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I. ASBESTOS--ITS TYPES, ORIGIN, AND CHARACTERISTICS

Asbestos is a name given to a number of naturally-occurring fibrous silicates, the word asbestos being derived from the Greek word similarly spelled, meaning inextinguishable. There are two main varieties of asbestos; the serpentine form, which is characterized by long, soft, flexible, and finely-polished strands, which may be woven into a cloth, of which chrysotile is the primary representative, and the amphiboles, which occur as straight, needle-like fibers, of which crocidolite, amosite, and anthophyllite, tremolite, and actinolite are the primary examples.

Chrysotile makes up approximately 70% of the world production of asbestos and is mined primarily in Quebec, Canada, which produces 95% of the world production of chrysotile. Chrysotile is also produced in Vermont, the Union of South Africa, Russia, and to a lesser extent, in certain parts of Europe. Its unique characteristic is the fact that the long, white, silky fibers can be woven into cloth, whereas the other types of asbestos do not have this capability. All types of asbestos have the outstanding characteristics of being almost indestructible on exposure to body fluids, highly resistant to heat, and extremely resistant to acid erosion. Chrysotile is especially resistant to heat, being able to withstand 500 degrees centigrade, but is less resistant to acid erosion, and in bodily tissues, for example, the magnesium gradually tends to be leached out over many years.

Crocidolite is blue asbestos is produced primarily in the Cape of South Africa, especially since 1910, and makes up approximately 3.5% of the world production of asbestos. It is more acid resistant and hence is used often in marine insulation and aboard ship, is less resistant to heat, being able to withstand only 200 degrees Centigrade. Its needle-like morphology enable it to penetrate further and deeper than the other types of asbestos in body tissues.

Amosite is produced largely in Transvaal South Africa, primarily since 1907; and has somewhat coarser brownish fibers which have the outstanding characteristic of being more acid-resistant and hence is used primarily in marine insulation and shipbuilding. It was also widely used in pipe and boiler lagging in buildings.

Anthophyllite is mined predominatly in Finland, is the coarsest of the asbestos silicates, is less heat resistant, being able to withstand only 200 degrees Centigrade, and has an inherent tensile strength much less than crocidolite. It is not flexible, and is used primarily in the chemical industry. Its exposure is associated with greater incidence of pleural plaques and rarely, if ever, is mesothelioma seen in men exposed to this type of asbestos. Anthophyllite makes up less than 1% of world usage of asbestos. It is only rarely found in building insulation.

The other two little-used types of asbestos are tremolite and actinolite. Tremolite is a more brittle asbestos, has a fairly good heat resistance, and it, as well as actinolite make up each less than 1% of world asbestos production. Actinolite is rarely used, although it is very acid and heat resistant. Tremolite has been found in some talc mines causing asbestos contamination of certain talc products.

Table 1. Varieties of asbestos[1]

Variety	Colour	Major components (%)			Approximate formulae
		Si	Mg	Fe	
Chrysotile	white	40	38	2	$3MgO.2SiO_2.2H_2O$
Amphiboles					
Amosite	grey brown	60	2	40	$5.5FeO.1.5MgO.8SiO_2.H_2O$
Anthophyllite	white	58	29	6	$7MgO.8SiO_2.H_2O$
Crocidolite	blue	50	–	40	$Na_2O.Fe_2O_3.3FeO.8SiO_2.H_2O$
Tremolite	white	55	15	2	$2CaO.5MgO.8SiO_2.H_2O$
Actinolite	white				$2CaO.4MgO.FeO.8SiO_2.H_2O$

[1] From Hodgson, A. A. (1965) *Fibrous silicates* Lecture Series No 4. The Royal Institute of Chemistry and the Asbestos Information Committee, London

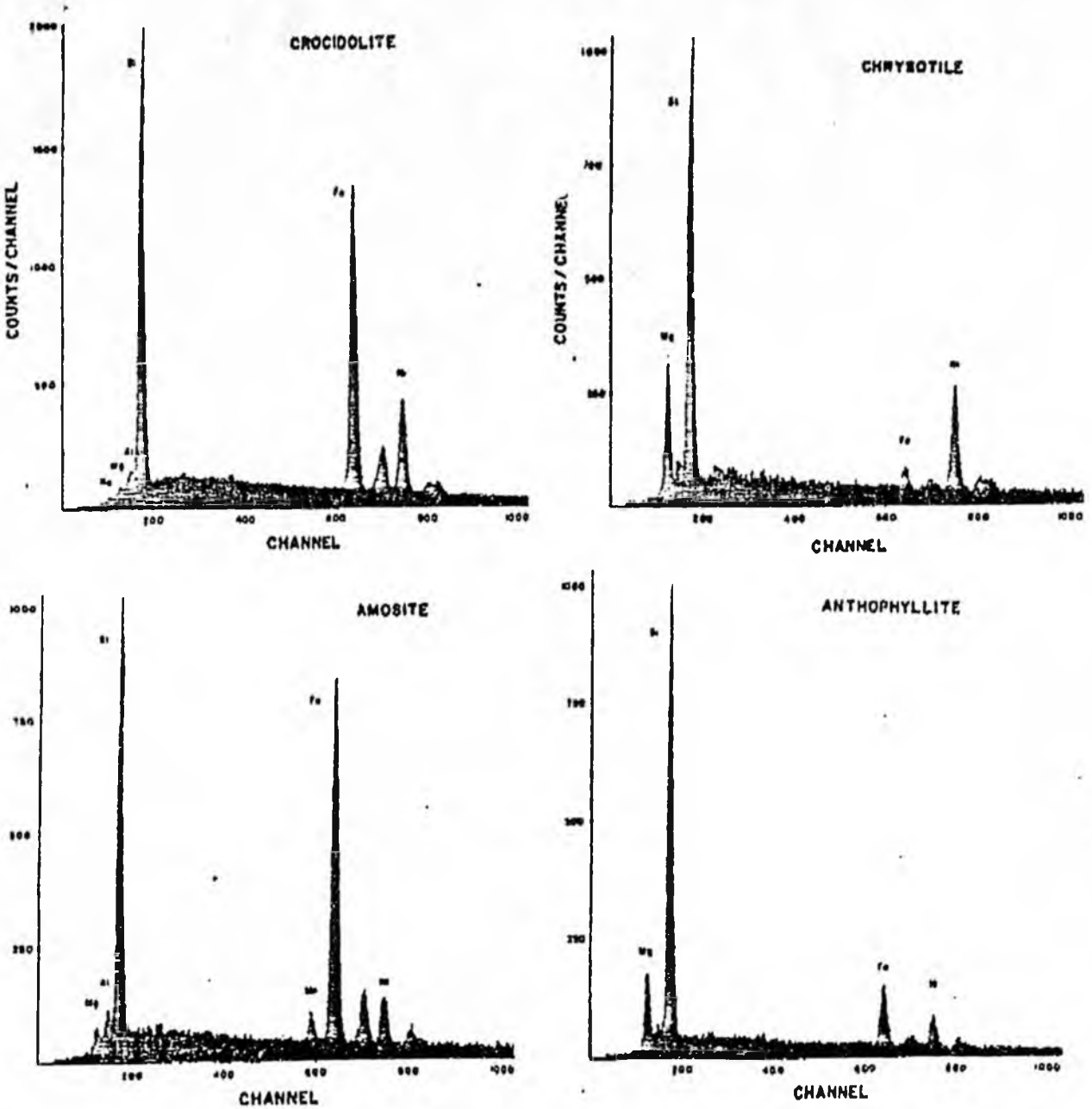

FIGURE 7. Examples of typical spectra from different types of asbestos: amosite; crocidolite; chrysotile; anthophyllite. (The nickel lines are present due to the specimen support.)

Reprinted from: Ivan B. Rubin and Carl J. Maggiore, "Elemental Analysis of Asbestos Fibers by Means of Electron Probe Techniques". Environmental Health Perspectives, Vol. 9, December 1974.

II. THE USES OF ASBESTOS

The United States used over 5 million tons of asbestos yearly in 1974, most of which came from the Quebec mines. Most was used for fire-proofing and insulating materials, especially in the construction industry where it was incorporated into cements, tiles, felts, and garments. In the textile industry, uses are fire-proof draperies and floor tiles, the former as used on theater curtains, asbestos sheets, and in the use of asbestos building boards. Plasterers applied an asbestos mix on steel foundations in order to prevent the steel from buckling in case of fire; this asbestos mix hardened within 8 hours without cracking or shrinking and without interrupting other construction activities. Boats and ships were similarly treated. Formerly, over 3 million pounds of fire-proofing mixture, which contains 30% chrysotile asbestos were used annually, and when sprayed, approximately 25% of the material goes directly into the air rather than being applied to building surfaces, and hence, workers may inhale as much as 50 million fibers in an eight-hour day. For this reason the use of a wet mixture of asbestos applied by trowelling was the preferred method of application. The practice of spraying asbestos-containing insulation in buildings was banned by the EPA in the 70s. In 1982, the United States used less than one-half million tons of asbestos, a significant decrease from the 1974 level referred to above.

Asbestos products resist heat and withstand abrasive forces. Chrysotile makes up 50% of the brake-lining material in brakes, and hence, workers exposed to this use of asbestos in repairing brake linings, are exposed to asbestos dust themselves. If not properly controlled, clouds of the asbestos dust appear in the air in this and other circumstances. Asbestos is also used in certain papers, paints, and plastics, where the positives charge of the chrysotile combines with the filler in pigment to form a more durable product. Similar friction products are used on

railroad cars, airplanes, and industrial machinery. The ship-building industry has been a major user of asbestos because the substance is good for insulating boilers, steam pipes, hot water pipes, nuclear reactors in ships, both in initial fitting and in repairs and refittings. Various sealants and patching tape compounds contain asbestos, and both floor and ceiling insulating tiles in the past often used asbestos.

It is apparent, therefore, that a large number of workers are exposed to asbestos; indeed, somewhere between 18 and 11 million U.S. workmen have been exposed to asbstos dusts during their lifetime in the past 40 years, including approximately 4½ million shipyard workers, 300,000 textile workers, 100,000 insulation workers, and perhaps another 3 to 5 million workers who handle asbestos at some course during its manufacture. It is apparent that individuals exposed include those who mine the asbestos, those who work in the mills in which asbestos is crushed, and those who manufacture the asbestos products-are all at risk in varying degrees. Those who load and truck the asbestos ore as in using it for rock filler on roads, as is the case in at least one area in Maryland are at risk, as well as the people who drive on this particular road. Carpenters are exposed when they cut asbestos board, or when they work in the presences of insulators or other workers working with the asbestos products themselves. Any worker aboard ship or working in shipyards is similarly exposed to asbestos dust, and indeed even families of workers who work in the vicinity of a shipyard or mine are at similar risk, including the families, for example, of shipyard workers, where asbestos dust may be brought home on the clothes of the workers, if proper precautions are not taken. The demolition of buildings containing old asbestos exposes such workers, as well as passers-by, to varying degrees of exposure to the asbestos dust. During the past 15 years it has become increasingly apparent that indirect family exposure, workers and family living near a mine, mill, or shipyard, represent a secondary risk not

previously appreciated. It has been demonstrated beyond a doubt that a period of time as short as one month's exposure to asbestos dust results in a significant risk to the individual from asbestos-associated diseases.

III. FATE AND BIOLOGIC EFFECTS OF INHALED ASBESTOS PARTICLES

It has been shown that the aerodynamic behavior of asbestos particles is a function primarily of the diameter of the fiber. It has been shown that fibers larger than 5 microns in diameter are precipitated out primarily in the nose and bronchi or upper parts of the bronchial tree, while fibers between 1 and 5 microns are capable of descending into the lower portions of the bronchial tree into the respiratory bronchioles. Only fibers less than 1 micron in diameter are capable of entering the air spaces or alveoli, where they may more readily penetrate the lung tissue. It is also apparent with asbestosis that gravity must play a part in the deposition of asbestos particles, as lung scarring is more prominent in the lower lung field suggesting that the weight of the particles tends to allow them to be deposited in the lower lung fields primarily. Once the asbestos fibers enter lung tissue approximately 25% of them become coated or walled off by macrophages, the scavengers of the lung, which try to wall off foreign particles to prevent tissue injury. At least 75% of the smaller fibers are not similarly walled off and remain uncoated and more difficult to see by usual light microscopy, and can only be seen with the higher magnification of electron microscopy.

The coated asbestos fibers, are called asbestos bodies, may be seen by regular light microscopy. These asbestos bodies are probably better called ferruginous bodies, as it has been demonstrated that other foreign particulates in the lung, primarily talc and probably zeolite, as found in certain towns in Turkish Anatolia, also have the capability of forming a similar-appearing coated fiber. The ferrugionous body is a long, beaded, rod-shaped particle of asbestos or talc having clubbed ends, staining darkly with iron stain and very easily picked up, when present, by the light microscope. This coating contains ferritin or iron granules

with some amorphous material of up to 5 microns in diameter, the latter apparently representing the breakdown process of macrophages and containing acid mucopolysaccharide with hemosiderin content. In most instances, however, the ferruginous body is diagnostic of asbestos exposure, while the presence of uncoated asbestos fibers can be confirmed by electron microscopy when necessary, by lung tissue obtained by either open lung biopsy, needle biopsy, or transbronchial biopsy. It is theorized that the physical characteristics of each asbestos fiber plays a distinct part in the type of disease produced in man.

IV. CELLULAR EFFECTS OF ASBESTOS

Once the asbestos fibril has penetrated lung tissue, local irritation there causes increased permeability of cellular membranes and as a result of this over a long period of time the particles are surrounded by macrophages, some chemical leaching or digestion of the magnesium, especially in chrysotile, occurs, macrophage death occurs, and fibrosis or scarring of the lung is stimulated in an effort to wall off these particles and prevent further lung damage. Chrysotile is probably the most potent in causing asbestosis than are the other types of asbestos. It is probable that the degree of the reaction is definitely related to the number of fibers inhaled into the lung as well as the individual's inherent biologic susceptibility or reactivity. It has been shown that both the total years of exposure, the dustiness of the job account for the cumulative dust exposure, and that these exposures are directly related to patient's symptoms, lung function tests, x-ray changes, the development of lung cancer, as well as mortality statistics. It is apparent, however, that mesothelioma needs much less exposure to the asbestos dust than the other diseases associated with asbestos.

In analyzing the presence of coated and uncoated fibers in the lung, it has been demonstrated that in carefully conducted studies almost 98% of all urban dwellers have asbestos fibrils or bodies in their lungs, this being in a higher percentage of men, in a greater number of older people, and in a greater percentage of individuals who work with shipping or docking areas or in industrial sites. The longer one lives in an urban area the higher the percentage and the greater the number of asbestos fibrils and ferruginous bodies have been found. Interestingly, ferruginous bodies are rarely found in the hilar lymph nodes or beyond the lung itself.

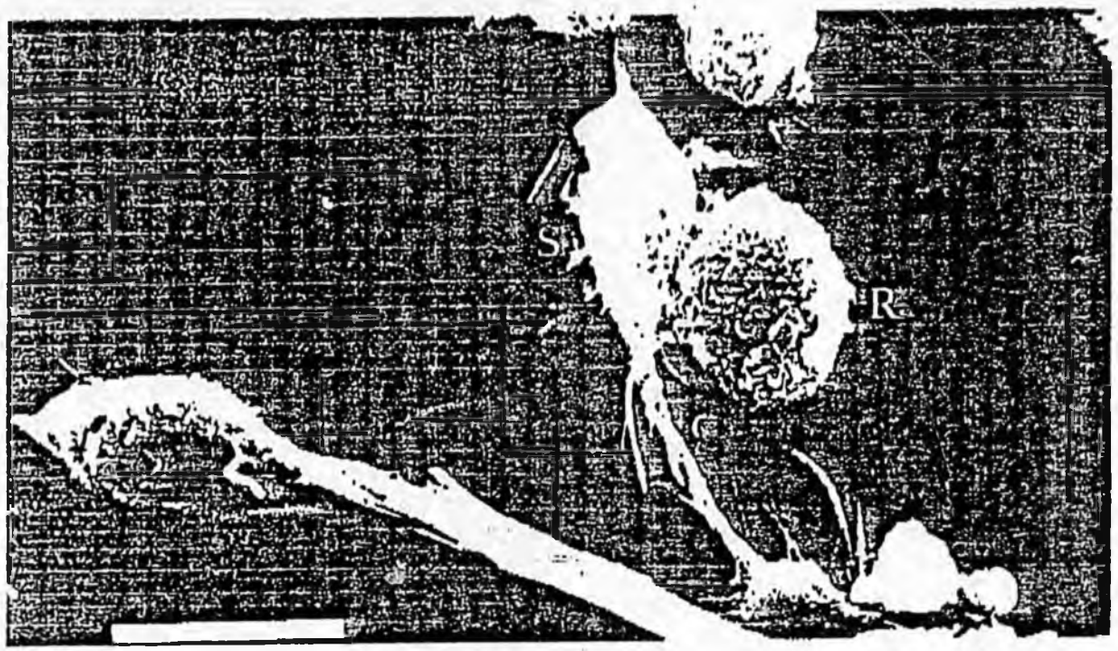

FIGURE 6. Scanning electron micrograph of untreated UICC chrysotile asbestos fibers associated with bovine alveolar macrophages: cells(S) were often observed spread along asbestos fibers with additional rounded macrophages (R) nearby (1940 x , bar = 10 μm).

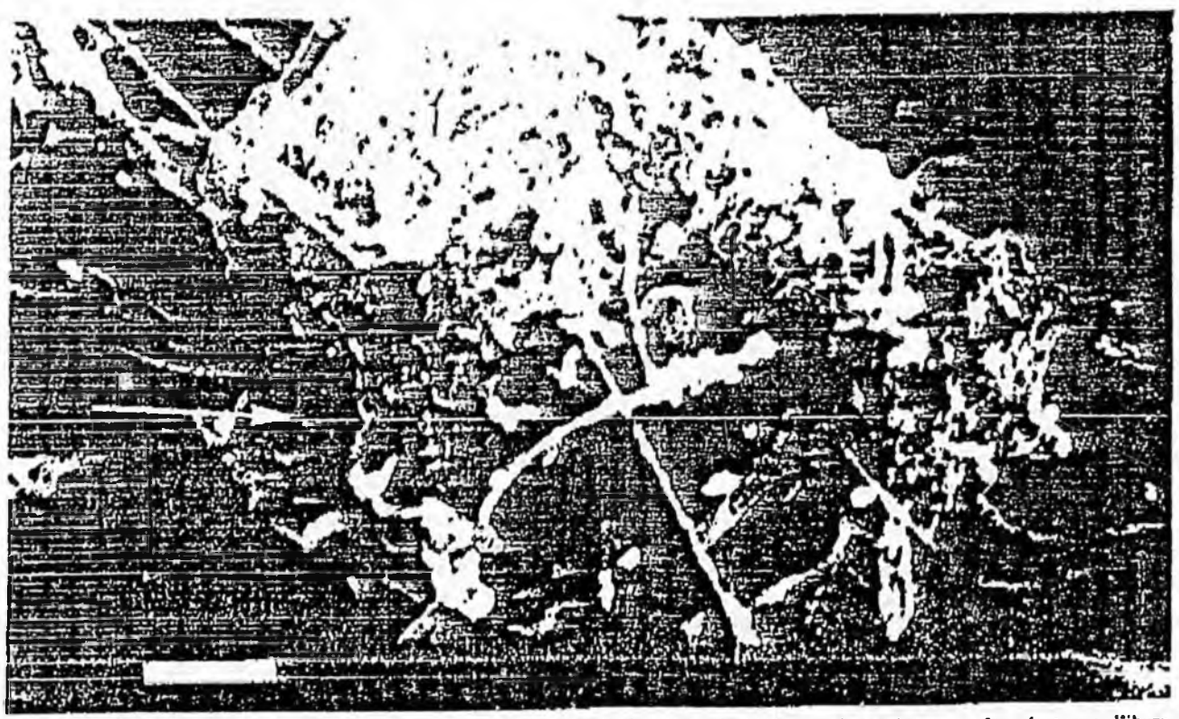

FIGURE 7. Some macrophages appeared mottled with numerous holes and a loss of typical membrane surface features. Fibers, previously X-ray irradiated, are visible (arrow) on such cells (9,700 x , bar = 1 μm).

Micrographs reprinted from: R. Valentine, et. al., "Thermal Modification of Chrysotile Asbestos: Evidence for Decreased Cytotoxicity". Environmental Health Perspectives. Vol. 51, September 1983.

V. ASBESTOS INDUCED OR ASSOCIATED DISEASES

There are six general areas of human disease caused by or at least strongly associated with exposure to asbestos dust. Most important, certainly historically, is that of diffuse interstitial pulmonary fibrosis or asbestosis. In previous years before adequate control of asbestos dust in the air was obtained, approximately 20%, or 1 out of 5 miners, would develop significant pulmonary fibrosis with the characteristic gradually progressive exertional dyspnea or shortness of breath, characteristic of this entity. With better precautions used in the handling of asbestos during more recent years, it is already noted that perhaps up to only 10% or 1 out of 10 miners have been afflicted with interstitial fibrosis of the lungs. Chest x-rays made over the years in a group of asbestos insulation workers have shown a gradually increasing number of abnormal chest x-rays with the passage of time, there being approximately 10% abnormal within 10 years, 44% abnormal within 20 years, 73% abnormal within 30 years, 87% abnormal within 40 years, and practically 94% of all chest x-rays show some abnormality secondary to asbestos dust inhalation in workers who have been exposed for over 40 years. The peak age for the development of disability in asbestos workers occurs after 20 years of exposures, in other words, after the worker has been exposed from 15-25 years. He may indeed have worked only 1-3 years in asbestos dust, and yet, 15-20 years later, full-blown asbestosis of the lung becomes apparent, indicating that the scarring in the lung progresses even after exposure to the asbestos dust per se has stopped. It is also interesting that the progression to moderate or severe pulmonary fibrosis is not related entirely to dosage, but perhaps to some genetic factors not fully understood at this time.

