

FROM

THE ASBESTOS WORKER

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INSULATION HYGIENE PROGRESS REPORTS

FROM THE INSULATION INDUSTRY HYGIENE RESEARCH PROGRAM

Irving J. Selikoff, M.D., Program Director

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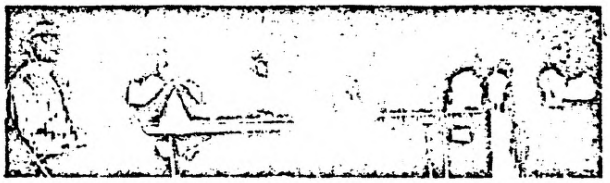

IIHRP meets with Local 12 on Health and Safety: (L. to R.) Dr. Nicholson, Dr. Kay, Mr. Holaday, Dr. Heimann, Mr. Haas, Dr. Selikoff.

SPECIAL ISSUE

First Union-IIHRP Meeting on Health and Safety

Health hazards among insulation workmen are now recognized and understood. They are related to dusty conditions in the industry. Research in the past two years has provided much information on how these conditions can be controlled or eliminated.

Determining these facts, however, is only one side of the coin. Correcting the situation is at least as important. To do this, review of the problems and consideration of remedies by all concerned will be helpful. Accordingly, a series of meetings in various parts of the country has been organized by the International Association of Heat and Frost Insulators and Asbestos Workers at which engineers and scientists of the IIHRP are meeting asbestos workers and contractors to analyze what can and should be done now to make this important industry safe for the men who work in it.

The first such meeting was held in New York City July 8, 1971, with members of Locals 12 and 91. Representatives of area contractors were also in attendance. Because of the broad interest of the questions covered, highlights of the discussions are published here. Mr. Nick Lucich, President of Local 12, opened the meeting.

Nick Lucich: It was good of all of you to come tonight. It was good of the Local 91 members to come. I see contractors in the audience. We are pleased to welcome them.

We know what Dr. Selikoff stands for. We know that since the Doctor came into the act, the widow of any boy who passed on was able to get some compensation and those of us with crippled lungs could also be taken care of.

We know what he has done in trying to clean up the trade. We're going to hear something about that tonight. I thank you all for coming. Doctor, I turn the meeting over to you.

"Especially Worthwhile"

Dr. Irving J. Selikoff: Thank you, Nick. This meeting to review health and safety practices can be especially worthwhile. We are at the crossroads on the journey to a safe work environment.

Hence this review and discussion can be most effective in providing guidelines for future action by the Insulation Industry Hygiene Research Program and by you, the union members directly involved.

On the platform with me tonight are the members of our occupational health and industrial hygiene group. Dr. Harry Heimann was formerly Chief of the Division of Occupational Health of the U. S. Public Health Service.

Uranium Mines Hazard

Duncan Holaday is our senior industrial hygienist, and was in charge of the Western Field Station of the Public Health Service. He is well known for his important work in defining the health hazard to uranium miners on the Colorado Plateau.

Dr. Kingsley Kay came to us from the Government of Canada to whom he was Chief Scientific Consultant. Finally, Dr. William Nicholson is a physicist who joined the IIHRP two years ago and has been coordinating most of the activities in the program.

Tonight we will be discussing the practical—practical in the sense that we will review what *should* be done, and what *can* be done. There have been serious problems in the insulation industry, but I am confident they can be solved. There are several reasons for my optimism.

Reasons for Optimism

The first reason comes from a review of the data in Table I. 1,117 men of Locals 12 and 32 were examined and X-rayed. Of the 346 men who worked less than 10 years in the trade, only 10% had any change characteristic of asbestosis on their X-rays, and these changes were small.

Even in the 10-19 year group, few changes were of serious consequence. In other words—what causes lung scarring takes a long time and requires much dust.

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Insulation Hygiene Progress Reports

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from the

Insulation Industry Hygiene Research Program

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PURPOSES OF THE INSULATION INDUSTRY HYGIENE RESEARCH PROGRAM

1. To develop improved methods for minimizing exposure of insulation workers to dusts and fumes encountered in their work.

2. To disseminate knowledge of these improved methods of dust control wherever they may be applied advantageously and to offer cooperation, advice and assistance toward their universal adoption.



Dr. Selikoff with Andy Haas. "We will see that work on health and safety continues," Mr. Haas said.

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Therefore, today's disease is the result of practices of 20, 30, or even 40 years ago. Work conditions then, in terms of dust, were bad. On many jobs they are still bad. But, just for that reason, we can look to great improvement.

There is a second reason for optimism. Just as there is much room for improvement, much has been found that can significantly reduce the dust exposure.

The Unpleasant Facts

However, before we go to the practical solutions, let's look again at the problem, the data which point to the need for urgent correction of conditions. The facts are not pleasant.

Briefly, the facts are these.

There were 632 men who were members of Locals 12 and 32 on January 1, 1943. Knowing each man's age in 1943, we could calculate from standard mortality tables how many of the 632 should have died by Dec. 31, 1962.

The calculations were made by our colleague and co-worker, Dr. E. Cuyler Hammond, Chief Statistician and Epidemiologist of the American Cancer Society.

From all causes, 203 deaths were expected of those who had reached 20 years of work. In fact, there were 255. In addition, seven men died before reaching this "time of risk."

More than 50 men died who should not have died. Looking at Table II, we can see the causes of these "excess deaths": 45 died of cancer of the lung, trachea, and pleura where only six or seven were expected; 12 died of asbestosis although none should have died; and three times as many died of cancer of the G. I. tract as were expected.

Results of continued observation of the 370 men still in the locals on Jan. 1, 1963 up to 8 days ago, June 30, are shown in Table III. They represent a catastrophe. They have changed the entire course of our research.

No Dust, No Disease

It is no longer enough to get additional health facts. Nor is it of primary importance to determine exactly how asbestos acts on cells or proteins and enzymes in the body.

In a situation in which one of every five deaths is due to lung cancer and almost three in ten to gastro-intestinal cancer, mesothelioma or asbestosis, correction of the conditions is far more urgent, because "no dust, no disease".

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Table 1

X-ray Changes in Asbestos Insulation Workers

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

5 Ways Cement Dust Can Be Controlled

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This is the direction the Insulation Industry Hygiene Research Program has taken.

I would like Dr. Nicholson to list some of the results of that program before we open the floor to a discussion of any problems and questions you may want to raise.

Dr. William J. Nicholson: Since most of you will have kept up with the program through our reports in the green sheet in *The Asbestos Worker,* I will only mention the major sources of dust and solutions that have been indentified to control those sources.

How to Control Dust

The mixing of cement, either in pails or in troughs, is one of the dustiest operations. It can be controlled by in-bag mixing in plastic bags.

Dust collectors on band saws can do wonders. Collectors can even be attached to powered rotary hand saws or saber saws.

The use of a downdraft cutting table can significantly reduce dust when using an ordinary hand saw.

Calcium silicate block and pipe covering can be coated with a thin plastic film to reduce dust during blocking operations. Comfortable, disposable respirators have been developed for use in circumstances where complete dust control is not practical.

How To Prevent Spread

The use of drop cloths, plastic bags and vacuum cleaners to collect waste will prevent the spread of asbestos throughout the construction site.

These are solutions that are practical. They can be implemented with a minimum of additional expense. If followed, they can reduce to at least one tenth the dustiest exposures of insulation workers.

(There followed a demonstration with slides and photographs of the various practices which lead to dusty conditions, and for which remedies have been worked out. Many of these have appeared in the Insulation Hygiene Progress Reports.*)*

Dr. Selikoff: These things can be done. But I suspect that less than full implementation of these procedures has taken place.

Is the Letter Correct?

The other day I received a letter from a member of your Local.

It states that many employers pay only lip service to health and safety. Few respirators are available, and they only cheap ones. Cement in plastic bags is never used because of the few pennies extra cost. The letter closes with the comment. "Only forceful legislation coupled with stiff fines will help. The $ still reigns supreme."

Is this correct- If so, what should we do?

Bill Fitzgerald: You can get a respirator from most contractors. I wear a respirator. But we don't know which are approved and which aren't. We don't know which are the best to wear. What is the story?

Dr. Selikoff: Three years ago every asbestos worker in the country was asked about his personal use of respirators and their suitability. The results showed that only 4% of the men always wore respirators even when they thought the job was dusty.

The Problems Reviewed

There were good reasons for this. Available respirators were uncomfortable, hot, and interfered with breathing or vision.

