

T. B. BONNEY

MEMORANDUM

PITTSBURGH OFFICE - 6

1984 April 13

RE: CONTROL OF FRIABLE ASBESTOS

Enclosed is a copy of a booklet published by the U.S. Environmental Protection Agency concerning the control of friable asbestos in buildings.

Although the booklet contains information about regulations in the United States, much more space is devoted to appropriate control measures irrespective of regulation. As such, we can recommend it as a good general reference on asbestos control.

We hope you find it useful.

Tom

T. B. BONNEY

TBB:bep

Enclosure



Distribution:	A. K. Jankiewicz	- Pt. Henry Works, Australia
	B. J. Chesson	- Kwinana Works, Australia
	M. Leroy	- Pinjarra, Australia
	M. F. Born	- Pocos de Caldas, Brazil
	S. Knott	- Kingston, Jamaica
	S. L. Vazquez	- Veracruz, Mexico
	G. A. Q. Ophuis	- Drunen, Netherlands
	R. Karstensen	- Mosjøen, Norway
	J. Rob	- Farsund, Norway
	A. Correia	- Suralco, Paranam Operations
	S. B. West	- Waunarlwydd, Swansea, Wales

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04/06 - Mary C. in a call
back on station 1000.

04/13 - Per phone of
Bureau notes --

ATTN: CUSTOMER SVC.
5265 ROYAL RD.

- OK w/ TBB to accept
& forward Xerox
cl of report. / ECK

OK - But what are we doing re:
4/13 domestic fin. l.
GER - They can order their own 12
free of charge per my 84-02-03 memo. *John*
TBB and Joan would like very much
to send the attached book to our
international stations. Please 10,
+ 2 others for the file, would run
us @ 11.50 each; @ 138.
Before I check & order, though I would
need your prior approval.
ECK

Rummy,

Single copies are available
gratis from the EPA offices. EPA
balked when we wanted 12.

Tom



1501 Alcoa Building
Pittsburgh, Pennsylvania 15219

ALCOA0000008714



Jan Kiewicz -
 Chesson -
 Born -
 Knott -
 Vazquez -
 Ophuis -
 Karstensen -
 Rob -
 Correia -
 West -

10

JES

982-214924

Many Thanks!

@ 11.50
 703/487-4650
 TPB

Mr. J.
 Mr. J.

We can't wait for tomorrow



L 1 - 11.50
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 - 11.50

11.50 x 12 =
 138. -

FILE

ALUMINUM COMPANY OF AMERICA

ALCOA BUILDING, PITTSBURGH, PENNSYLVANIA 15219

ALCOA

1984 March 19

National Technical Information Service
Springfield, VA 22161

Gentlemen:

Confirming my phone conversation of March 16, we would like to order the following:

12 copies - "Guidance for Controlling - @ \$11.50
Friable Asbestos-Containing
Materials in Buildings"/
EPA Report #560/5-83-002

Upon contacting your EPA Region III Asbestos Coordinator at the phone number indicated, we learned that single copies, only, were available free of charge.

Enclosed is our check in the amount of \$138 to cover the cost of our order.

Thank you for your prompt attention to our request.

Very truly yours,

Elle Sasinoski

Elle Sasinoski
Secretary to E. E. Rumberger,



Aluminum Company of America
Headquarters Office, Pittsburgh, Pennsylvania 15219

TO THE ORDER OF

CHECK NO.

015341 015341

DATE 84-03-19

NATL TECHNICAL INFO SERVICE

*****138.00***

Mellon Bank N.A.
Pittsburgh, Pennsylvania 15230

MEMO 098148988

IMPREST FUND

AUTHORIZED SIGNATURE

001534100 00430002610 0001111810

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FROM JOAN E. SANDER
PITTSBURGH OFFICE - 6

H & S
Industrial Hygiene

BDD
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FEB 14 1984

TO
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PW
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EDS

F. B. Bonney
Pittsburgh Office - 6

1984 February 03

RE: CONTROL OF FRIABLE ASBESTOS - EPA DOCUMENT

For your information, attached please find a table entitled "Comparison of Asbestos Control Alternatives". This table was taken from EPA Report Number 560/5-83-002, "Guidance for Controlling Friable Asbestos-Containing Materials in Buildings", and is available free of charge by contacting your EPA Regional Asbestos Coordinator, as indicated in Attachment II.

This document offers a comprehensive overview of an asbestos control program, and includes illustrations of asbestos-containing materials and various control projects (i.e. encapsulation, removal, enclosure). I would highly recommend it as reference material for an asbestos control program. Please contact me on extension 2597 if additional information is required.

Joan E. Sander
JOAN E. SANDER

JES:sc

Attachments

Distribution:

I.H. Contacts (domestic)

cc: G. Crouth-Pittsburgh 7
R. Reeves-Pittsburgh 6
F. Shelhamer-WPH
D. Balya-ATC



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Table 2. Comparison of Asbestos Control Alternatives

Method	Advantages	Disadvantages	Appropriate applications	Inappropriate applications	General comments
Removal	Eliminates asbestos source Eliminates need for special operations and maintenance program	Replacement with substitute material may be necessary Porous surfaces also may require encapsulation Improper removal may raise fiber levels	Always	Never	Containment barriers needed Worker protection required Wet removal is required for all types of asbestos. (amosite will not adsorb water or water with traditional wetting agents) Disposal may be a problem in some areas Unusual circumstances, complex surfaces, and the presence of utilities may require special removal techniques
Enclosure	Reduces exposure in the area outside the enclosure Initial costs may be lower than removal unless utilities need relocating or major changes Usually does not require replacement of material	Asbestos source remains and must be removed eventually Fiber release continues behind enclosure Special operations program required to control access to enclosure for maintenance and renovation Periodic reinspection required to check for damage Repair of damaged enclosure necessary Fibers released in dry form during construction of enclosure Long-term costs could be higher than removal	When materials need to be isolated from building occupants (e.g., exposed pipe) Disturbance or entry into enclosed area unlikely	Damaged or deteriorating materials causing rapid fiber release Water damage evident Damage or entry into enclosure likely Ceiling to be enclosed is low	Containment barriers needed Use of tools with HEPA-filtered vacuum attachments advisable Worker protection needed

① Call for 12 ~~12~~
cc

② When they arrive,
forward of letter.
TBB

03/07 -

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Appendix B. Addresses of EPA Regional Asbestos Coordinators

EPA Region I
Asbestos Coordinator
Air and Hazardous Material Division
JFK Federal Building
Boston, Massachusetts 02202
(617) 223-0585

EPA Region II
Asbestos Coordinator
Woodbridge Avenue
Edison, New Jersey 08837
(201) 321-6668

EPA Region III
Asbestos Coordinator
Curtis Building
6th and Walnut Street
Philadelphia, Pennsylvania 19106
~~(215) 597-9859~~ [Single cc only]

EPA Region IV
Asbestos Coordinator
345 Cortland Street
Atlanta, Georgia 30365
(404) 881-3864

EPA Region V
Asbestos Coordinator
230 S. Dearborne Street
Chicago, Illinois 60604
(312) 886-6003

EPA Region VI
Asbestos Coordinator
First International Building
1219 Elm Street
Dallas, Texas 75270
(214) 767-2734

EPA Region VII
Asbestos Coordinator
324 E. 11th Street
Room 1411
Kansas City, Missouri 64106
(816) 374-6538

EPA Region VIII
Asbestos Coordinator
1860 Lincoln Street
Denver, Colorado 80295
(303) 837-3926

EPA Region IX
Asbestos Coordinator
215 Fremont Street
San Francisco, California 94105
(415) 974-8123

EPA Region X
Asbestos Coordinator
1200 6th Avenue
Seattle, Washington 98101
(206) 442-2632

Information copy

H & S
Industrial Hygiene

JES
TJB

RICHARD S. DANCHIK
ENVIRONMENTAL HEALTH LABORATORY
ALCOA TECHNICAL CENTER - C

(1) BDB
(2) EER
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D. R. BALYA
R. C. GEIGER
R. A. MILITO
J. J. PERRIELLO

1984-04-06

RE: IDENTIFICATION AND COUNTING OF ASBESTOS

A meeting will be held on Wednesday, 1984 Apr 11, at 8:30 AM in Room 1204 to discuss the new NIOSH Method 7400 for the sampling and the measurement of asbestos fibers using optical microscopy. Please critically review this method with the purpose of replacing P&CAM 239.

RICHARD S. DANCHIK

cc: E. E. Rumberger, Pittsburgh-6
T. B. Bonney, Pittsburgh-6

10 Apr 84

Following EHL's decision they will make their recommendations to us in Pittsburgh. Assuming they recommend that we use the method we will have to decide (based on health and legal considerations) whether or not we want to make the conversion.

TJB

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R. L. SWIFT
MSA

FORMULA: various

FIBERS

M.W.: various

METHOD: 7400

ISSUED: 2/15/84

OSHA: 0.5 asbestos fibers ($> 5 \mu\text{m}$ long)/mL

PROPERTIES: solid,

NIOSH: 0.1 asbestos f/mL [1]; 3 glass fibers ($>10 \mu\text{m} \times <3.5 \mu\text{m}$)/mL [2]

fibrous

ACGIH: 0.2 crocidolite; 0.5 amosite; 2 chrysotile and other asbestos, f/mL

SYNONYMS: asbestos (actinolite [CAS #77536-66-4], grunerite (amosite) [CAS #12172-73-5], anthophyllite [CAS #77536-67-5], chrysotile [CAS #12001-29-5], crocidolite [CAS #12001-28-4], tremolite [CAS #77536-68-6]); fibrous glass.

SAMPLING	MEASUREMENT
SAMPLER: FILTER (0.8-1.2 μm cellulose ester membrane, 25-mm diameter)	!TECHNIQUE: MICROSCOPY, PHASE CONTRAST ! !ANALYTE: fibers (manual count) !
FLOW RATE*: $\geq 0.5 \text{ L/min}$	!SAMPLE PREPARATION: acetone/triacetin method !
VOL-MIN*: 400 L @ 0.1 fiber/mL -MAX*: 1920 L @ 0.1 fiber/mL *Adjust for 100 to 1300 fibers/ mm^2 (step 4).	!COUNTING RULES: Set A (P&CAM 239 [3,4]) or Set B (modified CRS [5]) !
SHIPMENT: routine	!EQUIPMENT: 1. phase-contrast microscope ! 2. Walton-Beckett graticule (100 μm ! field diameter): A Rules use ! G-22; B Rules use Type G-24 ! 3. phase-shift test slide (HSE/NPL) !
SAMPLE STABILITY: indefinite	!
BLANKS: 10% of samples (minimum 2) [3]	!CALIBRATION: phase-shift detection limit about ! 3 degrees [7] !
ACCURACY	!
RANGE STUDIED: 80 to 100 fibers counted	!RANGE: 100 to 1300 fibers/ mm^2 filter area [6] !
BIAS: see EVALUATION OF METHOD	!ESTIMATED LOD: 7 fibers/ mm^2 filter area !
OVERALL PRECISION (s_p): 0.115 to 0.13 [3] (A Rules)	!PRECISION: 0.10 to 0.12 [3] ! (A Rules) !

APPLICABILITY: The working range is 0.02 fiber/mL (1920-L air sample) to 1.25 fibers/mL (400-L air sample). The method gives an index of airborne asbestos fibers but may be used for other materials such as fibrous glass by inserting suitable parameters into the counting rules. The method does not differentiate between asbestos and other fibers. Asbestos fibers less than ca. 0.25 μm diameter will not be detected by this method [7].

INTERFERENCES: Any other airborne fiber may interfere since all particles meeting the counting criteria are counted. Chain-like particles may appear fibrous. High levels of non-fibrous dust particles may obscure fibers in the field of view and raise the detection limit.

OTHER METHODS: This method introduces changes for improved sensitivity and reproducibility and replaces P&CAM 239 [3,4].

2/15/84

7400-1

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REAGENTS:

1. Acetone.*
2. Triacetin (glycerol triacetate), reagent grade.

*See Special Precautions.

EQUIPMENT:

1. Sampler: field monitor, 25 mm, three-piece cassette with 50-mm extension cowl with cellulose ester filter, 0.8 to 1.2- μ m pore size and backup pad.
NOTE: Analyze representative filters for fiber background before use and discard the filter lot if more than 5 fibers/100 fields are found.
2. Personal sampling pump, ≥ 0.5 L/min (see step 4 for flow rate), with flexible connecting tubing.
3. Microscope, phase contrast, with green or blue filter, 8 to 10X eyepiece, and 40 to 45X phase objective (total magnification ca. 400X); numerical aperture = 0.65 to 0.75.
4. Slides, glass, single-frosted, pre-cleaned, 25 x 75 mm.
5. Cover slips, 25 x 25 mm, no. 1-1/2, unless otherwise specified by microscope manufacturer.
6. Knife, #10 surgical steel, curved blade.
7. Tweezers.
8. Flask, Guth-type, insulated neck, 250 to 500 mL (with single-holed rubber stopper and elbow-jointed glass tubing, 16 to 22 cm long).
9. Hotplate, spark-free, stirring type; heating mantle; or infrared lamp and magnetic stirrer.
10. Syringe, hypodermic, with 22-gauge needle.
11. Graticule, Walton-Beckett type with 100 μ m diameter circular field at the specimen plane (area = 0.00785 mm²) (Type G-22 for A Rules; Type G-24 for B Rules). Available from Graticules Ltd., Morley Road, Tonbridge TN9 1RN, Kent, England (Telephone 011-44-732-359061).
NOTE: The graticule is custom-made for each microscope. Specify disc diameter needed to fit exactly the ocular of the microscope and the diameter (μ m) of the circular counting area (see step 11).
12. HSE/MPL phase contrast test slide, Mark II. Available from PTR Optics Ltd., 145 Newton Street, Waltham, MA 02154 (Telephone (617) 891-6000).
13. Telescope, ocular phase-ring centering.
14. Stage micrometer (0.01 mm divisions).

SPECIAL PRECAUTIONS: Acetone is an extremely flammable liquid and precautions must be taken not to ignite it. Heating of acetone must be done in a ventilated laboratory fume hood using a flameless, spark-free heat source.

SAMPLING:

1. Calibrate each personal sampling pump with a representative sampler in line [3].
2. Fasten the sampler to the worker's lapel as close as possible to the worker's mouth. Remove the top cover from the end of the cowl extension (open face) and orient face down. Wrap the joint between the extender and monitor body with shrink tape to prevent air leaks.

3. Submit at least two field blanks (or 10% of the total samples, whichever is greater) for each set of samples. Remove the caps from the field blank cassettes and store the caps and cassettes in a clean area (bag or box) during the sampling period. Replace the caps in the cassettes when sampling is completed.
4. Sample at 0.5 L/min or greater [8]. Do not exceed 1 mg total dust loading on the filter. Adjust sampling flow rate, Q (L/min), and time to produce a fiber density, E (fibers/mm²), of 100 to 1300 fibers/mm² [3.85×10^4 to 5×10^5 fibers per 25-mm filter with effective collection area ($A_c = 385$ mm²)] for optimum counting precision (see step 21). Calculate the minimum sampling time, t_{min} (min), at the action level (one-half the current standard), L (fibers/mL), of the fibrous aerosol being sampled:

$$t_{min} = \frac{(A_c)(E)}{(Q)(L)10^3}$$

5. Remove the field monitor at the end of sampling, replace the plastic top cover and small end caps, and store the monitor.
 6. Ship the samples in a rigid container with sufficient packing material to prevent jostling or damage.
- NOTE: Do not use polystyrene foam in the shipping container because of electrostatic forces which may cause fiber loss from the sampler filter.

SAMPLE PREPARATION:

NOTE: The object is to produce samples with a smooth (non-grainy) background in a medium with a refractive index equal to or less than 1.46. The method below collapses the filter for easier focusing and produces permanent mounts which are useful for quality control and interlaboratory comparison. Other mounting techniques meeting the above criteria may also be used (e.g., the non-permanent field mounting technique used in PSCAM 239 [1,3,4]).

7. Ensure that the glass slides and cover slips are free of dust and fibers.
 8. Place 40 to 60 mL of acetone into a Guth-type flask. Stopper the flask with a single-hole rubber stopper through which a glass tube extends 5 to 8 cm into the flask. The portion of the glass tube which exits the top of the stopper (8 to 10 cm) is bent downward in an elbow which makes an angle of 20 to 30° with the horizontal.
 9. Place the flask on a stirring hotplate or wrap in a heating mantle. Heat the acetone gradually to its boiling temperature (ca. 58 °C).
- CAUTION: The acetone vapor must be generated in a ventilated fume hood away from all open flames and spark sources. Alternate heating methods can be used, providing no open flame or sparks are present.
10. Mount either the whole sample filter or a wedge cut from the sample filter on a clean glass slide.
 - a. Cut wedges of ca. 25% of the filter area with a curved blade steel surgical knife using a rocking motion to prevent tearing.
 - b. Place the filter or wedge, dust side up, on the slide. Static electricity will usually keep the filter on the slide until it is cleared.
 - c. Hold the glass slide supporting the filter approximately 1 to 2 cm from the glass tube port where the acetone vapor is escaping from the heated flask. The acetone vapor stream should cause a condensation spot on the glass slide ca. 2 to 3 cm in diameter. Move the glass slide gently in the vapor stream. The filter should clear in 2 to 5 sec. If the filter curls, distorts or is otherwise rendered unusable, the vapor stream is probably not strong enough. Periodically wipe the outlet port with tissue to prevent liquid acetone dripping onto the filter.

- d. Using the hypodermic syringe with a 22-gauge needle, place 1 to 2 drops of triacetin on the filter. Gently lower a clean 25-mm square cover slip down onto the filter at a slight angle to reduce the possibility of forming bubbles. If too many bubbles form or the amount of triacetin is insufficient, the cover slip may become detached within a few hours.
 - e. Glue the edges of the cover slip to the glass slide using a lacquer or nail polish [9].
- NOTE: If clearing is slow, the slide preparation may be heated on a hotplate (surface temperature 50 °C) for 15 min to hasten clearing. Counting may proceed immediately after clearing and mounting are completed.

CALIBRATION AND QUALITY CONTROL:

11. Calibration of the Walton-Bckett graticule. The diameter, d_c (mm), of the circular counting area and the disc diameter must be specified when ordering the graticule.
 - a. Insert any available graticule into the eyepiece and focus so that the graticule lines are sharp and clear.
 - b. Set the appropriate interpupillary distance and, if applicable, reset the binocular head adjustment so that the magnification remains constant.
 - c. Install the 40 to 45X phase objective.
 - d. Place a stage micrometer on the microscope object stage and focus the microscope on the graduated lines.
 - e. Measure the magnified grid length, L_o (μm), using the stage micrometer.
 - f. Remove the graticule from the microscope and measure its actual grid length, L_a (mm). This can best be accomplished by using a stage fitted with verniers.
 - g. Calculate the circle diameter, d_c (mm), for the Walton-Bckett graticule:

$$d_c = \frac{L_a}{L_o} \times D.$$

Example: If $L_o = 108 \mu\text{m}$, $L_a = 2.93 \text{ mm}$ and $D = 100 \mu\text{m}$, then $d_c = 2.71 \text{ mm}$.

- h. Check the field diameter, D (acceptable range $100 \mu\text{m} \pm 2 \mu\text{m}$) with a stage micrometer upon receipt of the graticule from the manufacturer. Determine field area (mm^2).
12. Microscope adjustments. Follow the manufacturer's instructions and also the following:
 - a. Adjust the light source for even illumination across the field of view at the condenser iris.

NOTE: Köhler illumination is preferred, where available.

 - b. Focus on the particulate material to be examined.
 - c. Make sure that the field iris is in focus, centered on the sample and open only enough to fully illuminate the field of view.
 - d. Use the telescope ocular supplied by the manufacturer to ensure that the phase rings (annular diaphragm and phase-shifting elements) are concentric.
13. Check the phase-shift detection limit of the microscope periodically.
 - a. Remove the MSE/NPL phase-contrast test slide from its shipping container and center it under the phase objective.
 - b. Bring the blocks of grooved lines into focus.

NOTE: The slide consists of seven sets of grooves (ca. 20 grooves to each block) in descending order of visibility from sets 1 to 7. The requirements for asbestos counting are that the microscope optics must resolve the grooved lines in set 3 completely, although they may appear somewhat faint, and that the grooved lines in sets 6 and 7 must be invisible. Sets 4 and 5 must be at least partially visible but may vary slightly in visibility between microscopes. A microscope which fails to meet these requirements has either too low or too high a resolution to be used for asbestos counting.

- c. If the image quality deteriorates, clean the microscope optics and if the problem persists, consult the microscope manufacturer.
14. Quality control of fiber counts.
 - a. Prepare and count field blanks along with the field samples. Report the counts on each blank. Calculate the mean of the field blank counts and subtract this value from each sample count before reporting the results.

NOTE 1: The identity of the blank filters should be unknown to the counter until all counts have been completed.

NOTE 2: If a field blank yields fiber counts greater than 7 fibers/100 fields, report possible contamination of the samples.
 - b. Perform blind recounts by the same counter on 10% of filters counted (slides relabeled by a person other than the counter).
15. Use the following test to determine whether a pair of counts on the same filter should be rejected because of possible bias. This statistic estimates the counting repeatability at the 95% confidence level. Discard the sample if the difference between the two counts exceeds $2.77 (F) s_p$, where F = average of the two fiber counts and s_p = relative standard deviation, which should be derived by each laboratory based on historical in-house data.

NOTE: If a pair of counts is rejected as a result of this test, recount the remaining samples in the set and test the new counts against the first counts. Discard all rejected paired counts.
16. Enroll each new counter in a training course which compares performance of counters on a variety of samples using this procedure.