Examination of the lungs of the man who has died of asbestosis shows that there is diffuse fine fibrotic scarring scattered throughout primarily the lower halves of both lung fields, frequently but not usually associated with some degree of centrilobular or bullous emphysema, and with relative retraction or generalized decrease in size of the lung in the involved areas. X-ray changes of these same lungs demonstrate a ground-glass appearance of linear scarring or fibrosis with partial obliteration of the diaphragmatic and heart borders primarily in the lower lung fields. During the worker's lifetime, pulmonary function studies show what is called a restrictive defect, characterized by a decreased vital capacity, diffusing capacity, and arterial oxygen content secondary to the diffuse scarring throughout the lower lung fields. One of the earliest changes that can be discovered, in fact, is that of the decreased vital capacity which can be recognized by doing pulmonary function studies. There are occasions when more complicated pulmonary function tests such as the use of the diffusion capacity, measurement of alveolocapillary oxygen gradients and exercise blood gas tests will show an abnormality before pulmonary function studies, but this is the exception rather than the rule. The use of the chest x-ray coupled with pulmonary function studies, as is required now by OSHA, are reasonable and practical means of measuring and picking up these changes as early as they can in general be.

On occasion, it is desirable or even necessary to prove that a patient or worker has pulmonary asbestosis, and this nowadays can be done without an open lung biopsy which requires a major chest operation. The abbreviated procedure being that of transbronchial bronchoscopy with biopsy of a tiny bit of lung tissue. This tissue, if carefully examined by electron microscopy for uncoated fibers, and for coated fibers or ferruginous bodies by light microscopy can frequently give unequivocal evidence of underlying asbestosis. It must be mentioned, however,

that efficient evaluation of electron microscopy requires the full day of a trained microscopist or pathologist in order to adequately examine a single specimen. Exposure to crocidolite probably accounts for more fibrosis than chrysotile exposure. Although we do not know what the actal fiber level is insofar as the threshold for human disease, in this instance (pulmonary fibrosis) workers are currently living longer, are having less disability due to pulmonary fibrosis, and their disease entities are picked up sooner.

The second most common disease entity related to asbestos dust exposure is that of the pleural plaque. This is a hyalinized and often calcified discrete parietal pleural plaque, not located on the wall of the lung, but on the pleura lining the chest wall and never on the lung itself. These plques are extrapleural and occur most commonly in workers exposed to anthophyllite fibers. The hyaline or calcified plaque is picked up often on routine chest x-ray as an ill-defined modular density along the margin of the lung which is almost pathognomonic of asbestos exposure. Interestingly, only 15% of the plaques are found on chest x-rays that are actually identified at autopsy, illustrating that multiple chest x-rays would need to be done in order to pick up all or most of these densities.

Clinically these plaques are rarely, if ever, symptomatic, and if a plaque is found on the chest x-ray, one can anticipate that individuals with the plaque will have a higher than expected incidence of bronchogenic carcinoma, otherwise they have little significance except for that of a signpost which calls out "asbestos". Another rare and more recently recognized disease apparently induced by asbestos fibers is that of the exudative reaction or pleural effusion of which there have been approximately 70 cases described in the medical literature. These cases are diagnosed partly by exclusion, that is, by ruling out all other causes for pleurisy with effusion, and in some instances, by parietal pleural biopsy in which asbestos

bodies and fibers are found in areas of pleural thickening and associated local pneumonitis or pneumonia. The development of this benign pleural effusion in the worker may occur in as little as 1 or as long as 5 years after exposure to asbestos. There is no specific treatment for this entity.

The malignant mesothelioma of the pleura or peritoneum, which was first described in a case reported in 1946, has become increasingly more common during the past 30 years, primarily in workers exposed to asbestos to the exclusion of other people generally. It is now well accepted that malignant mesothelioma can be induced by asbestos dust inhalation for as short a period of time as 1 or 2 months primarily to crocidolite fibers, less frequently with amosite fibers and least with chrysotile fibers, while anthophyllite fibers have not been known to produce this entity. It is interesting to speculate that the size of the fibers is the most important aspect in explaining this variation, as the crocidolite fibers are the tiniest and most needle-like of all, and therefore can penetrate deep into the tissues lining the lung and the peritoneum in order to produce this cancerogenic effect. It is also interesting that more cases are produced in those workers who are the furthest along the line in the processing of the asbestos ore, the fewest cases of mesothelioma occurring in the workers with the heaviest of the ore exposure. This implies that processing breaks down the asbestos into finer particles which are better able to penetrate deep into the tissues of the lungs. Mesothelioma is more often found, therefore, in industries which use crocidolite and amosite asbestos, as in the shipyard workers, and in workers exposed to manufactured products using these types of asbestos fibers. During the past 10 years, it has become apparent that the wives, sons and daughters of asbestos workers and individuals who live in the vicinity of shipyards where asbestos dust is used, are often the ones who, though they have no direct exposure to asbestos in their work, inhale the particles brought home by their husbands in their work

clothes or breathe in the particles from the air blown from the shipyards where asbestos is being used. Among the seventeen thousand insulation workers in America at this time, approximately one worker every two weeks dies of mesothelioma. This is in contrast to the general association among people at large of only one case of mesothelioma per million persons in the United States.

The mesothelioma usually develops in the pleural or peritoneal surfaces and spreads diffusely around and into the lung or abdominal cavity with death generally occurring within 1 year after the tumor is recognized. Pulmonary fibrosis or asbestosis is usually associated with mesothelioma in varying degrees, and ferruginous bodies are generally found in the lung, although they are not generally found in the mesothelioma itself. Uncoated fibers of asbestos can usually be found by electron microscopy.

The clinical features of mesothelioma are generally insidious with weight loss, lassitude, chest or shoulder pain, abdominal swelling or obstruction of the intestine, with generally rapid progression of the disease with average survival being less than one year. Adequate treatment is not yet available but appropriate chemotherapy is currently being evaluated. The amount of asbestos fibers needed to produce mesothelioma is apparently much less than that necessary to produce asbestosis or pulmonary fibrosis.

Carcinoma of the lung has been associated with asbestos exposure since the early 1930's, definitely confirmed by 1947. During the past ten years it is anticipated that from 15 to 20% of men having significant asbestos exposure die of carcinoma of the lung. There is a greater incidence of adenocarcinoma of the lung in asbestos workers, probably related to the fact that asbestos dust pervades every part of the lung especially in the periphery where the cells which develop into the

adenocarcinoma are more plentiful. The worker's likelihood of developing carcinoma of the lung is slightly greater in the worker who has pleural plaques noted on chest x-ray. Cancer of the lung can be more effectively treated than mesothelioma of the pleura or peritoneum, and for this reason, early diagnosis by chest x-ray or in cetain instances by Pap smears of sputum may be helpful in effecting palliative relief of symptoms and indeed cures in some patients, if they are discovered early enough in their clinical course. For this reason, annual chest x-rays in every asbestos-exposed individual should be carried out for their lifetime. The longer the duration of the asbestos-exposed worker's employment the greater the risk of developing lung cancer. Even 1 month of working with asbestos was enough to increase the instance of bronchogenic carcinoma, in that the instance of cancer was twice as much in such a worker, as in one who has no asbestos exposure. After two years of exposure the instance of lung cancer increases to six times that of the normal person, and after ten years rises markedly. The smaller the dose of asbestos, it has been found, the longer the induction period before the cancer deevelops. In general, when cancer of the lung is first diagosed, 75% of them are inoperable at that time. If the lung cancer can be found as a small peripheral nodule resected by lobectomy, 40 to 50% will survive for as long as 5 years.

The final area of asbestos-associated disease, mainly where the relationship is less positive as to the etiologic agent being asbestos, includes other tumors or cancers which are found to be of greater incidence in workers or people exposed to asbestos. At this time, cancer of the esophagus, larynx, stomach, colon, and more recently the pancrease, are definitely in increased numbers as compared with the general population, and hence pose added risk to the asbestos worker. These entities are, in general, two to five times more common in asbestos workers than in the general populace.

VI. RELATIONSHIP OF SMOKING TO ASBESTOS INDUCED DISEASES

In August 1978, Johns-Manville, the biggest producer of asbestos products in the United States, not only had banned smoking entirely in the company work area, but has since established a policy that no person who smokes will be hired by the company for any operation where there is a possibility of exposure to asbestos, and that applies to the entire plant, including the officers. Even visitors to the plant are prohibited from smoking inside the plant itself. This action is to be strongly commended, and yet it was not enforced without considerable controversy. What in fact are the effects of smoking or not smoking on the health of the asbestos worker?

Insofar as pulmonary fibrosis or asbestosis of the lung, there is little or no effect on the scarring in the lung insofar as whether the worker smokes or does not smoke. There is no question, however, that smoking aggravates and causes to develop a significantly greater obstructive defect in the lung, which further increases the worker's shortness of breath, and especially his amount of cough and expectoration, as compared with the non-smoking worker who develops asbestosis. There is also no apparent statistical role in the development of mesothelioma of the pleura or of the peritoneum in asbestos workers, and the same probably applies to the development of the asymptomatic pleural plaque and the benign pleural effusion. There is, however, a greater incidence of cancer of the stomach and larynx associated with smoking, but it may not have a significant effect insofar as the asbestos worker is concerned.

Wherein, therefore, is the data for forbidding smoking in an asbestos plant? Statistically it has been shown that the non-smoking asbestos worker will develop

cancer of the lung approximately five times more commonly than the non-smoking, non-asbestos worker. This proportion, in itself is relatively mild, but significant. In the smoking asbestos worker, however, there is a multiplicative or synergistic effect in that there is a fifty-four times greater rate of cancer of the lung than in the non-smoking, non-asbestos-exposed individual, and these facts are borne out that approximately 15-20% of all asbestos-exposed workers in previous years will develop carcinoma of the lung, almost one of every five workers. This is in sharp contrast to the one or two out of each hundred to one hundred fifty workers who do not smoke. In other words, the worker's chance of developing cancer of the lung is 20 times greater if he smokes while working in an asbestos environment than if he does not smoke. Unfortunately, banning smoking on company premises does not stop the person from smoking, but an adequate educational program by management, backed up by labor, is the best approach towards reducing the high incidence of lung cancer in these individuals.

VII. DURATION OF EXPOSURE AS RELATED TO DISEASE DEVELOPMENT

TABLE I

ROENTGENOLOGIC CHANGES IN ASBESTOS INSULATION WORKERS

Years of Exposure (yr).	No.	Percent Normal	Percent Abnormal	Asbestosis 1	2	3
40+	121	5.8	94.2	35	51	28
30-39	194	12.9	87.1	102	49	18
20-29	77	27.2	72.8	35	17	4
10-19	379	55.9	44.1	158	9	0
0-9	346	89.6	10.4	36	0	0
	1,117	51.5	48.5	366	126	50

Selikoff et. al.

In general, the initial exposure of the asbestos worker to asbestos dust may be measured in decades for convenience in categorization. For example, in the fibrosis induced by asbestos dust there are few changes noted during the first ten years, but during the second ten years, mild changes occur. These changes moderate from ten to twenty-nine years after the initial exposure, and result in a greater degree of pulmonary scarring during the fourth decade. As shown in Table I, pulmonary fibrosis, as evidenced by x-ray changes, becomes increasingly more prominent the longer the time from initial onset of exposure. Practically every asbestos worker who has worked for over forty years or has had forty years from the initial exposure has some evidence by chest x-ray of lung or pleural abnormality not found in the normal individual. The same applies to the development of disability in these workers, in that the average person who develops asbestosis or pulmonary fibrosis becomes disabled somewhere between the fifteenth and the twenty-fifth year peaking at the twentieth year following initial exposure to the dust.

The same findings are similarly true with mesothelioma and lung cancer, as is shown by the accompanying Figure 2 (below).

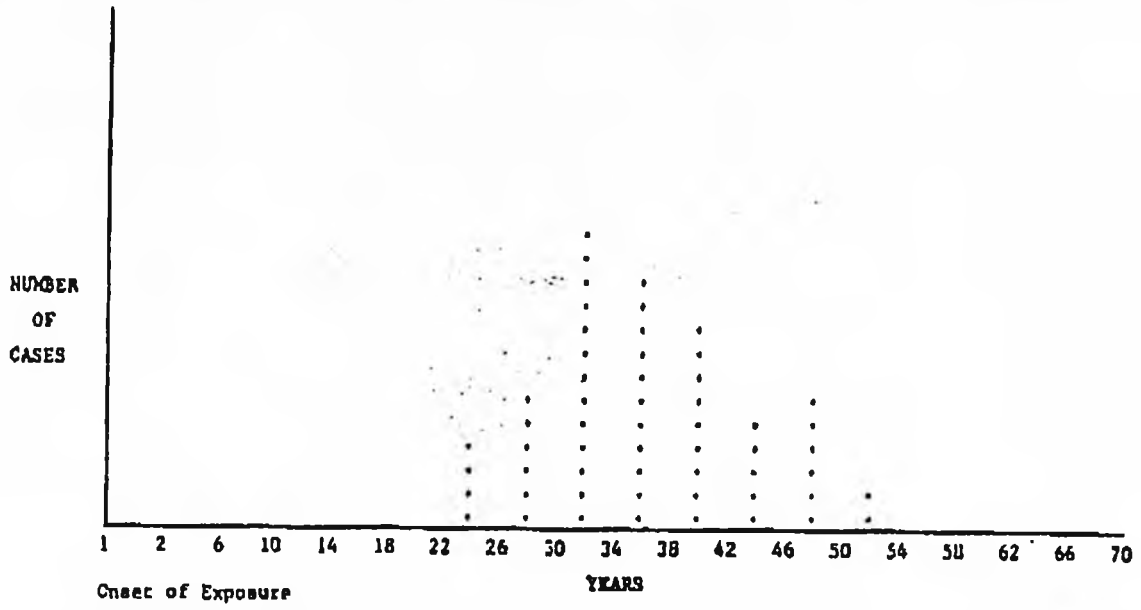

Figure II. Fifty-six cases of neoplasm of the lung or pleura (each case represented by a dot). The elapsed time from onset of exposure is shown on the base line.

The individual exposed to asbestos dust will develop cancer in approximately eight or ten out of every hundred workers rarely before twenty years from the date of initial exposure, and usually over thirty years after the initial exposure, which indeed may not be more than one or two months total exposure time for this entity to develop. The average age of development is approximately 31.8 years for mesothelioma, while for lung cancer, which rarely occurs before thirteen years after initial exposure, the average age of development from date of onset of initial exposure to asbestos dust is approximately 30.7 years. As mesothelioma and lung cancer are relatively late-developing asbestos-induced diseases, it is quite likely that an even greater percentages or workers will develop these cancers as they become older.

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The primary importance of recognizing the time lag between initial exposure and the development of the disease is many current laws concerning Workmans' Compensation, Social Security benefits, and Workers' Pension Plans, contain a statute of limitations which states that the person is not liable for a company-induced disease, if the disease is discovered or diagnosed more than two, five, or perhaps seven years from the date the worker left the company's employment. State, federal and company rules or laws need to be modified in order to accept the medical facts related above. Each of these three major disability diseases; pulmonary fibrosis, mesothelioma, and lung cancer, all may develop twenty to thirty-five years or longer after the exposure to the asbestos dust has terminated.

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TARGET VOL. 13/APRIL-MAY '84/NO. 5

Authority: "To secure adequate laws for the care and protection of children and youth." National PTA Bylaws, Article II:c

Asbestos: Still a danger in schools

by Elaine S. Knapp

For Phyllis Adams and Ann Gibbs the last year has been a frustrating one—trying to get their local school board to remove asbestos from the school their children attend.

"It's frustrating, our children are being poisoned and there's not a..ything ve can do," Mrs. Gibbs declared. What the Lexington, Kentucky, housewife has done is work through the PTA, form a group of concerned parents, go door-to-door telling parents of the danger, gather hundreds of signatures on petitions, read volumes on asbestos, call and write federal agencies and confront the school administrator and board.

After a year of parental pressure being applied and at least a decade after school authorities knew of the asbestos hazard, Mrs. Gibbs said, "We don't think anything will be done until the government makes them (the school board)." School authorities maintain the asbestos will be cleaned up if money is available for renovation next year.

Ironically, the major government effort to control asbestos lies in Mrs. Gibbs and others like her. Telling parents and teachers that their school has asbestos and relying on them to ressure local action is the heart of the U.S. Environmental rotection Agency's (EPA) strategy to rectify the nationwide problem of asbestos in schools.

No effective federal program exists to protect schoolchildren from asbestos, state efforts vary widely and local schools often ignore the danger due to the cost of cleanup.

Asbestos dangers

Any exposure to asbestos involves some health risk, according to the Congress, the EPA and the scientific community. Children are especially vulnerable, according to the EPA guidance document on asbestos sent to schools. Their remaining life expectancy provides the 20 to 40 years it takes for disabling and fatal asbestos-related diseases to develop. Large numbers of children may be exposed in a contaminated school and exposure is continuous during the school year. Children are active and breathe more frequently than adults, possibly inhaling more asbestos fibers. Smoking can increase the cancer risk due to asbestos exposure.

Most hazardous is friable asbestos that can be crumbled. It sends deadly fibers into the air which may lodge in the lungs indefinitely, according to EPA's guidance document. Asbestos workers often develop a chronic and debilitating lung disease called asbestosis. Lower and shorter exposure can result in death many years later.

Asbestos diseases include: 1) asbestosis, a disease in which asbestos clogs the lungs, 2) pleural calcification, a deposit of alcium salts in the lung lining, 3) malignant tumors of the lung, 4) mesothelioma, a rapid and fatal cancer of the lung and 5) intestinal and uterine cancers.

Hot potato

Asbestos in the schools has been a "hot potato" tossed among various levels of government and federal agencies. One reason is that removal of asbestos can be quite expensive, especially if large areas of buildings are affected. Funding is basically up to local schools as is asbestos detection and control. No federal funds are available and state aid varies.

The U.S. EPA requires schools to inspect for asbestos and notify parents and [school] employees of asbestos hazards. The EPA doesn't require removal or abatement. "The theory is that PTAs and employees would pressure local districts to take remedial action," said Terrell Hunt, assistant to EPA Deputy Administrator Alvin Alm.

However, a recent internal EPA report found that many schools did not meet EPA's June 1983 deadline for asbestos detection, record keeping and notification.

No federal funds

Federal funds of $172 million authorized by the Asbestos School Hazard Detection and Control Act of 1980 were never appropriated. Grants were promised for schools to identify asbestos hazards and loans for mitigation of asbestos hazards. But funds were never requested by the Department of Education, reported John Bennett, aide to U.S. Representative George Miller, D-Calif., who sponsored the act. In 1983, a $50 million recommendation by the House was omitted in a House-Senate conference.

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Under pressure from Congress, the department reactivated its task force in October 1983 and is gathering information on asbestos to send to chief state school officials, Kruger said. The department also reactivated its requirement that states file plans for asbestos in the schools' programs and report on their progress every six months. All but two states have filed.

EPA's program

The federal effort has largely been a requirement by the EPA that schools inspect for asbestos hazards, sample and analyze material to determine if asbestos is present, keep records of the inspection, post notices, and notify parents and employees if asbestos is found. Although schools were to comply with the rule by June 1983, the EPA doesn't know how many did. It does not require schools to report to it and must send federal inspectors to schools to check their records. EPA staff said when the EPA regulation was written that the administration op-

This is a reprint of a portion of an article appearing in State Government News, *March 1984. It is authored by and printed with permission of Elaine S. Knapp, its editor.*

posed imposing a data reporting requirement. The EPA recently doubled its field force of inspectors by adding 16 people through a contract with the American Association of Retired Persons, Hunt said. These include retired architects and engineers. Primarily, EPA staff look at school records and physically inspect some schools. However, there are not enough inspectors to cover but a small portion of the nation's schools.

In providing technical advice, EPA can help schools determine the best strategy for evaluating the risk and responding to asbestos, Hunt said. He said that anything short of removal is considered a short-term solution.

Connie Derocco, environmental protection specialist with EPA, said that out of 1,527 schools inspected in 468 districts, some 60 percent did not comply with EPA rules. Most failed to notify and warn PTAs and employees of asbestos materials [manufacturers]. Schools know they will be pressured once the word is out, and they are hesitant to deal with the asbestos problem, Derocco explained. After receiving a notice of noncompliance, schools have 30 days to act before the EPA files a civil complaint.

Labor union concern

An estimated 3.24 million schoolchildren and 648,000 school employees are potentially exposed to asbestos, according to Kitty Conlan, research analyst with the Service Employees International Union (SEIU).

The SEIU is lobbying Congress to fund the 1980 act for grants and loans to schools. Schools don't have the money to clean up on their own, Conlan said. "It's a nationwide problem which affects the health of millions of people."

SEIU is suing the EPA to require schools to clean up flaking asbestos. "Schools say if EPA thinks asbestos is so bad, then EPA would require them to get rid of it," Conlan commented.

EPA does give schools good technical advice on how to get rid of asbestos, Conlan noted. But some schools accept the lowest bid rather than follow EPA guidelines. If the cleanup is not done right, the asbestos danger can be worsened.

Conlan said SEIU doesn't think suing asbestos' manufacturers is worthwhile, citing lack of action on suits filed by asbestos workers. "We're hesitant to have our members litigate themselves to death," she said.

Conlan added that school districts can also be held responsible for asbestos. "They can face a big liability," she commented.

Lawsuits filed

A number of lawsuits on behalf of school boards and building owners in Kentucky, Mississippi, New Hampshire, Florida, South Carolina, Alabama and Tennessee have been filed by a South Carolina law firm.

Daniel Speights (a school board attorney) noted that legal theories available to school boards against manufacturers of asbestos include: contract (the products were not fit for the use intended), negligence (the manufacturers were negligent in informing users of the risks associated with the products), strict liability (manufacturers should be strictly liable for failing to warn of asbestos hazards), and restitution (manufacturers have a duty to abate the hazard).

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A September 1981 report by the U.S. attorney general to Congress recommended that school authorities seek to recover asbestos abatement expenses from asbestos manufacturers. The report said federal litigation would be ineffective unless Congress imposed liability on asbestos manufacturers.