Table 2

Expected and Observed Deaths Among 632 Asbestos Workers Exposed to Asbestos Dust 20 Years or Longer (1943-1962)

	Expected	Observed
Total deaths: all causes	203.5	255
Total cancer: all sites	36.5	95
Cancer of lung, trachea, pleura	6.6	45
Cancer of stomach, colon, rectum	9.4	29
Cancer all other sites combined	20.5	21
Asbestosis	0	12
All other causes	167	148

Table 3

Mortality experience of 632 members of IAHFIAW, Locals 12 and 32 January 1, 1943 to June 30, 1971

Cause of death	Number	Per cent
Lung cancer	85	20.0
Pleural mesothelioma	7	1.6
Peritoneal mesothelioma	20	4.8
Gastro-intestinal cancer	40	9.3
All other cancers	36	8.4
Total cancer = 188		
Asbestosis	32	7.7
All other causes	205	48.2
	425	100.0

In 1968, Mr. Hutchinson and I visited the Public Health Service. We then reviewed these problems with safety equipment manufacturers in a series of meetings.

The last meeting with nine manufacturers was held on October 9, 1969, at The Mount Sinai School of Medicine.

Disappointed with the then slow progress in preparing new models, the IIHRP undertook independent development of respirators and filter materials, in cooperation with Johns-Manville's Research Laboratory.

Following the 1969 meeting, the Bureau of Mines began developing criteria for single-use disposable respirators. These criteria may be published this summer.

Standard For Protection

Duncan Holaday was appointed chairman of the Z88.3 Committee of the American National Standards Institute which has written a standard for respiratory protection against asbestos dust.

So, while the road to a comfortable, effective respirator has been long, it appears that we are nearly there. And Duncan Holaday has been the skillful guide we've followed.

Duncan A. Holaday: The basic problem with respirators is that anything worn on the face is, in some degree, uncomfortable. *Reusable* ("standard") respirators, approved by the U.S. Bureau of Mines for protection against asbestos under its old schedules, have been available for many years.

Individual Fitting

The common types all have a half-mask face piece and should be individually fitted to insure a proper seal to the face. Because of the small filter area, they have relatively high

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Bill Fitzgerald asks: "Which respirators are the best to wear?"

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resistance to breathing, which is particularly objectionable to men who may have impaired lung function.

They require maintenance (filter change, cleaning, strap replacement, etc.) *to insure continued proper functioning.* Unfortunately, maintenance programs are very difficult to operate in construction work and, for practical purposes, do not exist.

For these reasons, we have been working with respirator manufacturers to develop single-use respirators which can be discarded at the end of the shift. A new approval schedule has had to be promulgated for these new appliances, since their like has not been tested before by the Bureau's respirator service.

At least three manufacturers are working to produce such respirators and one of these has a device approved under the old schedule.

New Respirator Schedule Due

The other two should be available shortly after the Bureau of Mines publishes its new schedule for disposable respirators. We have been told that it will appear in July—but I won't guarantee this date.

The cost per day of the single-use respirators should not be any more than the cost of operating a maintenance program for re-usable respirators.

Frank Brady: You show in the green sheet one that looks like a surgical mask. How much protection does that give?

Duncan Holaday: Surgical masks cannot be relied on for good protection. They are not designed to filter out fine particles and the face seal is highly variable. They are better than nothing, though.

The respirator shown in the green sheet was not a surgical mask, even though it may have looked like one. That particular respirator is made of a high-efficiency material which provides good protection.

Glasses Get Fogged

Don't confuse lightness (for comfort) with flimsiness.

Frank Suraci: What good are any of these masks to anyone who wears glasses? In five minutes your glasses are all fogged up.

Duncan Holaday: With a good face fit, this would not be so much of a problem. Anti-fog dope is available at safety supply houses. I have used this and find it helps to prevent fogging.

Fitting respirators is an important part of a respirator program and should be done by an experienced person.

Several to Choose From

Several respirators should be available for selection, as no single model face-piece will fit all men.

Rudy Perich: I bought a mask. It seemed secure on my face. I took it home and found a spoonful of block in it.

George Boylan: What do you mean by a good face fit? How does a man know if he has one?

Duncan Holaday: For reusable respirators, one can take off the filter cartridge, cover the inhalation orifice with the hand and breathe in. If you have a proper fit, you will not get any air.

A single-use respirator is harder to test. If the fit is bad, leakage will usually occur around the nose: here, if you blow hard, you can feel warm air at your eyes.

Having another man make a quick inspection of your respirator will also help.

Let's Get Back to Cleaning Up The Workplace

Nick Lucich: It all boils down to the fact that we already have three masks that can do the trick for us, light and comfortable. Let's get them on the job.

Dr. Selikoff: Right, Nick. But remember—although respirators are valuable, they are no substitute for safe work practices. Let's get back to cleaning up the workplace.

Nick Buratovich: We know the effects of the dust. We are now at the point of desperation. I will take the responsibility of picking out a mask. It is wonderful to know that we can get over 90% protection.

Does Water Affect K-Factor?

In the past, we saw a lot of dust and we did some things to try to control it. One of them was to take a block and dump it into a 50-gallon drum filled with water.

I was told that this was not to be done because it would affect the k-factor of the block. Is this true?

Dr. Nicholson: A very brief wetting would not affect the k-factor, although a more extensive soaking could. But there is a better solution to this problem.

Frank Suraci: Is there a way to reduce the dust on the block before it goes to the field?

Dr. Nicholson: Yes, the same result that Nick Buratovich achieved by wetting can be obtained by the use of a plastic or wax coating on the block, applied by the manufacturers. No manufacturer does this at this time, although Johns-Manville has developed one process that is suitable.

Coating Must be Mandated

The problem comes in getting every manufacturer to apply a coating. No one company wants to do it alone because of the extra cost of the product. It must be mandated by agreement or regulation and its use required by asbestos workers.

Art Boylan: Why not have state inspectors give citations for dusty conditions? They give citations for

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Frank Brady: "How much protection?"

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faulty ladders or other safety hazards. Why doesn't the state come into the picture?

Dr. Selikoff: I once asked each man in Locals 12 and 32 how many times he himself had seen a dust inspection on the job.

The more than 1,100 men asked had had over 4,500,000 work days of experience. Eight dust counts had been seen from 1915 to 1963.

Ralph Drinkard of Local 25 recently asked 75 men in Detroit whether they had seen inspectors take dust counts on the job. Not one had.

6 Men to Check 120,000 Places

The fact is, the states just do not have the manpower to provide effective inspection. For example, in New Jersey at this time, there are six industrial hygienists in the Department of Health responsible for the conditions in 120,000 workplaces.

It's not surprising that no inspectors are seen.

We need a specified set of procedures required by law or by union agreement. Then you men yourselves must help do the job of policing. The Great White Father in Washington, or Albany, or Springfield, or Austin, or Boston has lots of other things to do, and doesn't get to them all. If a job doesn't have safe equipment or safe materials, you are putting yourselves at risk.

We will all have to work at getting the safe materials, equipment, and procedures required.

We've Come a Long Way

I'm ready to join you any time in meeting with federal, state or local officials to establish appropriate regulations. With the new Occupational Safety and Health Act, this would be a good time to do it.

Tom Viscovich: In the past, no one knew of approved respirators. We have come a long way.

Let me move on to another field where respirators probably cannot help—that is adhesives. I've read where kids sniffing glue have had brain tumors, some kinds of cancer, and kidney damage. What is the effect on us of the adhesives and the glues that we use?

Dr. Kingsley Kay: Organic solvents are used in most adhesives. These chemicals act primarily as anesthetics causing central nervous system depression manifested by visual disturbances, mental confusion, fatigue, nausea, vomiting, difficulty in locomotion, and, finally, if concentrations are high enough, unconsciousness.

Workers Made Accident Prone

Naturally, the exposed worker who is affected by these substances becomes potentially accident prone.

As enzyme systems in the body respond to the insult of these materials by augmenting their destruction, adaptation is frequently experienced.

Nevertheless, this adaptive mechanism has its limits, beyond which the basic toxic nature of such solvents begins to take effect.

Another aspect of the inorganic solvents is their effect in defatting skin and interfering with lipoproteins of the mucous membranes.

In heavy concentrations, pulmonary effects may ensue. They are usually irritating to the eye, and corneal damage is always a possibility. Cirrhosis of the liver and kidney damage may also occur in excessive exposure.

A special reference should be made to the interaction of many



George Boylan: "What is a good face fit?"



