

FILE NAME: General Electric (GE)

DATE: 1939-1967

DOC#: GE196

DOCUMENT DESCRIPTION: GE Asbestos - BC Notes & 5 Docs [From PA Archive]

General Electric Asbestos

- 1967 Application for approval of air recirculation system with asbestos dust as contaminant
- 1937 Investigation of Hazard of Asbestos Dust at General Electric Co. York Wire Works
- 1939 request for info regarding harmful effects of asbestos dust
- 1965 Operation/Hazard/Control Measure matrix with asbestos dust hazard documented Crocidolite asbestos ball milled and ground manually. Exhaust hood recommended

APPLICATION FOR APPROVAL OF AIR RECIRCULATION SYSTEM

DATE Feb. 27 1967

PLANT NAME General Electric Apparatus Service Shop ADDRESS 4930 Buttermilk Hollow Rd., West Mifflin, Pa.
CITY AND ZIP CODE West Mifflin, Pa. 15122 COUNTY Allegheny

CONTAMINANTS COLLECTED Saw Dust LOCATION OF AIR RECIRCULATION SYSTEM Coil Department
(DEPARTMENT, BUILDING, ROOM, ETC.)

LIST OPERATIONS EXHAUST VENTILATED TO COLLECTOR AND ALL MATERIALS USED IN THESE OPERATIONS
OPERATIONS MATERIALS USED IN OPERATION (SPECIFIC INGREDIENTS)

Table Saw Wood, Textolite,
Roll Saw Glass Melamine, Oiled Asbestos
Belt Sander Paper

AIR RECIRCULATION SYSTEM INFORMATION

MANUFACTURER OF COLLECTOR Agst Manufacturing Co. COLLECTOR EFFICIENCY DATA _____
MODEL NUMBER DB-2 TYPE COLLECTOR Recirculating
AIR VOLUME RATE OF SYSTEM 900 CFM DAILY OPERATION TIME 2 HR
DESCRIPTION OF AREA TO WHICH AIR IS RECIRCULATED
LENGTH 300 FT.
WIDTH 220 FT.
HEIGHT 24 FT.
NUMBER OF EMPLOYEES FULL TIME 100
IN THE AREA PART TIME _____
QUANTITY OF MAKE-UP AIR SUPPLIED TO AREA 126,000 CFM
LIST SPECIFIC REASONS WHY SYSTEM CANNOT BE EXHAUSTED TO THE OUTSIDE Keep portable for layout flexibility
MAINTENANCE PROGRAM (DESCRIBE) Weekly check to clean and empty unless usage greater than normal.
SOURCE OF MAKE-UP AIR Gas-Fired space and unit heaters
OTHER EXHAUST VENTILATION SYSTEMS IN THE AREA (DESCRIBE) 2- Power Roof Ventilators, 5800 CFM each

TITLE Mfg. Eng. SIGNATURE [Signature] PHONE 462-7400 EXTENSION NUMBER 12

FOR DEPARTMENTAL USE ONLY			☐ REGION REPORT AND RECOMMENDATIONS ON REVERSE SIDE	
REGION	DATE REC'D	BY	☐ APPROVED ☐ DISAPPROVED	
COMMITTEE	DATE REC'D	BY	COMMITTEE ACTION: ☒ APPROVED (CONDITIONAL)	
REGION	DATE REC'D	BY	CONDITIONS:	
PLANT NOTIFIED	DATE NOTIFIED	BY	<u>No conditions</u>	

(USE REVERSE SIDE FOR ADDITIONAL COMMENTS)

Air Recirculation

Re: General Electric Company - Apparatus Service

Points:

1. The use is very occasional.
2. The mention is made about oiled asbestos paper being used. I telephoned the company. This was used on one particular job and is not a normal operation at this machine or any where else in the plant. They had to produce blocks to be used as fillers.
3. The area is large.

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OK to 3/22/67
OK yvk 3/22/67 - complete

Aktina 3/24/67

RECEIVED
MAR 24 1967
FBI - NEW YORK
FBI - NEW YORK
FBI - NEW YORK

INVESTIGATION OF HAZARD OF ASBESTOS DUST

GENERAL ELECTRIC CO.