Asbestos manufacturers are being sued by at least 20,000 people on the grounds that the companies knew of asbestos hazards and covered them up, according to a September article in the *National Journal*.

A 1983 report from the Rand Institute says that asbestos litigation and compensation has cost an estimated $1 billion over the past decade. Only 37 cents of every dollar went for actual compensation to plaintiffs. Estimates of the number of deaths due to asbestos over the next 30 years range from 74,000 to 265,000.

What you should do about asbestos in your school

Given current asbestos rules and regulations, PTAs should check on the following:

1. Was each school in your district inspected for friable asbestos? If not, request this action immediately.
2. Was an analysis of asbestos samples, using polarized light microscopy, conducted?
3. Are records of the asbestos inspection on file in the school district?
4. Does the PTA have a copy of the report in its records?

In schools where asbestos was found, has the school complied with the following:

1. Did the school district notify the children's parents, either directly or through the PTA?
2. Were school employees notified of the location of the materials?
3. Did the school post a standard form in administrative and custodial areas?
4. Are measures being taken, if not already completed, to remove asbestos in the school?
5. Did the school district provide maintenance and custodial employees with instructions for reducing exposure to asbestos?

If asbestos was found in your school, but corrective measures are not being taken, the following steps should be pursued:

1. The PTA should work with the school to affect removal or abatement. Invite parents, teachers, employees of the building, the school principal, and the superintendent to a PTA meeting. Request information about the degree of the asbestos problem and what plans are being developed for cleanup.

2. If plans are not under way or seem unsatisfactory, contact the school board to inform it of your concern. If informal discussions do not produce results, get the issue on the agenda of the next school board meeting. Be prepared to provide the facts, including the inspection reports and the cost of abatement, to school board members.

3. Meanwhile, inform your state legislature and the U.S. Congress about the problems and the degree of difficulty there is in terms of cleanup.

4. If the school board is unable or unwilling to ameliorate the problem, one resort would be a lawsuit. Be sure that you have tried every alternative before taking this step.

Asbestos in Schools Still a Problem

The federal government and the states have taken some actions over the past year to protect school children and others from exposure to asbestos.

Due to its fire retardant and insulating qualities, asbestos is used in hundreds of products. "Friable" asbestos, the kind that easily crumbles into microscopic fibers that can be inhaled, is very hazardous according to the Environmental Protection Agency (EPA). Studies have linked exposure to asbestos to lung diseases and cancer.

Federal Activities

In 1982, the EPA issued rules requiring public and private elementary and secondary schools to identify friable asbestos-containing building materials, maintain records, and notify employees and parent-teacher organizations of the results. The deadline for inspections was June 28, 1983.

According to a recent EPA survey, 93 percent of America's school buildings have been inspected, and 35 percent of them have friable materials that contain asbestos. The survey also revealed that 67 percent of the schools have taken action to control the substance in their buildings. However, only 34 percent of the schools have complied with major requirements of the 1982 rule.

The lack of uniform federal standards, particularly for definition of hazard and worker protection, is viewed by many as a flaw in the EPA's asbestos-in-schools program.

At least one state has moved to set its own standard. The New Jersey Asbestos Policy Committee in October recommended to Gov. Thomas Kean an "action guideline" at 0.003 fibers per cubic centimeter of air, and a decision-making protocol for building owners. Rules are expected to be proposed early this year. The federal Center for Disease Control has proposed an "action level" of 0.01 fibers per cubic centimeter, or three times higher than the proposed New Jersey standard.

In 1984, Congress passed the Asbestos School Hazard Abatement Act to provide loan and grant money to school districts seeking to abate friable asbestos-containing materials in schools. The act appropriated $50 million for fiscal 1984, and authorized $50 million for fiscal 1985 and $100 million per year for five years thereafter. Conservative estimates of the price tag for school abatement actions are in the range of $1.6 billion to $2 billion. "Typical" abatement projects cost from $100,000 to $500,000 per school.

This legislation created a number of deadlines for state authorities. By Nov. 20, 1984, state governors were to submit a plan to EPA on procedures for maintaining records on the presence, detection and abatement of asbestos. States must also meet deadlines to submit priority lists of schools that are candidates for abatement, and financial assistance applications.

What States Have Done

A number of states are undertaking their own legislative and regulatory initiatives. The most common state approach has been to appoint a state asbestos coordinator. State programs have focused on school buildings and other state-owned facilities.

Most states leave asbestos removal or cleanup to local school districts. A handful of states mandate cleanup or provide funds for removal. Even when state funding is provided, the local districts often must set their own standards for asbestos management.

In 1984, seven state legislatures adopted legislation on asbestos in schools or public buildings, according to the Safe Buildings Alliance, comprised of manufacturers of asbestos (see table). Five of those seven states passed funding bills for asbestos removal or control: California, Iowa, Minnesota, Nebraska and New Jersey. Delaware created an ad hoc committee to consider a comprehensive state plan on asbestos in state-owned buildings. Louisiana authorized the state attorney general to assist local school districts in bringing suit against asbestos manufacturers, suppliers and installers. Iowa also passed an asbestos contractor licensing law.

During the 1983-84 legislative sessions, 28 states considered legislation on the issue of asbestos-containing materials in buildings, according to the Safe Buildings Alliance.

(Editor's Note: This article was condensed from a CSG Backgrounder on "Asbestos in Buildings," compiled by John F. Welch, president of the Safe Buildings Alliance in Washington, D.C., and Kevin J. Fay, of Alcalde, Henderson and O'Bannon in Rosslyn, Virginia, in cooperation with Jon Grand, a former CSG staff member. For a copy of the entire report, contact the Order Department, The Council of State Governments, Iron Works Pike, P.O. Box 11910, Lexington, KY 40578. Ask for Backgrounder No. 118402. Single copies are free to state officials.)

STATE ACTIONS ON ASBESTOS IN BUILDINGS

State	Legislation adopted	State funding	State assistance	Local funding option	Contractor certification and training	Encapsulation allowed	EPA NC citation
Alabama			★(a)				★
Alaska			★				
Arkansas							★
California	★	★				★	★
Connecticut		★	★			★	★
Delaware	★(b)						★
Georgia		★	★				★
Idaho				★			
Illinois	★		★	★			★
Indiana							★
Iowa	★			★	★	★	
Kansas							★
Kentucky	★(b)		★				★
Louisiana	★(c)						
Maine			★				
Maryland	★		★		★		
Massachusetts		★	★				★
Michigan							★
Minnesota	★	★		★		★	★
Missouri							★
Nebraska	★			★			
New Hampshire							★
New Jersey	★	★ (d,e)	★		★		★
New Mexico			★				
New York	★	★	★		★(f)	★	★
North Carolina		★ (e)					★
Ohio	★(b)						★
Oregon							★
Pennsylvania	★	★					★
Rhode Island							★
South Carolina	★(g)		★		★(h)		★
South Dakota							★
Tennessee	★(b)		★				
Vermont							★
Virginia							★
West Virginia			★			★	★
Wisconsin							★
Wyoming							★
Dist. of Columbia	★(b)						★

Definitions:

Legislation adopted—states that have specifically enacted a program, funding measure or commissioned a *study on asbestos in buildings.*

State funding—states that have established a funding program or cost sharing with local school districts.

State assistance—states that provide literature, training, inspections, certification or technical assistance to local school districts.

Local funding option—states that have authorized local school districts to raise funds for asbestos programs through local taxes.

Contractor certification and training—states that mandate certification, training or licensing of asbestos contractors.

Encapsulation allowed—states that allow encapsulation of asbestos materials as a viable control option.

EPA NC citation—states in which public or private school districts have been cited by the U.S. EPA for not complying with federal asbestos inspection regulations.

Notes:

(a) Asbestos being removed from schools under a court order obtained by the state attorney general in a suit against the state school boards.

(b) Special committee or task force created to study the problem.

(c) State attorney general is to assist local schools in bringing civil suit against asbestos manufacturers, suppliers and installers.

(d) Money available either through foundation aid programs or local funding is mandatory.

(e) Funding is available for asbestos control in government buildings.

(f) Training only.

(g) Mandatory state inspection program.

(h) Inspector certification required.

Asbestos: Still a Danger in Schools

By Elaine S. Knapp, editor

For Phyliss Adams and Ann Gibbs the last year has been a frustrating one—trying to get their local school board to remove asbestos from the school their children attend.

"It's frustrating, our children are being poisoned and there's not anything we can do," Mrs. Gibbs declared. What the Lexington, Kentucky, housewife has done is work through the PTA, form a group of concerned parents, go door-to-door telling parents of the danger, gather hundreds of signatures on petitions, read volumes on asbestos, call and write federal agencies and confront the school administrator and board.

After a year of parental pressure being applied and at least a decade after school authorities knew of the asbestos hazard, Mrs. Gibbs said, "We don't think anything will be done until the government makes them (the school board)." School authorities maintain the asbestos will be cleaned up if money is available for renovation next year.

Ironically, the major government effort to control asbestos lies in Mrs. Gibbs and others like her. Telling parents and teachers that their school has asbestos and relying on them to pressure local action is the heart of the U.S. Environmental Protection Agency's (EPA) strategy to rectify the nationwide problem of asbestos in the schools.

No effective federal program exists to protect school children from asbestos, state efforts vary widely and local schools often ignore the danger due to the cost of cleanup.

Asbestos Dangers

Any exposure to asbestos involves some health risk, according to the Congress, the EPA and the scientific community. Children are especially vulnerable, according to the EPA guidance document on asbestos sent to schools. Their remaining life expectancy provides the 20 to 40 years it takes for disabling and fatal asbestos-related diseases to develop. Large numbers of children may be exposed in a contaminated school and exposure is continuous during the school year. Children are active and breathe more frequently than adults possibly inhaling more asbestos fibers. Smoking can increase the cancer risk due to asbestos exposure.

Most hazardous is friable asbestos that can be crumbled. It sends deadly fibers into the air which may lodge in the lungs indefinitely, according to EPA's guidance document. Asbestos workers often develop a chronic and debilitating lung disease called asbestosis. Lower and shorter exposures are linked to lung and other cancers. Even brief exposure can result in death many years later.

Asbestos diseases include: 1) asbestosis, a disease in which asbestos clogs the lungs, 2) pleural calcification, a deposit of calcium salts in the lung lining, 3) malignant tumors of the lung, 4) mesothelioma, a rapid and fatal cancer of the lung, and 5) intestinal and uterine cancers.

Where It Is, What to Do

Use of asbestos materials was common in schools and other buildings from the mid-1940s until EPA banned sprayed asbestos in 1973. Friable (or soft) asbestos-containing material was used for fireproofing,

insulation or decoration. It was usually sprayed on overhead surfaces, steel beams, ceilings, walls and pipes.

As friable asbestos material ages, it breaks down and releases fibers into the air. School activities can damage or disturb asbestos, such as a ball hitting a gym ceiling. Asbestos material can be disturbed by maintenance activities, vandalism, water damage or vibration from people or machinery and release fibers into the air.

Many experts believe removal of asbestos is the only final and satisfactory solution to asbestos exposure. However, removal may cost more initially and be more complicated. Temporary measures include encapsulation by spraying asbestos with a sealant or enclosing the asbestos. EPA and other experts warn that such temporary measures make removal more difficult and dangerous later on, and must be constantly monitored.

The EPA guidelines call for asbestos work only after construction of sealed containment barriers and worker protection as mandated by OSHA. All but asbestos workers should be kept out of the sealed area and worker change rooms are required.

Hot Potato

Asbestos in the schools has been a "hot potato" tossed among various levels of government and federal agencies. One reason is that removal of asbestos can be quite expensive, especially if large areas of buildings are affected. Funding is basically up to local schools as is asbestos detection and control. No federal funds are available and state aid varies.

The U.S. EPA requires schools to inspect for asbestos and notify parents and employees of asbestos hazards. The EPA doesn't require removal or abatement. "The theory is that PTAs and employees would pressure local districts to take remedial action," said Terrell Hunt, assistant to EPA Deputy Administrator Alvin Alm.

However, a recent internal EPA report found that many schools did not meet EPA's June 1983 deadline for asbestos detection, record keeping and notification.

No Federal Fund

Federal funds of $172 million authorized by the Asbestos School Hazard Detection and Control Act of 1980 were never appropriated. Grants were promised for schools to identify asbestos hazards and loans for mitigation of asbestos hazards. But funds were never requested by the Department of Education, reported John Bennett, aide to U.S. Rep. George Miller, D-California, who sponsored the act. In 1983, a $50 million recommendation by the House was omitted in a House-Senate conference.

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EPA's Program

The federal effort has largely been a requirement by the EPA that schools inspect for asbestos hazards, sample and analyze material to determine if asbestos is present, keep records of the inspection, post notices, and notify parents and employees if asbestos is found. Although schools were to comply with the rule by June 1983, the EPA doesn't know how many did. It does not require schools to report to it and must send federal inspectors to schools to check their records. EPA staff said when the EPA regulation was written that the administration opposed imposing a data reporting requirement. The EPA recently doubled its field force of inspectors by adding 16 people through a contract with the American Association of Retired Persons, Hunt said. These include retired architects and engineers. Primarily, EPA staff look at school records and physically inspect some schools. However, there's not enough inspectors to cover but a small portion of the nation's schools.

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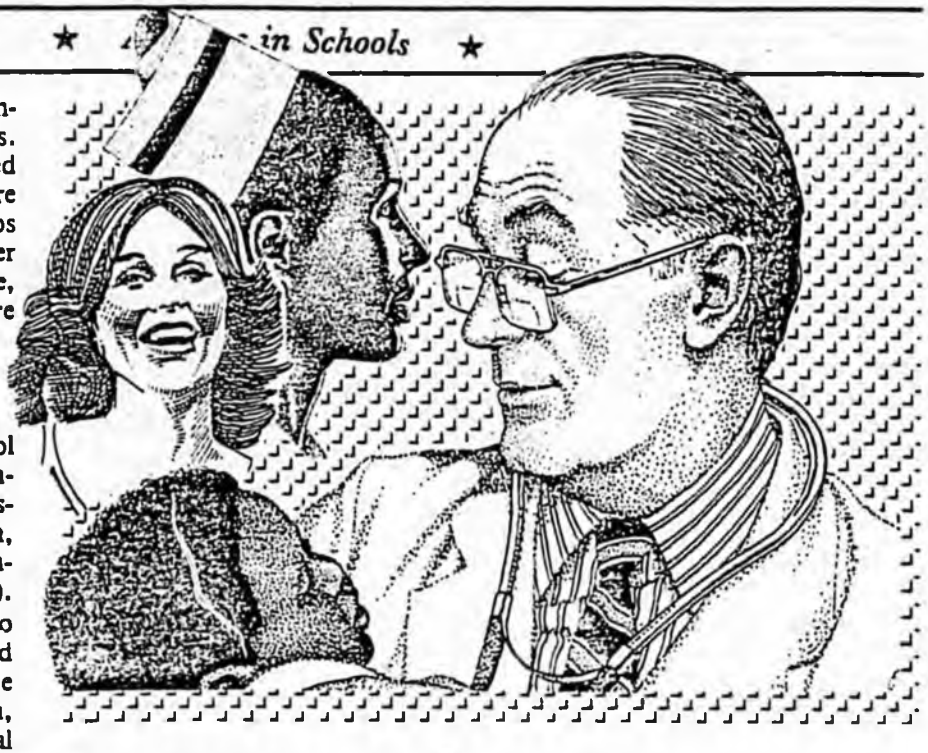

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Labor Union Concern

An estimated 3.24 million school children and 648,000 school employees are potentially exposed to asbestos, according to Kitty Conlan, research analyst with the Service Employees International Union (SEIU).

The SEIU is lobbying Congress to fund the 1980 act for grants and loans to schools. Schools don't have the money to cleanup on their own, Conlan said. "It's definitely a federal responsibility," Conlan said. "It's a nationwide problem which affects the health of millions of people."

SEIU is suing the EPA to require schools to cleanup flaking asbestos. "Schools say if EPA thinks asbestos is so bad, then EPA would require them to get rid of it," Conlan commented.

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Lawsuits Filed

A number of lawsuits on behalf of school boards and building owners in Kentucky, Mississippi, New Hampshire, Florida, South Carolina, Alabama and Tennessee, have been filed by a South Carolina law firm.

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Future Problems

Generally, 15-40 years can elapse between asbestos exposure and manifestation of certain diseases. For instance, shipyard workers exposed during World War II may only now be filing claims, according to the Rand study. Despite this knowledge, no attempt is being made to monitor school children exposed to asbestos.

An internal EPA memo written in November 1978 called for long-term surveillance of children who are exposed. The memo noted that when they reach adulthood these children could then be informed and notified of their childhood exposure. They could be medically examined more frequently for respiratory diseases and cancer.

EPA Regions, States

Because no one tracks data on asbestos in the schools on a national basis, *State Government News* interviewed asbestos coordinators in five of the 10 EPA regions and several state asbestos coordinators.

Generally, the federal regional EPAs have switched their emphasis from providing technical assistance on identifying and dealing with asbestos in the schools to checking school records on asbestos inspections. Most found a high percentage of schools either had not inspected or had not notified parents and employees of asbestos in the schools as required by the EPA.

State programs differ widely in scope and authority. While a few states fund asbestos removal and cleanup, most simply help schools identify asbestos or provide other technical assistance.

Region I

"Compliance is terrible," said Paul Heffernan, asbestos coordinator for EPA Region I covering Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont.

Five full-time EPA inspectors have visited 160 districts covering 400 schools and issued 58 notices of noncompliance. Of the EPA violations, 37 percent had not even inspected and 53 percent had not notified parents or employees of asbestos found. Many school administrators didn't want to be "bothered," others had not read the regulation and others simply refused to post a warning in the building.

Oddly enough, schools in states which had asbestos programs in the late 1970s were most difficult to convince they needed to inspect for asbestos in ways not done in earlier years. For instance, the latest regulations require inspection of pipes and boiler rooms.

With 3,300 school districts in the region, there is no way EPA can inspect them all, Heffernan said. However, press releases announce schools found in violation, so the hope is that other schools will inspect rather than see themselves in the headlines.

Asbestos abatement efforts vary widely even in the same school district and among neighboring school districts, Heffernan said. He said West Haven, Connecticut, had an effective program while North Haven, next door, had none. While Hartford, Connecticut, spent $6 million on big problems in five schools, it had not tackled "mini-disasters" in 37 others. The same situation existed in Boston.

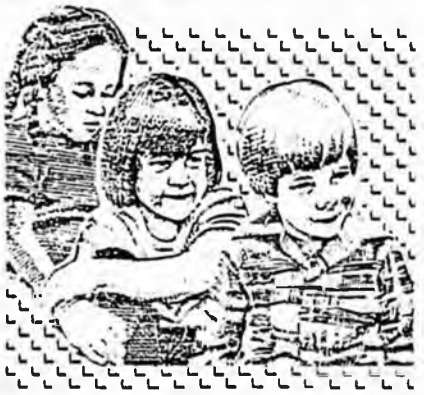
In the region, New Hampshire sent a checklist of EPA requirements plus abatement actions to help schools comply with the EPA.

Connecticut has granted $6.5 million since 1976 to localities for asbestos control in schools, reported Richard Krissinger, coordinator of school facilities, state Department of Education. State grants range from 40 to 80 percent of cost, depending on the aid formula the town qualifies for. If asbestos is found, the "chances are good it will be removed," Krissinger said. "We treat it as a health violation."

The state "accepts encapsulation" as an abatement measure, but doesn't encourage it. Krissinger said, "We believe removal is the only answer."

Al Siniscalchi, acting chief of the toxic hazard section of the Connecticut Department of Health Services and Education, noted that the state also provides technical assistance to schools. Schools were sent EPA guidelines and seminars were co-hosted by the state and EPA Region I.

A job freeze has reduced a former staff of nine to four and most inspec-



tions are now done by local health departments. Connecticut does follow-up inspections after asbestos removal to make sure the school is safe. Safe disposal of large amounts of asbestos is supervised by the state Department of Environmental Protection.

Maine is in good shape, according to Roy Nisbett, director of the Division of School Facilities. Most of the asbestos found was confined to pipe wrapping and boiler rooms. The state notified schools of the EPA rule and 90 percent complied with inspection requirements, Nisbett said. The Division of Industrial Safety trained school personnel to conduct asbestos inspections.

A proposed bill in Maine would authorize a bond issue to reimburse local schools for the cost of asbestos removal and repair.

In spite of the fiscal contraints caused by Proposition 2 1/2, public pressure has spurred asbestos abatement in Massachusetts, said Mike Malchik, assistant engineer, Division of Occupational Hygiene. "Parents and teachers are adamant about getting it (asbestos) down," Malchik said. The legislature allocated $2 million in 1983-84 to repay part of school removal costs if removal is recommended by the state.

Massachusetts inspects public buildings and schools, samples, analyzes samples and recommends abatement measures. There are at least five engineers and a project engineer available. The schools are being re-surveyed based on new guidelines, as inspections in 1978 only covered sprayed-on asbestos in public areas.

Region II

EPA Region II asbestos coordinator, Arnold Freiberger, has seven inspectors to check some 3,000 schools in New York and New Jersey. Out of 108 districts inspected, only 13 were in compliance with EPA rules, 32 had minor violations and 63 had either failed to inspect or identify asbestos or to post notices and notify parents and teachers.

New York has provided funds for asbestos control, reported Henry Binzer, associate in school business management, state Department of Education. In addition to state grants of $1.75 million annually for the past four years, school districts may tap state building aid for asbestos control.

An annual state survey of schools revealed 509,000 square feet of potentially hazardous asbestos.

The New York State School Asbestos Safety Act of 1979 required schools to identify asbestos and, if it is hazardous, take control measures. Encapsulation is most popular with schools. "The problem is that still has to be watched," Binzer noted. Removal is permanent, but expensive.

The state does not give advice on specific jobs, but provides an educational program for contractors and information to schools.

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New Jersey doesn't provide specific aid for asbestos removal, but schools can get assistance through the foundation aid program, said Dr. Irving M. Peterson, manager, Facility Planning Services, state Department of Education.

