

Part 1—Focus on schools

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EPA does little to ease fears over cancer risks

By Michael J. Bennett
News Special Writer

What to do about asbestos is fast becoming one of the most explosive environmental issues of the decade.

This widely used material has been linked to cancer in numerous medical studies, spurring a frantic effort costing millions of dollars to remove asbestos from the nation's schoolrooms.

As this four-part series will show, however, the actual risk from asbestos is highly questionable. Some doctors and scientists, interviewed over three months, accuse the federal government of letting politics dominate over research, exaggerating the health dangers, causing mass confusion and potentially making the problem only worse.

The debate involves broad concerns of public health policy, legal liability and state-federal relations, all of which come under the tricky process of risk analysis—the balancing of financial, political and medical factors in an objective way for the public good. The basic argument is over how much "safety" society can afford when astronomical sums are needed to deal with just one of the many risks in the environment.

The asbestos issue is focused primarily on schools, the only buildings that must be inspected for asbestos under federal regulations.

The Environmental Protection Agency (EPA) requires educators to look closely at common construction items such as ceiling tiles, insulated pipes and fire-proofed walls. If they find asbestos that can be easily crumbled and can release fibers, they must warn parents and school employees that "asbestos-containing materials may cause health problems."

The EPA issued the inspection rule in 1982 and enforces it with fines. It will start providing limited removal grants and loans this summer. But the agency does not say the asbestos must be removed.

nor does it tell how to evaluate the risks or pick a remedy.

For now, educators are on their own—and subject to pressure from worried parents or unions representing teachers and custodians.

Asbestos is a mineral that insulates and protects against fire. It can be woven or molded. Like cotton or wool, it is composed of microscopic fibers. Sometimes they are released into the air—either naturally or when the asbestos is mined, milled, installed in buildings or removed from them. The emissions can be invisible or look like powdery dust.

Asbestos is most hazardous when it looks like dust, as can happen when it's being ripped out of a building. If particles enter the lungs, they can become attached permanently—making it hard to breathe. They also can cause cancer 10 to 40 years later, some scientists say.

In 1973, the EPA banned all asbestos emissions that look like dust, as well as the spraying of asbestos insulation or sound-proofing. Five years later, it banned all construction uses of the material except to repair buildings erected before then, as long as it couldn't be crumbled or turned into powder.

Various studies, however, including one last year by a government commission in Ontario, suggest that intact asbestos does not pose an excessive health risk to pupils, teachers and custodians. Unless it's flaking, the best precaution may be to keep hands off or perhaps apply a sealant, some prominent scientists say.

"The mere presence of asbestos in a building doesn't mean it's a health risk," admits assistant EPA administrator John A. Moore, who is based in Chicago. His ex-boss, former Administrator William Ruckelshaus, acknowledges. "The potential for people panicking when they're faced with a problem of this kind is there."

Thus, as one Michigan official sees it, EPA is standing on the sidelines of a cancer scare it pro-

voked.

"This may be a little like saying 'beware of the bull, don't wave a red flag,' and then saying 'don't worry about it because you're outside the fence,'" comments Irving H. Davis, chief of occupational health services for the state Department of Public Health.

"The EPA must do a better job of communicating its concept."

The only guidance for school administrators and boards is the EPA ruling on May 27, 1982, that all public and private schools must determine by June 28, 1983, whether their buildings contain "friable" (easily crumbled) asbestos.

If any is found, the school must post warning notices and send them to parents, teachers and other building employees.

Then what? EPA doesn't say specifically. It decided last November not to write a federal regulation covering asbestos hazards, saying, "There is strong evidence that the current EPA program for handling potential asbestos hazards in schools is working."

George Ciampa, an EPA attorney in Boston, describes the policy a bit differently. "The theory is the mothers will form a vigilante mob and storm the school committee to do something," he says. "What that is I don't know. I couldn't sit down and write it out."

Ciampa and other EPA attorneys have fined districts for violations of the surveying, notification and recordkeeping mandates. The Ferndale system recently was fined \$42,000 and Royal Oak schools incurred a \$7,800 penalty.

Ninety percent of U.S. districts have done the inspections, according to the government, but only 30 percent of those required to send notices have done so.

Altogether, up to 15 million pupils and 1.4 million school employees may be exposed to asbestos in a form that could release the dangerous fibers, according to

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an EPA estimate last fall.

But no further steps have been taken to protect them because "if we had ordered the schools to clean up the problem," former EPA chief Ruckelshaus told *The News* last month, "then the federal government would have been ordered (by courts) to pay for it."

Still, the environmental agency tries to make sure parents and teachers hear about schools that haven't looked for or properly recorded the presence of asbestos. "I support the use of press releases in conjunction with appropriate enforcement activities," Ruckelshaus wrote in a 1983 memo to his regional chiefs.

The EPA chief, who resigned last December, passed along a three-page sample press release to his aides and suggested they warn that asbestos fibers "are harmful when inhaled and can cause asbestosis, a lung ailment, or cancer of the lung and gastro-intestinal tract."

He defended that tactic in the recent interview. "The idea of the approach," Ruckelshaus said, "was to put the pressure on the school boards through publicity to clean up, if in fact cleanup was necessary."

The asbestos-in-schools controversy stems largely from studies, led by Dr. Irving Selikoff of Mt. Sinai Hospital in New York, that linked cancer and lung disease to heavy asbestos exposure among insulation workers in New York and New Jersey. The research, which analyzed data from 1942-76, focused mainly on shipyard employees who often worked closely with the material.

Many of these workers also smoked cigarettes, however, and as a result, a number of prominent doctors, authors and political scholars have challenged the asbestos studies and an overall belief among many environmentalists and scientists that cancer is largely a consequence of industrial development.

The studies were also questioned because the asbestos handled by those workers generally was the blue or reddish-brown variety. Another variety, white, is much more common, especially in U.S. buildings. It's the type used nearly all the time and seems to be

the least threatening, since the lungs expel its fibers most easily.

The debate about all this has reached Capitol Hill, where influential members of Congress are starting to question federal agencies' claims about asbestos risks.

Lawmakers are reacting to the scientific sparring and court decisions that overruled regulatory initiatives similar to the EPA asbestos rule.

At the same time, EPA is backing away from plans to ban asbestos from all domestic products and manufacturing processes.

Last summer, the agency sought approval from the Office of Management and Budget for two proposals to ban four uses of asbestos immediately and the rest over 10 years. This would have forced manufacturers to find substitutes for asbestos in such items as appliances, textiles, wallpaper, paint, corrugated paper, vehicle brakes and some patching compounds. The budget office reportedly balked at the cost, which couldn't even be estimated.

On Feb. 1, EPA announced the sweeping proposals were placed on hold. In an angry reaction, about 100 EPA employees signed a Feb. 19 letter to Lee Thomas, the new administrator. "The retreat on asbestos makes a joke of our work," they complained.

In another current development, a crowded and significant trial opens tomorrow in San Francisco, where five firms that made asbestos items and their 75 insurance companies will argue over who should pay the costs of damage suits filed by schools and individuals.

This ongoing political, scientific and financial debate does little to ease parents' fears, teachers' worries or school administrators' headaches. The dispute actually may increase the public's confusion about the complex issues.

Here are some of the people and studies involved in the controversy:

William Borwegen—He is safety and health director of the Service International Employees Union, whose members include 85,000 school custodians and maintenance workers. The union sued EPA on Jan. 29 in an attempt to secure formal standards that

would help educators, parents and school employees determine how to deal safely with asbestos.

"EPA puts the weight of the burden on individuals to encourage the removal of asbestos from the environment of children," he told an EPA hearing last May. "They can potentially put friend against friend, teacher against administrator, parent against school and children against all of the above."

Dr. Robert N. Sawyer—A holder of engineering and medical degrees, he teaches at Mt. Sinai School of Medicine in New York, the hospital that performed the original asbestos studies cited by the EPA. He supervised the nation's first major asbestos removal project in 1972 at Yale's School of Architecture. He also was a scientific consultant to the New York Board of Education when it carried out a massive asbestos containment effort a few years ago.

Sawyer terms it "very unfortunate" that many school districts are ordering complete removal of asbestos—he predicts that the agency "will cause more adverse health effects, including malignancies, than it is preventing."

"Currently there exists a common misconception . . . that the discovery of asbestos-bearing construction products automatically indicates serious contamination and exposures in a school building," he testified at an EPA hearing last July in Boston.

"The surge in demand for removals greatly reduces the probability that the local school administration will obtain a competent contractor, experienced workers, knowledgeable architectural advice and a safe removal operation. There is a limited supply of such qualified personnel, and demand has already exceeded supply."

"The basic problem is that you're causing cancer in abatement workers by allowing this unnecessary removal."

A British health commission—After three years of hearings and study by scientists, it said there wasn't enough danger from asbestos to warrant its general removal from buildings.

"Present evidence suggests that dangers from asbestos in buildings are likely to arise only when asbestos fibers are released into the air when products containing asbestos are damaged either accidentally or during maintenance or repair," it

Report of The Royal Commission on Matters of Health and Safety Arising from the Use of

is far above the cost of life saving in other programmes. From the standpoint of occupants, asbestos control in buildings is uneconomic because the risk it removes for occupants is insignificant, and its costs are large.

Our conclusion that the occupants of buildings are generally not at risk from asbestos fibre exposure, and that asbestos control work may expose workers to substantially elevated asbestos fibre levels if not carefully performed, raises the question whether the programme to remove asbestos from all Ontario schools, involving an expenditure of provincial funds of over \$26 million to date, constituted an over-reaction, albeit well intentioned, to public concern vigorously expressed by parents alarmed by perceived health risks to their children. We appreciate that children may be somewhat more at risk from a given fibre exposure than are adults, as discussed in Chapter 5 above. The risk assessment models presented in the Appendix to Chapter 7 predict that children may be exposed to almost twice the risk faced by adults. Even acknowledging that the very young may be more susceptible to asbestos disease, the health risks to children remain insignificant because the level of exposure in asbestos-containing schools has in general been extremely low. The exceptions would be cases where asbestos material was actively disturbed, or where it fell onto building surfaces and was disturbed. It follows that, with these exceptions, the programme for removing asbestos from all asbestos-containing schools was not justified by the health risk posed to students. In some cases, the asbestos control work may have been justified in order to protect building renovation, maintenance, or custodial workers from exposure to asbestos if their work would have disturbed asbestos insulation. (See Chapter 10, Section D.) But neither the scale nor the pace of the school programme was warranted by the risk posed by most asbestos-containing schools to occupants or workers. If anything, the scale and pace of the programme significantly increased the risk to some workers directly engaged in control projects. Crash programmes invariably mean that inexperienced contractors and personnel will enter the field. A number of asbestos-control projects in schools were conducted in a manner which, according to the evidence before us, may have generated significant risk for the workers involved. (See Chapter 10, Section D.) There is no question, however, that the crash nature of the asbestos control programme in schools was occasioned by a climate of public apprehension; the actions of school boards and of the Ministry of Education, paralleled in other jurisdictions, show them to be responsive to public demand.