YORK WIRE WORKS

York, Pennsylvania.

July 14, 1937

Allen E. Dooley,

Julia L. Matthews.

RECEIVED
JUL 14 1937
U.S. DEPT. OF HEALTH
BUREAU OF MINES
WASHINGTON, D.C.

Investigation of Asbestos Dust Hazard

General Electric Co.
York, Penna.

Reason for Investigation.

The management of the York Wire Works of the General Electric Company requested the Division of Industrial Hygiene to determine the degree of hazard caused by the use of asbestos in the plant. Installation of an exhaust system had been contemplated to remove dust produced in the braiding operation but a question had arisen concerning whether or not the degree of hazard was sufficient to warrant the proposed installation.

Collection of the Samples.

Samples for the determination of the concentration of asbestos dust were collected by means of the modified form of the Impinger dust sampling apparatus⁽¹⁾. Ninety-five per cent. ethyl alcohol, U. S. P., was used as the collecting medium. The use of alcohol eliminated any clumping of the asbestos particles, a condition which does occur if distilled water is used. The rate of sampling was one cubic foot per minute. All samples were collected in the breathing zone of the workers. Samples were counted within twenty-four hours after collection. A total of fourteen samples were collected at various locations in the plant.

Results.

1. Braiding Department.

There are 23 asbestos braidiers in this department, arranged in two rows with an aisle for the operators between the two rows. At the time

(1). Hatch, T., Warren, H., and Drinker, P.: Modified Form of the Greenburg-Smith Impinger for Field Use, with a Study of its Operating Characteristics. Jour. Ind. Hyg., Vol. 14, No. 8, October, 1932.

of the investigation a 10-cut yarn was being used on all machines. A total of six samples were collected in the braiding department. The results expressed in particles per cubic foot of air are shown in Table 1.

Table 1.

Sample No.	Location of Sample	Time Started	Cu. ft. Sampled	Particles per cubic foot of air	Date Sampled
1	#22 braider	11:30 A.M.	24.5	582,887	6-29-37
2	do.	1:18 P.M.	30	632,000	do.
3	#3-4 braiders	1:52 P.M.	28	484,827	do.
4	do.	2:34 P.M.	30	504,000	do.
5	#7-8 braiders	10:42 A.M.	30	382,666	6-30-37
6	do.	11:14 A.M.	30	336,000	do.

The average concentration in the braiding department represented by six samples is 470,391 particles per cubic foot of air.

3. Experimental hood on # 24 Braider.

The # 24 braider has been equipped with a hood in an attempt to remove the asbestos lint or "fly" which collects on the braiders during operation. They asked that dust counts be made on this braider in order to determine, if possible, the effectiveness of the exhaust ventilation. Accordingly, during the lunch period when all the other braiders were not operating two samples were collected with the # 24 braider operating. One sample was collected while the exhaust ventilation was shut off and the second one was collected at the same location with the exhaust ventilation turned on. The results are indicated in Table 2.

Table 2.

Sample No.	Time Started	Cu. ft. Sampled	Particles per cubic foot of air	Conditions of ventilation	Date Sampled
7	11:57 A.M.	23	681,732	Off	6-30-37
8	12:08 P.M.	26	264,000	On	do.

3. Asbestos Dust Collector.

The management was interested to know the concentration of asbestos dust produced during the daily cleaning of the asbestos dust collector. This work is done during the lunch hour by an employee who sweeps and brushes all asbestos lint and dust from the room into which the asbestos exhaust from the "K" and "M" machines is discharged. The employee wears a respirator while performing this work. The operation requires approximately forty-five minutes per day. One sample was collected and the results shown in Table 3.

Table 3.

Sample No.	Location	Time Started	Cu. ft. Sampled	Particles per cubic foot of air	Date Sampled
11	Dust collector	12:01	14	218,314,283	7-7-37

4. "K" Machines.

Each "K" machine has a small asbestos card which is used to apply a covering of asbestos to the wire prior to application of the halowax. Five samples were collected in the workers breathing zones on a group of these machines in order to determine the concentration of asbestos dust to which the operators were exposed. Results are shown in Table 4.

