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KAISER GYPSUM COMPANY, I. C.

INTER-OFFICE MEMORANDUM

R.L. Allgood
C.E. Caprye
J.D. Cassidy
J.D. Chambers
N.D. Dicks
COPIES TO D.H. Homan
J.F. Modaff
P.D. Orleman

W.L. Traub
J.H. Walton
R.J. Wiborn
S.R. Witt

cc: P.J. Franklin
G.B. Kirk
J.C. Reilly
E.H. Schaper

DATE March

FROM L.R. Fl.
AT KC 2482

SUBJECT Health Haza

The attached material has been received from the Gypsum Association and is presented for your information.

In connection with protection against asbestos dust, it is advised to use a respirator with a filter especially designed for asbestos dust.

LRF:sb

C O P Y

REPORT ON

C O P Y

INDUSTRIAL HYGIENE FOUNDATION OF AMERICA, INC., DISCUSSIONAL, PITTSBURGH PENNSYLVANIA, JANUARY 12, 13 and 14, 1965

On the evening of January 12th, Mr. Kenneth M. Morse of the U.S. Steel Corp., spoke on major noise sources. There wasn't anything new or startling in the discussion.

On Wednesday, January 13th in a talk by Mr. Thomas B. Bonney, Aluminum Company of America, entitled "Accuracy of Field Measurements of Noise" stressed somethings that were of interest. For one thing, he said that noise tests that were made without complete equipment including calibration equipment were of little value. That anyone using the equipment to do a good job would have to be familiar with the equipment and recognize the methods to be used in relation to the job that was to be done. Oddly enough in the discussion period afterwards he stated that they did not possess an impact noise meter and had done no work on impact noise.

This was followed by a talk on "Typical Designs, Design Factors, Low Frequency Versus High Frequency Attenuation" by Vaughn H. Hill of the DuPont Company. He covered a lot of old ground but he came up with one method of absorbing sound by dampening that was quite interesting, primarily because of the magnitude of the installation that was found necessary. He cited a particular case of the gear housing that was made of one half inch plate and to dampen the sound they put a one quarter inch layer of felt over the housing and then applied one quarter inch of steel plate by means of bolts spaced on ten inch centers stagered. Apparently it was effective but it must have been quite costly. In addition to the plates the base of the machine was filled with concrete, and a retaining box around the base was filled with sand. If such a piece of equipment were on the second floor of a plant I would begin to worry about the added weight that was being placed on this floor area.

At 10:45 Paul E. Toth, Supervisor, Industrial Hygiene Unit, Ford Motor Company gave a report on "Speech Interference, Hearing Damage Risk and Attenuation with Ear Protectors", that was the best part of the whole program. He was not to enthused about the present risk damage criteria that uses the two wave bands 300 to 600 and 600 to 1200 at 85DB as a maximum safe exposure. He cited two cases that were rather interesting.

They had one man who spent 7 days cleaning buckets on a bucket elevator with a hammer he would struck the bucket to knock out material that was on the inside and the maximum time that he would spend actually doing this operation would not exceed 4 hours. He did this for 7 days and at the end of that time complained of ringing in his ears and inability to hear. A check on the actual noise created disclosed a noise energy of 120 DB maximum with the high energy at about 1,000 of frequency. The man was 55 years old and the hearing loss established by the comp. court was 55DB.

In the second case it was a man 60 years old had only 5 hours exposure to a chipping gun used to clean off scale on the inside of a metal tank. The overall noise level was 120 DB and as in the previous case the man complained of ringing in the ears and loss of hearing the day following the exposure. In this case the award by the Compensation Court was 65 DB of loss. Again there was no previous audiometric examination to determine how much hearing loss there was prior to this exposure. When questioned about the exposure Mr. Toth stated that in making the tests no impact noise measurements were made. That an overall noise reading was taken at the sight of the exposure, that a tape recording was made of the noise and this recording was analyzed in the laboratory.

