WALK-THROUGH SURVEY OF

General Electric Company
Hudson Falls, New York
Fort Edward, New York

SURVEY DATE

January 20, 1976

SURVEY CONDUCTED BY

David Brown
Leela Murthy
Mark Jones

WRITTEN BY:

Mark Jones

DATE OF REPORT

April 27, 1976

Division of Surveillance, Hazard Evaluations and Field Studies
National Institute for Occupational Safety and Health
Cincinnati, Ohio

PLACE VISITED:	General Electric Company Hudson Falls, New York Ft. Edward, New York
DATE OF VISIT:	January 20, 1976
PERSONS MAKING VISIT:	David Brown Leela Murthy Mark Jones
PERSONS CONTACTED:	Mr. Lucas Hart - General Manager Capacitor Products Department Mr. James Herger - Manager, Employee and Community Relations Mr. Lew Wise - Manager, Manufacturing Hudson Falls, New York Dr. Stenger - Laboratory - Hudson Falls, New York Mr. James Moss - Safety Supervisor
PURPOSE OF VISIT:	To conduct a walk-through survey to determine if an industrial hygiene/mortality study of workers exposed to polychlorinated biphenyls at these General Electric facilities would be feasible.
UNION:	United Electrical, Radio and Machine Workers of America, Local #332

INTRODUCTION

The Division of Surveillance, Hazard Evaluations, and Field Studies of the National Institute for Occupational Safety and Health has underway a study to document past and present worker exposure to polychlorinated biphenyls in conjunction with a mortality study.

On January 20, 1976, David Brown, Leela Murthy, and Mark Jones conducted walk-through surveys of the General Electric facilities in Hudson Falls and Ft. Edward, New York. The main purpose of these surveys was to determine if a possible cohort of employees exposed to polychlorinated biphenyls was available at these facilities.

DESCRIPTION OF PLANT

The Ft. Edward and Hudson Falls facilities are located about one mile apart along the Hudson River in New York. The Ft. Edward plant began operations using polychlorinated biphenyls in 1946 and the Hudson Falls plant in 1951. Today the Ft. Edward plant primarily manufactures small capacitors used in lighting, air conditioning, etc. while the Hudson Falls plant manufactures power capacitors. Currently, the polychlorinated biphenyl being used is Monsanto's Aroclor 1016 with occasional use of Aroclor 1221. In past years both Aroclor 1254 and Aroclor 1242 have been used. Other materials used are mineral oil, dibutyl sebaceate, dioctyl phthalate and some stabilizers.

Presently, both plants hire a total of approximately 1400 employees. There are approximately 233 hourly employees at Hudson Falls and approximately 700 hourly employees at Fort Edward. The work force is predominantly white and equally distributed between male and female. The union at these plants is Local #332 of U.E.

General Electric estimated that approximately 137 employees were working in areas with exposure to polychlorinated biphenyls.

DESCRIPTION OF THE PROCESSES

Hudson Falls - The plant at Hudson Falls is mainly involved in the manufacturing of large capacitors. First, bales of paper, film, and foil are rolled together automatically. A number of these rolls are covered with cardboard, bound together and tested automatically. This is called the capacitor pack. Next, the proper leads are assembled and connected and the capacitor pack is inserted into the metal capacitor box. The capacitor unit is then tested in a vacuum to check for leaks. From here the majority of the capacitors are filled automatically in a closed system but some are still flood filled in chambers.

The flood filled capacitors are put into a chamber, heated to approximately $150^{\circ}C$ and then put under vacuum to remove any moisture that is present. The polychlorinated biphenyl is then pumped from storage tanks outside the

building into the chamber. The residue PCB is then pumped out of the chamber, filtered, and reused.

During the closed system operation the PCB is pumped into the capacitor through a valve in the top of the capacitor. When the capacitor is filled, the valve is removed manually and the top of the capacitor cleaned of any excess PCB. The hole is then soldered to seal the capacitor.

Next, the capacitor is put into the "heat soak", which causes the oil to penetrate the bales.

The capacitor is then tested and if there are no leaks, is sent through a trichloroethylene degreaser. Then the capacitor is painted, dried, and packed for shipping.

Ft. Edward - The plant at Ft. Edward mainly produces the smaller capacitors that are used in lighting and air conditioning. First, webs of either paper, film, and foil or film and foil are rolled together automatically. While this is being done, the capacitor cases and tops are manufactured and cleaned in trichloroethylene degreasers.

Next, the capacitor is assembled. This includes inserting the roll into the capacitor can, making the correct connections between the roll and the capacitor top and finally sealing the capacitor top to the capacitor box.

The capacitor is then put into the treat system (either a carrousel or chamber). In these systems the capacitor is automatically heated, put under vacuum and filled with the dielectric fluid (mainly polychlorinated biphenyls).

From the treat system the capacitor goes to the crimping operation where it is sealed. Next, the capacitor is washed with heated water and phosphates, tested for leaks and packed for shipping.