NOTE: To ensure good reproducibility, all laboratories engaged in asbestos counting should participate in an asbestos proficiency testing program such as the NIOSH Proficiency Analytical Testing (PAT) Program and routinely participate with other asbestos fiber counting laboratories in the exchange of field samples to compare performance of counters.

MEASUREMENT:

17. Place the slide on the mechanical stage of the calibrated microscope with the center of the filter under the objective lens. Focus the microscope on the plane of the filter.
18. Regularly check phase-ring alignment and Köhler illumination [7].
19. Select one of the following sets of counting rules:

NOTE: The two sets of rules have been demonstrated to produce equivalent mean counts on a variety of asbestos sample types [5] and must be strictly followed in order to obtain valid results. No hybridizing of the two sets of rules is permitted. The calibration of the microscope with the HSE/NPL test slide determines the minimum detectable fiber diameter (ca. 0.25 μ m).

 - a. A Rules (same as PCAM 239 rules [1,3,4]).

NOTE: The A Rules are required for monitoring asbestos for compliance purposes under OSHA or NIOSH standards.

 1. Count only fibers longer than 5 μ m. Measure the length of curved fibers along the curve.
 2. Count only fibers with a length-to-width ratio equal to or greater than 3:1.
 3. For fibers which cross the boundary of the graticule field, do the following:
 - a. Count any fiber longer than 5 μ m which lies entirely within the graticule area.
 - b. Count as 1/2 fiber any fiber with only one end lying within the graticule area.
 - c. Do not count any fiber which crosses the graticule boundary more than once.
 - d. Reject and do not count all other fibers.

4. Count bundles of fibers as one fiber unless individual fibers can be identified by observing both ends of a fiber.
5. Count enough graticule fields to yield 100 fibers. Count a minimum of 20 fields. Stop at 100 fields regardless of fiber count.

b. 8 Rules

NOTE: The 8 Rules are preferred analytically because of their demonstrated ability to improve the reproducibility of fiber counts [5].

1. Count only ends of fibers. Each fiber must be longer than 5 μm and less than 3 μm diameter.
2. Count only ends of fibers with a length-to-width ratio equal to or greater than 5:1.
3. Count each fiber end which falls within the graticule area as one end, provided that the fiber meets rules b.1 and b.2.
4. Count visibly free ends which meet rules b.1 and b.2 when the fiber appears to be attached to another particle, regardless of the size of the other particle.
5. Count the free ends of fibers emanating from large clumps and bundles up to a maximum of 10 ends (5 fibers), provided that each segment meets rules b.1 and b.2.
6. Count enough graticule fields to yield 200 ends. Count a minimum of 20 fields. Stop at 100 fields, regardless of the fiber count.
7. Divide the total end count by 2 to yield fiber count.

NOTE: Split fibers will normally be counted as more than two ends if the free ends meet the rules b.1. and b.2.

20. Start counting from one end of the filter and progress along a radial line to the other end, shift either up or down on the filter and continue in the reverse direction [10]. Select fields randomly by looking away from the eyepiece briefly while advancing the mechanical stage. When an agglomerate covers ca. 1/6 or more of the field of view, reject the field and select another. Do not report rejected fields in the number of total fields counted.

NOTE: When counting a field, continuously scan a range of focal planes by moving the fine focus knob to detect very fine fibers which have become embedded in the filter. The small-diameter fibers will be very faint but are an important contribution to the total count.

CALCULATIONS:

21. Calculate and report fiber density on the filter, E (fibers/ mm^2), by dividing the total fiber count, F , minus the mean field blank count, B , by the number of fields, n , and the field area, A_f (0.00785 mm^2 for a properly calibrated Walton-Beckett graticule):

$$E = \frac{(F - B)}{(n)(A_f)} \text{ fibers}/\text{mm}^2.$$

22. Calculate the concentration, C (fibers/mL), of fibers in the air volume sampled, V (L), using the effective collection area of the filter, A_c (385 mm^2 for a 25-mm filter):

$$C = \frac{(E)(A_c)}{V \cdot 10^3}$$

NOTE: Periodically check and adjust the value of A_c , if necessary.

EVALUATION OF METHOD:

This method is a revision of NIOSH Method PCM 239 [1,3,4]. A summary of the revisions is as follows:

A. Sampling

The change from a 37-mm to a 25-mm filter size was incorporated to improve sensitivity and reduce problems associated with non-uniform fiber loading reported on the 37-mm filters [10]. The change in flow rates allows for 2 m³ full-shift samples to be taken, providing that the filter is not overloaded with non-fibrous particulates. The collection efficiency of the sampler is not affected by changes in flow rate in the range 0.5 to 16 L/min [8].

B. Sample Preparation Technique

The acetone vapor-triacetin preparation technique has been incorporated in the method as a faster, more permanent mounting technique than the dimethyl phthalate/diethyl oxalate method of PCM 239 [1,3,4,11].

C. Measurement

1. The inclusion of the Walton-Beckett graticule in the method was made to standardize the field area observed through the eyepiece [6,11].
2. The introduction of the HSE/NPL test slide was made to standardize microscope optics for sensitivity to fiber diameter [7,11].
3. A recent international collaborative study involved 16 laboratories using prepared slides from the asbestos, cement, milling, mining, textile, and friction material industries [5]. The relative levels of count by different counting rules were:

Sample Type	Number of Samples	Aspect Ratio > 3:1		Aspect Ratio > 5:1	
		AIA	Mod. CRS*	AIA	Mod. CRS*
Mining	10	100	127	74	92
Milling	10	100	112	84	95
Asbestos Cement	14	100	146	90	137
Textile Chrysotile	10	100	109	89	99
Friction Material	10	100	130	87	116
Others (Insulation, Amosite)	6	100	127	92	118
TOTAL: 60		MEAN: 100	125	86	110

*Arithmetic means of counts made by different laboratories relative to the AIA counts.

The modified CRS (NIOSH B) Rules were found to be more precise than the AIA (NIOSH A)* Rules. The ranges of relative standard deviations (s_r) which varied with sample type and laboratory were:

	s_r		
	Intralaboratory	Interlaboratory	Overall
AIA (NIOSH A Rules)*	0.12 to 0.40	0.27 to 0.85	0.46
Modified CRS (NIOSH B Rules)	0.11 to 0.29	0.20 to 0.35	0.25

*Under AIA rules, only fibers having a diameter less than 3 μ m are counted and fibers attached to particles larger than 3 μ m are not counted. NIOSH A Rules are otherwise similar to the AIA rules.

The B Rules have also been favorably received by analysts as less ambiguous and simpler to use; these rules also showed the least bias relative to AIA rules in the collaborative study. An independent NIOSH laboratory study using amosite fibers reported a relative standard deviation, including within- and between-sample

variability, of 0.157 for the B Rules [12]. Adding an estimated sampling pump error, s_p , of 0.05 [13] to the within-sample variability in this study results in an estimate of overall precision, s_p , of 0.102 for the B Rules.

4. Because of past inaccuracies associated with low fiber counts, the minimum loading has been increased to 100 fibers/mm² filter area (80 fibers total count). This level yields an overall s_p = 0.13, as indicated in Figure 3 (revised) of P&CAM 239 [3,4] which corresponds to a measurement s_p = 0.12 after removal of pump error [13]. Similarly, at the maximum count of 100 fibers, overall s_p = 0.115 and measurement s_p = 0.10 are obtained.
- D. Evaluation of the method using the A and B counting rules will proceed on a continuing basis through the NIOSH Proficiency Analytical Testing (PAT) Program. The new PAT reporting form allows for reporting of results by either set of rules as of January, 1984.

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METHOD REVISED BY: James W. Carter, David G. Taylor, Ph.D., CDH, and Paul A. Baron, Ph.D., NIOSH/DPSE; based on the revised Method P&CAM 239 [1,3,4].

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Asbestos: OSHA Emergency Temporary Standard

On Friday, November 4, 1983 OSHA published in the Federal Register an Emergency Temporary Standard (ETS) for Asbestos. (48 FR 51086) OSHA set a new PEL at 0.5 fibers/cc. During the time of the ETS employers may use all practicable control methods, such as engineering controls, work practices and personal protective equipment to meet the new limit. Training programs are required to be instituted within 30 days.

The notice also requests comments on the appropriateness of including the provisions of the ETS as permanent revisions to the asbestos standard. The effective date for this ETS was November 4, 1983. Comments and evidence concerning the proposed revisions to the permanent standard made by the ETS had to be received on or before January 3, 1984.

"OSHA's determination that a grave danger currently exists is predicated upon quantitative risk estimates in this record which point to a large number of excess deaths from cancer (and asbestosis) among currently exposed workers which are attributable to continued exposures under present working conditions."

"OSHA estimated the number of cancer deaths avoided through lowering of the exposure to 0.5 f/cc based on 6 months, 1-year, 20-year and 45-year periods of exposures at current levels. The predicted cancer deaths avoided that result from these periods are respectively 210, 426, 5725 and 7815."

On November 18, the Asbestos Information Association (AIA) filed a Petition with the Fifth Circuit in New Orleans to stay the enforcement of the Asbestos ETS. In its Petition the AIA made heavy use of Mr. Auchter's testimony to congress in June 1983, as to why it was not reasonable or possible for OSHA to do an ETS on Asbestos. On November 23, 1983 the Court granted the AIA a temporary stay, setting January 12, 1984 as the date to hear oral arguments in the case. After the oral arguments, OSHA thinks that it has at least an even chance of winning the case.

In November 1983 OSHA informally sent a draft copy of its NPR on Asbestos over to OMB so that OMB could find out what problems, if any, OMB had with the OSHA approach. This was part of OSHA's new policy designed to improve relations and communications between OSHA and OMB. As a result, OSHA found that OMB was unhappy that OSHA had not calculated out the cost of the requirements tied into the action level of 0.1 fibers/cc. OSHA plans to require

mandatory medical surveillance, monitoring, and regulated areas all tied to the action-level. By the end of December 1983, OSHA had made a number of changes in response to OMB's comments, and was preparing to formally submit the Asbestos NPR to OMB for clearance.

On January 5, 1984 a draft copy of the Asbestos NPR was released to the Advisory Committee on Construction Safety and Health, which unanimously refused to comment on it, saying it lacked sufficient details for the group to evaluate what OSHA intended to do.

The draft NPR that was released to the Construction Advisory Committee is a "rather unique" looking proposal, that asks many questions and generally avoids taking any firm positions that could be criticized. A number of groups that have reviewed the NPR have urged OSHA to substantially modify the proposal before they submit it to OMB for final clearance. Some think that as it is presently constituted, the NPR does not meet the minimum requirements for an NPR under Section 6(b) of the OSH Act.

Asbestos and Respirators

Los Alamos Laboratories (LASL) has been given a contract to determine if there is a greater than 1% penetration of asbestos fibers through a variety of filter media. LASL has some preliminary results but they will not be ready until late spring of this year.

Changes In The British Asbestos Standard

Beginning August, 1984 the new control limits will be:

Blue asbestos (crocidolite)	0.2 f/cc (presently)	0.2 f/cc
Brown asbestos (amosite)	0.2 f/cc (presently)	0.5 f/cc
White asbestos (chrysotile)	0.5 f/cc (presently)	1.0 f/cc

The British Health and Safety Commission has made it clear that wherever possible, employers will be expected to comply with these levels before the August 1984 effective date.

LEAD

Throughout 1983 OSHA became progressively more active in the lead area. OSHA has been actively involved in discussions with the lead industry and organized labor to resolve problems with the requirements to develop written plans to comply with the PEL through engineering controls.

Based on detailed feasibility data received from its contractors in the spring of 1983, and encouraged by the results of the tripartite discussions, OSHA decided not to propose modifications to the engineering control requirements of the existing lead standard.

OSHA has had a revised lead standard prepared since October 1983, and in November the Secretary of Labor approved the more limited rulemaking approach. On November 23, 1983 OSHA transmitted to OMB (under Executive Order 12291) the proposal to reconsider the lead standard. Since OSHA no longer planned to propose modifications to the engineering control provisions of the existing lead standard, there was no longer justification for a stay on the engineering control requirements. Consequently on January 4, 1984, OSHA transmitted to OMB a proposal to vacate the compliance plan stay.

OSHA intends to publish its proposal removing the stay on engineering control requirements of as soon as it is released by OMB. The proposal would set a new effective date for the stayed portions of the compliance plan requirements, 90 days after publication of a final rule vacating the stay. The effective dates of the final rule will be determined based on the evidence submitted during the comment period of 30 days. OSHA intends to reach a decision on vacating the stay within 60 days of the end of the comment period.

The proposal to vacate the stay on engineering controls was submitted to OMB in hopes of influencing its review of the November 23 transmittal, and in a new spirit of cooperation. OMB seems to have little problem with the January 4, 1984 proposal, but the November 23 proposed rule to reconsider the lead standard is receiving a very stringent review and is making slow progress.

Rumor has it that the following changes have been made to the new OSHA lead standard. (1) No shower requirement for spray painters using supplied air equipment, (2) Air circulation requirements for paint booths have been dropped in some circumstances, (3) Less frequent testing for ZPP will be required, (4) Secondary smelters will have ten years to meet the standards requirements, (5) Cooperative assessment of compliance, (6) Less frequent blood lead testing below 30 micrograms, (7) No 4.4 hour limit on the use of respirators.

Lead and Respirators

A draft copy of a NIOSH research study on lead and respirators shows some types of non-high efficiency filters with as much as 5% penetration of lead dust and fume. Because of this finding OSHA is seriously considering requiring the use of high efficiency filters for all respirators used for protection against lead. OSHA will first have to get the court stay on high efficiency filters lifted.

HAZARDS COMMUNICATION

On Friday, November 25, 1983 OSHA published in the Federal Register (48 FR 53280) the Hazards Communication Standard. Effective dates are as follow: Chemical manufacturers and importers are required to label containers they ship and provide required data sheets by November 25, 1985. Distributors are required to be in compliance by November 25, 1985. All employers covered by the standard are to be in compliance by May 25, 1986.

On December 1, 1983 The United Steelworkers of America filed suit in the U.S. Court of Appeals for the Third Circuit for review of the standard. Other organized labor groups are expected to join the steelworkers. The labor groups are unhappy because the standard is limited to manufacturing sectors (Standard Industrial Code (SIC) 20-39) and would thus leave many workers in transportation, construction, communications, retail and health care without coverage.

The unions are also unhappy over the trade secret protections extended to manufacturers. George Cohen, AFL-CIO, wanted to know if OSHA thought that the Hazards Communication Standard should immediately supersede all state standards? Would this happen in two years or not at all? OSHA replied officially that any pre-emption happens in two years. But, they did not say that no other preemption could happen!

LABORATORY SAFETY STANDARD

This standard has been approved by the Secretary of Labor and was sent over to OMB for review toward the end of November 1983. OMB is not convinced that such a standard is in fact necessary, and the review has been going slowly.

FIELD SANITATION

In January 1984 the standard went to OMB for review. There was some internal opposition within OSHA by those who did not want to "waste" time on it, but since OSHA is under court order to produce a standard, they had little choice but to proceed.

BENZENE

At present there is not a lot of action taking place on this standard. The mediation effort has been only moderately successful even though both sides went through the motions. One reason has been the unions insistence that if a PEL higher than one part per million (ppm) was to be considered, they would have no part of it. On the other hand, a small but determined group at the API had resisted considering a PEL lower than 5 ppm.

Eventually, industry representatives agreed to consider a 5 ppm STEL as a 30 minute time weighted average, (TWA), as well as an action level of 1 ppm for a four hour TWA. Both sides agreed that dermal contact with liquids containing more than 0.5% benzene should be avoided, but not banned. Labor agreed on an exemption from the standard for retail gasoline stations and bulk gasoline marketing installations.

OSHA has finished a rough draft of Benzene, but it has not been finalized at this date. The Regulatory Impact Analysis has not been completed, and what has been done has not been completely reviewed by the OSHA Staff. If all goes well OSHA may get this standard to OMB by March 1984. For the present, OSHA is solid on a PEL of 1.0 ppm but as time passes, those in the agency that favor 0.5 ppm are gaining strength and support.

FORMALDEHYDE

It is unlikely that OSHA will take any action on this substance until 1985. It is possible that a lot of the future action will come from the efforts of the Formaldehyde Group, one of three parts of a reconstituted IRLG. (See the discussion on the IRLG in this section)

INTERAGENCY REGULATORY AGENCY LIAISON GROUP (IRLG)

Also known as "son of IRLG", this group which was abolished when the Reagan Administration took over has been reestablished albeit, in a much diminished form. The IRLG was originally formed by Dr. Morton Corn after the Kepone affair, and was intended to improve communications and information exchange between agencies.

Under Dr. Bingham, the IRLG became a planning group that took the lead in the development and publication of controversial policies in areas such as carcinogens. The IRLG was much harder for OSHA's critics to deal with since it was composed of individuals from many agencies, and this gave it a certain independence of action denied the participating agencies.

Because the IRLG did take a strong pro-regulatory stance in many areas, it was much disliked by those opposed to excessive government regulation. The impetus for the IRLG rebirth came from the EPA and is in line with its recent more aggressive stance on the regulation of chemical hazards in the workplace. The Principals of the new IRLG want to avoid a self-perpetuating, proliferation of sub-groups that may get out-of hand.

Agencies involved in the IRLG are: OSHA, EPA, CPSC, FDA, USDA, NIEHS and NIOSH.

The EPA clearly had the lead in the first meetings, but indicated that it did not intend to keep it. Also evident from the first several meetings is the fact that the other agencies in the group are not going to allow the EPA to dominate the proceedings without a contest. During the initial meetings, the EPA group made heavy use of the National Academy of Sciences (NAS) report on Risk Assessment. Others in the group however, were not as impressed with the NAS efforts and felt that they should be looked upon as a starting point, not conclusions to be implemented.

Three working groups have been established:

(1) Formaldehyde (2) Bio-technology (3) Cancer Policy and Risk Assessment.

The Formaldehyde Group is chaired by Peter Pruess of the CPSC, the Cancer Policy & Risk Assessment Group is chaired by Betty Anderson of the EPA, (who was involved with the EPA's carcinogen assessment group (CAG)). The Bio-technology Group could not agree on a chairman.

There is a coordinating committee for the IRLG composed of representatives of the Principals. This group sets the agenda, and decides which projects should be undertaken.

In the early meetings there was a lot of interest by both the FDA and the USDA in the Bio-technology group, and clearly they are not going to allow the EPA to dominate.

RESPIRATORS

Work is still proceeding on the revision of 1910.134, but very slowly, and there is little chance that anything will come out of OSHA on respirators in 1984.

CANCER POLICY

At the present there is little action on this standard, and this situation does not seem likely to change for the next several months. OSHA is working with the Office of Technology Assessment (OTA) and the Office of Science and Technology Policy (OSTP) as well as the IRLG. The FDA is said to be putting finishing touches on a cancer policy which it expects to publish this year.

ETHYLENE DIBROMIDE

OSHA published an NPR on EDB on October 7, 1983, (48 FR 45956) which would lower the PEL from 20 ppm to 0.1 ppm as an eight hour time weighted average and would also set a short term limit of 0.5

ppm for 15 minutes. Not everybody was pleased with OSHA's EDB Standard. The Food and Allied Service Trades Department, AFL-CIO told OSHA that it is unhappy that OSHA did not set the PEL for EDB at 15 parts per billion (PPB).

NIOSH commented that the PEL should be set at 45 ppb in order to reduce the risk to workers of cancer over a lifetime of exposure. and recommended a ceiling limit of 0.130 ppb for intermittent exposures. NIOSH said that OSHA lacked adequate scientific basis for its 0.5 ppm STEL. NIOSH also opposed allowing the use of negative pressure respirators, particularly since qualitative fit-testing of these respirators is accepted in place of quantitative fit-testing.

The Workers Institute for Safety and Health (WISH) stated that according to its calculations there will be 9.1 cancer deaths per 1000 workers exposed to EDB on an intermittent basis at the proposed PEL. Even at a PEL of 0.01 ppm WISH estimated a risk of 0.9 cancer deaths per 1000 workers.

The CMA suggested that OSHA exempt from the standard EDB mixtures with 0.1% or less EDB by weight under the same rationale that OSHA used to exempt automotive service stations and the distribution storage or bulk handling of leaded fuel.

STYRENE

The National Institute for Occupational Safety and Health (NIOSH) has released a new criteria document that recommends a PEL of 50 ppm as a 10 hour time weighted average and a forty hour work week. The recommended PEL was based primarily on reports of effects on the central nervous system and irritation of the eyes. NIOSH also suggested a 25 ppm Action Level and a ceiling limit of 100 ppm based on a 15 minute sample. OSHA is reading the NIOSH Criteria Document, but is under no pressure to act anytime soon.

ETHYLENE OXIDE

The record is closed on this standard and the OSHA staff is actively reviewing the record and writing the final standard. OSHA is planning a September 1984 publication of a final standard.

1,3-BUTADIENE

On December 20, 1983 the EPA and OSHA announced that they will jointly conduct reviews of the data on the health risks associated with exposure to 1,3-butadiene. The review, which was initiated under Section 4(f) of the Toxic Substances Control Act, will determine the future regulatory stance of the agencies for this substance.

The agencies are looking for comments and will accept them for 60 days after the notice appears in the Federal Register.

Under Section 4(f) of TSCA the EPA has 180 days to make a decision whether to regulate on substances that cause "a significant risk of serious or widespread harm to human beings from cancer, gene mutations, or birth defects." The agencies had previously used Section 4(f) of TSCA in regard to 4'-methylenedianiline.

