England
Robin Brodie
(617) 828-1812

North Carolina
Jake Harriss, Jr.
(919) 493-2158

Oregon and Southwest Washington
Kenner Peterson
(503) 942-0739

Pennsylvania
Ian Stewart
(412) 325-1776

Texas
George B. Stacy
(713) 692-1155

Washington State
Thomas P. Fuller
(206) 383-5107

West Virginia
Nick Ciccarello
(304) 744-3636

Wisconsin
Tom Ortell
(414) 781-8700

By Laura Tener

Air Monitoring

(continued from page 1)

for compliance. In Rhode Island, the Department of Health has established a detailed hazard assessment protocol. This protocol does not, however, require that air sampling be done. Sampling may be done in response to complaints of poor conditions in a building or improper asbestos-related activities. Such activities are the focus of the new regulations in North Carolina. These regulations are aimed more at the disturbance of asbestos due to improper activities than general conditions in a building.

This concern is also evident in New Jersey's regulations. An asbestos safety technician (AST), licensed by the Department of Community Affairs, is required to be on-site and conduct monitoring throughout the removal phase of an asbestos abatement project. The AST is required to take samples both inside and outside the abatement area. If the level outside the work area exceeds 0.01 f/cc, the AST is required to order the contractor, building owner and architect/engineer to take corrective action. If

problems with barriers or work methods are observed, the AST is required to increase the number of daily samples taken.

California approaches the issue differently but does establish an ambient air standard. Asbestos is included on the Governor's List of Carcinogens and Reproductive Toxins. This list is mandated by Proposition 65 and requires that a warning be given to individuals who may be exposed to significant levels of a substance on the list. The state has established that levels below 100 fibers inhaled per day pose no significant risk. Measurements above this level require warnings but do not require corrective action. The Department of Health Services recommends TEM analysis, but it also recommends that visual inspection be used to evaluate whether a significant risk is present, making warnings necessary.

Factors that must be considered in the application of non-occupational standards in buildings are the time and expense involved in sampling and analysis. Four out of five of these states—Colorado, New Jersey, North Carolina and Rhode Island—have

certification or licensing requirements for individuals taking the samples. The analytical laboratories must also have the appropriate accreditations. This may account for the low use of the air standard to prompt abatement action. Only two states, New Hampshire and Colorado, noted specific instances where the air standard was used to require corrective action.

It should be noted that the establishment of an air monitoring standard does not preclude the use of visual inspections to make hazard assessment decisions. EPA's current position that hazard assessment decisions should be based on visual evaluation by trained professionals is still widely followed; however, there is a growing trend toward the use of an air monitoring standard.

By Mary Beth Carver, Hygienetics, Inc.

Editor's note: For more information about state regulations concerning air monitoring standards, contact the National Conference of State Legislatures (NCSL) at 1050 17th Street, Suite 2100, Denver, CO 80265; (303) 623-7800.

Hazardous Waste and Emergency Response Booklet Available

The Occupational Safety and Health Administration (OSHA) has published a booklet on its new final rule on hazardous waste site and emergency response operations.

The 18-page booklet explains the new standard, which will protect 1.75 million people who work with hazardous wastes and will become effective March 6, 1990. The standard was promulgated in March 1989.

The booklet includes a detailed discussion of the elements of the written safety and health program that employers working with operations in hazardous waste sites or treatment, storage and disposal (TSD) facilities are required to develop.

The booklet also has tables on the different levels of training requirements

for the personnel employed in the operations.

There also is a discussion of other provisions of the standard, including requirements for engineering and work practice controls, handling and labeling of drums and containers, recordkeeping, and compliance with OSHA's Hazard Communication Standard and Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA).

Workers protected by the new rules include private firefighters; ambulance and hazardous materials personnel who respond to hazardous waste site spills; workers employed in clean-up operations at uncontrolled hazardous waste dump sites; and those working at waste storage, treatment and disposal facilities licensed by the Environmental Protection Agency.

Enforcement of the new standard will be handled by federal OSHA. Occupational safety and health agencies in states with OSHA-approved state plans must adopt and enforce the new standard or a comparable standard.

A single free copy of the booklet titled "Hazardous Waste and Emergency Response" (OSHA 3114) can be obtained by mailing a self-addressed label to the OSHA Publications Office, Room N-3101, U.S. Department of Labor, Washington, D.C. 20210 or to the nearest OSHA regional or area office.

OSHA offices are listed in the U.S. government section of the telephone directory under the U.S. Department of Labor.

