

July 13, 1934.

MR. J. M. VANE

BADIN WORKS

MR. M. M. ANDERSON

PITTSBURGH OFFICE

(CONFIDENTIAL)

RE: DUSTY WORKING CONDITIONS

Your letter of June 14, 1934 relative to the above was referred to the writer for attention. I have accordingly made a survey of the Badin plant and in collaboration with Mr. L. G. Daniel have arrived at the following conclusions.

CARBON PLANT

The majority of materials used in the process of manufacturing carbon are of necessity dry and make for a rather bad dust condition.

Petroleum Coke: This coke is received in hopper bottom cars and at present, due to reduced operations, is for the most part unloaded directly into a four-roll crusher. There is some dust from crushing, density of same depending on dryness of coke. One man is employed approximately twelve hours per week. The installation of exhauster or providing operator with respirator would improve this condition. We have had no complaints and no protection is used at present.

In full time operation the coke is unloaded into outside storage and operators exposure is increased proportionately.

The crushed coke is carried by conveyers to storage, where there is possibly more dust encountered than in crushing. However, the crane man is the only one exposed - from one to three hours per day. While we have not had any complaints from this source, our suggestion would be to provide crane man with respirator rather than the installation of dust collector.

The coke is then passed thru the caliner and

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very little dust is encountered until it is dumped from the extractors to scale and carried by elevators and closed screw conveyors to the bunkers. This operation is very dusty and in all probability could be improved by some work on the elevators, in addition to providing operator (exposed approximately 8 hrs. per day) with respirator. We have had no complaints and do not use any protection at the present time.

The calciner operator, while not exposed to any dust, does come in contact with gas and smoke fumes for ten minutes or more every two or three hours. We have had occasional complaints of headache and probably should furnish respirator for this operation.

The calcined coke from the bunkers is fed to Compeb mill for grinding and conveyed to bins over the mixers where it is drawn out into scales. This operation is a very dusty one, and while the Compeb mill is much superior to the Raymond mill from a dust standpoint it is still very dusty, including all of mixing room operations. Three men are exposed approximately 36 hours per week. We have occasional complaints of headache and nausea. No protection is being used at present. In addition to furnishing operators with respirators, I would suggest that some study be made as to the best method of dust elimination, particularly in mixing room, as it is far from a simple problem and one which will probably require spending some money on dust collecting equipment.

Pitch:

Pitch is received in box cars and unloaded from a 12 or 15 ft. trestle to storage below. Very little dust is encountered here and no protection is used, with the exception of grease for face and arms to prevent burning. From storage it is

carried by wheelbarrows to the Sturdivant rotary crusher and by elevator to bins over mixer. There is some dust from rotary crusher, but operator is not confined to this area as in the mixing room. We have not had any complaints from this source. One man is exposed approximately twelve hours per week on this operation.

Carbon Butts: Carbon butts are received from the redding room in box cars and unloaded into Kennedy crusher and conveyed to Raymond mills for grinding, this being the dustiest operation we have. Some dust of course is encountered thru unloading and crushing, but in comparison to Raymond mills it is not so noticeable. The stocking collectors are not effective and make for a very dusty condition. I do not believe there is any way to improve this condition without discarding Raymond mill and installing Ball or Rod mill for this grinding. It is rather unusual, but we have had few complaints from this operation and do not use any protection. One man is exposed approximately 10 hours per week.

Gas Coal: Gas Coal is received in hopper bottom cars and is dumped from trestle to storage below. Very little dust is apparent during unloading as this operation is out in the open and unloader is not confined. Possibly more coal dust is encountered by crane man and gas producer operator than unloader when coal is placed on gas producer floor and is then handled again by producer operator. We have not had any complaints and I don't believe any difficulty will result here.

Black Summer Oil: This oil is used as a lubricant on carbon press, but very little if any fumes or smoke are given off; certainly not enough to in any way endanger the operator.

While the above covers materials used in manufacturing carbons, there are other conditions incidental thereto that I feel should be given consideration, as practically all the processes are dusty.

Packing, Pulling & Cleaning Carbons:

All these operations are dusty and the men performing these tasks are for the most part confined to dusty area. The operation of packing material plant also makes for a very dusty condition, which is not confined to plant alone but covers a rather large area outside. The operator however is protected with G.R.220 Pullsman respirator. This plant only operates approximately 18 to 20 hours per week, but I believe some dust collecting equipment could be used very advantageously at this point. We have had occasional complaints of headache and nausea here.

While the operation of the gas producer is not dusty, the operator is exposed to some gas fumes, possibly not enough to be harmful but we have occasional complaints of headache from this source.

In general, the Carbon Plant as a whole is a dusty place, all employees having some degree of exposure to same on all processes. My suggestion for maximum elimination of dust from carbon manufacture would be to have dust collecting engineers make a study of same and recommend equipment that will really do the work. The elimination of dust from this source does not in any way involve the question of good house-keeping. As I see it, it is a problem of installing suitable collecting devices that will not only remove the dust but also collect same, as we would no doubt sustain a heavy

loss in dust pumped to outside, in addition to contaminating the air, should simple exhausters be placed for the purpose of dust removal only. At present the Carbon Plant is only operating about one-fourth of its capacity and actual man hours exposure is not so great. The exposure hours of course would increase proportionately with full time operation.