Emergency Temporary Standard Requested

On January 25, 1984 the United Rubber Workers petitioned the Secretary of Labor for an Emergency Temporary Standard of one ppm or less. They said that: "No further evidence need be cited other than the NTP data recently peer reviewed and previous studies funded by the International Institute of Synthetic Rubber Products and NIOSH. These studies show that exposure to the current standard of 1000 ppm constitutes a grave danger to workers. An emergency temporary standard is necessary to protect employees from the significant carcinogenic and reproductive risks caused by current levels of exposure to 1,3 butadiene which exist in the workplace. IISRP evaluations appear to indicate that a 1 ppm exposure level is technically and economically feasible."

The petition is being reviewed by OSHA, but it does not seem likely that they will grant it.

NITROSAMINES

On Monday, January 22, 1984 the EPA published in the Federal Register (49 FR, 2762) an immediately effective proposed rule on the prohibition of nitrites in metalworking fluids. This rule, effective January 23, 1984, was proposed under section 6(a) of TSCA, and will remain in effect until the EPA promulgates a final rule.

The rule prohibits the addition of nitrosating agents such as nitrites, to the chemical substance known generically as the triethanolamine salt of tricarboxylic acid when it is or could be used as or in metalworking fluids. The rule also requires distributors of the substance to notify customers of the restrictions of the rule through letters sent prior to shipment of the substance and to notify machine shop workers of the health hazard through labels on metalworking fluids containing the substance.

In addition, the rule requires distributors of tricarboxylic acid, which when combined with water and triethanolamine, produces the triethanolamine salt of tricarboxylic acid, to notify customers of the restrictions of the rule through letters sent prior to shipment of the substance.

The EPA believes that the unrestricted distribution in commerce of both substances and the unrestricted processing and use of the triethanolamine salt of tricarboxylic acid in combination with nitrosating agents, such as nitrites, will present an unreasonable risk of injury to human health before a final rule can be promulgated under section 6 of TSCA .

The EPA is also initiating a regulatory investigation into the potential human health risk posed by exposure to nitrosamines in metalworking fluids generally.

Written comments and requests for a public hearing must be submitted by March 23, 1984. A public hearing will be held only if requested, beginning on April 6, 1984.

2-METHOXYETHANOL and 2-ETHOXYETHANOL

The EPA is preparing to issue an Advance Notice of Proposed Rule-making (ANPR) for 2-methoxyethanol and 2-ethoxyethanol and their acetates, (CAS No.s 109-86-4, 101-80-5, 110-49-6, and 111-15-9). They are known by the trade names: Cellosolve, Dowanol, Ektasolve, Glycol ester, Poly-Solve, Prist, Oxitol, and Jeffersol.

The EPA notes that a number of animal studies indicate that adverse reproductive and fetotoxic effects are associated with these chemical substances at concentrations to which humans may be exposed. EPA is concerned about both shortterm and chronic exposure of pregnant women, either as workers or as household consumers. The EPA is also concerned about the exposure of males to these substances, both from short-term and chronic exposures.

The evaluation and assessment process began with the results of studies submitted to the office both as an FYI from NIOSH and as an Section 8(e) notification by manufacturers. These studies show developmental toxicity of both 2-EE and 2-ME.

The EPA is inviting interested parties to submit data and comments relevant to the control of exposure to 2-ME, 2-EE, 2-MEAcetate, and 2-EEAcetate. All comments must be received by 60 days after publication in the Federal Register. Comments should be directed (in triplicate) to:

Document Control Office (TS-793)
Office of Toxic Substances
Environ. Prot. Agency
Rm. E-409
401 M St., S.W.
Washington, D.C. 20460

Comments should include the docket control number (OPTS-62030).

DKM:jt

Officials from the two agencies told BNA that the inquiry is not expected to delay publication of a final ethylene dibromide standard.

In a memorandum to the Department of Labor, OMB asserted that the "need, purpose, and burden associated with the proposed recordkeeping requirements are not justified by [OSHA's] submission." A "major problem," the memorandum continued, is "the vast set of medical tests that are required for workers exposed to one-half of the proposed [permissible exposure limit] for over one month per year or who wear respirators."

OMB contended that it "is not clear how these tests will reduce the cancer incidence of EDB exposure."

Concern also was expressed by the budget office regarding "the effectiveness of a record of respiratory fit tests and selection procedures, emergency plans, medical opinions, training programs, extensive monitoring, and labeling." The memorandum added, "Again, the health benefits that could be expected from such records are not clear from the evidence submitted."

Purpose of Tests

The memorandum was submitted to the DOL Office of the Assistant Secretary for Management, the Labor Department unit to which OMB documents under the Paperwork Reduction Act customarily are referred. Gary Strobel, an assistant to OSHA Administrator Thorne Auchter, told BNA. The document then was relayed to OSHA's directorate of technical support, which will draft a response.

Steve Mallinger, deputy director of the technical support office, remarked that OMB's objections apparently pertain to blood serum tests and other laboratory analyses that would be required under the proposal. Mallinger noted that these examinations are intended to detect toxic effects of EDB on the liver and kidneys, and are not related to the substance's carcinogenic risks.

OSHA's response to the budget office will explain the rationale for the medical surveillance requirements in further detail, Mallinger said.

OMB involvement in the ethylene dibromide rulemaking has been a subject of continuing controversy. The proposed standard originally was scheduled for publication Sept. 30, then withdrawn after OSHA learned that the budget office had not given final approval to the action. The proposal appeared a week later (Current Report, Oct. 13, p. 435).

Mallinger estimated that it will take at least two weeks to submit a response to OMB. The situation is not viewed as urgent, since OSHA is still in the early, comment-gathering phase of the ethylene dibromide rulemaking action, he indicated.

OMB spokesman Edwin L. Dale Jr. commented that the budget office "anticipates the problem will be cleared up in time for publication of a final standard."

On-Site Consultation

EXTENSION OF TIME FOR PUBLIC COMMENT ON CONSULTATION REVISIONS GRANTED BY OSHA

An extension of time for submission of written comments on proposed revisions to the Occupational Safety and Health Administration's on-site consultation regulations was announced Nov. 4 (48 FR 50902).

The deadline for submission of comments was extended to Dec. 23 from the original date of Nov. 4.

OSHA proposed the amendments last month in order to broaden the scope of the on-site consultation regulations in

29 CFR Part 1908, and to initiate a conditional inspection exemption program for employers using consultation services (Current Report, Oct. 13, p. 435).

According to the agency, the extension of the comment period was granted in response to requests from interested parties. The requests "indicated that additional time is needed to prepare an adequate response," the notice stated.

Also, the agency noted that it was asked to add to the rulemaking docket "various documents relevant to the proposed amendments." These documents include:

- A list of state agencies providing, or scheduled to provide, consultative services.

- An OSHA notice dated July 25, 1983, to agency field staff on the agency's experimental program for inspection exemption through consultation. The notice refers to the directive as No. TED 2, but an OSHA spokesman said the correct number is TED 3. This program was initiated in seven Southern states in 1982 and extended in July for an additional six months (Current Report, July 14, p. 158).

- A letter from Emmett Jones, director of the CAL/OSHA Consultation Service, describing the impact of California's experimental exemption program.

- The most recent evaluation reports on the state consultation projects participating in the program.

- Testimony on proposed revisions to the consultation regulation before the National Advisory Committee on Occupational Safety and Health.

- Comments by a NACOSH subcommittee on an earlier draft of the proposed revisions, and a brief summary of the rationale for OSHA's response to those comments.

- A solicitor of labor opinion on release to the public of consultant reports to employers.

Written comments on the proposal should be submitted in quadruplicate to the Docket Office, Docket No. C-1, Room S-6212, 200 Constitution Ave., N.W., Washington, D.C. 20210; tel. (202) 523-7894.

For further information, contact James F. Foster, OSHA Office of Information and Consumer Affairs, Room N-3637, U.S. Department of Labor, 200 Constitution Ave., N.W., Washington, D.C. 20210; tel. (202) 523-8151.

Asbestos

DU PONT FINDS 22 MALIGNANCY CASES THROUGH SCREENING PROGRAM, OFFICIAL SAYS

NEW ORLEANS — (By a BNA Staff Correspondent) — As a result of its asbestos screening program covering 112,000 employees and pensioners, E.I. du Pont de Nemours & Company has discovered 22 cases of malignancies related to asbestos exposure, according to Burford W. Culpepper, the company's medical director.

Culpepper told the Joint Conference on Occupational Health Nov. 3 that the company became aware of the need to "intensify" its detection efforts more than four years ago, when a number of asbestos-related X-ray abnormalities were found at several Du Pont plants. As a result, in 1980 the company began a full-scale review of medical histories of employees 40 years of age or older and with 10 years' experience at Du Pont in jobs where they may have been exposed to asbestos.

Subsequently, the program was expanded to the company's 30,000 pensioners, with 10,000 electing to participate in the screening program and to have an X-ray at the company's expense. Culpepper noted that since the beginning of its comprehensive program, Du Pont has required that all radiographs be read by a board-certified or qualified

radiologist. In addition, plant physicians have undergone internal training in the early detection of lung abnormalities and the company's X-ray sales technical staff regularly visit all plant sites to evaluate and make sure that the best quality of film is being used.

In addition to 22 cases of malignancies, the Du Pont medical director reported that 200 employees were determined to have asbestosis and about 1,300 employees and pensioners, or slightly more than 1 percent, were found to have "evidence of asbestos related pleural thickening," but the majority were found to have "no illness or physical disability."

According to Culpepper, these results indicate that asbestos-related abnormalities "are more prevalent than we suspected four years ago," even considering the wide use of asbestos-containing insulation in chemical plants. On the other hand, he added, the results also show that "the vast majority" of the company's employees and pensioners do not have asbestos-related medical problems.

As another part of the asbestos screening program, the Du Pont medical director explained, all employees have seen a company-produced 25-minute film, "Caring About: Asbestos," which describes the problems involved in asbestos-related abnormalities, using Du Pont employees as well as medical experts such as Dr. Irving Selikoff of the Mt. Sinai Medical Center and Dr. Benjamin Felson of the University of Cincinnati College of Medicine.

Referral to Specialists

All those with asbestos-related abnormalities have been referred to pulmonary specialists at company expense for evaluation and consultation and are offered follow-up exams annually, "or at an interval prescribed by the specialist," to determine whether there is "any impairment that requires a change in work assignment," the medical director explained.

In those situations where work-related illness or impairment develops, Culpepper said that Du Pont "will accept responsibility for appropriate related medical costs, and will offer the employee or pensioner compensation based on our understanding of the workers' compensation laws in that jurisdiction," in addition to assisting in obtaining other community benefits. Further, he noted that the company's policy covers employees even "when we are not certain that the abnormality stems from exposure at a Du Pont site."

Culpepper said that the company generally has not purchased asbestos-containing insulation since the 1970s and is replacing the asbestos it has with non-asbestos insulation when other repairs are necessary. In the few sites where asbestos-containing products are used, there are strict controls, and plant employees follow written procedures, including routinely monitoring exposure levels, using protective equipment and clothing, and having regular medical examinations.

Determining Pulmonary Disability

Judging the degree of pulmonary disability resulting from asbestos exposure has been a problem for Du Pont which has been further complicated by the varying criteria established by state workers' compensation laws. Culpepper explained that in some cases the company relies on X-ray abnormalities and pulmonary function changes and has found the American Medical Association's criteria for disability "frequently useful," except in assessing lesser degrees of disability. The British Medical Research Council's criteria "are even less suitable," he added, since they were developed primarily for emphysema and chronic bronchitis.

In an effort to overcome this continuing problem, the company medical director reported, Du Pont has contracted with Selikoff to help develop a system "for a quantitative, reproducible, analytical method for the evaluation of pulmonary disability."

Culpepper told BNA that the project has been in the works for about a year and that the company hopes to get something definitive this year so that it can "begin setting some real boundaries for medical determination of pulmonary disability for asbestosis."

Since Du Pont knows little about the risk of developing disabling conditions from asbestos-related abnormalities, Culpepper said that the company also is beginning an epidemiologic study of all employees and pensioners with asbestos-related abnormalities. He anticipated that the data would be helpful "to quantitate the risk of future malignancies, impaired lung function, or other diseases," as well as in assessing "the relative contributions of cigarette smoking and asbestos exposure to pulmonary disease and impaired lung function."

Benzene

BENZENE CALLED MULTI-POTENTIAL CARCINOGEN, BUT DOSE-RESPONSE RELATIONSHIP SEEN UNCLEAR

NEW YORK — (By a BNA Staff Correspondent) — Although the dose-response relationship between exposure to benzene and the occurrence of leukemia is still unclear, it is certain that benzene is an indirect-acting, multi-potential carcinogen, Arthur Upton, of New York University, concluded in summing up the results of an international conference on the substance.

The conference, sponsored by the Collegium Ramazzini, focused on recent experimental observations regarding carcinogenicity, blood dyscrasias, and toxicology associated with benzene.

Results presented by scientists attending the conference indicated that benzene produces leukemia and many other cancers in laboratory animals and there is "cause to believe that it produces the same results in humans, although this is not yet proven," according to Upton. The following conclusions also were drawn by Upton:

- Variations in the duration and extent of exposure may be responsible for production of the different types of cancer found in the laboratory animals.

- Age and sex of the exposed animals affect their physical responses to benzene exposure.

- A risk assessment modeled to an exposure dose is still difficult at this point.

Upton emphasized the need to determine the metabolic derivative or active principal in benzene that causes leukemia. He also stressed the need for better empirical data and additional animal research to determine the effects of intermittent peak exposures as opposed to time-weighted averages.

Most conference speakers agreed that determination of a dose/time relationship for benzene, or the impact of intermittent exposure vs. constant exposure in the development of leukemia, is crucial.

Health Effects of Benzene Exposure

Muzaffer Aksoy of Medical School, Istanbul, Turkey, asserted that leukemia develops through both genetic factors and environmental factors, citing familial studies indicating that some people are genetically more susceptible to leukemia.

Plante to:

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FROM BARRY L. CLARK
PITTSBURGH OFFICE

TO

J. E. SANDER - 6 AB

1984 January 24

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RE: ASBESTOS EMISSION STANDARDS

Demolition or renovation work being done at a number of Alcoa operating locations resulted in requests for information regarding regulatory requirements for asbestos. This wide distribution of those requirements is intended to familiarize those not aware and update those who are.

The Clean Air Act regulates asbestos under Subpart B of the National Emission Standards for Hazardous Air Pollutants (NESHAP). A copy of the regulations currently in effect is Attachment 1. The Environmental Protection Agency proposed amendments to these standards on July 13, 1983 (Attachment 2) but they have not been promulgated as of this date. Regardless of when these amendments are promulgated, the effect on current requirements will be insignificant. Another document (Attachment 3) which may be helpful to you is an Industrial Hygiene Technical Bulletin issued June 15, 1983 by the Industrial Hygiene Department. This bulletin mentions the EPA requirements which are a responsibility of Environmental Control personnel.

Assuming that asbestos will not be used on any new projects within Alcoa, the following is a synopsis of the NESHAP requirements that plant Environmental Control personnel should keep in mind.

1. Notification

There are notification requirements if any friable asbestos is to be removed during demolition or renovation of any structure or building. Notification requirements differ depending upon the amount of friable asbestos involved.

- "Friable asbestos material" means any material that contains more than 1% asbestos by weight and can be crumbled, pulverized or reduced to powder when dry, by hand pressure.

2. Air Emission Standard

In contrast to most air emission standards which are based on pollutant concentrations in a volume of air, this standard is written as "visible emissions."

It should be emphasized that during any operations or handling of friable asbestos material there shall not be any visible emissions to the outside air.



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ENVIRONMENTAL CONTROL

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- "Visible emissions" means any emissions which are visually detectable without the aid of instruments and which contain particulate asbestos material.

3. Application

- Almost any process involving the use of friable asbestos.
- Demolition or renovation of any structure or building containing friable asbestos.
- Stripping or removing friable asbestos from pipes, conduit, boilers, etc.
- Handling and disposal of friable asbestos.

4. Control

Two basic means of control are discussed in the regulations.

- Keep the friable asbestos wet with water during operations and handling.
- Air cleaning is permitted using fabric filter collection devices as specified in the regulations.

5. Disposal

- Asbestos-containing waste materials can be wetted or mixed with water into a slurry and sealed into leak-tight containers while wet. After labeling with a warning label, the containers are deposited at a sanitary landfill provided the waste is covered with soil.
- Asbestos-containing waste materials can be formed into non-friable pellets or other shapes and deposited at a sanitary landfill.
- Asbestos-containing wastes can be adequately mixed, with a wetting agent recommended by the agent manufacturer, to effectively wet tailings and dust prior to disposition at the disposal site.

6. Disposal Sites

- Inactive Sites -- The perimeter of the site must be fenced and posted with warning signs at all entrances. The asbestos-containing material must be covered as specified in the regulations.

Memorandum
1984 January 24
Page 3

- Active Sites -- The perimeter must also be fenced and posted. Asbestos-containing material must be covered at the end of each working day or at least once every 24 hours during continuous operation and in accordance with regulatory specifications.

This synopsis is only meant to make the reader aware of requirements involved when dealing with asbestos. If asbestos is found present during any demolition or renovation projects, please follow the provided regulations.

If you have questions concerning these requirements, please contact me.

Barry
BARRY L. CLARK

BLC/llc

Attachments

Distribution: Environmental Control Contacts
Engineering Managers - Plant

cc: R. H. Carwile - 7 AB
G. J. Crouth - 7 AB
J. E. Sander - 6 AB

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ENVIRONMENTAL PROTECTION AGENCY REGULATIONS ON NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

(40 CFR 61; 38 FR 8820, April 6, 1973; Amended as shown in Code of Federal Regulations, Volume 40, Revised as of July 1, 1978; 43 FR 47692, October 16, 1978; 44 FR 7714, February 7, 1979; 44 FR 55174, September 25, 1979; 44 FR 65399, November 13, 1979; 45 FR 13074, February 28, 1980)

PART 61—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

Subpart A—General Provisions

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- 61.02 Definitions.
- 61.03 Abbreviations.
- 61.04 Address.
- 61.05 Prohibited activities.
- 61.06 Determination of construction or modification.
- 61.07 Application for approval of construction or modification.
- 61.08 Approval by Administrator.
- 61.09 Notification of startup.
- 61.10 Source reporting and waiver request.
- 61.11 Waiver of compliance.
- 61.12 Emission tests and monitoring.
- 61.13 Waiver of emission tests.
- 61.14 Source test and analytical methods.
- 61.15 Availability of information.
- 61.16 State authority.
- 61.17 Circumvention.

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Subpart C—National Emission Standard for Beryllium

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- 61.33 Stack sampling.
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Subpart D—National Emission Standard for Beryllium Rocket Motor Firing

- 61.40 Applicability.
- 61.41 Definitions.
- 61.42 Emission standard.
- 61.43 Emission testing—rocket firing or propellant disposal.
- 61.44 Stack sampling.

Subpart E—National Emission Standard for Mercury

- 61.50 Applicability.
- 61.51 Definitions.
- 61.52 Emission standard.
- 61.53 Stack sampling.
- 61.54 Sludge sampling.
- 61.55 Emission monitoring.

Subpart F—National Emission Standard for Vinyl Chloride

- 61.60 Applicability.
- 61.61 Definitions.
- 61.62 Emission standard for ethylene dichloride plants.
- 61.63 Emission standard for vinyl chloride plants.
- 61.64 Emission standard for polyvinyl chloride plants.
- 61.65 Emission standard for ethylene dichloride, vinyl chloride and polyvinyl chloride plants.
- 61.66 Equivalent equipment and procedures.
- 61.67 Emission tests.
- 61.68 Emission monitoring.
- 61.69 Initial report.
- 61.70 Semiannual report.
- 61.71 Recordkeeping.

National Emission Standards for Hazardous Air Pollutants

Appendix A—Compliance Status Information.

Appendix B—Test Methods.

Method 101—Reference method for determination of particulate and gaseous mercury emissions from stationary sources (air streams).

Method 102—Reference method for determination of particulate and gaseous mercury emissions from stationary sources (hydrogen streams).

Method 103—Beryllium screening method.

Method 104—Reference method for determination of beryllium emissions from stationary sources.

Method 105—Method for determination of mercury in wastewater treatment plant sewage sludges.

Method 106—Determination of vinyl chloride from stationary sources.

Method 107—Determination of vinyl chloride of inprocess wastewater samples, and vinyl chloride content of polyvinyl chloride resin, slurry, wet cake, and latex samples.

Source: 38 FR 8226, Apr. 6, 1973, unless otherwise noted.

Authority: Sec. 112, 301(a) of the Clean Air Act as amended (42 U.S.C. 7412, 7601(a)), unless otherwise noted.

Subpart A—General Provisions

§ 61.01 Applicability.

The provisions of this part apply to the owner or operator of any stationary source for which a standard is prescribed under this part.

§ 61.02 Definitions.

[61.02 amended by 44 FR 55174, September 25, 1979]

The terms used in this part are defined in the Act or in this section as follows:

"Act" means the Clean Air Act (42 U.S.C. 1857 et seq.).

"Administrator" means the Administrator of the Environmental Protection Agency or his authorized representative.

"Alternative method" means any method of sampling and analyzing for an air pollutant which is not a reference or equivalent method but which has been demonstrated to the Administrator's satisfaction to, in specific cases, produce results adequate for his determination of compliance.

"Commenced" means, with respect to the definition of "new source" in section 111(a)(2) of the Act, that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

"Compliance schedule" means the date or dates by which a source or category of sources is required to comply with the standards of this part and with any steps toward such

[Sec. 61.02]

compliance which are set forth in a waiver of compliance under §61.11.