Table 4.

Sample No.	Location	Time Started	Cu. ft. Sampled	Particles per cubic foot of air	Date Sampled	Remarks
9	12-13	10:34 A.M.	33	745,085	7-7-37	Hood closed
10	do.	11:01 A.M.	30	163,733	do.	do.
12	21	1:46 P.M.	30	638,400	do.	
13	1-3-3-4	11:23 A.M.	15	1,902,800	7-13-37	Hood opened
14	do.	1:11 P.M.	30	1,172,000	do.	do.

Conclusions.

The results of this investigation indicate that the concentrations of asbestos dust at the operations enumerated, with the exception of the work of cleaning the asbestos dust collector, are well below the maximum safe concentration of asbestos dust in air. Studies up to the present time indicate that the maximum safe concentration for asbestos dust lies somewhere between five and ten millions of particles per cubic foot of air.

The installation of exhaust ventilation equipment on the asbestos braiders is unnecessary from an industrial hygiene viewpoint in light of the results obtained in this study.

Recommendations.

NONE.

July 14, 1937

RECEIVED
JUL 15 1937
BUREAU OF MINES
WASHINGTON, D. C.

510 Commonwealth Bldg.,
May 11, 1937

General Electric Co.,
York Wire Works,
453 S. Albemarle St.,
York, Pa.

Att: Mr. F. R. Kaimar.

Gentlemen:

There will be a little delay in our survey to determine the dust concentrations in the asbestos braiding department of your plant. This delay is due to the fact that our purchase of hex-free ethyl alcohol, which must be used in the determinations, has been held up pending approval of storage facilities by the Bureau of Internal Revenue.

That approval will be issued shortly and just as soon as alcohol is procured, we will commence the study.

We regret this delay, but, as I explained to Mr. Kaimar on my recent visit, rather anticipated it because of the numerous channels through which such a request must travel before final approval.

Yours very truly

Allan E. Cooley, Chemist,
Industrial Hygiene Division.

RECEIVED
MAY 12 1937
INDUSTRIAL HYGIENE DIVISION
U.S. DEPARTMENT OF HEALTH
WASHINGTON, D.C.

COPY

GENERAL ELECTRIC

York Wire Works
453 S. Albemarle St.
York, Pennsylvania

Department of Industrial Hygiene
Bureau of Industrial Standards
Harrisburg, Pa.

Gentlemen:

We have recently installed, at our York plant, new equipment for the braiding of asbestos yarn in the manufacture of asbestos insulated wires and cable. This equipment, as supplied by the manufacturer, does not incorporate provisions for exhausting the dust and particles of asbestos fiber which emanate from this operation. We have had under consideration quite recently, the problem of adequately ventilating the area surrounding each braiding machine, in order to remove the suspended particles. However, some question has arisen concerning whether or not the degree of hazard caused by these machines would be sufficient to warrant complete exhausting.

In view of our interest in this problem, we would request and appreciate your consideration of conducting a survey for us, with proper instruments of precision in order to determine by such tests the advisability of carrying out the proposed installation.

As you are already familiar with our plant conditions as a result of former surveys at which the solvent vapors were primarily considered, we would appreciate your further cooperation and advice in the immediate problem we have under consideration.

s/ F. B. Kaiser.

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December 29, 1939

Mr. Franklin Keesey
President
York County Industrial Union
Council of the C. I. O.
York, Pennsylvania

Dear Mr. Keesey:

Your letter dated December 12, 1939, requesting information concerning the harmful effects of inhalation of asbestos dust, and information concerning chloronaphthalene and chlorodiphenyls has been referred to this Division for reply.

In recent years the Public Health Service has been studying the possible harmful effects of chlorinated diphenyls. The study has not been completed for publication. However, a similar study has been completed and reported by Dr. Cecil K. Drinker, Department of Physiology, Harvard School of Public Health, Boston, Massachusetts. This article, entitled "The Problem of Possible Systemic Effects From Certain Chlorinated Hydrocarbons", appeared on page 283 of the Journal of Industrial Hygiene and Toxicology in the September issue, 1937. A copy of this article may be obtainable through your public library.