ALUMINUM PLANT

As in the Carbon Plant, the materials used in the Aluminum Plant are dry and dusty. However, for the most part they are received ready for use, thus eliminating dust exposure on crushing and grinding operations.

Alumina: Alumina is received in box cars and unloaded by hand. This operation is probably the dustiest one we have in the Aluminum Plant and the unloader is exposed to a very bad condition. He is protected by No. 7 Filter type respirator. One man is exposed approximately 30 hours per week. We have had some complaints from this source and all employees on this operation seem to be more susceptible to colds and frequent layoffs. Potroom employees, particularly in east end of room, are also exposed to some dust from this operation, the density of same depending on prevailing winds, as there is always a great deal of dust around car and tank when unloading.

Aluminum Fluoride: This material is received and unloaded the same as alumina, with practically the same dust conditions present. However, with present operations out to about 1/6 capacity, the exposure hours on this operation is only about 8 hours every six months. I believe about the only solution to the problem of dust

elimination from unloading both alumina and aluminum fluoride would be to receive same in tank cars which are unloaded by enclosed screw conveyor connected to elevator.

Cryolite: Cryolite is received in barrels and very little dust is encountered in unloading. However, when same is handled in potroom there is considerable dust from this source, which will be given consideration under general work in potrooms.

Pot Lining: This operation is more or less in a class with prevailing conditions in Carbon Plant due to the operations of crushing, drying and grinding coke. This process is very dusty and additional dust is created in handling and weighing pot lining mix materials. Here again it is not a question of good house-keeping and our suggestion would be to install dust collecting devices for maximum elimination. No protection is used at the present time and we have had no complaints. Exposure hours vary from 20 to 40 hours per week with one potroom operating.

Sand Blasting: Sand blasting operations are also carried on in this building and for the most part in the open. However, their work is not carried on while pot lining men are on duty and the operator is furnished with Pangborn vented hood, which seems to take care of open work fairly well, altho there is probably quite a bit of suspended dust that remains in the air for some time after actual operation of machine has stopped. Exposure hours at present vary from 6 to 18 per week. We have had no complaints from this source. For maximum elimination of dust from this source, I would suggest an enclosed room equipped with dust collecting device and a sand blast helmet with induced or force draft ventilation for operator.

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Some periodic sand blast work is also carried on by the construction force on gates at dams. This work however is of necessity done in the open where there is no one likely to be exposed except the operator and he is protected by Pangborn sand blast hood, which seems to be very effective for this class of work.

Redding Room: Operations in this room are comparatively free from dust, with the possible exception of handling carbon butts, and while there is some dust incidental to this work the operator is not confined. Exposure hours are very few, which makes for a very good condition from the standpoint of dust in this department.

Petroom operations in general from a dust viewpoint are far from being good, as practically all materials handled are dry and dusty. Some suspended dust seems to be present in the air at all times, to which the workmen are constantly exposed while on duty. Then when working the pots, changing carbons and oring up, they are of course exposed to a greater quantity of dust, particularly in Room 22 or on the Niagara type pot which is worked from platform between pots, approximately same elevation as top of pot. We also have another bad condition in Room 22 where the pots are so close together it is impossible to sweep between or back of them. In spite of all precautions, ore accumulates in large quantities, which, if permitted to build up, provides insulation in the wrong place and causes pot shell to become red. This ore at present is blown out with compressed air on one six hour shift each day and makes for a bad dust condition. I believe a vacuum system for this ore removal would improve conditions at this point considerably. The prevailing winds

govern in a large measure the density of dust on this and practically all other petroom operations. In general the petrooms are dusty and it is a condition that will require some study and the installation of dust collecting equipment to overcome. We do not furnish any protection and have had very few complaints from this source. This operation is continuous and at present is divided into four 6-hour shifts.

SILICON PLANT

The manufacture of silicon, with the exception of sand blast operations, is probably the only place in the plant where employees are exposed to silica dust. Materials used to produce metallic silicon are for the most part dry and dusty, with ^{one} possible exception.

Gravel: Gravel is received in hopper bottom gondola cars. Due to being taken from river bed, it is still damp when it reaches us. This gravel is unloaded direct to conveyor and elevated to storage tanks. It is not crushed and there is no dust visible during unloading, conveying and elevating operations. When this gravel is drawn from storage tanks, however, it is dry and some dust is probably encountered from this source in weighing, mixing and conveying to furnace. We do not use any protection and have had no complaints at this point. Exposure will approximate 4 hours each shift or 16 hours per day. Respirators would probably take care of this operation.

Charcoal: Charcoal is received in box cars and unloaded with shovel to conveyor which dumps inside of building to storage space on floor. Moisture in this charcoal causes variations in the charge;

therefore every effort is made to receive same as dry as possible. Dust conditions inside car during unloading operations are bad and there is some dust in furnace building from both unloading and dumping from elevator. No protection is furnished, but the unloaders sometime use a piece of damp cheese cloth over mouth and nose. Respirators for men inside of car would improve conditions at this point. However dust in furnace building will probably require the installation of collectors for maximum elimination. We have approximately 16 hours exposure per week on this operation.