"Construction" means fabrication, erection, or installation of an affected facility.

"Effective date" is the date of promulgation in the Federal Register of an applicable standard or other regulation under this part.

"Equivalent method" means any method of sampling and analyzing for an air pollutant which has been demonstrated to the Administrator's satisfaction to have a consistent and quantitatively known relationship to the reference method, under specified conditions.

"Existing source" means any stationary source which is not a new source.

"Modification" means any physical change in, or change in the method of operation of, a stationary source which increases the amount of any hazardous air pollutant emitted by such source, or which results in the emission of any hazardous air pollutant not previously emitted, except that:

(a) Routine maintenance, repair, and replacement shall not be considered physical changes, and

(b) The following shall not be considered a change in the method of operation:

(1) An increase in the production rate, if such increase does not exceed the operating design capacity of the stationary source;

(2) An increase in hours of operation.

"New source" means any stationary source, the construction or modification of which is commenced after the publication in the Federal Register of proposed national emission standards for hazardous air pollutants which will be applicable to such source.

"Owner or operator" means any person who owns, leases, operates, controls, or supervises a stationary source.

"Reference method" means any method of sampling and analyzing for an air pollutant, as described in Appendix B to this part.

"Standard" means a national emission standard for a hazardous air pollutant proposed or promulgated under this part.

"Startup" means the setting in operation of a stationary source for any purpose.

"Stationary source" means any building, structure, facility or installation which emits or may emit any air pollutant which has been designated as hazardous by the Administrator.

§ 61.03 Units and abbreviations.

Used in this part are abbreviations and symbols of units of measure. These are defined as follows:

(a) System International (SI) units of measure:

A = ampere

g = gram

Hz = hertz

J = joule

K = degree Kelvin

kg = kilogram

m = meter

m³ = cubic meter

mg = milligram = 10⁻³ gram

mm = millimeter = 10⁻³ meter

Mg = megagram = 10⁶ gram

mol = mole

N = newton

ng = nanogram = 10⁻⁹ gram

nm = nanometer = 10⁻⁹ meter

Pa = pascal

s = second

V = volt

W = watt

Ω = ohm

μg = microgram = 10⁻⁶ gram

(b) Other units of measure:

°C = degree Celsius (centigrade)

cfm = cubic feet per minute

cc = cubic centimeter

d = day

°F = degree Fahrenheit

ft² = square feet

ft³ = cubic feet

gal = gallon

in = inch

in Hg = inches of mercury

in H₂O = inches of water

l = liter

lb = pound

lpm = liter per minute

min = minute

ml = milliliter = 10⁻³ liter

oz = ounces

psig = pounds per square inch gage

°R = degree Rankine

μl = microliter = 10⁻⁶ liter

v/v = volume per volume

yd² = square yards

yr = year

(c) Chemical nomenclature:

Be = beryllium

Hg = mercury

H₂O = water

(d) Miscellaneous:

act = actual

avg = average

I.D. = inside diameter

M = molar

N = normal

O.D. = outside diameter

% = percent

std = standard

[42 FR 51574, September 29, 1977]

§ 61.04 Address.

(a) All requests, reports, applications, communications, and other communications to the Administrator pursuant to this part shall be submitted in duplicate and addressed to the appropriate Regional Office of the Environmental Protection Agency, to the attention of the Director Enforcement Division. The regional offices are as follows:

Region I (Connecticut, Maine, New Hampshire, Massachusetts, Rhode Island, Vermont), John F. Kennedy Federal Building Boston, Massachusetts 02203.

Region II (New York, New Jersey, Puerto Rico, Virgin Islands), Federal Office Building, 26 Federal Plaza (Foley Square), New York, N.Y. 10007.

Region III (Delaware, District of Columbia, Pennsylvania, Maryland, Virginia, West Virginia), Curtis Building, Sixth and Walnut Streets, Philadelphia, Pennsylvania 19104.

Region IV (Alabama, Florida, Georgia, Mississippi, Kentucky, North Carolina, South Carolina, Tennessee), Suite 300, 1481 Peachtree Street, Atlanta, Georgia 30309.

Region V (Illinois, Indiana, Minnesota, Michigan, Ohio, Wisconsin), 230 South Dearborn Street, Chicago, Illinois 60604.

Region VI (Arkansas, Louisiana, New Mexico, Oklahoma, Texas), 1800 Patterson Street, Dallas, Texas 75201.

Region VII (Iowa, Kansas, Missouri, Nebraska), 1735 Baltimore Street, Kansas City, Missouri 64108.

Region VIII (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming), 199 Lincoln Towers, 1800 Lincoln Street, Denver, Colorado 80203.

Region IX (Arizona, California, Hawaii, Nevada, Guam, American Samoa), 100 California Street, San Francisco, California 94111.

Region X (Washington, Oregon, Idaho, Alaska), 1200 Sixth Avenue, Seattle, Washington 98101.

(b) Section 112(d) directs the Administrator to delegate to each State, when appropriate, the authority to implement and enforce the national emission standards for hazardous air pollutants for stationary sources located in such State. All information required to be submitted to EPA under paragraph (a) of this section, must also be submitted to the appropriate State Agency of any State to which this authority has been delegated (provided that each specific delegation may exempt sources from a certain Federal or State reporting requirement). The appropriate mailing address for those States whose delegation request has been approved is as follows:

(A) [reserved]

(B) State of Alabama, Air Pollution Control Division, Air Pollution Control Commission, 646 S. McDonough Street, Montgomery, Alabama 36104.

[41 FR 40467, September 20, 1976]

(C) [reserved]

(D) Arizona:

Maricopa County Department of Health Services, Bureau of Air Pollution Control, 1825 East Roosevelt Street, Phoenix, AZ 85006.

Pima County Health Department, Air Quality Control District, 181 West Congress, Tucson, AZ 85701.

(E) [reserved]

F—California:

(F) California:

Bay Area Air Pollution Control District, 939 Ellis Street, San Francisco, CA 94109.

Del Norte County Air Pollution Control District, Courthouse, Crescent City, CA 95531.

Fresno County Air Pollution Control District, 515 S. Cedar Avenue, Fresno, CA 93702.

Humboldt County Air Pollution Control District, 5600 S. Broadway, Eureka, CA 95501.

Kern County Air Pollution Control District, 1700 Flower Street (P.O. Box 997), Bakersfield, CA 93302.

Madera County Air Pollution Control District, 135 W. Yosemite Avenue, Madera, CA 93637.

Mendocino County Air Pollution Control District, County Courthouse, Ukiah, CA 94582.

Monterey Bay Unified Air Pollution Control District, 420 Church Street (P.O. Box 467), Salinas, CA 93901.

Northern Sonoma County Air Pollution Control District, 3314 Chanate Road, Santa Rosa, CA 95404.

Sacramento County Air Pollution Control District, 3701 Branch Center Road, Sacramento, CA 95837.

San Diego County Air Pollution Control District, 9150 Chesapeake Drive, San Diego, CA 92123.

San Joaquin County Air Pollution Control District, 1801 E. Hazelton Street (P.O. Box 2009), Stockton, CA 95201.

Santa Barbara County Air Pollution Control District, 4440 Calle Real, Santa Barbara, CA 93110.

Shasta County Air Pollution Control District, 1855 Placer Street, Redding, CA 96001.

South Coast Air Quality Management District, 9420 Telstar Avenue, El Monte, CA 91731.

Stanislaus County Air Pollution Control District, 820 Scenic Drive, Modesto, CA 95350.

Trinity County Air Pollution Control District, Box AJ, Weaverville, CA 96093.

Ventura County Air Pollution Control District, 625 E. Santa Clara Street, Ventura, CA 93001.

[43 FR 20988, May 16, 1978]

(G)—State of Colorado, Colorado Air Pollution Control Division, 4210 East 11th Avenue, Denver, Colorado 80220.

[40 FR 50719, October 31, 1975]

(H) State of Connecticut, Department of Environmental Protection, State Office Building, Hartford, Connecticut 06115

[41 FR 11820, March 22, 1976]

(I) State of Delaware (for asbestos, beryllium and mercury only): Delaware Department of Natural Resources and Environmental Control, Edward Tatnall Building, Dover, Delaware 19901.

[43 FR 6771, February 16, 1978]

(J)-(K) [reserved]

(L) State of Georgia, Environmental Protection Division, Department of Natural Resources, 270 Washington Street, S.W., Atlanta, Georgia 30334.

[41 FR 24885, June 21, 1976]

(M)-(O) [reserved]

(P) State of Indiana, Indiana Air Pollution Control Board, 1380 West Michigan Street, Indianapolis, Indiana 46206.

[41 FR 43148, September 30, 1976]

(S) Division of Air Pollution Control, Department for Natural Resources and Environmental Protection, U.S. 127, Frankfort, Ky. 40601.

[43 FR 3361, January 25, 1978]

(U) State of Maine, Department of Environmental Protection, State House, Augusta, Maine 04320.

[40 FR 59729, December 30, 1975]

(V) State of Maryland, Bureau of Air Quality and Noise Control, Maryland State Department of Health and Mental Hygiene, 201 West Preston Street, Baltimore, Maryland 21201.

[61.04(b)(V) added by 45 FR 13074, February 28, 1980]

(W) Massachusetts Department of Environmental Quality Engineering, Division of Air Quality Control, 600 Washington Street, Boston, Massachusetts 02111

[41 FR 19633, May 13, 1976]

(X) State of Michigan, Air Pollution Control Division, Michigan Department of Natural Resources, Stevens T. Mason Building, 11th Floor, Lansing, Michigan 48926.

[41 FR 1914, January 13, 1976]

(Y) Minnesota Pollution Control Agency, Division of Air Quality, 1985 West County Road B-2, Roseville, Minn. 55113.

[43 FR 10, January 3, 1978]

(Z)-(AA) [reserved]

(BB) State of Montana, Department of Health and Environmental Sciences, Ogden Building, Helena, Mont. 59601.

[42 FR 44545, September 6, 1977]

(CC) [reserved]

(DD) Nevada:

Nevada Department of Conservation and Natural Resources, Division of Environmental Protection, 201 South Fall Street, Carson City, NV 89710.

Clark County County District Health Department, Air Pollution Control Division, 625 Shadow Lane, Las Vegas, NV 89106.

Washoe County District Health Department, Division of Environmental Protection, 10 Kirman Avenue, Reno, NV 89502.

[43 FR 20988, May 16, 1978]

(EE) New Hampshire Air Pollution Control Agency, Department of Health and Welfare, State Laboratory Building, Hazen Drive, Concord, New Hampshire 03301.

[41 FR 19633, May 13, 1976]

(FF)—State of New Jersey: New Jersey Department of Environmental Protection, John Fitch Plaza, P.O. Box 2807, Trenton, New Jersey 08625.

[42 FR 37387, July 21, 1977]

(GG) [reserved]

(HH)—New York: New York State Department of Environmental Conservation, 50 Wolf Road, Albany, New York 12233, attention: Division of Air Resources.

[40 FR 48347, October 15, 1975]

(II) North Carolina Environmental Management Commission, Department of Natural and Economic Resources, Division of Environmental Management, P.O. Box 27097, Raleigh, North Carolina 27611. Attention: Air Quality Section.

[41 FR 56805, December 30, 1976]

(JJ)—State of North Dakota, State Department of Health, State Capitol, Bismarck, North Dakota 58501.

[41 FR 44859, October 13, 1976]

(kk) Ohio

Montgomery County: Regional Air Pollution Control Agency, Montgomery County Combined General Health District, 451 West Third Street, Dayton, Ohio 45402.

Clarke, Darke, Greene, Miami and Preble Counties [except for all information required under 461.22(d) and (e)]: Montgomery County Combined General Health District, 451 West Third Street, Dayton, Ohio 45402.

[60.04(b)(kk) added by 44 FR 65400, November 13, 1979]

(ll) [Reserved]

(MM)—State of Oregon, Department of Environmental Quality, 1234 SW Morrison Street, Portland, Oregon 97205.

[41 FR 7750, February 20, 1976]

(NN)(a) Commonwealth of Pennsylvania (except for City of Philadelphia and Allegheny County)

Pennsylvania Department of Environmental Resources,

Bureau of Air Quality and Noise Control, Post Office Box 2063,

Harrisburg, Pennsylvania 17120.

(NN)(b) City of Philadelphia, Philadelphia Department of Public Health, Air Management Services, 801 Arch Street, Philadelphia, Pennsylvania 19107.

[42 FR 6812, February 4, 1977]

(OO) State of Rhode Island, Department of Environmental Management, 83 Park Street, Providence, R.I. 02908

[43 FR 47692, October 16, 1978]

(PP) State of South Carolina, Office of Environmental Quality Control, Department of Health and Environmental Control, 2600 Bull Street, Columbia, South Carolina 29201.

[42 FR 4124, January 24, 1977]

(QQ, RR) [reserved]

(SS) State of Texas, Texas Air Control Board, 8520 Shoal Creek Boulevard, Austin, Texas 78758.

[44 FR 7714, February 7, 1979]

(TT) [reserved]

(UU)—State of Vermont, Agency of Environmental Protection, Box 489, Montpelier, Vermont 05602.

[42 FR 1215, January 6, 1977]

(VV) Commonwealth of Virginia, Virginia State Air Pollution Control Board, Room 1106, Ninth Street Office Building, Richmond, Virginia 23219.

[41 FR 8346, February 26, 1976]

(WW)(i) Washington: State of Washington, Department of Ecology, Olympia, Washington 98504.

(ii) Northwest Air Pollution Authority, 207 Pioneer Building, Second and Pine Streets, Mount Vernon, Washington 98273.

(iii) Puget Sound Air Pollution Control Agency, 410 West Harrison Street, Seattle, Washington 98119.

(iv) Spokane County Air Pollution Control Authority, North 811 Jefferson, Spokane, Washington 99201.

(v) Yakima County Clean Air Authority, County Courthouse, Yakima, Washington 98901.

[40 FR 58640, December 18, 1975]

(vi) Olympic Air Pollution Control Authority, 120 East State Avenue, Olympia, Washington 98501.

(vii) Southwest Air Pollution Control Authority, Suite 7601 H, NE Hazel Dell Avenue, Vancouver, Washington 98663.

[41 FR 4264, January 29, 1976]

(XX) [reserved].

(YY) Wisconsin—Wisconsin Department of Natural Resources, P.O. Box 7921, Madison, Wisconsin 53707.

[42 FR 16778, March 30, 1977]

[Sec. 61.04(b)]

(ZZ) [reserved].

(AAA) [reserved]

(BBB)—Commonwealth of Puerto Rico
Commonwealth of Puerto Rico Environ-
mental Quality Board, P.O. Box 11785, San-
sueño, P.R. 00910.

[42 FR 62137, December 9, 1977]

(CCC)—U.S. Virgin Islands: U.S. Vir-
gin Islands Department of Conservation
and Cultural Affairs, P.O. Box 578, Char-
lotte Amalie, St. Thomas, U.S. Virgin
Islands 00801.

[41 FR 34629, August 16, 1976]

(DDD) [reserved].

[39 FR 37987, October 25, 1974; 40 FR
18169, April 25, 1975; 40 FR 42195,
September 11, 1975]

§ 61.05 Prohibited activities.

(a) After the effective date of any standard prescribed under this part, no owner or operator shall construct or modify any stationary source subject to such standard without first obtaining written approval of the Administrator in accordance with this subpart, except under an exemption granted by the President under section 112(c)(2) of the act. Sources, the construction or modification of which commenced after the publication date of the standards proposed to be applicable to such source, are subject to this prohibition.

(b) After the effective date of any standard prescribed under this part, no owner or operator shall operate any new source in violation of such standard except under an exemption granted by the President under section 112(c)(2) of the act.

(c) Ninety days after the effective date of any standard prescribed under this part, no owner or operator shall operate any existing stationary source in violation of such standard, except under a waiver granted by the Administrator in accordance with this subpart or under an exemption granted by the President under section 112(c)(2) of the act.

(d) No owner or operator subject to the provisions of this part shall fail to report, revise reports, or report source test results as required under this part.

§ 61.06 Determination of construction or modification.

Upon written application by an owner or operator, the Administrator will make a determination of whether actions taken or intended to be taken by such owner or operator constitute construction or modification or the commencement thereof within the meaning of this part. The Administrator will within 30 days of receipt of sufficient information to evaluate an application, notify the owner or operator of his determination.

§ 61.07 Application for approval of construction or modification.

(a) The owner or operator of any new source to which a standard prescribed under this part is applicable shall, prior to the date on which construction or modification is planned to commence, or within 30 days after the effective date in the case of a new source that already has commenced construction or modification and has not begun operation, submit to the Administrator an application for approval of such construction or modification. A separate application shall be submitted for each stationary source.

(b) Each application shall include:

(1) The name and address of the applicant.

(2) The location or proposed location of the source.

(3) Technical information describing the proposed nature, size, design, operating design capacity, and method of operation of the source, including a description of any equipment to be used for control of emissions. Such technical information shall include calculations of emission estimates in sufficient detail to permit assessment of the validity of such calculations.

§ 61.08 Approval by Administrator.

(a) The Administrator will, within 60 days of receipt of sufficient information to evaluate an application under § 61.07, notify the owner or operator of approval or intention to deny approval of construction or modification.

(b) If the Administrator determines that a stationary source for which an application pursuant to § 61.07 was submitted will, if properly operated, not cause emissions in violation of a standard, he will approve the construction or modification of such source.

(c) Prior to denying any application for approval of construction or modification pursuant to this section, the Administrator will notify the owner or operator making such application of the Administrator's intention to issue such denial, together with:

(1) Notice of the information and findings on which such intended denial is based, and

(2) Notice of opportunity for such owner or operator to present, within such time limit as the Administrator shall specify, additional information or arguments to the Administrator prior to final action on such application.

(d) A final determination to deny any application for approval will be in writing and will set forth the specific grounds on which such denial is based. Such final determination will be made within 60 days of presentation of additional information or arguments, or 60 days after the final date specified for presentation, if no presentation is made.

(e) Neither the submission of an application for approval nor the Administrator's granting of approval to construct or modify shall:

(1) Relieve an owner or operator of legal responsibility for compliance with any applicable provision of this part or of any other applicable Federal, State, or local requirement, or

(2) Prevent the Administrator from implementing or enforcing this part or taking any other action under the act.

§ 61.09 Notification of startup.

(a) Any owner or operator of a source which has an initial startup after the effective date of a standard prescribed under this part shall furnish the Administrator written notification as follows:

(1) A notification of the anticipated date of initial startup of the source not more than 60 days nor less than 30 days prior to such date.

(2) A notification of the actual date of initial startup of the source within 15 days after such date.

(Sec. 114 of the Clean Air Act as amended (42 U.S.C. 7414))

§ 61.10 Source reporting and waiver request.

(a) The owner or operator of any existing source, or any new source to which a standard prescribed under this part is applicable which had an initial startup which preceded the effective date of a standard prescribed under this part shall, within 90 days after the effective date, provide the following information in writing to the Administrator:

(1) Name and address of the owner or operator.

(2) The location of the source.

(3) The type of hazardous pollutants emitted by the stationary source.

(4) A brief description of the nature, size, design, and method of operation of the stationary source including the operating design capacity of such source. Identify each point of emission for each hazardous pollutant.

(5) The average weight per month of the hazardous materials being processed by the source, over the last 12 months preceding the date of the report.

(6) A description of the existing control equipment for each emission point.

(i) Primary control device(s) for each hazardous pollutant.

(ii) Secondary control device(s) for each hazardous pollutant.

(iii) Estimated control efficiency (percent) for each control device.

(7) A statement by the owner or operator of the source as to whether he can

comply with the standards prescribed in this part within 90 days of the effective date.

(b) The owner or operator of an existing source unable to operate in compliance with any standard prescribed under this part may request a waiver of compliance with such standard for a period not exceeding 2 years from the effective date. Any request shall be in writing and shall include the following information:

(1) A description of the controls to be installed to comply with the standard.

(2) A compliance schedule, including the date each step toward compliance will be reached. Such list shall include as a minimum the following dates:

(i) Date by which contracts for emission control systems or process modifications will be awarded, or date by which orders will be issued for the purchase of component parts to accomplish emission control or process modification;

(ii) Date of initiation of onsite construction or installation of emission control equipment or process change;

(iii) Date by which onsite construction or installation of emission control equipment or process modification is to be completed; and

(iv) Date by which final compliance is to be achieved.

(3) A description of interim emission control steps which will be taken during the waiver period.

(c) Changes in the information provided under paragraph (a) of this section shall be provided to the Administrator within 30 days after such change, except that if changes will result from modifications of the source, as defined in § 61.02 (j), the provisions of § 61.07 and § 61.08 are applicable.

(d) The format for reporting under this section is included as appendix A of this part. Advice on reporting the status of compliance may be obtained from the Administrator.

(Sec. 114 of the Clean Air Act as amended (42 U.S.C. 7414))

§ 61.11 Waiver of compliance.

(a) Based on the information provided in any request under § 61.10, or other information, the Administrator may grant a waiver of compliance with a standard for a period not exceeding 2 years from the effective date of such standard.

(b) Such waiver will be in writing and will:

(1) Identify the stationary source covered.

(2) Specify the termination date of the waiver. The waiver may be terminated at an earlier date if the conditions specified under paragraph (b) (3) of this section are not met.

(3) Specify dates by which steps toward compliance are to be taken; and impose such additional conditions as the Administrator determines to be necessary to assure installation of the necessary controls within the waiver period, and to assure protection of the health of persons during the waiver period.