Frank Suraci: "What about fogged glasses?"

organic solvents with drugs and alcohol. It is well known that solvents and alcohol interfere with each other's metabolism.

As a result, normal intake of alcohol may result in increased effects due to reduction in the normal rate of alcohol metabolism, caused by the solvent.

Workers continually exposed to solvents should have special medical advice where drugs have to be taken.

Apart from the solvents, some high polymers and additives used in adhesives can be sensitizing to produce skin reactions and asthmatic attacks.

Interaction With Asbestos

It will be understood that workers who experience adverse effects using adhesives should have continuing medical supervision.

Tom Viscovich: What is the interaction of solvents or the polymers with asbestos?

Dr. Kay: It is not known whether solvents, high polymers and additives commonly used in adhesives interact with asbestos in its action on the lung. Obviously, materials that affect lung tissue stand a chance of intensifying each other's action.

Most adhesives are intended for use under conditions of good ventilation. What seems to happen is that they are frequently used in whatever conditions exist on the job—for as long as the men can stand the exposure.

Everyone's Responsibility

When labels call for good ventilation, the employer should provide adequate equipment. It is surely everyone's responsibility to ensure working conditions appropriate to the precautions on the products handled.

Tom Babich: There are so many

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Nick Lucich: "Let's get them on the job!"

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solvents, we feel like we're involuntary guinea pigs. One time the boss accused me of being drunk. I was weaving all over the floor and he said, "Have you been drinking?"

"No, just smelling this stuff."

Adhesives Vary Widely

Are there any adhesives we can use that are less toxic than others?

Dr. Kay: Adhesives are generally formulated for a particular job, so the ingredients vary widely. Virtually all the materials in use today contain organic solvents.

Though there are some differences in the toxicity of different organic solvents, switching solvents is a less satisfactory answer than good ventilation.

Frank Suraci: Proper ventilation is not practical. It is not the fault of the employer, nor ours. It is just not practical on a construction job.

Duncan Holaday: I hesitate to accept the statement that it is impossible to ventilate areas where adhesives are being used. I agree that it is difficult.

Difficult, But it is Done

The U.S. Department of Labor regulations covering shipbuilding and ship repair require that ventilation be used for all surface coating work in enclosed areas. Ships have many compartments which are hard to ventilate, but it is done.

Similar regulations should apply to all construction work.

The Department of Labor regulations published in the Federal Register, April 17, 1971, which apply to all federally assisted construction work, state that exposure of employees to inhalation, ingestion, skin absorption or contact with any material or substance at a concentration above those specified in the "Threshold Limit Values of Airborne Contaminants for 1970" of the American Conference of Governmental Industrial Hygienists shall be avoided.

More Than 70 Kinds of Fibrous Glass Used in Insulation

The Ducts Problem

It will require some ingenuity and work to control vapors of adhesive solvents—but it is possible.

Ray Ryder: Ducts are another area of the problem. We have a problem in this city with ducts lined on the inside with fibrous glass and I don't know anyone who will guarantee that the glass will never enter the air stream.

The use of this stuff is new and its effects haven't yet showed up in



Nick Buratovich: "We're at the point of desperation."

pipe coverers. The State won't change the specifications.

Doctor, what can you do to have a study made of the hazard of this material?

Dr. Selikoff: The problem is potentially an important one. There are more than 70 different kinds of fibrous glass used in insulation products. They are different in size and have different chemical compositions.

Tests on Animals

To evaluate each would be an impossible task. We have tested three different kinds in animals. Nothing hapoened with two, but the third produced cancer.

Moreover, fibrous glass is manufactured with a variety of binders, resins, and oils, the biological effects of which are unknown either alone or in conjunction with fibrous glass.

In addition, the effects of the glass you inhale today will probably not become evident for more than 20 years, just as with asbestos.

No one suggests that glass particles in your lungs are *good* for you, and since recent studies by Dr. Cooper have shown that air contaminated by dust from fibrous glass insulation materials contains fibers fine enough to enter the depths of the lungs, these materials should be used only in such ways as to keep them from being inhaled.

New Air Pollution Code

A similar problem occurs with sprayed plenums used for return air. Here asbestos, rock wool and other materials are in direct contact with a building's air supply.

In New York City we have not been allowed to analyze air in buildings in which this has been done. We may be able to do this when the City Council passes a new air pollution code.

Tom Viscovich: Doctor, one thing seems funny. Men in their forties and fifties are dying of lung cancer. But those in their sixties and seventies die of something else. What is the reason for this?

Started Smoking Young

Dr. Selikoff: Your observations are very sharp, Tom. The answer is that lung cancer is strongly associated with cigarette smoking, especially in asbestos workers.

Not many men in the United States began smoking cigarettes until after World War I, and those that started did so while young. We are

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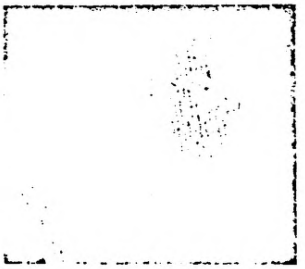

Tom Viscovich: "What's the effect of adhesives?"

Reducing Dust Levels is Key to The Whole Problem

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now seeing the result.

The young men who began smoking cigarettes in the 20s and 30s are now coming down with lung cancer after 20, 30 or more years; the older non-smokers do not.

In fact, asbestos workers who smoke run more than 90 times the risk of dying of lung cancer than men who neither smoke cigarettes nor work with asbestos do.

Pete Alphano: You say one out of five died of lung cancer. Was there something special with them?

The Key to the Problem

You mentioned the association with smoking. Is there something else we can do to prevent disease?

Dr. Selikoff: We have discussed prevention of disease by reducing the dust levels. This is the key to the problem.

However, this will be of most benefit to those now entering the industry. Of equal importance is the question of what can be done for those who have been in the industry 10 or 20 years or more. Here, too, we have some optimism.

1. Asbestosis can be delayed or minimized by reducing dust levels; we talked about that.
2. Since smoking greatly increases the incidence of lung cancer, switch to a pipe or cigar, if you have to smoke at all. Only a small effect on health has been found from either.
3. With respect to dust already in the lungs, research at Mount Sinai is being conducted on how to inactivate that dust. A chemical has been found that will inactivate *silica* dust already in the lungs. We hope to do the same for asbestos. Dr. Robert J. Schnitzer in our laboratory has discovered some chemicals that inactivate asbestos in test tube experiments, and animal studies are now under way.
4. Mesothelioma, a cancer of the lining of chest or abdomen, has never been cured. Almost 10% of the deaths of insulation workers are from this disease. Research now being done at Mount Sinai, and the establishment of a treatment center there, give rise to hope. We are testing new drugs and new treatments. Some success has already been achieved, both by Dr. William E. Smith in our animal research laboratory, and by our chemotherapy team for patients. This is now one of our research priorities. A cure must be found to help men who get this disease in the 1970s and 1980s, even while we control dust exposure, and prevent future cases, in the 1990s.



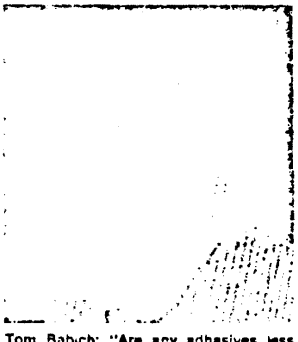
Pete Alphano: "What can we do to prevent disease?"

Nick Lucich: Cases of mesothelioma were so rare in the past that when a pipe coverer got it, it was something special.

What is the number of cases today?

Dr. Selikoff: The first modern report on mesothelioma came from Mount Sinai Hospital in 1931, written by two of my teachers, Dr. Paul Klemperer and Dr. Coleman B. Rabin. In the next 30 years we saw only three cases. That's how rare it was in the past.

In the last eight years, however, we have had more than 25 cases, many from Locals 12 and 32. Because of its association with asbestos, mesothelioma is now compensable as an industrial disease. But this is small consolation. Compensation is no substitute for a man's life!



Tom Babich: "Are any adhesives less toxic?"



Ray Ryder: "Ducts are another problem."

Studies Being Continued

Ray Ryder: If a man comes down with cancer of the lung, is there any chance of similar problems developing in his wife or children?

Dr. Selikoff: This is a worry to us. Dr. Muriel L. Newhouse in London found cases of mesothelioma in family members of asbestos workers. Presumably, this was from the dust brought home by the worker on his clothes.

We have been looking at the problem here in New York. So far, fortunately, the data look reassuring. We are continuing these studies.