1990 Award of Excellence

The Awards and Sponsorship Committee is seeking member input for the selection of the 1990 recipient of the NAC Award of Excellence. If you want to recommend a person or persons for consideration, please contact Lisa Sanders at the NAC office to request a copy of the award criteria and a recommendation form. All recommendations are due Nov. 15, 1989.

Important Dates

Upcoming NAC Conferences

Feb. 19-21, 1990
San Antonio, Texas

Sept. 10-12, 1990
Phoenix, Arizona

Deadline for Sessions and Papers

San Antonio Conference
Oct. 5, 1989

Board of Directors Meeting

10 a.m.-4 p.m.
Saturday, Dec. 9, 1989
NAC office, Atlanta

Deadline for Advertising in Winter Journal

Space Reservation - Oct. 20, 1989
Ad Material - Nov. 3, 1989

From the Field

As I deal with the asbestos coordinators at industrial facilities, I have found that most of them are quite confident that they have their asbestos-containing material located.

Many times I find that the reasoning behind this conclusion is flawed. One common statement is, "We spot-checked every department so we know where our asbestos is." Another is, "We called our insulator in and he marked our lines."

Any partial approach to an asbestos survey is an invitation for trouble. Information gained from maintenance workers, insulators, contractors, etc., combined with dates of installation, is useful. But it is no substitute for a complete survey.

To encourage site asbestos coordinators to evaluate their survey and hazard assessment data, I have developed a checklist of important questions. In some cases, not being able to answer yes to the questions on this list has convinced facility managers to re-evaluate and improve survey data and perhaps get professional help.

1. Can your maintenance staff and outside contractors be sure they are not breaking into or disturbing ACM during maintenance and renovation activity?

2. Is the dividing point between ACM and non-ACM clearly marked?

3. Can your staff see asbestos identification labels from any point where they might access the material?

4. At any given time, could you locate areas where bulk samples were collected?

5. Does your survey comply with government regulations or stated policies?

6. Can you reach an accurate conclusion as to the quantity of asbestos in your facility? Could a removal contractor make accurate cost estimates based on your data?

7. Has the survey been done in a way that your sampling, labeling and documentation will last through and beyond the duration of the management plan? Is your documentation clear for the ACM that has been removed and replaced with a non-asbestos material?

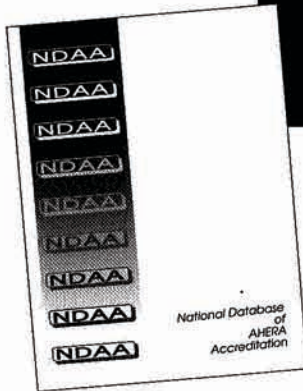
Obviously there are many approaches to doing quality asbestos surveys, but the basic elements remain the same.

- Use a careful sampling strategy to identify all of your asbestos-containing material. Mark all dividing points between ACM and non-ACM.
- Mark the sample number, label and document every sample point.
- Use labels that will endure the adverse conditions that may be encountered in an industrial plant.
- Maintain the survey data and make adjustments to the management plan for the ACM that has been removed. Move labels and/or markers when there has been a partial asbestos removal. Use labels that indicate material is "asbestos free" immediately after reinsulation projects.

Using the techniques outlined here will help ensure that you have a quality survey, a long-lasting survey and a survey that might surprise you by paying, at least in part, for itself over the long haul.

—David Evans, Procter and Gamble

To share your on-the-job knowledge, send your copy to the Editor, *Council Currents*, "From the Field," 1777 Northeast Expressway, Suite 150, Atlanta, GA 30329. Copy must be typed, double-spaced and no more than 75 words. All submissions are reviewed for technical accuracy and are subject to editing for space and clarity.



National Database of AHERA Accreditation

...a customized directory matching asbestos control professionals with those who need their services.

The comprehensive database, funded by the U.S. Environmental Protection Agency and administered by the National Asbestos Council Training Department, lists project designers, contractors/supervisors, inspectors and management planners accredited under AHERA guidelines.

AHERA-approved training providers gather demographic and skill information from students successfully completing AHERA training and forward that information to NDAA.

In turn, NDAA compiles the reports, by discipline and by state.

To order one list or more: Public schools affected by AHERA can order the personalized lists at cost. Other organizations pay a slightly higher charge. Certain discounts apply.

To be listed in the database: Request an Individual Data Form from NAC, complete and return the form, along with certified copies (a notary stamp will suffice) of AHERA-discipline certificates for training completed within the past 12 months.



National Asbestos Council
Training Department

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