(c) Prior to denying any request for a waiver pursuant to this section, the Administrator will notify the owner or operator making such request of the Administrator's intention to issue such denial, together with:

(1) Notice of the information and findings on which such intended denial is based, and

(2) Notice of opportunity for such owner or operator to present, within such time limit as the Administrator specifies, additional information or arguments to the Administrator prior to final action on such request.

(d) A final determination to deny any request for a waiver will be in writing and will set forth the specific grounds on which such denial is based. Such final determination will be made within 60 days after presentation of additional information or arguments, or 60 days after the final date specified for such presentation, if no presentation is made.

(e) The granting of a waiver under this section shall not abrogate the Administrator's authority under section 114 of the act.

§ 61.12 Emission tests and monitoring.

(a) Emission tests and monitoring shall be conducted and reported as set forth in this part and appendix B to this part.

(b) The owner or operator of a new source subject to this part, and at the request of the Administrator, the owner or operator of an existing source subject to this part, shall provide or cause to be provided, emission testing facilities as follows:

(1) Sampling ports adequate for test methods applicable to such source.

(2) Safe sampling platform(s).

(3) Safe access to sampling platform(s).

(4) Utilities for sampling and testing equipment.

(Sec. 114 of the Clean Air Act as amended (42 U.S.C. 7414))

§ 61.13 Waiver of emission tests.

(a) Emission tests may be waived upon written application to the Administrator if, in his judgment, the source is meeting the standard, or if the source is operating under a waiver of compliance or has requested a waiver of compliance.

(b) If application for waiver of the emission test is made, such application shall accompany the information required by § 61.10. The appropriate form is contained in appendix A to this part.

(c) Approval of any waiver granted pursuant to this section shall not abrogate the Administrator's authority under the act or in any way prohibit the Administrator from later canceling such waiver. Such cancellation will be made only after notice is given to the owner or operator of the source.

(Sec. 114 of the Clean Air Act as amended (42 U.S.C. 7414))

§ 61.14 Source test and analytical methods.

(a) Methods 101, 102, and 104 in appendix B to this part shall be used for

all source tests required under this part, unless an equivalent method or an alternative method has been approved by the Administrator.

(b) Method 103 in appendix B to this part is hereby approved by the Administrator as an alternative method for sources subject to § 61.32(a) and § 61.42 (b).

(c) The Administrator may, after notice to the owner or operator, withdraw approval of an alternative method granted under paragraphs (a), (b) or (d) of this section. Where the test results using an alternative method do not adequately indicate whether a source is in compliance with a standard, the Administrator may require the use of the reference method or its equivalent.

(d) Method 105 in Appendix B to this part is hereby approved by the Administrator as an alternative method for sources subject to § 61.52(b).

[40 FR 48292, October 14, 1975, (Sec. 114 of the Clean Air Act as amended (42 U.S.C. 7414))

§ 61.15 Availability of information.

The availability to the public of information provided to, or otherwise obtained by, the Administrator under this part shall be governed by Part 2 of this chapter.

[41 FR 36918, September 1, 1976] (Sec. 114 of the Clean Air Act as amended (42 U.S.C. 7414))

§ 61.16 State authority.

(a) The provisions of this part shall not be construed in any manner to preclude any State or political subdivision thereof from:

(1) Adopting and enforcing any emission limiting regulation applicable to a stationary source, provided that such emission limiting regulation is not less stringent than the standards prescribed under this part.

(2) Requiring the owner or operator of a stationary source, other than a stationary source owned or operated by the United States, to obtain permits, licenses, or approvals prior to initiating construction, modification, or operation of such source.

(Sec. 114 of the Clean Air Act as amended (42 U.S.C. 7414))

§ 61.17 Circumvention.

No owner or operator subject to the provisions of this part shall build, erect, install, or use any article, machine, equipment, process, or method, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous dilutants to achieve compliance with a visible emissions standard, and the piecemeal carrying out of an operation to avoid coverage by a standard that applies only to operations larger than a specified size.

[40 FR 48292, October 14, 1975]

[Sec. 61.17]

Subpart B—National Emission Standard for Asbestos

§ 61.20 Applicability.

The provisions of this subpart are applicable to those sources specified in § 61.22.

§ 61.21 Definitions.

Terms used in this subpart are defined in the act, in subpart A of this part, or in this section as follows:

(a) "Asbestos" means actinolite, amosite, anthophyllite, chrysotile, crocidolite, tremolite.

(b) "Asbestos material" means asbestos or any material containing asbestos.

(c) "Particulate asbestos material" means finely divided particles of asbestos material.

(d) "Asbestos tailings" means any solid waste product of asbestos mining or milling operations which contains asbestos.

(e) "Outside air" means the air outside buildings and structures.

(f) "Visible emissions" means any emissions which are visually detectable without the aid of instruments and which contain particulate asbestos material.

(g) "Asbestos mill" means any facility engaged in the conversion or any intermediate step in the conversion of asbestos ore into commercial asbestos. Outside storage of asbestos materials is not considered a part of such facility.

(h) "Commercial asbestos" means any variety of asbestos which is produced by extracting asbestos from asbestos ore.

(i) "Manufacturing" means the combining of commercial asbestos, or in the case of woven friction products the combining of textiles containing commercial asbestos, with any other material(s), including commercial asbestos, and the processing of this combination into a product as specified in § 61.22(c).

(j) "Demolition" means the wrecking or taking out of any load-supporting structural member and any related removing or stripping of friable asbestos materials.

(k) "Friable asbestos material" means any material that contains more than 1 percent asbestos by weight and that can be crumbled, pulverized, or reduced to powder, when dry, by hand pressure.

(l) "Control device asbestos waste" means any asbestos-containing waste material that is collected in a pollution control device.

(m) "Renovation" means the removing or stripping of friable asbestos materials used on any pipe, duct, boiler, tank, reactor, turbine, furnace, or structural member. Operations in which load-supporting structural members are wrecked or taken out are excluded.

[Paragraph (m) revised by 43 FR 26373, June 19, 1978]

(n) "Planned renovation" means a renovation operation, or a number of such operations, in which the amount of friable asbestos material that will be removed or stripped within a given period of time can be predicted. Operations that are individually non-scheduled are

included, provided a number of such operations can be predicted to occur during a given period of time based on operating experience.

(o) "Emergency renovation" means a renovation operation that results from a sudden, unexpected event, and is not a planned renovation. Operations necessitated by non-routine failures of equipment are included.

(p) "Adequately wetted" means sufficiently mixed or coated with water or an aqueous solution to prevent dust emissions.

(q) "Removing" means taking out friable asbestos materials used on any pipe, duct, boiler, tank, reactor, turbine, furnace, or structural member from any building, structure, facility, or installation.

(r) "Stripping" means taking off friable asbestos materials from any pipe, duct, boiler, tank, reactor, turbine, furnace, or structural member.

[Paragraph (q) and (r) revised by 43 FR 26373, June 19, 1978]

(s) "Fabricating" means any processing of a manufactured product containing commercial asbestos, with the exception of processing at temporary sites for the construction or restoration of buildings, structures, facilities or installations.

(t) "Inactive waste disposal site" means any disposal site or portion thereof where additional asbestos-containing waste material will not be deposited and where the surface is not disturbed by vehicular traffic.

(u) "Active waste disposal site" means any disposal site other than an inactive site.

(v) "Roadways" means surfaces on which motor vehicles travel including, but not limited to, highways, roads, streets, parking areas, and driveways.

(w) "Asbestos-containing waste material" means any waste which contains commercial asbestos and is generated by a source subject to the provisions of this subpart, including asbestos mill tailings, control device asbestos waste, friable asbestos waste material, and bags or containers that previously contained commercial asbestos.

[40 FR 48292, October 14, 1975]

(x) "Structural member" means any load-supporting member, such as beams and load-supporting walls; or any non-load-supporting member, such as ceilings and non-load-supporting walls.

[42 FR 12127, March 2, 1977]

61.22 Emission standard.

(a) Asbestos mills: There shall be no visible emissions to the outside air from any asbestos mill except as provided in paragraph (f) of this section.

[39 FR 15936, May 3, 1974]

(b) Roadways: The surfacing of roadways with asbestos tailings or with asbestos-containing waste that is generated by any source subject to paragraphs (c), (d), (e) or (h), of this section is prohibited, except for temporary roadways on an area of asbestos ore deposits.

The deposition of asbestos tailings or asbestos-containing waste on roadways covered with snow or ice is considered "surfacing."

(c) Manufacturing: There shall be no visible emissions to the outside air, except as provided in paragraph (f) of this section, from any of the following operations if they use commercial asbestos or from any building or structure in which such operations are conducted.

[40 FR 48292, October 14, 1975]

(1) The manufacture of cloth, cord, wicks, tubing, tape, twine, rope, thread, yarn, roving, lap, or other textile materials.

(2) The manufacture of cement products.

(3) The manufacture of fireproofing and insulating materials.

(4) The manufacture of friction products.

(5) The manufacture of paper, mill-board, and felt.

(6) The manufacture of floor tile.

(7) The manufacture of paints, coatings, caulks, adhesives, sealants.

(8) The manufacture of plastics and rubber materials.

(9) The manufacture of chlorine.

(10) The manufacture of shotgun shells.

(11) The manufacture of asphalt concrete.

(d) Demolition and renovation. The requirements of this paragraph shall apply to any owner or operator of a demolition or renovation operation who intends to demolish any institutional, commercial, or industrial building (including apartment buildings having more than four dwelling units), structure, facility, installation, or portion thereof which contains any pipe, duct, boiler, tank, reactor, turbine, furnace, or structural member that is covered or coated with friable asbestos materials, except as provided in paragraph (d)(1) of this section; or who intends to renovate any institutional, commercial, or industrial building, structure, facility, installation, or portion thereof where more than 80 meters (ca. 260 feet) of pipe covered or coated with friable asbestos materials are stripped or removed, or more than 18 square meters, (ca. 160 square feet) of friable asbestos materials used to cover or coat any duct, boiler, tank, reactor, turbine, furnace, or structural member are stripped or removed.

(1) (i) The owner or operator of a demolition operation is exempted from the requirements of this paragraph: *Provided*, (A) The amount of friable asbestos materials in the building or portion thereof to be demolished is less than 80 meters (ca. 260 feet) used on pipes, and less than 18 square meters (ca. 160 square feet) used on any duct, boiler, tank, reactor, turbine, furnace, or structural member, and (B) the notification requirements of paragraph (d)(1)(ii) are met.

(ii) Written notification shall be postmarked or delivered to the Administrator at least 20 days prior to com-

mencement of demolition and shall include the information required by paragraph (d)(2) of this section, with the exception of the information required by paragraphs (d)(2) (iii), (vi), (vii), (viii), and (ix) of this section, and shall state the measured or estimated amount of friable asbestos materials which is present. Techniques of estimation shall be explained.

[Paragraph (d) revised by 43 FR 26374, June 19, 1978]

(2) Written notice of intention to demolish or renovate shall be provided to the Administrator by the owner or operator of the demolition or renovation operation. Such notice shall be postmarked or delivered to the Administrator at least 10 days prior to commencement of demolition, or as early as possible prior to commencement of emergency demolition subject to paragraph (d) (6) of this section, and as early as possible prior to commencement of renovation. Such notice shall include the following information:

- (i) Name of owner or operator.
- (ii) Address of owner or operator.
- (iii) Description of the building, structure, facility, or installation to be demolished or renovated, including the size, age, and prior use of the structure, and the approximate amount of friable asbestos materials present.

[Paragraph (iii) revised by 43 FR 26374, June 19, 1978]

- (iv) Address or location of the building, structure, facility, or installation.

- (v) Scheduled starting and completion dates of demolition or renovation.

- (vi) Nature of planned demolition or renovation and method(s) to be employed.

- (vii) Procedures to be employed to meet the requirements of this paragraph and paragraph (j) of this section.

- (viii) The name and address or location of the waste disposal site where the friable asbestos waste will be deposited.

- (ix) Name, title, and authority of the State or local governmental representative who has ordered a demolition which is subject to paragraph (d) (6) of this section.

(3) (i) For purposes of determining whether a planned renovating operation constitutes a renovation within the meaning of this paragraph, the amount of friable asbestos material to be removed or stripped shall be:

(A) For planned renovating operations involving individually non-scheduled operations, the additive amount of friable asbestos material that can be predicted will be removed or stripped at a source over the maximum period of time for which a prediction can be made. The period shall be not less than 30 days and not longer than one year.

(B) For each planned renovating operation not covered by paragraph (d) (3) (i) (A), the total amount of friable asbestos material that can be predicted will be removed or stripped at a source.

(ii) For purposes of determining whether an emergency renovating operation constitutes a renovation within the meaning of this paragraph, the

amount of friable asbestos material to be removed or stripped shall be the total amount of friable asbestos material that will be removed or stripped as a result of the sudden, unexpected event that necessitated the renovation.

(4) The following procedures shall be used to prevent emissions of particulate asbestos material to outside air:

(i) Friable asbestos materials, used on any pipe, duct, boiler, tank, reactor, turbine, furnace, or structural member, shall be removed from any building, structure, facility or installation subject to this paragraph. Such removal shall occur before wrecking or dismantling of any portion of such building, structure, facility, or installation that would break up the friable asbestos materials and before wrecking or dismantling of any other portion of such building, structure, facility, or installation, that would preclude access to such materials for subsequent removal. Removal of friable asbestos materials used on any pipe, duct, or structural member which are encased in concrete or other similar structural material is not required prior to demolition, but such materials shall be adequately wetted whenever exposed during demolition.

(ii) Friable asbestos materials used on pipes, ducts, boilers, tanks, reactors, turbines, furnaces, or structural members shall be adequately wetted during stripping, except as provided in paragraphs (d)(4)(iv), (d)(4)(vi), or (d)(vii) of this section.

(iii) Pipes, ducts, boilers, tanks, reactors, turbines, furnaces, or structural members that are covered or coated with friable asbestos materials may be taken out of any building, structure, facility, or installation subject to this paragraph as units or in sections provided the friable asbestos materials exposed during cutting or disjoining are adequately wetted during the cutting or disjoining operation. Such units shall not be dropped or thrown to the ground, but shall be carefully lowered to ground level.

(iv) The stripping of friable asbestos materials used on any pipe, duct, boiler, tank, reactor, turbine, furnace, or structural member that has been removed as a unit or in sections as provided in paragraph (d)(4)(iii) of this section shall be performed in accordance with paragraph (d)(4)(ii) of this section. Rather than comply with the wetting requirement, a local exhaust ventilation and collection system may be used to prevent emissions to the outside air. Such local exhaust ventilation systems shall be designed and operated to capture the asbestos particulate matter produced by the stripping of friable asbestos materials. There shall be no visible emissions to the outside air from such local exhaust ventilation and collection systems except as provided in paragraph (f) of this section.

[4(i)-(iv) revised by 43 FR 26374, June 19, 1978]

(v) All friable asbestos materials that have been removed or stripped shall be

adequately wetted to ensure that such materials remain wet during all remaining stages of demolition or renovation and related handling operations. Such materials shall not be dropped or thrown to the ground or a lower floor. Such materials that have been removed or stripped more than 50 feet above ground level, except those materials removed as units or in sections, shall be transported to the ground via dust-tight chutes or containers.

(vi) Except as specified below, the wetting requirements of this paragraph are suspended when the temperature at the point of wetting is below 0°C (32°F). When friable asbestos materials are not wetted due to freezing temperatures, such materials on pipes, ducts, boilers, tanks, reactors, turbines, furnaces, or structural members shall, to the maximum extent possible, be removed as units or in sections prior to wrecking. In no case shall the requirements of paragraphs (d) (4) (iv) or (d) (4) (v) be suspended due to freezing temperatures.

(vii) For renovation operations, local exhaust ventilation and collection systems may be used, instead of wetting as specified in paragraph (d) (4) (ii), to prevent emissions of particulate asbestos material to outside air when damage to equipment resulting from the wetting would be unavoidable. Upon request and supply of adequate information, the Administrator will determine whether damage to equipment resulting from wetting to comply with the provisions of this paragraph would be unavoidable. Such local exhaust ventilation systems shall be designed and operated to capture the asbestos particulate matter produced by the stripping and removal of friable asbestos material. There shall be no visible emissions to the outside air from such local exhaust ventilation and collection systems, except as provided in paragraph (f) of this section.

(5) Sources subject to this paragraph are exempt from the requirements of §§ 61.05(a), 61.07, and 61.09.

(6) The demolition of a building, structure, facility, or installation, pursuant to an order of an authorized representative of a State or local governmental agency, issued because that building is structurally unsound and in danger of imminent collapse is exempt from all but the following requirements of paragraph (d) of this section:

(i) The notification requirements specified by paragraph (d) (2) of this section;

(ii) The requirements on stripping of friable asbestos materials from previously removed units or sections as specified in paragraph (d) (4) (iv) of this section;

(iii) The wetting, as specified by paragraph (d) (4) (v) of this section, of friable asbestos materials that have been removed or stripped;

(iv) The portion of the structure being demolished that contains friable asbestos materials shall be adequately wetted during the wrecking operation.

[39 FR 15936, May 3, 1974; 40 FR 48292, October 14, 1975]

(e) Spraying. There shall be no visible emissions to the outside air from the spray-on application of materials containing more than 1 percent asbes-

[Sec. 61.22(e)]

tos, on a dry weight basis, used on equipment and machinery, except as provided in paragraph (f) of this section. Materials sprayed on buildings, structures, structural members, pipes, and conduits shall contain less than 1 percent asbestos on a dry weight basis.

[Paragraph (e) revised by 43 FR 26374, June 19, 1978]

(1) Sources subject to this paragraph are exempt from the requirements of § 61.05(a), § 61.07, and § 61.09.

(2) Any owner or operator who intends to spray asbestos materials which contain more than 1 percent asbestos on a dry weight basis on equipment and machinery shall report such intention to the Administrator at least 20 days prior to the commencement of the spraying operation. Such report shall include the following information:

- (i) Name of owner or operator.
- (ii) Address of owner or operator.
- (iii) Location of spraying operation.

(iv) Procedures to be followed to meet the requirements of this paragraph.

(3) The spray-on application of materials in which the asbestos fibers are encapsulated with a bituminous or resinous binder during spraying and which are not friable after drying is exempted from the requirements of paragraphs (e) and (e)(2) of this section.

[Paragraphs (2) and (3) revised by 43 FR 26374, June 19, 1978]

(f) Rather than meet the no-visible-emission requirements as specified by paragraphs (a), (c), (d), (e), (h), (j), and (k) of this section, an owner or operator may elect to use the methods specified by § 61.23 to clean emissions containing particulate asbestos material before such emissions escape to, or are vented to, the outside air.

(g) Where the presence of uncombined water is the sole reason for failure to meet the no-visible-emission requirement of paragraphs (a), (c), (d), (e), (h), (j), or (k) of this section, such failure shall not be a violation of such emission requirements.

(h) Fabricating: There shall be no visible emissions to the outside air, except as provided in paragraph (f) of this section, from any of the following operations if they use commercial asbestos or from any building or structure in which such operations are conducted.

(1) The fabrication of cement building products.

(2) The fabrication of friction products, except those operations that primarily install asbestos friction materials on motor vehicles.

(3) The fabrication of cement or silicate board for ventilation hoods; ovens; electrical panels; laboratory furniture;

bulkheads, partitions and ceilings for marine construction; and flow control devices for the molten metal industry.

(i) Insulating: Molded insulating materials which are friable and wet-applied insulating materials which are friable after drying, installed after the effective date of these regulations, shall contain no commercial asbestos. The provisions of this paragraph do not apply to insulating materials which are spray applied; such materials are regulated under § 61.22(e).

(j) Waste disposal for manufacturing, fabricating, demolition, renovation and spraying operations: The owner or operator of any source covered under the provisions of paragraphs (c), (d), (e), or (h) of this section shall meet the following standards:

(1) There shall be no visible emissions to the outside air, except as provided in paragraph (j)(3) of this section, during the collection; processing, including incineration; packaging; transporting; or deposition of any asbestos-containing waste material which is generated by such source.

(2) All asbestos-containing waste material shall be deposited at waste disposal sites which are operated in accordance with the provisions of § 61.25.

(3) Rather than meet the requirement of paragraph (j)(1) of this section, an owner or operator may elect to use either of the disposal methods specified under (j)(3)(i) and (ii) of this section, or an alternative disposal method which has received prior approval by the Administrator:

(i) Treatment of asbestos-containing waste material with water:

(A) Control device asbestos waste shall be thoroughly mixed with water into a slurry and other asbestos-containing waste material shall be adequately wetted. There shall be no visible emissions to the outside air from the collection, mixing and wetting operations, except as provided in paragraph (f) of this section.

(B) After wetting, all asbestos-containing waste material shall be sealed into leak-tight containers while wet, and such containers shall be deposited at waste disposal sites which are operated in accordance with the provisions of § 61.25.

(C) The containers specified under paragraph (j)(3)(i)(B) of this section shall be labeled with a warning label that states:

CAUTION
Contains Asbestos
Avoid Opening or Breaking Container
Breathing Asbestos is Hazardous
to Your Health

Alternatively, warning labels specified by Occupational Safety and Health Standards of the Department of Labor, Occupational Safety and Health Administration (OSHA) under 29 CFR 1910.93a(g)(2)(ii) may be used.

(ii) Processing of asbestos-containing waste material into non-friable forms:

(A) All asbestos-containing waste material shall be formed into non-friable pellets or other shapes and deposited at waste disposal sites which are operated in accordance with the provisions of § 61.25.

(B) There shall be no visible emissions to the outside air from the collection and processing of asbestos-containing waste material, except as specified in paragraph (f) of this section.