I would advise, nevertheless, that work clothes always be changed before going home. Dr. Victor Baden of our staff has taken samples of dust from the air in the houses of

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pipe coverers. Asbestos and glass fibers were found.

Pete Alphano: JM has a cement that contains no asbestos. I think Carey also has one. Is there any problem with these cements?

Dr. Selikoff: We don't really know. They all contain mineral material that has no business being in a man's lungs. You should use the same care with them as with the asbestos cements.

Non-Asbestos Cement in Plastic

Mix them in plastic bags. I know of two manufacturers, Johns-Manville and Ryder Industries of Dallas, who sell non-asbestos cement in plastic bags.

George Semonovich: To summarise tonight's meeting, it is clear that we need

1. good housekeeping,
2. dustproof materials,
3. muscle to demand that action be taken.

It remains for us now to get this done. Will we get any help from the Occupational Safety and Health Act?

Dr. Harry Heimann: The new Occupational Safety and Health Act is a good one and, if adequate money is appropriated by Congress for the law's implementation, *all* workers, including asbestos workers, could expect to benefit from it by a marked reduction in accident and sickness resulting from their occupations.

First Come, First Served

However, it looks as if funds appropriated will be much less than are needed for proper implementation. As a result, it will be a matter of first come, first served.

For this reason, the union rank and file must begin to exert pressure in the right places, so that the funds are used to benefit their own safety and health.

Incidentally, Senator Williams and Representative Daniels, who introduced and strongly promoted the Bill, are from New Jersey. They, and the congressmen and senators who supported them, deserve much credit.

The bill contains the provision that standards for harmful physical agents, such as asbestos will assure "That no employee will suffer material impairment of health or functional capacity even if such employee has regular exposure to the hazard dealt with by such standard for the period of his working life."



Jack Novak: "The workplace must be made safe for pipe coverers."



Rudy Perich: "Problems with respirators."

"Each employer shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees."

Whether this will come true or not will depend on how Labor and Industry meet their responsibilities, on what *you* do.

Jack Novak: It was interesting to hear the data on the number of state inspections. Asbestos workers have had to take care of themselves in the past and, if necessary, we will in the future.

Now We Need Action!

The Occupational Safety and Health Act and the Safety and Health Regulations for Construction can give us some of the muscle we need.

But if these new acts are not properly enforced, we ourselves will see that the results of the HERP research get into the workplace.

One thing is certain—the workplace must be made safe for pipe coverers.

Andy Haas, General Secretary-Treasurer: You all know President Hutchinson's view on health and safety and how he has done so much, as has the entire Executive Board, to eliminate the severe hazards from our industry. Research is under way and much has been discovered. It is now necessary to have action, to get a safe workplace.

The asbestos industry National Health and Safety Fund has been slow in getting off the ground, but I can assure you that we will see that action on health and safety proceeds, and rapidly.

It's just too important to our members for it to stop.

SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION

The following regulation is applicable to all federally funded construction (Federal Register, Vol. 36, page 7349, April 17, 1971):—

"1518.55 Gases, vapors, fumes, dusts, and mists.

(a) Exposure of employees to inhalation, ingestion, skin absorption, or contact with any material or substance at a concentration above those specified in the "Threshold Limit Values of Airborne Contaminants for 1970" of the American Conference of Governmental Industrial Hygienists, shall be avoided.

(b) When engineering or administrative controls cannot be employed to reduce or eliminate the exposure, protective equipment, as required in Subpart E of this part, shall be used."

Doctor Irving J. Selikoff recently made the following presentation at the AFL-CIO conference on Occupational Health held June 17, 1971 in Washington, D. C. We believe that this presentation will be of vital interest to our membership, and we are, therefore, reproducing it herewith.



Twelve weeks ago, I participated in a remarkable meeting in Chicago. Representatives of the Steelworkers' Union convened to consider the serious problems of occupational safety and health now faced by them and by all of American labor. A remarkable meeting in many ways. First, that it was held—this would have been inconceivable even five years ago. Second, it confirmed the sensitivity and wisdom of Mr. Abel and the leadership of the Steelworkers' Union. They had hoped for a considerable attendance, had arranged for the largest ballroom in the Hilton Hotel and had prepared 1,500 delegate places. When the meeting opened, 300 more chairs had to be found.

That meeting, as this, demonstrates the determination that business as usual—"the usual" of the past—is no longer acceptable.

I'm afraid that I was not the most popular speaker at that meeting and I don't think I will be at this morning's. I was not in the mood. On my way to the airport, I had stopped at the hospital to see a patient, Nick Evelich, a member of Local 12 of the International Association of Heat and Frost Insulators and Asbestos Workers. AFL-CIO. Nick had an advanced cancer, replacing the upper part of his right lung.

May I tell you a little about him? Nick was a very decent man. In the mid-1920s, at the age of 18, he had become a building trades worker, insulating boilers, pipes, air supply ducts and such-like in buildings as this, in oil refineries, chemical plants, powerhouses— one of those who helped put together the structure and industry of our America.

His was a somewhat dusty job, and this worried him a bit, because Joseph Mullaney, the President of his Union, had read that doctors had found that some of these dusts produce serious lung disease and had written in his Union journal questioning this.

But Nick was reassured. He felt certain that in our America, surely someone was seeing to it that he and the tens of thousands of other insulation workers, had a safe working place. He didn't quite know who; but he had heard of "state health departments," the public health service," "industrial hygienists," "occupational health physicians," "inspectors." He knew that in New Jersey and New York—the states in which he worked—there were legislatures, and laws.

As I left Nick's bed that morning, I knew that his confidence had been misplaced, that there had been no "someone."

Nick didn't know, but scientists knew, during his years of work, that the dusts he was inhaling, frequently led—twenty or thirty years later—to lung cancer. No one told Nick, nor any of the members of his Union. Each day he, and tens of thousands of his brothers, went to work to add a bit more of the cancer causing dust, to his lung burden.

As a result, today, in 1971, thousands of insulation workmen are doomed to die of lung cancer and other neoplasms. The unhappy statistics are that one of every five insulation workers in the United States dies of lung cancer, one in ten dies of cancer of the stomach, colon and rectum, and one in every ten dies of a tumor called mesothelioma—affecting the lining of the chest or the lining of the abdomen, and invariably fatal. In addition, adding to this toll, one in every ten dies of scarred lungs caused by the dusts inhaled in the workplace.

This disaster—what else can we call it—is now faced by almost 100,000 insulation workers in our country; one of every two men to die of some form of cancer, or of scarred lungs. Almost as many men will die of occupational diseases in this one trade, as have died in the war in Vietnam.

I now have a somber follow-up to give you. Nick Evelich, age 64, died on April 4, 1971, two weeks after the Chicago meeting. I was present at his death, more to ease his last hours, than anything else. Also, to give what comfort I could to his widow. It was a difficult time for me because, as we walked away, Mrs. Evelich asked me, through her tears, "Doctor, what happened? What went wrong?"

What went wrong? What could I answer her? The question bothered me as I went to the nurse's desk to sign the death certificate. In New York City, the death certificate requires the doctor to certify that the death was of "natural causes." "Natural causes?" Did Nick Evelich die of natural causes? I signed it, because otherwise the medical examiner would have had to investigate whether there had been foul play. "Foul play?"

You might consider that my concern has a large personal basis. That's true; but it has a wider one as well, because Nick Evelich is but one of many. Let me give you a few examples.

There are today, in the United States, more than 15,000 steel workers—members of Mr. Abel's Union—employed at coke ovens. These ovens emit gases and other materials containing benzpyrene and other chemicals long suspected of causing cancer. Starting in 1936 and at intervals thereafter, scientists reported that lung cancer was much more common among men working in plants like this. Yet for the last 50 years, a period during which tens of thousands of American men were daily exposed to these cancer chemicals, decades in which they had every right to assume that their workplace was safe, no precautions whatever were taken to prevent their inhalation of these materials. They were not even told of the danger!

Four months ago, partly as the result of brilliant research by men now members of Dr. Key's staff, we learned that at the least, these men have more than twice as much lung cancer as everyone else and, in some areas, *ten times* as much lung cancer!

Like Nick Evelich, steel workers during the 1930s, 1940s, 1950s and 1960s, surely had the right to expect that someone was seeing to it that cancer would not be their fate. *There was no someone.*

Or consider the tragedy of our coal mines, where literally hundreds of thousands of American men have lost their lives to accidents and to black lung, in the last 50 years. Hundreds of thousands of men in Pennsylvania, Kentucky, West Virginia, Ohio and elsewhere. Contrast this with the fact that the first hundred thousand dollars allotted by Congress for coal workers' lung disease research was only provided in 1963!

