

Mr. Roy Degesero Environmental

I would now like to introduce ~~DR. DUCOMMUN~~ from our Medical
Dept. RESEARCH. Roy -

Mr. Degesero & Dr. Ducommun have presented the technical
aspects to us with several recommendations - you might now
be asking yourselves "NOW WHAT DO WE DO?"
LARRY WARREN will now discuss PERSONAL PROTECTION with us.

SUMMARY:

1 1/2 HOUR

As you can see, the past ~~35 minutes~~ presentation, ~~questions~~
~~and answers~~, affects ALL of us. Those of us in management
have a moral and legal obligation to see that you have a
safe environment in which to work. To continue our efforts
to give you a safe place to work -- we are obviously going
to eliminate any insulating material containing asbestos * TRAX PAR
ASAP. Starting August 11, in specific areas, until adequate
substitutions are acquired, approved respiratory equipment
must be worn.

Thank you for your attention.

INTRO. DR. KRANTZ

↳ We will now attempt to answer
any question you might have at this
Time.

RECOMMENDATIONS

1. USE LOCAL VENTILATION
2. USE APPROVED RESPIRATORY PROTECTION
3. REPLACE INSULATING MATERIALS CONTAINING ASBESTOS

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S U M M A R Y

1. WE HAVE A KNOWN HEALTH PROBLEM.
2. THE SOLUTIONS MAY NOT BE POPULAR.
3. WE HAVE A CHOICE BETWEEN PROTECTING EMPLOYEE HEALTH - OR - OCCASIONAL DISCOMFORT.

WE ARE GOING TO PROTECT YOUR HEALTH :

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Good day, Gentlemen. My name is Roy DeGesero. Supervision requested an ~~environmental study~~ of Midland pipe coverers' ~~Exposure to dusts from insulating materials~~ used here in Midland. These dusts contained asbestos and fiberglass. I shall present the results of the study, conducted from January to April, 1969, then turn the meeting over to members of Medical and management.

Before discussing what the exposures are, I'd like to define a term you'll hear several times today. That term is ~~"time-weighting"~~. ~~"Time-weighting" means that we look~~ at ~~what~~ you do, and ~~how often~~ you do it, and ~~exposure~~ of a certain dust you fellows are exposed to at these times.

We learned how often and how long pipe coverers perform the several most common jobs of pipe covering by talking to you men, your supervision, looking at the time study and from personal observations. We decided on this basis where to sample the air containing dusts caused by pipe covering. The sampling gave us a concentration number of millions of particles of dust per cubic foot -- an expression of how much dust is in the air you men breathe.

(SHOW SLIDE I)

This table is a list of the most common operations pipe coverer's perform: removing old covers, mixing adhesives and so forth. Next to the operations are the % Day or estimated average time spent by a pipe coverer performing these operations. Then next to that are the mean concentrations in mppcf measured for each operation with each material listed, and the range of concentrations. Finally, we see a column with the fractional products of time x concentration, for each material in each operation. When this column of fractions is totaled, we have arrived at a time-weighted exposure, and can then discuss the significance of this number. For men working indoors, the time-weighted average exposure to asbestos containing dusts was 4.9 mppcf in the 8-hour day. The time-weighted exposure to fiberglass (dust) was 0.5 mppcf.

(SHOW SLIDE II)

This table represents the time-weighted exposures to asbestos containing dusts for men working outdoors. That number is 4.2 mppcf and reflects the fact that some air movement outdoors tends to dilute the dust. The time-weighted exposure to fiberglass dust was 0.4 mppcf.

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After obtaining a time-weighted exposure, we then relate this exposure number to the best current information available on the health experience with asbestos and fiberglas. A group of advisors called the American Conference of Governmental Industrial Hygienists has gathered up as much sound data as is available from laboratory research and field experience on the health problems associated with insulating materials, and the ACGIH expresses this information in numbers called the Threshold Limit Values; asbestos has one TLV, and fiberglas has another, different TLV.

The Threshold Limit Value describes a 1W average concentration of dust to which men can be repeatedly exposed for 8 hours with no adverse effect on health. This average number can be exceeded for brief periods of time, provided such excesses are balanced by equally long periods of time when exposures are below the average Threshold Limit Value. For asbestos, the present TLV is 5 million ppcf, based on knowledge accumulated 30 years ago. Present experience with health problems in

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insulators and others working with asbestos has suggested that the Threshold Limit Value be lowered by 1971 from 5 mppcf to 2 mppcf, in light of very subtle health problems.

