3

PLAINTIFF'S EXHIBIT GP-15

U. S. DEPARTMENT OF LABOR

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
REGION X

SEATTLE AREA OFFICE

ROOM 1906 SMITH TOWER
506 SECOND AVENUE
SEATTLE, WASHINGTON 98104

January 22, 1973

TO: EMPLOYERS USING ASBESTOS

SUBJECT: Asbestos Hazard Control

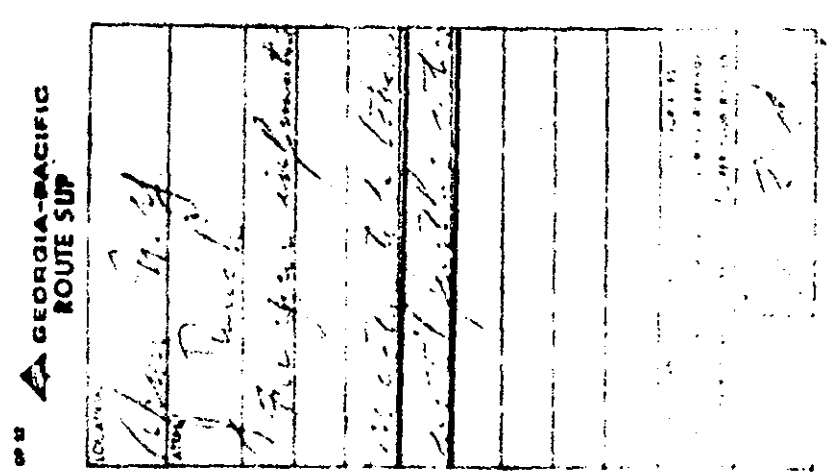
GENTLEMEN:

The enclosed package of selected materials is oriented toward the employers' role in developing an asbestos control program.

If you have specific comments, suggestions or questions regarding the asbestos standard, please write them on this sheet and return to the course instructor, or by mail at the above address.

Sincerely,

R. L. Beeston



ASBESTOS HAZARD CONTROL - GENERAL

CHANGING WORK PRACTICES IS A SIMPLE, ECONOMICAL, AND PRACTICAL APPROACH TO CONTROL OF ASBESTOS DUST PRODUCTION

Some recommended practices are :

1. Use plastic waste bags for collection, transportation, and waste disposal of asbestos refuse.

2. Use a portable industrial vacuum cleaner for pick-up of asbestos waste and dust at the work site.

3. Use plastic impregnated paper coveralls and dust respirators for dusty operations of an incidental nature. The coveralls are throw-away and eliminate processing and cleaning.

4. Use down-draft ventilated portable work tables for precutting and assembly of asbestos materials at remote locations, mobile situations or inside ships.

5. Precut all block insulation in shops under ventilated condition and then deliver it to location.

6. Deliver precut block insulation in plastic and add water to contain dust, to retain integrity of cores, identification, and ease of handling.

7. Reduce airborne asbestos dust 50 to 90 % by prewetting the materials before handling.

8. Mix asbestos cement (14%) at remote locations under ventilated conditions. Mix small batches in plastic bags.

9. Spread plastic or canvas drop cloths at work site to contain and facilitate clean-up.

10. Conduct modular assembly of asbestos materials on piping prior to installation.

EMPLOYER'S ASBESTOS CONTROL PROGRAM CHECK-LIST

The broad requirements of any asbestos control program should include :

First: Initiate a respirator program immediately to reduce exposures until other control measures can be developed.

Second: Identify obvious dusty operations, or potential sources of asbestos dust.

Third: Develop capabilities for both personnel and environmental monitoring. Otherwise the exact exposures or dust level ranges are unknown.

Fourth: Examine work practices to identify those causing dust production and eliminate, modify, or explore alternate ways.

Fifth: Initiate engineering controls that will have a sustained effect; such as, substitution of materials, new methods, ventilation control, isolation, enclosure and dust collection.

Sixth: An educational program is necessary to explain program directives, changes of work practices, techniques, and medical requirements.