In 1979, a governor's Task Force on Asbestos set minimum specifications for removal of friable asbestos. The specifications, which contractors must follow, require notification of state and federal agencies prior to the start of a project, require documentation of the contractor's qualifications, and require the contractor to follow stringent procedures for removal. The standards do not permit encapsulation (by coating the asbestos-containing layer) in New Jersey.

The state must approve all construction projects, plans, make field inspections to assure the work area is set up properly so contamination doesn't spread and check at the end of the project. Contractors, agents and workers must all attend a one-day state-EPA seminar and carry certification cards on the job.

Out of 2,400 public schools in New Jersey, asbestos removal projects have been approved in 350. Costs have totaled $46 million, for an average of $131,000 per school. It's up to local districts to remove the asbestos and as many as 100 more may not have acted yet.

Region IV

EPA doesn't have the resources to inspect school compliance with asbestos regulations, declared Dwight Brown, asbestos coordinator for Region IV covering Alabama, Georgia, Kentucky, Mississippi, North Carolina, South Carolina and Tennessee.

Most commonly, schools have either failed to inspect or to notify parents, Brown noted. He added that common law requires building owners to identify and notify occupants of hazards, and to provide medical surveillence if there is evidence of exposure.

Region IV also provides technical assistance and its intensive seminars on asbestos are attended by many from outside the region.

Most of the asbestos found in Georgia schools was in boiler rooms or pipe wrapping and has been corrected, said Lovett Fletcher, asbestos coordinator. State environmental, health and education departments worked with the U.S. EPA to provide information and hold seminars for superintendents. In addition, 70 environmental health specialists were trained to assist local systems. Schools with acute problems could get matching state aid through the state capital outlay, Fletcher said.

Kentucky helps schools comply with EPA inspection requirements, but has no money to aid them, said Jim Judge, unit director of property insurance, Department of Education. Asbestos cleanup was estimated to cost $26 million last year, but a survey now underway could change that estimate. Judge noted that the EPA doesn't require removal and many schools "are hesitant to post a warning." Asbestos problems in the state's 180 districts range from major ones with ceilings to boiler rooms.

Affected schools mostly include those built from World War II to the early 1970s. Judge said certain architects used lots of asbestos while others didn't.

South Carolina selected the critical points of EPA's regulations in requiring public and private schools to inspect, sample and analyze for asbestos, said Lee Bacot, asbestos coordinator, Department of Health and Environment. Results of the school surveys and health hazard assessments were required to be publicized in meetings and by notifying parents.

Out of 1,200 public schools, 1,080 or 90 percent complied with EPA's rule and 270 found friable asbestos. Only about 30 percent of the 450 private schools complied.

Asbestos inspectors must be certified by the state and must send survey results to the state. A one-day course is offered by the state to consultants and state and local staff. Schools are provided information, but the state does not provide specific advice or any funds.

Tennessee had a governor's task force on asbestos in 1978, according to Robert Foster, chief, technical services, Division of Air Pollution Control, Bureau of the Environment.

Out of 1,773 schools, 150 reported potentially hazardous asbestos.

The state provides free analysis of suspected asbestos materials, provides information to schools, and conducts training sessions. Because there is a shortage of EPA inspectors, Tennessee Gov. Lamar Alexander wrote the EPA offering to help enforce the inspections. However, EPA has not responded. The state plans to proceed to develop the data anyway, Foster said.

"We're convinced asbestos in the schools is one of the more important health problems," Foster declared. "It's an absolute human carcinogen. It causes serious irreversible health effects. Even brief exposure can cause painful disease. Children are

EPA's new rule requiring parental notice "triggered a lot of work," Peterson said. As many projects were approved last year as in the previous four years.

even at more risk."

The goal should be to eliminate the hazard, Foster continued, while the EPA only requires inspections and warnings which can lead to panic and make schools vulnerable to unscrupulous contractors. People need to be educated on how to abate the hazard, he said. He added that although "most want to do the best, it's hard to convince them that a little dust out of the ceiling will kill them."

"I've gone in schools where the material (asbestos) was hanging off chairs," Foster said. In that case the superintendent closed the schools upon the state's recommendation. More troublesome are marginal situations, Foster noted, where schools don't understand the potential hazard. "They look to the state or federal government," he said. "But hope for federal or state aid is a loser."

Region V

"There's quite a few violations of EPA's rule," said Anthony Restaino, asbestos coordinator for Region V covering Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin.

Many school officials thought asbestos "was a low priority, didn't take time to inspect, didn't touch asbestos-materials to see if it crumbled or didn't notify parents or employees," Restaino said. Out of 43 school districts inspected, 29 were in violation. The Region V inspection staff was recently doubled to eight.

Illinois treats asbestos as a health and public safety issue, said Ralph Morrisette, architect, school facilities and organization section, State Board of Education.

Under Illinois law, school boards can hire an architect to determine if school building conditions endanger lives. After a survey of the cost to remove the asbestos, the local district can levy a tax for the amount without a referendum. Because schools are able to raise the funds, most of those with asbestos are having it removed, Morrisette said.

Most Wisconsin schools have inspected for asbestos, reported Nori Roden, school asbestos program coordinator, Department of Health and Social Services.

Out of 3,027 schools, 3,006 inspected and 1,089 found friable asbestos. Corrective action was taken by 583: 395 rewrapped pipes, 94 removed asbestos, 33 enclosed it and 61 encapsulated it.

Wisconsin has had an asbestos program since 1980. The Department of Industrial Labor and Human Relations conducted asbestos inspections when it conducted fire and other safety inspections. Samples were analyzed by the state lab. The Department of Public Institutions targeted schools for the free inspections, helped with record keeping, and provided technical assistance and consultation services. The health department computerized and coordinated the data and consults on health effects of asbestos.

A position paper being developed by the health department will most likely recommend removal of all friable asbestos, Roden said. "We're cautious of encapsulation and enclosure," she said. Advantages of the temporary measures include less cost and time, but the disadvantage is the "asbestos is still in the building," Roden said.

Minnesota in 1983 authorized a $25 per pupil unit capital expenditure levy and aid for asbestos removal or encapsulation and PCB cleanup with Department of Education approval.

Region VIII

The major violation found in Region VIII is that schools "aren't willing to put up notices," said Steve Farrow, EPA asbestos coordinator for Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming. Instead, schools are trying to remove or encapsulate the asbestos first, he said.

Of the states, Farrow said that Utah's problems were with pipes and boiler rooms, North Dakota was making progress and Wyoming had few major problems.

Chuck Johanningmeier, technical advisor for the region, said, "Many people hoped it would go away. Medically, it is just getting worse." A Fargo teacher had contacted the EPA after discovering asbestos debris left in a school storeroom. Not long afterwards, the lawyer for the teacher's estate reported the man had died of mesothelioma (a rare cancer associated with asbestos exposure).

Unqualified contractors can do more damage than if the asbestos was left alone, Johanningmeier said. A proposed measure before the Colorado Legislature will require contractors to be certified to work on asbestos.

In another case, a contractor left asbestos which students and teachers dusted up. As a result the EPA is helping write specifications in a contract for cleanup which will be available to others as well.

There are some bright spots as well. Johanningmeier praised the work of Gill Johnson, the asbestos coordinator for a Jefferson County, Colorado, district. Johnson overcame school resistance and succeeded in cleaning up the asbestos in the district's schools.

No Cavalry in Sight

Although asbestos was recognized as a nationwide health problem by the Congress in 1980, there's no real federal effort to protect the health of exposed school children. Even though most states have asbestos coordinators, few states mandate cleanup or provide funds for removal. Essentially, asbestos removal or cleanup is left up to local school districts. Local school officials may not be willing or understand how to inspect for asbestos. Some may not understand the health dangers or legal liability they incur by allowing asbestos to remain. Apparently, many refuse to adequately notify parents or teachers if asbestos is found. Even then, students have no choice but to attend the school and teachers may be fearful of retribution if they take action. Many schools don't have or don't want to spend the money it takes to remove or cleanup asbestos.

Alvin L. Alm, deputy administrator of the EPA, recently acknowledged that the agency was reconsidering its approach to asbestos in the schools.

* * *

Leonard P. Stavisky

State Responsibility for the Control of Asbestos in the Schools

Asbestos, widely used in construction, is hazardous to human health. Schools represent the most pressing concern for public policymakers who are faced with the asbestos issue. With few exceptions, compulsory attendance laws exist throughout the United States. Typically, state statutes prescribe that minors from six to 16 years old attend school for approximately 180 days a year. Parents and guardians have no discretion in this matter and those who refuse may be charged with neglect. As a result of these laws, government's legal and ethical responsibilities may be greater in this area than in others where one's presence is voluntary or where minors are not involved.[1]

On the school asbestos issue, the educational and public health mandates of existing state constitutions come into conflict. In the language of one state constitution: "The legislature shall provide for the maintenance and support of a system of free common schools, wherein all of the children of the state may be educated." The same constitution further stipulates that "the protection and promotion of the health of the inhabitants of the state are matters of public concern and provision therefore shall be made by the state and by such of its subdivisions (including school districts) and in such manner, and by such means as the legislature shall from time to time determine." Obviously, though teaching and learning cannot be suspended, the public deserves ironclad guarantees that the instruction will be offered in a safe environment.[2]

Such guarantees come in implied warranties of quality — the presumption that a product is free from substantial, latent defects which are not obvious through inspection; these appeared in Roman edicts as early as 150 B.C. In modern commercial practice, the term warranty has always meant that the conditions are exactly as they have been stated, that standards of quality exist, and that those in positions of responsibility recognize their obligation to repair or replace defective parts. Implied warranty of quality exist even in cases in which there is no sale. Thus, nonprofit institutions have been named as defendants under breach of warranty.[3]

Statutory law has extended the boundaries. In real property law, states have enacted warranties of habitability which presume that a dwelling is suitable for human habitation and that the occupants will not be subjected to conditions which are "dangerous, hazardous or detrimental to their life, health or safety." Similar language appears in occupational safety codes, public health laws and environmental protection legislation.[4] In recent decades, government has become a landlord — involved in the ownership and management of public housing. Formerly private buildings have been acquired through "in rem" proceedings resulting from non-payment of taxes. Does the warranty of habitability therefore apply to the public sector?[5] Does it extend to other physical settings such as schools? Presumably, when a child is enrolled in a public school, for which

taxes are paid in lieu of tuition, there is an implied warranty that professional services will be rendered in a building that is free from conditions and substances which are hazardous to health.[6]

Asbestos, a hydrated mineral silicate which was widely used for fireproofing, soundproofing and decorating during the post-World War II construction boom, was introduced in Great Britain in 1932 and in the United States three years later. Between 1946 and 1972, sprayed-on asbestos was used in school auditoriums, gymnasiums, classrooms, hallways and libraries. Of the one million tons consumed in the United States in a single year, the material was applied to insulation, ceilings, floor tiles, cement, roofing and shingles. Homes, offices, factories, government buildings, private institutions and places of public accommodation were laden with this ubiquitous substance. More than 3,000 known asbestos products came into use.[7]

Concern over the impact on human health arose as a result of the inordinately high rates of disease discovered among employees handling asbestos in mining, manufacturing and construction. During the 1950's and 1960's, clinicians and researchers reviewed the medical records of asbestos workers and established positive correlations between persons who had been exposed to extraordinarily high asbestos air concentrations and specific diseases such as: 1) asbestiosis, a non-malignant scarring of the lungs; 2) bronchogenic carcinoma, a malignancy of the lungs; 3) mesothelioma, a malignancy of the lining of the abdomen or chest cavity, and 4) cancer of the gastrointestinal tract (esophagus, stomach, colon or rectum). By the early 1970's, medical researchers at the National Cancer Institute demonstrated in laboratory experimentation that malignancies "comparable to those resulting from asbestos exposure in man, can be induced rapidly in the rat and hamster by direct intrapleural application of asbestos. Such experiments attest to the carcinogenity of asbestos and offer an excellent means of investigating those carcinogenic mechanisms involved," these studies concluded.[8]

Government has responded in various ways. Since 1970, the Occupational Safety and Health Administration (OSHA) has regulated working conditions in the asbestos industry. In 1973, the United States Environmental Protection Agency prohibited the spraying of asbestos materials for fireproofing and insulation. Five years later, the ban was extended to all forms of sprayed asbestos, including decorative applications. Agencies of government promulgated regulations to control the industrial discharge of asbestos materials into the air and water. The sale of spackling compounds containing asbestos and the use of asbestos in insulation fireplaces was halted. Placing asbestos on the list of hazardous materials is under consideration. In all sections of the country, monitoring and informational programs have been initiated by federal, state and local authorities.[9]

Efforts have also been made to verify the effects of asbestos in non-occupational settings, but here the information has been imprecise. Abnormally-high disease rates have been linked to people who live near asbestos mines and factories. Among the families of asbestos workers, diseases have been traced to the minute particles brought into homes of the workers' clothing, Nevertheless, attempts to define standards that would be applicable outside of industrial settings have been opposed by an unexpected source. Scientists who have worked in this field appear unwilling or unable to provide definitive answers to the question of what represents a "safe" level of exposure to asbestos over a given period of time. Researchers are currently unprepared to support publicly or privately an accepted standard such as nanograms of asbestos per cubic meter of air nor are they willing to risk their reputations or the health of the public by categorically stating that the presence of asbestos below certain levels is tolerable. In the opinion of many reputable scientists, there is no way to compromise with a carcinogenic substance.[10]

Asbestos fibers, which are neither chemically nor biologically degradable, are virtually indestructable. Once the particles have been released into the environment, the slightest turbulence disturbs those that have already settled. People are constantly exposed to asbestos in the air they breathe, in the water they drink and in the food they eat. Processed asbestos fibers are more hazardous than the natural mineral. The thin strands which are by-products of the manufacturing process are easily inhaled or ingested. Asbestos fills the urban environment as a result of incessant braking of motor vehicles, building construction and demolition projects, and the incineration of certain plastic products. In suburban and rural areas, asbestos exposure is most likely to stem from mines, mills, manufacturing plants and waste disposal sites.[11]

Although asbestos permeates the environment in various settings, outdoors the moving air currents disperse the particles to reduce the levels of concentration. Indoors, the presence of asbestos poses a special hazard. Architects have designed many structures with inoperable windows. At one time, planners even specified windowless schools for blighted urban neighborhoods. Within such enclosed ventilation systems, asbestos particles are continually recycled throughout these buildings.[12]

Most educational officials have not kept adequate records to deal with asbestos in their schools. State and local authorities never examined the building specifica-

tions to check for the presence of asbestos. Even when plans were reviewed by state agencies in order to determine eligibility for building aid, officials simply looked at the adequacy of the space in relation to the educational program. After a few years, those plans that had been filed by the school districts were routinely discarded in some states in order to "save space." As a result of a new wave of concern about asbestos in the schools, state and local educational authorities may be compelled to reassemble information which was once available to them when the schools were originally constructed or remodeled."[13]

Progress in this field has been painfully slow. By the late 1970's, only 27 states and the District of Columbia were known to have conducted any asbestos inspections. Approximately 15 states had looked at more than a few schools. Of these, New Jersey, Massachusetts and New York had each inspected more than 1,000 school facilities, while Indiana, Rhode Island, Michigan and Vermont had each examined more than 100 buildings. California and New Mexico had simply reported "many" inspections. Rhode Island, the only state which had presumably inspected all of its buildings identified asbestos in 19 locations. Seventeen states, primarily in the South, the Middle West and the Far West, had not reported any school asbestos inspections. In other states, the extent of the testing remained uncertain. Individual school districts undertook limited inquiries, but approximately forty per cent of the states in the nation had no asbestos programs at all. Nationally, no agency of the United States Government could provide reliable information as to how many schools had asbestos problems."[14]

Two principal methods exist for determining whether asbestos is present in a school — visual inspection and laboratory testing. The most common method of detecting asbestos in a friable or crumbling condition involves direct observation. Unfortunately, visual inspections can be quite subjective and deceptive. What appears to be asbestos to the naked eye may prove under a microscope to be some other material. On the other hand, asbestos may be concealed in unconventional forms. Laboratory analysis of air samples offers more reliable identification. However, the levels of asbestos may fluctuate dramatically from place to place within the same facility and vary from day to day, depending on how much activity preceded the collection of the sample."[15]

Funding poses another problem. Optical laboratory tests may cost $30 to $50 per air sample. To be accurate, multiple tests may be necessary; different locations within a building may have to be sampled at different times. Electron microscopic analysis may cost ten times as much as optical testing and finding competent laboratories is sometimes difficult. A Connecticut laboratory incorrectly labelled cellulose as asbestos. The error was not detected until the ceiling had been removed, at considerable cost to the local school district."[16]

Policymakers, the educational community and the public are caught in a cruel dilemma. There should be no danger to the life, health or safety of any child or adult in any school. On the other hand, the educational process cannot grind to a halt. Creating a sense of public panic or uncertainty is not the answer. Neither is indifference to the problem. What is needed is an immediate, responsible nationwide plan for school asbestos indentification and control. The commitment to act must involve lawmakers, boards of education and school administrators throughout the United States.

First, those entrusted with responsibility for the schools must become familiar with the fact that asbestos materials appear in various forms under different names such as chrysotile, amosite, crocidolite, tremolite, anthrophyllite and actinolite. Often, more than one form of asbestos is present and the fibers are frequently combined with other products.

While it would be desirable to deal with all types of asbestos at once, fiscal constraints dictate a strategy that focuses on those forms and conditions which knowledgeable scientists agree are hazardous to human health. Accordingly, many authorities have suggested that school officials concentrate on asbestos which has been sprayed on structures or applied in the form of plaster or textured paints. In addition, the physical condition of the asbestos should be considered. As a general guideline, an imminent hazard is likely to exist where the asbestos material is flaking, dusting, or shows similar evidence of damage, deterioration or disturbance because of abuse, abrasion, water leakage or forced air circulation which results in dispersing asbestos fibers and particles in the school."[17]

School-by-school surveys can be mandated by state statute or by the rules and regulations promulgated by the chief state school officer or the state board of education. With scientific and technical information provided by the state, preferably the superintendent of public instruction or commissioner of education after consultation with the department of health or the environmental protection agency, the school districts can proceed with the inspections. In most instances, the custodian who works in the school building daily is in a position to know where asbestos may be present. Regional training programs may be desirable to enhance the skills of those who conduct the preliminary surveys. Materials suspected of containing asbestos can be sent to approved

public or private laboratories for analysis."[18]

Once the asbestos has been identified and corrective action is required, there are three methods of dealing with the problem: 1) encapsulation, involving the use of a sealant which covers the original asbestos material and prevents further flaking; 2) structural containment, in which a permanent partition is installed between the asbestos area and the public and 3) removal of the asbestos."[19]

Each control method poses certain problems. A chemical sealant may be the easiest to apply and the least expensive technique, but it may not hold up for a long period of time. The very act of applying a chemical covering may damage some of the asbestos. Furthermore, in these days of mercurial changes in scientific data, there is no guarantee that a particular sealant itself may not subsequently stand accused as a hazard to health.

Structural containment is predicated upon the assumption that the area will not have to be accessible at a later date. Many school buildings have been designed to utilize the space between a ceiling and the floor above for electrical, plumbing, heating and ventilation installations. If a permanent partition is installed rather than a suspended ceiling made up of removable tiles, workmen may not be able to check faulty wiring, water leakage or a breakdown in the air circulation system. Also, although the asbestos will no longer be visible to the pupils and staff, asbestos particles may continue to be recycled through ventilation ducts after a new structural separation has been built.

Total removal is obviously the most comprehensive method. Nevertheless, substantial skill is required. The act of extricating the asbestos may pose a hazard for the occupants of the building and the workmen. Consequently, removal may have to take place during vacation periods. In most cases, work areas have to be sealed off from other sections of the building and care exercised to guarantee that asbestos particles do not become lodged in the air circulation system. Removal is also the most expensive program.[20]

Although not as dramatic, asbestos poses the same type of public health menace as the Three Mile Island nuclear reactor accident in Pennsylvania, the radiation near the desert testing sites of Utah and Nevada or seepage of toxic wastes from the Hooker Chemical Company in the Love Canal area of western New York. Public policymakers cannot risk having a whole generation of young adults discover 20 or 30 years from now that they have contracted lung cancer and other malignancies as a result of prolonged exposure to asbestos in the schools.

The United States Environmental Protection Agency is considering a plan for long-term surveillance of children exposed to asbestos in seriously contaminated schools. Unfortunately, the effort is fraught with complications. In an unpublished, in-house report, EPA acknowledges that the effects of asbestos exposure will not be evident for many years to come. "Medical examination of children now, whether to document exposure or to detect clinical disease, would be fruitless," the staff report concludes. "The psychological and monetary costs would be considerable. If a means were available to identify exposed school children so that they could be located years later, positive steps could be taken. As adults these persons could be informed of their childhood exposure and advised of the proper measures they personally could take." In the next breath, however, the agency has acknowledged the superficial, conscience-soothing nature of this recommendation, by admitting that "although no cures are currently known for asbestos-induced diseases, therapeutic research continues; it may be possible by then to apply *palliative* (emphasis added) measures. Without a means of identifying these children now almost nothing can be done to help them in the future." As a temporary expediency, some EPA officials have suggested issuing Social Security numbers to these children so that at a later date someone could open the sealed files and advise these people of their fates."[21]

The federal government, the states and local school districts should obviously pursue immediate programs of prevention and abatement instead of waiting to notify potential cancer victims that they have been needlessly exposed to an incurable disease. In the absence of an adequately-funded federal policy which would require appropriate corrective action throughout the country, the most promising approach seems to fall within the realm of the states. State legislation could establish goals and procedures which would:

1. Develop precise, scientific definitions of asbestos materials.
2. Identify the circumstances under which certain forms of asbestos pose hazards to human health.
3. Require the state commissioner of education — in consultation with state health or environmental officials — to: a) inform school authorities of the asbestos hazards; b) advise school districts of the methods of identifying, sampling and testing materials suspected of containing asbestos and constituting a health hazard; c) direct the school districts to undertake surveys of school buildings throughout the state; d) maintain current records regarding the condition of asbestos in the schools based upon periodic surveys by local school officials or inspections by the state education agency; e) provide scientific and technical assistance to the

school districts; f) require the districts to prepare and submit abatement plans; g) promulgate standards under which the containment or removal of asbestos shall proceed; h) establish regional training programs for contractors and supervisors engaged in eliminating asbestos hazards and i) monitor the implementation of these programs.