Carbon Butts: These are received in box cars and unloaded by shovel to conveyor, carried to crushers and thru sand rolls to be used in Soderberg electrode. This is by far the dustiest operation we have to contend with in the silicon plant and dust from this source covers practically all of furnace building, causing exposure to all silicon plant employees on duty while this operation is carried on. For maximum improvement at this point, some study should be made on method of crushing, in addition to the installation of dust collecting equipment. We do not use any protection and have had no complaints. Fortunately, the exposure hours are comparatively few as this operation is only carried on for two 6-hour shifts every three months.

Fumes: The 2500 K.W. silicon furnace gives off a large volume of vaporized silica, but for the most part this is taken care of by hood and stack which carries same to outside of building. Also, during tapping operations a large quantity of silica vapor is given off and makes a rather bad condition in the furnace room. This however was improved considerably about four weeks ago by placing hood over

tapping trough leading to crucible and connecting same to an exhauster which connects to stack. At present I would say very little silica vapor escapes in furnace room during tapping operations.

Crushing: The metallic silicon is crushed in Building #38 by Aurora jaw crusher and quite a bit of dust is created during this operation. Two men are exposed approximately two hours each day and no protection is furnished. I believe a hood connected with exhauster and dust collector would furnish a practical solution to dust problem at this point.

ELECTRICAL DEPARTMENT

Rotary Stations: The rotary stations are comparatively free from dusty operations. However, maintenance men are exposed to some dust in blowing off rotors with compressed air and while there seems to be a combination of dusts present, copper dust predominates or at least causes more trouble as it takes but very little of this dust to produce acute nausea. The nausea is always of short duration, but at times it reaches a rather severe stage. The men affected do not seem to suffer any ill affects afterwards but we find our older men are more susceptible to nausea from this source and it is probably more severe. We have tried several different types of respirators for this work, but as a rule the men claim several layers of cheese cloth or gauze dampened and placed over nose and mouth is much easier to wear and just as effective. Some times a canvass hood is used to cover machine, with an exhauster at bottom, and while this arrangement keeps the dust from being scattered over the building, it does not in any way improve conditions for the men blowing off machines.

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Cranes: We also have a dust condition similar to the above but somewhat modified when blowing off cranes. The men as a rule wear filter type respirators or cheese cloth masks and while we have never had a case of nausea on this work, the men have noticed the same peculiar taste in mouth that occurs when blowing off rotors, produced no doubt from contact with copper dust. Exposure hours will run from 16 to 20 hours a week on basis of present operations. I believe a vacuum system could be worked out for these two operations that would practically eliminate the dust hazard on this type of work.

Motor Shop: Maintenance men are exposed to a great deal of dust when blowing off motors, the kind of dust of course depending on location of motor. They are protected by Pullsman filter type goggle respirator, which seems to be very efficient on this work. We have had no complaints from this source. However, I see no reason why a vacuum system could not be used to advantage on this operation also.

MAINTENANCE AND CONSTRUCTION

These men, with the few exceptions noted, do not as a general rule come in contact with any great amount of dust, as most of the dust producing operations are idle while their work is going on. From a dust standpoint, I would describe working conditions for these men as very good.

In general, all occupations that have not been taken up in detail are for the most part comparatively free from dust. At times wind variations will cause some dust to drift to very remote places, but I believe a dust count taken at such places would show a very low content.

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I believe some experimental work along the line of dust elimination could be carried on very advantageously here. It is a problem that will require a great deal of study and some expense if maximum results are obtained.

JMV:EG

J. M. VANH.

cc to Mr. S. A. Copp

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FOX 042808

[40] From: Kathryn J. Rezens at AMPCCN3 11/4/94 2:16PM (1829 bytes: 1 in)
To: Earl R. Foley at WENCCN1
cc: Gerald E. Gibbons at WENCCN1, Felicia J. Bayer at PITCCN2
Subject: History of Mesothelioma at Alcoa

----- Message Contents -----

Text item 1: Text_1

Earl,

Regarding your question of past cases/deaths due to mesothelioma for active employees at Alcoa- I did not come up with much.

I spoke with Lyn Lang, Kevin Oxley, Chris Dixon-Ernst and others.

Our current workers' comp recordkeeping system indicates past and open cases of "dust disease of the lung" with an accident agent and or contact agent of "asbestos", but does not go to the extent of indicating the diagnosis of "mesothelioma".

Among those with the contact agent or accident agent of "asbestos" only 2 are receiving "death dollars". "Death dollars" are given when the cause of death is determined to be work related. We cannot determine if the cause of death for these 2 individuals was due to asbestos or some other agent.

Keep in mind that the workers' comp recordkeeping system is limited and lists all cases from previous years that were still open in 1983, and all cases since 1983.

Thus, information from this source is very limited.

Per Chris Dixon-Ernst, the PMR (proportionate mortality ratio) study did not reveal any deaths due to mesothelioma between 1980 and 1988.

A review of death certificates is not a viable option at this time.

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