F. Recommendations for Occupant Protection

We conclude that a universal programme of building inspection and control is not warranted to protect building occupants. As Pinchin has noted, this would be quite expensive. In addition, it is unlikely that such a programme could be performed at a high level of competence in a short

said.

A Canadian commission—It studied the issue in Ontario, where \$26 million was spent in a removal program, and said last April:

"Even acknowledging that the very young may be more susceptible to asbestos disease, the health

risks to children remain insignificant because the level of exposure in asbestos-containing schools has in general been extremely low. The exceptions would be cases where asbestos material was actively disturbed or it fell onto building surfaces and was disturbed.

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U.S. House Committee—Last summer, Congress approved legislation to appropriate \$50 million in grants and loans—the down payment on a projected \$600 million—to help private and public schools remove asbestos. But the House Appropriations Committee added a stipulation that no money can be spent until EPA "develops guidelines for assessing asbestos hazards and selecting appropriate abatement options."

A House subcommittee opens hearings this month into EPA's appropriations requests for the next fiscal year, including new grants and loans to help schools handle asbestos. Members could raise the broader issue of how the agency is behaving on the matter of asbestos, as they did in a strongly worded report last March:

"There is no conclusive evidence of measurable adverse health effects produced by the inhalation of 'white' asbestos at low nonoccupational exposures or from ingestion even at high concentrations," wrote ranking member Edward Boland, D-Mass.

"Recently, the asbestos-in-schools program has received wide attention. However, EPA's handling of the problem has not encouraged rational or responsible risk management. ... EPA technical guidance is lacking on how school officials are to evaluate risks and select appropriate corrective measures."

"The potential for risk and overreaction is tremendous—leading to wasted resources and possible higher asbestos exposures if complete removal is undertaken in schools where modest containment measures are appropriate. The committee urges EPA to provide more balanced and complete technical information to encourage more rational and less emotional responses to asbestos in schools."

The House panel suggested that the agency assess the relative dangers of different asbestos types and evaluate medical studies "to identify the specific risks of 'white' asbestos at low environ-

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mental exposures." Lawmakers also called for "animal studies to determine the biological activity and health risks of asbestos substitutes."

For its part, the EPA acknowledges there is a risk in removing asbestos from schools. "Like any other rapidly growing industry, asbestos removal has attracted companies with varying experience and competence," notes the EPA's 1983 booklet for school districts and other building owners.

"A breach in the containment barrier is a significant exposure hazard for building occupants. . . . Disposal and transport of removed material has been a problem."

Such concerns have not changed much since then. Moore, the Midwestern EPA official, confirms: "Unqualified contractors . . . unwittingly go about it in the wrong way and may expose themselves and inadvertently contaminate the whole damn building with the asbestos."

For now, the EPA's main publication on asbestos for school administrators, landlords and contractors is that 1983 booklet—200 pages entitled *Guidance for Controlling Friable Asbestos-Containing Materials in Buildings*.

The guidebook does not say there are several types of asbestos—including the white variety (known as chrysotile).

There also is no such reference in one of two supplemental volumes, *Evaluation of the Asbestos-in-Schools Identification and Notification Rule*, published last October. In the other 1984 supplement, *Asbestos in Buildings: A National Survey of Asbestos-Containing Friable Materials*, mention of the "white" variety appears in two charts and in a two-sentence reference.

Many scientists contend that sensible action on asbestos requires knowledge about the differences of the varied forms and their relative health risks.

Another technical issue provoking debate is the "no-threshold" belief—an assumption by EPA and other federal agencies that potential carcinogens have no safe exposure level. Some scientists disagree by noting that they now can measure down to parts per bil-

lion (nanograms) and parts per trillion (picograms)—levels that can be identified, but which are so microscopic that health dangers seem extremely remote.

"The behavior of the EPA on this entire issue is absurd," complains John J. Sweeney, president

of the Service Employees International Union. "The ultimate absurdity is that EPA has created a high level of concern about asbestos, but refuses to tell anyone how to deal safely with the substance."

News staff writer Dudley K. Pierson contributed to this story.

What's the cost and who pays?

By Eric Freedman
News Lansing Bureau

LANSING—For Michigan's public and private educators, the asbestos controversy sparks debate over health and dollars.

Nobody knows exactly how many schools across the state have asbestos in their walls, ceilings, insulation or pipe wrapping. And nobody yet knows the overall cost of removing or sealing the material, which some specialists link to long-term diseases.

The price tag for some districts will be millions of dollars. Others face bills of a few thousand dollars. And some fortunate systems found no asbestos at all.

Neither the U.S. government nor the state requires a district to do more than inspect schools for easily crumbled asbestos and maintain records of what is found. Remedial action is optional, even if the material is flaking into classrooms, gyms or halls.

"It's totally up to the districts and the local boards of education," explained Dennis Carpenter, energy projects coordinator for the Michigan School Business Officials group.

Many school officials opt for prompt action, despite the cost and uncertainty over the health risks. Other districts want to act, but can't afford immediate repairs.

Gov. James J. Blanchard will ask legislators soon to authorize special bonds to help pay the tab, because only a tiny amount of federal aid is forthcoming.

Some educators are not waiting for government checks, however. Akiva Hebrew Day School in Lathrup Village spent \$41,000 to contain asbestos in its furnace room, a hallway and classrooms. The expense "hurt us terribly," said President Barry Eisenberg. "It came out of our operating budget."

"The asbestos was minute (in amount), but the potential for danger was there. You can't take chances with the children, even if

you don't have the money."

Romulus officials found themselves in a similar position: Their high school roof was crumbling and releasing asbestos fibers from the ceiling. Money was tight. Voters rejected a bond proposal to pay for asbestos removal and a new ceiling. Some parents and teachers actively pressed for action.

"We finally bit the bullet and took it out of the general budget," Romulus Business Manager Joel Carr said of the \$103,000 expense. "The board wanted to do it from the beginning, but it was a financial dilemma."

However, some districts say that dilemma is overwhelming. Consider the Davison School District in Genesee and Lapeer counties:

Asbestos extraction in three schools would cost \$3.1 million, an architect said. Since that estimate was made, asbestos was found in a fourth school, adding up to \$400,000 to the potential bill. The system's annual budget is \$12 million.

"It's going to be pretty tough to come up with \$3.1 million," observed Assistant Supt. Donovan J. Green. Voters rejected millage increase that would have provided \$312,000 a year for building maintenance and asbestos removal, and the school board "hates to go into long-term debt" by issuing bonds, Green added.

As a result, the district is tackling asbestos in small steps. During the last two years, it spent \$11,000 to remove falling asbestos in open areas of the high school and \$85,000 to clean one junior high floor. "Our idea is that, if we can do some work each year, we'll eventually get it cleaned up," said the assistant superintendent.

Lansing schools are taking the same approach. An inspection found asbestos in 47 of its 54 buildings, and removal could cost \$2.5 million, according to physicist plant coordinator David Finnie. To date the district has spent \$165,445 on corrective measures.

What the technical terms mean

■ **Amosite:** Technical name for brownish-red asbestos. Strong medical evidence links inhalation of fibers to elevated cancer rates.

■ **Asbestosis:** Lung-scarring disease that makes breathing progressively more difficult. Lesions on lung membranes are linked to inhalation of asbestos fibers. Also known as plural asbestosis, it first was reported in 1907 in Britain and can be fatal.

■ **Bronchogenic carcinoma:** Most common form of lung cancer. Can be caused by inhaled asbestos fibers or by cigaret smoke, and the risk increases when both are present.

■ **Chrysotile:** White asbestos, the type used most commonly in building materials. Not conclusively linked to elevated cancer rates.

■ **Crocidolite:** Blue asbestos, linked by strong medical evidence to above-average cancer rates.

■ **Carcinogen:** A cancer-causing substance. Doctors generally identify carcinogens based on animal tests and human studies, although they can't always confirm a direct link or determine the precise level of exposure that may be dangerous.

■ **Electron microscopy:** Expensive technique to measure amount of microscopic airborne asbestos in an enclosed area.

■ **Encasing:** Stopgap measure to contain asbestos by building a structure around it—such as a new wall or drop ceiling. Under federal law, asbestos still must be removed before building is demolished.

■ **Encapsulation:** Use of sprayed-on coating to seal in asbestos. Can create a moisture barrier on ceilings and walls, however, and asbestos still must be removed before demolition.

■ **Friable:** Crumbled or damaged asbestos that is easily powdered. Fibers become airborne since they are smaller and more buoyant than dust.

■ **Glove bag:** Airtight enclosure placed around pipes and other small areas during asbestos removal. Worker inserts hands into rubber gloves with cuffs sealed into clear plastic unit.

■ **Mesothelioma:** Cancer of membranes that line the chest and abdomen. Almost never occurs in people who haven't been exposed to asbestos. First linked to asbestos in 1955.

■ **Negative air filtration:** Three-chamber system to keep fibers from spreading during large-scale asbestos removal. It filters contaminated air before venting it and pumps in fresh air.

■ **Threshold level:** Cutoff point for safe exposure to a substance that is considered dangerous. Specialists often disagree over actual level or question whether one exists.



■ **Asbestos:** A group of minerals that separate into fibers. The white, chalky version was used widely by the construction industry from the 1930s until the late 1970s for fire protection, insulation and decoration. Found in some ceiling tiles, furnace or pipe wrap, roof shingles and vinyl floors. U.S. government has banned construction uses, but allows asbestos in brake linings, appliances and other items.

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"We have no plan to do complete removal now," Finnie said. "As there is a problem, we'll find the money to correct it."

Douglas Roberts, state deputy superintendent of public instruction, noted that "districts determined to remove or control asbestos have limited financial options." In general, a district can only dig into its operating budget or seek voter approval of a bond issue or millage increase.

Voters in the Merrill School District, straddling the border between Saginaw and Midland counties, will decide April 2 whether to approve more than \$240,000 in bonds for high school asbestos removal.

A few districts have issued "energy conservation notes" with some of the proceeds earmarked to replace asbestos insulation. The notes don't require voter approval, but are of limited scope, because insulation isn't a major source of asbestos in most schools.

Broader help is proposed by Gov. Blanchard, who is asking lawmakers "to issue state bonds on behalf of local school districts to pay for removal of school asbestos." The governor said Jan. 23 in his State of the State message that bonds issued under a "shared-credit program ... should save school districts money through lower interest and issuance costs and provide them with an incentive to move quickly to remove this hazard."

