ALASKA LEGISLATURE COMMITTEE FILES 1985-1986 8672

3214.54 HHESS HB 5

MEMORANDUM State of Alaska

TO: The Honorable Harold Reynolds
Commissioner
Department of Education

DATE: August 29, 1984

FILE NO: 366-017-85

TELEPHONE NO: 465-3600

FROM: Norman C. Gorsuch
Attorney General

By: Ronald W. Lorensen
Deputy Attorney General
Department of Law

SUBJECT: Emergency school closures under AS 14.03.030(2)

This confirms our conversation on Thursday, August 23, 1984.

Upon further review and analysis, I believe some clarification of my May 28, 1984, */ letter to Senator Joe Josephson regarding the scope of the "emergency school closure" provision of AS 14.03.030(2) is in order. In that letter I indicated in fairly absolute terms that planned activities such as an asbestos abatement program could never qualify as adequate grounds for an "emergency school closure."

The May 28 letter does not adequately acknowledge the discretion which AS 14.03.030(2) vests in you, as Commissioner of Education, to determine what constitutes an "emergency" justifying deviation from the normal 180-day school term. Under the law, "emergency closure days" may only be substituted for days in session with your approval. Since the legislature did not define "emergency" under AS 14.03.030(2), it is left to you to apply the appropriate standard and conditions for granting an "emergency school closure" based on the general policy and purposes underlying the school laws. See, e.g., Kenai Peninsula Fishermen's Co-op Association v. State, 628 P.2d 897, 907 (Alaska 1981).

As I indicated in my May 28 letter, pre-planned construction or maintenance activities would not normally be considered to constitute a situation covered by AS 14.03.030(2). However, that general conclusion should not be taken as implying that you may never approve a closure for a pre-planned activity when, in the exercise of your discretion in reviewing a specific case, you conclude that an emergency situation exists.

RWL:vrb

cc: Honorable Joe Josephson
Alaska State Senator

*/ Redated for printing July 1, 1984: 1984 Inf. Op. Att'y Gen. (July 1; 366-017-85).

TESTIMONY OF
SENATOR JOE P. JOSEPHSON
January 23, 1985

SSHB 5 - "AN ACT ESTABLISHING AN ASBESTOS HEALTH HAZARD ABATEMENT PROGRAM"

Prepared for: House HESS Committee

Mr. Chairman and Members of the Committee;

Thank you for this opportunity to discuss with you the problem of asbestos in Alaska's public schools.

Asbestos in public facilities is a problem that goes beyond the school buildings of Alaska. For example, Commissioner Richard Knapp of the Department of Transportation and Public Facilities has noted the presence of asbestos in facilities of the Alaska Railroad and the Department is continuing to work on its inventory of asbestos in public buildings.

But the issue of asbestos in school buildings is particularly critical, medically and morally. There are several explanations for this criticality:

First, school attendance is required by law; the child of school age has no practical alternative to presence in the school house.

Second, children are especially vulnerable to the health risk of asbestos, according to the Environmental Protection Agency; their remaining life expectancy, as one writer has noted, "provides the 20 to 40 years it takes for disabling and fatal asbestos-related diseases to develop."

Third, school activities can damage or disturb asbestos, such as a ball hitting a gym ceiling or a ski or ski pole or hockey stick in contact with a ceiling or wall, and if asbestos materials become wet (for example, from a roof that leaks) or damaged or disturbed either by school activities, or vandalism -- or, indeed, by maintenance activities (for example, the repair of electrical wiring in a ceiling), the health hazards rise because of the dispersal of countless particles.

Fourth, governments hold their highest moral responsibility to the children of the society governments serve.

Naturally, because of the cost of asbestos removal programs, prudent people ask about the possibility of less costly alternatives. The literature in your Committee's possession contains warning against any "quick fix" solutions. For example, at page 5 of State Government News (March 1984), Elaine Knapp has written:

> 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.

And in the same tenor is an article in The Journal of School Health (August 1982) by Leonard Stavisky. Mr. Stavisky

notes that encapsulation, which involves the use of a sealant to cover the original asbestos material and prevent further flaking, "may not hold up for a long period of time" and that "the very act of applying a chemical covering may damage some of the asbestos."

This morning, in fact, I questioned Mr. Tom Freeman of the Anchorage School District, to ascertain whether any technology has been demonstrated that would obviate the necessity of asbestos removal. Mr. Freeman responded in the negative. In fact, he reported, he is in contact with school officials in Jefferson County, Missouri, where an encapsulation program was carried out within the past several years. There, school officials have determined that the program is a failure, and that removal of asbestos is the only prudent course.

Structural containment is another method which has been examined, requiring the installation of a permanent partition between the asbestos area and the public. In the schools in my district, this methodology would be unacceptable, because the spaces between ceilings and the floor above are used for electrical, plumbing, heating, and ventilation installations. In a building like Bartlett High School, workers need access to the area behind suspended ceilings to repair and check faulty wiring, water leakage,

and the air circulation system. The ventilation ducts can carry asbestos particles from one area of the building to another.

I am grateful, Mr. Chairman, for your leadership this year in bringing the need for asbestos removal before the House. I am also grateful to Governor Sheffield, who has included 11 million dollars for asbestos removal in his proposed Fiscal Year 1986 budget.

Unfortunately, the scope of the problem in our schools is much greater than 11 million dollars. The number one priority of the Anchorage School District, as transmitted to the Anchorage legislators at this session, is 11 million dollars for the removal of asbestos in Anchorage schools. This amount, which would meet substantially the remaining need in Anchorage, has nothing to do, of course, with the need in other areas of the State. The 11 million dollar figure is computed <u>after</u> the achievement of asbestos removal at West, East and Dimond High Schools, and Clark Junior High School, in Anchorage. And it does not take into account the cost of the 18 million dollar asbestos removal program at Bartlett High School.

The good news is that Anchorage has received 10 million dollars of State money for the Bartlett asbestos removal program, and because of a unique quirk -- part of the Bartlett school building is on federal land -- Anchorage

expects to receive another 6 million dollars from the United States government as a contribution to the cost of asbestos removal at that school.

But asbestos removal in Anchorage schools is a 55-school obligation, and we have hardly begun.

Let me turn, now, to the bill itself.

It would appear that section 1, allowing the Commissioner of Education to designate a shorter school term, may no longer be necessary. Section 1 was prepared last year, after the Attorney General had advised the Commissioner that existing statutes did not give the Commissioner authority to relax the 180-day school term requirement for asbestos removal. At that time, the Department of Law's rationale that while waivers may be granted in cases of emergency, the installation of asbestos in the schools was a human-caused problem, not a natural emergency such as an earthquake or flood.

Since then, the Commissioner has been permitted by the Attorney General to relax the 180-day school term requirement for Bartlett High School, without a change in the statute. Accordingly, by this precedent, it would appear that the Attorney General's mind has changed and no statutory amendment is needed.

I am a strong believer in section 2, although you will hear testimony against it. Let me tell you something of the dimension of the asbestos problem which I have not

mentioned. According to the National Cancer Institute, between 1.6 and 2.15 million American workers will die from exposure to cancer-causing asbestos -- and another 3 million more may suffer non-cancerous, but fatal, asbestosis.

In your packets is the article by Kathleen McCormick in The American School Board Journal (April 1984) which warns:

> 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.

I have some confidence that the Anchorage School District, because of the availability of competing contractors with asbestos-removing experience and because of the District's sophistication in contract management, is making sure that workers removing asbestos are trained and qualified, and appropriately supervised.

In all candor, I am not equally confident about other areas of the state. Last year, your Committee heard eyewitness testimony that Alaska workers handling asbestos on the job-site have been observed using careless methods reflecting a want of training. We are concerned for the safe working place; we are also concerned about the thoroughness and completeness of the asbestos removal job itself.

I think it is also important, Mr. Chairman, that provisions of the bill creating statutory duties of school officials to comply with EPA regulation be enacted into law. At last report, in the Thirteenth Alaska State Legislature, we were told that only about half of the State's school districts had examined their facilities for the presence of asbestos as part of EPA's requirement that schools be inspected for asbestos hazards, with record-keeping of the inspection results and notification to parents and employees if asbestos is found.

This slow-paced response to EPA must be deemed unacceptable, and mandatory state legislation appears to be needed and even overdue.

Mr. Chairman, I again wish to commend you and your Committee for your prompt action to consider the asbestos issue in our schools. Surely this is one problem that must be addressed even in this time of relative constraint in state budgeting. For if Alaska cannot afford to remove asbestos in the schools, what state can? In my judgment, our thoroughgoing action now will save hundreds or thousands of Alaska youngsters from disability and untimely death over the next several decades. The resources of local districts are inadequate to the problem, an Alaskans look here for a solution.

SECTIONAL ANALYSIS - SSHB 5 "AN ACT ESTABLISHING AN ASBESTOS HEALTH HAZARD ABATEMENT PROGRAM; EFD." by Gruenberg, Coll, Davis, Koponen and Navarre

Section 1 Allows the Commissioner of the Department of Education to designate a shorter school term (of at least 150 days) in a particular school for the purpose of abating an asbestos health hazard.

Section 2 Establishes the asbestos health hazard abatement program in the Department of Labor for the purposes of inspecting schools which have not complied with EPA regulations; coordinating state agencies; establishing guidelines for safe working conditions where asbestos is involved; oversight of employee certification programs and adoption of regulations.

CERTIFICATION PROGRAMS. The Department of Labor shall establish guidelines for employee training programs, review and approve those programs meeting the standards. Any contractor undertaking an asbestos related project must have an approved program and certify that each employee is trained. Violations of these requirements would make a contractor liable for civil penalties and guilty of a misdemeanor.

DEPARTMENT OF EDUCATION. Duties of the department includes cooperation with the Department of Labor and school districts; keeping records on asbestos abatement projects, administration and distribution of grants to schools from available funds.

SCHOOL OFFICIALS. Duties of school officials include compliance with EPA regulations for asbestos inspection through contracts or cooperation with the Department of Labor, notification of school personnel and parents of the results, maintaining records and contracting for renovations as needed.

Section 3 Immediate effective date.

NOTE: HB 57 is the companion appropriation bill which would provide $300.0 to the Department of Labor to cover the cost of asbestos inspections and sampling (or contracts for those purposes), and $26 million to the Department of Education for grants to schools for asbestos abatement projects.

RESOLUTION: 84-10

ASBESTOS ABATEMENT IN ALASKA SCHOOLS

The Alaska Public Health Association,

Believing that friable asbestos, similar to that which was discovered in schools in the Anchorage School District, exists in numerous other schools in school districts throughout the State; and

Knowing that an Asbestos Technical Panel, convened in Anchorage by the Anchorage School Board, reviewed thoroughly health hazards associated with asbestos in Anchorage schools; and, as a result, recommended that friable asbestos be removed from Anchorage schools as an unacceptable health hazard[1]; and

Believing that many Alaskan school children in school districts other than Anchorage may be exposed to health hazards from asbestos that are preventable; therefor

Urges passage of Senate Bills 373 and 374; and

Urges the Governor to form a special task force with representatives of Department of Health and Social Services, Department of Labor, Department of Education, Department of Transportation & Public Facilities, Department of Environmental Conservation, parents of school children, and teachers to implement an asbestos abatement program in all Alaskan schools in accordance with recognized standards for asbestos abatement[2]; and

Urges implementation of an asbestos abatement program which will include the following tasks:

1. Implement and insure completion of a comprehensive survey to identify and categorize asbestos in all Alaskan schools.
2. Evaluate health hazards associated with any asbestos (friable asbestos and asbestos in other forms) discovered in the survey and make recommendations for appropriate medical surveillance of students, teachers and workers exposed to asbestos.
3. Insure notification of teachers, parents, and students of the presence of friable asbestos identified in Alaskan schools in accordance with guidelines established by the EPA.
4. Recommend a plan for removal of friable asbestos, where necessary, and develop appropriate bid specifications and guidelines so that school districts can be assured that asbestos will be removed according to established standards which protect workers, students, parents and teachers during the removal process as well as insure that asbestos is removed totally and is adequately disposed of in approved sites.
5. Increase awareness of the health hazards associated with asbestos and protect against future problems by making sure that asbestos containing materials are not used in new construction.

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1. Asbestos Technical Advisory Panel Recommendations, ASD Memorandum #534(82-83), Anchorage School District, Anchorage, Alaska, May 23, 1983.
2. Asbestos-Containing Materials in School Buildings: A Guidance Document, Part 1 and 2. U.S. EPA, Office of Toxic Substances, Washington, D.C., March 1979.

STATE OF ALASKA

BILL SHEFFIELD, GOVERNOR

DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

OFFICE OF THE COMMISSIONER

POUCH Z
JUNEAU, ALASKA 99811
PHONE: (907) 465-3900

May 29, 1984

The Honorable Joe Josephson
Alaska State Senate
Pouch V
Juneau, AK 99811

Dear Senator Josephson:

This is in response to your request for information concerning asbestos in public facilities and the Alaska Railroad. What we have learned about the risks associated with the use of asbestos is certainly disturbing.

Facilities

Prior to the known health hazards associated with asbestos (such as lung and intestinal cancer), many State public facilities were constructed utilizing asbestos for floor and ceiling tile, exterior siding, pipe and ceiling insulation, and other products which contained varying amounts of asbestos.

As you know, extensive remodeling efforts are underway at the Anchorage International Airport. As part of this effort, the ceiling above the main ticket lobby is being replaced following the removal of asbestos fireproofing material above the existing ceiling. Overall construction costs will total $1.8 million; $850,000 of that amount is being spent solely for asbestos removal.

An Inventory and Condition Survey of other State facilities will be necessary in order to identify the extent of any additional asbestos problems, and establish priorities for its removal prior to the Department of Transportation and Public Facilities being able to specifically address either the timeframe or the cost involved. We have estimated, however, that the survey, along with necessary laboratory testing, could cost in excess of $5 million, and could take numerous years to complete. Currently we do not have funding to cover this, so I am initiating an in-house survey to try to determine the scope of the problem.

ALASKA RAILROAD

In 1982, it became apparent that the Alaska Railroad had an extensive amount of asbestos located around the railroad work areas. Asbestos had been traditionally used for pipe and boiler insulation, wall coverings, and ceiling and electrical insulation. It also became apparent that the substance would need to be removed from the perimeter of the work areas. It was determined that removal would require the most up-to-date methods in order to comply with Alaska Occupational Health and Environmental Control Standards, and ensure the health and safety of all employees during the removal period. Management and employees of the Alaska Railroad were notified of the hazard, and plans to remove the asbestos were prioritized and initiated. Safety classes were held in which 24 railroad engineering and mechanical personnel were trained in the proper techniques for personal protection and asbestos removal. The Alaska Railroad Manager of Safety was assisted in these classes by Environmental Protection Agency officials and an environmental engineer certified in asbestos identification and removal.

