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HARVARD UNIVERSITY
SCHOOL OF PUBLIC HEALTH

INDUSTRIAL TOXICOLOGY

55 VAN DYKE STREET
BOSTON, MASSACHUSETTS

January 18, 1926.

Gerard Swope, President,
General Electric Company,
120 Broadway,
New York City.

Dear Mr. Swope:

During the last two months I have made visits to
the plant in Philadelphia at Willow and Seventh Streets, the
one in West Philadelphia, the one in Baltimore, and the one
in Bridgeport. I also went, at their request, with Mr. G. W.
Stickney and Mr. Ward Harrison, to see the lighting system of
the East Boston Lamp Works.

Enclosed you will find brief reports of these visits.
From now on, my reports will be usually brief because my
visits are more in the nature of a check-up than an investigation
and it is unnecessary to comment on anything but a new feature
or perhaps an old evil which has not been corrected as yet.

Yours truly,

Oliver Hammond

AH:F



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Philadelphia.

November 27, 1925.

The visit to the plant at Willow and Seventh Streets where I met, W. R. Mr. E. P. Higgs, Mr. Teale, Mr. C. P. Bloomer, and Mrs. E. N. Miller, was rather hasty because my chief objective was the new plant in West Philadelphia to which Mrs. Miller conducted me later.

I found here a change in the coating used for machine parts which is, I believe, a decided improvement. The new Pyroxylin, lacquers, as made at present, contain less harmful substances than did the older lacquers of this class and the resin lacquers. These are free from wood alcohol and usually from benzol. The lacquer ovens in this plant are excellent and there are no fumes from them. It is unnecessary to repeat my former favorable comments on the provision for the comfort and health of the employees in this plant.

West Philadelphia.

Mr. H. E. Kemp took me through those departments which were operating at the time, but a second visit will be necessary if I wish to see the sand-blasting of large machine parts, acid-dipping, and spray-painting.

The employment department and dispensary are large and admirably housed and equipped. I should have no suggestion whatever to make except possibly that a door opposite the entrance door would make the dispensary easier of access for a large part of the plant. The wash-rooms for men are much the best I have ever seen anywhere.

Spray-painting was not in operation during my visit but it is apparently unusually well done, for there was no apparent scattering of spray

droplets, and these would have betrayed themselves, for much of the paint was red lead and would have appeared on nearby surfaces. The truck panels can be sprayed under great hoods, but much of the work must be done out in the general room, and if it were not for the skill with which the spray-gun is handled there would be a risk not only to the painter but to others. My impression at present, from seeing not the actual work but the results, is that the Eclipse gun which is used here is much better than the ordinary gun or else the painters are unusually skilled men. Pyroxylin coatings are used here also. The buildings are large and no criticism could be made of the general ventilation, lighting, and accident prevention.

It may be that there will be some trouble among the men who work near the welders because welding repair work has to be done in different places wherever the heavy machine parts are, and in order to protect other men from the glare of the flame there are heavy metal screens which must be set up as needed, some of them requiring the travelling crane because they are so heavy. A good deal of vigilance will be needed to see that these screens are always used.

A minor point, but one which is worth mentioning because it bears on a situation I have observed in other ^{plants} departments, has to do with the bubbling fountains for drinking water. Those selected for the Willow Street plant are of the best approved variety, carefully designed to prevent the carrying of infection. Those selected for the West Philadelphia plant are poor and do not afford the proper protection. It is hard to understand how this should happen. The explanation given me was that the water in the first plant was not cold enough and that the second plant is an improvement in that respect, but obviously this has nothing to do with the drinking piece.

The medical department was not yet in working order and will have to be visited later.

JAN 19 '26

Baltimore.

November 30, 1925.

Mr. J. A. Muir took me over the plant and showed me several new features which are designed to afford protection against fumes or dust or accident. I should like to pay tribute to the close attention to details which is evidenced throughout the plant.