The move could cut local communities' borrowing costs from about 10 percent to 5 percent, said state Treasurer Robert Bowman. Legislation to authorize the bonds and create a Michigan municipal bonding authority has been drafted and scheduled to be introduced this month.

Bowman predicted passage, saying the issue of asbestos-removal is nonpartisan. The first bonds could be issued two months later.

School administrators also can try for federal aid or compensation from asbestos manufacturers, who are being sued for damages.

Under a law passed by Congress last summer, needy school districts nationwide are eligible to share \$50 million in 1985 grants and loans for asbestos-control projects—an amount that is dwarfed by the cost of such remedial work. The environmental Protection Agency (EPA) will announce the first recipients in June. Another \$550 million is authorized to be spent over the next five years, but the EPA has said it may not request the full amount from Congress.

Many educators question the effectiveness of the initial EPA money. "It's a spit in the ocean," said Carr of the Romulus district.

"There's not enough for the state of Michigan to hardly talk about," agreed Assistant Supt. Green of Davison.

EPA officials agree with such comments, but stress that federal policy intentionally defers removal decisions—and costs—to the local and state levels.

The goal is to avoid creating "a cost-free benefit to the schools," former EPA chief William Ruckelshaus told The News. Without forcing systems to find a way of covering the tab, he explained, many educators would demand maximum cleanup help. Accordingly, EPA's limited funds are unlikely to reimburse any district for work that has started.

As a result, Deputy Supt. Roberts in Lansing said only 39 of the state's 1,800 public and private systems applied for the EPA program, with the final deadline 12 days away. Their requests exceeded \$13 million.

Despite the slim odds of selection, the state urged districts to file because their forms will provide details on the scope of asbestos in Michigan schools, the information also will be used in appeals to Congress and the state Legislature for more dollars, according to Roberts.

History of the issue

- **1866** Asbestos, mixed with sodium silicate, used for insulation material.
- **1870** Asbestos mixed with cement for commercial uses.
- **1898** Corrugated asbestos paper introduced.
- **1907** Asbestosis reported among British miners' mill workers.
- **1955** Inhaled asbestos fibers linked to chest cancer known as mesothelioma.
- **1964** International science conference hears Dr. Irving Selikoff report on high lung cancer rate for asbestos insulation workers. Conferees urge more studies of health risks.
- **1978** U.S. bans asbestos in construction materials.
- **1982** EPA requires schools to inspect for asbestos installations and publicly report any in an easily crumbled condition; Manville Corp. files for bankruptcy because of 16,500 asbestos damage suits.
- **1983** Deadline for school inspections and notification under EPA rule.
- **1984** Federal judge approves national class-action suit against asbestos manufacturers by school systems.
- **1985** EPA defers future ban on all asbestos uses in consumer products.

Repairs cost \$100,000 in Romulus

Mother's fight spurs school board to act

By Mike Wowk
News Staff Writer

Phyllis Kreft has no regrets about helping to get rid of 47,000 square feet of ceiling asbestos in Romulus High School.

A mother of two, she mobilized other parents into a committee two years ago that pressured school officials for months. They spoke at school board meetings, sent flyers home with students and staffed an information booth at the Romulus City Fair.

Mrs. Kreft hauled a TV set and video recorder to each elementary school in the district to show a film about asbestos.

In the end, the Romulus school board spent \$100,000 to pull asbestos out of the high school ceiling, even though voters rejected three bond issues to finance the project.

"If I had to do it all over again," Mrs. Kreft says now, "I would picket that school until they shut it down. People were not listening to our arguments, but my son (Steve, now 16) was going in there every day and breathing that air. You don't fool around with something like asbestos."

In contrast, Warren Consolidated

School District officials decided not to disturb the asbestos—mostly in the form of boiler-pipe insulation—found in more than 20 of their 35 schools.

Spokesman Bob Freehan said test showed that none of Warren Consolidated's asbestos is "friable" (easily crumbled). "As long as the asbestos remains intact, we felt it would not present a danger," he added. "Of course, we'll keep monitoring it."

As in Romulus, schools officials throughout the nation are asking hard questions about asbestos in their buildings:

- Should we get rid of the stuff?
- How would we pay for the work?
- Is there an immediate health danger?
- Will removal produce more airborne fibers than exist now?

At Romulus High, the need for immediate removal was clear, officials said. Water run-off from a leaky roof had damaged asbestos tiles and exposed fibers.

Warren Consolidated's decision not to remove asbestos was endorsed by Clayton Environmental Consultants Inc. "Almost any building will have asbestos in it. That's a fact of life," said Michael Coffman of the Southfield firm. "But many parents create a sense of panic when they force removal of asbestos. In many cases, it may be better to leave it alone."

Intact pipe wrappings are a case in point. "If the canvas cover on the pipe isn't cut, you won't release any airborne fibers," according to Coffman.

To save money, districts can "encapsulate" asbestos materials by applying a sealant or building a structure around them. That is what Detroit officials elected to do after friable asbestos was reported in 23 of the city's 298 public schools. In most cases, peeling pipe insulation is being rewrapped and enclosed in metal sleeves.

William Schmidt, the Detroit system's acting director of engineering services, estimates it would cost at least \$20 million to remove all the asbestos in his buildings.

For districts that decide to rip out asbestos, the costs can be staggering.

We're drinking asbestos

According to a 1971 Canadian government report, asbestos is found in virtually all water and many beverages. The study suggested microscopic asbestos fibers are a routinely ingested mineral and not considered a health risk. The findings, excerpted below, were cited last year by a commission criticizing Ontario school officials for "an over-reaction... to public concern" about asbestos in their buildings.

Liquid	Source	Fibers/liter
Melted snow	Ottawa (3 week sample)	33.5 million
Ginger ale	Unspecified	12.2 million
Vermouth	Italian brand	11.7 million
River water	Ottawa River at Ottawa	9.5 million
Beer	Canadian brand "B"	6.6 million
Tap water	Toronto, from Lake Ontario	4.4 million
Beer	Canadian brand "A"	4.3 million
Orange pop	Unspecified	2.5 million
Tap water	Montreal, St. Lawrence River	2.4 million
Port wine	Canadian brand	2.1 million
Tap water	Ottawa, from Ottawa River	2.0 million
Beer	U.S. brand "B"	2.0 million
Sherry	Spanish brand	2.0 million
Vermouth	French brand	1.8 million
Tonic	Unspecified	1.7 million
Beer	U.S. brand "A"	1.1 million

*TAP WATER samples passed through filtration plants. Fibers were identified as mostly white asbestos by electron microscope, but the authors wrote that the numbers must be considered a minimum estimate of those actually present. The amounts by weight of the asbestos found in these samples were exceedingly small.
SOURCE: Asbestos Fibers in Beverages and Drinking Water by Hugh M. Cunningham and Roderic D. Pontefract. Nature journal, July 30, 1971.

Southfield spent roughly \$400,000 to correct problems in 10 schools through 1981.

Ferndale, which is appealing a \$42,000 EPA (Environmental Protection Agency) fine for laxness in mandatory inspections and record-keeping, earlier spent \$74,000 to remove an asbestos-laden ceiling.

A study by the American Association of School Administrators of 1,235 randomly selected districts shows that the average cost of asbestos removal is \$128,000 per system—compared to \$22,000 for encapsulation.

The total amount spent so far by 550 districts in the survey was more than \$50 million.

Former EPA chief William Ruckelshaus says that is partly why his agency stopped short of requiring districts to do more than inspect and report on asbestos content.

"If we had ordered the schools to clean up the problem, then the federal government would have been ordered (by courts) to pay for it," Ruckelshaus told *The News* in a recent Washington interview. "It would have become a cost-free benefit to the schools."

"But we wanted to force the schools to make a risk vs. benefit decision," he added. "I think that's sensible."

Without forcing systems to find a way of covering the tab, Ruckelshaus explained, educators would demand a maximum cleanup effort.

Ruckelshaus, who left EPA last November, met with two *Detroit News* writers in his office at a Washington research institute. He compared the risk-benefit debate over asbestos to a decision he made last year regarding new radiation standards for two Utah phosphorus plants.

"I refused to issue those standards because the studies showed that the new standards would have reduced the theoretical cancer deaths in those two towns (Salt Springs and Pocatello) by only one. But they would have cost \$72 million," Ruckelshaus said.

"In my view, that's a very minor risk. To spend that kind of money to (reduce pollution) is crazy," he added.

A federal judge held Ruckelshaus in contempt for his refusal. A few days after he left, new administrator Lee M. Thomas signed documents that enacted the new radiation standards.

The Detroit News

Varieties of asbestos

TYPE	HEALTH IMPACT	USES
Chrysotile	Least dangerous; not conclusively linked to elevated cancer rates	Acoustical tiles, pipe wrap, spray insulation or fireproofing
Amosite	More dangerous; studies link inhalation of fibers to elevated cancer rates	Cement, water pipes, sewage lines
Crocidolite	Most dangerous; strong evidence that inhalation increases cancer risk	Boiler insulation on ships and in factories

A high-risk job

Insurance underwriters are among those who have caught "asbestos-phobia."

Because the new and largely unregulated asbestos-removal industry deals with uncertain risks, many insurers balk at writing general liability coverage for contractors.

"The word (asbestos) is enough to cause paralysis in ... an underwriter's pen," the U.S. legal counsel for Lloyd's of London told the *Baltimore Sun* last month. Many contractors—up to 600, according to one industry executive—have changed fields because they couldn't get protection against lawsuits from employees, landlords or building occupants who may claim health damages from the release of asbestos fibers.

Firms willing to write such policies charge asbestos contractors three to four times more than most contractors. A Michigan removal company, Mechanical Insulation Services of Saginaw, saw its annual premium rise from \$6,000 to \$44,000 this year.

"Most companies don't tell their insurance companies they are doing asbestos abatement," Indiana contractor Frederick Treadway told a trade journal last year. His firm pays about \$40,000 annually for \$5 million in insurance.

"Very few contractors have properly written coverage specific for asbestos exposure," added Dennis Garde, vice-president at Asbestos Control Inc. of Illinois, which has had three carriers in four years. "A company risks us for a year and then drops us," Garde explained to the *Engineering News-Record*.

Nearly 100 contractors met in Louisiana last month to discuss forming a self-insurance plan.

Policy prompts sharp questions

By Michael J. Bennett
News Special Writer

BERKELEY, Calif.—Prominent scholars are criticizing the role of politics in setting health priorities to protect the public from asbestos and other presumed dangers.

Senior faculty members at the University of California, among others, protest what they see as a political, unscientific reaction to cancer risks by Washington officials.

Some scientists who disagree with government conclusions "are afraid to come out or just don't want to get involved in politics," claims political scientist Aaron Wildavsky, one of the critics on the Berkeley campus.

These concerns are voiced against the backdrop of controversies over the government's handling of asbestos, a mineral that can be molded or woven into insulation or fire-retarding materials.