When the actual removal process began, a certified asbestos identification expert was retained for independent monitoring during the procedure. To date, the Railroad's diesel repair shop, the largest building in the yard in Anchorage, has been cleaned up. Asbestos removal costs for this building totaled about $115,000; $50,000 went into monitoring the air to ensure that no asbestos particles were present outside of the area during cleanup. Last year, after the Railroad's safety office had drawn up some rough plans for a decontamination area, a unit was built out of a troop transport rail car. It now contains an area where workers can change from the special suits worn in asbestos areas, and shower following their shift. This entire operation was inspected by at least two experts in asbestos removal, announcing that this was a model program, and that all necessary safeguards were in place to ensure employee protection. The total cost of the "decontamination car" was $75,000.

Last year, the Department of Transportation and Public Facilities conducted its own Inventory and Condition Survey of the Alaska Railroad Facilities. Departmental facilities planning staff and a team of consultants, the architectural firm of Selberg Associates, Inc., performed a general inspection of all railroad facilities, and obtained samples from areas where asbestos was suspect. These field inspections revealed a number of health and safety code deficiencies, among them, the use of asbestos. The DOT&PF estimates that future asbestos removal costs from the Alaska Railroad in Anchorage alone will total $500,000. Replacement of removed insulation materials from Fairbanks, Healy, Whittier, Seward and Portage will add to the total.

The Department of Transportation and Public Facilities remains committed to working cooperatively with the Departments of Labor and Environmental Conservation to ensure that future asbestos removal in public facilities, and the Alaska Railroad, is initiated in the safest, most timely, and cost-effective methods possible.

If we may be of further assistance, please contact this office.

Sincerely,

R. J. Knapp
Commissioner

SF/ajh

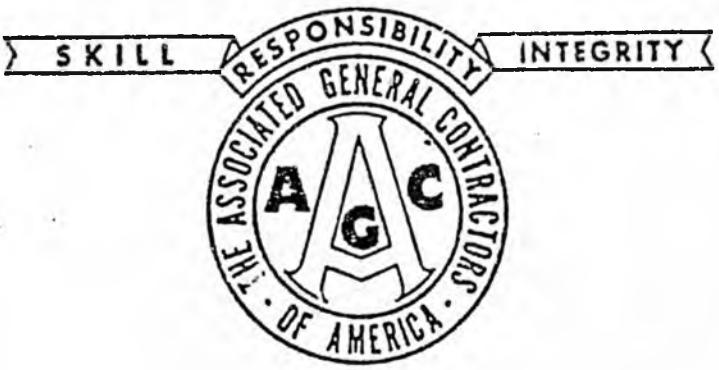
ALASKA CHAPTER
ASSOCIATED GENERAL CONTRACTORS OF AMERICA, INC.

POSITION STATEMENT

ON LEGISLATION ESTABLISHING

AN ASBESTOS HEALTH HAZARD ABATEMENT PROGRAM (HB 5)

January 18, 1985



POSITION PAPER ON HB 5

The Alaska Chapter, Associated General Contractors of America, Inc. (A.G.C.) represents more than 900 companies, including most of the general contracting companies engaged in Alaska's commercial construction.

The A.G.C. agrees with the intention of this bill - the abatement of asbestos health hazards. Many A.G.C. contractors are or have been involved in this very important safety effort. There is, however, a section of the bill that unnecessarily duplicates existing safety regulations and should, therefore, be deleted.

Specifically, we draw your attention to Section 18.28.030, Certification Programs. In this section, the Department of Labor is given authority to certify contractors and employees who intend to conduct asbestos abatement.

What the bill essentially requires is a State license to do asbestos work. But is there a need for such a license? We think not.

There are literally thousands of potentially hazardous substances that are handled safely in todays workplace. Asbestos should not be treated any differently than these substances.

Another serious concern that needs to be addressed is that of liability. Asbestos work is plagued with lawsuits. Through the proposed Department of Labor certification program, the State may become party to these suits by certifying that contractors, employees and labor organizations are competent to undertake this work, the State may have

liability if an employer or employee is certified improperly. We suggest an opinion from the attorney general's office be obtained prior to passage of this bill from committee.

Finally, in examining the fiscal requirements of this proposed licensing program, it appears that millions of dollars would be needed, rather than the proposed $300,000. It is virtually impossible to competently administer the proposals contained in HB 5 for $300,000. We suggest that an inadequately administered program is worse than no program at all. A realistic fiscal note must be developed so that lawmakers may assess the true costs of proposed legislation.

We believe once the true cost of this program is known, the question will arise: What does a certification program provide that is not already enforceable under the existing DOSH safety code regulations? The answer is "nothing." Sufficient asbestos health standards already exist, including requirements for employer training and proper respirator usage. (See attached).

In conclusion, we request this committee to thoroughly determine the fiscal costs of the proposed legislation, including potential State liability and to balance that cost against the benefits received. A.G.C. contends that for the certification program, the dollar cost will be high and there is no benefit because sufficient asbestos health standards presently exist.

We strongly urge deletion of the licensing section of SSHB 5.

04.0102 Asbestos. (a) Definitions, for the purpose of 04.0102.

(1) "Asbestos" includes chrysotile, amosite, crocidolite, tremolite, anthophyllite and actinolite.

(2) "Asbestos fibers" means asbestos fibers longer than five micrometers.

(b) Permissible exposure to airborne concentrations of asbestos fibers.

(1) Standard effective July 7, 1972. The 8-hour time weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed five fibers, longer than five micrometers, per cubic centimeter of air, as determined by the method prescribed in 04.0102(e).

(2) Standard effective July 1, 1976. The 8-hour time weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed two fibers, longer than five micrometers, per cubic centimeter of air, as determined by the method prescribed in 04.0102(e).

(3) Ceiling concentration. No employee shall be exposed at any time to airborne concentrations of asbestos fibers in excess of 10 fibers, longer than five micrometers, per cubic centimeter of air, as determined by the method prescribed in 04.0102(e).

(c) Methods of compliance.

(1) Engineering methods.

(A) Engineering controls. Engineering controls, such as, but not limited to, isolation, enclosure, exhaust ventilation, and dust collection, shall be used to meet the exposure limits prescribed in 04.0102(b).

(B) Local exhaust ventilation

(i) Local exhaust ventilation and dust collection systems shall be designed, constructed, installed, and maintained in accordance with the American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, ANSI Z9.2-1971, which is incorporated by reference herein.

(ii) See 1910.6 of the Federal Occupational Safety and Health Act concerning the availability of ANSI Z9.2-1971, and the maintenance of a historic file in connection therewith. The address of the American National Standards Institute is given in 04.0109.

(C) Particular tools. All hand-operated and power-operated tools which may produce or release asbestos fibers in excess of the exposure limits prescribed in 04.0102(b), such as, but not limited to, saws, scorers, abrasive wheels, and drills, shall be provided with local exhaust ventilation systems in accordance with 04.0102(c)(1)(B).

(2) Work practices.

(A) Wet methods. Insofar as practicable, asbestos shall be handled, mixed, applied, removed, cut, scored, or otherwise worked in a wet state sufficient to prevent the emission of airborne fibers in excess of the exposure limits prescribed in 04.0102, unless the usefulness of the product would be diminished thereby.

(B) Particular products and operations. No asbestos cement, mortar, coating, grout, plaster, or similar material containing asbestos shall be removed from bags, cartons, or other containers in which they are shipped, without being either wetted, or enclosed, or ventilated so as to prevent effectively the release of airborne asbestos fibers in excess of the limits prescribed in 04.0102.

(C) Spraying, demolition, or removal. Employees engaged in the spraying of asbestos, the removal, or demolition of pipes, structures, or equipment covered or insulated with asbestos, and in the removal or demolition of asbestos insulation or coverings shall be provided with respiratory equipment in accordance with 04.0102(d)(2)(C) and with special clothing in accordance with 04.0102(d)(3).

(d) Personal protective equipment.

(1) Compliance with the exposure limits prescribed by 04.0102(b) may not be achieved by the use of respirators or shift rotation of employees, except:

(A) During the time period necessary to install the engineering controls and to institute the work practices required by 04.0102(c);

(B) In work situations in which the methods prescribed in 04.0102(c) are either technically not feasible or feasible to an extent insufficient to reduce the airborne concentrations of asbestos fibers below the limits prescribed by 04.0102(b); or

(C) In emergencies.

(D) Where both respirators and personnel rotation are allowed by 04.0102(d)(1)(A), (B) or (C), and both are practicable, personnel rotation shall be preferred and used.

(2) Where a respirator is permitted by 04.0102(d)(1), it shall be selected from among those approved by the Bureau of Mines, Department of the Interior, or the National Institute for Occupational Safety and Health, Department of Health, Education, and Welfare, under the provisions of 30 CFR Part 11 (37 F.R. 8244, Mar. 25, 1972), and shall be used in accordance with 04.0102(d)(2)(A), (B), (C) and (D).

(A) Air purifying respirators. A reusable or single use air purifying respirator, or a respirator described in 04.0102(d)(2)(B) or (C), shall be used to reduce the concentrations of airborne asbestos fibers in the respirator below the exposure limits prescribed in 04.0102(b), when the ceiling or the 8-hour time weighted average airborne concentrations of asbestos fibers are reasonably expected to exceed no more than 10 times those limits.

(B) Powered air purifying respirators. A full facepiece powered air purifying respirator, or a powered air purifying respirator, or a respirator described in 04.0102(d)(2)(C), shall be used to reduce the concentrations of airborne asbestos fibers in the respirator below the exposure limits prescribed in 04.0102(b), when the ceiling or the 8-hour time weighted average concentrations of asbestos fibers are reasonably expected to exceed 10 times, but not 100 times, those limits.

(C) Type "C" supplied-air respirators, continuous flow or pressure-demand class. A type "C" continuous flow or pressure-demand, supplied-air respirator shall be used to reduce the concentrations of airborne asbestos fibers in the respirator below the exposure limits prescribed in 04.0102(b), when the ceiling or the 8-hour time weighted average airborne concentrations of asbestos fibers are reasonably expected to exceed 100 times those limits.

(D) Establishment of a respirator program.

(i) The employer shall establish a respirator program in accordance with the requirements of the American National Standards Practices for Respiratory Protection, ANSI Z88.2–1969, which is incorporated by reference herein.

(ii) See 1910.6 of the Federal Occupational Safety and Health Act concerning the availability of ANSI Z88.2–1969 and the maintenance of a historic file in connection therewith. The address of the American National Standards Institute is given in 04.0109.

(iii) No employee shall be assigned to tasks requiring the use of respirators if, based upon his most recent examination, the examining physician determines that the employee will be unable to function normally wearing a respirator, or that the safety or health of the employee or other employees will be impaired by his use of a respirator. Such employee shall be rotated to another job or given the opportunity to transfer to a different position whose duties he is able to perform with the same employer, in the same geographical area and with the same seniority, status, and rate of pay he had just prior to such transfer, if such a different position is available.

(3) Special clothing. The employer shall provide, and require the use of, special clothing, such as coveralls or similar whole body clothing, head coverings, gloves, and foot coverings for any employee exposed to airborne concentrations of asbestos fibers, which exceed the ceiling level prescribed in 04.0102(b).

(4) Change rooms.

(A) At any fixed place of employment exposed to airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in 04.0102(b), the employer shall provide change rooms for employees working regularly at the place.

(B) Clothes lockers. The employer shall provide two separate lockers or containers for each employee, so separated or isolated as to prevent contamination of the employee's street clothes from his work clothes.

(C) Laundering.

(i) Laundering of asbestos contaminated clothing shall be done so as to prevent the release of airborne asbestos fibers in excess of the exposure limits prescribed in 04.0102(b).

(ii) Any employer who gives asbestos-contaminated clothing to another person for laundering shall inform such person of the requirement in 04.0102(d)(4)(C)(i) to effectively prevent the release of airborne asbestos fibers in excess of the exposure limits prescribed in 04.0102(b).

(iii) Contaminated clothing shall be transported in sealed impermeable bags, or other closed, impermeable containers, and labeled in accordance with 04.0102(g).

(e) Method of measurement. All determinations of airborne concentrations of asbestos fibers shall be made by the membrane filter method at 400–450 X (magnification) (4 millimeter objective) with phase contrast illumination.

(f) Monitoring.

(1) Initial determinations. Within six months of the publication of 04.0102 every employer shall cause every place of employment where asbestos fibers are released to be monitored in such a way as to determine whether every employee's exposure to asbestos fibers is below the limits prescribed in 04.0102(b). If the limits are exceeded, the employer shall immediately undertake a compliance program in accordance with 04.0102(c).

(2) Personal monitoring.

(A) Samples shall be collected from within the breathing zone of the employees, on membrane filters of 0.8 micrometer porosity mounted in an open-face filter holder. Samples shall be taken for the determination of the 8-hour time weighted average airborne concentrations and of the ceiling concentrations of asbestos fibers.

(B) Sampling frequency and patterns. After the initial determinations required by 04.0102(f)(1), samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of employees. In no case shall the sampling be done at intervals greater than six months for employees whose exposure to asbestos may reasonably be foreseen to exceed the limits prescribed by 04.0102(b).

(3) Environmental monitoring.

(A) Samples shall be collected from areas of a work environment which are representative of the airborne concentration of asbestos fibers which may reach the breathing zone of employees. Samples shall be collected on a membrane filter of 0.8 micrometer porosity mounted in an open-face filter holder. Samples shall be taken for the determination of the 8-hour time weighted average airborne concentrations and of the ceiling concentrations of asbestos fibers.

(B) Sampling frequency and patterns. After the initial determinations required by 04.0102(f)(1), samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of the employees. In no case shall sampling be at intervals greater than six months for employees whose exposures to asbestos may reasonably be foreseen to exceed the exposure limits prescribed in 04.0102(b).

(4) Employee observation of monitoring. Affected employees, or their representatives, shall be given a reasonable opportunity to observe any monitoring required by 04.0102 and shall have access to the records thereof.

(g) Caution signs and labels.

(1) Caution signs.

(A) Posting. Caution signs shall be provided and displayed at each location where airborne concentrations of asbestos fibers may be in excess of the exposure limits prescribed in 04.0102(b). Signs shall be posted at such a distance from such a location so that an employee may read the signs and take necessary protective steps before entering the area marked by the signs. Signs shall be posted at all approaches to areas containing excessive concentrations of airborne asbestos fibers.

(B) Sign specifications. The warning signs required by 04.0102(g)(1)(A) shall conform to the requirements of 20 inches by 14 inches vertical format signs specified in 02.0105 and to 04.0102(g)(1)(B). The signs shall display the following legend in the lower panel, with letter sizes and styles of a visibility at least equal to that specified in 04.0102(g)(1)(B).