The TLV number represents good practice and is used by most governmental agencies in maintaining healthy work environments. As you can see, the time-weighted exposures we have measured for asbestos containing dusts are above this proposed TLV of 2 mppcf. The time-weighted exposures for fiberglas containing dusts are below the TLV for fiberglas dusts. That TLV is 15 mppcf.

The Environmental Research Laboratory has proposed to management, three ways of lowering pipe coverer's exposures to asbestos containing dusts to within the 1971 limit. They are:

- (1) Use local ventilation (on the job air movers) to pull dusts away from the man's breathing zone, or

- (2) Use approved respiratory protection whenever men remove, cut, or apply, Aircell, Kaylo, High-Temp or ~~Thermobestos~~, or when they mix Webers and Armentite.
- (3) Replace present insulating materials containing asbestos with materials which do not present the health problems of currently used materials containing asbestos.

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Table 1. TIME-WEIGHTED EXPOSURES OF PIPE COVERERS TO DUSTS FROM ASBESTOS CONTAINING MATERIALS

<u>Operations</u>	<u>Materials</u>	<u>% Day</u>	<u>Concentrations (mppcf)</u>		<u>Time-weight Factor: Asbestos</u>
			<u>Mean</u>	<u>Range</u>	
Remove	Air cell	1.2	11.4	0.3-24.9	0.137
	Kaylo	1.6	11.2	3.7-20.5	0.170
	Mag oxide	0.2	2.8	1.8-4.6	0.006
	Fiberglas	2.0	13.7	1.2-33.7	---
Mix	No. 1 Plus	1.6	13.4	2.2-30.5	0.219
	Armentite	0.1	9.5	2.7-13.5	0.010
	Superpower	0.8	34.9	19.6-6.14	---
Cut	Air cell	5.0	3.0	0.6-6.2	0.177
	Kaylo	8.8	11.7	4.9-23.1	1.030
	Fiberglas	2.2	1.7	0.8-2.6	---
	Others	0.6	--	---	---
Apply	Air cell	15.8	5.7	0.2-15.4	0.901
	Kaylo	19.9	5.7	0.4-22.3	1.123
	Fiberglas	4.5	2.4	1.2-3.8	---
	Others	2.6	--	---	---
	No. 1 Plus	4.8	9.6	1.1-39.5	0.461
	Armentite/ Superpower	2.4	2.1	0.9-3.9	0.050
Clean up removed covers		3.0	8.5	2.4-24.6	0.255
Stocking; get new covers		2.0	1.0	0.1-2.3	0.020
Move to job, set up		5.0	2.0	1.4-2.9	0.100
Breaks, lavatory		15.0	1.4	0.1-3.9	0.242

Time-weighted exposure to asbestos containing dusts (indoor) in mppcf

= 4.9

Warren Portion of the Insulation Talks

After all of the explanation and facts concerning the hazards of asbestos I can imagine a lot of you are wondering "where do we go from here?"

For years and years, asbestos and insulation value have been almost synonymous. The higher the asbestos content the easier it was to sell. Most of us were aware of the health problem, covering asbestos, but it seemed rather insignificant as it didn't seem to be affecting us much.

Then there were a couple articles in our local paper concerning the affects of asbestos on the respiratory system. These were brought to my attention and I in turn brought it to the attention of the Medical Department & Inviromental Research.

We decided that each of the coverers should have a chest x-ray and at the same time we should have an inviromental research study to find out exactly what our exposure is.

We were very pleased to find that none of our coverers had asbestosis. But when the inviromental research findings were told to us we recognized that we do have the potential for

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The Doctor and Roy Degesro have explained the causes of the problem and the affect on the body. I'm here to tell you ^{we} expect to ^{do it} eliminate the problem. If you will remember Roy gave usg three (3) things he thought we could do that would lower the parts per million of asbestos dust to a acceptable level.

1. Local ventiation. You and I know this is not an acceptable method as it would be ~~impossible to do this~~.
2. Use Bureau of Mines approved respiratory protection (show example). This is an acceptable method in most cases if we follow the chart I will now show on the screen. If you will notice the removing of aircell, Kaylo, high temp. and mag oxide have all been checked. All of you men who are in the trade I'm sure have seen the reason for this. Also checked is the applying of Kaylo and aircell. It was found the applying of either of these insulations caused the parts per million of dust in the breating area to to 5.7 which is above the limit. This was almost 35% of your work day. The mixing of asbestos shorts or plus one is also checked for appar nt reasons.

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You will notice that Fibriglas is not checked in any catagory. The reason for this has been pretty well covered by Roy & Dr. Ducommon. I will only say that I've heard

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many controversial words said about fibriglas, but never have I heard or read any thing by a reliable source, that said it was detrimental to your health. In fact I have with me a pamphlet put out by the Industrial Hygiene Foundation of America from which I would like to read you a few excerpts.