Nearly three years ago, the Environmental Protection Agency (EPA) ordered school districts to examine buildings for asbestos and tell parents and employees if any is found in a condition that can release fibers. The notice must warn of a potential health hazard.

But many scientists question the degree of risk from installed asbestos.

One is Bruce Ames, chairman of biochemistry at Berkeley. "People hear carcinogen and they get so excited," he told an interviewer last year. "But you have to think of amounts. Sunlight is a carcinogen, but you don't tell your friend not to walk across the street in the sun."

Asbestos is dangerous when its microscopic fibers enter the lungs, where they can cling to internal membranes and reduce lung efficiency. In addition, they may cause cancer years or decades later.

Critics of the federal school-inspection rule suggest the EPA acted without sufficient evidence or acknowledgement that these questions are unanswered:

■ How much asbestos—how many fibers in a classroom's air for example—may be harmful?

■ How much asbestos is present naturally in air and water?

■ Is the white asbestos commonly used in U.S. buildings as dangerous as the government suggests?

There are several kinds of asbestos, some that crumble more easily than others. An asbestos product such as insulation is particularly dangerous when flaked into a powdery mist, as sometimes happens during removal. But when left intact or covered by paint or plaster, it may not release more fibers than already are present in air and water.

Such distinctions, many experts say, have been overlooked or ignored by federal rule-writers. Critics in Berkeley and elsewhere feel the policymakers are trying, in the name of environmental concern, to eliminate virtually any substance that could cause cancer.

Wildavsky, the Berkeley political scientist, is among those trying to change the ways Americans see cancer. Some government officials, he asserts, use the dreaded disease as an instrument for enacting political and social change.

That claim by Wildavsky, president-elect of the American Political Science Association, is reinforced by Ames.

The 56-year-old biochemist, who invented a test for identifying mutagens (gene-changing agents), is a principal proponent of the theory that life itself "causes" cancer. He insists that most food, including everything broiled or roasted, is loaded with carcinogens.

"Far from being a rarity," he has said, carcinogens "are literally everywhere."

Ames argued in a 1983 article in *Science*, the journal of the American Association for the Advancement of Science, that carcinogens abound naturally in such foods as uncooked corn, nuts, peanut butter, bread, cheese, fruit, beets, celery, lettuce, spinach, radishes, mushrooms and rhubarb.

"Cooking our food also generates mutagens and carcinogens, as all browned and burned material contains them," Ames wrote last year in *Science* '84.

"It takes a Los Angeles resident a year of breathing smog to equal the burned material that a heavy

Risks at home?

Many U.S. homes, particularly those built during the 1960s, contain asbestos in insulation or other construction materials. When used around pipes or boilers, the material resembles corrugated cardboard and has a white, chalky surface. In thicker attic insulation, it looks like snow or wool. It also was blown onto walls and ceilings for decorative purposes.

Specialists stress that the mere presence of asbestos is not a hazard, especially if the material remains sealed and solid. The cancer risk from an average home's asbestos is the same as from smoking half a cigaret a year, a Canadian government commission concluded last year.

U.S. officials say homeowners generally need not be alarmed about intact asbestos in the home, and strongly advise against self-removal. If crumbling asbestos is found, the EPA advises owners to contact an experienced removal contractor. A national trade group in Kansas—(913) 749-4032—will refer callers to local firms.

A \$2.75 booklet, "Asbestos in the Home," is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Standards may shift

The International Labor Organization is drafting new asbestos-exposure standards to protect millions of workers worldwide.

Delegates from 151 nations will vote on the proposed guidelines at a June labor conference in Geneva. Threshold limits and monitoring methods now vary from country to country.

In a report issued last week, the organization described asbestos as a "Jekyll-and-Hyde mineral" that can pose a health hazard but save lives through its use in fireproofing materials and brake linings.

The United States, western Europe and the Soviet Union use 75 percent of the asbestos produced. More than two-thirds is taken for cement while the rest goes into about 1,000 industrial products.

Unfortunately, no suitable alternatives exists, the group said.

From Reuter News Service.

smoker inhales in one day," his article continued. "And we eat even more browned and burned material than the heavy smoker inhales, though we don't know the risk from this."

Ames' conclusions place him in direct opposition to the environmental movement, a cause he used to champion. He helped convince the Consumer Product Safety Commission to ban Tris, a flame retardant used in children's pajamas until it was linked to cancer.

He also was an early advocate of reducing the limits of workers' exposure to ethylene dibromide (EDB), a soil fumigant banned by the EPA last year because it caused cancer in rats. Ames urged the agency, however, not to outlaw EDB unless it recommended an equally effective substitute to help farmers fight crop pests—the kind of risk-benefit question also raised about asbestos.

Dr. Robert Sawyer of Mt. Sinai Medical School in New York urged the EPA at a 1984 hearing to "place the risk from asbestos in schools into a reasonable perspective." He told agency officials in Boston last July: "Until the 'single fiber will kill' mythology is dispelled and put into perspective, unnecessary and unreasonable response actions are inevitable."

One federal insider who acknowledged the shortcomings in what she called "this balancing process" is Barbara Hackman Franklin, a member of the Consumer Product Safety Commission under Jimmy Carter.

"When we banned certain products that contain asbestos, the truth of the matter is that we lacked information to evaluate the safety of the substitute materials," she told a 1979 scientific conference in New York.

In the broader debate, critics accuse the consumer and environmental movements of looking for *any* cancer-causing substances that can be linked to industrial pollution of air, water and soil.

An illustration, according to Wildavsky, can be found in the way a community's health problems often are linked to a local factory—even when medical studies fail to confirm a connection. "These charges climb so fast, they spread so rapidly," he said. "With the willingness to believe, it spreads."

Before jumping to conclusions about a neighborhood's cancer rate, the Berkeley professor declared, "you have

to ask how many of these people are smokers." As he explained, "It turns out if you have blue-collar, it's a high smoking population. That would account for the excess cancers right there."

The well-known professor, who has written 20 books, says doctors and scientists share the blame for what he sees as environmental alarmism.

"When there was 99.99-percent unanimity among scientists, then these fears don't get very far," Wildavsky said. "But when you have, say, just a 5-percent difference among scientists—or 2- or 3-percent difference—there are enough to carry this off."

And once the public becomes alarmed, in Wildavsky's view, it's inevitable that politicians take notice. He noted that fears of cancer and other effects of pollution have "captured a great deal of public attention, and very few public officials would argue against this."

Along that line, he accused former EPA chief William Ruckelshaus of being "stampeded by this" pressure to act against suspected cancer threats.

The Berkeley professor doesn't advocate ignoring or minimizing all potential cancer threats. "I do believe in making as great an effort as possible to assess the scientific information, to correct what needs to be corrected," he stressed.

The basic argument made by Wildavsky and other health policy critics is that scientific questions should be resolved by scientific evidence or arguments, not political decisions.

Concern is not enough, they contend. Knowledge is necessary, along with the realization that complicated technical issues do not have simple solutions.

Politics and science have collided at EPA since June 1972, when Ruckelshaus banned DDT. The pesticide was the principal target of *Silent Spring* by Rachel Carson, a 1962 book that helped pioneer the environmental movement.

By outlawing DDT, Ruckelshaus over-ruled an EPA administrative law judge who conducted 17 months of hearings and ruled that the chemical did not necessarily cause human cancer. "Surely it can't be seriously contended that the fact that DDT has NOT been proven NOT to be carcinogenic to man is a logical reason for advocating a ban... on all future uses of DDT," the law judge declared, according to a book titled *Ecological Sanity*.

The World Health Organization endorses the continued use of DDT, and Richard Nixon wrote in his memoirs that the DDT decision was "panicky."

Ruckelshaus later told this reporter his 1972 move was "political." He explained in a 1981 interview: "Society demands certain decisions be made by someone, and in this case I was the someone."

To political scientist Nelson W. Polsby, the DDT episode shows that environmentalists are "making it impossible" for the EPA and similar agencies to be "evenhanded."

"There's no incentive in it," the 50-year-old professor said at his Berkeley office. "No matter what they do, there's a chance they might be wrong, and could be crucified for it later."

Consequently, Polsby said, EPA and other safety or health agencies often do what environmentalists want.

Critics say that's why journalists and the public have come to believe environmentalists' allegations generally are on target, even if scientific evidence points in the other direction.

The EPA's public-relations apparatus helps spread a message of vigilance over alleged dangers from asbestos or other substances, as one veteran of the staff recounted last year.

"I worked for Ruckelshaus and his successors from 1970 to 1981," Jim Sibbison wrote in the Washington Monthly last March. "One of the first things I learned in the job is that reporters take too much on faith what the government tells them."

"That's the way it was at the EPA during Ruckelshaus' first term as head of the agency," added the former Associated Press reporter, who spent 11 years as an EPA press officer. "In those days, the idea was to get the media to help turn the EPA into an enforcer that struck fear into the heart of polluters."

That approach ended when the Reagan administration arrived, according to Sibbison: "Previously, the EPA had sought to whip the public into a frenzy. Now, a less, shall we say, *active* administration wanted a cooler approach."

"The rules of the game were thus reversed for those of us who wrote the press releases. Where once we had written freely in our news materials about the hazards of chemicals, employing words like 'cancer' and 'birth defects' to splash

Part 2—Politics & science

**Policy prompts
sharp questions** *continued*

a little cold water in reporters' faces, we were urged to be more cautious."

The rules appeared to change back again with the appointment of Ruckelshaus two years ago to replace ousted EPA chief Anne Burford. On Sept. 28, 1983, two months after he was sworn in, Ruckelshaus issued a memo titled, "Communications Strategy for Asbestos-in-Schools Program."

Regional administrators were told to put out press releases identifying school systems that had failed to meet all requirements of the inspection rule. The strategy was described as a way of involving "the local community in sorting out what actions are needed to protect their children and school employees from potential health risks."

Ruckelshaus suggested that the handouts cover "batches" of inspections, since "case-by-case releases may quickly exhaust the public's attention." He included a sample news release that said asbestos fibers "are harmful when inhaled and can cause asbestosis, a lung ailment, or cancer of the lung and gastrointestinal tract."

An insider's perspective on that high-visibility approach to public relations was provided by Jim Sibbison, whose magazine story concluded: "The truth of the matter is that official sources alone will never give you an accurate picture of an agency's successes and failures. Take it from me, I used to be one."

Crews protected from head to toe

**By Mike Wowk
and Dudley K. Pierson**
News Staff Writers

There are no paper face masks, few workers who smoke or sloppy habits at asbestos-removal jobs supervised by John Krieger.

Each of his men wears a protective suit from head to toe and breathes through a battery-powered respirator. Employees shower after each shift with their respirators still on, then pass through a series of airlocks to minimize release of asbestos fibers.