Seventh: Medical programs are now required. Each asbestos worker must be medically and environmentally monitored. Record keeping and availability of the records to both the worker, his physician and to OSHA or NIOSH are embodied in the requirement.

11. Consider disposable forms of respiratory protection for onetime or intermittent use situations.
(U.S. Bureau of mines Approved.)

12. Substitute non-asbestos products whenever suitable,acceptable and feasible.

13. Use enclosures to limit the spread of dust from unit operations.

14. Seperate clean-up areas for workmen.

15. Limit exposure of other trades in the vicinity of asbestos work.

16. Develop asbestos work stations, either portable or stationary , to control dust production.

17. Develop suitable storage and storing areas.

Some practices that produce high asbestos dust levels :
and SHOULD be prohibited

. Do not clean up fallen asbestos debris with brooms or brushes.

. Do not allow debris to be thrown from staging or from one deck to another.

. Do not store coveralls or drop cloths.

. Do not remove respirators before asbestos dust laden clothing.

. Do not clear dusty clothes with an air gun.

. Do not vent asbestos dust picked up by ventilation into adjoining work areas,or clean compartments.

. Do not wear respirators covered with asbestos dust.

. Do not wear street clothes to handle asbestos materials or under known dusty conditions.

. Do not use asbestos for welders pads.

. Do not allow uncontrolled cutting,ripping,sawing,or bracking of asbestos in small enclosed spaces.

TYPICAL OSHA SAMPLING DATA SHEET

Substance:

Asbestos.

Standard:29 CFR 1910.93a(b),(1) and(3) of June 7,1972

8-hour time-weighted average:5 fibers,longer than 5 micrometers,per cubic centimeter of air.

Ceiling concentration:10 fibers,longer than 5 micrometers,per cubic centimeter of air.

Analytical Method:

Fibers counted at 400-450 Magnification,using phase contrast illumination, with sample mounted in high-viscosity solution of membrane filter material.

Sampling Equipment:

Personal sampling pump plus Millipore type AA Filter (37mm,0.8u pore size). Face cap is removed and filter used open face during sampling. Sample rate: 2 liters per minute.

Sample Size:

Minimum period of 15 minutes for evaluation of ceiling limit. Several samples of up to 4 hours for evaluation of 8-hour average. Samples with a visible deposit may be too heavy to count. Compare with a clean filter. Heavy concentratio of visible dust in the air (100-500 fibers/cc) may require short sampling periods o only 5 minutes,or less.

Blanks:

With each batch of samples submit two filters which are subjected to exactly the same handling as for the samples except that no air is drawn through them. Label these as blanks.

Shipping:

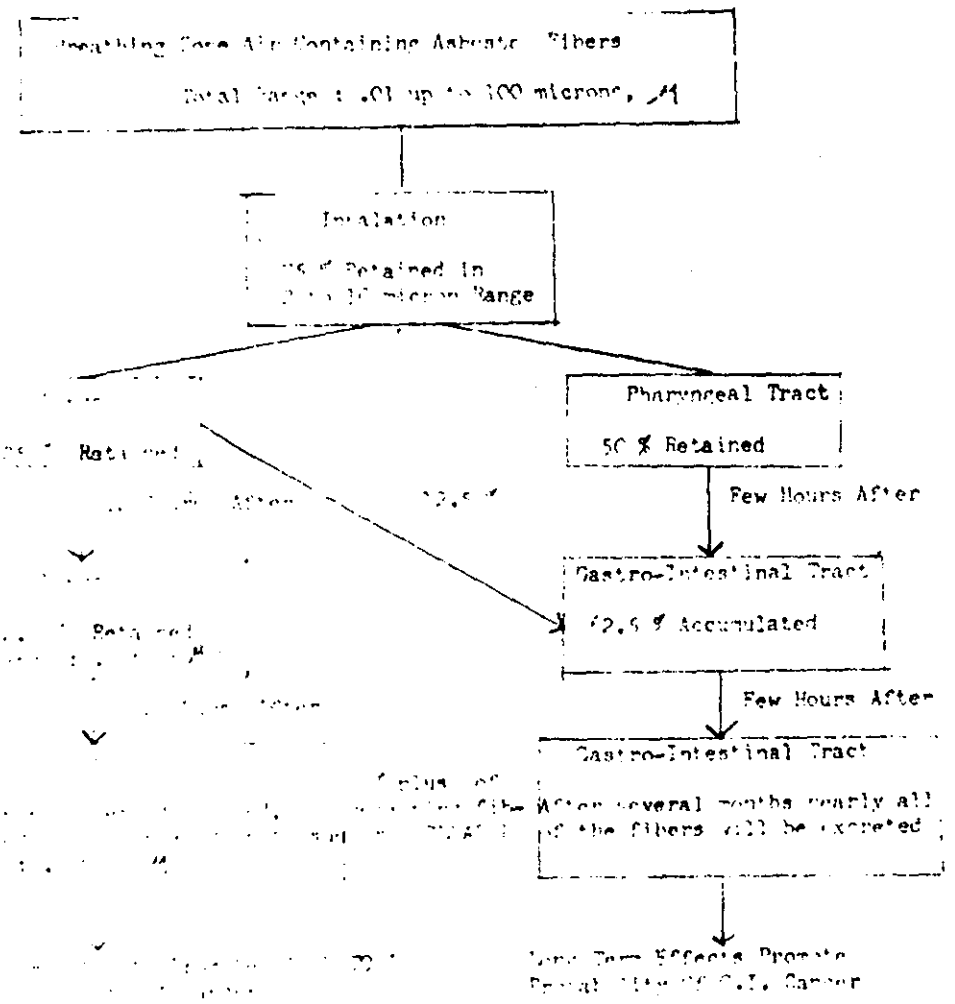
The cassettes in which the samples are collected should be shipped in a suitable container,designated to prevent damage in transit.

Formula used for Limits:

$$E = \frac{C_1T_1 + C_2T_2 + \ldots C_nT_n}{8}$$

E = equivalent exposure for the 8-hour workshift.
C_1 = fiber concentration for the period T_1
C_2 = fibers at concentration C_2
T_n = a series of numbered samples and exposure times.

PATH OF INHALED ASBESTOS FIBER



PREDICTED ASBESTOS DUST CONCENTRATIONS

(Taken From Actual Measurements Of Industrial Operations)

Type of Work	Present Fibers/ml	Improved	Change of Work Practice & Approved Respirator
1. Mixing & Applying Cement and Cloth to Insulation Material			
Good Ventilation	2.5	.5	.05
Poor Ventilation	4.6	1.0	.10
2. Cutting & Applying Insulation Block or Sections to Piping			
Good Ventilation	5.2	2.5	.30
Poor Ventilation	11.5	5.0	.50
[illegible] Materials			
Zn [illegible]	[illegible]	1.5	.20
3. Spraying Turbines or [illegible] Spaces			
[illegible] Operator	[illegible]	.7	3.0
[illegible] Bender	[illegible]	.1	1.0
4. [illegible] Cutting [illegible]	[illegible]	10	.5
5. [illegible]			
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	20	5
6. [illegible]	[illegible]	5	1
7. [illegible]			
[illegible]		[illegible]	1
[illegible]		[illegible]	1

Type of Work	Present	Improved	Change of Work Practice & Approved Respirator
8. Amosite Installation on Chips (enclosed Spaces)	10-45	10	1
9. Chrysotile Block Cutting Installation			
Ventilated	5	2	1
Unventilated	25	5	1
10. Asbestos Cement Mixing			
Open	100-200	25	10
Enclosed Bag	3	1	1
11. Spraying Asbestos Materials (5%) on New [illegible]	68-100	50	10
12. Mixing Charging at Hopper	10-40	10	5
13. Incidental Exposure from Spraying Nozzle 75 Feet away	40-60 75-100	30	5
14. [illegible] Down of Mip-out [illegible]	50-70	20	5
15. [illegible] of Materials-dry	200+	100+	50
16. [illegible]	[illegible]	10	2
17. [illegible] Covered [illegible] Dust	5 (Intermittent)	1	> 1