Legend	Notation
Asbestos	1 in. Sans Serif, Gothic or Block
Dust hazard	½ in. Sans Serif, Gothic or Block
Avoid breathing dust	¼ in. Gothic
Wear assigned protective equipment	¼ in. Gothic
Do not remain in area unless your work requires it.	¼ in. Gothic
Breathing asbestos dust may be hazardous to your health	14 point Gothic

Spacing between lines shall be at least equal to the height of the upper of any two lines.

-(2) Caution labels.

(A) Labeling. Caution labels shall be affixed to all raw materials, mixtures, scrap, waste, debris, and other products containing asbestos fibers, or to their containers, except that no label is required where asbestos fibers have been modified by a bonding agent, coating, binder, or other material so that during any reasonably foreseeable use, handling, storage, disposal, processing, or transportation, no airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in 04.0102(b) will be released.

(B) Label specifications. The caution labels required by 04.0102(g)(2)(A) shall be printed in letters of sufficient size and contrast as to be readily visible and legible. The label shall state:

CAUTION

Contains Asbestos Fibers
Avoid Creating Dust
Breathing Asbestos Dust May Cause
Serious Bodily Harm

(h) Housekeeping.

(1) Cleaning. All external surfaces in any place of employment shall be maintained free of accumulations of asbestos fibers if, with their dispersion, there would be an excessive concentration.

(2) Waste disposal. Asbestos waste, scrap, debris, bags, containers, equipment, and asbestos-contaminated clothing, consigned for disposal, which may produce in any reasonably foreseeable use, handling, storage, processing, disposal, or transportation, airborne concentrations of asbestos fibers in excess of the exposure limits prescribed in 04.0102(b), shall be collected and disposed of in sealed impermeable bags, or other closed, impermeable containers.

(i) Recordkeeping.

(1) Exposure records. Every employer shall maintain records of any personal or environmental monitoring required by 04.0102. Records shall be maintained for a period of at least 20 years and shall be made available upon request to the Assistant Secretary of Labor for Occupational Safety and Health, the Director of the National Institute for Occupational Safety and Health, and to authorized representatives of either.

(2) Employee access. Every employee and former employee shall have reasonable access to any record required to be maintained by 04.0102(i)(1) which indicates the employee's own exposure to asbestos fibers.

(3) Employee notification. Any employee found to have been exposed at any time to airborne concentrations of asbestos fibers in excess of the limits prescribed in 04.0102(b) shall be notified in writing of the exposure as soon as practicable but not later than five days of the finding. The employee shall also be timely notified of the corrective action being taken.

(j) Medical examinations.

(1) General. The employer shall provide or make available at his cost, medical examinations relative to exposure to asbestos required by 04.0102(j).

(2) Preplacement. The employer shall provide or make available to each of his employees, within 30 calendar days following his first employment in an occupation exposed to airborne concentrations of asbestos fibers, a comprehensive medical examination, which shall include, as a minimum, a chest roentgenogram (posterior–anterior 14 x 17 inches), a history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at one second ($FEV_{1.0}$).

(3) Annual examinations. On or before January 31, 1973, and at least annually thereafter, every employer shall provide, or make available, comprehensive medical examinations to each of his employees engaged in occupations exposed to airborne concentrations of asbestos fibers. Such annual examination shall include, as a minimum, a chest roentgenogram (posterior–anterior 14 x 17 inches), a history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at one second ($FEV_{1.0}$).

(4) Termination of employment. The employer shall provide, or make available, within 30 calendar days before or after the termination of employment of any employee engaged in an occupation exposed to airborne concentrations of asbestos fibers, a comprehensive medical examination which shall include, as a minimum, a chest roentgenogram (posterior–anterior 14 x 17 inches), a history to elicit symptomatology of respiratory disease, and pulmonary function tests to include forced vital capacity (FVC) and forced expiratory volume at one second ($FEV_{1.0}$).

(5) Recent examinations. No medical examination is required of any employee, if adequate records show that the employee has been examined in accordance with 04.0102(j) within the past one-year period.

(6) Medical records.

(A) Maintenance. Employers of employees examined pursuant to 04.0102(j) shall cause to be maintained complete and accurate records of all such medical examinations. Records shall be retained by employers for at least 20 years.

(B) Access. The contents of the records of the medical examinations required by 04.0102(j) shall be made available, for inspection and copying, to the Assistant Secretary of Labor for Occupational Safety and Health, the Director of NIOSH, to authorized physicians and medical consultants of either of them, and, upon the request of an employee or former employee, to his physician. Any physician who conducts a medical examination required by 04.0102(j) shall furnish to the employer of the examined employee all the information specifically required by 04.0102(j) and any other medical information related to occupational exposure to asbestos fibers.

04.0103 Ventilation. (a) Abrasive blasting.

(1) Definitions applicable to 04.0103.

(A) Abrasive. A solid substance used in an abrasive blasting operation.

(B) Abrasive-blasting respirator. A continuous flow air-line respirator constructed so that it will cover the wearer's head, neck, and shoulders to protect him from rebounding abrasive.

(C) Blast cleaning barrel. A complete enclosure which rotates on an axis, or which has an internal moving tread to tumble the parts, in order to expose various surfaces of the parts to the action of an automatic blast spray.

(D) Blast cleaning room. A complete enclosure in which blasting operations are performed and where the operator works inside of the room to operate the blasting nozzle and direct the flow of the abrasive material.

(E) Blasting cabinet. An enclosure where the operator stands outside and operates the blasting nozzle through an opening or openings in the enclosure.

(F) Clean air. Air of such purity that it will not cause harm or discomfort to an individual if it is inhaled for extended periods of time.

(G) Dust collector. A device or combination of devices for separating dust from the air handled by an exhaust ventilation system.

(H) Exhaust ventilation system. A system for removing contaminated air from a space, comprising two or more of the following elements: (a) enclosure or hood, (b) duct work, (c) dust collecting equipment, (d) exhauster, and (e) discharge stack.

(I) Particulate-filter respirator. An air purifying respirator, commonly referred to as a dust or a fume respirator, which removes most of the dust or fume from the air passing through the device.

(J) Respirable dust. Airborne dust in sizes capable of passing through the upper respiratory system to reach the lower lung passages.

(K) Rotary blast cleaning table. An enclosure where the pieces to be cleaned are positioned on a rotating table and are passed automatically through a series of blast sprays.

(L) Abrasive blasting. The forcible application of an abrasive to a surface by pneumatic pressure, hydraulic pressure, or centrifugal force.

(2) Dust hazards from abrasive blasting.

(A) Abrasives and the surface coatings on the materials blasted are shattered and pulverized during blasting operations and the dust formed will contain particles of respirable size. The composition and toxicity of the dust from these sources shall be considered in making an evaluation of the potential health hazards.

(B) The concentration of respirable dust or fume in the breathing zone of the abrasive-blasting operator or any other worker shall be kept below the levels specified in 04.0101.

SUBCHAPTER 1 - GENERAL SAFETY CODE

ARTICLE 4 - PERSONAL PROTECTIVE EQUIPMENT

01.0401 General requirements. (a) Application. Protective equipment, including personal protective equipment for eyes, face, head, and extremetles, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition whenever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact.

(b) Employee-owned equipment. Where employees provide their own protective equipment, the employer shall be responsible to assure its adequacy, including proper maintenance, and sanitation of such equipment.

(1) Other personal safety equipment or clothing, such as rubber gloves, rubber boots, leggings, aprons, hand pads, safety belts, life lines, buoyant vests, shall be furnished to the employees who are exposed to hazards where such device may be expected to prevent injury.

(c) Design. All personal protective equipment shall be of safe design and construction for the work to be performed.

(d) Sterilization. Goggles, rubber gloves, respirators and other protectors shall not be interchanged among employees unless they have been sterilized.

01.0402 Eye and face protection. (a) General.

(1) Protective eye and face equipment shall be required where there is a reasonable probability of injury that can be prevented by such equipment. In such cases, employers shall make conveniently available a type of protector suitable for the work to be performed, and employees shall use such protectors. No unprotected person shall knowingly be subjected to a hazardous enviornmental condition. Suitable eye protectors shall be provided where machines or operations present the hazard of flying objects, glare, liquids, injurious radiation, or a combination of these hazards.

(A) An employer must provide all employees working with acids, protective clothing, as well as any other equipment needed for safety purposes.

(B) Goggles, hard hats, masks, shields, or other prescribed face, eye and head protection shall be worn by employees who are engaged in welding, grinding, torch cutting, snagging or chipping, handling molten metals, caustics, or who are exposed to harmful rays, dust or flying materials of any kind.

(2) Protectors shall meet the following minimum requirements.

(A) They shall provide adequate protection against the particular hazards for which they are designed.

(B) They shall be reasonably comfortable when worn under the designated conditions.

(C) They shall fit snugly and shall not unduly interfere with the movements of the wearer.

(D) They shall be durable.

(E) They shall be capable of being disinfected.

(F) They shall be easily cleanable.

(G) Protectors shall be kept clean and in good repair.

(3) Persons whose vision requires the use of corrective lenses in spectacles, and who are required by this standard to wear eye protection, shall wear goggles of one of the following types:

(A) Spectacles whose protective lenses provide optical correction.

(B) Goggles that can be worn over corrective spectacles without disturbing the adjustment of the spectacles.

(C) Goggles that incorporate corrective lenses mounted behind the protective lenses.

(4) Every protector shall be distinctly marked to facilitate identification only of the manufacturer.

(5) When limitations or precautions are indicated by the manufacturer, they shall be transmitted to the user and care taken to see that such limitations and precautions are strictly observed.

(6) Design, construction, testing, and use of devices for eye and face protection shall be in accordance with American National Standard for Occupational and Educational Eye and Face Protection, Z87.1-1968.

01.0403 Respiratory protection. (a) Permissible practice.

(1) In the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary objective

shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used pursuant to the following requirements.

(2) Respirators shall be provided by the employer when such equipment is necessary to protect the health of the employees. The employer shall provide the respirators which are applicable and suitable for the purpose intended. The employer shall be responsible for the establishment and maintenance of a respiratory protective program which shall include the requirements outlined in 01.0403(b).

(3) The employee shall use the provided respiratory protection in accordance with instructions and training received.

(b) Requirements for a minimal acceptable program.

(1) Written standard operating procedures governing the selection and use of respirators shall be established.

(2) Respirators shall be selected on the basis of hazards to which the worker is exposed.

(3) The user shall be instructed and trained in the proper use of respirators and their limitations.

(4) Where practicable, the respirators should be assigned to individual workers for their exclusive use.

(5) Respirators shall be regularly cleaned and disinfected. Those issued for the exclusive use of one worker should be cleaned after each day's use, or more often if necessary. Those used by more than one worker shall be thoroughly cleaned and disinfected after each use.

(6) Respirators shall be stored in a convenient clean, and sanitary location.

(7) Respirators used routinely shall be inspected during cleaning. Worn or deteriorated parts shall be replaced. Respirators for emergency use, such as self-contained devices shall be thoroughly inspected at least once a month and after each use.

(8) Appropriate surveillance of work area conditions and degree of employee exposure or stress shall be maintained.

(9) There shall be regular inspection and evaluation to determine the continued effectiveness of the program.

(10) Persons should not be assigned to tasks requiring use of respirators unless it has been determined that they are physically able to perform the work and use the equipment. The local physician shall determine what health and physical conditions are pertinent. The respirator user's medical status should be reviewed periodically (for instance, annually.)

(11) Approved or accepted respirators shall be used when they are available. The respirators furnished shall provide adequate respiratory protection against the particular hazard for which it is designed in accordance with standards established by competent authorities. The U.S. Department of Interior, Bureau of Mines, and the U.S. Department of Agriculture are recognized as such authorities. Although respirators listed by the U.S. Department of Agriculture continue to be acceptable for protection against specified pesticides, the U.S. Department of the Interior, Bureau of Mines, is the agency now responsible for testing and approving pesticide respirators.

(c) Selection of respirators. Proper selection of respirators shall be made according to the guidance of American National Standard Practices for Respiratory Protection Z88.1-1969.

(d) Air quality.

(1) Compressed air, compressed oxygen, liquid air, and liquid oxygen used for respiration shall be of high purity. Oxygen shall meet the requirements of the United State Pharmacopoeia for medical or breathing oxygen. Breathing air shall meet at least the requirements of the specification for Grade D breathing air as described in Compressed Gas Association, Commodity Specification G-7.1-1966. Compressed oxygen shall not be used in supplied-air respirators or in open circuit self-contained breathing apparatus that have previously used compressed air. Oxygen must never be used with air line respirators.

(2) Breathing air may be supplied to respirators from cylinders or air compressors.

(A) Cylinders shall be tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR Part 178.)

(B) The compressor for supplying air shall be equipped with necessary safety and standby devices. A breathing air-type compressor shall be used. Compressors shall be constructed and situated so as to avoid entry of contaminated air into the system and suitable in-line purifying sorbent beds and filters installed to further assure breathing air quality. A receiver of sufficient capacity to enable the respirator wearer to escape from a contaminated atmosphere in event of compressor failure, and alarms to indicate compressor failure and overheating shall be in-

stalled in the system. If an oil-lubricated compressor is used, it shall have a high-temperature or carbon monoxide alarm, or both. If only a high-temperature alarm is used, the air from the compressor shall be frequently tested for carbon monoxide to insure that it meets the specifications in 01.0403(d)(1).

(3) Air line couplings shall be incompatible with outlets for other gas systems to prevent inadvertent servicing of air line respirators with non-respirable gases or oxygen.

(4) Breathing gas containers shall be marked in accordance with American National Standard Method of Marking Portable Compressed Gas Containers to Identify the Material Contained, Z48.1-1954; Federal Specification BB-A-1034a, June 21, 1968, Air, Compressed for Breathing Purposes; or Interim Federal Specification GG-B-00675b, April 27, 1965, Breathing Apparatus, Self-Contained.

(e) Use of respirators.

(1) Standard procedures shall be developed for respirator use. These should include all information and guidance necessary for their proper selection, use and care. Possible emergency and routine uses of respirators should be anticipated and planned for.

(2) The correct respirator shall be specified for each job. The respirator type is usually specified in the work procedures by a qualified individual supervising the respiratory protective program. The individual issuing them shall be adequately instructed to insure that the correct respirator is issued. Each respirator permanently assigned to an individual should be durably marked to indicate to whom it was assigned. This mark shall not affect the respirator performance in any way. The date of issuance should be recorded.

(3) Written procedures shall be prepared covering safe use of respirators in dangerous atmospheres that might be encountered in normal operations or in emergencies. Personnel shall be familiar with these procedures and the available respirators.

(A) In areas where the wearer, with failure of the respirator, could be overcome by a toxic or oxygen-deficient atmosphere, at least one additional man shall be present. Communications (visual, voice, or signal line) shall be maintained between both or all individuals present. Planning shall be such that one individual will be unaffected by any likely incident and have the proper rescue equipment to be able to assist the other(s) in case of emergency.

(B) When self-contained breathing apparatus or hose masks with blowers are used in atmospheres immediately dangerous to life or health, standby men must be present with suitable rescue equipment.