Desk-sized fans draw contaminated air through several filters and electronic monitors sample the surrounding space for asbestos content.

"We try to trap everything. Even smoke won't go through (our filters)," said Krieger, vice-president of Mechanical Insulation Services Inc. of Saginaw.

Each weekend for the last month, Krieger's 15-man crew has removed asbestos fireproofing from a Michigan Bell Telephone Co. office complex in Southfield. The grayish material is scraped off the building's frame and then sealed in plastic bags. The bags, in turn, are placed in drums for landfill burial.

Work can't be done during normal business hours because the building's ventilation system is shut to minimize chances of spreading the microscopic fibers.

Most of the time-consuming precautions taken by Bell and the Saginaw firm are voluntary, since asbestos-removal firms are not licensed or closely regulated. As the field expands, especially from school district jobs, some officials and contractors voice fears about the lack of accepted operating standards.

Krieger said he respects the stringent safeguards, despite questions about how much danger is posed by the white form of asbestos. That scientific and political debate generally involves asbestos that is intact and releases few airborne fibers. At a removal site, in contrast, Krieger recognizes that the loose fibers his crews encounter could be deadly.

"My men can't afford to be indifferent to asbestos," explained the Saginaw contractor. "Exposure to asbestos can cause one of three lethal diseases—lung cancer, mesothelioma and asbestosis. There are no cures. The victims always die."

Thus, Krieger trains workers by cautioning against "the saccharin syndrome"—his phrase for the skepticism fostered by widespread warnings about

cancer risks from saccharin and other common products.

His firm's insurance carrier also views asbestos seriously, and raised the annual premium cost from \$6,000 to \$44,000 this year.

Employees of Mechanical Insulation Services got a personal reminder last month of what asbestos can do. The firm's president, Robert H. Bordeaux, died at 62 of mesothelioma (cancer of chest membranes). He installed asbestos at a Saginaw Bay shipyard during World War II.

When Bordeaux joined the Saginaw firm in 1940, it was an insulation contractor for power plants, foundries and other industrial customers. Today, with asbestos banned from most of its former uses, about half the corporation's business consists of removing the substance it once installed—a turnabout that's common in the growing field of "asbestos abatement."

Unionized asbestos-removal workers earn about \$20 an hour in the Detroit area, with no premium for hazardous duty. The Saginaw firm provides roughly one day of special training in removal techniques and the hazards of asbestos.

Since numerous medical studies show that tobacco multiplies the risk of lung damage from asbestos, Krieger won't hire smokers. "Those men who installed asbestos insulation in those shipyards during the war who are now dead were usually smokers," he noted. "The nonsmokers are still alive."

Krieger, who doesn't smoke, said he's not worried about getting an asbestos-related illness because of the stringent controls on current job sites.

Precautions were not always as strict in earlier years. "I've heard of some guys who scrape asbestos while wearing paper masks. They punch a hole in the mask so they can smoke a cigaret while working," Krieger added, shaking his head. "We know the paper masks are ineffective, so we got rid of them years ago."

The firm's other removal projects have included four Veterans Administration hospitals, several General Motors plants and sites owned by Ford, Mobil Oil and Consumers Power.

Mechanical Insulation Services avoids bidding on asbestos-removal jobs in schools—a large segment of the market. Krieger explained that educators, required by a federal rule to inspect for loose asbestos and publicize the results, often react hastily and hire the lowest-bidding repair contractor.

"If asbestos is removed improperly,

there can be a greater hazard than if it were left in place," Krieger warned. "They have gotten rid of all the visible asbestos—but if you put (an air sample) under an electron microscope, it would look like a snowstorm."

The federal Environmental Protection Agency (EPA) shares the concern and includes this warning in a publication:

"Like any other rapidly growing industry, asbestos removal has attracted companies with varying experience and competence."

John A. Moore, who oversees the EPA's asbestos-in-schools program, repeated that warning recently. "Unqualified contractors ... unwittingly go about it in the wrong way," he said, "and may expose themselves and inadvertently contaminate the whole damn building with the asbestos."

His former boss, EPA Administrator William Ruckelshaus, acknowledged the problem. "What we have consistently recommended (to educators) is that they be very careful about how they proceed," Ruckelshaus said in Washington. "And the question of whether or not they could go ahead and create a worse situation, the potential is there, there is no doubt about it."

EPA would like to see states and the industry adopt a certification program to set competency standards for asbestos contractors. Municipal codes often require school districts to hire the lowest bidder, noted Moore, who said bidding should be limited to experienced or certified contractors.

Moore, an assistant administrator, said the EPA hopes to create a "model certification program" this year that states can adopt or use as a guide for establishing their own.

New Jersey and Oklahoma already license removal contractors and spot checks by Trenton officials turned up numerous health and safety violations last summer. Crews at one school were flushing asbestos down toilets.

Some workers were not wearing respirators or protective clothes. Others did not shower after their shifts and tracked asbestos dust into uncontaminated areas.

A Michigan contractor from Lansing shares the belief that his field should be regulated more tightly. "Somehow they should come up with some licensing procedure for this," said Charles Osborne of John E. Green Co. "They are handling a hazardous material."

John Lynch, owner of Asbestos Abatement Inc. in Lansing, feels unsafe practices could increase as more contractors

scramble for contracts. "As this work picks up, you're going to have more people come into the area, a lot of fly-by-night people coming into it," said Lynch, whose firm recently removed asbestos from classrooms at the Avondale Community Center in Auburn Hills.

For now, a desire for cost-cutting can lead to scenes that would seem comical if they were not so serious.

Dan Speights, a South Carolina lawyer involved in major asbestos lawsuits around the nation, recently told Michigan school administrators that one Tennessee district used the high school basketball team to pull out an asbestos-insulated ceiling since those students were the tallest and worked for free.

Krieger shuddered at the story and said, "We see that attitude in the schools here, too. They just want the job done and they're not willing to listen how."

After removal

The U.S. Environmental Protection Agency requires contractors to put asbestos into "leak-tight containers, typically six-mill polyethylene bags." Those bags are at least three times thicker than household trash bags and asbestos waste sometimes is dampened first to keep fibers from floating.

At the Michigan Bell job in Southfield, workers wash off the bags in a shower, then place them inside clean bags. The double-bagged load is put inside fiberboard drums and transported to the removal firm's Saginaw warehouse to await landfill burial.

"If we're dealing with something that's hard or sharp and can tear the bags, then we'll place the material in metal drums," said company vice-president John Krieger.

Not all landfills accept asbestos-laden materials and those that do are regulated by the Michigan Department of Natural Resources in an effort to avert ground and water contamination.

Part 3—How fears spread

EPA rule process criticized

Original studies called misleading

By Michael J. Bennett
News Special Writer

WASHINGTON—An 80-year-old doctor from Brooklyn, more than any other person outside government, prompted warnings that asbestos in schools may pose health hazards.

He is Dr. Irving J. Selikoff, a world-renowned asbestos expert who directs the Environmental Science Laboratory at Mt. Sinai Hospital in New York City. His conclusion that inhaling microscopic asbestos fibers can cause lung illnesses and cancer led to the federal mandate for school inspections.

In the three years since that rule took effect, however, other specialists have mounted vocal attacks on Selikoff's research and the Environmental Protection Agency's (EPA) response.

One leading critic is inside government—Malcolm Ross, a 55-year-old mineralogist with the U.S. Geological Survey. He argues that pivotal asbestos studies methods were misinterpreted, that scientific methods were ignored in some studies and that the EPA overreacted to evidence of high cancer and death rates among asbestos workers.

The EPA's school inspection rule, say Ross and others, could cause more asbestos-linked disease than it seeks to prevent. The alarm sounded by Selikoff is "dangerous," Ross states flatly.

To the Mt. Sinai doctor, this ongoing debate leaves educators with "a terrible dilemma." As Selikoff recently told *The News*: "The school boards are in a very difficult position. They have to decide whether or not ... to spend money to perhaps save lives that won't be lost for perhaps 25, 35 years. And they have to spend it now, not 35 years from now."

"This is a terrible decision for them to have to make."

And what would Selikoff suggest they do? "That's another story," he replied in the phone interview. "That's no longer science."

But in Washington, Ross disagrees strongly. He contends that policy decisions and science have become entwined in the case of asbestos, as well as in the government's overall cancer-prevention efforts.

Federal regulations and the scientists behind them assert that there can be no safe level of exposure to asbestos or any cancer-causing agents (carcinogens). The popular expression for that attitude in the asbestos dispute is the phrase, "One fiber can kill."

This "no threshold" theory becomes increasingly important because of advances that allow measurements of smaller and smaller quantities.

Thus, scientists are better-equipped to detect microscopic traces of carcinogens—opening the way for policy-makers to investigate or ban more products as possible health hazards.

Some specialists challenge the "no threshold" assumption by noting the vast array of potential carcinogens in our food, our hormones and almost everything else around us. They advise against massive campaigns to remove carcinogens from the environment without examining more closely what is to be removed—and what will replace it.

The medical community's debate over asbestos involves a belief by many scientists that it has not claimed as many victims as Selikoff says. In fact, some prominent specialists in lung disease dispute the existence of asbestosis—a lung-scarring disease that Selikoff says is caused mainly by the mineral's fibers.

Skeptics note that X-rays of the ailment's white lesions (marks) on the outer lung surface look just like those from illnesses caused by smoking. "A person with obstructive lung disease (such as emphysema) can be read as having an X-ray compatible with asbestosis," says Dr. Barry Levine, a lung specialist at Harvard Medical School and Massachusetts General Hospital.

That view is shared by Dr. Edward A. Gaensler, who heads an asbestosis research project funded by the National Institutes of Health. "I have not seen a new case of asbestosis in two or three years," he told the *Boston Globe* in 1983. "Ninety percent of the cases referred to this laboratory do not have asbestosis. Asbestosis is a disappearing disease."

In the case of lung cancer, there is no question of a link to asbestos exposure. But Selikoff's own figures suggest that smoking has a greater impact than asbestos in causing such tumors.

"Asbestos exposure alone is not the entire explanation," he and two associates wrote in a 1969 paper published in the *Journal of the American Medical Association*. "Calculations suggest that asbestos workers who smoke have about 92 times the risk of dying of bronchogenic carcinoma (lung cancer) as men who neither work with asbestos nor smoke."

Smoking generally is more prevalent among blue-collar workers than among those in professional and managerial occupations, and this may account for the increased rates of lung cancer and asbestosis recorded by Selikoff's pioneering studies of shipyard workers and factory employees.

The facts surrounding another disease—mesothelioma (cancer of the chest and abdomen membranes)—also are disputed hotly.

Large-scale studies of mesothelioma are impossible because there are so few cases. Richard Doll and Richard Peto of Oxford University estimate there are no more than 1,000 new patients a year in the United States. Another research team gave the same estimate, but suggested the figure would rise to a peak of 1,400 cases a year in 1990.