Or cotton workers. Until two or three years ago this was a nondisease; it didn't occur, no state would provide compensation for it. Not one dollar for research was ever provided, until the last several years. Yet recent studies, and the investigations of the Textile Worker's Union of America AFLCIO, show that 20% and more of carders, spinners, ginners and weavers in our great mills in North Carolina, South Carolina, Virginia, Georgia and elsewhere, suffer from byssinosis and that more than 100,000 men and women in these states are at risk. Again, *there was no someone* —neither the Department of Labor, nor the State Health Department, nor occupational health physicians, to warn these American workmen through the years, and the mills remained dusty.

I hope I have said enough to indicate some sense of urgency of such problems. Because they are urgent. In one sense, we are not heading for disaster; it is with us.

May I share some of my worries? First, there is the long "latent" period between exposure to many of the dangers in factories, mills, mines —and the subsequent development of disease. Men began working on the Colorado plateau in uranium mines, and others in uranium processing plants, in the early 1940s. The lung cancers from which one in five is now dying didn't begin to appear for 20 or 25 years. Aniline dye workmen don't develop and die of bladder cancer for 15, 20, or 25 years after they have begun work. The scarred lungs of beryllium may not appear for two or three decades. Nick Evelich, you remember, began working many years ago.



NICHOLAS EVELICH

Seeds are being planted now for the diseases of 20 and 30 years hence. This leads to less sense of urgency at this moment—but the greater necessity for us to understand the need for precautions *now*, to safeguard the future.

This insidiousness is particularly important when we consider the new processes and new chemicals being added to the work environment every day, with little or no testing and with no knowledge of what lies in store for the workmen asked to use them. For example, cancer authorities throughout the world suggest that, on the basis of growing evidence, perhaps as many as 95% of all cancers come from our environment. And of all environments, the work environment is most suspect and most dangerous. I have mentioned aniline dyes. It may interest you to know that one of these, β-napthalamine, has, in one group of workmen, after 25 years, resulted in bladder cancer in every single man that had been exposed!

Parenthetically, it may be of interest to you to know the matter of occupational and environmental cancer is considered of such importance that the Board of Directors of the American Cancer Society three weeks ago voted to initiate a new research effort—the Environmental Cancer Research Project—jointly, with our Laboratory. This will have strong emphasis on studying cancer hazards in the workplace. Considerable funds and the great statistical resources of the Society will be devoted to this problem, under Dr. E. Cuyler Hammond and myself. American Labor and Industry will, I believe, benefit greatly from this new program of the American Cancer Society.

Another cause for concern is our growing appreciation that, as the complexity of our work environment increases, so do its disease effects. For example, in recent years, the known dangers have extended from those concerns of the past such as silicosis, carbon monoxide, benzene and others, to cancer of the nasal sinuses in wood-workers, polyurethane and isocyanate hazards of firemen and the growing seriousness of emphysema; from chromates, manganese and carbon tetrachloride, to detergent enzyme asthma, pesticides and mesothelioma in shipyard workers.

There are reasons, therefore, for worry. It is possible that we are doomed to repeat our mistakes. That, at most, we will continue to do little but put out fires. Should this happen, we will not have justified the trust that the working men of this country put in us. Like Nick Evelich, the men you represent go to their jobs feeling that, at the least, laws have been provided by their elected representatives to ensure that the materials they work with are not harmful, that the workplace is safe and that the work environment will not endanger their health nor result in their premature death. In short, as I say, they trust us.

Have we justified that trust?

The question is simple: the answer is complex. Many of us, as individuals, have earned that trust. I know of Union leaders who have, often with scant thanks, argued desperately for the safety of their comrades; of employers who would will-

ingly do what was needed to provide that safety; of public health workers whose dedication explains their perseverance in the face of great odds; legislators, physicians, engineers, scientists and others who have tried to help solve these problems.

But taken together, we have failed. The hundreds of thousands of miners whose lungs have been destroyed and who have gasped their dying days; the chemical workers who have suffered liver disease, blood disorders and bladder cancers; the almost half-million men who have lost their lives in industrial accidents since the war and even more whose lives have been shattered by near-fatal accidents; uranium miners, beryllium workers, cotton workers, sandhogs, men hurt by lead, ozone, carbon disulfide, mercury, cadmium, laser beams, pesticides, radiation, noise and dozens of other hazards of the workplace—all these victims mutely tell us we have failed. If I might paraphrase Emerson, I would note that what has happened speaks so loudly that we cannot hear what is said should have happened.

Who killed Cock Robin? Not I, says the employer. Tell me what to do and I'll do it. Not I, says the industrial hygienist—I've tried my best. Not I, says the physician—I've hardly been told the problem exists. And not I, repeats the legislator—we pass laws when we've been told of the need.

All these people are right. No *one* killed Cock Robin. His has been an impersonal, technological death, of research not done, of funds not granted, of training omitted, of hearings not held. We have all failed —taken together. As the youngsters would perhaps now put it—the *system* has failed.

In the United States of 1971, this must end. Either we prepare to earn and justify the trust the working people of our country give us—or we should frankly tell them that they must not have a false sense of security, that we cannot protect them, that we have not the personnel, equipment, funds, laws to meet our responsibility. We must not perpetuate a fraud.

Of course, it would be heresy to suggest that it would be better to disband the National Institute of Occupational Safety and Health than for it to continue as it is—understaffed, underfinanced, hamstrung and ill-supported; or that it would be better to dissolve the meager industrial hygiene divisions in most states, than to have them continue as ineffectual shells. At least then, industry and labor would know they must look to themselves for protection.

Mind you, it would be a tragedy for this to happen, but perhaps less of a tragedy than what has happened and what can happen.

May I return to my asbestos workers for an example? In 1935, Dr. Kenneth Lynch reported the association of asbestos work and lung cancer and warned that they were causally related. After his report, not one piece of research of any kind on this subject was done by the Public Health Service in the 1930s, 1940s or 1950s. No funds were provided, no personnel was available, no grants were made to other scientists. No research of any kind! Tens of thousands of abestos workers continued to work with this material daily, unaware that there might be special hazards.

In just one asbestos trade—insulation work—some 50,000 American men *began* work *after* Dr. Lynch's warning. Not one was told of this warning, not one employer was cautioned of precautions he should take. Both groups *assumed* someone was looking after any health hazards they might have. Again, *there was no someone* and now 20,000 of these men are perhaps doomed to die *unnecessarily* of lung cancer, mesothelioma, asbestosis.

Who kills asbestos workers? Inattention, omission, inadequacy. Not very spectacular murderers, but deadly killers nonetheless.

The heartbreak of all this—if it continues—will be that it is unnecessary, because our scientists have the knowledge, our industry has the skill, and our public health people the commitment, to make the American workplace safe, so that a man may live out his days in health and in dignity. The decades of our neglect—the 1930s, 40s, 50s and 60s—cannot continue. The workplace must be made safe; *it is now time for change.*

And here I turn to you. Many of us can and will help, in government, as Senator Williams has so amply demonstrated, in Science, in Medicine and in Industry. But the main task is yours, to attract scientists, to alert physicians, to strengthen laws, to prod officials when this is needed. You're supposed to be good at organizing—well, this problem provides ample opportunity for organizing.

And you have more than just opportunity—you have an important responsibility. American workmen now expect that someone *is* going to change the workplace—and, in large part, from now on, *you are that someone.*

In conclusion, may I apologize for my frankness. I thought it the best tribute and farewell I could give my friend *Nick Evelich.*

THIS SPACE CONTRIBUTED BY THE PUBLISHER

LISTEN TO YOUR BODY.



If something's going wrong, it'll tell you.

1. Change in bowel or bladder habits.
2. A sore that does not heal.
3. Unusual bleeding or discharge.
4. Thickening or lump in breast or elsewhere.
5. Indigestion or difficulty in swallowing.
6. Obvious change in wart or mole.
7. Nagging cough or hoarseness.

If you have a warning signal, see your doctor. If it's a false alarm, he'll tell you. If it isn't, you can give him time to help. Don't be afraid. It's what you don't know that can hurt you.