(C) Persons using air line respirators in atmospheres immediately hazardous to life or health shall be equipped with safety harnesses and safety lines for lifting or removing persons from hazardous atmospheres or other and equivalent provisions for the rescue of persons from hazardous atmospheres shall be used. A standby man or men with suitable self-contained breathing apparatus shall be at the nearest fresh air base for emergency rescue.

(4) Respiratory protection is no better than the respirator in use, even though it is worn conscientiously. Frequent random inspections shall be conducted by a qualified individual to assure that respirators are properly selected, used, cleaned and maintained.

(5) For safe use of any respirator, it is essential that the user be properly instructed in its selection, use and maintenance. Both supervisors and workers shall be so instructed by competent persons. Training shall provide the men an opportunity to handle the respirator, have it fitted properly, test its facepiece-to-face seal, wear it in normal air for a long familiarity period, and, finally, to wear it in a test atmosphere.

(A) Every respirator wearer shall receive fitting instructions including demonstrations and practice in how the respirator should be worn, how to adjust it, and how to determine if it fits properly. Respirators shall not be worn when conditions prevent a mask to skin face seal. To assure proper protection, the facepiece fit shall be checked by the wearer each time he puts on the respirator. This may be done by following the manufacturer's facepiece fitting instructions. Conditions which could prevent a mask to skin face seal may be a growth of beard, sideburns, a skull cap that projects under the facepiece, or temple pieces on glasses. Also the absence of one or both dentures can affect the fit of a facepiece. The worker's diligence in observing these factors shall be evaluated by periodic check.

(B) Providing respiratory protection for individuals wearing corrective glasses is a serious problem. A proper seal cannot be established if the temple bars of eye glasses extend through the sealing edge of the full facepiece. As a temporary measure, glasses with short temple bars or without temple bars may be taped to the wearer's head. Wearing of contact lenses in contaminated atmosphere with a respirator shall not be allowed. Systems have been developed for mounting corrective lenses inside full facepieces. When a workman must wear corrective lenses as part of the facepiece, the facepiece and lenses shall be fitted by qualified individuals to provide good vision, comfort, and a gas-tight seal.

(C) If corrective spectacles or goggles are required, they shall be worn so as not to affect the fit of the facepiece. Proper selection of equipment will minimize or avoid this problem.

(f) Maintenance and care of respirators.

(1) A program for maintenance and care of respirators shall be adjusted to the type of plant, working conditions, and hazards involved, and shall include the following basic services:

(A) Inspection for defects (including a leak check.)

(B) Cleaning and disinfecting.

(C) Repair, and

(D) Storage

Equipment shall be properly maintained to retain its original effectiveness.

(2) Inspection of respirators.

(A) All respirators shall be inspected routinely before and after each use. A respirator that is not routinely used but is kept ready for emergency use shall be inspected after each use and at least monthly to assure that it is in satisfactory working condition.

(B) Self-contained breathing apparatus shall be inspected monthly. Air and oxygen cylinders shall be fully charged according to the manufacturer's instruction. It shall be determined that the regulator and warning devices function properly.

(C) Respirator inspection shall include a check of the tightness of connections and the condition of the facepiece, headbands, valves, connecting tube, and canisters. Rubber or

elastomer parts shall be inspected for pliability and signs of deterioration. Stretching and manipulating rubber or elastomer parts with a massaging action will keep them pliable and flexible and prevent them from taking a set during storage.

(D) A record shall be kept of inspection dates and findings for respirators maintained for emergency use.

(3) Routinely used respirators shall be collected, cleaned, and disinfected as frequently as necessary to insure that proper protection is provided for the wearer. Each worker should be briefed on the cleaning procedure and be assured that he will always receive a clean and disinfected respirator. Such assurances are of greatest significance when respirators are not individually assigned to workers. Respirators maintained for emergency use shall be cleaned and disinfected after each use.

(4) Replacement or repairs shall be done only by experienced persons with parts designed for the respirator. No attempt shall be made to replace components or to make adjustment or repairs beyond the manufacturer's recommendations. Reducing or admission valves or regulators shall be returned to the manufacturer or to a trained technician for adjustment or repair.

(5) Storage of respirators.

(A) After inspection, cleaning, and necessary repair, respirators shall be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. Respirators placed at stations and work areas for emergency use should be quickly accessible at all times and should be stored in compartments built for the purpose. The compartments should be clearly marked. Routinely used respirators, such as dust respirators, may

be placed in plastic bags. Respirators should not be stored in such places as lockers or tool boxes unless they are in carrying cases or cartons.

(B) Respirators should be packed or stored so that the facepiece and exhalation valve will rest in a normal position and function will not be impaired by the elastomer setting in an abnormal position.

(C) Instructions for proper storage of emergency respirators, such as gas masks and self-contained breathing apparatus, are found in "use and care" instructions usually mounted inside the carrying case lid.

(g) Identification of gas mask canisters.

(1) The primary means of identifying a gas mask canister shall be by means of properly worded labels. The secondary means of identifying a gas mask canister shall be by a color code.

(2) All who issue or use gas masks falling within the scope of 01.0403 shall see that all gas mask canisters purchased or used by them are properly labeled and colored in accordance with these requirements before they are placed in service and that the labels and colors are properly maintained at all times thereafter until the canisters have completely served their purpose.

(3) On each canister shall appear in bold letters the following:

(A) Canister for _____
or Type N Gas Mask Canister.

SUBCHAPTER 1 - GENERAL SAFETY CODE

Article 1 - General Safety and Health Considerations

01.0101 Purpose and Scope. (a) This subchapter sets forth the occupational safety and health standards adopted by the Commissioner of Labor for the purpose of providing the Alaskan work force with a healthful and safe place to work.

01.0102 Employer Requirements. (a) The employer shall furnish to each of his employees, employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees. This shall be implemented by the employer by complying with these regulations.

(b) The employer shall initate and maintain accident prevention programs for the prevention of occupational illness and disease.

(c) Employers shall display a poster, furnished by the Alaska Department of Labor, in places where notices to employees are generally posted. The poster will outline appropriate provisions of AS 18.60.010 to AS 18.60.105.

01.0103 Employee Requirements. (a) Each employee shall comply with all regulations contained in this chapter which are applicable to his own actions while on the job.

(b) Employees shall conscientiously use all safety devices, procedures, and personal protective equipment required by these regulations.

01.0104 Reporting of Injuries. Occupational injuries shall be reported in accordance with AS 18.60.058.

01.0105 Accident-Prevention Program. (a) Program organization.

(1) Every employer shall start and maintain an accident prevention program. The program shall provide that personnel knowledgeable in the field of occupational safety and health shall make daily inspections of on the job equipment and activities. The employer shall insure that immediate action be taken to eliminate all hazards.

(2) Each employer shall adopt a code of safe practices and procedures which applies to his operation and which embraces the applicable provisions of these regulations. It shall be the obligation of the employer to have the safe practices code posted in a conspicuous location at each job site office.

(3) Each employer shall insure that the supervisory personnel shoulder their share of the responsibility for accidents. It is suggested that a written report be submitted by each supervisor associated with an accident. These reports should suggest a feasible means of avoiding future accidents of a similar nature.

(b) Recommendations.

(1) Each employer should display an interest in safety matters by:

(A) The display of safety posters and warning signs. A sign indicating how many consecutive accident free days have passed is often worthwhile.

(B) Considering the advisability of posting a list of all foremen who have kept their crews accident free for a certain period of time.

(C) Considering the advisability of establishing various forms of safety competition, including suitable rewards or recognition to individuals and crews with good records.

(c) General safety requirements.

(1) Anyone known to be under the influence of intoxicating liquor, narcotics or drugs shall not be allowed on the job while in that condition. Further, horseplay, scuffling, and other acts which tend to have an adverse influence on the safety or well-being of the employees shall be prohibited.

(2) No one shall knowingly be permitted or required to work while his ability and alertness is impaired by fatigue, illness, or other causes that might unnecessarily expose him or others to injury.

ALASKA CHAPTER A.G.C.
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FAIRBANKS, ALASKA
APRIL 20, 1984

AGENDA:

11:30 to 12:00 - Registration
12:00 to 12:30 - Lunch
12:30 PROGRAM

I. Asbestos in the Workplace
   a. Source
   b. Uses
II. Standards
III. Health Hazards
IV. Locations
V. Survey
VI. Identification
VII. Abatement Procedures and Removal Techniques
   a. Types
   b. Design
   c. Procedures
VIII. Monitoring
   a. Why
   b. How
   c. Standards
IX. Personal Protective Equipment
   a. Clothing
   b. Respirators
      1. Types
      2. Demonstration
X. Employee Training
XI. Legal Liability
XII. Insurance
XIII. EPA Demolition and Renovation Regulations
XIV. Waste Disposal Procedures and Permits
XV. Contractor Prequalification Requirements
XVI. Pending Legislation
XVII. Questions and Answers

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ASBESTOS
SAFETY AND HEALTH WORK PRACTICES GUIDE

A Safety Service of the:

Alaska Chapter Associated General Contractors
3201 Spenard Road
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Anchorage, Alaska
(907) 561-5334

In conjunction with:

OSH
Alaska Department of Labor
3301 Eagle Street
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Milwaukee, WI 53208
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Respirator use, allowed under this section, is on a sliding scale according to exposure levels. Respirator use is allowed as follows, provided that they have NIOSH and MSHA approval:

1. Any respirator must be an approved type. Approval currently is a combined MSHA/NIOSH designation, which means that respiratory equipment is jointly approved by the Mine Safety and Health Administration and the National Institute of Occupational Safety and Health. In the future, it is possible that respirators will be approved only by NIOSH. All approved respirators carry an approval number. Respirators are approved only for specific types of hazard and within certain contamination limits. Make sure that respirators you are using are designed and approved for the hazard encountered and the concentration at which it is encountered.

2. Re-usable or single-use air purifying respirators for use in atmospheres with exposure up to 10 times that limit of 2 fibers per cubic centimeter (cc) of air for an 8-hour exposure or 10 times the limit of 10 fibers per cc for a short exposure.

3. Powered air purifying respirators for up to 100 times the limit.

4. Type C supplied air or pressure demand type respirators where the exposure exceeds 100 times the limit.

Disposable clothing is suggested for employees working in asbestos atmospheres (See Appendix C). In addition, monitoring of exposure levels on both an initial and continuing basis must be performed. Caution signs are required in work areas and all debris must be bagged and labeled before disposal in accordance with the provisions of 04.0102. Medical monitoring is another important part of the program. Every employee exposed to asbestos in concentrations greater than 0.1 fiber per cubic centimeter (f/c) must have a medical examination made available to him within 30 days of his first exposure and annually thereafter. If an employee terminates his employment, or is terminated, a medical exam must be available to him within 30 days of the termination. All medical records must be retained by employer for 20 years.

APPLICATION OF STANDARDS

The OSH code as written is extremely hard to comply with in the construction industry. They were written for static industrial applications. The entire 04.0102 asbestos standard is part of the 01.0101 verticalized standard and must be adhered to. The effects of asbestos do not show until as late as 20 years after the initial exposure. The legal and moral ramifications of not providing proper protection for employees are enormous. Liability suits in the millions of dollars have already been awarded to exposed employees and their associated costs far overshadow OSH penalties. We are then faced with a two-fold problem in construction operations. First and foremost is whether or not employees are adequately protected and secondarily, are we in compliance with OSH standards? Since the existence of asbestos cannot be determined in the field, and many construction operations which come in contact with asbestos are of short duration we have a difficult time gaining 100% compliance with OSH regulations. This policy can only be a guide to initial employee protection and seeks a method of safeguarding the employee and OSH compliance.

This document is intended to aid in short term, small or low exposure routine situations. It is not intended for use on abatement projects where the scope of the project is solely to remove asbestos from a structure. Because of the many other factors involved in abatement work like EPA regulations, protection of the owners future interest, etc., monitoring should always be conducted for abatement projects.

ASBESTOS POLICY AND SAFE WORKING PRATICES

For the purpose of simplification, we are dividing this sub-section into three areas we have been able to identify where the construction process comes into contact with asbestos.

Notify him that because he had taken these actions you will consider his rights waived unless he informs you within 5 days that he will take a physical. This notice should also be certified mail or personal service with certification. If you use our data base concept you will almost always have a provide medical monitoring since it is extremely unlikely that exposures would fall under the 0.1 fiber limit. If you do not use the data base you will have to air monitor to determine whether or not medical surveillance is required.

EMPLOYEE TRAINING

An important part of any asbestos program must be employee hazard awareness. Employees likely to be exposed must be told about what produces asbestos dust, such as cutting. While all of us are aware of the health hazard, many of us fail to realize that it is so abundant in repair, remodeling, and emergency work. We must instruct our employees in safe working practices, covering thoroughly the following topics:

1) The health hazard.

2) The areas of work most likely to have exposure problems.

3) The importance and proper use of respiratory protection.

4) The importance of treating all suspect material as asbestos until proven otherwise.

5) The importance of having all suspect material tested.

6) The importance of having air tests made.

7) A thorough understanding of OSH regulations.

8) A thorough knowledge of techniques for limiting airborne concentrations.

9) A thorough understanding of personal protective equipment.

DATA BASE CONCEPT

One way to handle the problem of air monitoring is to use a data base concept. The OSH standard is loosely worded about actual monitoring requirements and hard to apply to construction operations.

We feel that the monitoring requirements can be technically met if each company does air monitoring for a range of examples of exposures it deals with. This data could then be applied to different projects with similar circumstances and materials. Each company can in effect establish a data base of probable concentrations for each type of exposure and rpotect their employees accordingly.

Many contractor air samples indicate properly handled asbestos will be below two fibers, the current OSH respirator requirement level. In spite of this we feel that respirators are absolutely required for any work with asbestos containing materials. While the current OSH level is 2 fibers per cubic centimeter, we have reason to believe it will soon be lowered. It is only prudent to provide respiratory protection for all exposures including those assumed to be reasonably low. While it is possible to make an informed decision that air monitoring is not required, we do not feel that the same can be said for the use of respirators. It is a keystone of the data base concept that employee protection be supplied and used for the so called low level exposures (those below current OSH respiratory requirement limits).

When an asbestos exposure situation is encountered you have two choices: monitor or use the data base concept. If you use data basing, review your file for similar situations. Make an informed decision based on past exposure experience. Be sure to allow an adequate safety factor when deciding on a respirator type. If your expected exposure is near the top of the allowable limits for the respirators you have selected, go to the next type up the protective ladder.

)4.0102—ASBESTOS

(a) Definitions.

For the purpose of this section.

(1) "Asbestos" includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.

(2) "Asbestos fibers" means asbestos fibers longer than 5 micrometers.

(b) Permissible exposure to airborne concentrations of asbestos fibers.

(1) Standard effective July 7, 1972. The 8-hour time-weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed five fibers, longer than 5 micrometers, per cubic centimeter of air, as determined by the method prescribed in paragraph (e) of this section.