(4) For the purposes of this paragraph (j), the term all asbestos-containing waste material as applied to demolition and renovation operations covered by paragraph (d) of this section includes only friable asbestos waste and control device asbestos waste.

(k) Waste disposal for asbestos mills: The owner or operator of any source covered under the provisions of paragraph (a) of this section shall meet the following standard:

(1) There shall be no visible emissions to the outside air, except as provided in paragraph (k)(3) of this section, during the collection, processing, packaging, transporting or deposition of any asbestos-containing waste material which is generated by such source.

(2) All asbestos-containing waste material shall be deposited at waste disposal sites which are operated in accordance with the provisions of § 61.25.

(3) Rather than meet the requirement of paragraph (k)(1) of this section, an owner or operator may elect to meet the following requirements in paragraphs (k)(3)(i) and (ii), or use an alternative disposal method which has received prior approval by the Administrator:

(i) There shall be no visible emissions to the outside air from the transfer of control device asbestos waste to the tailings conveyor, except as provided in paragraph (f) of this section. Such waste shall be subsequently processed either as specified in paragraph (k)(3)(ii) of this section or as specified in paragraph (j)(3) of this section.

(ii) All asbestos-containing waste material shall be adequately mixed, with a wetting agent recommended by the manufacturer of the agent to effectively wet dust and tailings, prior to deposition at a waste disposal site. Such agent shall be used as recommended for the particular dust by the manufacturer of the agent. There shall be no discharge of visible emissions to the outside air from the wetting operation except as specified in paragraph (f) of this section. Wetting may be suspended when the ambient temperature at the waste disposal site is less than -9.5°C (ca. 15°F). The ambient air temperature shall be determined by an appropriate measurement method with an accuracy of ±1°C (±2°F) and recorded at least at hourly intervals during the period that the operation of the wetting system is suspended. Records of

such temperature measurements shall be retained at the source for a minimum of two years and made available for inspection by the Administrator.

(1) The owner of any inactive waste disposal site, which was operated by sources covered under § 61.22 (a), (c) or (h) and where asbestos-containing waste material produced by such sources was deposited, shall meet the following standards:

(1) There shall be no visible emissions to the outside air from an inactive waste disposal site subject to this paragraph, except as provided in paragraph (1) (5) of this section.

(2) Warning signs shall be displayed at all entrances, and along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material was deposited, at intervals of 100 m (ca. 330 ft) or less, except as specified in paragraph (1) (4) of this section. Signs shall be posted in such a manner and location that a person may easily read the legend. The warning signs required by this paragraph shall conform to the requirements of 20" x 14" upright format signs specified in 29 CFR 1910.145(d)(4) and this paragraph. The signs shall display the following legend in the lower panel, with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

LEGEND

ASBESTOS WASTE DISPOSAL SITE
Do Not Create Dust
Breathing Asbestos is Hazardous
to Your Health
Notation
1" Sans Serif, Gothic or Block
¾" Sans Serif, Gothic or Block
14 Point Gothic

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

(3) The perimeter of the site shall be fenced in a manner adequate to deter access by the general public, except as specified in paragraph (1) (4) of this section.

(4) Warning signs and fencing are not required where the requirements of paragraphs (1) (5) (1) or (1) of this section are met, or where a natural barrier adequately deters access by the general public. Upon request and supply of appropriate information, the Administrator will determine whether a fence or a natural barrier adequately deters access to the general public.

(5) Rather than meet the requirement of paragraph (1) (1) of this section, an owner may elect to meet the requirements of this paragraph or may use an alternative control method for emissions from inactive waste disposal sites which has received prior approval by the Administrator.

(1) The asbestos-containing waste material shall be covered with at least 15 centimeters (ca. 6 inches) of compacted non-asbestos-containing material, and a cover of vegetation shall be grown and maintained on the area adequate to prevent exposure of the asbestos-containing waste material; or

(ii) The asbestos-containing waste material shall be covered with at least 60 centimeters (ca. 2 feet) of compacted non-asbestos-containing material and maintained to prevent exposure of the asbestos-containing waste; or

(iii) For inactive waste disposal sites for asbestos tailings, a resinous or petroleum-based dust suppression agent which effectively binds dust and controls wind erosion shall be applied. Such agent shall be used as recommended for the particular asbestos tailings by the dust suppression agent manufacturer. Other equally effective dust suppression agents may be used upon prior approval by the Administrator. For purposes of this paragraph, waste crankcase oil is not considered a dust suppression agent.

[40 FR 48292, October 14, 1975]

§ 61.23 Air-cleaning.

If air-cleaning is elected, as permitted by §§ 61.22(f) and 61.22(d)(4)(iv), the requirements of this section must be met.

[40 FR 48292, October 14, 1975]

(a) Fabric filter collection devices must be used, except as noted in paragraphs (b) and (c) of this section. Such devices must be operated at a pressure drop of no more than 4 inches water gage, as measured across the filter fabric. The airflow permeability, as determined by ASTM method D737-69, must not exceed 30 ft³/min/ft² for woven fabrics or 35 ft³/min/ft² for felted fabrics, except that 40 ft³/min/ft² for woven and 45 ft³/min/ft² for felted fabrics is allowed for filtering air from asbestos ore dryers. Each square yard of felted fabric must weigh at least 14 ounces and be at least one-sixteenth inch thick throughout. Synthetic fabrics must not contain fill yarn other than that which is spun.

(b) If the use of fabric filters creates a fire or explosion hazard, the administrator may authorize the use of wet collectors designed to operate with a unit contacting energy of at least 40 inches water gage pressure.

(c) The administrator may authorize the use of filtering equipment other than that described in paragraphs (a) and (b) of this section if the owner or operator demonstrates to the satisfaction of the administrator that the filtering of particulate asbestos material is equivalent to that of the described equipment.

(d) All air-cleaning equipment authorized by this section must be properly installed, used, operated, and maintained. Bypass devices may be used only during upset or emergency conditions and then

only for so long as it takes to shut down the operation generating the particulate asbestos material.

§ 61.24 Reporting.

The owner or operator of any existing source to which this subpart is applicable shall, within 90 days after the effective date, provide the following information to the administrator:

(a) A description of the emission control equipment used for each process;

(b) If a fabric filter device is used to control emissions, the pressure drop across the fabric filter in inches water gage.

(1) If the fabric filter device utilizes a woven fabric, the airflow permeability in ft³/min/ft²; and, if the fabric is synthetic, indicate whether the fill yarn is spun or not spun.

(2) If the fabric filter device utilizes a felted fabric, the density in oz/yd², the minimum thickness in inches, and the airflow permeability in ft³/min/ft².

(c) For sources subject to §§ 61.22(j) and 61.22(k):

(1) A brief description of each process that generates asbestos-containing waste material.

(2) The average weight of asbestos-containing waste material disposed of, measured in kg/day.

(3) The emission control methods used in all stages of waste disposal.

(4) The type of disposal site or incineration site used for ultimate disposal, the name of the site operator, and the name and location of the disposal site.

(d) For sources subject to § 61.22(l):

(1) A brief description of the site.

(2) The method or methods used to comply with the standard, or alternative procedures to be used.

(e) Such information shall accompany the information required by § 61.10. The information described in this section shall be reported using the format of Appendix A of this part.

[40 FR 48292, October 14, 1975]

§ 61.25 Waste disposal sites.

In order to be an acceptable site for disposal of asbestos-containing waste material under § 61.22 (j) and (k), an active waste disposal site shall meet the requirements of this section.

(a) There shall be no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, except as provided in paragraph (e) of this section.

(b) Warning signs shall be displayed at all entrances, and along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material is deposited, at intervals of 100 m (ca. 330 ft) or less except as specified in paragraph (d) of this section. Signs shall be posted in such

[Sec. 61.25(b)]

a manner and location that a person may easily read the legend. The warning signs required by this paragraph shall conform to the requirements of 20" x 14" upright format signs specified in 29 CFR 1910.145(d)(4) and this paragraph. The signs shall display the following legend in the lower panel, with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

LEGEND

ASBESTOS WASTE DISPOSAL SITE

Do Not Create Dust

Breathing Asbestos
is Hazardous to Your Health

Notation

1" Sans Serif, Gothic or Block

¾" Sans Serif, Gothic or Block

14 Point Gothic

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

(c) The perimeter of the disposal site shall be fenced in order to adequately deter access to the general public except as specified in paragraph (d) of this section.

(d) Warning signs and fencing are not required where the requirements of paragraph (e)(1) of this section are met, or where a natural barrier adequately deters access to the general public. Upon request and supply of appropriate information, the Administrator will determine whether a fence or a natural barrier adequately deters access to the general public.

(e) Rather than meet the requirement of paragraph (a) of this section, an owner or operator may elect to meet the requirements of paragraph (e)(1) or (e)(2) of this section, or may use an alternative control method for emissions from active waste disposal sites which has received prior approval by the Administrator.

(1) At the end of each operating day, or at least once every 24-hour period while the site is in continuous operation, the asbestos-containing waste material which was deposited at the site during the operating day or previous 24-hour period shall be covered with at least 15 centimeters (ca. 6 inches) of compacted non-asbestos-containing material.

(2) At the end of each operating day, or at least once every 24-hour period while the disposal site is in continuous operation, the asbestos-containing waste material which was deposited at the site during the operating day or previous 24-hour period shall be covered with a resinous or petroleum-based dust suppression agent which effectively binds dust and controls wind erosion. Such agent shall be used as recommended for the particular dust by the dust suppression

agent manufacturer. Other equally effective dust suppression agents may be used upon prior approval by the Administrator. For purposes of this paragraph, waste crankcase oil is not considered a dust suppression agent.

[40 FR 48292, October 14, 1975]

(Sec. 114 of the Clean Air Act as amended (42 U.S.C. 7414))

Subpart C—National Emission Standard for Beryllium

§ 61.30 Applicability.

The provisions of this subpart are applicable to the following stationary sources:

(a) Extraction plants, ceramic plants, foundries, incinerators, and propellant plants which process beryllium ore, beryllium, beryllium oxide, beryllium alloys, or beryllium-containing waste.

(b) Machine shops which process beryllium, beryllium oxides, or any alloy when such alloy contains more than 5 percent beryllium by weight.

§ 61.31 Definitions.

Terms used in this subpart are defined in the act, in subpart A of this part, or in this section as follows:

(a) "Beryllium" means the element beryllium. Where weights or concentrations are specified, such weights or concentrations apply to beryllium only, excluding the weight or concentration of any associated elements.

(b) "Extraction plant" means a facility chemically processing beryllium ore to beryllium metal, alloy, or oxide, or performing any of the intermediate steps in these processes.

(c) "Beryllium ore" means any naturally occurring material mined or gathered for its beryllium content.

(d) "Machine shop" means a facility performing cutting, grinding, turning, honing, milling, deburring, lapping, electrochemical machining, etching, or other similar operations.

(e) "Ceramic plant" means a manufacturing plant producing ceramic items.

(f) "Foundry" means a facility engaged in the melting or casting of beryllium metal or alloy.

(g) "Beryllium-containing waste" means material contaminated with beryllium and/or beryllium compounds used or generated during any process or operation performed by a source subject to this subpart.

(h) "Incinerator" means any furnace used in the process of burning waste for the primary purpose of reducing the volume of the waste by removing combustible matter.

(i) "Propellant" means a fuel and oxidizer physically or chemically combined which undergoes combustion to provide rocket propulsion.

(j) "Beryllium alloy" means any metal to which beryllium has been added in order to increase its beryllium content and which contains more than 0.1 percent beryllium by weight.

(k) "Propellant plant" means any facility engaged in the mixing, casting, or machining of propellant.

§ 61.32 Emission standard.

(a) Emissions to the atmosphere from stationary sources subject to the provisions of this subpart shall not exceed 10 grams of beryllium over a 24-hour period, except as provided in paragraph (b) of this section.

(b) Rather than meet the requirement of paragraph (a) of this section, an owner or operator may request approval from the Administrator to meet an ambient concentration limit on beryllium in the vicinity of the stationary source of 0.01 µg/m³, averaged over a 30-day period.

(1) Approval of such requests may be granted by the Administrator provided that:

(i) At least 3 years of data is available which in the judgment of the Administrator demonstrates that the future ambient concentrations of beryllium in the vicinity of the stationary source will not exceed 0.01 µg/m³, averaged over a 30-day period. Such 3-year period shall be the 3 years ending 30 days before the effective date of this standard.

(ii) The owner or operator requests such approval in writing within 30 days after the effective date of this standard.

(iii) The owner or operator submits a report to the Administrator within 45 days after the effective date of this standard which report includes the following information:

(a) Description of sampling method including the method and frequency of calibration.

(b) Method of sample analysis.

(c) Averaging technique for determining 30-day average concentrations.

(d) Number, identity, and location (address, coordinates, or distance and heading from plant) of sampling sites.

(e) Ground elevations and height above ground of sampling inlets.

(f) Plant and sampling area plots showing emission points and sampling sites. Topographic features significantly affecting dispersion including plant building heights and locations shall be included.

(g) Information necessary for estimating dispersion including stack height, inside diameter, exit gas temperature, exit velocity or flow rate, and beryllium concentration.

(h) A description of data and procedures (methods or models) used to de-

Wednesday
July 13, 1983

Environmental Protection Agency

Part II

**Environmental
Protection Agency**

National Emissions Standards for
Hazardous Air Pollutants; Proposed
Amendments to Asbestos Standard

ALCOA0000008756

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 61

(AD-FRL-3219-4)

National Emission Standards for Hazardous Air Pollutants; Amendments to Asbestos Standard

AGENCY: U.S. Environmental Protection Agency (EPA).

ACTION: Proposed rule and notice of public hearing.

SUMMARY: These proposed amendments to the national emission standard for asbestos would reinstate work practice and equipment provisions of the standard that were held not to be emission standards by the Supreme Court in 1978. They would also reword and rearrange other portions of the standard for clarity.

A public hearing will be held, if requested, to provide interested persons an opportunity for oral presentation of data, views, and arguments concerning the proposed amendments.

DATES: *Comments.* Comments must be received on or before September 9, 1983.

Public Hearing. If anyone contacts EPA requesting to speak at a public hearing by July 27, 1983, a public hearing will be held on August 9, 1983 beginning at 10:00 a.m.

Request to Speak at Hearing. Persons wishing to present oral testimony must contact EPA by August 3, 1983.

ADDRESSES: *Comments.* Comments should be submitted (in duplicate if possible) to: Central Docket Section (LE-131), Attention: Docket Number A-83-02, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, D.C. 20460.

Public Hearing. If a public hearing is held, it will be held at the Environmental Research Center Auditorium, Corner of Highway 54 & Alexander Drive, Research Triangle Park, North Carolina. Persons wishing to present oral testimony should notify Mrs. Naomi Durkee, Standards Development Branch (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

Docket. Docket number A-83-02, containing supporting information used in developing the proposed amendments, is available for public inspection and copying between 8:00 a.m. and 4:00 p.m., Monday through Friday, at EPA's Central Docket Section, West Tower Lobby, Gallery 1, Waterside Mall, 401 M Street, SW.,

Washington, D.C. 20460. A reasonable fee may be charged for copying.

FOR FURTHER INFORMATION CONTACT: Mr. Gene W. Smith, Standards Development Branch, Emission Standards and Engineering Division (MD-13), U.S. Environmental Protection Agency, Research Triangle Park, N.C. 27711, telephone number (919) 541-5824.

Persons interested in attending the hearing should call Mrs. Naomi Durkee at (919) 541-5578 to verify that a hearing will occur.

SUPPLEMENTARY INFORMATION: On April 8, 1973 (38 FR 8826), EPA promulgated national emission standards for hazardous air pollutants (NESHAP) for asbestos in Subpart B of 40 CFR Part 61, pursuant to Section 112 of the Clean Air Act, as amended in 1970. Amendments to the NESHAP were promulgated on May 3, 1974 (39 FR 15398), October 14, 1975 (40 FR 48299), and March 2, 1977 (42 FR 12127). Parts of the NESHAP were in the form of work-practice standards, which were later held by the Supreme Court not to be emission standards within the meaning of Section 112, as amended in 1970. *Adams Wrecking Company v. United States*, 434 U.S. 275 (1978).

On August 7, 1977, Section 112 of the Acts was amended to specifically authorize "design, equipment, work-practice and operational standards," Section 112(e). On June 19, 1978 (43 FR 26372), EPA repromulgated many of the work-practice standards in the NESHAP, pursuant to Section 112, as amended in 1977. The provisions so repromulgated were 40 CFR 61.22(d), (d)(1), (d)(2)(iii), (d)(4)(i)-(iv), (e), (e)(2) (in part), and (e)(3).

Work-practice standards contained in other portions of the NESHAP were not repromulgated in 1978 (§ 61.22(b), (d)(4)(v) and (vi), (d)(6)(iii) and (iv), (f), (i), (j)(2) and (3), (k)(2) and (3), (1)(2)-(5); § 61.23; and § 61.25(b)-(e)). Some of these paragraphs contain both emission limits and work-practice standards. EPA intended that owners and operators could comply with either the emission limit or the work-practice standards at their option. The emission limits were not affected by the Court's ruling. The rulemaking being proposed today would reinstate the work-practice standards contained in these paragraphs. It would also reinstate the work-practice standards in other paragraphs that do not contain an alternative emission limit.

Many of these provisions are being complied with now, and most owners and operators of asbestos sources are conscientiously minimizing asbestos emission. Therefore, today's proposed

action would have minimal adverse economic effects. However, this action is intended to make clear EPA's intent that asbestos emissions be controlled.

Another purpose of the proposed rulemaking is to reword and rearrange various provisions of the NESHAP for clarity. This has resulted in the addition of several sections and the redesignation of the NESHAP as Subpart M. The discussion below, however, will refer to the old paragraph numbering system for ease of understanding. A listing is provided to show the new section numbers in which the provisions contained under the old numbers can be found.

Old Designation (Subpart B) (section)	New Designation (Subpart M) (section)
61.20	61.140
61.21	61.141
61.22	
(a)	61.142
(b)	61.143
(c)	61.144
(d)	61.145
(d)(1)(i)	61.145
(d)(1)(ii)	61.146
(d)(2)	61.146
(d)(3)(i)(A), (B)	61.146
(d)(3)(ii)	61.146
(d)(4)	61.147
(d)(5)	61.148
(d)(6)	61.148
(e)	61.148
(f)	61.142-61.152
(g)	61.141
(h)	61.149
(i)	61.150
(j)	61.152
(k)	61.161
(l)	61.153
61.23	61.154
61.24	61.155
61.25	61.156

The authority and basis for this proposal is contained in Section 112(e) of the Clean Air Act, as amended in 1977. This Section provides that the Administrator may promulgate a "design, equipment, work practice, or operational standard, or combination thereof" for control of a hazardous air pollutant if it is infeasible to prescribe an emission standard under Section 112(b) for the pollutant. Such infeasibility occurs, for example, when "a hazardous pollutant or pollutants cannot be emitted through a conveyance designed and constructed to emit or capture such pollutant" or when "the application of measurement methodology to a particular class of sources is not practicable due to technological or economic limitations." For some asbestos emission sources affected by this proposed rulemaking, the Administrator finds that it is not feasible to prescribe a numerical emission limitation because the asbestos cannot be emitted through a

conveyance that readily captures emissions for measurement and because such measurement, in any event, would be technologically and economically impracticable. An example of such a source is the emission of asbestos fibers during the demolition of a building containing friable asbestos materials. For other types of asbestos emission sources, a numerical emission limitation would be feasible under certain conditions but not under others. For example, under normal conditions, a waste disposal site could be operated with no visible emissions. Under high-wind conditions, however, visible emissions could occur even if good work procedures were followed. Therefore, a no visible emission limitation that would be achievable under normal operating conditions would be technologically impracticable during windy conditions. Work-practice standards provide an alternative means of compliance that would represent best available technology under these and other abnormal conditions. The Administrator believes it is important to provide alternative work-practice standards for sources that may not always be able to achieve no visible emissions even though they employ good asbestos emission control procedures. Therefore, the proposed amendments to the asbestos standard would reinstate work practice and other non-numerical standards as the only requirement for some asbestos sources and as an alternative to a numerical emission limit for other sources.

Summary of Proposed Amendments

The following sections and paragraphs were either repromulgated in June 1978 or do not contain work practice or equipment requirements. The Agency is proposing only to reword these for clarity. Therefore, only comments regarding the new wording and not the substantive content of these paragraphs will be considered in this rulemaking. The reworded sections and paragraphs are as follows: § 61.20; § 61.21; § 61.22(a), (c), (d)(1)-(3), (d)(4)(i)-(iv) and (vii), (d)(5), (d)(6)(i)-(iii), (e), (g), (h), (j)(1) and (4), (k)(1), (l)(1); § 61.24; § 61.25(a).

The following sections and paragraphs are being proposed for comment on their content as well as being reworded for clarity: § 61.22(b), (d)(4)(v) and (vi), (d)(6)(iii) and (iv), (f), (i), (j)(2) and (3), (k)(2) and (3), (l)(2)-(5); § 61.23; § 61.25(b)-(e). A discussion of these portions of the asbestos NESHAP is presented below.

Alternative Non-numerical Standards

Several of the paragraphs that are being proposed do not impose any new requirements. Some of these reinstate work practice or equipment specifications that are an alternative to the current no visible emissions standard (an emission limit not affected by the 1978 Supreme Court decision). Others reinstate means of compliance that are alternatives to work practice requirements that were repromulgated in June 1978. All of these are being proposed today to reinstate the alternative means of compliance that EPA believes should be available to those who must comply with the asbestos NESHAP. Since these paragraphs do not impose any new requirements, they would not result in adverse economic or energy impacts to source owners and operators. Following is a discussion of these paragraphs.