There was discussion from the floor after this at which it was pointed out that a recent study disclosed that if a man were 50 years old and put into a noisey area that the maximum allowable exposure should be reduced by 12 DB, and at 60 by 20 DB. The finding apparently was that the older hearing machanism could not stand or recover from the higher noise levels. If I remember correctly Glorig of California, was in on this particular study.

During the discussion period someone mentioned the California Law which has an exposure chart as follows:

EXPOSURE	20-75	75-150	150-300	300-600	600-1200	1200 to 2400	2400 to 2800	4800 to 9600
5 Hours	110	102	97	95	95	95	95	95
2 1/2 Hours	113	105	100	98	98	98	98	98
1 1/4 Hours	116	108	103	101	101	101	101	101

In theory at least any exposure beyond the hours indicated that would exceed the prescribed noise level in any of the wave bands would constitute and injurious exposure.

It was then pointed out by another member that in Michigan no award is made if the claimant is gainfully employed even though not with the same employer, but at retirement or total disability for any reason an award for hearing loss could be made.

Mr. Toth then went on to describe the work that has been done at Ford Motor in all of their plants in the way of hearing loss conservation and presented the following statements of what they do:

1. In determining noisey environment they use an overall noise level of 90 DB with no analysis for frequency peaks. In other words if the overall noise level is greater than 90 DB the area is immediately designated as a compulsory ear protection area.

2. After various experiments with ear plugs they found that th tiveness varied so much due to fit that they have completely tinued the use of them, and instead require ear muffs in any that is designated as an ear protection area.

3. That while the ear muffs with the liquid in the cushion was more effective it was found that the effectiveness was greatly reduced when used in an area where compulsory eye protection program was also enforce. That ear muffs with the sponge cushion were much mor. effective when eye glasses were worn and therefore they have gone to the sponge rubber entirely.

4. And when buying in quantity they have been able to get ear muffs down to $4.30 a pair. I believe this was a Wilson ear muff but I am not sure.

5. He suggested that if the ear protection program using ear muffs were to be started it should always be started in the winter time so that the men would get use to wearing them before the hot weather came.

6. That in some of their plants where they encounter heat, he has found that the men have rapped the ear muff in aluminum foil and apparently have found it a lot cooler.

7. That in all of the Ford Motor Plants yearly audiometric examinations are made of all of their employees. That these audiometric examinations are made in the plant, that the men are taken directly from their jobs to the medical department and immediately given the audiometric examination and then returned to work.

When asked from the floor how the information obtained with the audiometric examinations was used, Mr. Toth stated that up to this point there had been no attempt to correlate it but it was expected that it would be done.

When questioned as to whether, particularly in New York State, consideration had been given to the possibility that such audiometric examinations of current employees could establish hearing loss evidence for posthumous awards, Mr. Toth said that no consideration has been given to this possibility.

On Wednesday afternoon, I found the material on Air Pollution Codes and Prospects quite disappointing. They spoke of Federal control, State control but admitted their biggest problem, and one for which they had no answers, was the village, city and township codes which admittedly were based on insufficient knowledge of the subject.

Another speaker from Midland, Michigan spoke on the "Broad Engineering Approaches to the Abatement of Air Pollution", and left me with the impression that the whole program was not so much the abatement of air pollution as it was the abatement of neighborhood complaints which the elaborate testing setup in and around the plant was designed to combat and alleviate.

In the evening the engineering problems of air pollution wound up as a discussion of the advantages of certain types of blowers, air filters and washers.

On Thursday morning the subject was Hot Environment, and the first part of the session which governed the measurement and interpretation of data seemed to offer confusion rather than conclusions. Some of the findings of earlier studies which were quite extensive were being reputed by some of the people at the meeting. I believe this is understandable as there apparently hasn't been too much work done on it and the talk and discussion mostly concerned the methods of measurement rather than helpful interpretation of the results of such measurements.