American Cancer Society

DEPARTMENT OF LABOR

DIVISION OF INDUSTRIAL HYGIENE

SOUND PRESSURE LEVEL SURVEY

1. SOUND LEVEL in Decibels re 0.0002 dynes per sq. cm.

LOCATION – OPERATION	WEIGHTING NETWORKS 20-20,000 cps (Hz)		PREFERRED CENTER FREQUENCIES, cycles per second (Hz)							
	dBA	dBC	63	125	250	500	1000	2000	4000	8000
GINT SYSTEMS – BUILDING 230										
DRY MIX AREA – BAGGING										
1. ST. REGIS PACKER WORK STATION	82	89	83	83	81	80	76	72	73	72
* 2. " " " "	93	94								
* 3 " " " "	79	87	85	83	79	76	74	70	69	68
– MIXING										
4. MIX HOPPER AREA – VIBRATING SCREEN ON HOPPER FULL	89	94	86	85	80	78	82	85	78	76
* 5. AS ABOVE, STARTS AFTER 15 MINUTES OF THE 20 MINUTE BATCH OPERATION.	94	101								

EMARKS:

* ONE SECOND DURATION EVERY 30 SECONDS (AVERAGE) DUE TO AIR RELEASE NOISE – DURING BAG FILLING

** BACKGROUND

*** INTERMITTENT OPERATION; BATCH OPERATION OPERATOR REMAINS AWAY FROM AREA AFTER STARTING MIXER

SSIGNMENT NO.	S. W. C. B. CASE NO.	6. DATE OF VISIT
SEF-129-72		8/18/72

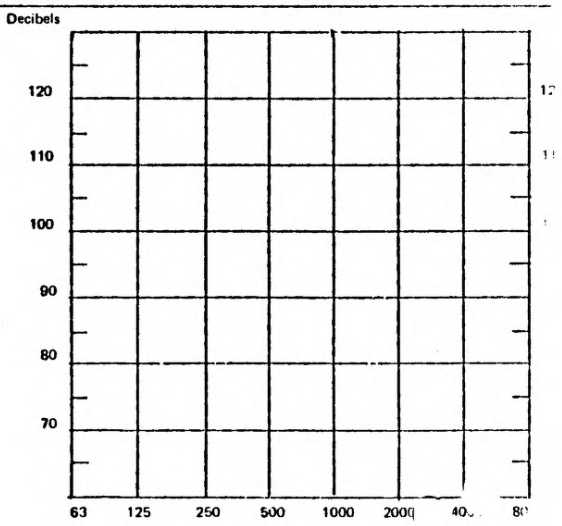
AME OF ESTABLISHMENT
GEORGIA PACIFIC CORPORATION

DDRESS OF ESTABLISHMENT
BLOOMINGDALE ROAD TN OF NEWSTEAD 14001

LAIMANT NAME

NGINEER
H.H. BRUNOTTE

11. INSTRUMENTS USED
B&K 2203/1613



DIVISION OF INDUSTRIAL HYGIENE

REPORT ON FIELD INVESTIGATION

DIRECTOR'S COPY

TO: DIVISION OF INDUSTRIAL SAFETY SERVICE, BUREAU OF [X] F&M [ ] CONSTRUCTION [ ] BOILER

ATTN: CHIEF INSP. E. T. Beaudett SUPV. INSP. E. P. Ehlert DISTRICT 16

1. FIRM NAME	2. DATE OF REPORT	3. DATE OF VISIT	4. DATE OF REQUE:
Georgia Pacific Corporation	10/11/72	8/10, 9/13 & 9/20/72	3/30/72
5. ADDRESS		6. I.H. ASSGT. NO.	7. B.S.A. PET. NO.
Woodingdale Road, Town of Newstead 14001		DIH-120-72	
8. INVESTIGATED BY	9. OFFICIAL(S) INTERVIEWED		
Norman Brunotte, Ind. Hygiene Engineer	Mr. Edward Foley, Office Manager Mr. William Hammer, Plant Engineer		

10. REPORT

In accordance with your request, the above firm was visited to investigate possible excessive noise resulting from the Joint Systems operations, possible air contaminants resulting from P & S operations, and possible exposure to excessive asbestos from the Joint Systems operations

RECEIVED
DEPARTMENT OF LABOR
BUFFALO, N. Y.
OCT 25 1972
DIVISION OF
INDUSTRIAL HYGIENE

I. NOISE IN THE JOINT SYSTEMS OPERATIONS, BUILDING 230

WORKROOM

The workroom, which measures about 120' X 60' X (25' to 40') high, comprises the one story east end of a large masonry and steel building. The east wall of the workroom contains a large sliding door, a man-door, and 3 openable windows. There are 2 openings in the west wall which lead to the warehouse area. The north and south walls contain openings. General mechanical ventilation is provided by a 30" diameter exhaust fan mounted in the east wall at a height of 10'. Additional ventilation is provided by 2 gravity roof ventilators.

EQUIPMENT AND OPERATIONS

The dry mix joint compound for wallboard is prepared in a 40' X 60' area located in the northeast corner of the workroom.

The process involves the preparation of about sixteen 1000 pound dry mixes during the 8 hour day shift. Each mix is comprised of 75% or more limestone with amounts of asbestos ranging from 220 to 320 pounds and mica up to 640 pounds, depending on the product specified. Minor amounts of other materials are also included.

Except for the limestone which is added from enclosed bins, two laborers load the other ingredients into a waist high 5' X 7' hopper. The cryscotile asbestos, contained in 100 lb. bags, and the mica, in 50 lb. bags, are dropped on bag slashers in the hopper, the contents dumped, and the empty paper bags removed from the area. A vibrating screen empties the hopper to an enclosed conveyor. The hopper is provided with a canopy hood at a height of 30" at one end and 40" at the other end, and is partially enclosed.

The subsequent operations, conducted in closed systems, include a ribbon mixer, bucket elevators, and a St. Regis packer. The mixer and elevators are provided with local exhaust systems.

OCT 2 0 1972

IH-11 (1-69) Div-Wide

The St. Regis equipment automatically fills multiwall bags with the correct weight of product material. A packer operator slips a pasted-valve tuck-in-sleeve bag over a feed spout, one of three such outlets. The filled bag is dropped on a horizontal conveyor which carries the bags at waist height to a stacker operator. The stacker operator, located about 15' from the loading station, removes the bags from the conveyor and loads them on pallets. The pallets, when filled, are transported to the warehouse by a fork lift truck operator. About 2500 bags are produced during an 8 hour shift.

The aforementioned mixing operations are provided with an alternate dust system which directs the material to the wet mixing area in the southwest corner of the workroom. There, a further enclosed mixing with the addition of water yields a paste product. This product is loaded into either 5 gallon or 1 gallon cans, the covers crimped, and the cans palletized for warehousing. Four men are usually assigned to this area.

TESTS AND OBSERVATIONS

It was noted that noise in the workroom was most evident in the mix preparation area (vibrating screen in the hopper) and at the dry mix filling station (St. Regis packer and adjacent auxiliary equipment). Noise level measurements were obtained in those areas and are noted on the attached Sound Pressure Level Survey form.

II. P & S OPERATIONS, BUILDING 212

WORKROOMS, EQUIPMENT AND OPERATIONS

The plaster operations are conducted in a three story corrugated steel structure, Building 212. The upper floors of the building are relegated to the storage, mixing, and conveying of materials to produce the plaster mix, which is essentially gypsum. The first floor is used for product bagging and shipping.

The above operations are conducted by a four man crew about 4 hours per day, once or twice a week, producing about 400 tons per month of bagged material. Before the advent of dry wall and wallboard, 12,000 tons per month were produced at this facility.

The mixing and conveying operations on the upper floors are conducted in essentially closed systems. The multi-wall bagging operations take place on the first floor. Bates bag loading machines automatically fill the bags to the desired weight. At the No. 1 Bates Packer, two workers pack 80 pounds of molding plaster into side opening bags. The filled bags are manually placed on hand trucks and removed to a shipping area. At the No. 3 Bates Packer, lightweight plaster is bagged by one worker. The bagged product is conveyed to the adjacent shipping area.

TESTS AND OBSERVATIONS

It was noted that dust was only evolved at the bagging operations.

Air tests were taken in the breathing zone of the workers while conducting bagging operations. The concentration of dust was found to be 35 MPPCF at the No. 1 Bates Packer, 7 MPPCF at the No. 3 Bates Packer. Analysis of ledge dust in both packer areas disclosed a free silica content of less than 5%.