(2) Standard effective July 1, 1976. The 8-hour time-weighted average airborne concentrations of asbestos fibers to which any employee may be exposed shall not exceed two fibers, longer than 5 micrometers, per cubic centimeter of air, as determined by the method prescribed in paragraph (e) of this section.

(3) Ceiling concentration. No employee shall be exposed at any time to airborne concentrations of asbestos fibers in excess of 10 fibers, longer than 5 micrometers, per cubic centimeter of air, as determined by the method prescribed in paragraph (e) of this section.

(c) Methods of compliance.

(1) Engineering methods.

(i) Engineering controls. Engineering controls, such as, but not limited to, isolation, enclosure, exhaust ventilation, and dust collection, shall be used to meet the exposure limits prescribed in paragraph (b) of this section.

(ii) Local exhaust ventilation.

(a) Local exhaust ventilation and dust collection systems shall be designed, constructed, installed, and maintained in accordance with the American National Standard Fundamentals Governing the Design and Operation of Local Exhaust Systems, ANSI Z9.2–1971, which is incorporated by reference herein.

(b) See § 1910.8 concerning the availability of ANSI Z9.2–1971, and the maintenance of a historic file in connection therewith. The address of the American National Standards Institute is given in § 1910.100.

(iii) Particular tools. All hand-operated and power-operated tools which may produce or release asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section, such as, but not limited to, saws, scorers, abrasive wheels, and drills, shall be provided with local exhaust ventilation systems in accordance with subdivision (ii) of this subparagraph.

(2) Work practices.

(i) Wet methods. Insofar as practicable, asbestos shall be handled, mixed, applied, removed, cut, scored, or otherwise worked in a wet state sufficient to prevent the emission of airborne fibers in excess of the exposure limits prescribed in paragraph (b) of this section, unless the usefulness of the product would be diminished thereby.

(ii) Particular products and operations. No asbestos cement, mortar, coating, grout, plaster, or similar material containing asbestos shall be removed from bags, cartons, or other containers in which they are shipped, without being either wetted, or enclosed, or ventilated so as to prevent effectively the release of airborne asbestos fibers in excess of the limits prescribed in paragraph (b) of this section.

(iii) Spraying, demolition, or removal. Employees engaged in the spraying of asbestos, the removal, or demolition of pipes, structures, or equipment covered or insulated with asbestos, and in the removal or demolition of asbestos insulation or coverings shall be provided with respiratory equipment in accordance with paragraph (d)(2)(iii) of this section and with special clothing in accordance with paragraph (d)(3) of this section.

(d) Personal protective equipment.

(1) Compliance with the exposure limits prescribed by paragraph (b) of this section may not be achieved by the use of respirators or shift rotation of employees, except:

(i) During the time period necessary to install the engineering controls and to institute the work practices required by paragraph (c) of this section;

(x) Laundering.

(a) Laundering of asbestos contaminated clothing shall be done so as to prevent the release of airborne asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section.

(b) Any employer who gives asbestos-contaminated clothing to another person for laundering shall inform such person of the requirement in (a) of this subdivision to effectively prevent the release of airborne asbestos fibers in excess of the exposure limits prescribed in paragraph (b) of this section.

(c) Contaminated clothing shall be transported in sealed impermeable bags, or other closed, impermeable containers, and labeled in accordance with paragraph (x) of this section.

(e) Method of measurement.

All determinations of airborne concentrations of asbestos fibers shall be made by the membrane filter method at 400–450 × (magnification) (4 millimeter objective) with phase contrast illumination.

(f) Monitoring.

(1) Initial determinations. Within 6 months of the publication of this section, every employer shall cause every place of employment where asbestos fibers are released to be monitored in such a way as to determine whether every employee's exposure to asbestos fibers is below the limits prescribed in paragraph (b) of this section. If the limits are exceeded, the employer shall immediately undertake a compliance program in accordance with paragraph (c) of this section.

(2) Personal monitoring.

(i) Samples shall be collected from within the breathing zone of the employees, on membrane filters of 0.8 micrometer porosity mounted in an open-face filter holder. Samples shall be taken for the determination of the 8-hour time-weighted average airborne concentrations and of the ceiling concentrations of asbestos fibers.

(ii) Sampling frequency and patterns. After the initial determinations required by subparagraph (1) of this paragraph, samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of employees. In no case shall the sampling be done at intervals greater than 6 months for employees whose exposure to asbestos may reasonably be foreseen to exceed the limits prescribed by paragraph (b) of this section.

(3) Environmental monitoring.

(i) Samples shall be collected from areas of a work environment which are representative of the airborne concentrations of asbestos fibers which may reach the breathing zone of employees. Samples shall be collected on a membrane filter of 0.8 micrometer porosity mounted in an open-face filter holder. Samples shall be taken for the determination of the 8-hour time-weighted average airborne concentrations and of the ceiling concentrations of asbestos fibers.

(ii) Sampling frequency and patterns. After the initial determinations required by subparagraph (1) of this paragraph, samples shall be of such frequency and pattern as to represent with reasonable accuracy the levels of exposure of the employees. In no case shall sampling be at intervals greater than 6 months for employees whose exposures to asbestos may reasonably be foreseen to exceed the exposure limits prescribed in paragraph (b) of this section.

(4) Employee observation of monitoring. Affected employees, or their representatives, shall be given a reasonable opportunity to observe any monitoring required by this paragraph and shall have access to the records thereof.

(g) Caution signs and labels.

(1) Caution signs.

(i) Posting. Caution signs shall be provided and displayed at each location where airborne concentrations of asbestos fibers may be in excess of the exposure limits prescribed in paragraph (b) of this section. Signs shall be posted at such a distance from such a location so that an employee may read the signs and take necessary protective steps before entering the area marked by the signs. Signs shall be posted at all approaches to areas containing excessive concentrations of airborne asbestos fibers.

(ii) Sign specifications. The warning signs required by subdivision (i) of this subparagraph shall conform to the requirements of 20" x 14" vertical format signs

Annual examinations. On or before January , 1973, and at least annually thereafter, ery employer shall provide, or make avail-le, comprehensive medical examinations each of his employees engaged in occupa-ns exposed to airborne concentrations of bestos fibers. Such annual examination all include, as a minimum, a chest roent-nogram (posterior-anterior 14 x 17 ches), a history to elicit symptomatology respiratory disease, and pulmonary func-n tests to include forced vital capacity VC) and forced expiratory volume at 1 sec-d ($FEV_{1.0}$).

Termination of employment. The employer all provide, or make available, within 30 lendar days before or after the termina-on of employment of any employee gaged in an occupation exposed to air-rne concentrations of asbestos fibers, a mprehensive medical examination which all include, as a minimum, a chest roent-nogram (posterior-anterior 14 x 17 ches), a history to elicit symptomatology respiratory disease and pulmonary func-n tests to include forced vital capacity VC) and forced expiratory volume at 1 sec-d ($FEV_{1.0}$).

) Recent examinations. No medical examina-on is required of any employee, if adequate cords show that the employee has been camined in accordance with this para-raph within the past 1-year period.

) Medical records.

(i) Maintenance. Employers of employees examined pursuant to this paragraph shall cause to be maintained complete and accurate records of all such medical examinations. Records shall be retained by employers for at least 20 years.

(ii) Access. The contents of the records of the medical examinations required by this paragraph shall be made available, for inspection and copying, to the Assistant Secretary of Labor for Occupational Safety and Health, the Director of NIOSH, to authorized physicians and medical consultants of either of them, and, upon the request of an employee or former employee, to his physician. Any physician who conducts a medical examination required by this paragraph shall furnish to the employer of the examined employee all the information specifically required by this paragraph, and any other medical information related to occupational exposure to asbestos fibers.

THE NEW OSH STANDARD

On Friday November 4, 1983 OSHA issued an Emergency Temporary Standard (ETS) on asbestos. These emergency requirements will remain in effect for six months under the rules governing the issuance of Emergency Temporary Standards. This means that it will be in effect until May 4, 1984.

During this time period we expect OSHA to go through the formal rule making process in order to cause a permanent change in the existing standard. We would be very much surprised if this formalization process resulted in a final standard with provisions much different than those outlined in the ETS.

The complete text of the Emergency Temporary Standard is printed after this explanation.

The ETS does not affect the data base concept since we are providing employee protection from zero exposures on up. It does, however, reduce the margin of error and place an even greater emphasis on careful work procedures.

It requires additional employee training and lowers the permissable exposure level (PEL) to .5 fibers from the current 2 fibers per cc of air. This is a 75% reduction in the amount of asbestos that an employee can be exposed to without respiratory protection. The .1 fiber action level for medical surveillance remains unchanged.

In addition the approval level for each type of respirator is reduced to a multiple of the now lower PEL.

Single use respirators have a maximum concentration approval of 5 fibers per cc (10 times .5) rather than 20 fibers (10 times 2) for as long as the ETS is in effect. Our data base indicates that about 5% of all construction exposures could exceed the 5 fiber limit on single use respirators.

Full face piece purifying and powered air purifiers are approved up to 50 fibers per cc (100 times .5) rather than up to 200 fibers (100 times 2). Any concentration over 50 fibers requires the use of airline respirators.

CONTRACTORS GUIDE TO RESPIRATOR USE
AND
WRITTEN RESPIRATOR PROGRAMS

A Safety Service of the:

Alaska Chapter Associated General Contractors
3201 Spenard Road
P.O. Box 4-2500(99509)
Anchorage, Alaska
(907)561-5354

With co-operation and
technical assistance from:

OSH
Alaska Department of Labor
3301 Eagle Street
Pouch 7-022,(99510)
Anchorage, Alaska
(907)264-2599

Innovative Safety for an Innovative Industry

I-RESPIRATOR TYPES

A respirator is a device designed to ensure the wearer of a breathable non-contaminated supply of air. There are two basic types of respirators, those that purify the existing atmosphere by filtering contaminants out and those that provide clean air from an outside source. There are several types of respirators within each of the above categories. A basic respirator program starts with a thorough understanding of the respirators available and the uses and limitations of each.

Air-Purifying Respirators remove the contaminants from air before breathing by filtering out contaminants, such as dust, fumes and mists. The simplest form of respirator in this category is commonly known as a single use or disposable respirator. These units are low cost and offer protection for certain types of low level exposures. They are generally used for dusts and fiber removal. As with all types of respirators, each manufacturer's product is approved for only certain types of contaminants and specific exposure levels.

The next most complicated type of air-purifying respirators is also designed for dusts and mists and features removable purifying elements. It is reusable as long as the elements are changed and it is properly maintained and cleaned. It is generally approved for higher concentrations than the single-use respirator. It can be purchased in quarter-mask, half-mask and full-face piece styles. Each style offers, successively, more protection with the full-face piece offering some protection for the eyes as well.

Closely related to the above respirator style are chemical cartridge and cannister respirators for gases and fumes. These respirators feature replaceable filter units and come in quarter, half and full-face styles. The filters remove harmful gases and vapors by way of a chemical reaction that absorbs or renders them harmless. Each filter element is effective only against a specific hazard or class of hazards. Filter cartridges are color coded according to a universal scheme, enabling the user to positively identify the proper cartridge for the hazard present.

The last type of respirator, in the air-purifying class, is known as a powered air purifying unit. This is a high efficiency mechanical unit. Powered air purifies come in half-mask and full-face mask or hood styles. A fan forces contaminated air through a filter and pure air into the face piece. Depending on the approved cartridges used, they can be effective for particles and gases or vapors.

It is important to note that none of the air-purifying respirators can be used in oxygen deficient atmospheres, since they do not supply air. They are also only effective against the particular contaminant and the concentration they are approved for.

The second major category of respirators are termed air supply units. As the name implies, they provide their own source of air from an outside supply. They can be used in high concentrations of most any type of hazardous substance.

The values, we have been discussing, represent a term in Industrial Hygiene known as a TLV or threshold limit value. When we say carbon monoxide is regulated by OSHA at concentrations of 50 PPM, we mean that it has a TLV of that amount. A TLV is the concentration value below which workers, exposed for extended periods of eight hour days, are assumed to suffer no ill effects. Concentrations above the TLV are considered dangerous and require contractor action either in the form of engineering or administrative controls. TLV's are also referred to as PEL's (Permissable Exposure Limits) when talking in terms of OSHA compliance.

Another commonly used term in Industrial Hygiene is TWA or Time Weighted Averages. PEL's are usually expressed in terms of Time-Weighted Averages. A time-weighted Average is simply an average of the various exposures occuring during a normal work day. Using a TWA and carbon monoxide as an example an exposure of 4 hours at 75 PPM and 4 hours at 25 PPM yields a time-weighted average of 50 PPM or no excessive employee exposures. Occasionally, hazardous substances, which are regulated on the basis of Time-Weighted Averages, have upper exposure limits (UEL) which cannot be exceeded without proper employee protection.

IV TESTING EQUIPMENT AND METHODS

Effective health protection requires that monitoring of concentration levels be done. No effective program can exist without an accurate idea of the contaminant levels present in the work environment. Since respirators are only approved and effective for specific concentrations, the hazard concentration must be established even to make an accurate selection. The types and methods of air monitoring are varied, ranging from simple units for spot checks to sophisticated continuous monitors. Equipment suppliers can help you choose the exact type of monitoring equipment for your needs and the hazards you are encountering. Most of the time, they will train your employees in the use and maintenance of the equipment. It is important to know exactly the kind and extent of service the manufacturer will provide before purchasing any monitoring equipment. It is also possible to have monitoring handled by an outside consultant.

V ENGINEERING vs ADMINISTRATIVE CONTROL

The cornerstone of any Construction Program, involving Industrial Hygiene, Respirator Protection and Hazardous Substance Control, is an understanding of the relationship between Engineering and Administrative Controls. OSHA law requires that Engineering Control be applied first, wherever possible, to hazardous-substance situations. Engineering controls are methods of reducing the amount of contaminants in the work environment by controlling and modifying the source of the contaminant. They include such things as isolation, enclosure, ventilation and dust collection. Perhaps the most feasible administrative control for construction operations is substitution. Wherever possible, non-hazardous and non-toxic substances should be substituted for harmful ones. This truly limits the hazard at the source. The Construction Health Specialist is always alert for ways and places to substitute.

For example, the problem caused by asbestos has been virtually eliminated in new construction, through the use of new materials. The application of engineering controls can also be effectively achieved in many cases by changes in the work processes. The use of engineering controls require imaginative and innovative thought.

These basic elements must be covered in detail in your respiratory protection program. The writing of a program for your company is a major undertaking. Each company encounters different hazards in their day to day operation. Before beginning preparation of a written program:

1. Identify the hazards found in your activities. This can best be done by obtaining data sheets on all materials used. Someone must be responsible for obtaining this basis information.