"A rigidly defined relationship to (asbestos) dosage has not been established for mesothelioma," Dr. John E. Craighead, a pathologist at the University of Vermont, wrote three years ago in the *New England Journal of Science*. Doc-

tors are unsure how the malignancy develops, he noted.

Moreover, Craighead observed that abdominal mesotheliomas occur only in persons exposed to the blue or reddish-brown forms of asbestos—not the white type used in most U.S. installations.

This confirms what geologist Ross told a congressional panel last summer and what other specialists said earlier: There are profound differences among types of asbestos.

Mesothelioma has been induced in rats exposed to all forms of asbestos, as Selikoff pointed out in the phone interview. But as Craighead wrote, "Of all the types, crocidolite (blue asbestos) is most clearly associated with the occurrence of the tumor."

But Selikoff, who retires this summer, wasn't the only epidemiologist studying asbestos workers.

Ross cites a study of mortality patterns among women living in two Quebec mining towns. Their exposure to white asbestos had not proved to be "a significant health hazard," he says. "If it were, the women of Asbestos and Thetford Mines, where over 20 million tons of chrysotile asbestos has been mined, would be dying of asbestos-related diseases. They are not."

Ross also notes that drinking water in the Thetford Mines area has "very high concentrations of chrysotile asbestos, ranging from 172 million to 1.3 billion fibers per liter"—yet there is no evidence it causes cancer.

Three Vienna specialists reported last summer on similar research in Austria from 1970-80. "No increased risk for lung or stomach cancer was found in a mining town with asbestos-

contaminated air and water," they wrote in the *Archives of Environmental Health*. "No significant differences could be attributed to environmental asbestos exposure" near a plant processing the mineral for cement.

These studies prove there is a "threshold value" for white asbestos below which no measurable health effects will occur, contends Ross, who has a doctorate in geology and has spent 20 years with the U.S. Interior Department.

"Many cities have lots of white asbestos in their water supplies," he told the *National Journal* magazine last fall. "And California, particularly in the north, is loaded with the mineral."

These scientific and public policy issues are not new. They involve risk assessment—which one federal official described as a "difficult balancing process" at a 1979 asbestos conference in New York.

In an address to the assembled scientists, Barbara Hackman Franklin of the Consumer Product Safety Commission noted that government regulators are "charged with making decisions that are in the public interest. This means weighing the need for adequate consumer safety against the possibility of greatly increased costs and burdens for industry and, ultimately, for the consumer."

She was speaking of possible bans on asbestos in textiles, paints and other consumer goods, but the message is the same once voiced by critics of EPA efforts in this area:

"The consequences of whatever we do must be anticipated, and alternative courses of action must be considered, so that we do not cause unnecessary economic upheaval."

An untimely arrival

The extent of America's asbestos alarm was symbolized recently by an ironic development in West Virginia.

While the Chessie Systems railroad and two asbestos firms were defending themselves against health-damage claims by rail workers exposed to asbestos, the civil case had to relocate abruptly from Huntington to another city's courthouse. Trial participants were making room for repair crews removing asbestos from the first courtroom, the *Wall Street Journal* reported.

'Potential for panic is there,' former EPA chief says

William Ruckelshaus, who headed the Environmental Protection Agency from 1970-73 and 1983-84, discussed the federal asbestos policy Feb. 15 in his new office at the Urban Institute in Washington. Excerpts of the 90-minute interview with staff writer Mike Wolk and special writer Michael J. Bennett follow:

Q. Why are you requiring schools to inspect for asbestos and not other kinds of buildings?

A. It'll move to other public buildings and commercial buildings as well. It was the schools where it started.

Q. What was the real reason behind the school rule?

A. It was simply a question of who was going to pay for it, who was going to pay to clean it up. ... The approach that was adopted by the administration before I got here was the burden was to be borne by the people living in the school districts. That's what the fight's all over. Who's going to pay for it?

Q. An EPA lawyer told me the theory behind all this is to whip the mothers up into a vigilante mob to storm the school committee to do something.

A. You could put it that way. Obviously, the purpose of the approach was to bring pressure on the school boards to correct whatever situation they found.

First, of all, do the inspection. Do you have a problem? If you don't, don't worry about it. If you've done the inspection and you find you have a problem that ought to be addressed, then you should notify the parents.

If you notify the parents, the parents will bring pressure upon you to correct it.

Q. The law requires schools to inspect for asbestos. Why not write something into it that would have required some action on their part?

A. Well, you could.

Q. Well, why wasn't that done?

A. The agency could do it. ... There's the authority in now for the agency to order action. The theory was if the federal government ordered the action, what would rapidly follow was a requirement that the federal government pay for whatever action was ordered. That's what scared them.

And if the federal government had to pay for it, you could just bet that the cost

'Potential for panic is there,' former EPA chief says *continued*

would be several orders of magnitude greater than if you had some balance with whatever risk-reduction you wanted to achieve. ...

If you removed the requirement of paying from the people who are going to benefit, which is exactly what we've done with these hazardous waste sites, the demand then is for zero risk. And the cost just goes straight up because it's a cost-free benefit to them. Why shouldn't they demand zero risk?

And so, the theory is you've got to keep that cost and the benefit in the same person. And then you can force them to come to grips with what sort of reductions make sense, what is reasonable to do under the circumstances. ...

Now that was the theory behind trying to force the local school boards to do the inspection, notify the parents and then the parents would come in and make that kind of balance.

Q. So, that was a deliberate decision.

A. Absolutely.

Q. So, what you're doing is essentially putting cost-benefit analysis on the agenda of every community in the country that supports a school system.

A. Sure, absolutely. We try to present to them what we think the risk is, what can be done to correct it—force them to go and find out if they have any risk and then force them to make a judgment as to what you should do about it.

Now the question of whether you panic them or whether the whole thing is going to cause more harm than good, frankly I think that's there any way you do it. I don't care whether the federal government does it or the local government does it. I think you've got that same problem.

But putting the onus on the person to make the judgment as to how much risk they want to reduce as long as the same guy is going to pay for it, it's in my view sensible. You take that away from them, which is exactly what we've done in the Love Canal kind of situation, boy, they just demand zero risk—they want that stuff out of there. "Don't tell me how much it costs. We don't care." And why should they?

Q. Dr. Bob Sawyer of the Mt. Sinai Hospital faculty (in New York) has said flatly that the asbestos policy is going to kill people.

A. Well, you know, whenever we have a problem like we have with this asbestos all over the country ... and we have no governmental apparatus to grapple with it, the potential for people panicking ... is there.

Any program that we would have

had—whether the government moved into it with more money, with a training program, with a contractor-certification program—still would have been faced with some people deciding, once they had discovered that they had asbestos in their buildings or their schools, to go forward without waiting for the government program to take hold. That potential is there.

Our people were terribly worried, at EPA, about whether we would have people coming in and trying to remove asbestos before they knew what they were doing, and potentially causing a worse problem than was there before. That potential is there—there's no question about it. ...

What we have consistently recommended is that they be very careful about how they proceed—that they do proceed, but that they be careful about how they do it. And we provided them guidance.

And the question of whether or not they could go ahead and create a worse situation, the potential is there. There is no doubt.

Q. Malcolm Ross of the U.S. Geological Survey is saying not just that there's a panic, but there's very good reason to argue whether or not the panic is justified.

A. I've listened to him have a lengthy discussion with our scientists. I sat in a room for a couple of hours and listened to them discuss this whole issue of blue and white asbestos, and which one was really carcinogenic and which one wasn't.

Our people believe, our scientists believe very strongly, that while one—I can't remember which one—is far more carcinogenic than the other, they're both carcinogenic. Those kinds of uncertainties—whether it's EDB, DDT or asbestos—are all part of this equation.

There is enormous scientific uncertainty in this field. ...

That isn't to say this guy (Ross) is wrong, and these other scientists are right. I mean there isn't any right or wrong here. It's just a question of where the consensus came out. The consensus came out not supporting his position as he was espousing it within the government. He may prove to be right. ...

It is one of the most frustrating parts of the job of being administrator of EPA. It is that when you're operating in these areas of enormous scientific uncertainty, even though you try to make it as clear as you can that this uncertainty exists, people continue to take a number out of a

risk assessment methodology and write it in stone, as if that number were exactly how many deaths were going to occur over a particular period of time. And we don't say that.

We indicate that this is the upper bound of the risk; the lower bound can be all the way down to zero. But based on the risk as we know it and what can be done about it, here is our judgment on how we ought to proceed.

Q. Is there a rational standard of asbestos exposure?

A. Our scientists have consistently told me we don't know how to set an ambient air quality standard for asbestos that makes any sense. We don't know how to do it.

So what we have suggested instead are these guidelines or approaches that can be taken where you find problems of a certain magnitude in a school, commercial building, wherever you find it. And the guidelines, in effect, take the place of the standard.

With asbestos there is always some residual risk ... where a fiber can provide a risk if somebody lives long enough.

Q. Do you think environmentalists exist not to be satisfied?

A. That's true, but those people don't necessarily dominate the bureaucracy in EPA. One of the problems in this whole field ... (is) the paranoid style of American politics which so dominates the thinking.

The Congress writes these laws as though the executive branch is not to be trusted in implementing them. ... They give us deadlines in which to act, which in most cases are unreasonable. They set standards for achievement, usually zero risk, which we can't achieve either.

And then if we don't do that, we get a citizen's-right-to-sue provision and turn the whole thing over to the courts. I think that's a terrible way to proceed. ...

What we've done is to divide this responsibility between the Congress and the executive branch and the courts, and in effect locate the power to act nowhere. And we just bounce back and forth between these various branches of government—without, in my view, providing the clear criteria for balancing risks and benefits and costs that the agency ought to be balancing. ... Instead, all of this responsibility is mixed between the Congress and the executive branch.

Getting the Congress to respond differently than we have traditionally in dealing with these problems is something that just defies me.

Science jury still out on identifying killer

By Michael J. Bennett
News Special Writer

WASHINGTON—Arguments about the cancer risks of asbestos may never be resolved because of a simple truth: Science cannot prove a negative.

That handicap—the inability to confirm that something does *not* cause cancer at all exposure levels—is a built-in limitation of medical research. It has been exploited, say critics of government health policies, by some private crusaders and public regulators.

Environmental activists "exist not to be satisfied," claims Aaron Wildavsky, president-elect of the American Political Science Association. No amount of evidence, he maintains, can convince environmentalists that asbestos is not responsible for thousands of deaths.

This philosophic and scientific debate is behind a simmering controversy over federal regulations that mandate inspections of all U.S. schools for "friable" (easily crumbled) asbestos, considered the mineral's most dangerous form.