4. Establish timetables for abatement programs within state school asbestos legislation and create advisory councils of representatives from state education agencies; local school districts; medical, public health, architectural and engineering professionals; employers and employees in the construction industry; parents and the general public.[22]

Implementing such a state plan will inevitably be influenced by considerations of cost. New York City school officials estimated that the price of containing or removing all of the asbestos found in nearly 300 schools could easily range between $35 and $50 million. While construction costs are not uniform throughout the nation, an effective program in any state is certain to be expensive. In several New Jersey schools, expenditures for sealing ranged from $1 to $2 per square foot, while removal and replacement of asbestos ceilings varied between $2 and $5 per square foot. Without additional funding from federal or state government, real danger that school districts facing fiscal constraints, taxpayer revolt and declining enrollment may delay the implementation of asbestos identification and abatement.[23]

Asbestos control is not an ordinary building need. Surely in a health emergency, an overriding state or national obligation might be invoked. However, certain guarantees are required. A building treated for asbestos should not be one which is likely to be closed within the foreseeable future because of age or declining enrollment. The state must expect, and receive, adequate assurances that there are no other facilities available to accommodate the students and that the building utilization rate is above a minimum percentage. The anticipated life of the structure should also be considered before asbestos funding is provided. School officials must be prepared to justify the continued occupancy of any building for which major asbestos abatement is ordered.

What is the federal role in the detection, containment or removal of asbestos? In 1980, a year after the enactment of the New York State Asbestos Safety Control Act, parallel legislation was approved by Congress and signed into law by President Carter. However, there is no certainty that the United States Asbestos School Hazard Detection and Control Act will provide immediate and adequate relief for school systems that are concerned with asbestos problems. Although the legislation set up a fund for testing and evaluating potential hazards and ostensibly created a loan program to assist in the containment or removal of asbestos, the program is presently unfunded. The future of this program is further complicated by the results of the 1980 presidential election and the apparent unwillingness of the Reagan administration to implement new federal regulations for school asbestos control.[24]

There are public policy lessons to be derived from the school asbestos experience. Initially, lay decision makers feel unqualified to judge public health issues. Eventually, they may recognize that there is uncertainty even within the scientific community, that potential victims have not been warned of imminent life-threatening hazards and that a chasm exists between research and public policy. Practitioners in medicine and public health, producers and distributors of asbestos as well as the construction industry neglected to subject the mineral to ample, long-range testing before using it. Tragic and unforeseen mistakes were made by architects and engineers who specified the incorporation of asbestos in building plans and by the educational authorities who approved and then destroyed the working drawings which would have illuminated its use and the extent of the present predicament. Finally, state and local governments nationwide incorporated the use of asbestos in building codes and issued certificates of occupancy attesting to the safety of the structures.

Nevertheless, the search for villains is pointless. Decisions do not wait for convenient time or circumstances, nor pause for optimum technical nor fiscal resources. Policy makers who are presently confronted with urgent crises may not have created the original conditions which they are called upon to correct. Furthermore, some problems defy government's best available solutions.

The decision making process has been compared to a multiple choice examination. In approaching the school asbestos issue, public officials could adopt a wait and see attitude or appoint a study commission. In this situation, such a choice would be deadly, for it would endanger the lives of a whole generation of students and educators who would be needlessly exposed to a known carcinogenic substance.

A second alternative would be to raise the level of public consciousness, to alert the teachers and parents of school-age children that asbestos, in various forms, pervades the educational system. In so doing, the alarmists would create a climate of fear, making it impossible for instructional programs to continue until all questions have been answered. However, a third more realistic option is to undertake an immediate

investigation of the scope and nature of the problem and use every available federal, state and local resource to finance corrective action.

Sensing the complexity of the total picture, reviewing the available scientific data, assessing the impact of each option, accepting responsibility and, ultimately, deciding upon the most propitious policy are essential ingredients for dealing intelligently with the school asbestos issue. However, any course of action may establish new conditions for which the ramifications are unknown or unanticipated. Beyond the schools, there are libraries and museums, community centers and civic auditoriums, as well as other public buildings and quasi-public facilities which contain asbestos. The legal and ethical principles inherent in the doctrine of implied warranty will not stop at the schoolhouse door. Future legislation and litigation will expand the boundaries.[23]

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4. *McKinney's Consolidated Laws of New York*, Book 49, *Real Property Law*, §235-b, notes 2, 11. Tenants' reliance upon implied warranties of habitability is discussed in John M. Strikor and Andrew D. Shapiro, *New York City Tenant Handbook* (New York, 1978); *McKinney's Consolidated Laws of New York*, Book 30, *Labor Law*, §470, Book 17½, *Environmental Conservation Law*, §19-0107; Book 44, *Public Health Law*, §225.

5. A leading tenants' group, the Metropolitan Council for Housing, believes that the warranty of habitability does, in fact, apply to government as "landlord." Conversations with Jane Benedict, Executive Director, Metropolitan Council for Housing, April 1979.

6. Existing provisions of state education laws contain broad safety requirements in relation to school building construction. Thus, the plans must "provide for heating, ventilation, lighting, sanitation and health, fire and accident protection adequate to maintain healthful, safe and comfortable conditions therein." *McKinney's Laws, Education Law*, §408, 408-a, 409. Responsibility is generally vested in the state education commissioner and in municipal building officials.

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8. Environmental Protection Agency, "Draft Report," pp. 6-9; William J. Nicholson, "Control of Sprayed Asbestos Surfaces in School Buildings: A Feasibility Study," Report to the National Institute of Environmental Health Sciences, June 15, 1978, pp. 1-8; Environmental Defense Fund, "Petition," pp. 8, 18-26; New York City, Department of Air Resources, "Asbestos Report"; Mabel F. Stanton and Constance Welch, "Mechanisms of Mesothelioma Induction with Asbestos and Fibrous Glass," *J Natl Cancer Inst*, 48, No. 3 (March 1972), 797.

9. Environmental Protection Agency, Office of Toxic Substances, "Draft Phase I Report," pp. 1, 9, 22-26; *Environ Defense Fund Newsletter*, November/December 1978.

10. A nanogram is a billionth of a part. The scientific community's unwillingness to agree upon "standards" for asbestos in non-occupational settings was expressed at a conference convened by the New York State Assembly Education Committee on February 6, 1979, in Albany, New York. Officials of the State Health Department, the State Education Department and the Environmental Sciences Laboratory of the Mount Sinai School of Medicine, among others, attended this meeting. A subsequent memorandum from an official of the State Education Department stated the problem in this manner: "Health authorities will not establish threshold levels for exposure to asbestos fiber in the air [,] stating that no exposure is acceptable." Memorandum from C. Stanton Baltzel to Milton Musicus, "Proposed Legislation Pertaining to Asbestos," March 6, 1979. The Environmental Defense Fund also maintains that "there is no safe level of exposure to asbestos . . . . Even a small exposure carries with it a meaningful and avoidable risk. Robert Rauch, et al., "Memorandum to Persons Interested in the Problem of Asbestos in the Schools," January 26, 1979, Environmental Defense Fund.

11. Environmental Protection Agency, Norbert P. Page to Cynthia Kelly, "Long Term Surveillance of Children Severely Exposed to Asbestos in Contaminated Schools," November 8, 1978; Environmental Protection Agency, Office of Toxic Substances, "Draft Phase I Report," pp. i-iii; Nicholson, "Control of Sprayed Asbestos," pp. 10-11.

12. Nicholson, "Ibid.," pp. 12, 54; Architectural Research Laboratory, University of Michigan, *The Effect of Windowless Classrooms on Elementary School Children* (Ann Arbor, Michigan, 1965).

13. New York State Assembly Education Committee, Asbestos Conference, Albany, New York, February 6, 1979.

14. Environmental Defense Fund, "Petition," pp. 32-33; United States, Environmental Protection Agency, *School Asbestos Program: Questions and Answers* (Washington, D.C., 1979), Question 18.

15. State of New Jersey, Department of Environmental Protection, "Guidance Document for Eliminating Health Risks from Sprayed-on Asbestos Containing Materials in Buildings," May 1977; Levin, "Asbestos in Schools," p. 31-32; Anthony R. Smith, "Asbestos in School Buildings," Memorandum #1 to Dr. Frank Macchiarola, Chancellor, New York City School System, November 6, 1978, and Memorandum #2, November 15, 1978; Nicholson, "Control," p. 19.

16. Levin, "Asbestos in Schools," p. 31; New York City, Board of Education, "Investigation and Testing of Various Methods," passim; Nicholson, "Control," pp. 18-22; New Jersey, "Guidance Document," pp. 6-7.

17. New York State Assembly Education Committee Conference, February 6, 1979, Albany; Nicholson, "Control," pp. 15-17; New Jersey, "Revised Guidance Document," October 20, 1978. United States Environmental Protection Agency, *Asbestos-Containing Materials in School Buildings: A Guidance Document* (Washington, 1979), Part 1, pp. 2-4. For a precise definition in statute law, consult the "New York State School Asbestos Safety Act." Chapter 581 of the Laws of 1979.

18. This procedure is outlined in *McKinney's Consolidated Laws of New York, Education Law*, Article 9-A, §430-436.

19. Educational Facilities Planning, "Newsletter," pp. 7-8; Smith, "Asbestos in School Buildings," Memorandum #2. U.S.E.P.A., *Asbestos-Containing Materials*, Part 1, pp. 15-19.

20. Environmental Protection Agency, *Sprayed Asbestos-Containing Materials in Buildings: A Guidance Document*, (Washington, 1978), II-3-1 to 3-5, II-4-1 F-5; State of New Jersey, Department of Treasury, Division of Building and Construction, "Bid Specifications for the Removal of Asbestos Accoustical Material," 1975; New Jersey, "Guidance Document," pp. 1-5; Nicholson, "Control," pp. 33-38; U.S.E.P.A., *Asbestos-Containing Materials*, Part 1, pp. 20-25.

21. Page, "Long-Term Surveillance of Children Severely Exposed to Asbestos."

22. *McKinney's Consolidated Laws, Education Law*, §430-436.

23. New York City, Board of Education, "News Release on School Asbestos Inspections," December 12, 1978; Environmental Defense Fund, "Petition," p. 37.

24. "Asbestos School Hazard Detection and Control Act of 1980," 96th Congress, 2d Session, *Senate Report* 96-710; United States Department of Education, Office of Elementary and Secondary Education, "Asbestos Detection and Control: Local Educational Agencies: Asbestos Detection and State Plan: State Educational Agencies; Final Regulations," *Federal Register*, January 16, 1981.

25. State capitols, county hospitals, and other public buildings have been cited by government employees, public interest organizations and the press as potential asbestos hazards. (Albany) *The Public Sector*, April 25, 1979, May 2, 1979; (Albany) *Times Union*, March 29, 1979; *New York Teacher*, April 1, 1979; New York Public Interest Research Group, Inc. "So What If There's Asbestos in the Air," Leaflet, Spring 1979. What may be the first school asbestos cancer case - a $2.5 million lawsuit - was filed against the New York City Board of Education by a teacher who worked from 1968 through 1970 at a Manhattan school which contained asbestos. The teacher, who developed lung cancer, also brought suit against the Johns-Manville Corporation. *Gloria Swerdling v. Johns-Manville Sales Corporation . . . , the City of New York*, Supreme Court of the State of New York, County of New York, Index No. 8180/79, May 3, 1979; *New York Daily News*, May 4, 1979.

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ASBESTOS

The clock is ticking in your schools, and inaction could prove to be devastating

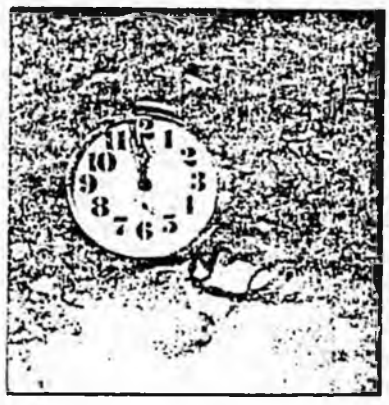
By Kathleen McCormick

ALL TALK AND no action: That's the way the asbestos-in-schools game has been played in the past several years by the federal government and thousands of U.S. school systems. It's time—past time—to respond to the potentially fatal hazards of asbestos in our schools. The ante has been raised in recent months, and from the look of things, school boards that haven't complied yet with federal regulations concerning inspection, notification, and record keeping could be in for a rough time. And even if you *have* made the inspections, posted the required notices, and notified parents and staff of potential health risks in your schools, you still might be the target of a lawsuit should a student or staff member become ill or die because of an asbestos-related disease.

That's not exactly reassuring news, but you can take some steps to meet federal regulations and protect your students and staff. Prudent school leaders would do well to consider carefully some of the recent developments in medical research, federal enforcement, and legal actions. Read on:

The medical risks

As far back as the 1930s, manufacturers of asbestos knew the substance was a killer. But the American public first became aware of the hazard when the Environmental Protection Agency (E.P.A.) banned some uses of sprayed-on asbestos in 1973, after research concluded that thousands of shipyard workers who had handled the substance during World War II were dying (or had died) of asbestos-related diseases. Five years later, an award-winning article in this magazine broke the disconcerting news to school leaders that U.S. schoolchildren faced imminent danger from asbestos: In schools built between 1946 and 1973, tens of thousands of tons of asbestos products were used for fireproofing, soundproofing, and insulating ceilings, walls, pipes, and boilers. As friable (loose or flaking) asbestos materials age, they release tiny particles into the air; if enough particles are inhaled, they can cause cancer and a variety of respiratory ailments. And if these materials get wet (say, from a roof that leaks) or are disturbed (perhaps by maintenance workers who fix electrical wiring in the ceiling), countless particles are dispersed, presenting an even greater health hazard.



The asbestos ante has been raised in recent months, and boards that don't respond could be in for trouble

What are the risks? Cancer, for starters: The most common form of asbestos-related cancer is lung cancer. Next is mesothelioma, a rare and fatal tumor of the membrane linings in the chest or abdominal cavities; its only known cause is asbestos. Exposure to the deadly mineral filaments released by asbestos also has been proved to cause cancers of the colon, rectum, stomach, esophagus, kidney, larynx, and pharynx. An associated disease is asbestosis, a scarring of the lungs that progressively robs the victim of breath and sometimes of life. The effects of asbestos are pervasive even among people who don't work directly with the stuff: Research has shown that among the immediate families of asbestos workers, 1 percent of the family members died from an asbestos-related cancer, and one-third were afflicted with asbestosis.

The number of airborne asbestos particles in your schools, of course, is considerably smaller than what asbestos workers once were exposed to on a daily basis. But that doesn't reduce the overall risk—nor does it absolve you from the responsibility of dealing with the problem. Dr. Edwin C. Holstein, clinical assistant professor at the Environmental Science Laboratories of Mount Sinai School of Medicine in New York, explains: "All scientific evidence suggests there is no safe dose of asbestos. Any exposure, no matter how small, will increase the risk of cancer." Dr. Holstein and his colleagues at Mt. Sinai, the preeminent U.S. institution for medical research on asbestos, have concluded the substance is a public health problem that must be remedied as soon as possible.

"For any one person, the risk is low," says Dr. Holstein. "But for a school system, sheer numbers tell you that you have a problem. It's like the half-full/half-empty glass of water," he notes. "The optimists say the health risks of asbestos are tiny; the pessimists—including public health authorities—know some people are going to die from exposure to asbestos."

Kathleen McCormick is assistant editor of the JOURNAL.

And they'd like to see schools help prevent those deaths—no matter how few—by removing the risk.

It could be many years before we're able to draw conclusions on the effects of asbestos exposure in schools. The risks vary, of course, depending on individual people, the condition and location of asbestos materials in school buildings, and the amount and duration of exposure. The appalling truth, according to Dr. Holstein: "It's false reassurance if no one is sick [now], because they might be sick by 1990 and dead by 1992." But despite the tendency for people to personalize this kind of highly emotional, life-and-death issue, he says, school board members and administrators should assure concerned parents that "there's no need to get hysterical; it's a problem that can be remedied."

The remedy

At the very least, you already should have complied with all federal regulations pertaining to asbestos in schools. Three sets of regulations have been issued. First, Department of Education (ED) regulations specify *how* states must distribute information on asbestos to schools, according to the Asbestos School Hazard Detection and Control Act of 1980. Second, Occupational Safety and Health Administration regulations detail procedures for the protection and decontamination of asbestos abatement workers and for measuring airborne asbestos. Schools engaged in containing and removing the friable fibers must comply with these procedures. Third—and more to the point—are the E.P.A. regulations: As of June 1983, you're responsible for having met the requirements of Section 6(a) of the Toxic Substances Control Act (T.S.C.A.), which were specified in "Friable Asbestos-Containing Materials in Schools; Identification and Notification Rule" (47 *Federal Register* 23360, May 27, 1982).

E.P.A. issued this rule because its Technical Assistance Program (TAP), launched in 1978, had limited success in getting schools to comply voluntarily with previous E.P.A. inspection and record-keeping guidelines. The T.S.C.A. rule applies to all elementary and secondary schools, except those built after December 31, 1978, and those that can document they already have checked buildings and either found no friable asbestos or satisfactorily dealt with the material. Schools were given one year to comply with the requirements.

(1) *Inspection.* You must inspect each building for friable materials.

(2) *Sampling.* If you find friable materials, you must take samples, following E.P.A. instructions.

(3) *Analysis.* A qualified laboratory must perform an analysis using polarized light microscopy, a sophisticated (and expensive) technique for measuring the amount of asbestos fibers in asbestos-containing materials.

(4) *Warnings and notifications.* You must post warning signs wherever you find friable asbestos-containing materials in schools—and send written notification to the staff and the P.T.O. of each school involved, specifying where the hazardous materials are located.

Note that the T.S.C.A. rule does *not* require you to remove, cover, or encapsulate the asbestos; it's up to individual school systems to decide how to dispense with the offending material. The rule also doesn't require you to report your findings to E.P.A., although you *do* need to keep complete and detailed records documenting your compliance with the T.S.C.A. rule.

Once you've found asbestos in your schools, you have a choice of four acceptable ways to resolve the problem: (1) removing the material altogether; (2) enclosing the areas containing asbestos to prevent fibers from escaping; (3) encapsulating completely the area that contains or is coated with asbestos; and (4) observing and maintaining the affected surfaces to avoid any damage that could cause the release of more fibers. Experts say removal is the only surefire way to rid your schools finally and completely of asbestos hazards. But the removal process itself is an extremely dangerous undertaking; a faulty or incomplete removal job could present even greater health hazards to your students and staff, as well as to asbestos abatement workers. So before you contract for any asbestos containment or removal work, refer to the technical advice presented in the E.P.A. document, "Guidance for Controlling Friable Asbestos-Containing Materials in Buildings," published in March 1983. And even though other measures might work in some schools, many school systems have found that public pressure is brought to bear on the school board to remove asbestos completely—regardless of expense.

The cost

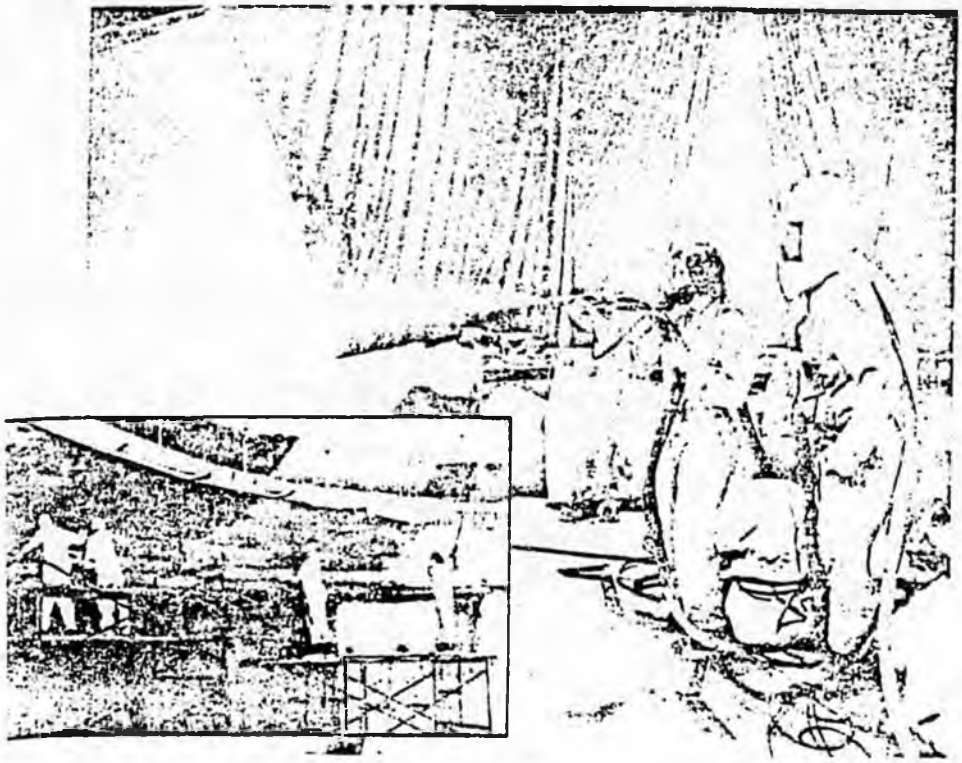
E.P.A. estimates that as many as 14,000 U.S. schools might contain dangerous friable material composed of more than 1 percent asbestos—which means more than 3 million students and 250,000 staff members are at risk right now. The agency estimates the total cost of asbestos abatement at $1.4 billion nationwide, or $100,000 per school building. Some school systems already have spent millions. According to Dwight Brown, formerly asbestos coordinator for E.P.A. Region IV in Atlanta, schools can expect to pay between $3 and $10 per square foot for asbestos removal—and the price can go as high as $28 per square foot. What drives the cost so high is the need for sophisticated analysis equipment and clothing to protect workers, Brown explains. Analysis of asbestos samples using an electron microscope goes for between $200 and $500 per sample—and you might need scores of samples to determine the hazard level in only one school.