Section 61.22(d)(4)(v)

This paragraph reinstates alternative work practices that may be used in lieu of those required in paragraph (d)(4)(ii) (wetting during stripping) during freezing weather. Without this alternative, it might not be possible to carry out demolition operations during freezing weather in some cases. Therefore, beneficial economic impacts may result in those cases, and there would be no adverse economic impacts.

Section 61.22(d)(6)(iii) and (iv).

Paragraph (d)(6) reinstates provisions exempting demolition operations for structurally unsound buildings from most of the NESHAP, although some requirements would apply. Paragraphs (d)(6)(iii) and (iv) contain two of these requirements. The exemption, even with the requirements in paragraphs (d)(6)(iii) and (iv), provides a less restrictive alternative for certain demolition operations. Therefore, proposal of these paragraphs would not result in any adverse economic impacts on demolition operations.

Section 61.22(f), (j)(3), (k)(3)(i) and (ii), (l)(5); § 61.23; and § 61.25(e)

These paragraphs reinstate alternative work practices that may be used in lieu of complying with a no visible emission limit. They would impose no additional costs and, therefore, would result in no adverse economic impacts.

Non-numerical Standards With No Alternatives

The remaining paragraphs being proposed for comment reinstate specific work-practice requirements for which

there are no alternatives. EPA believes that these proposed requirements would not impose significant adverse economic impacts on source owners and operators, as discussed below.

Section 61.22(b)

This paragraph reinstates the prohibition of surfacing roadways with asbestos tailings or asbestos-containing waste. This prohibition is not expected to cause serious adverse economic impacts because road surfacing with asbestos tailings or waste materials is not commonly practiced in the United States. The prohibition is necessary, however, to prevent such surfacing in isolated cases.

Section 61.22(d)(4)(v)

This paragraph would reinstate the requirement that asbestos removed during demolition or renovation be kept wet until disposal is completed. It would also require that the asbestos not be dropped or thrown to the ground or a lower floor and that asbestos removed more than 50 feet above level be transported to the ground in dust-tight chutes or containers (unless it is removed in units or sections).

There would be no significant adverse economic impact resulting from this paragraph. Provisions of the asbestos NESHAP that do not require reinstatement require that the asbestos be adequately wetted during stripping and removal. They also require that there be no visible emissions during the collection, handling, and transporting of the asbestos waste. Demolition and renovation contractors typically transport the asbestos they remove from a facility to a waste disposal site on a daily basis. In order to meet no visible emissions during the collecting and transporting activities, they keep the asbestos wet until it is placed into containers and trucks, and they place it into containers as soon as possible to keep it from drying out and unnecessarily exposing workers to asbestos fibers. Therefore, this paragraph would not significantly affect asbestos removal and collection activities that would occur in its absence. EPA believes it is necessary, however, to ensure that effective asbestos emission control techniques are followed after the asbestos is stripped or removed and before it is taken away to a waste disposal site.

Section 61.22(i)

This paragraph reinstates the prohibition of commercial asbestos in certain molded and wet-applied insulating materials. It is not expected to

result in significant adverse economic materials in the United States since economical substitutes are widely available. EPA believes that there is general compliance with this provision but that the prohibition is necessary to make it clear that this use of asbestos should not be reinstituted.

Section 61.22(j)(2) and (k)(2)

These paragraphs simply refer to the requirements of § 61.25. Those portions of § 61.25 that require repromulgation are discussed below.

Section 61.22(l)(2)-(4) and § 61.25(b)-(d)

These paragraphs reinstate the requirement for warning signs and fencing around asbestos waste disposal sites if: (1) The owner or operator chooses to comply with a no visible emission limit rather than follow specified work practices, and (2) there is no natural barrier to deter access by the general public. Most disposal site owners and operators currently follow the work practices specified and thus would not be required by these amendments to install warning signs and fences, although many States require fencing for all landfills. For the few cases where signs and fencing would not be installed in the absence of these proposed paragraphs, the cost of the signs and fences would be minimal when compared to the cost of the disposal site and its operation. Therefore, there would be no significant adverse economic impacts resulting from these paragraphs.

Public Hearing

A public hearing, if requested, will be held to discuss the proposed amendments to the asbestos standard in accordance with Sections 112(b)(1)(B) and 307(d)(5) of the Clean Air Act. Persons wishing to make oral presentations on the proposed amendments should contact EPA at the address given in the ADDRESSES section of this preamble. Oral presentations will be limited to 15 minutes each. Any member of the public may file a written statement before, during, or within 30 days after the hearing. Written statements should be addressed to the Central Docket Section address given in the ADDRESSES section of this preamble and should refer to docket number A-83-02.

A verbatim transcript of the hearing and written statements will be available for public inspection and copying during normal working hours at EPA's Central Docket Section in Washington, D.C. (see ADDRESSES section of this preamble).

Docket

The docket is an organized and complete file of all the information submitted to or otherwise considered by EPA in the development of this proposed rulemaking. The principal purposes of the docket are: (1) To allow interested parties to identify readily and locate documents so that they can effectively participate in the rulemaking process; and (2) to serve as the record in case of judicial review, except for interagency review materials [§ 307(d)(7)(A)].

Miscellaneous

The Administrator will welcome comments on all aspects of the proposed amendments in § 61.22(b), (d)(4)(v) and (vi), (d)(6)(iii) and (iv), (f), (i), (j)(2) and (3), (k)(2) and (3), (l)(2-5); § 61.23; and § 61.25(b)-(e), including economic and technological issues. For proposed amendments to the remaining portions of the asbestos standard, only comments pertaining to the rewording and rearranging of those portions will be considered by the Administrator.

This regulation will be reviewed within 5 years from the date of promulgation. This review will include an assessment of such factors as the need for intergration with other programs, the existence of alternative methods, enforceability, improvements in emission control technology and health data, and reporting requirements.

Under E.O. 12291, EPA must judge whether a regulation is "major" and therefore subject to the requirement of a Regulatory Impact Analysis. This regulation is not major because it does not meet any of the criteria specified in the Executive Order regarding the annual effect on the economy; increase in cost or prices; or adverse effects on competition, employment, investment, productivity, innovation, or the ability of U.S. enterprises to compete with foreign enterprises.

These information collection requirements have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1980, 44 U.S.C. 3501 *et seq* and have been assigned OMB control number 2000-0284.

This regulation was submitted to the Office of Management and Budget (OMB) for review as required by E.O. 12291.

Pursuant to the provisions of 5 U.S.C. 605(b), I hereby certify that this rule, if promulgated, will not have a significant economic impact on a substantial number of small entities because no significant impact will result.

Dated: June 29, 1983.

William D. Ruckelshaus,
Administrator.

PART 61—(AMENDED)

It is proposed to amend 40 CFR Part 61 by redesignating Subpart B (§§ 61.20-61.25) as Subpart M and revising New Subpart M to read as follows:

Subpart M—National Emission Standard for Asbestos

Sec.

- 61.140 Applicability.
- 61.141 Definitions.
- 61.142 Standard for asbestos mills.
- 61.143 Standard for roadways.
- 61.144 Standard for manufacturing.
- 61.145 Standard for demolition and renovation: Applicability.
- 61.146 Standard for demolition and renovation: Notification requirements.
- 61.147 Standard for demolition and renovation: Procedures for asbestos emission control.
- 61.148 Standard for spraying.
- 61.149 Standard for fabricating.
- 61.150 Standard for insulating materials.
- 61.151 Standard for waste disposal for asbestos mills.
- 61.152 Standard for waste disposal for manufacturing, demolition, renovation, spraying, and fabricating operations.
- 61.153 Standard for inactive waste disposal sites for asbestos mills and manufacturing and fabricating operations.
- 61.154 Air-cleaning.
- 61.155 Reporting.
- 61.156 Active waste disposal sites.

Authority: Sec. 112 and 301(a) of the Clean Air Act, as amended [42 U.S.C. 7412, 7601(a)], and additional authority as noted below.

Subpart M—National Emission Standard for Asbestos

§ 61.140 Applicability

The provisions of this subpart are applicable to those sources specified in §§ 61.142 through 61.153.

§ 61.141 Definitions

All terms that are used in this subpart and are not defined below are given the same meaning as in the Act and in Subpart A of this part.

Active waste disposal site means any disposal site other than an inactive site.

Adequately wetted means sufficiently mixed or coated with water or an aqueous solution to prevent dust emissions.

Asbestos means the asbestiform varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, anthophyllite, and actinolite-tremolite.

Asbestos-containing waste material means any waste that contains commercial asbestos and is generated by a source subject to the provisions of

this subpart. This term includes asbestos mill tailings, asbestos waste from control devices, friable asbestos waste material, and bags or containers that previously contained commercial asbestos. However, as applied to demolition and renovation operations, this term includes only friable asbestos waste and asbestos waste from control devices.

Asbestos material means asbestos or any material containing asbestos.

Asbestos mill means any facility engaged in converting asbestos ore into commercial asbestos. Outside storage of asbestos material is not considered a part of the asbestos mill.

Asbestos tailings means any solid waste that contains asbestos and is a product of asbestos mining or milling operations.

Asbestos waste from control devices means any waste material that contains asbestos and is collected in a pollution control device.

Commercial asbestos means any asbestos that is extracted from asbestos ore.

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

Emergency renovation operation means a renovation operation that was not planned but results from a sudden, unexpected event. This term includes operations necessitated by nonroutine failures of equipment.

Fabricating means any processing of a manufactured product that contains commercial asbestos, with the exception of processing at temporary sites for the construction or restoration of facilities.

Facility means any institutional, commercial, or industrial structure, installation, or building (including apartment buildings having more than four dwelling units).

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

Functional member means any pipe, duct, boiler, tank, reactor, turbine, or furnace at or in a facility.

Inactive waste disposal site means any disposal site or portion of it where additional asbestos-containing waste material will not be deposited and where the surface is not disturbed by vehicular traffic.

Manufacturing means the combining of commercial asbestos—or, in the case of woven friction products, the combining of textiles containing commercial asbestos—with any other material(s), including commercial

asbestos, and the processing of this combination into a product.

Outside air means the air outside buildings and structures.

Particulate asbestos material means divided particles of asbestos material.

Planned renovation operation means a renovation operation, or a number of such operations, in which the amount of friable asbestos material that will be removed or stripped within a given period of time can be predicted. Individual nonscheduled operations are included if a number of such operations can be predicted to occur during a given period of time.

Remove means to take out friable asbestos materials from any facility.

Renovation means refurbishing that includes the removal of friable asbestos materials.

Roadways means surfaces on which motor vehicles travel. This term includes highways, roads, streets, parking areas, and driveways.

Strip means to take off friable asbestos materials from any part of a facility.

Structural member means any load-supporting member of a facility, such as beams and load supporting walls; or any nonload-supporting member, such as ceilings and nonload-supporting walls.

Visible emissions means any emissions containing particulate asbestos material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.

§ 61.142 Standard for asbestos mills.

Each owner or operator of an asbestos mill shall either discharge no visible emissions to the outside air from that asbestos mill or use the methods specified by § 61.154 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.

§ 61.143 Standard for roadways.

No owner or operator of a roadway may deposit asbestos tailings or asbestos-containing waste material on that roadway, unless it is a temporary roadway on an area of asbestos ore deposits.

§ 61.144 Standard for manufacturing.

(a) *Applicability:* This section applies to the following manufacturing operations using commercial asbestos:

(1) The manufacture of cloth, cord, wicks, tubing, tape, twine, rope, thread, yarn, roving, lap, or other textile materials.

(2) The manufacture of cement products.

(3) The manufacture of fireproofing and insulating materials.

(4) The manufacture of friction products.

(5) The manufacture of paper, millboard, and felt.

(6) The manufacture of floor tile.

(7) The manufacture of paints, coatings, caulks, adhesives, and sealants.

(8) The manufacture of plastics and rubber materials.

(9) The manufacture of chlorine.

(10) The manufacture of shotgun shell wads.

(11) The manufacture of asphalt concrete.

(b) *Standard:* Each owner or operator of any of the manufacturing operations to which this section applies shall either:

(1) Discharge no visible emissions to the outside air from these operations or from any building or structure in which they are conducted; or

(2) Use the methods specified by § 61.154 to clean emissions from these operations containing particulate asbestos material before they escape to, or are vented to, the outside air.

§ 61.145 Standard for demolition and renovation: Applicability.

The requirements of §§ 61.146 and 61.147 apply to each owner or operator of a demolition or renovation operation as follows:

(a) If the amount of friable asbestos materials in a facility being demolished is at least 80 linear meters (260 linear feet) on pipes or at least 15 square meters (160 square feet) on structural or other functional members, all the requirements of §§ 61.146 and 61.147 apply, except as provided in paragraph (c) of this section.

(b) If the amount of friable asbestos materials in a facility being demolished is less than 80 linear meters (260 linear feet) on pipes and less than 15 square meters (160 square feet) on structural and other functional members, only the notification requirements of paragraphs (a), (b), and (c) (1), (2), (3), (4), and (5) of § 61.146 apply.

(c) If the facility is being demolished under an order of a State or local governmental agency, issued because the facility is structurally unsound and in danger of imminent collapse, only the requirements in § 61.146 and in paragraphs (d), (e), and (f) of § 61.147 apply.

(d) If more than 80 linear meters (260 linear feet) of friable asbestos materials on pipes or more than 15 square meters (160 square feet) of friable asbestos materials on other functional and structural members are stripped or,

removed at a facility being renovated, all the requirements of §§ 61.146 and 61.147 apply.

(1) To determine whether paragraph (d) of this section applies to planned renovation operations involving individual nonscheduled operations, predict the additive amount of friable asbestos materials to be removed or stripped over the maximum period of time a prediction can be made, not to exceed 1 year.

(2) To determine whether paragraph (d) of this section applies to emergency renovation operations, estimate the amount of friable asbestos materials to be removed or stripped as a result of the sudden, unexpected event that necessitated the renovation.

(e) Owners or operators or demolition and renovation operations are exempt from the requirements of §§ 61.05(a), 61.07, and 61.09.

§ 61.146 Standard for demolition and renovation: Notification requirements.

Each owner or operator to which this section applies shall:

(a) Provide the Administrator with written notice of intention to demolish or renovate.

(b) Postmark or deliver the notice as follows:

(1) At least 10 days before demolition begins if the operation is described in § 61.145(a);

(2) At least 20 days before demolition begins if the operation is described in § 61.145(b);

(3) As early as possible before demolition begins if the operation is described in § 61.145(c);

(4) As early as possible before renovation begins.

(c) Include the following information in the notice:

(1) Name and address of owner or operator.

(2) Description of the facility being demolished or renovated, including the size, age, and prior use of the facility.

(3) Estimate of the approximate amount of friable asbestos material present in the facility. For facilities described in § 61.145(b), explain techniques of estimation.

(4) Location of the facility being demolished or renovated.

(5) Scheduled starting and completion dates of demolition or renovation.

(6) Nature of planned demolition or renovation and method(s) to be used.

(7) Procedures to be used to comply with the requirements of this section.

(8) Name and location of the waste disposal site where the friable asbestos waste material will be deposited.

(9) For facilities described in § 61.145(c), the name, title, and authority

of the State or local governmental representative who has ordered the demolition.

§ 61.147 Standard for demolition and renovation: Procedures for asbestos emission control.

Each owner or operator to whom this section applies shall comply with the following procedures to prevent emissions of particulate asbestos material to the outside air:

(a) Remove friable asbestos material from a facility being demolished before any wrecking or dismantling that would break up the materials or preclude access to the materials for subsequent removal. However, friable asbestos materials need not be removed before demolition if:

(1) They are in a structural or functional member that is encased in concrete or other similar material; and

(2) These materials are adequately wetted whenever exposed during demolition.

(b) When a functional or structural member covered or coated with friable asbestos materials is being taken out of the facility as units or in sections:

(1) Adequately wet any friable asbestos materials exposed during cutting or disjoining operations; and

(2) Carefully lower the units or sections to ground level, not dropping them or throwing them.

(c) Adequately wet friable asbestos materials when they are being stripped from functional or structural members before the members are removed from the facility. In renovation operations, wetting that would unavoidably damage equipment is not required if the owner or operator:

(1) Asks the Administrator to determine whether wetting to comply with this paragraph would unavoidably damage equipment, and, before beginning to strip, supplies the Administrator with adequate information to make this determination; and

(2) When the Administrator does determine that equipment damage would be unavoidable, uses a local exhaust ventilation and collection system designed and operated to capture the particulate asbestos material produced by the stripping and removal of the friable asbestos materials. The system must exhibit no visible emissions to the outside air or be designed and operated in accordance with the requirements in § 61.154.

(d) After a functional or structural member has been taken out of the facility as units or in sections, either:

(1) Adequately wet friable asbestos materials during stripping; or

(2) Use a local exhaust ventilation and collection system designed and operated to capture the particulate asbestos material produced by the stripping. The system must exhibit no visible emissions to the outside air or be designed and operated in accordance with the requirements in § 61.154.

(e) For friable asbestos materials that have been removed or stripped:

(1) Adequately wet the materials to ensure that they remain wet during all remaining stages of demolition or renovation and related handling operations; and

(2) Carefully lower the materials to the ground or a lower floor, not dropping or throwing them; and

(3) Transport the materials the ground via dust-tight chutes or containers if they have been removed or stripped more than 50 feet above ground level and were not removed as units or in sections.

(f) When the temperature at the point of wetting is below 0°C (32°F):

(1) Comply with the requirements of paragraphs (d) and (e) of this section. The owner or operator need not comply with the other wetting requirements in this section; and

(2) Remove functional and structural members coated or covered with friable asbestos materials as units or in sections to the maximum extent possible.

(g) For facilities described in § 61.145(c), adequately wet the portion of the facility that contains friable asbestos materials during the wrecking operation.

§ 61.148 Standard for spraying.

The owner or operator of an operation in which asbestos-containing materials are spray applied shall comply with the following requirements:

(a) Use materials that contain 1 percent asbestos or less on a dry weight basis for spray-on application on buildings, structures, pipes, and conduits, except as provided in paragraph (c) of this section.

(b) For spray-on application of materials that contain more than 1 percent asbestos on a dry weight basis on equipment and machinery, except as provided in paragraph (c) of this section:

(1) Notify the Administrator at least 20 days before beginning the spraying operation. Include the following information in the notice:

(i) Name and address of owner or operator.

(ii) Location of spraying operation.

(iii) Procedures to be followed to meet the requirements of this paragraph.

(2) Discharge no visible emissions to the outside air from the spray-on application of the asbestos-containing material or use the methods specified by § 61.154 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.

(c) The requirements of paragraphs (a) and (b) of this section do not apply to the spray-on application of materials where the asbestos fibers in the materials are encapsulated with a bituminous or resinous binder during spraying and the materials are not friable after drying.

(d) Owners and operators of sources subject to this paragraph are exempt from the requirements of §§ 61.05(a), 61.07, and 61.09.

§ 61.149 Standard for fabricating.

(a) *Applicability.* This section applies to the following fabricating operations using commercial asbestos:

(1) The fabrication of cement building products.

(2) The fabrication of friction products, except those operations that primarily install asbestos friction materials on motor vehicles.

(3) The fabrication of cement or silicate board for ventilation hoods; ovens; electrical panels; laboratory furniture, bulkheads, partitions, and ceilings for marine construction; and flow control devices for the molten metal industry.

(b) *Standard.* Each owner or operator of any of the fabricating operations to which this section applies shall either:

(1) Discharge no visible emissions to the outside air from any of the operations or from any building or structure in which they are conducted; or

(2) Use the methods specified by § 61.154 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.

§ 61.150 Standard for insulating materials.

After the effective date of this regulation, no owner or operator may install insulating materials that contain commercial asbestos if the materials are either molded and friable or wet-applied and friable after drying. The provisions of this paragraph do not apply to spray-applied insulating materials regulated under § 61.148.

§ 61.151 Standard for waste disposal for asbestos mills.

Each owner or operator of any source covered under the provisions of § 61.142 shall:

(a) Deposit all asbestos-containing waste material at waste disposal sites

operated in accordance with the provisions of § 61.156; and

(b) Discharge no visible emissions to the outside air from the transfer of asbestos waste from control devices to the tailings conveyor, or use the methods specified by § 61.154 to clean emissions containing particulate particulate asbestos material before they escape to, or are vented to, the outside air. Dispose of the asbestos waste from control devices in accordance with § 61.152(b) or paragraph (c) of this section; and

(c) Discharge no visible emissions to the outside air during the collection, processing, packaging, transporting, or deposition of any asbestos-containing waste material, or use one of the disposal methods specified in paragraphs (c)(1) or (2) of this section, as follows:

(1) Use a wetting agent as follows:

(i) Adequately mix all asbestos-containing waste material with a wetting agent recommended by the manufacturer of the agent to effectively wet dust and tailings, before depositing the material at a waste disposal site. Use the agent as recommended for the particular dust by the manufacturer of the agent.

(ii) Discharge no visible emissions to the outside air from the wetting operation or use the methods specified by § 61.154 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.

(iii) Wetting may be suspended when the ambient temperature at the waste disposal site is less than -0.5°C (15°F). Determine the ambient air temperature by an appropriate measurement method with an accuracy of ±1°C (±2°F), and record it at least hourly while the wetting operation is suspended. Keep the records for at least 2 years in a form suitable for inspection.

(2) Use an alternative disposal method that has received prior approval by the Administrator.

§ 61.152 Standard for waste disposal for manufacturing, demolition, renovation, spraying, and fabricating operations.