At these plants waste polychlorinated biphenyl or other materials contaminated with it are disposed of into drums which are shipped to a licensed incinerator in Buffalo, New York.

MEDICAL PROGRAM

Dr. Feingold is the physician retained by the plants on a part-time basis. There are also two nurses employed at the plants.

All employees must take a pre-employment examination. Those employees who are exposed to hazardous material (PCB, lead, and trichloroethylene) are given periodic examinations which include chest x-rays, blood test, EKG, and pulmonary function.

The plant has started a hearing conservation program in which audiometric tests will be given annually.

INDUSTRIAL HYGIENE AND SAFETY PROGRAMS

Mr. James Moss is the Safety Supervisor at these facilities. The facilities have initiated new safety practices. In the past, gloves, aprons, safety glasses, and shoes were supplied to the employees by the company. Instead of gloves, some of the employees chose to use a barrier cream, Milburn ply-9, which is made from wood pulp and designed specifically for use with PCB's. The present program consists of providing longsleeve coveralls, liquid-proof aprons, safety shoes and safety glasses on a full time basis. Respirators, full face shields and earplugs are provided where necessary. All clothing and materials are cleaned at the plant.

Air samples have been taken for PCB's at the facilities by OSHA regional personnel. Both AA millipore filters and charcoal tubes were used to collect the samples. Presently, the results of this sampling are being obtained.

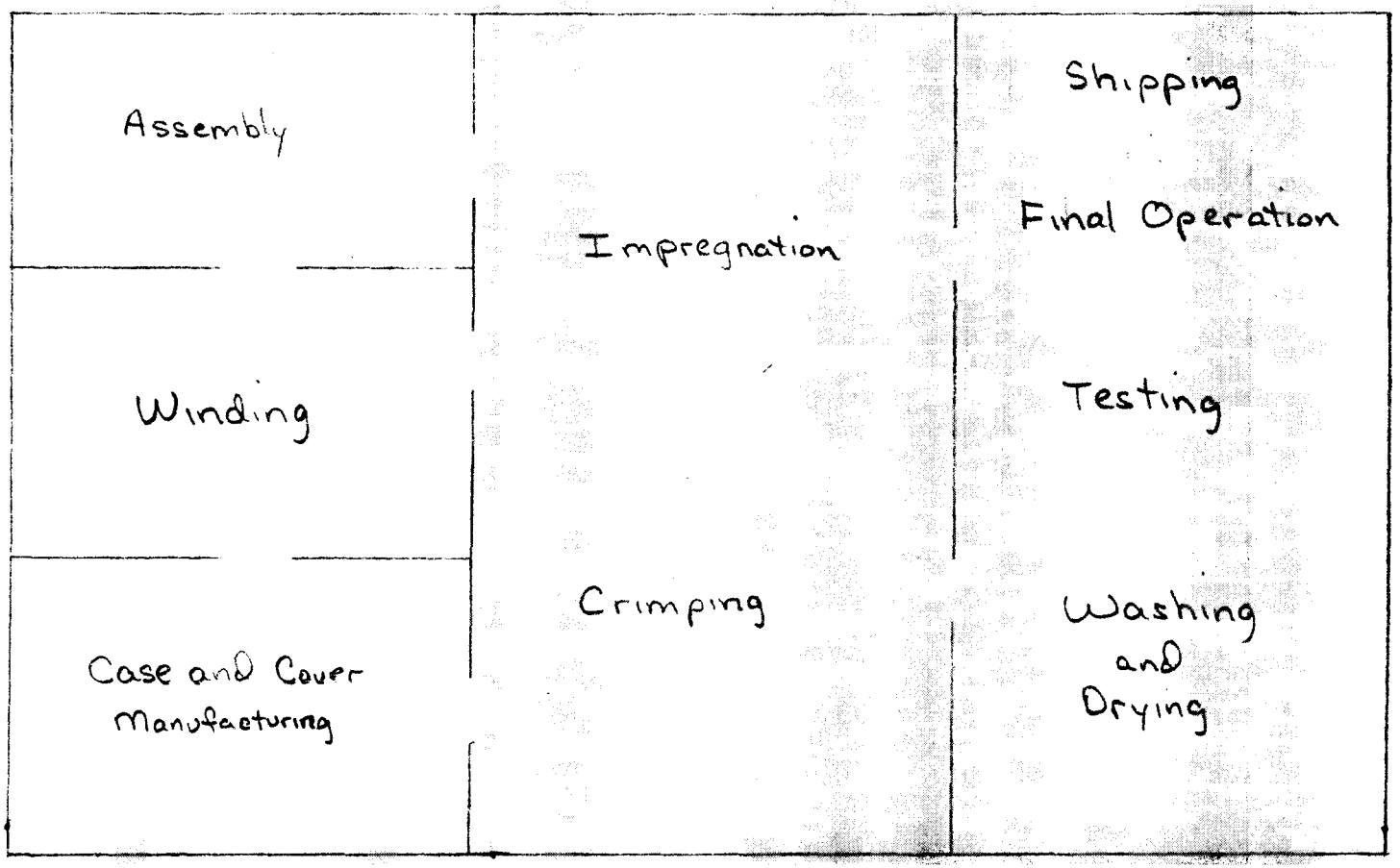
Other potential hazards are:

1) lead
2) trichloroethylene
3) noise exposure in pressing operations

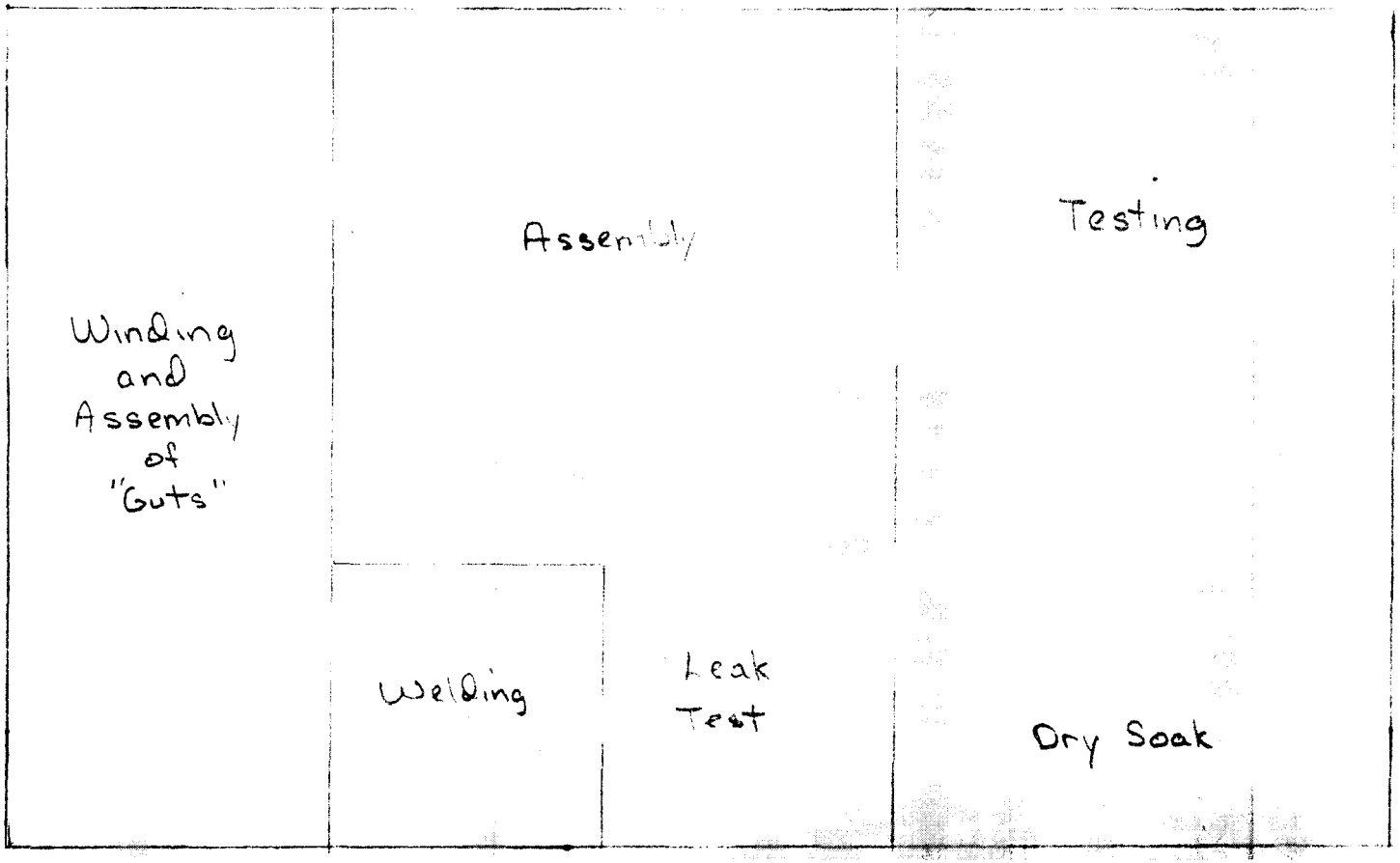
CONCLUSIONS AND RECOMMENDATIONS

Although a complete epidemiologic study may not be possible, it would be beneficial to do industrial hygiene sampling at the plant. This would enable us to document what employees working in the closed system operation are exposed to. Also some of the other operations have not changed significantly enabling past exposure levels to be determined at these locations.

Fort Edward


Assembly
Winding
Case and Cover Manufacturing
Impregnation
Crimping
Shipping
Final Operation
Testing
Washing and Drying

Hudson Falls - Second Floor



Hudson Falls - First Floor