No local exhaust ventilation is provided for the Bates Packers. Workers at the No. 1 unit were cartridge type dust respirators; the No. 3 unit operator did not wear any respiratory protective equipment.

III. ASBESTOS EXPOSURE - JOINT SYSTEMS OPERATIONS

WORKROOM, EQUIPMENT AND OPERATIONS

The workroom, equipment, and operations are described in Section I. of this report.

TESTS AND OBSERVATIONS

Air tests were taken in the breathing zone of the workers during joint systems dry mix operations. The following results were obtained:

Sample Location, Breathing Zone	Asbestos Concentration
1. Packer	41 fibers/ml (greater than 5 microns in length)
2. Stacker	17 fibers/ml (" " 5 " " ")
3. Mixerman	28 fibers/ml (" " 5 " " ")

In addition, general air samples were taken at two locations in the dry mix area. Th concentration of asbestos was found to be 31 fibers/ml (greater than 5 microns in length) a a point about 20' west of the packer and 12' northwest of the stacker. The concentration o asbestos was found to be 26 fibers/ml (greater than 5 microns in length) adjacent to the mi hopper (mixerman's work station). The latter test was taken when no mix preparation wa being done.

It was noted that the mixermen wore respirators during the actual mixing operations. Neither the packer nor the stacker wore respirators. It was stated that the packer and the stacker switch jobs about every 350 bags of production.

The floors, equipment, ledge surfaces, etc. in the 40' X 60' dry mix working area wer covered with dust. The dust layer was constantly being built up during the various unit operations, primarily from the heavy concentration of dust generated by the bag filling operation.

CONCLUSIONS

1. Exposure to noise resulting from the Joint Systems operations, as performed at the time of the visit, would not tend to be detrimental to the hearing of the workers.

2. The P & S Building 212 operations, as performed at the time of the visit, would not to to be hazardous to the health of the workers.

3. Exposure to asbestos from the Joint Systems operations would be hazardous to the healt of the workers in the dry mix area.

RECOMMENDATIONS

Re items 1 and 2 above - none.

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OCT 2 0 1972
DIVISION OF INDUSTRIAL

RE Item 3 above - That the exhaust system for the mix hopper be redesigned and reconstructed and that sufficient local exhaust ventilation be provided for the bagging operations, both in accordance with 12 NYCRR 12 and 12 NYCRR 18. That plans for the aforementioned be submitted in triplicate to this Division prior to installation.

AJR:SCL
HD

Albert J. Rosso, M.D.
Industrial Hygiene Physician II

DEP MENT OF LABOR

SOUND PR URE LEVEL SURVEY

1. SOUND LEVEL in Decibels re 0.0002 dynes per sq. cm.

LOCATION – OPERATION	WEIGHTING NETWORKS 20-20,000 cps (Hz)		PREFERRED CENTER FREQUENCIES cycles per second (Hz)							
	dBA	dBC	63	125	250	500	1000	2000	4000	8
JOINT SYSTEMS – BUILDING 230										
DRY MIX AREA – BAGGING										
1. ST. REGIS PACKER WORK STATION	82	89	83	83	81	80	76	72	73	
* 2. " " " "	93	94								
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– MIXING.										
4. MIX HOPPER AREA – VIBRATING SCREEN ON HOPPER FULL	89	94	86	85	80	78	82	85	78	
** 5. AS ABOVE, STARTS AFTER 15 MINUTES OF THE 2 MINUTE BATCH OPERATION.	94	101								

REMARKS:
* ONE SECOND DURATION EVERY 36 SECONDS (AVERAGE) DUE TO AIR RELEASE NOISE – DURING BAG FILLING
** BACKGROUND
*** INTERMITTENT OPERATION; BATCH OPERATION OPERATOR REMAINS AWAY FROM AREA AFTER STARTING CYCLE

4. ASSIGNMENT NO.	5. W. C. B. CASE NO.	6. DATE OF VISIT
BEF-129-72		8/18/72

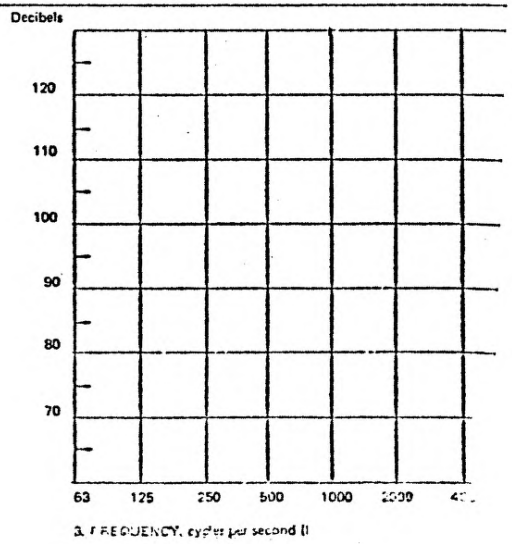
7. NAME OF ESTABLISHMENT
GEORGIA PACIFIC CORPORATION

8. ADDRESS OF ESTABLISHMENT
BLOOMINGDALE ROAD TN OF NEWSTEAD 14001

9. CLAIMANT NAME

10. INSTRUMENTS USED
B&K 2203/1613

11. ENGINEER
H.H. BRUNOTTE



13. FREQUENCY, cycles per second (I

GEORGIA-PACIFIC

INTERDEPARTMENTAL COMMUNICATION

DATE: October 27, 1972

TO: Mr. E. B. Hollingsworth

LOCATION: Wilmington

FROM: J. D. Rauch

LOCATION: Akron

SUBJECT: STATE NOISE AND DUST SURVEY

cc: Mr. John DiLorenzo - Portland
Mr. C. W. Lehnert - Tigard R & D

On 8/18, 9/13, and 9/20/72 we had a New York State Inspector here for dust and noise testing in our Joint System and Plaster Packing Departments. This survey was conducted at the request of the New York State Factory Safety Inspector.

I have attached a copy of their results. As you can see we have no problem with the noise level in either department or the dust level in the Plaster Packing Department. However, they have reported excessive asbestos dust in the Joint System area. The State's Recommendations appear on page 4 of the report.

As you know, Mr. DiLorenzo's office is actively engaged in work to correct this problem. However, we must now submit plans to the State for approval prior to installation.

At this time this is only a recommendation and not a citation, so there is no time limit or fine involved.

But, the State of New York is making O.S.H.A. inspections for 1972, so this will no doubt end up in an O.S.H.A. file somewhere. I believe it would be to our best interest to file our plans to correct this matter as soon as possible. This may avoid a future problem should O.S.H.A. decide to check into this matter.

J. D. R.

att.

k

STATE OF NEW YORK
DEPARTMENT OF LABOR
DIVISION of INDUSTRIAL SAFETY SERVICE
BUREAU OF FACTORIES AND MERCANTILE ESTABLISHMENTS

Georgia Pacific Corp
Bloomingdale Road
Tn of Newstead N.Y. (Akron 14001)

NOTICE OF VIOLATION AND ORDER TO COMPLY

DATE 10/27/72

REFER TO
CAPTION: WWW-SPEC-16-7-2
PREMISES: FED ID# 46001-00-30-014
Bloomingdale Road
Tn of Newstead, N.Y. (Akron 14001)

OCCUPANCY Factory

NOTICE TO BUILDING:
TENANT ☐ OWNER ☒ AGENT ☐ LESSEE ☐

You are hereby ordered to comply with the following requirements of the Labor Law and the Industrial Code Rules at the above premises. These requirements must be complied with IMMEDIATELY unless otherwise specified herein.

Item #32 - Sec 200-1 - Now null & void as result of N.Y. State Div of 57.5-V(M) Industrial Hygiene investigation 9/13-20/72 - report #BEF129-72. Copy of report attached for Dept of Interior.

As a result of the investigation by the N.Y. State Dept of Labor Div of Ind. Hyg Div the following order is issued.

Item #1 - CR 12-1.6 (a)(2) Reconstruct system of local exhaust system provided to remove or control dangerous air contaminants generated or released by mixing operations involving asbestos in the Joint Systems Operations.

File plans & specifications in triplicate for approval as required by Rule 18.5 and do not install, change or alter any machinery or apparatus for any of the purposes specified herein until the plans are approved by the Dept of Labor. Please submit plans in triplicate to the N.Y.S. Dept of Labor Div of Ind Hyg - 2447 Sheridan Av Cleveland N.Y. 14150

Requirements explained to Jack Rausch
Title: Tel Mgr

Wm J Ward
INSPECTOR
FOR THE COMMISSIONER

NOTE: "Sec" refers to section of the Labor Law; "C" refers to the Industrial Code Rules; "R" refers to Title 12 of the Official Compilation of Codes, Rules and Regulations of the State of New York. An asterisk "*" indicates that the order is based on requirements of the State Building Construction Code or the standards accepted thereunder.