Without a doubt, asbestos is a financial burden for school systems. At President Reagan's behest, Congress repeatedly has refused to provide funds to accompany the federal regulations it requires schools to obey. Part of the Asbestos School Hazard Detection and Control Act of 1980, for example, called for $700 million in grants and interest-free loans to help state and local education agencies identify and correct asbestos hazards in schools; no appropriations were made. Don't count on E.P.A. for changes in the funding situation, either: Officials there say they have no plans to request or provide money for school systems to deal with asbestos problems.

School systems in several states are fortunate to be reimbursed for expenses they incur in removing asbestos. In the past four years, for example, New York has given more than $12 million in grants and state building aid to help local asbestos removal programs. And in the same period, Florida has appropriated $10.5 million for asbestos removal. These are notable exceptions, however. Most school leaders have to dig into general operating budgets to come up with the funds. Such cost considerations, along with federal regulations that are at once technical and vague, have caused many school leaders to avoid the issue of asbestos altogether. But ducking the issue can only bring harm to your schools.

The consequences

Forewarned is forearmed: E.P.A. is stepping up its monitoring of schools' compliance. Although the agency has no conclusive statistics, E.P.A. officials say the rate of noncompliance by schools is high. Proferred proof: An E.P.A. staff



Space-age procedures are needed to eliminate asbestos from schools. Here, abatement workers wet down and remove the substance from a school gymnasium.

memorandum in August 1983 indicated that 80 percent of a sample of 167 schools were in violation of the E.P.A. inspection rule. And, according to E.P.A.'s compliance monitoring office, inspections conducted in 275 school systems since June 1983 show that 190—nearly 70 percent—had not complied with E.P.A. regulations on obtaining asbestos samples, notifying parents, keeping records, and so forth. The 275 school systems inspected include approximately 80 of the 100 largest school systems in the U.S.

Now something is being done about that kind of slackness: In fact, E.P.A. inspectors could come knocking on your door any day, asking to see your records. You could be cited for violations of T.S.C.A. on these grounds: failure to inspect schools; failure to sample friable materials; failure to analyze asbestos samples; failure to notify parents and staff; and failure to keep records.

Depending on the number and type of violations, your schools could be fined as much as *$25,000 per day per violation*—an amount that quickly could snowball into an outrageous sum. Here's how the fine system works: If E.P.A. finds you haven't complied with T.S.C.A., your central office will be given 30 days to certify compliance in writing. If certification isn't received within 30 days, E.P.A. files a civil complaint against your schools. Agency officials then will ask to see a compliance schedule as a demonstration of your good intentions. If these negotiations fail—if you don't cooperate—E.P.A. will attempt to collect the fines it has levied against your schools.

If you think the E.P.A. is making idle threats, think again: Under the direction of old/new Director William Ruckleshaus, E.P.A. has become more vigilant [illegible] is going after asbestos in schools as one [illegible]s Top Ten priority items. E.P.A.'s design in these aggressive actions is to force schools into compliance through pressure from the community, according to Connie DeRocco, a specialist in E.P.A.'s asbestos enforcement program. It stands to reason that school board members and administrators would tend to choose compliance over the chance that a concerned parent might blow the whistle on the schools' negligence.

Other signs that E.P.A. means business: The agency is doubling its monitoring staff for fiscal year 1985. And then there's the Philadelphia case: E.P.A. has threatened to set a precedent by filing a civil complaint for noncompliance against the Philadelphia schools, to the tune of $378,000 in fines ($6,000 for each of 63 nursery and day care centers housed in buildings leased by the school system that weren't inspected for asbestos). School officials are trying to head off the complaint by inspecting the buildings; E.P.A. officials say they are willing to negotiate as long as the Philadelphia schools can show they mean to comply fully with E.P.A. regulations.

But public pressure also is mounting on E.P.A. itself to issue more stringent and specific regulations on asbestos in schools. In response to a petition filed last November by the Service Employees International Union—prompted by the asbestos-related death of a school custodian—E.P.A.'s Ruckleshaus announced in late February that the agency will set formal standards for schools to remove or seal crumbling asbestos materials.

The legal ramifications

Before you make any decisions about asbestos in your schools, consult your school attorney. Advice from Dwight Brown, who has conducted seminars on asbestos in schools for the past five years: Devise a three-part legal action plan with your attorney concerning cost recovery, tort claim defense, and the process of administering contracts for removing and disposing of asbestos.

One legal question on everyone's mind: Can you recover costs of removing asbestos from the manufacturers of the material? "The Attorney General's Asbestos Liability Report to the Congress," published in September 1981, says schools should have a good chance of recovery in court. The bankruptcy last year of a major asbestos producer, Johns Manville Co., cast a pallor over what some school attorneys had held were excellent chances to recover costs. But in February, Lexington County School District No. 5 in South Carolina brought suit against U.S. Gypsum Co. to recover approximately $300,000—the cost of removing asbestos from Irmo High School. (The potentially precedent-setting case was about to come to trial as the JOURNAL went to press.) The school system is being represented by Daniel A. Speights of Hampton, S.C. Speights anticipates having filed as many as 30 asbestos-related lawsuits against U.S. Gypsum Co., National Gypsum Co., and W.R. Grace & Co. by July on behalf of school systems in Florida, Alabama, Mississippi, New Hampshire, and other states. He says these cases stand a "good chance" of winning. The Lexington suit, then, could open the floodgates for thousands of lawsuits against asbestos manufacturers.

Other legal issues you should be aware

Asbestos-control funds sought from legislatures

The Environmental Protection Agency is threatening to require schools to eliminate asbestos or face closure.

In autumn 1982, the U.S. House of Representatives voted to appropriate $50 million to provide school districts with interest-free loans to help defray the cost of removing or controlling asbestos in school buildings. But the measure, authorized under the Asbestos School Hazard Detection and Control Act that was passed in 1980 but never funded, failed to win the support of the Senate. When a conference committee also decided against asbestos-control funds, the chances that Washington would provide money for removal became remote.

The defeat of the funding measure is likely to mean that state legislatures will feel increased pressure from school officials to come up with asbestos-control funds. Some states — New York and Alabama, for example — already have provided such funds. Alabama uses a $75-million fund drawn from oil and gas revenues. In Mississippi, state education officials planned to go to the Legislature to ask for funds to offset the estimated $20 million it will cost to remove asbestos from schools, schools.

The continued absence of federal funding comes at a time when public pressure to deal with asbestos in the schools is increasing in many areas, in part because the Environmental Protection Agency may now issue a press release announcing which schools have not met the requirements of its regulation. Under the EPA regulation, all public and private schools were required to inspect for friable (crumbling) asbestos by June 28, 1983. If they found asbestos but took no action, the schools were required to notify parents and staff members. Although there is no federal requirement that asbestos be removed from the schools, the belief was that knowledge of its presence would generate enough public pressure to force action.

What this strategy of the EPA did not take into account, however, is that many school districts lack the money to pay for the often costly abatement procedures, and would instead simply fail to notify anyone of the presence of crumbling asbestos. As of last fall, an EPA survey outlined in an internal memorandum found that about 66 percent of all schools had not complied with some component of the regulation. The most common violation, the survey found, was failure to notify.

Although more school districts are belatedly complying with the regulation, according to EPA officials, the problem of funding remains serious for some. A report prepared for the Senate Appropriations Committee by the U.S. Department of Education estimated the cost of removing asbestos from schools nationwide at $1.4 billion. Under the loan program authorized in the 1980 legislation, the federal share of this would be $700 million. Acknowledging that there are no firm data to support this estimate, the report places the number of schools with an asbestos problem at 14,000. The estimated cost of removal is $100,000 per school, according to the draft report. That figure is dramatically higher in some areas: Jackson, Miss., faces a $6-million bill, and in Philadelphia school officials estimated the cost at $17 million. Others, of course, will require much less money because their asbestos situation is less dire.

A growing concern that they will be held liable for any asbestos-related illness — cancer, for example — contracted by students or staff is also prompting some school officials to step up the removal process and accelerate their quest for outside funding. Lawyers who handle asbestos litigation argue that, although no school suit of this type has been filed, school officials who do not remove a substance known to be hazardous will indeed be legally liable.

Some school districts — about 35 as of last fall — have filed suits of their own against asbestos manufacturers. Should one of these cases be decided in favor of a school district, more suits may follow, and favorable rulings would allow districts to recoup the cost of removal. Until then — barring the possibility of federal funding — districts have few places to turn and state legislators may find themselves the recipients of pleas from school officials.

— Susan Walton

States help employees buy out failing firms

Since the mid-1970s, more than 6,000 businesses across the nation have become, wholly or in part, owned by their employees. In most cases, employees have simply purchased stock through Employee Stock Ownership Plans (ESOPs), and there has been little state involvement.

When the number of plant shutdowns and relocations rose during the recent recession, however, legislators in several states sought ways to encourage "buyouts" of ailing firms by employees to save their jobs.

At least 12 states — California, Delaware, Illinois, Maryland, Massachusetts, Michigan, Minnesota, New Jersey, New York, Ohio, Oregon, and West Virginia -- have laws concerning worker ownership. Although some of these laws simply direct that state agencies study the issue, others, such as in California, Illinois, Michigan, and New York, have broader provisions that provide venture capital, technical assistance, and other help to workers attempting a buyout.

Maryland and Wisconsin also have strong legislation pending, while an attempt to add to New Jersey's law was vetoed last year by Governor Thomas H. Kean.

Essentially, there are two types of employee buyouts. The first is the most widely publicized — but least frequent — when, in a last-ditch attempt, employees try to save their jobs by buying a failing or unprofitable plant in danger of being closed. Weirton Steel in West Virginia is a recent example. This kind of buyout, however, constitutes "only about 1 percent of the total," according to Corey Rosen, director of the Center for Employee Ownership in Washington, D.C.

Far more common are ESOPs. In a typical plan, workers are simply offered company stock at market value rates.

Workers of firms that offer ESOPs typically own from 15 to 30 percent of the stock, although often the stock offered is nonvoting. ESOPs are encouraged by various federal tax incentives, and little state legislation has been enacted.

Instead, some state lawmakers have designed their efforts specifically to help employees purchase failing firms, particularly in already hard-hit urban areas. For example, in Illinois, Democratic state Representative Wyvetter H. Younge, hoping to "subsidize employment rather than unemployment," sponsored a bill that passed and was sign-

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Authority. "To secure adequate laws for the care and protection of children and youth." National PTA Bylaws, Article II.c

Asbestos: Still a danger in schools

by Elaine S. Knapp

For Phyllis Adams and Ann Gibbs the last year has been a frustrating one—trying to get their local school board to remove asbestos from the school their children attend.

"It's frustrating, our children are being poisoned and there's not anything we can do," Mrs. Gibbs declared. What the Lexington, Kentucky, housewife has done is work through the PTA, form a group of concerned parents, go door-to-door telling parents of the danger, gather hundreds of signatures on petitions, read volumes on asbestos, call and write federal agencies and confront the school administrator and board.

After a year of parental pressure being applied and at least a decade after school authorities knew of the asbestos hazard, Mrs. Gibbs said, "We don't think anything will be done until the government makes them (the school board)." School authorities maintain the asbestos will be cleaned up if money is available for renovation next year.

Ironically, the major government effort to control asbestos lies in Mrs. Gibbs and others like her. Telling parents and teachers that their school has asbestos and relying on them to pressure local action is the heart of the U.S. Environmental Protection Agency's (EPA) strategy to rectify the nationwide problem of asbestos in schools.

No effective federal program exists to protect schoolchildren from asbestos, state efforts vary widely and local schools often ignore the danger due to the cost of cleanup.

Asbestos dangers

Any exposure to asbestos involves some health risk, according to the Congress, the EPA and the scientific community. Children are especially vulnerable, according to the EPA guidance document on asbestos sent to schools. Their remaining life expectancy provides the 20 to 40 years it takes for disabling and fatal asbestos-related diseases to develop. Large numbers of children may be exposed in a contaminated school and exposure is continuous during the school year. Children are active and breathe more frequently than adults, possibly inhaling more asbestos fibers. Smoking can increase the cancer risk due to asbestos exposure.

Most hazardous is friable asbestos that can be crumbled. It sends deadly fibers into the air which may lodge in the lungs indefinitely, according to EPA's guidance document. Asbestos workers often develop a chronic and debilitating lung disease called asbestosis. Lower and shorter exposure can result in death many years later.

Asbestos diseases include: 1) asbestosis, a disease in which asbestos clogs the lungs, 2) pleural calcification, a deposit of calcium salts in the lung lining, 3) malignant tumors of the lung, 4) mesothelioma, a rapid and fatal cancer of the lung and 5) intestinal and uterine cancers.

Hot potato

Asbestos in the schools has been a "hot potato" tossed among various levels of government and federal agencies. One reason is that removal of asbestos can be quite expensive, especially if large areas of buildings are affected. Funding is basically up to local schools as is asbestos detection and control. No federal funds are available and state aid varies.

The U.S. EPA requires schools to inspect for asbestos and notify parents and [school] employees of asbestos hazards. The EPA doesn't require removal or abatement. "The theory is that PTAs and employees would pressure local districts to take remedial action," said Terrell Hunt, assistant to EPA Deputy Administrator Alvin Alm.

However, a recent internal EPA report found that many schools did not meet EPA's June 1983 deadline for asbestos detection, record keeping and notification.

No federal funds

Federal funds of $172 million authorized by the Asbestos School Hazard Detection and Control Act of 1980 were never appropriated. Grants were promised for schools to identify asbestos hazards and loans for mitigation of asbestos hazards. But funds were never requested by the Department of Education, reported John Bennett, aide to U.S. Representative George Miller, D-Calif., who sponsored the act. In 1983, a $50 million recommendation by the House was omitted in a House-Senate conference.

The U.S. Department of Education had a task force which set standards for state grants in 1980, according to W. Stanley Kruger, deputy director for state and local programs. However, when the program wasn't funded, the department "deferred to EPA," Kruger said.

Under pressure from Congress, the department reactivated its task force in October 1983 and is gathering information on asbestos to send to chief state school officials, Kruger said. The department also reactivated its requirement that states file plans for asbestos in the schools' programs and report on their progress every six months. All but two states have filed.

EPA's program

The federal effort has largely been a requirement by the EPA that schools inspect for asbestos hazards, sample and analyze material to determine if asbestos is present, keep records of the inspection, post notices, and notify parents and employees if asbestos is found. Although schools were to comply with the rule by June 1983, the EPA doesn't know how many did. It does not require schools to report to it and must send federal inspectors to schools to check their records. EPA staff said when the EPA regulation was written that the administration op-

This is a reprint of a portion of an article appearing in State Government News, *March 1984. It is authored by and printed with permission of Elaine S. Knapp, its editor.*

posed imposing a data reporting requirement. The EPA recently doubled its field force of inspectors by adding 16 people through a contract with the American Association of Retired Persons, Hunt said. These include retired architects and engineers. Primarily, EPA staff look at school records and physically inspect some schools. However, there are not enough inspectors to cover but a small portion of the nation's schools.

In providing technical advice, EPA can help schools determine the best strategy for evaluating the risk and responding to asbestos, Hunt said. He said that anything short of removal is considered a short-term solution.

Connie Derocco, environmental protection specialist with EPA, said that out of 1,527 schools inspected in 468 districts, some 60 percent did not comply with EPA rules. Most failed to notify and warn PTAs and employees of asbestos materials [manufacturers]. Schools know they will be pressured once the word is out, and they are hesitant to deal with the asbestos problem, Derocco explained. After receiving a notice of noncompliance, schools have 30 days to act before the EPA files a civil complaint.

Labor union concern

An estimated 3.24 million schoolchildren and 648,000 school employees are potentially exposed to asbestos, according to Kitty Conlan, research analyst with the Service Employees International Union (SEIU).

The SEIU is lobbying Congress to fund the 1980 act for grants and loans to schools. Schools don't have the money to clean up on their own, Conlan said. "It's a nationwide problem which affects the health of millions of people."

SEIU is suing the EPA to require schools to clean up flaking asbestos. "Schools say if EPA thinks asbestos is so bad, then EPA would require them to get rid of it," Conlan commented.

EPA does give schools good technical advice on how to get rid of asbestos, Conlan noted. But some schools accept the lowest bid rather than follow EPA guidelines. If the cleanup is not done right, the asbestos danger can be worsened.

Conlan said SEIU doesn't think suing asbestos' manufacturers is worthwhile, citing lack of action on suits filed by asbestos workers. "We're hesitant to have our members litigate themselves to death," she said.

Conlan added that school districts can also be held responsible for asbestos. "They can face a big liability," she commented.

Lawsuits filed

A number of lawsuits on behalf of school boards and building owners in Kentucky, Mississippi, New Hampshire, Florida, South Carolina, Alabama and Tennessee have been filed by a South Carolina law firm.

Daniel Speights (a school board attorney) noted that legal theories available to school boards against manufacturers of asbestos include: contract (the products were not fit for the use intended), negligence (the manufacturers were negligent in informing users of the risks associated with the products), strict liability (manufacturers should be strictly liable for failing to warn of asbestos hazards), and restitution (manufacturers have a duty to abate the hazard).

A civil action filed on behalf of the Barnwell, South Carolina, school district notes that school districts and public officials could be held liable for failing to abate a health hazard.

A September 1981 report by the U.S. attorney general to Congress recommended that school authorities seek to recover asbestos abatement expenses from asbestos manufacturers. The report said federal litigation would be ineffective unless Congress imposed liability on asbestos manufacturers.

Asbestos manufacturers are being sued by at least 20,000 people on the grounds that the companies knew of asbestos hazards and covered them up, according to a September article in the *National Journal*.

A 1983 report from the Rand Institute says that asbestos litigation and compensation has cost an estimated $1 billion over the past decade. Only 37 cents of every dollar went for actual compensation to plaintiffs. Estimates of the number of deaths due to asbestos over the next 30 years range from 74,000 to 265,000.

What you should do about asbestos in your school

Given current asbestos rules and regulations, PTAs should check on the following:

1. Was each school in your district inspected for friable asbestos? If not, request this action immediately.
2. Was an analysis of asbestos samples, using polarized light microscopy, conducted?
3. Are records of the asbestos inspection on file in the school district?
4. Does the PTA have a copy of the report in its records?

In schools where asbestos was found, has the school complied with the following:

1. Did the school district notify the children's parents, either directly or through the PTA?
2. Were school employees notified of the location of the materials?
3. Did the school post a standard form in administrative and custodial areas?
4. Are measures being taken, if not already completed, to remove asbestos in the school?
5. Did the school district provide maintenance and custodial employees with instructions for reducing exposure to asbestos?

If asbestos was found in your school, but corrective measures are not being taken, the following steps should be pursued:

1. The PTA should work with the school to affect removal or abatement. Invite parents, teachers, employees of the building, the school principal, and the superintendent to a PTA meeting. Request information about the degree of the asbestos problem and what plans are being developed for cleanup.

2. If plans are not under way or seem unsatisfactory, contact the school board to inform it of your concern. If informal discussions do not produce results, get the issue on the agenda of the next school board meeting. Be prepared to provide the facts, including the inspection reports and the cost of abatement, to school board members.

3. Meanwhile, inform your state legislature and the U.S. Congress about the problems and the degree of difficulty there is in terms of cleanup.

4. If the school board is unable or unwilling to ameliorate the problem, one resort would be a lawsuit. Be sure that you have tried every alternative before taking this step.

35 U.S. School Boards Sue to Force Manufacturers to Remove Asbestos

By JAMES BARRON

With the Environmental Protection Agency stepping up its campaign against asbestos in schools, more than 35 school boards around the nation have filed lawsuits to get asbestos manufacturers to pay for removing the potentially hazardous material from their buildings.

The agency says 62 percent of the school districts it has inspected violate some of the Federal regulations that require local school officials to inspect and report on asbestos. Alvin Alm, Deputy Administrator of the E.P.A., said the figure dropped as low as 50 percent earlier in the year but climbed recently as the inspections continued.

To improve the compliance rate, the environmental agency has proposed fines of more than $300,000 against 16 school districts where Federal inspectors found problems.

Four of the school districts fined were in New Jersey: Brick Township, South Orange, Springfield Township and Dunellen. The largest fine was $102,000 against the Waterbury public schools in Connecticut. There, the agency said it had found that 16 of 26 schools contained asbestos that could become airborne.

Some Call E.P.A. Rules Vague

Some local school officials say the agency's rules are vague and subjective and its inspectors interpret them arbitrarily. But others have turned to the courts because of the high cost of removing asbestos, more than $100,000 a school by some estimates.

One case in South Carolina was settled last month when U.S. Gypsum agreed to pay $675,000 to the school district in Lexington County. One in Pennsylvania may be used as the basis for a suit that would consolidate all the claims against manufacturers by school boards around the country.

Asbestos was widely used as fireproofing insulation between World War II and the late 1970's. It has since been found to pose a threat of a variety of serious diseases, including mesothelioma, a cancer of the lining of the lungs that is often fatal.

The E.P.A. says it cannot estimate how many children face possible future health problems from attending classes in schools containing asbestos or how much exposure causes a health hazard. The National Education Association, which maintains that children are more susceptible to asbestos-related diseases than adults, says there are asbestos problems in 14,000 schools. The teachers' union has threatened to make asbestos removal a bargaining issue this year.

Under the Federal rules, more than 121,000 public and private schools with more than 50 million pupils are required to notify parents and school employees if asbestos is found by inspectors. In most cases, there are two types of asbestos in schools: asbestos in ceiling insulation and asbestos wrapping on plumbing and heating equipment.

The environmental agency's inspectors are supposed to check for asbestos that crumbles or can be pulverized at a touch, but they may also cite school districts for failing to keep detailed records on their own inspections.