2. Take <u>every</u> available option to eliminate the use of known hazardous substances.

3. Determine the exposure levels of hazardous substances that are in use. This can only be done through accurate monitoring.

4. Investigate the types of respiratory equipment, specifically designed and approved for the hazard encountered. Before buying <u>any</u> respiratory equipment, find out what services the seller supplies with his equipment. Will he help train and fit? Does he have specific and detailed use instructions?

5. Because construction operations are diverse, complex, and widespread, you must establish an internal notice of use of hazardous substances system. Make someone (job superintendant) responsible for notifying safety personnel of intended usage.

6. Set up a specific training and fitting program for respirator use. No one can tell for certain in construction, when and where in the construction process, hazardous substances will be encountered. Because of the high turnover, periodic general training of employees may not be sufficient. A training program, done immediately before respirator use, appears to be the only effective way to combat infrequent use of regulated hazardous substances.

7. Make one individual responsible for administering your program, keeping your records, and inspecting your equipment. Provide him with all the training possible.

8. Plan for every contingency. Be thoroughly prepared and avoid future trouble.

9. Establish a working relationship with a doctor or clinic familiar with industrial medicine and respirator use.

Having done the required "homework" you can now begin to draft your company's respiratory use program

VIII SAMPLE RESPIRATORY PROGRAM

A.

It is the intended purpose of _____ company to provide a safe and healthful workplace environment for all employees. To further this purpose we have established this respirator use program. The requirements of this program are binding on all employees.

4. Wherever possible, respirators will be assigned to individual workers for their exclusive use. Workers will be responsible for maintenance and sanitation of respirators assigned to them. Periodic and frequent spot checks will be made by supervisory personnel to insure compliance. Respirators, for the exclusive use of an individual, will be cleaned at least once a day at the end of the shift. Respirators, used by more than one worker, shall be cleaned and disinfected after each use. Respirators will be stored in a clean, sanitary place on the jobsite reserved solely for that purpose. No respirators may be removed from any jobsite except on written authorization from the Safety Director. If respirators are individually assigned, they shall bear the name of the person to whom they are assigned.

5. Areas, where respirators are in use, shall be closely monitored to insure compliance and safe conditions. Unauthorized and untrained personnel will be prohibited from entering these areas. Crew sizes for work, requiring respiratory protection, will be kept to the smallest practical size and the makeup, for short-duration operations, will not be changed unless absolutely necessary.

6. This program will be under constant review to determine that it meets its stated goal of providing maximum employee protection. Suggestions for improvement of this program should be submitted to _____ at _____ and are openly encouraged. Questions should also be referred to _____.

7. _____ Company has made arrangements with _____ (Doctor or Clinic) to handle medical requirements for respirator use. Employees will be required to furnish medical information in order to be sure that respirator use will not, in itself, be detrimental to their health.

This policy will be amended, from time to time, to improve it's performance. The proper use of respirators requires the active participation of all employees. The _____ Company is making a commitment to a healthful work environment for the good of us all.

_____

President (etc.)

USING THE MODEL PROGRAM

OSHA regulations were designed for General Industry which is more static in nature. The work process and materials used change very seldom and with longer planning times in general industry. Construction is different altogether. The products we use are specified by owners and architects, and we have no control over them. Each construction project is unique and uses different materials. We do not have the luxury of knowing exactly what chemical hazards we may encounter down the road. This changeable nature makes respiratory protection programs hard to formulate. We cannot begin the selection process until we are able to identify the hazardous components of each project.

MEMORANDUM State of Alaska

TO: Dick Stokes, SERO
Bob Flint, SCRO
Pete McGee, NRO

DATE: October 12, 1983

FILE NO:

TELEPHONE NO:

FROM: Stanley W. Hungerford, Chief
Air and Solid Waste Management

SUBJECT: Waste Asbestos Disposal Responsibilities

There seems to be some confusion concerning our role and responsibility in asbestos disposal. Specifically, what laws address asbestos, what permits are required, and who issues them. Dick Williams and Dave Estes have compiled a list of the pertinent laws and policies on asbestos acttivities. Please circulate copies to your staff for their reference.

I. ASBESTOS IS NOT A HAZARDOUS WASTE UNDER RCRA.

RCRA covers ignitable, corrosive, reactive, EP toxic, and listed wastes. It does not recognize long-term health effects as a separate criteria.

II. ASBESTOS IS A HAZARDOUS AIR POLLUTANT UNDER NESHAPS.

Federally, asbestos is an air pollutant addressed by 40 CFR 61. These regulations address air emissions from activities that involve asbestos, and specify operating procedures that should prevent hazardous emissions.

ADEC has not taken on that part of NESHAPS, and any situation encountered should be referred to EPA, Alaska Operations Office, Juneau.

III. NO FEDERAL PERMITS APPLY TO ASBESTOS DISPOSAL AT ALASKAN LANDFILLS.

IV. ASBESTOS IS A HAZARDOUS WASTE UNDER OUR SOLID WASTE REGULATIONS, 18 AAC 60.

18 AAC 60.910.(11)...' "hazardous waste" means a solid waste or combination of solid wastes, which because of its quantity, concentration, or physical, chemical or biological characteristics may cause or significantly contribute to

(a) an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or

(b) a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.'

Diseases caused by breathing asbestos dust, such as lung cancer and asbestosis, definitely increase mortality.

V. ASBESTOS DISPOSAL REQUIRES AN ADEC WASTE DISPOSAL PERMIT.

Asbestos is a solid waste and, therefore, requires a Waste Disposal Permit under AS 46.03.100 and 18 AAC 60.200.(a).

Asbestos is also "hazardous" and requires "specific approval" from the department according to 18 AAC 60.087.(a).

"Specific Approval" should be given via conditions in a new permit or an amendment of an existing permit.

Approvals should be granted for an overall operation, not for each bag, barrel or truckload.

V. ASBESTOS DISPOSAL PROCEDURES.

All the solid waste disposal standards in 18 AAC 60 apply to asbestos disposal. In addition, the following requirments must also be met:

a. Waste asbestos must be thoroughly wetted and placed in a water-tight container before burial. Containers may be barrels, drums, or double -four mil or thicker- plastic bags.
or Single six mil

b. All containers shall have a warning label attached that states:

CAUTION

CONTAINS ASBESTOS

AVOID OPENING OR BREAKING CONTAINER

BREATHING ASBESTOS IS HAZARDOUS
TO YOUR HEALTH

c. Apply 2 feet of cover soil to the wastes at the end of each operating day, or if cover is not applied

1. install fencing or provide other approved access controls, and
2. post signs at site entrances and at 100 foot intervals along the site boundary that state in one inch or taller lettering:

ASBESTOS WASTE DISPOSAL SITE

DO NOT CREATE DUST

BREATHING ASBESTOS IS
HAZARDOUS TO YOUR HEALTH

VI. ASBESTOS REMOVAL AND HANDLING PROCEDURES ARE OSHA AND EPA CONCERNS.

ADEC should refer the public to these agencies when appropriate. We are not authorized or trained to interpret and enforce their regulations. Also, we lack the staff and funding needed to take on any more programs.

Conclusion:

Asbestos is a "hazardous solid waste" under Alaskan Law. We regulate its disposal with the Solid Waste Management Regulations, 18 AAC 60, and the Waste Disposal Permit program. All disposal must be approved in writing, i.e., by permit condition. Disposal activities must comply with departmental standards and procedures. Signs and fences are NOT required if the waste is covered on the day of deposition. All removal, handling, and air pollution control activities are EPA concerns and must be referred to them.

Please call Dick or Dave if you have any questions or corrections.

cc : Keith Kelton

RTW:SH:sz

Federal Regulations Affecting Asbestos

U.S. Dept. of Labor
OSHA

- Code of Fed. Regulations (CFR)
  Title 29 Part 1910
- Work practices & worker protection
- Industrial exposure

EPA
Toxic Substances Control Act (TSCA)
Asbestos IN Schools Rule

- CFR Title 40 Part 763
- Identifying friable asbestos containing material
- Employee & parent notification
- Record Keeping

EPA
Clean Air Act (CAA) Section 112
National Emission Standards for Hazardous Air Pollutants (NESHAPS)
(asbestos, beryllium, mercury, vinyl chloride)

- CFR Title 40 Part 61 Subpart A
  Subpart B replaced by Subpart M
  on 4/5/84 Fed Reg. 1/01.49 No. 67
- Standards for mills, roadways manufacturing, demolition/renovation.

Demolition / Renovation of Friable Asbestos Material

CFR Title 40 Part 61 Subpart M Sections 61.140; 61.141, 61.145 - 61.147, 61.152, 61.154 and 61.156

Definitions - CFR 40 Part 61 Section 61.141

Friable asbestos material - any material containing more than 1 percent asbestos by weight that hand pressure can crumble, pulverize or reduce to powder when dry

Renovation - altering in any way one or more facility components. Operations in which load-supporting structural members are wrecked or taken out are excluded

Demolition - wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations.

Visible emissions - emissions containing particulate asbestos material that are visually detectable without the aid of instruments. Excludes condensed uncombined water vapor.

Facility Component - pipe, duct, boiler, tank, reactor, turbine, furnace

Demolition / Renovation of Friable Asbestos

Applicability Categories Section 61.145

61.145(a) Demolition ≥ 260 lin. feet (pipes) or 2160 sq. ft other fac. comp.

Notification Req. Section 61.146

Written notification to EPA required.
Postmark/Deliver 10 days prior to demolit.

(1) Name/add. of owner/op. of rem./dem. firm
(2) Bldg. description (size, age, prior use)
(3) Amount of asb. in facility

(4) Fac. location for dem./renov.
(5) Start date / Completion date
(6) Descrip. of dem./renov. and methods
(7) Procedures followed in dem./renov. to comply with Subpart M
(8) Name & location of waste disp. site

Emission Control Proced. Section 61.147

(a) Remove asb. before wrecking or dismantling that would break asb. mat. or preclude access. Exception - demolition - asb. on fac. component encased in concrete - wet whenever asb. is exposed while dem.

(b) Removal of facility component w/ asbestos in sections
- Wet the areas to be cut
- Do not drop - lower the units to ground

(c) Removing/stripping asb. from intact

Notification Req. Section 61.145

SEND NOTIFICATIONS TO:

EPA
Alaska Operations Office
3.200 Hospital Dr.
Suite 101
Juneau, AK 99801
ATTN: KATHRYN [illegible]

Emission Control Proced. Section 61.147

(d) After removing facility component w/ asb.
- Wet during stripping —OR—
- Use local exhaust vent. & collection (NO V.E. or designed & oper. 61.154)

(e) All asbestos removed or stripped
- Asb. must remain wet until contained for disposal
- Do not drop - lower material to ground
- Dust-tight chutes or containers if > 50 feet above ground. Exception: 61.147 (b)

(f) Temp. at wetting point < 32°F
- Comply w/ (d) and (e) - no other wetting requirements

Demolition / Renovation of Friable Asbestos

- Applicability Categories Section 61.145

61.145(b) Demolition < 260 lin. feet (pipes) or < 160 sq. ft. other fac. comp.

Notification Req. Section 61.146

Written notification to EPA required
Postmark/deliver 20 days prior to demol/rt

(1) Name/addr. of owner/op. of rem./dem. firm
(2) Bldg. description (size, age, prior use)
(3) Amount of asb. in facility
- Explain techniques of estimation
(4) Fac. location for dem./renov.
(5) Start Date / Completion date

Emission Control Proced. Section 61.147

Not required by EPA regulations
But recommend follow 61.147 a-g

Demolition / Renovation of Friable Asbestos

Applicability Categories Section 61.145

61.145(c) Demolition – ORDERED by State or local govt., facility structurally unsound and in danger of imminent collapse.
≥ 260 lin.ft. (pipe) or ≥ 160 s.q.ft. other fac. comp.

Notification Req. Section 61.146

Written notification to EPA required as early as possible prior to demolit.
Recommend at least 10 days

1. Name/add. of owner/op. of rem./dem. firm
2. Bldg. description (size, age, prior use)
3. Amount of asb. in facility.
4. Fac. location for dem./renov.
5. Start date / Completion date
6. Descrip. of dem./renov. and methods
7. Procedures followed in dem./renov. to comply with Subpart M
8. Name & location of waste disp. site

Emission Control Proced. Section 61.1[illegible]

Notification Req. Section 61.146

(g) Name, title and authority of State/local gov. rep. ordering demolition.

SEND NOTIFICATIONS TO:

EPA

Alaska Operations Office

3200 Hospital DR

Suite 101

Juneau, AK 99801

ATTN: KATHRYN DAMERON

Emission Contm' Proced. Section 61.147

(d) After removing facility component w/ asb.
- Wet during stripping —OR—
- Use local exhaust vent. & collection (NO V.E. or designed & oper. 61.154)

(e) All asbestos removed or stripped
- A.C.M. must remain wet until contained for disposal
- Do not drop - lower material to ground
- Dust-tight chutes or containers if > 50 feet above ground - Exception: 61.147 (b)

(f) Temp. at wetting point < 32°F
- Comply w/ (d) and (e) - no other wetting requirements

Demolition / Renovation of Friable Asbestos

Applicability Categories Section 61.145

61.145(d) Renovation ≥ 260 lin.ft. (pipes) or ≥ 160 sq.ft. other fac. comp

Notification Req. Section 61.146

Written notification to EPA required.
as early as possible prior to renov
Recommend at least 10 days

(1) Name/add. of owner/op. of rem./dem. fac
(2) Bldg. description (size, age, prior use)
(3) Amount of asb. in facility

(4) Fac. location for dem./renov.
(5) Start date / Completion date
(6) Descrip. of dem./renov. and methods
(7) Procedures followed in dem./renov.
to comply with Subpart M
(8) Name & location of waste disp. site

Emission Control Proced. Section 61.147

(a) Remove asb. before wrecking or dismantling that would break friable asb. mat. or preclude access

(b) Removal of facility component w/ asbestos in sections
- Wet the areas to be cut
- Do not drop - lower the units to ground

(c) Removing/stripping asb. from intact facility components

Notification Req. Section 61.145

SEND NOTIFICATIONS TO:

EPA
Alaska Operations Office
3200 Hospital Dr.
Suite 101
Juneau, AK 99801

Emission Control Proced. Section 61.1

Exception: Unavoidable damage to equipment.
- Request EPA to make determination
- If damage unavoidable, must use exhaust ventilation & collection sys. (No V.E. or designed & oper. 61.154)

(d) After removing facility component, insul.
- Wet during stripping —OR—
- Use local exhaust vent. & collection (No V.E. or designed & oper. 61.154)

(e) All asbestos removed or stripped
- Asb. must remain wet until contained for disposal
- Do not drop - lower material to ground
- Dust-tight chutes or containers if > 50 feet above ground - Exception: 61.147 (b)

(f) Temp. at wetting point < 32°F
- Comply w/ (d) and (e) - no other wetting requirements

Demolition / Renovation Projects
Standards for Waste Disposal of Friable Asbestos *
61.152

(a) Deposit all asbestos waste (friable & control equip) at waste disposal site operated by 61.158

(b) No visible emissions (collection, process, packaging, transport, deposit)

-OR-

1) Treat asb. waste with water (No V.E. or use Air cleaning 61.154)
- Seal wet asbestos in leak-tight containers (suggest 6 mil bag)
- Label containers (61.152(b)(1)iii OR 29CFR 1910.1001(g)(1)(iv)

-OR-

2) Process asbestos waste into non-friable forms (no V.E. or use Air cleaning 61.154)

-OR-

3) Submit alternative disposal to EPA for approval

* Demolition/Renovation projects < 260 lin.ft. or < 160 sq.ft. of friable asb are excluded from EPA waste disposal requirements but are not excluded from DofL or ADEC regulations.