After the coffee break the second part of the program which dealt with the "Engineering Control of Hot Environment Problems" was a little bit more conclusive. The most startling was the presentation by B. R. Small of the Aluminum Company of America on some of the ventilating systems that have been installed in their plants. One of these was unique in that the monitors on the roof of the building were not used as exhaust but for the intake of the air which was driven down into the work areas through ducts and then distributed about 12 feet above the floor through directional veins, and which produced a much cooler air than could be obtained from taking the air from ground level. This combined with water evaporation could apparently produce temperatures below 85° when the outside temperature was between 95° and 100°.

In conclusion I would say that this being the first of the so called "Engineering Discussionals", I would think that future meetings of this type would be very instructive and helpful. The men who were there were top men in their field who have actually done a great deal of work in the different areas of endeavour that were covered and were willing to speak openly about their errors as well as their accomplishments. I would point out that one of the instructions given to people invited to this meeting is that no man will be quoted on any statement that he makes, that no publicity is given to these meetings nor to the people who attend them or speak at them.

You will find attached the list of those people who were registered, though not all of them actually attended. Roughly 40 people were represented.

I believe it would be to our advantage to have some one of our people attend any future meeting of this type that the Foundation puts on.

s/A. B. Hoftiezer
A. B. Hoftiezer
Vice President

ABH/sm
Attachment

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ASBESTOS IS POINTED OUT AS CAUSE OF LUNG CANCER

by

Alton Blakeslee
AP Science Writer

NEW YORK (AP) -- Medical specialists pointed a strong finger of suspicion today at asbestos as a cause not only of lung cancer but also of another extremely rare form of fatal human cancer.

This cancer, known as mesothelioma, involves the lining of the abdominal and chest cavities.

Much of the specialists' evidence comes from autopsy studies of men working with asbestos as an insulation material.

They said it also is possible that dust from products containing asbestos might be exposing people generally to some risk of cancers. How much risk there might be, they said, they could not tell.

Release Dust

Asbestos is used not only for insulation but as a flooring material, in automobile brake shoes, and in many other applications. Ordinary wear and tear, they said, might release dust into the atmosphere.

The report was presented to the American Public Health Association by Drs. Irving J. Selikoff and Jacob Churg of the Mount Sinai Hospital, New York, and E. Cuyler Hammond, Sc.D., director of statistical research for the American Cancer Society. Dr. Hammond is known for his studies of cigarette smoking in relationship to lung cancer.

Asbestos is a mineral, magnesium silicate, and about 3 1/2 million tons of it are used worldwide each year, they said. In 1935, worldwide usage amounted to about 500 tons, the researchers said.

Tiny, hard particles of asbestos can lodge in the lungs during mining, processing and application of asbestos-containing materials, or possibly from dust raised through normal wear, they said.

"We had previously found that lung cancer and possibly gastrointestinal cancer were markedly increased in incidence among asbestos insulation workers," they said.

Increase Noted

Now they also find a markedly high increase among such workers of mesothelioma, a cancer so rare it is not classed separately as a cause of death in the international classification of diseases.

As a prime example, they reported finding 10 deaths due to this form of cancer in a study of 307 deaths among New York and New Jersey building trades union members engaged in using asbestos at least occasionally as an insulation material.

By contrast, this form of cancer was found to be the cause of death among only three out of more than 30,000 autopsies in a study of the general population sponsored by the American Cancer Society.

Other Studies

Other studies showed a high incidence not only of lung cancer but mesotheliomas among persons who had asbestos particles in their lungs at the time of their deaths, they said.

"It would appear that mesothelioma must be added to the neoplastic (cancer) risks of asbestos inhalation and joins lung cancer (53 out of 307 deaths) and probably cancer of the stomach and colon (34 of 307 deaths) as a significant complication of such industrial exposure in the United States," their report said.

The cancers may not appear until 20 to 30 years after asbestos dust is inhaled or swallowed, they said. Since the particles do not dissolve, they may remain in body tissue as a continuous source that might incite ultimate cancer.

Dr. Hammond said one worry is whether a few or even a single past exposure might set the stage for cancer. He said this is a matter calling for more research.

Taking precautions to avoid breathing in asbestos dust is a main protection for industrial workers, he and Dr. Selikoff said.