Each owner or operator of any source covered under the provisions of §§ 61.144-61.149 shall:

(a) Deposit all asbestos-containing waste material at waste disposal sites operated in accordance with the provisions of § 61.156; and

(b) Discharge no visible emissions to the outside air during the collection, processing (including incineration), packaging, transporting, or deposition of any asbestos-containing waste material generated by the source, or use one of

the disposal methods specified in paragraphs (b)(1), (2), or (3) of this section, as follows:

(1) Treat asbestos-containing waste material with water:

(i) Mix asbestos waste from control devices with water to form a slurry; adequately wet other asbestos-containing waste material; and

(ii) Discharge no visible emissions to the outside air from collection, mixing, and wetting operations, or use the methods specified by § 61.154 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air; and

(iii) After wetting, seal all asbestos-containing waste material in leak-tight containers while wet; and

(iv) Label the containers specified in paragraph (b)(1)(iii) as follows:

CAUTION

Contains Asbestos

Avoid Opening or

Breaking Container

Breathing Asbestos is Hazardous to Your Health

Alternatively, use warning labels specified by Occupational Safety and Health Standards of the Department of Labor, Occupational Safety and Health Administration (OSHA) under 29 CFR 1910.1001(g)(2)(ii).

(2) Process asbestos-containing waste material into nonfriable forms:

(i) Form all asbestos-containing waste material into nonfriable pellets or other shapes; and

(ii) Discharge no visible emissions to the outside air from collection and processing operations, or use the methods specified by § 61.154 to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.

(3) Use an alternative disposal method that has received prior approval by the Administrator.

§ 61.153 Standard for inactive waste disposal sites for asbestos mills and manufacturing and fabricating operations.

Each owner or operator of any inactive waste disposal site that was operated by sources covered under §§ 61.142, 61.144, or 61.149 and received deposits of asbestos-containing waste material generated by the sources, shall

(a) Comply with one of the following:

(1) Either discharge no visible emissions to the outside air from an inactive waste disposal site subject to this paragraph; or

(2) Cover the asbestos-containing waste material with at least 15 centimeters (6 inches) of compacted

nonasbestos-containing material, and grow and maintain a cover of vegetation on the area adequate to prevent exposure of the asbestos-containing waste material; or

(3) Cover the asbestos-containing waste material with at least 60 centimeters (2 feet) of compacted nonasbestos-containing material, and maintain it to prevent exposure of the asbestos-containing waste; or

(4) For inactive waste disposal sites for asbestos tailings, apply a resinous or petroleum-based dust suppression agent that effectively binds dust and controls wind erosion. Use the agent as recommended for the particular asbestos tailings by the manufacturer of the dust suppression agent. Obtain prior approval of the Administrator to use other equally effective dust suppression agents. For purposes of this paragraph, waste crankcase oil is not considered a dust suppression agent.

(b) Unless a natural barrier adequately deters access by the general public, install and maintain warning signs and fencing as follows, or comply with paragraph (a)(2) or (a)(3) of this section.

(1) Display warning signs at all entrances and at intervals of 100 m (330 feet) or less along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material was deposited. The warning signs must:

(i) Be posted in such a manner and location that a person can easily read the legend; and

(ii) Conform to the requirements for 51 cm x 38 cm (20" x 14") upright format signs specified in 29 CFR 1910.145(d)(4) and this paragraph; and

(iii) Display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

Legend	Notation
Asbestos Waste Disposal Site.	2.5 cm (1 inch) Sans Serif, Gothic or Block.
Do Not Create Dust.	1.9 cm (¾ inch) Sans Serif, Gothic or Block.
Breathing Asbestos is Hazardous to Your Health.	14 Point Gothic.

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

(2) Fence the perimeter of the site in a manner adequate to deter access by the general public.

(3) Upon request and supply of appropriate information, the Administrator will determine whether a fence or a natural barrier adequately deters access by the general public.

(c) The owner or operator may use an alternative control method that has received prior approval of the Administrator rather than comply with the requirements of paragraph (a) or (b) of this section.

§ 61.154 Air-cleaning.

(a) The owner or operator who elects to use air-cleaning, as permitted by §§ 61.142, 61.144, 61.147(c)(2), 61.147(d)(2), 61.148(b)(2), 61.149(b), 61.150(b)(1)(ii), and 61.150(b)(2)(ii) shall:

(1) Use fabric filter collection devices, except as noted in paragraph (b) of this section, doing all of the following:

(i) Operating the fabric filter collection devices at a pressure drop of no more than 4 inches water gage, as measured across the filter fabric; and

(ii) Ensuring that the airflow permeability, as determined by ASDM Method D737-75, does not exceed 9 m²/min/m² (30 ft²/min/ft²) for woven fabrics or 11 m²/min/m² (35 ft²/min/ft²) for felted fabrics, except that 12 m²/min/m² (40 ft²/min/ft²) for woven and 14 m²/min/m² (45 ft²/min/ft²) for felted fabrics is allowed for filtering air from asbestos ore dryers; and

(iii) Ensuring that each square meter of felted fabric weighs at least 237 grams (14 ounces) and is at least one-sixteenth inch thick throughout; and

(iv) Avoiding the use of synthetic fabrics that contain fill yarn other than that which is spun.

(2) Properly install, use, operate, and maintain all air-cleaning equipment authorized by this section. Bypass devices may be used only during upset or emergency conditions and then only for so long as it takes to shut down the operation generating the particulate asbestos material.

(b) There are the following exceptions to paragraph (a)(1):

(1) If the use of fabric filters creates a fire or explosion hazard, the Administrator may authorize as a substitute the use of wet collectors designed to operate with a unit contacting energy of at least 9.95 kilopascals.

(2) The Administrator may authorize the use of filtering equipment other than that described in paragraphs (a)(1) and (b)(1) of this section if the owner or operator demonstrates to the Administrator's satisfaction that it is equivalent to the described equipment in filtering particulate asbestos material.

§ 61.155 Reporting.

(a) Within 90 days after the effective date of this subpart, each owner or operator of any existing source to which this subpart applies shall provide the

following information to the Administrator:

(1) A description of the emission control equipment used for each process; and

(2) If a fabric filter device is used to control emissions, the pressure drop across the fabric filter in inches water gage; and

(i) If the fabric filter device uses a woven fabric, the airflow permeability in m²/min/m² and; if the fabric is synthetic, whether the fill yard is spun or not spun; and

(ii) If the fabric filter device uses a felted fabric, the density in g/m², the minimum thickness in inches, and the airflow permeability in m²/min/m².

(3) For sources subject to §§ 61.151 and 61.152:

(i) A brief description of each process that generates asbestos-containing waste material; and

(ii) The average weight of asbestos-containing waste material disposed of, measured in kg/day; and

(iii) The emission control methods used in all stages of waste disposal; and

(iv) The type of disposal site or incineration site used for ultimate disposal, the name of the site operator, and the name and location of the disposal site.

(4) For sources subject to § 61.153:

(i) A brief description of the site; and

(ii) The method or methods used to comply with the standard, or alternative procedures to be used.

(b) The information required by paragraph (a) of this section must accompany the information required by § 61.10. The information described in this section must be reported using the format of Appendix A of this part.

(Sec. 114, Clean Air Act as amended (42 U.S.C. 7414)

§ 61.156 Active waste disposal sites.

To be an acceptable site for disposal of asbestos-containing waste material under §§ 61.151 and 61.152, an active waste disposal site must meet the requirements of this section.

(a) Either there must be no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, or the requirements of paragraph (c) or (d) of this section must be met.

(b) Unless a natural barrier adequately deters access by the general public, either warning signs and fencing must be installed and maintained as follows, or the requirements of paragraph (c)(1) or (c)(2) of this section must be met.

(1) Warning signs must be displayed at all entrances and at intervals of 100 m (330 ft) or less along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material is deposited. The warning signs must:

(i) Be posted in such a manner and location that a person can easily read the legend; and

(ii) Conform to the requirements of 51 cm x 36 cm (20" x 14") upright format signs specified in 29 CFR 1910.145(d)(4) and this paragraph; and

(iii) Display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

Legend	Notation
Asbestos Waste Disposal Site	2.5 cm (1 inch) Sans Serif, Gothic or Block.
Do Not Create Dust	1.9 cm (3/4 inch) Sans Serif, Gothic or Block.
Breathing Asbestos is Hazardous to Your Health.	1.4 Point Gothic.

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

(2) The perimeter of the disposal site must be fenced in a manner adequate to deter access by the general public.

(3) Upon request and supply of appropriate information, the Administrator will determine whether a fence or a natural barrier adequately

deters access by the general public.

(c) Rather than meet the no visible emission requirement of paragraph (a) of this section, an active waste disposal site would be an acceptable site if at the end of each operating day, or at least once every 24-hour period while the site is in continuous operation, the asbestos-containing waste material which was deposited at the site during the operating day or previous 24-hour period is covered with either:

(1) At least 15 centimeters (6 inches) of compacted nonasbestos-containing material, or

(2) A resinous or petroleum-based dust suppression agent that effectively binds dust and controls wind erosion. This agent must be used as recommended for the particular dust by the manufacturer of the dust suppression agent. Other equally effective dust suppression agents may be used upon prior approval by the Administrator. For purposes of this paragraph, waste crankcase oil is not considered a dust suppression agent.

(d) Rather than meet the no visible emission requirement of paragraph (a) of this section, an active waste disposal site would be an acceptable site if an alternative control method for emissions that has received prior approval by the Administrator is used.

(Secs. 112 and 301(a) of the Clean Air Act as amended (42 U.S.C. 7412, 7601(a))

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**Industrial Hygiene
Technical Bulletin**

No. 83-3

Date: 1983 June 15

RE: ASBESTOS EXPOSURES

Due to the very serious nature of asbestos exposure hazards, a closer look was taken at our policies and procedures for controlling such exposures. Starting in 1978, Alcoa implemented an Asbestos Replacement Program with the objective of making our operations as free of asbestos-containing materials as possible. While the program has met with considerable success, there are still some applications where acceptable substitutes have not been found. Likewise, we currently have numerous applications where asbestos products were used in past construction and are still in place. This situation may pose a potential health hazard in the event that asbestos-containing materials become capable of fiber release (i.e. due to deterioration, water damage, etc.), or during renovation or demolition activities.

The purpose of this technical bulletin is to clarify Alcoa's policy and procedures for job tasks involving exposures to asbestos fibers. It applies to both renovation or demolition of asbestos-containing materials, as well as routine or repetitive job tasks involving asbestos exposures. Attached please find a one page flow chart entitled "Asbestos Exposure Procedures" which summarizes the requirements outlined in the following text based upon job activity and air monitoring data.

I. DEFINITIONS

- A. "Asbestos fiber" means a fibrous form of asbestos longer than 5 microns with a length-to-diameter ratio of at least 5 to 1, and with a maximum diameter of 3 microns.
- B. "Friable asbestos" means any material that contains more than 1% asbestos by weight and that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.
- C. "Action Level" is defined as 0.1 fibers/cc (8 hour TWA). Medical surveillance, air monitoring and employee training requirements are triggered at the action level.
- D. "Alcoa Permissible Limit (APL)" is defined as 0.5 fibers/cc (8 hour TWA). Respiratory protection is required when exposures may exceed the APL. Likewise, a respiratory protection program (employee training, fit testing, medical approval, etc.) must be implemented.
- E. "Routine or Repetitive Job Tasks" means employees engaged in work activities involving exposures to asbestos fibers on an average frequency of an 8 hour shift per month or greater. (Examples include working with marine headers, trough linings, thermocouple wire, brake lining, etc.).

- F. "Renovation or Demolition" means those activities involving the removing, stripping, wrecking, or taking out of friable asbestos from any structural member. (Examples include removing asbestos pipe insulation, furnace tearouts, etc.).

II. JOB CLASSIFICATIONS

A. Routine or Repetitive Job Tasks.

The industrial hygienist should assess all job tasks involving routine or repetitive exposures to asbestos fibers. (Examples given in Definitions section.) Industrial hygiene sampling for asbestos should be performed if such is not already the case. If asbestos concentrations are below the action level, and you are not relying on engineering controls (i.e. local exhaust) to reduce the airborne concentration, no further action is required, pending process or product changes that might potentially increase the airborne fiber concentrations. Areas relying on engineering controls to reduce airborne asbestos fibers should be sampled at least annually to evaluate the effectiveness of the controls. If exposure levels are between the action level and APL, employees must be trained in the safe handling of asbestos and receive medical surveillance. Routine monitoring should be performed on a 6 month basis. When exposures are found to equal or exceed the APL, the procedures mentioned above as well as respiratory protection will be required. Disposable protective clothing may also be necessary.

B. Renovation or Demolition Job Tasks.

Typically, maintenance tasks involving renovation or demolition activities represent likely potential excessive exposures. The prudent course for such job tasks would be to automatically implement the appropriate precautionary measures: (1) medical surveillance, (2) respiratory protection, (3) employee training and (4) protective clothing (as necessary). Wherever possible, wet down the material to be removed to minimize dust. Do not use water if electrical or other hazards exist (i.e., water on phosphorous-containing refractories may result in phosphine gas formation).

The following sections offer supporting detail concerning required industrial hygiene safeguards when working with asbestos-containing materials.

III. REQUIREMENTS

A. Medical Surveillance.

Employees exposed above the action level on an average frequency of one eight hour shift per month or greater will re-

ceive an annual medical examination. This periodic evaluation will include a questionnaire to elicit the symptomatology of respiratory disease, pulmonary function tests (FVC and FEV_{1.0}), and a chest roentgenogram. Employees should be notified of any abnormalities within 30 days of such a finding by the evaluating physician.

B. Employee Training

All employees exposed to asbestos concentrations above the action level shall receive annual training in the proper handling of asbestos. This program should include an explanation of the following:

- (1) The requirements outlined in this bulletin.
- (2) Hazardous properties of asbestos.
- (3) Work practices and engineering controls utilized to reduce exposures.
- (4) Safe work procedures for handling asbestos-containing materials.
- (5) The effectiveness of personal protective equipment.

Attendance at such training sessions should be documented and filed appropriately.

C. Air Monitoring

All tasks involving potential exposures to asbestos require baseline sampling. Routine air monitoring should be continued on a six month basis for routine or repetitive job tasks with asbestos concentrations at or above the action level. If exposure levels are found to be below the action level, air monitoring should be performed if process or product changes occur which might potentially increase the airborne fiber concentrations. If reliance on engineering controls is necessary to reduce exposures below the action level, annual monitoring should be performed to evaluate the effectiveness of the controls.

D. Respiratory Protection

Respirators are required of anyone performing a job task whose potential exposure to airborne asbestos fibers may exceed the APL. This would include all demolition/renovation activities, and may include routine or repetitive job tasks, depending upon industrial hygiene sampling data.

For exposures up to 10 fibers/cc, the following NIOSH approved respirators are acceptable for protection against asbestos fibers:

3M 8710, 9900, 9910 or 9920
AO R1070
Willson 1410
MSA Comfo II with Type F Filter

Exposures in excess of 10 fibers/cc require the use of a NIOSH approved powered air purifying respirator, or a type "C" supplied air respirator.

While the Alcoa Permissible Limit determines the requirement for respiratory protection, disposable respirators should be made available to all employees with potential asbestos exposure who desire to wear them, regardless of their levels of exposure. When respiratory protection is used, a respirator program in compliance with Alcoa Engineering Standard 18.1.1 must be established and implemented. Annual fit-testing and training, medical approval, NIOSH approved respirators, and written SOP's should be included with this program.

E. Protective Clothing

The area of protective clothing (disposable garments) is best left up to the judgement of the plant industrial hygienist after an assessment of the job task and its associated dust exposures have been made. For demolition or renovation activities in which there is a considerable amount of dust generation, or when fibers may accumulate on work clothing, disposable protective clothing is warranted and required. All contaminated protective clothing, as well as respirators, should be disposed of as asbestos-containing material.

F. EPA Requirements

The Clean Air Act regulates removal, cleanup, and disposal of asbestos material under certain circumstances: (1) the material is "friable asbestos", and (2) asbestos is removed from renovation or demolition work, and (3) asbestos material quantity is greater than 260 linear feet of pipe covering and 160 ft² from other sources.

If only the first two considerations exist, only notification procedures are required. If all three conditions exist, Clean Air Act Regulations Subpart B, Parts 61.22(d), (i), (j), (l) must be followed. Contact the Plant Environmental Control Department for assistance with the above.

IV. ALCOA'S ASBESTOS REPLACEMENT PROGRAM

Alcoa's Asbestos Replacement Program was instituted in 1978 with the objective of making our plants as free of asbestos materials as possible. Suitable replacements for most, but not all, asbes-

tos products have been found. Efforts to find replacements for the remaining applications will continue.

It is imperative that accurate records be kept to identify areas where asbestos-containing materials are being used, or have been used in past construction. To minimize potential health hazards associated with renovation or demolition of asbestos products, all maintenance projects should be reviewed for potential asbestos exposures prior to starting the job. If asbestos is suspected, the material should be treated as such unless laboratory analysis confirms otherwise. Samples of bulk material can be analyzed by Alcoa's Environmental Health Laboratory.

Asbestos materials in good condition which do not represent likely exposures should not be removed simply because they contain asbestos since doing so may present a greater hazard during the actual removal. However, a routine inspection program of the material should be implemented to insure that the situation does not change.

If you have any questions concerning the above, please do not hesitate to contact me.

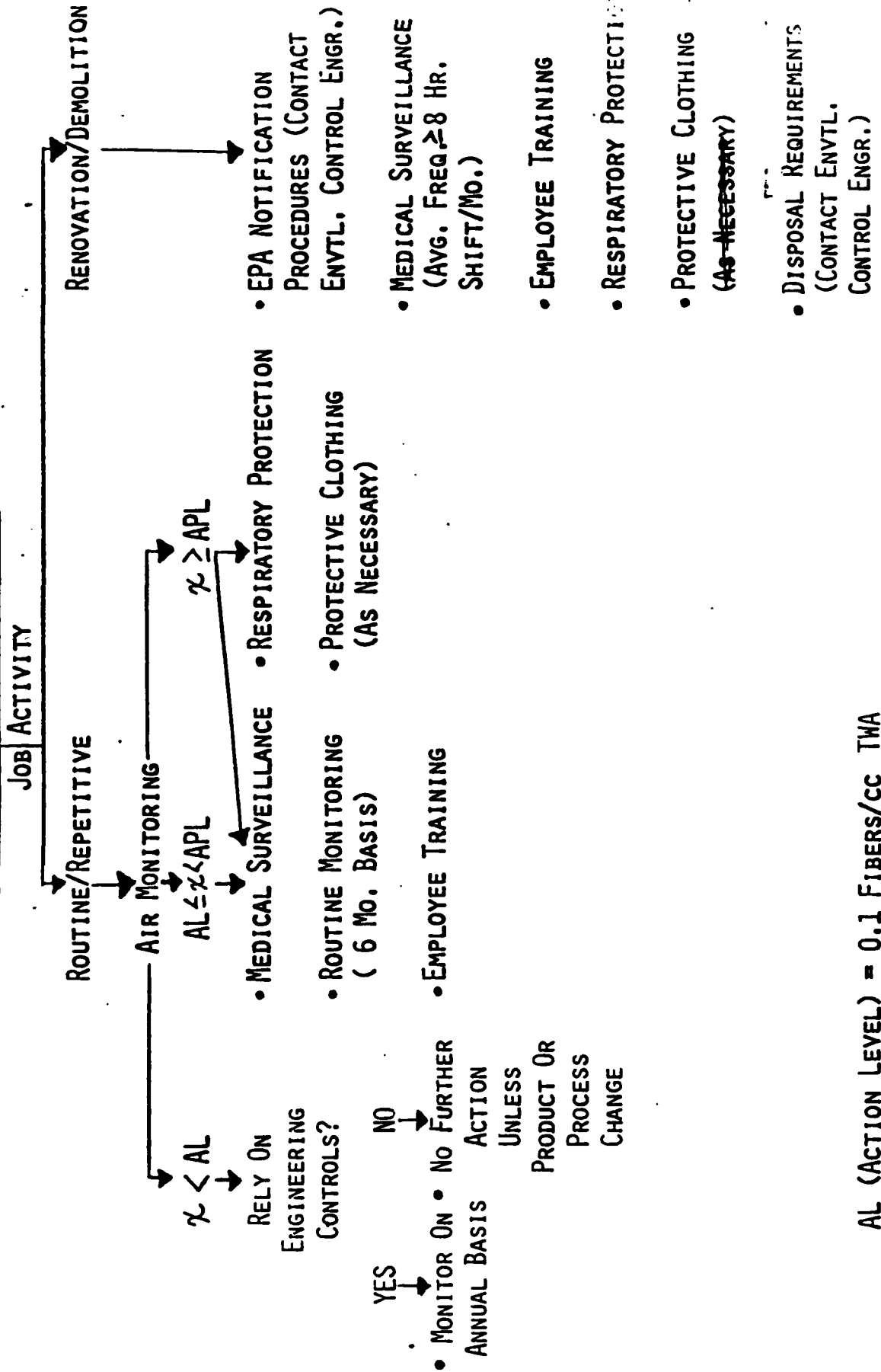
JOAN E. SANDER

JES:sc

Distribution: I. H. Distribution List

I. H. Plant Contacts
Industrial Hygienists - International
I. H. Division - Pittsburgh & ATC
I. H. Technicians
Pittsburgh & ATC - General

ASBESTOS EXPOSURE PROCEDURES



AL (ACTION LEVEL) = 0.1 FIBERS/CC TWA

APL (ALCOA PERMISSIBLE LIMIT) = 0.5 FIBERS/CC TWA