I would say that under same circumstances that it is some what uncomfortable. According to most people who have studied its use, a person using Fibriglas insulation should wear loose fitting clothing, no tight belts or cuffs and they should keep clean.

Talking about cleanliness brings up another point that bears mentioning and that is that shower time for men using fibriglas is not and I repeat not, automatic or mandatory for health reasons. A supervisor will grant shower time if he feels the conditions warrent it.

3. Replace our present asbestos containing insulation with materials that don't cause a health problem. We have all of our resources on the lookout for replacements now. Ray Anderson will cover this subject further later on.

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These were Roys recommendations and starting August

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- a) [REDACTED] as much as possible with non asbestos [REDACTED] Fiberglass foam glas, cermic foam, polyurethane, etc.
- b) When using insulation containing asbestos, [REDACTED] a bureau of mines approved [REDACTED] as per the chart. We will pass out a wallet size copy of the chart as you leave.
- c) [REDACTED] for more [REDACTED]

If we do these three things there is no doubt in my mind that we will be below the 2 M.P.P.C.F. limit that will go into affect soon.

Gentlemen, we have a problem; it isn't going away by itself. We feel we recognize the problem and we have the solution. You have heard the plans. We expect and insist that we get your full cooperation to implement these plans.

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I'm sure some of you men are sitting there thinking about possible additional costs, and of the possible corrosion in some instances where a perfect weather barrier is not achieved. We know we have had some of these problems in

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By working together we know that all the problems can be worked out. Our main objective today is to make the job safe for you men. The economics are important, but not of prime importance at this particular time.

Thank you for your attention, now here is Roy Anderson to talk about possible substitutes.

Remember August 11th is the day that we must wear respiratory protection when working with asbestos type insulation. The card is your guide.

Thanks again

Here's Roy.

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THE DOW CHEMICAL COMPANY

July 17, 1969

As a result of his survey, Mr. DeGesero has made up a table showing under what conditions and with what materials an approved respirator must be worn. This table has been reproduced on a small card and each one of you will receive a copy. (Show transparency on the screen.)

I think you all know that there is a very good replacement for Aircell and that is Fiberglas. Fiberglas is more than twice as effective as Aircell as an insulating material and contains no asbestos. (K factor .61 versus .29) Fiberglas is being used in every Dow division except here at Midland. Actually, Aircell should not be used on any job except for personnel protection. It is not designed for temperatures higher than 200° F. and we know it is commonly used on lines traced with 150# steam (375°F.)

At the present time we are trying out an expanded silicone (perlite) type of insulation called Careytemp 1500. This material does contain about 6% asbestos which is about the same as Kaylo; however, it is not supposed to be nearly as dusty. The Phillip-Carey Company has been doing some work on eliminating completely the asbestos from this material. More information on this material will be forthcoming as soon as an evaluation can be made.

Hi-temp is a diatomaceous earth type of insulation which contains about 15% asbestos. There is no non-asbestos substitute for this material on very high temperature applications; however, its use is rather limited and it should not present a real problem.

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Mag Oxide is another fairly high asbestos containing insulation which, at present, is not being used to any great extent here in the plant.

Mineral wool insulating cement commonly known as Webber's Cement contains about 10% asbestos and is quite dusty when being mixed with water. It has been suggested that the dry material be made up in batches large enough to last for a week or two. This would eliminate the need for a respirator each time the material is used. The use of Armentite is small enough so that making up large batches would not be warranted except in special cases.

Every major manufacturer of insulation has been contacted with regard to new products available, etc. This practice will be continued and any time we can find a new product that will be more effective or easier to work with, it will be brought into the plant for your use.

Roy Anderson
Maintenance Engineer
222 Building
Phone 6-4456

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MINIMAL RESPIRATORY PROTECTION REQUIREMENTS

Material	Remove	Mix	Cut	Apply
Air Cell	X			X
Kaylo (Cal sil)	X		X	X
High Temp.	X			
Mag Oxide	X			
No. 1 Plus (Webbers)		X		
Armentite (Asbestos Shorts 352)		X		
Super Power				
Thermobestos				
Fiberglass				

1. You ~~shall~~ wear a respirator* when doing the above operations marked "X"

2. You ~~should wear~~ respirator* ~~as specified in the following table~~

*MSA Dustfoc or Sure Guard (R-2090) are the only allowed types.

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Jack:

This is the cost information that Larry, Roy, and I put together this morning for Jim Scovic. He seemed pleased with it and is sending copies to the Productivity Committee.

See you Monday.

Tom

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