Those rules, which the Environmental Protection Agency enforces with hefty fines, were adopted largely on the basis of a Paris study of indoor asbestos levels and U.S. data that blamed the mineral's fibers for a high rate of deaths and illnesses among ship-insulation crews and factory workers.

But the jury of scientific opinion still is discussing whether the right suspect has been identified and whether asbestos is a mass killer. Some respected researchers accuse the federal government of building its case on a shaky foundation.

Four independent reviewers picked apart the EPA's analysis of asbestos-risk data as "unconvincing," "greatly overestimated," "superficial," "scientifically unappealing," "judgmental" and "absurd." One doctor on an official review panel said the EPA's asbestos conclusions reflected "preconceived notions" and "an underlying tone of bias."

The government solicited comments from the four professionals as part of its normal rule-making procedure. Their harsh language

was aimed at a 1980 draft of a "scientific support document," issued by EPA to build the foundation for its school-inspection mandate.

The final document was released without major changes in January 1982. The inspection rule took effect four months later.

The 138-page document was produced mainly by two agency employees—Harry Tietlebaum, who has a doctorate in biochemistry, and Charles Poole, who holds a master's degree in public health.

They adapted indoor asbestos-exposure data developed by Dr. Patrick Sebastien for the French government in 1977 and cited earlier cancer-rate studies by Dr. Irving Selikoff of Mt. Sinai Hospital in New York.

EPA's preliminary study concluded that building "materials in common use can release asbestos fibers" and expose occupants to increased risk of "numerous serious and irreversible diseases." The school-inspection rule itself was issued four months later, using similar language and speaking of "a significant hazard to public health."

The two U.S. government scientists concluded that children and adults in schools across the country might be exposed to an average of 57 nanograms (a microscopic weight) of airborne asbestos each day if they spent time in various parts of the building. If they stayed in areas of heavy activity, the maximum daily exposure could rise to 270 nanograms, the EPA estimated.

As the buildings deteriorated from use and age, the maximum exposure could be anticipated to rise to 500 nanograms, the report said.

A nanogram is one-billionth of a gram—an amount comparable to one drop of water in a one-square-mile lake that's 78 feet deep, according to a government scientist. Asbestos fibers are extremely light, and the EPA calculated that 30 would weigh a nanogram.

The federal support study said its estimate "assumes that the exposed population is distributed over all U.S. schools with friable

asbestos-containing materials, and these areas have the same distribution as the measurements of Sebastien."

But those assumptions and the overall conclusions about asbestos dangers were criticized sharply by the outside scientists hired to provide "peer review" evaluations of EPA's study, a standard research procedure.

One of the four reviewers, Julian Peto of Oxford University in England, closely analyzed the use of France's figures and contacted the original researcher in Paris. His report back to the EPA was scathing.

"The assertion that Sebastien's data are applicable to U.S. schools is unconvincing," wrote Peto, who has a doctorate in mathematics and is an internationally known medical statistician. "Dr. Sebastien, whose measurements in Paris buildings are claimed to be representative of U.S. schools, does not regard this assumption as valid."

At another point, Peto added: "This 'maximum' estimate of average exposure (270 nanograms) ... is absurd."

Even EPA's calculation of how much asbestos fibers weigh was challenged. "I could not persuade him (Sebastien) to offer an estimate of the appropriate conversion factor from nanograms to fibers, assumed to be 30 in the present draft," related the Oxford professor.

Frank Carlborg, who has a doctorate in statistics and taught at two Illinois universities, concluded in his peer review that EPA's methods and conclusions "seem scientifically unappealing."

Another paid commentator, Dr. Philip Cole, told EPA: "The selected estimates of prevalent asbestos exposure probably greatly overestimated the true levels."

Dr. Cole, an epidemiologist who taught at Harvard and now is at the University of Alabama, alleged that the draft of the 1982 EPA document contained "an underlying tone of bias towards preconceived notions of the risks associated with airborne asbestos in schools."

Part 4—A shaky foundation

Science jury still out on identifying killer *continued*

"For example, the first paragraph of the introduction seems to conclude that the occupants of the schools are incurring a risk of developing asbestos-related disease. This is completely judgmental."

Dr. Cole also disputed the widely discussed studies by Dr. Selikoff of New York and two colleagues, who concluded in 1964 that lung cancer rates from 1942-62 among 1,522 asbestos insulation workers were "found to be at least seven times as common as expected and cancer of the gastrointestinal tract three times as common as expected."

Dr. Selikoff, 80, is a principal scientific proponent of the theory that asbestos will continue to cause serious illness unless removed from factories, schools and homes. His research team linked asbestos to cancer and lung disease after studying three groups:

- 632 unionized insulation workers in New York and New Jersey. Their survival rate was monitored from 1943-76, as were the causes of death.

- All 17,800 members of the same union in 120 U.S. and Canadian locals. The study recorded their death rate, causes and years since first asbestos exposure.

- 933 workers in a Paterson, N.J., factory that made insulation from reddish-brown asbestos. Their health was checked since 1943.

Based on data from those workers, Dr. Selikoff and two American Cancer Society epidemiologists reported: "Asbestos insulation workers in the United States and Canada suffer an extraordinary increased risk of death of cancer and asbestosis, associated with their employment."

But their research did not compare asbestos employees to control groups from the general work force. Moreover, the study noted that some subjects handled the mineral "in rather tight quarters," a situation likely to have increased their health risks.

And other studies, particularly ones done abroad, suggested that disease patterns are influenced strongly by personal smoking habits and by the kind of asbestos involved.

Accordingly, Dr. Cole warned EPA against relying heavily on Dr. Selikoff's broadly generalized studies linking asbestos to elevated cancer rates.

"An unwarranted degree of accuracy is attributed to these estimates," Dr. Cole wrote in reviewing the agency's support document. "It should be appreciated that these estimates are subject to considerable error. ..."

"Applying the risk estimates obtained from the insulation workers to school occupants (creates) the potential for gross confounding by cigaret smoking. Approximately 80 percent of the insulation workers were either current or ex-cigaret smokers."

Dr. Cole noted that the Selikoff team's own data "indicates that approximately 88 percent of the lung cancer deaths of asbestos workers could have been prevented if none of the workers had smoked."

The fourth reviewer of EPA's support document was Dr. Kenneth Rothman, who has a doctorate in epidemiology and biostatistics. "The main objection to the document as a whole," he wrote, "is the superficial way by which the actual risk estimates were derived."

Dr. Rothman echoed Dr. Cole's concern about the industrial data gathered by Dr. Selikoff:

"The final calculations are highly sensitive to the unstated assumption that the excess deaths as reported among the insulation workers who died are indicative of the experience that schoolchildren will face each year of life for a lifetime."

Despite their unanimous criticism, EPA apparently altered none of its key judgments. The final 1982 document says:

"Exposure to asbestos fibers can lead to numerous serious and irreversible diseases. ... In particular, friable asbestos-containing materials have been found to release fibers in concentrations sufficient to increase the risk of these diseases for the building occupants. ... The agency has determined that exposure to asbestos in school buildings poses a significant hazard to public health."

The government's continuing

These books explore the issues

- **Alternatives to Regulation**, by Michael S. Baram, 1981, \$23.95, Lexington Books. This 256-page volume is subtitled: "Managing Risks to Health, Safety and the Environment."

- **The Apocalypitics: Cancer and the Big Lie**, by Edith Efron, 1984, \$19.95, Simon & Schuster. This 589-page study explores "how environmental politics controls what we know about cancer."

- **The Causes of Cancer**, by Richard Doll and Richard Peto, 1981, \$16.95, Oxford University Press. (\$8.95 paperback). Thin textbook (144 pages) presents "quantitative estimates of avoidable risks of cancer in the U.S."

- **Illness As Metaphor**, by Susan Sontag, 1978, \$5.95, Farrar, Straus & Giroux (\$3.95 paperback, Random House). Short essay asserts that cancer has been used as a symbol of modern ills and exploited for political purposes "in the service of a world view that can turn paranoid."

- **Love Canal: Science, Politics and People**, by Adeline G. Levine, 1982, \$25 (\$14 paper), D.D. Heath & Co. The author scrutinizes the Love Canal pollution episode in upstate New York as a case of overblown alarmism.

- **Political Innovation in America**, by Nelson W. Polsby, 1984, \$18.50, Yale University Press. A 200-page examination of "the politics of policy initiation" by a well-known political scientist.

- **Preventing Cancer**, by Elizabeth Whelan, 1980, \$4.95 paperback, Atheneum. The author, who has a doctorate in public health from Harvard, strives to correct common misconceptions about cancer—as she did in a 1975 book, *Panic in the Pantry*.

- **Risk and Culture**, Aaron Wildavsky and Mary Douglas, 1983, \$6.95 paperback, U. Of Calif. Press. Wildavsky, the new president of the American Political Science Association, and his co-author look at how and why society focuses on certain "technological and environmental dangers."

- **Risk Watch: The Odds of Life**, by Drs. John Urquhart and Klaus Heilmann, 1984, \$16.95, Facts on File Publications. "Two physicians warn against 'technophobia' and describe 'myth-shattering research into the risks of living in a technological society.' The asbestos controversy shows the 'problem of balancing benefit and risk,'" says their 200-page book.

case against asbestos rests on two premises:

- The presence of any asbestos in a building is dangerous.

- Potential risks can be projected from medical studies of workers exposed to high asbestos concentrations 20 to 40 years ago. The first premise adopts a belief that "one fiber is enough" where asbestos is concerned. "All asbestos exposures, even those of very brief duration or very low intensity, increase the risk of cancer," states the 1982 rule-support document. "The increases in risk are directly proportional to cumulative exposure."

A year later, however, the agency acknowledged that the theory is impossible to prove. "EPA and the scientific community believe that any level of asbestos involves some risk, although the exact degree of risk cannot be reliably estimated," it says at the start of a booklet still being distributed.

That appears to some to be an example of framing a case so that the other side must try to prove a negative.

In the scientific and academic worlds, severe criticism by peer reviewers nearly always would be fatal to a study like the one used in 1982 as a foundation for EPA's asbestos-inspection rule. But when the study-writers work for a government agency, different standards apparently apply.

For more details

Questions about asbestos may be referred to the federal government via two toll-free numbers—(800) 424-9065 for the Environmental Protection Agency and (800) 638-8326 for the Consumer Product Safety Commission. Callers may get a list of labs for asbestos-testing, advice about respirators and guidelines for repair or removal.

A \$2.75 booklet, *Asbestos in the Home*, is available from the superintendent of documents, U.S. Government Printing Office, Washington, D.C. 20402.

A Kansas-based trade group—(913) 749-4032—will provide names of local asbestos-removal contractors.

Schools sue firms, charge negligence

By Eric Freedman
News Lansing Bureau

LANSING—Public and private schools across Michigan are heading for court to sue companies which made and distributed asbestos products.