The new glass shield over the grinding wheels is ingenious, does not interfere with work, and prevents flying particles from reaching the grinders' eyes. The exhaust along the edge of the cyanide tank does not prevent the men's approaching it from both sides and yet undoubtedly lessens the escape of fumes. The new brass foundry is excellent, with no escape of fumes during fusing and so large and high that there is good dilution of the fumes formed in pouring. The method of handling the cyanide in case-hardening is especially good and might serve as a model for other plants. It is done in a small separate room which is kept locked, is entered only by two men, and is well ventilated. There is also protection against splashing when the heated metal is dropped into the water. The man in charge is perfectly aware of the necessity for precautions in using and storing sodium cyanide. Welding is not so much of a problem here as in some other plants because the work can be done in one room, and men who are not protected by goggles do not run the risk of eye irritation from the light of the torch.

This plant has very simple and inexpensive equipment both for the dispensary-employment-office and the cafeteria, but they are so satisfactory that it is evident that careful planning may bring about as good a result as the expenditure of a good deal of money. Any plant which has only a small space to devote to the employment office and the physician's quarters might

well copy the arrangement in Baltimore. The bubbling fountains are of unusual type, nickel-plated instead of porcelain-enamelled, of a simple but entirely satisfactory type.

Bridgeport

January 4, 1925.

On arriving at the plant I found that Dr. Taylor was about to address the foremen on health questions, and later in the day Mr. C. W. Collins was holding a meeting of the safety committee. I attended both and was much interested to hear the discussions on the two subjects and to see the close acquaintance the men displayed with the problems in their own departments. The health and safety work seems to be in admirable hands.

Mr. W. Stuart Clark, Mr. H. Hunerkopf, Dr. F. A. Taylor, and Mr. C. W. Collins showed me the new developments since my last visit, the most interesting of which is the rubber department. The only risk I found here comes from the litharge used in rubber compounding, for that is the accelerator used in all batches of rubber and no rubber solvent at all is required. One barrel of litharge a day is weighed on open scales and emptied into the mixer. The man works with great care and no dust was evident while weighing, but it was impossible to avoid it when the batch went into the mixer. This department is in course of reconstruction and the feed into the mixer will be through a pipe from the room above. It will be desirable to have some device here to prevent any escape of litharge dust. The use of the mixer is of course a great improvement over the usual method in rubber factories of dumping the dry compounds directly into the open mixing mills. In the panning room great efforts are being made to diminish the amount of soapstone dust in the air.

Certain features which seemed open to criticism had, I found, already been considered by Mr. Hunerkopf and plans had been made for remedying them. Such are the poor ventilation in the department using hot paraffin, "wax" where window fans have been ordered, the steam from the

potash tank, and the hoods over the tanks in the plating room. These last are of the old-fashioned type, low and covering the whole tank, thus tending to hold down the fumes, while in the acid-dipping room the hoods are of the new variety placed at the back, slanting, with a strong suction. Mr. Runerkopf assured me that the latter are to be installed in the plating room also.

The illumination in several departments has recently been modernized but seems to be only partially successful, for many of the former lamps, low and providing direct lighting, have had to be retained.

Cyanide case-hardening has recently been moved to a large room where the furnace and the supply of cyanide are out in the open. It may be that this is a temporary situation, but if not, it is open to criticism, and I should advise treating that process as is done in Baltimore.

The provision of rest and comfort for the 1400 women is inadequate. The chairs provided throughout the plant are better than the average, and it would be a mistake to make any change at present before the studies of seating now being carried on in Schenectady are completed. The only change I should suggest here is the provision of ordinary low comfortable chairs for the girls winding spools in 25B whose work requires them to be on their feet, but who could sit down and rest occasionally. It is in the matter of rest rooms that there is decided need for improvement. Up to now, I am told, the buildings have been in a continual condition of change and readjustment, but that is passing over and it is possible now to provide the sort of quarters which are to be found in the better plants of the General Electric. At present there is a matron's room with only one cot, and this is not open at noon although a woman can rest there during the noon hour if she reports to the matron before twelve o'clock. This room, with two straight chairs and one rocker, is all the 700-800 wire and supplies girls have. Buildings 25 and 27 have 160 girls, with no room. Office girls have no rest room at all, but I was shown the

space which is to be devoted to a room for them. The dispensary has a room for girls, with two cots, and the office employees and those in 28 and 29 can go there easily; the others are pretty far away. There is a tiny room for a second matron, but it has only two chairs. Less than half the women go home at noon, so there is no fear that pleasant rest rooms would not be fully used and appreciated. The toilet rooms are well located, easily accessible to all departments, and very good.

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