Demolition / Renovation Projects
Active Waste Disposal
61.156

a) No V.E. from waste disposal site

b) Natural barrier or warning signs & fencing

c) Instead of a) and b) at least once every 24 hours newly deposited asbestos waste covered with a minimum of 6 inches of compacted non-asbestos-containing material.

Substance (Note 1)	ppm	mg/M³ (Note 2)
Coal tar pitch volatiles, BaP phenanthrene, acridine, chrysene[1]		
Cobalt, metal fume & dust		0.1
Copper fume		0.1
Dusts and Mists		1
Corundum Al2O3 (Note 4)		
Cotton dust, raw—See §1910.1043 and (Note 7)		1
Crag herbicide		15
Cresol (all isomers)-Skin	5	22
Crotonaldehyde	2	6
Cumene-Skin	50	245
Cyanide (as CN)-Skin		5
Cyanogen	10	
Cyclohexane	300	1,050
Cyclohexanol	50	200
Cyclohexanone	50	200
Cyclohexene	200	1,015
Cyclopentadiene	75	200
2,4-D		10
DDT-Skin		1
DDVP, see Dichlorvos		
Decaborane-Skin	0.05	0.3
Demeton-Skin		0.1
Diacetone alcohol (4-hydroxy-4-methyl-2-pentanone)	50	240
1,2-Diaminoethane, see Ethylenediamine		
Diazomethane	0.2	0.4
Diborane	0.1	0.1
C 1,2-Dibromoethane (ethylene dibromide)-Skin	25	190
Dibutyl phosphate	1	5
Dibutylphthalate		5
C Dichloroacetylene	0.1	0.4
C o-Dichlorobenzene	50	300
p-Dichlorobenzene	75	450
Dichlorodifluoromethane	1,000	4,950
1,3-Dichloro-5,5-dimethyl hydantoin		0.2
1,1-Dichloroethane	100	400
1,2-Dichloroethane	50	200
1,2-Dichloroethylene	200	790
C Dichloroethyl ether-Skin	15	90
Dichloromethane, see Methylene chloride		
Dichloromonofluoromethane	1,000	4,200
C 1,1-dichloro-1-nitroethane	10	60
1,2-Dichloropropane, see Propylene dichloride		
Dichlorotetrafluoroethane	1,000	7,000
Dichlorvos (DDVP)-Skin		1
Dieldrin-Skin		0.25
Diethylamine	25	75
Diethylamino ethanol-Skin	10	50
C Diethylene triamine-Skin	10	42
Diethylether, see Ethyl ether		
Difluorodibromomethane	100	850
C Diglycidyl ether (DGE)	0.5	2.8
Dihydroxybenzene, see Hydroquinone		
Diisobutyl ketone	50	290
Diisopropylamine-Skin	5	20
Dimethoxymethane, see Methylal		
Dimethyl acetamide-Skin	10	35
Dimethylamine	10	18
Dimethylaminobenzene, see Xylidine		
Dimethylaniline (N-dimethylaniline)-Skin	5	25
Dimethylbenzene, see Xylene		
Dimethyl 1,2-dibromo-2,2-dichloroethyl phosphate, (Dibrom)		3
Dimethylformamide-Skin	10	30
2,6-Dimethylheptanone, see Diisobutyl ketone		
1,1-Dimethylhydrazine-Skin	0.5	1
Dimethylphthalate		5
Dimethylsulfate-Skin	1	5
Dinitrobenzene (all isomers)-Skin		1
Dinitro-o-cresol-Skin		0.2
Dinitrotoluene-Skin		1.5
Dioxane (Diethylene dioxide-Skin	100	360
Diphenyl	0.2	1
Diphenylamine		10
Diphenylmethane diisocyanate (see Methylene bisphenyl isocyanate MDI)		
Dipropylene glycol methyl ether-Skin	100	600
Di-sec. octyl phthalate (Di-2-ethylhexylphthalate)		5
Emery (Note 4)		
Endosulfan (Thiodan®)-Skin		0.1
Endrin-Skin		0.1
Epichlorhydrin-Skin	5	19
EPN-Skin		0.5
1,2-Epoxypropane, see Propylene oxide		
2,3-Epoxy-1-propanol, see Glycidol		
Ethane (Note 3)		
Ethanethiol, see Ethylmercaptan		
Ethanolamine	3	6
2-Ethoxyethanol-Skin	200	740
2-Ethoxyethyl acetate (Cellosolve acetate)-Skin	100	540
Ethyl acetate	400	1,400
Ethyl acrylate-Skin	25	100
Ethyl alcohol (ethanol)	1,000	1,900
Ethylamine	10	18
Ethyl sec-amyl ketone (5-methyl-3-heptanone)	25	130
Ethyl benzene	100	435
Ethyl bromide	200	890
Ethyl butyl ketone (3-Heptanone)	50	230
Ethyl chloride	1,000	2,600
Ethyl ether	400	1,200
Ethyl formate	100	300
Ethyl mercaptan	0.5	1
Ethyl silicate	100	850
Ethylene (Note 3)		
Ethylene chlorohydrin-Skin	5	16
Ethylenediamine	10	25
Ethylene dibromide, see 1,2-Dibromoethane		
Ethylene dichloride, see 1,2-Dichloroethane		
C Ethylene glycol dinitrate and/or Nitroglycerine-Skin (Note 8)	0.2	
Ethylene glycol monomethyl ether acetate, see Methyl cellosolve acetate		
Ethylene imine-Skin	0.5	1
Ethylene oxide	50	90
Ethylidine chloride, see 1,1-Dichloroethane		
N-Ethylmorpholine-Skin	20	94
Ferbam		15
Ferrovanadium dust		1
Fibrous glass (Note 4)		
Fluoride (as F)		2.5
Fluorine	0.1	0.2
Fluorotrichloromethane	1,000	5,600
C Formaldehyde	5	6
Formic acid	5	9
Furfural-Skin	5	20
Furfuryl alcohol	50	200
Gasoline (Note 9)		
Glycerine mist (Note 4)		
Glycidol (2,3-Epoxy-1-propanol)	50	150
Glycol monoethyl ether, see 2-Ethoxyethanol		
Graphite, (Synthetic) (Note 4)		
Guthion, see Azinphosmethyl		
Gypsum (Note 4)		
Hafnium		0.5
Helium (Note 3)		
Heptachlor-Skin		0.5
Heptane (n-heptane)	500	2,000
Hexachloroethane-Skin	1	10
Hexachloronaphthalene-Skin		0.2

nent shall be cleaned and disinfected immediately after each use.

The following requirements from 29 CFR Part 1910 (General Industry) have been identified as applicable to construction (29 CFR 1926.103 *Respiratory protection*), in accordance with their respective scope and definitions.

§ 1910.94 Ventilation.

(a) *Abrasive blasting.*—(1) *Definitions applicable to this paragraph.* • • •

(ii) *Abrasive-blasting respirator.* A continuous flow air-line respirator constructed so that it will cover the wearer's head, neck, and shoulders to protect him from rebounding abrasive.

• • • • •

(5) *Personal protective equipment.* (i) Only respiratory protective equipment approved by the Bureau of Mines, U.S. Department of the Interior (see 30 CFR Part 11) shall be used for protection of personnel against dusts produced during abrasive-blasting operations.

(ii) Abrasive-blasting respirators shall be worn by all abrasive-blasting operators. • • •

(8) When using silica sand in manual blasting operations where the nozzle and blast are not physically separated from the operator in an exhaust ventilated enclosure.

• • • • •

(8) *Scope.* This paragraph (a) applies to all operations where an abrasive is forcibly applied to a surface by pneumatic or hydraulic pressure, or by centrifugal force. It does not apply to steam blasting, or steam cleaning, or hydraulic cleaning methods where work is done without the aid of abrasives.

• • • • •

§ 1910.134 Respiratory protection.

(a) *Permissible practice.* (1) In the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary objective shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used pursuant to the following requirements.

(2) Respirators shall be provided by the employer when such equipment is necessary to protect the health of the employee. The employer shall provide the respirators which are applicable and suitable for the purpose intended. The employer shall be responsible for the establishment and maintenance of a respiratory protective program which shall include the requirements outlined in paragraph (b) of this section.

(3) The employee shall use the provided respiratory protection in accordance with instructions and training received.

(b) *Requirements for a minimal acceptable program.* (1) Written standard operating procedures governing the selection and use of respirators shall be established.

(2) Respirators shall be selected on the basis of hazards to which the worker is exposed.

(3) The user shall be instructed and trained in the proper use of respirators and their limitations.

(4) Where practicable, the respirators should be assigned to individual workers for their exclusive use.

(5) Respirators shall be regularly cleaned and disinfected. Those issued for the exclusive use of one worker should be cleaned after each day's use, or more often if necessary. Those used by more than one worker shall be thoroughly cleaned and disinfected after each use.

(6) Respirators shall be stored in a convenient, clean, and sanitary location.

(7) Respirators used routinely shall be inspected during cleaning. Worn or deteriorated parts shall be replaced. Respirators for emergency use such as self-contained devices shall be thoroughly inspected at least once a month and after each use.

(8) Appropriate surveillance of work area conditions and degree of employee exposure or stress shall be maintained.

(9) There shall be regular inspection and evaluation to determine the continued effectiveness of the program.

(10) Persons should not be assigned to tasks requiring use of respirators unless it has been determined that they are physically able to perform the work and use the equipment. The local physician shall determine what health and physical conditions are pertinent. The respirator user's medical status should be reviewed periodically (for instance, annually).

(11) Approved or accepted respirators shall be used when they are available. The respirator furnished shall provide adequate respiratory protection against the particular hazard for which it is designed in accordance with standards established by competent authorities. The U.S. Department of Interior, Bureau of Mines, and the U.S. Department of Agriculture are recognized as such authorities. Although respirators listed by the U.S. Department of Agriculture continue to be acceptable for protection against specified pesticides, the U.S. Department of the Interior, Bureau of Mines, is the agency now responsible for testing and approving pesticide respirators.

(c) *Selection of respirators.* Proper selection of respirators shall be made according to the guidance of American National Standard Practices for Respiratory Protection Z88.2-1969.

(d) *Air quality.* (1) Compressed air, compressed oxygen, liquid air, and liquid oxygen used for respiration shall be of high purity. Oxygen shall meet the requirements of the United States Pharmacopoeia for medical or breathing oxygen. Breathing air shall meet at least the requirements of the specification for Grade D breathing air as described in Compressed Gas Association Commodity Specification G-7.1-1966. Compressed oxygen shall not be used in supplied-air respirators or in open circuit self-contained breathing apparatus that have previously used compressed air. Oxygen must never be used with air line respirators.

(2) Breathing air may be supplied to respirators from cylinders or air compressors.

(i) Cylinders shall be tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR Part 178).

(ii) The compressor for supplying air shall be equipped with necessary safety and standby devices. A breathing air-type compressor shall be used. Compressors shall be constructed and situated so as to avoid entry of contaminated air into the system and suitable in-line air purifying sorbent beds and filters installed to further assure breathing air quality. A receiver of sufficient capacity to enable the respirator wearer to escape from a contaminated atmosphere in event of compressor failure, and alarms to indicate compressor failure and overheating shall be installed in the system. If an oil-lubricated compressor is used, it shall have a

cleaning procedure and be assured that he will always receive a clean and disinfected respirator. Such assurances are of greatest significance when respirators are not individually assigned to workers. Respirators maintained for emergency use shall be cleaned and disinfected after each use.

(4) Replacement or repairs shall be done only by experienced persons with parts designed for the respirator. No attempt shall be made to replace components or to make adjustment or repairs beyond the manufacturer's recommendations. Reducing or admission valves or regulators shall be returned to the manufacturer or to a trained technician for adjustment or repair.

(5) (i) After inspection, cleaning, and necessary repair, respirators shall be stored to protect against dust, sunlight, heat, extreme cold, excessive moisture, or damaging chemicals. Respirators placed at stations and work areas for emergency use should be quickly accessible at all times and should be stored in compartments built for the purpose. The compartments should be clearly marked. Routinely used respirators, such as dust respirators, may be placed in plastic bags. Respirators should not be stored in such places as lockers or tool boxes unless they are in carrying cases or cartons.

(ii) Respirators should be packed or stored so that the facepiece and exhalation valve will rest in a normal position and function will not be impaired by the elastomer setting in an abnormal position.

(iii) Instructions for proper storage of emergency respirators, such as gas masks and self-contained breathing apparatus, are found in "use and care" instructions usually mounted inside the carrying case lid.

(g) *Identification of gas mask canisters.* (1) The primary means of identifying a gas mask canister shall be by means of properly worded labels. The secondary means of identifying a gas mask canister shall be by a color code.

(2) All who issue or use gas masks falling within the scope of this section shall see that all gas mask canisters purchased or used by them are properly labeled and colored in accordance with these requirements before they are placed in service and that the labels and colors are properly maintained at all times thereafter until the canisters have completely served their purpose.

(3) On each canister shall appear in bold letters the following:

(i)—

Canister for _____
(Name for atmospheric contaminant)

or

Type N Gas Mask Canister

(ii) In addition, essentially the following wording shall appear beneath the appropriate phrase on the canister label: "For respiratory protection in atmospheres containing not more than _____ percent by volume of _____."

(4) Canisters having a special high-efficiency filter for protection against radionuclides and other highly toxic particulates shall be labeled with a statement of the type and degree of protection afforded by the filter. The label shall be affixed to the neck end of, or to the gray stripe which is around and near the top of, the canister. The degree of protection shall be marked as the percent of penetration of the canister by a 0.3-micron-diameter dioctyl phthalate (DOP) smoke at a flow rate of 85 liters per minute.

(5) Each canister shall have a label warning that gas masks should be used only in atmospheres containing sufficient oxygen to support life (at least 16 percent by volume), since gas mask canisters are only designed to neutralize or remove contaminants from the air.

(6) Each gas mask canister shall be painted a distinctive color or combination of colors indicated in Table I-1. All colors used shall be such that they are clearly identifiable by the user and clearly distinguishable from one another. The color coating used shall offer a high degree of resistance to chipping, scaling, peeling, blistering, fading, and the effects of the ordinary atmospheres to which they may be exposed under normal conditions of storage and use. Appropriately colored pressure sensitive tape may be used for the stripes.