"The unsettling thing is I'm afraid that is sidetracking the E.P.A.'s attention from the real issue, which is what's hazardous," said William Anderson, a lawyer who represents the National Association of School Boards. "It's also creating an adversarial situation. The E.P.A. is making enemies of many school districts as a result of what the schools see as nit-picking and unfair enforcement."

The Syracuse public schools complied with New York state regulations before the Federal environmental inspectors arrived. Ernest Rookie, the system's facilities supervisor, said the Federal inspectors questioned whether there was asbestos in an auditorium ceiling at Fowler High School.

"We had already taken samples in nine different spots," he said. "They were proved to be not asbestos. The E.P.A. came through and demanded a lab analysis. It cost $450, and we were sure that stuff wasn't asbestos."

Fine Is Called 'Unreasonable'

In Waterbury, Thomas G. Parisot, an assistant corporation counsel, called the proposed fine "unreasonable" and questioned how the agency had determined it. Long before the Federal inspectors showed up, he said, Waterbury made plans to have the asbestos removed.

"The E.P.A. inspected only four schools before it lowered the boom," he said. "They were not really familiar with the makeup of our school system when they issued their complaint. We say any asbestos-containing material is limited in comparison to other districts. We don't have any spray-on beam insulation, wall insulation, or the kinds of materials that are a great deal more friable."

He said samples taken before the E.P.A. inspection "indicated there was no exposure problem for airborne concentrations."

Many school boards are divided on how to proceed with the suits, stalled since Federal District Judge James M. Kelly ruled in Philadelphia that all the cases should be combined and tried there.

After lawyers representing many of the other districts with pending cases protested, he scheduled a hearing on whether to go ahead with the merged legal actions. The case before him originally concerned only the schools in Lancaster, Pa., which had sued the Lake Asbestos Company, a Canadian company, among others.

"To require thousands of lawsuits to be tried in one forum means that each individual school district will be lost in the mass," said Daniel Speights, a Hampton, S.C., lawyer handling more than a dozen cases. "Historically, parties in a class action do not get the amount in damages that they would get if they tried their cases separately. Many of them could file locally and try the case in a year or less."

David Berger, one of the lawyers who represented the Lancaster districts when the case began, said individual trials would prove "costly, repetitive and duplicative."

"If everyone operates independently," he said, "that might make it impossible for anyone to recover. There is no way this industry could withstand $4 billion or $5 billion in judgments relating to school claims, which is what would happen if we used the tremendously ineffective case-by-case basis."

Ruckelshaus En

By PHILIP SHABECOFF

Special to The New York Times

WASHINGTON, May 19 — One year after his return as Administrator of the Environmental Protection Agency, William D. Ruckelshaus is widely credited with restoring morale, stability, purpose and credibility to an agency he found in a state of chaos.

But his critics, including members of Congress and environmentalists, charge that he has failed in leadership on such important environmental issues as emissions into the air of sulfur and nitrogen oxides that fall in particles called acid rain, killing aquatic life and threatening forests; that he is seeking to weaken environmental regulation by weighing risks to health against other social values; that he is serving as a benign front for what the critics call the anti-environmental policies of the Reagan Administration.

In an interview in his office overlooking the Potomac, Mr. Ruckelshaus denied that the Administration was anti-environment.

"It is a fair criticism of this Administration that the environment is not one of its high priorities — it has not been a high priority of the President in his career," he said. But he added that "this Administration has much more sympathy for the environment than the Nixon Administration," though many major environmental laws were passed in that Administration's tenure. "In the

Bartlett calendar approved

By ANDREW PERALA
Daily News reporter

The Anchorage School Board unanimously approved an extended summer vacation for students at Bartlett High School next year to give contractors time to remove asbestos from campus buildings.

Representatives of the school's students, teachers, parents and staff had supported the new school calendar, which will also extend the school day by 90 minutes beginning Jan. 21, 1985.

Under the plan, students at Bartlett will be out of school from April 26 to Oct. 15, 1985. The long summer break will allow contractors to remove asbestos insulation from inside the school building.

In a separate action, the board approved a $14.8 million contract to Vertecs Corporation for removal of the asbestos.

Of that amount, $13.4 million will be for the base contract and $1.3 million will be reserved as a contingency fund.

The contingency fund, said district superintendant Gene Davis, will cover unforeseen problems encountered during the 150-day asbestos removal project.

"It has not even been determined how many lights will have to be removed" from the school's ceilings, Davis said.

Removal of the asbestos has been classified as an emergency and the state Department of Education ruled

See Page C-3, BARTLETT

Bartlett

Continued from Page C-1

recently that the district can alter the school calendar.

Any new asbestos-removal expenses over $20,000 will require approval of the board. Amounts under $20,000 will be approved at the discretion of the superintendant, Davis said.

The 5½-month Bartlett summer vacation won't come without a price, however. In order for students to get the equivalent of 162 days of classroom instruction, the class day will be lengthened by an hour and a half. Students will start school at 7:30 a.m. as usual, but will not be released from classes until 3:30 p.m.

The extra-long summer break aroused the most concern from the speakers before the School Board.

"Our one concern is that students remain active" during the long break, said Karla Josephson, who spoke on behalf of the high school's staff. "Most students do like the idea of a five-and-a-half month summer," said student representative Brian Schmidt. The calendar plan represents a better solution than attending school on Saturdays or double-shifting with another school, he said.

In conjunction with approving the new calendar, the board also approved spending an additional $231,432 in the spring semester of this school year to accommodate the extra costs of changing the school calendar.

About $98,000 will go toward the expected added costs of school buses the district will have to pay a bus contractor. And $78,000 will be allotted to local moving companies to move the hundreds of student desks and other furniture into the school's gymnasium.

News Miner
2/1/84

EPA: schools ignore law about asbestos warnings

WASHINGTON (AP)—Local school officials, worried about their budgets or about "panic and hysteria," are widely ignoring a federal law requiring parents to be notified about dangerous asbestos in their school buildings, a government study says.

The study by the Environmental Protection Agency said that study said.

In many cases, the study said, school officials did not want to notify parents because of the money the school district would have to spend if forced to clean up the asbestos hazard.

School officials "are reluctant to notify parents because they believe this will result in a redirection of limited operating funds and-or create unnecessary panic and hysteria," the study said.

But whatever the reason, the EPA study added, it is undermining the program to get rid of hazards from asbestos that face millions of schoolchildren.

"The success or failure of the asbestos in schools rule, which relies heavily upon public involvement, is the degree to which information is communicated to the public," the study said. "Poor public awareness has resulted in only slight activity on the part of the parent groups in schools."

The finding are included in an internal program review requested by EPA Deputy Administrator Al Alm and completed in December. A copy was obtained by The Associated Press.

The study involves asbestos insulation that once was widely used in schools and other public buildings. Health officials now say that some types of asbestos can flake into microscopic particles that can be inhaled, causing lung cancer or other lung diseases. There is no known safe exposure level.

Under federal law, school officials are required to inspect their buildings for hazardous asbestos and to notify parents and school employees if it is found. It is then up to the local officials to decide what to do.

The law covers more than 37,000 public, private and parochial school systems with more than 50 million students.

The EPA study was intended to find out how well the program was working. Some of its findings, including the conclusion that two-thirds of the nation's schools are in violation of some part of the law, have been reported earlier.

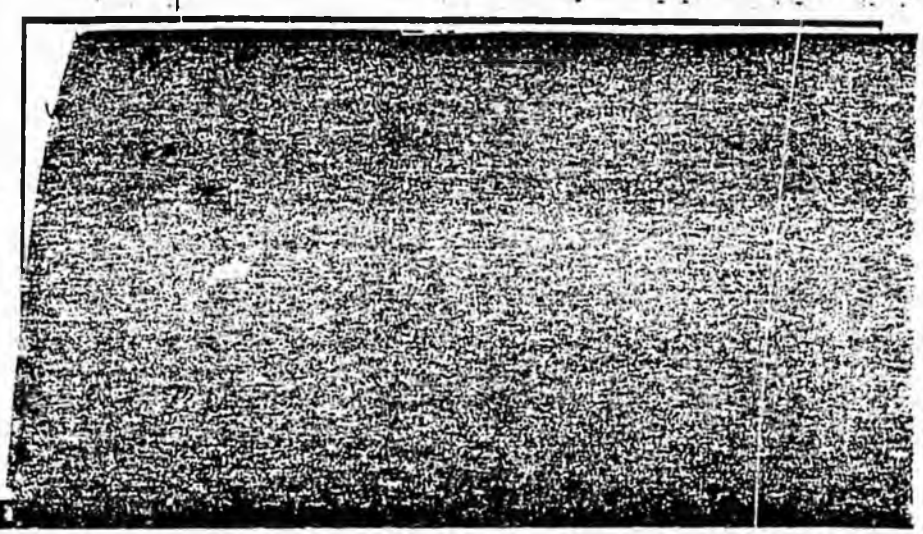
The EPA study did not blame school officials alone. It also found that the agency itself needed to devote more money and people to the program, including more than doubling the EPA inspection program.

"The agency has not issued a high-level statement detailing the risks of exposure to asbestos and the importance of considering various abatement options," the study said. "The regions and the public have not been made fully aware and have received mixed signals on the seriousness of asbestos health hazards."

The congressional author of the asbestos in schools law, Rep. George Miller, D-Calif., focused on those shortcomings in his analysis of the report.

"This document, drafted by EPA's own experts, again confirms the shocking inadequacy of this administration's approach to a threat that endangers the health of millions of school children," Miller said. "It is apparent that at least some officials within EPA are trying to warn their agency about the consequences of the current policies."

Whatever the failings of the agency, however, the study indicated that school officials have not endorsed the program wholeheartedly.



Funding limits asbestos removal

Associated Press

Washington — Local school officials, worried about their budgets or about "panic and hysteria," are widely ignoring a federal law requiring parents to be notified about dangerous asbestos in their school buildings, a government study says.

The study by the Environmental Protection Agency said that of 275 schools inspected by EPA, 190 were found to be violating the federal law on asbestos insulation. Of those 190, the EPA said, 134 had violated the requirement that parents be notified of the excess levels.

"Consequently, we can conclude that the parents of students exposed are in many cases unaware of the existence of such a hazard," the study said.

In many cases, the study said, school officials did not want to notify parents because of the money the school district would have to spend if forced to clean up the asbestos hazard.

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Federal funds to help remove asbestos

by Stephen J. Downes 2/9/87
Times Writer

The federal government has offered at least $2.1 million to help remove asbestos at Bartlett High School, a school district official said Wednesday.

And federal dollars will also pay for removing asbestos at Mount Spurr Elementary School, said assistant superintendent Tom Freeman.

Freeman said the federal Department of Education made the offer in a letter received by the district Tuesday, after three months of lobbying by the school district and members of the school board.

The district wanted the federal government to pay a portion of the bill for the schools because they are both on federal land.

About 35 acres of Bartlett is on federal land and technically belongs to the federal government, Freeman said. The other 118 acres have been deeded to the municipality, he said. The district operates the whole school.

Mount Spurr is on Elmendorf Air Force Base. The school district estimates it will cost $80,000 to remove asbestos at the school.

Negotiations between the district and the DOE that might result in even more money being obtained are still continuing. The district is seeking additional funds because cost estimates for Bartlett are increasing, Freeman said.

The $2.1 million represents 39 percent — the federal government's share — of what the district originally believed the Bartlett project would cost: $5.5 million.

"We've informed them that it may be more," Freeman said.

Howard Games, a DOE project engineer in Seattle, said a request for the money would go to DOE offices in Washington as soon as the school district provides a revised estimate of the cost. The estimate could come as early next week.

Construction firms will be asked to come up with estimated costs of removing asbestos at Bartlett. The firms will also seek a way to complete the work without disrupting the school year, which could mean higher costs.

The federal Environmental Protection Agency has linked exposure to asbestos with lung cancer and other diseases. The Anchorage School Board last year ordered asbestos removed from all district buildings.

The state legislature is now considering a district request for $10 million to remove asbestos from six schools, among them Bartlett and Mount Spurr. Bartlett is the top priority and has by far the most asbestos.

Anchorage lawmakers have already proposed $8.7 million for Anchorage asbestos removal.

DOE representatives will come to Anchorage in the next couple of weeks to advertise for bids on the Mount Spurr project, Freeman said.

The bid specifications will be drawn up by Gobbell, Hays and Pickering, the firm evaluating the asbestos problem for the school district.

Another DOE official, Jim Ishihara, said the federal government is also paying for asbestos removal on other Alaska schools: a $2.2 million project at Reeve Junior and Senior High School in Adak, and a $230,000 project at nine schools in Fairbanks.

5/8/84

Parents, scientists tell EPA to ban asbestos in schools

By BETTY ANNE WILLIAMS
The Associated Press

WASHINGTON — Scientists, union officials and parents urged the Environmental Protection Agency on Monday to require the removal of the carcinogen asbestos from schools and other public buildings.

"Ultimately, what you will do is decide who will live and who will die," said Irving Selikoff, director of the environmental sciences laboratory at Mount Sinai School of Medicine and an authority on the health effects of asbestos.

"We're gazing at children being exposed to asbestos. We're seeing teachers, personnel being exposed. We don't really need any additional research about what can happen. What we need now is controls."

Selikoff and other witnesses testified as the EPA held the first of four hearings on what to do about the asbestos which was used in public building construction and insulation until it was pinpointed as a cancer-causing agent in humans in the late 1970s. Other hearings will be held in Boston, San Francisco and Chicago in June.

The hearings series was planned after the Service Employees International Union petitioned the EPA to issue an asbestos abatement rule which would assure the removal of the substance from schools and other types of public buildings.

William Borwegan, director of occupational safety and health for the union, said the EPA should be prepared to come up with more money and staff to implement a tougher standard and monitor its enforcement.

"At a minimum, the agency should immediately train at least 100 individuals that can act as technical advisers to advise building owners and local school districts on how to evaluate and control asbestos in building hazards," he said.

National Education Association Vice President Keith Geiger estimated that as many as 650,000 teachers and other workers and three million children are exposed to asbestos every school day in 14,000 institutions.

"An emergency exists in our schools. Each day that the asbestos hazard goes unabated, the likelihood increases that there will be more victims," he said.

The EPA believes only 250,000 teachers and other school personnel are at risk but does not quarrel with the other estimates cited by the NEA.

Geiger also called the asbestos problem "a national disaster" and said the federal government must take the lead in arranging for the cleanup.

White House rejects suggestion to cut Social Security benefits

The Associated Press

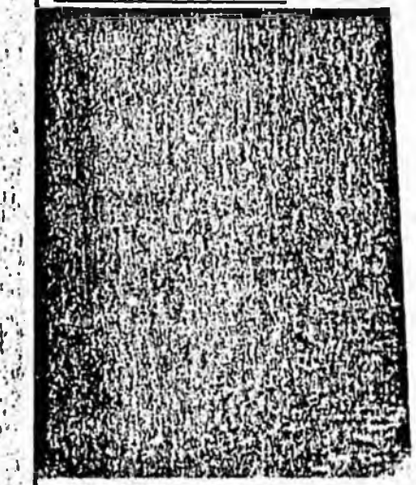
WASHINGTON — Democrats in Congress criticized Treasury Secretary Donald

Nevertheless, Senate Minority Leader Robert Byrd, D-W.Va., said the Regan

untary item," said House Speaker Thomas O'Neill

Del to

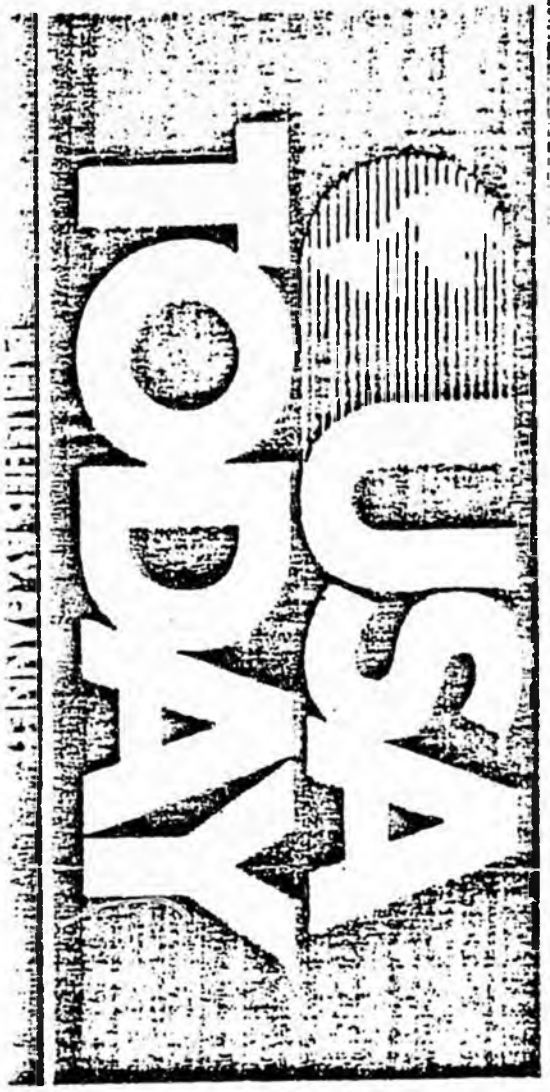
alaska women's run 1984



"I made it all the way

On June 12, there wi very special runners amor hundreds of participants ir Alaska Women's Run 1984 months of training with vo coaches, these ten women giving their personal best t money for The Association Retarded Citizens of Anchc They know how much ARC help people with mental ret

Soon, volunteers will be asking you to pledge an amount



School asbestos program failing

By Carol Stevens
USA TODAY

Mary Banscombe hopes to find out today if her sixth-grade son is being exposed to cancer-causing asbestos at his Goffstown, N.H., school.

The suburban Manchester district will get results of an inspection ordered after it was fined 11 days ago for failing to tell parents about possible asbestos dangers.

Meanwhile Banscombe, like many USA parents, is worried: "At this point we don't know what we're dealing with."

Says executive director James Fite of the White Lung Association: "Conditions in the nation's schools are absolutely horrible . . . and getting worse."

The federal Environmental Protection Agency's $24,000 fine against Goffstown was its first at any school.

It's been a decade since EPA outlawed asbestos as a fireproofing agent because of studies linking it to cancer. Yet EPA estimates asbestos is still present in as many as half the USA's 121,000 schools.

As a result, 3 million to 5 million children in schools built in 1940-60 risk asbestos exposure, says Arnold Fege of the National Congress of Parents and Teachers.

EPA's voluntary cleanup program is partly to blame. Schools had until June 1983 to inspect buildings and tell parents of the asbestos dangers.

Nine months after the federal deadline, EPA says the regulations have failed. Spot checks of 275 school districts found more than 69 percent violating asbestos standards.

Administrators say they can't afford cleanup at $100,000 per school.

FRI./SAT./SUN. MARCH 23-25, 1984

RECORDS CERTIFICATION

I, the undersigned, an employee of the State of Alaska, do hereby certify that the microfilm images on this microform are accurate reproductions of the original records of the State of Alaska as accumulated during the regular course of business, and that it is the established policy and practice of this State to microfilm its records and to dispose of the original records after microfilm reproductions have been made.

James O. Smith
Signature of Camera Operator

11/24/89
Date

02-519 (REV 8/78)

HB

20

STATE OF ALASKA
THE LEGISLATURE

LEGISLATIVE AFFAIRS AGENCY

POUCH Y - STATE CAPITOL
JUNEAU, ALASKA 99811
907-465-3800

M E M O R A N D U M April 15, 1986

SUBJECT: SCS SSHB 20 (L&C)
(Interest on deposits collected by public utilities)

TO: Senator Fred Zharoff
Chairman, Labor and Commerce Committee

FROM: Teresa B. Cramer TBC
Legislative Counsel

Enclosed is the Senate CS you requested to HB 20. The language added by the CS raises questions because it is not clearly reflected in the title. Article II, Section 13 of the Alaska State Constitution requires in part that

> The subject of each bill shall be expressed in the title.

The court has stated that a violation of this section must be substantial and plain before it will require an enactment to be set aside. North Slope Borough v. Sohio Petroleum Corp., 585 P.2d 534 (Alaska 1978).

The title to SCS SSHB 20 reads "relating to interest on deposits collected by public utilities." (Emphasis added) The Senate CS adds the following sentence to the bill:

> A public utility may collect and retain a deposit for contracted recurring monthly service.

To the extent that the language grants a public utility a right to collect and retain deposits, it is arguably beyond the scope of the title, which could be read as limited to interest on those deposits. It is also possible that the court would consider that the title was broad enough to encompass provisions concerning the deposits as well as the interest.

The safest course for the committee to follow would be to amend the title to clearly include the subject of deposits collected by public utilities, not merely the interest on those deposits. A title amendment would require permission to waive the rules since the bill originated in the House.

If I may be of further assistance, please advise.

TC:mkr
m4/113

Enclosure

Official Business

Alaska State Legislature

Senate

Committee on Labor & Commerce

Pouch V
State Capitol
Juneau, Alaska 99811

SSHB 20: Summary

This measure requires a public utility to pay interest on utility deposits of $100 or more, at the legal rate of interest at the time the deposit was made. Exceptions to this requirement occur as follows:

1) If the deposit is in an interest bearing account, the utility shall pay the interest rate of that account.

2) In cases where delinquent payments interrupt service, the utility is not required to pay interest for 12 months following the reestablishment of service.

BILL SUMMARY

ALASKA STATE LEGISLATURE
HOUSE OF REPRESENTATIVES
RESEARCH AGENCY

Pouch Y, State Capitol
Juneau, Alaska 99811
(907) 465-3991

February 12, 1985

MEMORANDUM

TO: Representative Peter Goll

FROM: Nancy Pease Nancy Pease
Legislative Analyst

RE: Deposits to Public Utilities
Research Request 85-142

Bob Berry of your office requested the following information on deposits that public utilities may require of first-time customers or those with no established credit:

- the representative low, high and average deposit required;
- the total amount of deposits held by public utilities;
- the length of time the deposits are held;
- the administrative cost and the burden to public utilities if they were required to pay interest on the deposits, and;
- an indication of the lead time utilities would require to begin paying interest on deposits without undue burden to the utilities.