Other references of interest on this subject are:

1. A preliminary report of the dermatological and systemic effects of exposure to hexachloronaphthalene and chlorodiphenyl. W. B. Fulton and J. L. Mathews. Special Bulletin No. 43, Pennsylvania Department of Labor and Industry, Harrisburg, Pennsylvania.
2. Safe Practice Bulletin No. 21 entitled "Insulation of Fire With Synthetic Wax (Chloro Compounds)". Department of Labor and Industry, Harrisburg, Pennsylvania.
3. Flinn, F. B., and Jarvik, H. M.: Proceedings of the Society for Experimental Biology and Medicine, 31, 118 (1936).
4. The halogenated hydrocarbons, their toxicity and potential dangers. W. F. von Oettingen, Journal of Industrial Hygiene, 19, 349, October 1937.

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Council of the C. I. O.
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3. Flynn, F. B., and Jarvik, H. E.: Proceedings of the Society for Experimental Biology and Medicine, 35, 118 (1936).
4. The halogenated hydrocarbons, their toxicity and potential dangers. W. F. von Oettingen, Journal of Industrial Hygiene, 19, 349, October 1937.

Mr. Franklin Keesey

- 2 -

December 29, 1939

5. Toxicity of Halowax and chlorinated naphthalene. Journal American Medical Association, 107, 1386, October 23, 1927.

This Division has recently reported a study of the effects of asbestos dust upon the health of workers in the textile industry. I am sending a copy of this report under separate cover.

With regard to your request for the services of a federal chemist or pathologist, I regret to advise that we are not prepared at this time for this work. Furthermore, this work is within the province of the State officers. It is suggested that you communicate with Dr. William B. Fulton, Director of the Division of Industrial Hygiene, State Department of Health, Harrisburg, Pennsylvania, as his department is engaged in this type of work.

If this Division can be of any further assistance in any way, we shall be glad to hear from you again.

Very truly yours,

H. A. Garra, Senior Surgeon
Chief, Division of Industrial Hygiene
National Institute of Health

CC: Dr. Fulton
RRF:BS

July 9, 1965

Inspection of General Electric Company
Valley Forge Space Technology Center

Leah T. Genshor
Regional Industrial Hygienist
Region VII

Through: Chief
Industrial Hygiene Section

P. G. Rantos
Industrial Hygienist III
Division of Occupational Health

Attached is the eleventh installment of the above inspection.

FOR:hl

Attachment

OPERATION

HAZARD

CONTROL

M - 9425

SPACE STRUCTURES LABORATORY

Nondestructive structural testing of epoxy resin, Fiberglass or plastic granular filled composites. A hydraulic Materials Testing System, Servo-Hydraulic Load Frame (100,000 lbs. pressure) is used for this purpose.

Potting of miniature
electronic components

Methyl anhydride
Resorcinol diglycidylether
A-Aminopropyltriethoxy silane
BDMA
Epon Resin #826
Shell Chemical Co.
New York, N. Y.
Mold Release #225
Ham Chemicals, Inc.
P. O. Box 192
Cardena, California

General ventilation
Disposable protective
gloves
Hand creams

Tetrahydrofuran
Dermatitis

Sealing and
mold casting
electric
160° F.

Rabbitt metal fumes
Carbide metal fumes

Exhaust hood
Occasional and inter-
mittent operation

Ball mill and
Manual asbestos grinding

Crocidolite asbestos dust

General ventilation
Enclosed unit
Wet operation
Small quantity
Intermittent and
occasional exposure

Recommendation: Improve housekeeping at the epoxy resin mixing area. Potting operations should be conducted under the exhaust hood where possible.

The manual grinding of asbestos should be conducted within the exhaust hood.

BUILDING - 1 (OC & F)

Radiation Laboratory

The degradation of electronic equipment parts as a result of neutron bombardment is studied. Electronic equipment and parts are placed within reactors elsewhere (Nevada), irradiated and shipped radioactive to the laboratory where they are disassembled and studied.

The Radiation Laboratory is divided into two areas: Electronic Components and Sensor Development.

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