TABLE I-1

Atmospheric contaminants to be protected against	Colors assigned*
Acid gases	White.
Hydrocyanic acid gas	White with ½-inch green stripe completely around the canister near the bottom.
Chlorine gas	White with ½-inch yellow stripe completely around the canister near the bottom.
Organic vapors	Black.
Ammonia gas	Green.
Acid gases and ammonia gas	Green with ½-inch white stripe completely around the canister near the bottom.
Carbon monoxide	Blue.
Acid gases and organic vapors	Yellow.
Hydrocyanic acid gas and chloropicrin vapor	Yellow with ½-inch blue stripe completely around the canister near the bottom.
Acid gases, organic vapors, and ammonia gases	Brown.
Radioactive materials, excepting tritium and noble gases	Purple (Magenta).
Particulates (dusts, fumes, mists, fogs, or smokes) in combination with any of the above gases or vapors	Canister color for contaminant, as designated above, with ½-inch gray stripe completely around the canister near the top.
All of the above atmospheric contaminants	Red with ½-inch gray stripe completely around the canister near the top.

*Gray shall not be assigned as the main color for a canister designed to remove acids or vapors.

NOTE: Orange shall be used as a complete body, or stripe color to represent gases not included in this table. The user will need to refer to the canister label to determine the degree of protection the canister will afford.

MATERIAL SAFETY DATA SHEET

SUBSTANCE (Chemical Name)	NO.

PRODUCT NAME, NUMBER, SYNONYM	COMMON OR TRADE NAME

MANUFACTURER'S NAME AND ADDRESS	TELEPHONE NUMBER

HEALTH HAZARDS

HAZARD RATING ( ) DANGER ( ) WARNING ( ) CAUTION

TYPE OF HAZARD

SYMPTOMS OF EXPOSURE

EFFECTS OF EXPOSURE

EMERGENCY FIRST AID

FIRE, EXPLOSION, AND REACTIVITY DATA

EXTINGUISHING AGENTS AND FIRE FIGHTING METHODS

FLASH POINT		FLAMMABLE OR EXPLOSIVE LIMIT	
OPEN CUP °C	CLOSED CUP °C	LOWER %	UPPER %
IGNITION TEMPERATURE °C		AUTO-IGNITION TEMPERATURE	°C

PRODUCTS FORMED BY FIRE OR EXCESSIVE HEAT

CONDITIONS TO AVOID

STABILITY ( ) Stable ( ) Unstable – Explain Conditions

INCOMPATIBLE MATERIALS AND REACTIONS

PRODUCTS OF DECOMPOSITION

HAZARDOUS POLYMERIZATION ( ) Will not occur ( ) May occur – Explain Reaction and Products

PROTECTION EQUIPMENT

PERSONAL PROTECTION

VENTILATION

ADDITIONAL PROTECTIVE EQUIPMENT

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.

ADDRESS (Number, Street, City, State, and ZIP Code)

CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS

CHEMICAL FAMILY	FORMULA

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES	%	TLV (Units)

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)		SPECIFIC GRAVITY (H_2O=1)	
VAPOR PRESSURE (mm Hg.)		PERCENT, VOLATILE BY VOLUME (%)	
VAPOR DENSITY (AIR=1)		EVAPORATION RATE (_____ =1)	
SOLUBILITY IN WATER			

APPEARANCE AND ODOR

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method Used)	FLAMMABLE LIMITS	Lel	Uel

EXTINGUISHING MEDIA

SPECIAL FIRE FIGHTING PROCEDURES

UNUSUAL FIRE AND EXPLOSION HAZARDS

SAMPLE P.O. CLAUSES

It is a direct condition of the term of this order that the vendor shall supply the purchaser with the information required on the Material Data Sheet attached hereto. In addition the vendor shall supply any material related to the safe use of this material and hazards associated with its use including but not limited to installation procadures and personnel protective equipment requirements. All hazardous components shall be identified. Data requested shall be furnished with the material shipment and a copy sent to this office at

_____

_____

_____

No material will be accepted for delivery without the required information.

04.0101(e) TABLE 1-1

1910.1001	Asbestos.
1910.1002	Coal tar pitch volatiles; interpretation of term.
1910.1003	4-Nitrobiphenyl.
1910.1004	alpha-Naphthylamine.
1910.1005	4, 4'-Methylene bis(2-chloroaniline).
1910.1006	Methyl chloromethyl ether
1910.1007	3, 3'-Dichlorobenzine (and its salts)
1910.1008	bis-Chloromethyl ether.
1910.1009	beta-Naphthylamine.
1910.1010	Benzidine.
1910.1011	4-Aminodiphenyl.
1910.1012	Ethyleneimine.
1910.1013	beta-Propiolactone.
1910.1014	2-Acetylaminofluorene.
1910.1015	4-Dimethylaminoazobenzine.
1910.1016	N-Nitrosodimethylamine.
1910.1017	Vinyl Chloride.
1910.1018	Inorganic arsenic.
1910.1028	Benzene.
1910.1029	Coke Oven Emissions
1910.1043	Cotton dust.
1910.1044	1,2 - dibromo - 3 - chloropropane.
1910.1045	Acrylonitrile.
1910.1046	Exposure to cotton dust in cotton gins.

LAWS OF ALASKA

1983

Source: CSSB 79(Res)

Chapter No. 93

AN ACT

Relating to toxic and hazardous substances in the workplace and providing for an effective date.

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

THE ACT FOLLOWS ON PAGE 1, LINE 9

Approved by the Governor: July 25, 1983
Actual Effective Date: Sections 1, 3, and 4 take effect July 26, 1983; and Section 2 takes effect July 1, 1984

Chapter 93

AN ACT

Relating to toxic and hazardous substances in the workplace; and providing for an effective date.

---

* Section 1. AS 18.60.030 is amended by adding new paragraphs to read:

(12) annually publish a list of toxic and hazardous substances;

(13) maintain a current set of OSHA form 20's or equivalent information for toxic and hazardous substances, and other information relevant to toxic and hazardous substances;

(14) assist employers, upon request, to identify and obtain information on toxic and hazardous substances and develop employee safety education programs.

* Sec. 2. AS 18.60 is amended by adding new sections to read:

Sec. 18.60.065. IMPORTATION OF TOXIC AND HAZARDOUS SUBSTANCES. Toxic and hazardous substances imported into the state shall be accompanied by a federal Occupational Safety and Health Administration (OSHA) form 20 or equivalent information. This requirement does not apply to a substance for which the in-state purchaser has already received the most current information.

Sec. 18.60.066. EMPLOYEE SAFETY EDUCATION PROGRAMS. (a) An employer shall conduct a safety education program for an employee before the employee performs a new work assignment that may result in the employee being exposed to a toxic or hazardous substance for which the employee has not received safety instruction as provided under (b

of this section.

(b) An employee safety instruction program shall inform the employee of

(A) the location, properties, and known or suspected acute and chronic health effects of the hazardous or toxic substances to which the employee is exposed in the workplace;

(B) the nature of the operations that could result in exposure to hazardous or toxic substances, as well as any necessary handling or hygienic practices or precautions; and

(C) the location, purpose, proper use, and limitations of personal protective equipment used in the workplace.

Sec. 18.60.067. INFORMATION PROVIDED ON EMPLOYEE'S REQUEST. (a) An employer shall make available to an employee on request a copy of the most recent OSHA form 20 or equivalent written information for a toxic or hazardous substance to which the employee may be exposed. If the employer does not have the copy or information requested, the employer shall request a copy from the department or the manufacturer of the substance within three state government working days after receiving the request.

(b) If the copy or information requested under (a) of this section is not made available to the employee within 15 calendar days after the request is received, the employer shall take measures to assure that employees are not exposed to the substance to which the copy or information pertains until the copy or information is made available to the employee who made the request. This subsection applies only to substances for which an OSHA form 20 or equivalent information is required under OSHA regulations. This subsection does not alter, deny, or abrogate any right an employee may have under law to refuse to work under hazardous circumstances.

Sec. 18.60.068. POSTING OF INFORMATION IN WORKPLACE. (a) The department shall print and make available to employers posters that contain notice of the provisions of this chapter relating to toxic and hazardous substances.

(b) An employer whose employees are or may be exposed in the workplace to a toxic or hazardous substance shall display the following information in a manner designed to notify the employees:

(1) a poster printed by the department under (a) of this section; and

(2) an OSHA form 20 or equivalent information for each toxic or hazardous substance to which an employee may be exposed in the workplace

(A) under normal conditions of work; or

(B) during a reasonably foreseeable emergency, including equipment failure and rupture of containers.

(c) Instead of posting the information required under (b)(2) of this section, an employer may post a list of the chemical name and product name of each toxic or hazardous substance to which an employee may be exposed in the workplace, together with an identification of a location, in or near the workplace and accessible to employees, where an employee may inspect the information listed under (b)(2) of this section.

* Sec. 3. AS 18.60.105 is amended by adding new paragraphs to read:

(6) "be exposed" means to ingest, inhale, or absorb through the skin or eyes a substance, or fumes or other potentially harmful aspect of a substance;

(7) "OSHA" means the federal Occupational Safety and Health Administration;

(8) "toxic or hazardous substance" includes

(A) a chemical listed in 29 CFR Part 1910, Subpart Z, Toxic and Hazardous Substances, "General Industry Standards", Occupational Safety and Health Administration;

(B) a chemical listed in "Threshold Limit Values for Chemical Substances and Physical Agents in the Work Environment", American Conference of Governmental Industrial Hygienists (Latest Edition);

(C) a substance for which an OSHA form 20 or equivalent information is required under OSHA regulations; and

(D) a substance determined by the department, in accordance with the Administrative Procedure Act (AS 44.62), to be a health hazard to an employee who is exposed to the substance, including a carcinogen, reproductive toxin, irritant, corrosive, sensitizer, hepatotoxin, nephrotoxin, neurotoxin, agent that acts on the hematopoietic system, agent that damages the lungs, a cutaneous hazard and an eye hazard;

(9) "toxic or hazardous substance" does not include

(A) substances that because of their physical state, volume, or concentration do not pose a health hazard upon exposure;

(B) substances that are goods, food, drugs, cosmetics, or tobacco products intended for personal consumption; or

(C) substances in transit;

(10) "transit" means conveyed in a sealed or unopened container by a mode of transportation.

* Sec. 4. AS 18.60.105 is amended by adding a new subsection to read:

(b) In AS 18.60.030(14), 18.60.065 - 18.60.068, and 18.60.105-(a)(9)

(1) "employee" means a person who works for an employer,

but not in a place used primarily as a personal residence;

(2) "employer" means a person, including the state and a political subdivision of the state, who has one or more employees working in a place not used primarily as a personal residence.

(3) "health hazard" means a substance capable of causing acute or chronic adverse effects to health;

(4) "workplace" means a place of employment other than a place used primarily as a personal residence.

* Sec. 5. Sections 1, 3, and 4 of this Act take effect immediately in accordance with AS 01.10.070(c).

* Sec. 6. Section 2 of this Act takes effect July 1, 1984.

: CORDOVA AREA STREET SWEEPER CONTRACT, CENTRAL REGION, STATE OF ALASKA
85-25-1-052

The project consists of establishing, on an as needed basis, a no guaranteed minimum usage contract for rental of a street sweeper w/operator to be used in the Cordova area. A Contractors License is required. A Business License is required prior to award.

E: May 3, 1984 at 2:00 PM
State of Alaska
Dept. of Trans. & Pub. Facil.
Central Region, Headquarters
4111 Aviation Ave. (Pouch 6173)
Anchorage, Alaska 99502

PLANS: State of Alaska
Dept. of Trans. & Pub. Facil.
Chief, Technical Services
Pouch 6900 (4111 Aviation Ave.)
Anchorage, Alaska 99502
NO CHARGE

C-25

T: BARTLETT HIGH SCHOOL, ASBESTOS ABATEMENT, ANCHORAGE SCHOOL DISTRICT, ANCHORAGE, ALASKA

The work includes extensive removal and disposal of asbestos-containing material, demolition and reconstruction of ceilings, walls, and electrical and mechanical systems. Bidders will be prequalified. Because of the highly specialized nature of this construction work, only prequalified bidders will receive Bid Documents and be allowed to submit bids for this project. Prequalification requirements include Alaska contractor's and business licenses, previous asbestos abatement experience involving spray-applied asbestos acoustical and fireproofing material, excellent contract performance record and references.

TE: May 8, 1984 at 2:00 PM
Anchorage School District
Purchasing Department
4600 Debarr Avenue
(Pouch 6-614
Anchorage, Alaska 99502

PLANS: Will be distributed by April 6, 1984 to interested bidders who prequalify

A-26

T: FIVE SCHOOLS - DIMOND, EAST, WEST HIGH SCHOOLS, CLARK JR. HIGH SCHOOL, AND MT. SPURR ELEMENTARY SCHOOL, ASBESTOS ABATEMENT, ANCHORAGE SCHOOL DISTRICT, ANCHORAGE, ALASKA

The work includes extensive removal and disposal of asbestos-containing material, demolition and reconstruction of ceilings, walls, and electrical and mechanical systems. Bidders will be prequalified. Because of the highly specialized nature of this construction work, only prequalified bidders will receive Bid Documents and be allowed to submit bids for this project. Prequalification requirements include Alaska contractor's and business licenses, previous asbestos abatement experience involving spray-applied asbestos acoustical and fireproofing material, excellent contract performance record and references.

TE: May 8, 1984 at 2:00 PM
Anchorage School District
Purchasing Department
4600 DeBarr Avenue (Pouch 6-614)
Anchorage, Alaska 99502

PLANS: Will be distributed by April 6, 1984 to interested bidders who prequalify

A-15

NEA-ALASKA

AFFILIATED WITH THE NATIONAL EDUCATION ASSOCIATION

ANCHORAGE REGIONAL OFFICE
1411 W. 33RD
ANCHORAGE, ALASKA 99503
(907) 274-0536

JUNEAU OFFICE
147 S. FRANKLIN #207
JUNEAU, ALASKA 99801
(907) 586-3090

FAIRBANKS REGIONAL OFFICE
2118 CUSHMAN STREET
FAIRBANKS, ALASKA 99701
(907) 456-4435

January 22, 1985

TO: Co-Chairman, Representative Niilo Koponen and Max Gruenberg
Members, House HESS Committee

RE: HB 57 "An Act making special appropriations for an asbestos health hazard abatement program; and providing for an effective date.

NEA-Alaska strongly supports and encourages expeditious attention to this extremely serious matter.

We further encourage that the suppliers and producers be held accountable for their products and services.

With this memorandum, supplemental information is bei g provided for the Committee.

Respectfully submitted:

Robert Manners
Executive Secretary

L85:03

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 $192,000 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.