SEE REVERSE FOR THE ADDRESSES OF THE DIVISION

ISS-17 (1-71)

DIVISION OF INDUSTRIAL HYGIENE

INSPECTOR'S COPY

REPORT ON FIELD INVESTIGATION

TO: DIVISION OF INDUSTRIAL SAFETY SERVICE, BUREAU OF [X] F&M [ ] CONSTRUCTION [ ] BOILERS

ATTN: CHIEF INSP. E. T. Beaudett SUPV. INSP. E. P. Ehlert DISTRICT 16

1. FIRM NAME	2. DATE OF REPORT	3. DATE OF VISIT	4. DATE OF REQUEST
Georgia Pacific Corporation	10/11/72	8/10, 9/13 & 9/20/72	3/22/72
5. ADDRESS		6. I.H. ASSGT. NO.	7. B.S.A. PET. NO.
[illegible] Road, Town of Newstead 14001		D-IH-120-72	
8. INVESTIGATED BY	9. OFFICIAL(S) INTERVIEWED		
Herman Lamotte, Ind. Hygiene Engineer	Mr. Edward Foley, Office Manager Mr. William Hamner, Plant Engineer		

10. REPORT

In accordance with your request, the above firm was visited to investigate possible excessive noise resulting from the Joint Systems operations, possible air contaminants resulting from P & S operations, and possible exposure to excessive asbestos from the Joint Systems operations

RECEIVED
DEPARTMENT OF LABOR
BUFFALO, N. Y.
OCT 2 [illegible] 1972
DIVISION OF
INDUSTRIAL [illegible]

I. [illegible] JOINT SYSTEMS OPERATIONS, BUILDING 230

[illegible]

The workroom, which measures about 120' X 60' X (25' to 40') high, comprises the one story east end of a large masonry and steel building. The east wall of the workroom contains a large sliding door, a man-door, and 3 openable windows. There are 2 openings in the west wall which lead to the warehouse area. The north and south walls contain no openings. General mechanical ventilation is provided by a 30" diameter exhaust fan mounted in the east wall at a height of 10'. Additional ventilation is provided by 2 gravity roof ventilators.

[illegible] OPERATIONS

The dry mix joint compound for wallboard is prepared in a 40' X 60' area located in the northeast corner of the workroom.

The process involves the preparation of about sixteen 4000 pound dry mixes during the 8 hour day shift. Each mix is comprised of 75% or more limestone with amounts of asbestos ranging from 220 to 320 pounds and mica up to 640 pounds, depending on the product specified. Minor amounts of other materials are also included.

Except for the limestone which is added from enclosed bins, two mixermen load the other ingredients into a waist high 5' X 7' hopper. The crysotile asbestos, contained in 100 lb. bags, and the mica, in 50 lb. bags, are dropped on bag slashers in the hopper, the contents dumped, and the empty paper bags removed from the area. A vibrating screen caps the hopper to an enclosed conveyor. The hopper is provided with a canopy hood at a height of 30" at one end and 40" at the other end, and is partially enclosed.

The subsequent operations, conducted in closed systems, include a ribbon mixer, bucket elevators, and a St. Regis packer. The mixer and elevators are provided with local exhaust systems.

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The St. Regis equipment automatically fills multiwall bags with the correct weight of product material. A packer operator slips a pasted-valve tuck-in-sleeve bag over a feed spout, one of three such outlets. The filled bag is dropped on a horizontal conveyor which ries the bags at waist height to a stacker operator. The stacker operator, located about 15' from the loading station, removes the bags from the conveyor and loads them on pallets. The pallets, when filled, are transported to the warehouse by a fork lift truck operator. About 2500 bags are produced during an 8 hour shift.

The aforementioned mixing operations are provided with an alternate duct system which directs the material to the wet mixing area in the southwest corner of the workroom. There, a further enclosed mixing with the addition of water yields a paste product. This product is loaded into either 5 gallon or 1 gallon cans, the covers crimped, and the cans palletized for warehousing. Four men are usually assigned to this area.

TESTS AND OBSERVATIONS

It was noted that noise in the workroom was most evident in the mix preparation area (vibrating screen in the hopper) and at the dry mix filling station (St. Regis packer and adjacent auxiliary equipment). Noise level measurements were obtained in these areas and are noted on the attached Sound Pressure Level Survey form.

II. P & S OPERATIONS, BUILDING 212

LOCATIONS, EQUIPMENT AND OPERATIONS

The plaster operations are conducted in a three story corrugated steel structure, building 212. The upper floors of the building are relegated to the storage, mixing, and weighing of materials to produce the plaster mix, which is essentially gypsum. The first floor is used for product bagging and shipping.

The above operations are conducted by a four man crew about 4 hours per day, once or twice a week, producing about 400 tons per month of bagged material. Before the advent of dry wall and wallboard, 12,000 tons per month were produced at this facility.

The mixing and conveying operations on the upper floors are conducted in essentially closed systems. The multi-wall bagging operations take place on the first floor. Bates bag loading machines automatically fill the bags to the desired weight. At the No. 1 Bates Packer, two workers pack 80 pounds of molding plaster into side opening bags. The filled bags are manually placed on hand trucks and removed to a shipping area. At the No. 3 Bates Packer, lightweight plaster is bagged by one worker. The bagged product is conveyed to the adjacent shipping area.

TESTS AND OBSERVATIONS

It was noted that dust was only evolved at the bagging operations.

Air tests were taken in the breathing zone of the workers while conducting bagging operations. The concentration of dust was found to be 35 MPPCF at the No. 1 Bates Packer, 7 MPPCF at the No. 3 Bates Packer. Analysis of ledge dust in both packer areas disclosed a free silica content of less than 5%.

No local exhaust ventilation is provided for the Bates Packers. Workers at the No. 1 unit wore cartridge type dust respirators; the No. 3 unit operator did not wear any respiratory protective equipment.

III. ASBESTOS EXPOSURE - JOINT SYSTEMS OPERATIONS

WORKROOM, EQUIPMENT AND OPERATIONS

The workroom, equipment, and operations are described in Section I. of this report.

TESTS AND OBSERVATIONS

Air tests were taken in the breathing zone of the workers during joint systems dry mix operations. The following results were obtained:

Sample Location, Breathing Zone	Asbestos Concentration
1. Packer	41 fibers/ml (greater than 5 microns in length)
2. Stacker	17 fibers/ml (" " 5 " " ")
3. Mixerman	28 fibers/ml (" " 5 " " ")

In addition, general air samples were taken at two locations in the dry mix area. The concentration of asbestos was found to be 31 fibers/ml (greater than 5 microns in length) at a point about 20' west of the packer and 12' northwest of the stacker. The concentration of asbestos was found to be 26 fibers/ml (greater than 5 microns in length) adjacent to the mix hopper (mixerman's work station). The latter test was taken when no mix preparation was being done.

It was noted that the mixerman wore respirators during the actual mixing operations. Neither the packer nor the stacker wore respirators. It was stated that the packer and the stacker switch jobs about every 350 bags of production.

The floors, equipment, ledge surfaces, etc. in the 40' X 60' dry mix working area were covered with dust. The dust layer was constantly being built up during the various unit operations, primarily from the heavy concentration of dust generated by the bag filling operation.

CONCLUSIONS

1. Exposure to noise resulting from the Joint Systems operations, as performed at the time of the visit, would not tend to be detrimental to the hearing of the workers.

2. The P & S Building 212 operations, as performed at the time of the visit, would not tend to be hazardous to the health of the workers.

3. Exposure to asbestos from the Joint Systems operations would be hazardous to the health of the workers in the dry mix area.

RECOMMENDATIONS

Re items 1 and 2 above - none.

RECEIVED
DEPARTMENT OF LABOR
OCT 2 0 1972
DIVISION OF

[illegible] Item 3 above - That the exhaust system for the mix hopper be redesigned and reconstructed and that sufficient local exhaust ventilation be provided for the bagging operations, both in accordance with 12 NYCRR 12 and 12 NYCRR 18. That plans for the [illegible]oremontioned be submitted in triplicate to this Division prior to installation.

AJR:SSL

Albert J. Rosso, M.D.
Industrial Hygiene Physician II