The attached table presents information on the customer deposit requirements of 28 electric, natural gas, water, sewer or refuse utilities across the state. The four smallest utilities surveyed do not require deposits from first-time customers or those with no established credit.[1] In addition, several utilities waive their deposit requirement for new customers who provide good credit references or for new residential customers who own or purchase a home.

[1]The Cities of Kotlik, Seldovia, North Pole and Dillingham each provide utility services to no more than 225 customers.

SPONSOR'S INFORMATION

Average deposits

Utilities which require a standard deposit from their new customers charge, on average, a $74 deposit to open a residential account and $142 to open a commercial account.

However, many utilities adjust the amount of a customer's deposit according to the monthly bills or credit histories of previous customers with similar service needs. Depending upon the methods used to calculate customer risk, residential deposits range from $10 for water and sewer service in Fairbanks to $600 for telephone service from the Matanuska telephone utility. Deposit requirements for new commercial accounts range from $19 for water service in Wrangell to $2,500 for electricity in Dillingham.[2] For those utilities which reported varying deposit requirements, the average low and high residential deposits are $29 and $130 respectively. The average low and high commercial deposits are $89 and $950 respectively.

Total Amount of Deposits Held by Public Utilities

Bob Berry indicated that the Alaska Public Utilities Commission (APUC) was providing you with the total deposits held by all APUC-regulated utilities. Based on the information gathered in this survey, we are unable to estimate the amount of deposits held by unregulated utilities. The 10 unregulated utilities which indicated in this survey that they require customer deposits hold a total amount of at least $1,180,000. Four of the unregulated utilites surveyed do not require deposits.

These 14 unregulated utilities represent only 20 percent of the approximately 70 unregulated utility corporations which provide electricity, natural gas, water, refuse removal, sewer or telephone service to Alaska consumers.[3] It is difficult to assess how accurately this survey reflects the sizes and types of unregulated utilities as well as

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[2]David Bowker, General Manager of Nushagak Electric Co-operative in Dillingham, stated that Nushagak received permission from the Alaska Public Utilities Commission to charge commercial users a deposit of up to the estimated two-month billing. This policy was directed specifically toward fish processors after the utility suffered $50,000 in losses when fish processors went bankrupt.

[3]The survey included the following unregulated utilities: Fairbanks Municipal Utilities Systems, Ketchikan Public Utilities, Kodiak Municipal Utilities, and the Cities of Kenai, Petersburg, Sitka, Nome, Wrangell, Palmer, Unalaska, Kotlik, Seldovia, Dillingham and North Pole.

other unknown factors which may correlate to deposit policy. Because this sample is not necessarily representative, the information cannot be used to extrapolate the total amount of deposits for all utilities.

We were also unable to estimate the total amount of deposits by determining the average deposit charged per customer or per capita. Utilities' records show the number of customer accounts, but not necessarily the number of actual customers. One customer may pay a single deposit for several services or he may pay multiple deposits either to the same or different utility companies. An extrapolation of total deposits based on a per capita estimate would also be inaccurate because the percent of the population who are utility customers varies greatly in different localities.

Length of Time Deposits Are Held

Most of the surveyed utilities which require deposits refund them after either one or two years if the customer maintains good credit with the company. Nearly half (42 percent) of those utilities keep the deposits for two years. Four of the utilities surveyed hold the deposit until the customer closes the account. For those utilities which return customer deposits after a scheduled interval, the average period for holding deposits is 16 months.

Administrative Cost, Burden and Lead Time for Requiring Interest Payments on Deposits

The administrative cost to utilities of paying interest on customer deposits depends largely on whether the utility has a computerized accounting system. Spokespersons for several utilities which currently pay interest indicated that implementing the interest paying policy incurred a one-time computer programming cost. Their computers calculate interest monthly on each customer's deposit. The interest is either credited to the customer's bill once per year or is refunded with the deposit. Utility spokespersons who currently use computerized accounting sytems to pay interest estimated that implementing an interest paying policy would require very little lead time.

Some of the small utilities balance their customer accounts by hand. Calculating and paying interest for each customer deposit would increase considerably the accounting and clerical work for these utilities. The utilities clerk for the city of Kenai stated that the Kenai utility might find it advantageous to stop requiring deposits rather than handle the paperwork of paying interest on each deposit.

Several utilities spokepersons mentioned that administrative complications would arise in calculating and paying interest to customers delinquent on their payments. The amount held in deposit for a customer may change many times at irregular intervals if the customer is consistently late with his payments and is disconnected, has part of his deposit confiscated, or is required to pay additional deposits.

Utility spokespersons were not able to estimate the financial burden of paying interest without determining what portion of their customer deposits would be affected. The burden to each utility will depend on the amount of deposits on which it must pay interest and on the utility's current use of the deposits. There was no consistent pattern to utilities' management of the deposits. Some of the utilities hold their deposits in a general fund and use them for general operating expenses while other utilities keep the deposits in checking accounts or interest bearing saving accounts, either separately or in combination with other daily cash deposits.

Chugach Electric keeps its deposits in a noninterest bearing checking account because it must frequently make refunds. If the utility were forced to commit its deposits to an investment account, it would lose this flexibility. Utilities which enter deposits into their general funds would also lose operating flexibility.

Ketchikan Public Utilities currently keeps customer deposits in an interest bearing savings account and passes along interest to the depositers. The City of Sitka invests its customer deposits for a return of 8 or 9 percent, also passing most of the interest to depositers. These utilities will incur a minimal burden if interest payment is mandated.

* * *

We hope you find this information to be useful. Please contact us if you have further questions.

NP

Attachment

Consumer Deposits with Public Utilities

Utility	Number of Customers	Deposit Residential Low ($)	Deposits Residential High ($)	Deposits Residential Std. ($)	Deposits Business Low ($)	Deposits Business High ($)	Deposit Business Std. ($)	Utility Deposits TOTAL ($)	Months Held	Interest Paid %
Fairbanks Muni. Util								799,491	12	6
electricity	6,274	20	40				1 mo.use			
water	4,539	10	30				40			
sewer	5,198	10	30				40			
telephone	22,883	20		100			220			
district heat	131	10	15				30			
Juneau & Douglas Tel										
telephone	17,061			100		400	225	55,193	12	0
Anchorage Mun. Tel.										
telephone	170,390	50	150			900		1,100,000		0
ENSTAR Natural Gas										
gas (1)	60,505	25	225			2,000		800,000	24	5
Matanuska Tel. Util.										
telephone	26,050		600	50		2,000		616,000	12	6
Homer Elec. Assoc.										
electric	14,427		150	100						0
Ketchikan Pub. Util.	14,748									
elec. & tel.			100	50			100	117,000	13	5
Kenai, City of	2,153									
water & sewer				40			50	19,000	24	0
Petersburg, City of	3,700									
elec,water&sewer				40			75	12,821	12	0
Bethel Utilities										
electricity	2,055			100			100	66,000	var	0
AK Elec. Lt & Power										
electricity	9,856	20	30		75	300		NA	24	0
Barrow Util. & Elec.								32,000	24	0
electricity	1,101			75			75			
gas	787			75			75			
Chugach Elec. Assoc.										
electricity	59,874			30	50	300		NA	24	0
Sitka Telephone										
telephone	6,320			90			125	NA	6	5
Sitka, City of	4,000									
elec,water&sewer				75			105	167,700	til close	6
Nushagak Elec. Coop.										
electricity	879			100	200	2,500		32,000	24	0
telephone				100			1,500	45,000	24	0
Nome, City of	2,500							20,000	12	0
electricity				75			75			
water&sewer				50			50			
Bristol Bay Tel.										
telephone	679		100	100		500		10,700	24	0
Wrangell, City of	1,164									
electricity				50			50	13,000	til close	5
water			20		19	403		2,000	12	5
Glacier State Tel.										
telephone	28,540			100			150	290,478	12	0
Kodiak Mun. Util.	1,690									
water hook-up				250			250	NA	1	0
sewer hook-up				300			300	NA	1	0
refuse				10			10	NA	til close	0
Palmer, City of	675									
water,sewer&refuse				40			40	30,700	til close	0
Eklutna Utilities										
water	300			50				20,000	24	10
Unalaska, City of										
elec. & water	475	100	200		100	200		1,400	24	0
Kotlik, City of										
elec. & tel.	105	0	0	0	0	0	0	0	0	0
Seldovia, City of										
water & sewer	209	0	0	0	0	0	0	0	0	0
North Pole, City of										
water & sewer	225	0	0	0	0	0	0	0	0	0
Dillingham, City of										
water & sewer	175	0	0	0	0	0	0	0	0	0
Total	469,496							$4,250,483		
Partial Average (2)		$29	$130	$86	$89	$950	$168	$223,710	16.4	

(1)Deposits required for business accounts range into the thousands of dollars.

(2)Average excludes utilities not requiring or not reporting deposits.

Prepared by House Research Agency, February 1985

Utility	Number of Customers	Deposits Residential Low	Deposits Residential High	Deposits Resident. Standard	Deposits Business High	Deposits Business Standard	Utility Deposits TOTAL	Period Held	Interest Paid %
Fairbanks Muni. Util							799491	12	6
electricity		20	40			1 mo.=5%			
water		10	30			40			
telephone		20	50						
district heat		10	15			30			
Juneau-Douglas									
telephone	17061			100	400	225	55193	12	0
Anchorage Mun. Tel.									
telephone	170390	50	150		900		1100000		0
ENSTAR									
gas	60505	25	225		over 1000		800000	24	5
Mat-Susitna Tel.									
telephone	26050		600	50	2000		616000	12	6
Homer Elec. Asso.									
electric	14427		150	100			960,090 *		0
Ketchikan Pub. Util.									
elec. & tel.			100	50		100	117000	13	5
Kenai, City of									
water & sewer				40		50	19000	24	0
Petersburg, City of									
elec,water&sewer				40		75	12821	12	0
Bethel Utilities									
electricity	2055			100		100	66000	var	0
AK Elec. Lt & Power									
electricity	9856	20	30		300		107,165 *	24	0
Barrow Pub. Util.							32000	24	0
electricity	1101			75		75			
gas	787			75		75			
Chugach Elec. Asso.									
electricity	59874			30	300		1,739,017 *	24	0
Sitka Telephone									
telephone	6320			90		125	61,873 *	6	5
Sitka,City of									
elec, water&sewer				75		105	167700 *til clos		6
Nushagak Elec.									
electricity	879			100	2500		32000	24	0
telephone				100		1500	45000	24	0
Nome, City of							20000	12	0
electricity				75		75			
water&sewer				50		50			
Bristol Bay Tel.									
telephone	679		100	100	500		10700	24	0
Wrangell, City of									
electricity				50			13000 til close		5
water			20				2000	12	5
Glacier State Tel.									
telephone	28540			100		150	290478	12	0
Kodiak Mun. Util.									
water hookup				250		250	NA	1	0
sewer hook-up				300		300	NA	1	0
refuse	272			10		10 NA	til close		0
City of Palmer									
water,sewer&refuse				40		40	30700 til close		0
Eklutna Utilities									
water	303			50			20000	24	10

Prepared by House Research Agency 08 Feb 1985

ADJUSTED VERSION

ELECTRIC UTILITIES
(Source - 1983 Annual Report)

NAME	CLASS	CUSTOMER DEPOSITS
Alaska Electric Light and Power Company	A	$ 107,165
Alaska Power and Telephone Company	B	36,899
Alaska Village Electric Cooperative, Inc.	A	670
Aniak Light & Power Company	D	0
Arctic Utilities, Inc.	B	0
Barrow Utilities and Electric Cooperative, Inc.	B	Data Not Available
Bethel Utilities Corporation, Inc.	B	80,545
Bettles Light & Power, Inc.	D	0
Chugach Electric Association, Inc.	A	1,739,017
Copper Valley Electric Association, Inc.	A	165,216
Fort Yukon Utilities (now Gwitchyaa Zhee Utility Co.)	C	0
Golden Valley Electric Association, Inc.	A	897,705
Haines Light and Power Company	C	3,425
Homer Electric Association, Inc.	A	960,090
Iliamna-Newhalen Electric Cooperative, Inc.	D	11,622
Kodiak Electric Association, Inc.	A	111,755
Kotzebue Electric Association, Inc.	B	44,455

ELECTRIC UTILITIES (CONT.)
(Source - 1983 Annual Report)

NAME	CLASS	CUSTOMER DEPOSITS
M & D Enterprises	C	Data Not Available
Manley Utility Company, Inc.		Data Not Available
Matanuska Electric Association, Inc.	A	$ 802,909
McGrath Light & Power Company	C	3,450
Municipality of Anchorage d/b/a Municipal Light & Power Dept.	A	44,913
Northern Power & Engineering Corporation (now G&K, Inc.)	C	1,276
Northway Power & Light, Inc.	D	0
Nushagak Electric Cooperative, Inc.	B	6,955
Pelican Utility Company Pelican Division	D	0
Pelican Utility Company Sand Point Division	C	0
Tanana Power Company, Inc.	C	6,244
Teller Power Company	D	Data Not Available
Tlingit-Haida Regional Electrical Authority	B	17,320
Yakutat Power, Inc.	C	0
SUBTOTAL		$5,041,631

GAS UTILITIES
(Source - 1983 Annual Report)

NAME	CLASS	CUSTOMER DEPOSITS
Alaska Pipeline Company	A	$ 0
Barrow Utilities and Electric Cooperative, Inc.	C	Data Not Available
ENSTAR Natural Gas Company	A	765,255
Kenai Utility Service Corporation	C	Data Not Available
SUBTOTAL		$765,255

SEWER UTILITIES
(Source - 1983 Annual Report)

NAME	CLASS	CUSTOMER DEPOSITS
Barrow Utilities and Electric Cooperative, Inc.	D	$ 30,660
College Utilities Corporation	B	27,247
Municipality of Anchorage d/b/a Anchorage Sewer Utility	A	512,813
Salmantof Utilities, Inc.	D	Data Not Available
Settlers Bay Properties, Inc.	D	0
SUBTOTAL		$570,720

TELEPHONE UTILITIES
(Source - 1983 Annual Report)

NAME	CLASS	CUSTOMER DEPOSITS
Alascom, Inc.	A	$ 233,242
Arctic Slope Telephone Association Cooperative, Inc.	B	6,867
Bristol Bay Telephone Cooperative, Inc.	B	6,307
Bush-Tell, Inc.	C	315,473
Copper Valley Telephone Cooperative, Inc.	B	45,805
General Telephone Company of Alaska	A	160,836
Glacier State Telephone Company	A	250,677 290,478
Interior Telephone Company	B	18,482
Juneau and Douglas Telephone Company	A	50,198 55,193
Matanuska Telephone Association, Inc.	A	620,512
Mukluk Telephone Company, Inc.	C	3,275
Municipality of Anchorage d/b/a Anchorage Telephone Utility	A	1,014,349
National Utilities, Inc.	C	32,083
Nushagak Telephone Cooperative, Inc.	B	35,487
OTZ Telephone Cooperative, Inc.	B	3,600
Sitka Telephone Company	A	61,873
Telephone Utilities of Alaska, Inc.	B	2,369
United Utilities, Inc.	A	80,846
Whittier Telephone Company	C	Data Not Available
Yukon Telephone Company	C	3,437
SUBTOTAL		$2,945,718

Total for Central Alaska 345,671
- mail up of Juneau Douglas +

WATER UTILITIES
(Source - 1983 Annual Report)

NAME	CLASS	CUSTOMER DEPOSITS
Alyeska Utilities, Inc.	D	$ 0
Barrow Utilities and Electric Cooperative, Inc.	A	30,660
Central Alaska Utilities[1]	A	200,869
College Utilities Corporation	B	52,416
Chugiak Utilities, Inc.	D	Data Not Available
Dawn Development Corporation	D	Data Not Available
Eklutna Utilities, Inc.	D	18,930
Glacier Utilities, Inc.	D	Data Not Available
Kwik Log Water System	D	Data Not Available
Matanuska Utility Company	D	Data Not Available
McCann, Alfred O.	D	Data Not Available
McGahan Utilities, Inc.	D	Data Not Available
McKinley Utilities, Inc.	D	0
Mendenhaven Improvement & Maintenance Corporation	D	0
Municipality of Anchorage d/b/a Anchorage Water Utility	A	189,311
Norfolk Utilities, Inc.	D	2,860
Paul Omlin, Inc.	D	0

[1]Now owned by the Municipality of Anchorage d/b/a Anchorage Water Utility.

WATER UTILITIES (CONT.)
(Source - 1983 Annual Report)

NAME	CLASS	CUSTOMER DEPOSITS
Pelican Utility Company	D	$ 0
R.J. & Clara Rhodes	D	0
Romig Park Improvement Company	D	0
S & S Development	D	0
Settlers Bay Properties, Inc.	D	0
Spenard Heights Water System	D	0
Sunny Slopes Water System	D	Data Not Available
Valley Water Company, Inc.	D	8,440
SUBTOTAL		$503,486
GRAND TOTAL OF ALL UTILITIES		$9,826,810

CHAIRMAN'S INFORMATION: SCS SSHB 20(L&C)

1) BILL TITLE: "An act relating to interest on deposits collected by utilities."

a) Introduced: Goll, Sund, Marrou, Gruenberg, Taylor, and Davis.

b) Co-sponsors:

2) INTENT: This measure requires public utilities to pay interest on deposits of $100 or more, at the legal rate of interest at the time the deposit was made. Exceptions to this requirement occur as follows:

1) If the deposit is in an interest bearing account, the utility shall pay the interest rate of that account.

2) In cases where delinquent payments interrupt service, the utility is not required to pay interest for 12 months following the reestablishement of service.

SCS added an amednment which occurs on line 10 an 11 of page 1. The amendment makes it clear in statute that a public utility may collect and retain deposits for contracted monthly service.

FISCAL NOTE: 0

3) ADDITIONAL REFERRALS: Finance and Rules

4) PUBLIC HEARINGS:

a) Sponsor:

b) Public Witnesses:

5) BILL ACTION:

a) Hold in committee?
b) Assign to sub committee for further review?
c) Move from committee?
d) Close public hearings?

6) COMMITTEE ACTION?

a) amendments?
b) CS adoption? Need to adopt the L&C SCS.

IN THE HOUSE

BY THE LABOR AND COMMERCE COMMITTEE

SENATE CS FOR SPONSOR SUBSTITUTE FOR HOUSE BILL NO. 20 (L&C)

IN THE LEGISLATURE OF THE STATE OF ALASKA

FOURTEENTH LEGISLATURE - SECOND SESSION

A BILL

For an Act entitled: "An Act relating to interest on deposits collected by public utilities."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. AS 42.05 is amended by adding a new section to read:

Sec. 42.05.365. INTEREST ON DEPOSITS. (a) A public utility may collect and retain a deposit for contracted recurring monthly service. A public utility that collects and retains a deposit of $100 or more for recurring monthly service shall pay interest on that deposit at or before the time it is returned. Interest paid under this section shall be at the legal rate of interest at the time the deposit is made. However, if the deposit is placed in an interest bearing account, the utility shall pay the interest rate of the interest bearing account.

(b) If delinquent payments result in interruption of service, a public utility is not required to pay interest under (a) of this section for 12 months after reestablishment of service.

Introduced: 3/4/85
Referred: Labor & Commerce
and Finance

IN THE HOUSE

BY GOLL, SUND, MARROU, GRUENBERG AND TAYLOR

SPONSOR SUBSTITUTE FOR HOUSE BILL NO. 20

IN THE LEGISLATURE OF THE STATE OF ALASKA

FOURTEENTH LEGISLATURE - FIRST SESSION

A BILL

For an Act entitled: "An Act relating to interest on deposits collected by public utilities."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

* Section 1. AS 42.05 is amended by adding a new section to read:

Sec. 42.05.365. INTEREST ON DEPOSITS. (a) A public utility that collects and retains a deposit of $100 or more for recurring monthly service shall pay interest on that deposit at or before the time it is returned. Interest paid under this section shall be at the legal rate of interest at the time the deposit is made. However, if the deposit is placed in an interest bearing account, the utility shall pay the interest rate of the interest bearing account.

(b) If delinquent payments result in interruption of service, a public utility is not required to pay interest under (a) of this section for 12 months after reestablishment of service.

how many utilities over charge for deposit. DC

STATE OF ALASKA 1986 LEGISLATIVE SESSION
FISCAL NOTE

Revision Date : ______

REQUEST

Bill/Resolution No. : SSHB20
Title : Interest on deposits by Utilities
Sponsor : Goll, Sund, Marrou, Gruenberg
Requestor : Jeanne Smith & Taylor
Date of Request : House Rules PH465-3764
2/4/86

FISCAL DETAIL

Agency Affected : Ak Public Utilities Commission
BRU : same
Components : Administration

EXPENDITURES/REVENUES : (Thousands of Dollars)

OPERATING	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91
PERSONAL SERVICES	0	0	0	0	0	0
TRAVEL	0	0	0	0	0	0
CONTRACTUAL	0	0	0	0	0	0
SUPPLIES	0	0	0	0	0	0
EQUIPMENT	0	0	0	0	0	0
LAND & STRUCTURES						
GRANTS, CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	0	0	0	0	0	0

	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91
CAPITAL	0	0	0	0	0	0
REVENUE	0	0	0	0	0	0

FUNDING : (Thousands of Dollars)

	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91
GENERAL FUND	0	0	0	0	0	0
FEDERAL FUNDS	0	0	0	0	0	0
OTHER						
TOTAL	[illegible]	0	0	0	0	0

POSITIONS :

	FY 86	FY 87	FY 88	FY 89	FY 90	FY 91
FULL-TIME	0	0	0	0	[illegible]	0
PART-TIME	0	0	0	0	0	0
TEMPORARY	0	0	0	0	0	0

ANALYSIS : Attach a separate page if necessary

No Fiscal Impact

Prepared by : T. S. Moninski, Dep. Director Phone : 276-6222
Division : Ak Public Utilities Commission Date : 2/4/86

Approved by Commissioner : Loren K. Lounsbury Date : 2/4/86
Agency : Commerce

Distribution (by Agency preparing fiscal note) :
Legislative Finance

— FISCAL NOTE

10/25/85