Pending liability suits charge that ceiling tiles, fireproofing spray, insulating wrap and other items were "defectively designed and manufactured" and pose an "imminent danger to the health and welfare of schoolchildren, teachers and administrative and maintenance personnel."

More than a dozen districts have joined forces to press two cases in Wayne Circuit Court and Ingham Circuit Court.

Educators claim the asbestos firms "negligently, recklessly, wilfully and wantonly sold dangerous materials ... not safe nor reasonably suitable and fit for use in the public schools." The companies are accused of conspiring to conceal medical and scientific information on asbestos dangers.

Faced with hundreds of millions of dollars in potential liability, the defendants are fighting back vigorously. They argue that the claims are being filed too late, that schools may have misused or altered the products and that they never notified the manufacturers of any problems.

Almost three dozen corporations are defendants in Michigan, including such well-known firms as Owens-Corning Fiberglas, W.R. Grace & Co., Kentile Floors, GAF Corp., Armstrong Cork and Union Carbide.

The companies' separate lawyers are taking similar routes in seeking to have the suits dismissed. They contend their goods conformed with the "prevailing industry standards at the time" and that districts designated which products they wanted.

The Ingham case, filed last September, involves six public school districts. The Wayne County suit began a month later, initially on behalf of the Detroit, Flint and Lansing schools and Akiva Hebrew Day School in Lathrup Village. Since that time other schools have joined—including Ferndale, Saginaw, Bloomfield Hills, Traverse City and Oak Park.

The Wayne suit seeks \$500 million in compensatory damages to cover inspection, analysis and asbestos-removal costs. The Ingham case asks for unspecified

damages for the same expenses, as well as reimbursement for disruption of operation and time spent by school administrators.

Beyond the expense of remedial work, some educators voice concern about their long-range liability to people who may develop asbestos-related diseases in coming decades.

"Diseases caused by exposure to asbestos are presently developing in an unknown number of children, teachers and school district employees," asserts the Ingham suit. Participating districts want the defendants to set up a \$1-million fund to cover future claims against the schools.

No school employee in Michigan has yet filed an asbestos-related workers' compensation claim, according to the state Labor Department.

The complex court battles will take years to complete, and the controversy seems destined to reach the state Supreme Court.

"We're two years away from trial at the most," said Patrick J. Berardo, a Lansing attorney representing schools in both Michigan cases. He predicted the litigation would end around 1990.

Lawyers for schools suing in Wayne County will ask Judge James E. Mies on March 15 to grant their motion for class-action status. That would let any Michigan public or private district with asbestos problems join the suit by sharing legal costs and agreeing to be bound by the outcome. (Those already pressing the Ingham suit would be excluded.)

Lawyers for all parties are scheduled to meet today with Mies to discuss a schedule for pretrial proceedings.

"The judge indicated he wants cooperation and some kind of coordination between the national class-action and the state action," said Robert S. Krause, a Detroit attorney representing defendant W.R. Grace & Co. He was referring to a federal suit in Philadelphia involving claims by up to 14,000 districts.

Some districts plan to stay out of court. "It would cost us about as much in legal fees to join in the suit as it will to take care of the problem," said Supt. David J. Porrell of the Ovid-Elsie district in Clinton, Saginaw, Shiawassee and Gratiot counties.

Asbestos control at three schools will cost \$5,000 to \$10,000, and "we don't know what the legal bill would be," Porrell explained.

Politics can fuel cancer fire

A 1984 book, *The Apocalypstics: Cancer and the Big Lie* by Edith Efron, dissects the roles of politicians and environmentalists in spurring public alarm over asbestos and other substances linked to cancer.

The author, a former journalist, sharply attacks "white hat, black hat" distinctions between natural and synthetic causes of cancer.

Her basic assault is on the belief that industrial carelessness is a prime cause of cancer, which can be controlled by federal regulation. Most citizens and lawmakers don't realize nature also causes tumors, she asserts.

Ms. Efron provides a 40-page list of natural carcinogens, including sunlight, background radiation and many common edibles.

However, she points out, federal agencies generally issue warnings only about industrial carcinogens. Behind that "arbitrary edict," according to the 589-page book, is an "apocalyptic movement" of scientists and regulators pushing their own political and social prejudices against big business. They are "committed to a blind assault on industrial civilization," states the angry broadside.

Federal agencies and the news media, in Ms. Efron's view, often adopt "false or baseless ideas about environmental cancer which ... are now deeply entrenched beliefs in our culture." She claims they also spread an illusion that cancer is being prevented by restrictions on certain products and emissions—rather than by medicine and science.

"The American press ... has been nourished on bad science since the inception of the cancer-prevention program," charges the former newswoman, now a University of Rochester research associate. "It was trained, as one trains a circus dog, to view apocalypstics in and out of government as fountainheads of scientific truth."

The government, writes Ms. Efron, regulates thousands of chemicals, products and manufacturing

processes in an attempt "to protect—in advance—every one of its citizens from the real or potential effects of carcinogens."

Expanding on her theme in Kalamazoo last October, the author told science writers: "We are continually pounded by natural and industrial carcinogens. And yet, the human body can tolerate quite a bit, or else we would be all dead by age 20."

Ms. Efron wrote two other books after working for the New York Times Magazine, Time and other publications. For *The Apocalypstics*, she conducted seven years of research and interviewed more than 200 scientists—including many who asked that their names be withheld because they feared losing federal grants.

One respected scientist supporting her effort is Bruce Ames, biochemistry chairman at the University of California at Berkeley.

"Efron's conclusion is that the emperor has no clothes, that the apocalyptic environmental movement ... has little or no scientific foundation," he wrote in a review of *The Apocalypstics* last year.

"She argues that the scientific knowledge to determine which carcinogens are hazardous is rudimentary, that Mother Nature may be responsible for most of these and that man-made chemicals may contribute only minimally to cancer. I think she is absolutely right in this."

Ames reported in a 1983 issue of *Science* magazine that corn, nuts, bread, cheese, fruit, black pepper, celery, spinach, rhubarb, mushrooms and even mother's milk are teeming with carcinogens and mutagens (gene-changing agents) placed there by nature.

More recently, cancer researcher Stephen S. Sternberg of New York praised the book and endorsed the conclusion that "a perplexing double standard exists: Those carcinogens that came from the Garden of Eden are acceptable, while those of synthetic origin are dangerous and unacceptable at any intake level."

—Michael J. Bennett

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The Asbestos Hysteria

Special writer Michael J. Bennett's four-part series on the asbestos dilemma, which ended yesterday, revealed a host of disturbing facts about the way the Environmental Protection Agency (EPA) is handling the asbestos issue. The asbestos commonly used in school buildings, for example, may not be nearly as dangerous to health as has been alleged. Even if it were, the current hysterical rush to remove it could do more harm than good. We believe Mr. Bennett also raised serious questions of whether science has been twisted to serve political ends.

The EPA ruled three years ago that asbestos posed a serious health hazard, and that school buildings should be inspected for its presence. Asbestos was widely used for a time after World War II as insulation for pipes and to make decorative ceilings. If material that crumbles is found, school boards must notify parents and staff, and then decide on what, if anything, to do about it.

Asbestos in school buildings became a major national issue when the Service Employees International Union got its hands on studies by Dr. Irving J. Selikoff of New York City's Mt. Sinai Hospital. Dr. Selikoff was tracking a high incidence of lung cancer among World War II shipyard workers who installed asbestos as an insulation material. The union that represents school custodians demanded asbestos rules from the EPA, ostensibly to protect members' health. (A major removal program may also provide lucrative job opportunities for contractors and unions, it's worth noting.)

The EPA should have recognized early on that there was something imperfect about the Selikoff studies. Other scientists said that the shipyard workers utilized red and blue asbestos, not the white variety used by the building trades. It is true that red and blue asbestos fibers lodge in the lungs and may cause cancer 20 or 30 years later, but it is also true that the lungs seem to easily expel white asbestos fibers.

Further, more than 80 percent of the shipyard cancer victims were heavy smokers, and their lung X-rays show the same lesions

that would be on the lungs of heavy smokers. Dr. Selikoff himself has sharply reduced his own estimates of the potential hazards of white asbestos.

Mr. Bennett brought to light two other tell-tale pieces of evidence. First, the Quebec government studied the health of women in two asbestos-milling towns, where air and water are laden with white asbestos fibers, and found no link to cancer. Further, some EPA officials have said consistently that it is impossible to write an air quality rule on asbestos that makes any sense because the scientific knowledge about these fibers is so uncertain.

The EPA subjected its studies to the peer review of four scientists who all treated them harshly. They questioned the methodology, and said some of the scientific premises were wrong. In academe, harsh peer review is enough to kill such studies. Nevertheless, the EPA, eager to avoid the wrath of environmental extremists and opportunistic politicians, ordered a school inspection program.

By leaving it to individual school districts, EPA would get political credit for "doing something" but would avoid the sticky question of who should finance an expensive cleanup. Washington offers grants and loan guarantees totaling \$50 million for asbestos removal, but the total cost could be many times that amount. In Michigan alone, the cost would be \$73 million, it's estimated.

New evidence shows that the best thing to do about asbestos is leave it alone if it is not flaking off, or encase damaged areas with plastic paint or other covering. Complete removal coats shelves, furniture, floors, ceilings, hot air pipes, and everything else with the very fibers the program was intended to contain. Removal is therefore a self-defeating option at a cost no school board can afford.

Reporter Bennett made some telling additional points that go to the heart of the whole environmental debate in this country. Environmental extremism is difficult to defend against because scientists can't prove a negative—they can't prove that cancer or

The Asbestos Hysteria *continued*

other risks from any given substance *don't* exist. So irresponsible extremists can always play on the fears of risks that *might* exist.

The asbestos case also rests on the "one fiber can kill" argument. That is, no amount of asbestos can be allowed in the environment, because as little as one fiber supposedly can make the body go haywire. This can't be proved (or disproved), but for extremists seeking to impose their values on society it has the virtue of forestalling attempts to weigh risks versus benefits. As Mr. Bennett pointed out, environmental activism exists *not* to be satisfied, at least on environmental concerns. Many who profess environmental concerns actually are pursuing larger political goals—to remake society along the lines they prefer. Asbestos is a classic example of the strategy. In that it seeks to use parental hysteria over the safety of children, however, it is all the more reprehensible.

The series' most important contribution was to point out that many supposedly "objective" scientists have willingly lent their prestige to the asbestos scare without careful consideration of the evidence. We suspect it's not the first time that has happened. This sort of abuse, if unchecked, will wind up creating great public skepticism about science and cost society dearly. The EPA should review the evidence impartially, and state and local officials should put a hold on crash programs to remove asbestos until a clearer picture of the risks and benefits emerges.

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BUILDING MATERIALS

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