BFGoodrich **INTER-ORGANIZATION CORRESPONDENCE**

TO	FIELD POINT OR DEPT. & BLDG. NO.	DATE YOUR LETTER
C. L. Woods	Calvert City	
FROM	FIELD POINT OR DEPT. & BLDG. NO	DATE THIS LETTER
T.S. Bialke	Akron - D/0020, 5-H	4-7-83

SUBJECT

Industrial Hygiene Survey; March 14-17, 1983

During the period March 14-17, an industrial hygiene audit of the Calvert City plant was conducted. Four out of six previous survey recommendations have been completed. Action on the remaining two has been initiated.

Items addressed during this survey include local exhaust for welding shop, instituting preventive maintenance procedures for Carbopol ventilation systems, conducting task monitoring for EDC exposures, reducing VCM and benzene personnel monitoring, and increasing both ambient and personnel monitoring for mercury when cell room vacuum system is completed.

Control of VCM and mercury exposures continues to be excellent. BFG and OSHA monitoring requirements are being satisfactorily met.

I wish to thank G. Brewer for her help during this survey and M. Fox and Calvert City management for their cooperation.

T. S. Bialke

v

cc: E.B.Katzenmeyer,Jr./H.W.Dietz,MD
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Previous Survey Recommendations	Action(s) Taken by Plant
1. Replace spring loaded eyewash fountains in Carbopol area and laboratory.	1. All fountains replaced. Action completed.
2. Conduct personnel monitoring in FRP shop.	2. Full shift monitoring has been done for Bisphenol-A, cobalt naphthenate and styrene. All results were below current TLV's. Short-term, or task monitoring to commence in the fall when building is closed up. Action partially complete.
3. Improve laboratory hood flow rates.	3. All lab hoods operating with satisfactory flow rates. Action complete.
4. Establish a procedure for responding to benzene area monitoring system.	4. Procedures being established. Lights to alarm at 5, 25 and 50 ppm benzene. Corrective action team formed including representatives from operators to address response to lights. Inclusion of operators on the CAT charged with developing responses to benzene alarms hopefully will improve the likelihood of the responses being properly implemented. Action partially complete.
5. Change noise dosimeter threshold criteria and remonitor job classes with exposures in the 25% to 50% range.	5. Noise dosimeter criteria have been changed. Job classes have been monitored. Based upon existing data, determinations have to be made as to what the noise hazardous jobs in the plant are to satisfy requirements of the OSHA hearing conservation amendment. Action complete.
6. Investigate feasibility of using existing benzene area monitoring equipment instead of installing additional area monitors.	6. The plant determined that is was not feasible to expand existing system. Action complete.

Current Findings	Recommendations	Responsibility	Exp.Date Compl.
1. Weld shop: Eight welding bays with no local exhaust ventilation. 11 welders assigned to the shop. Building size provides for less than 10,000 cu. ft. per welder. Variety of welding operations conducted in shop include cold steel arc welding and cutting, brazing, silver soldering, MIG and TIG. Metals worked on include galvanized and stainless steel, aluminum, titanium and nickel alloys. Fluxes used include those containing fluoride and cadmium. Materials worked on include those contaminated with mercury, EDC and other solvents.	1. OSHA 1910.252(f)(2)-(10) requires that mechanical ventilation be provided when welding is performed in a space of less than 10,000 cu. ft. per welder. This standard requires the mechanical ventilation to be not less than 2,000 cu. ft. per minute per welder except that local exhaust hoods on booths are required when fluoride zinc, lead, beryllium, cadmium, or mercury containing or contaminated materials are used. The OSHA standard states that oxygen cutting, or gas shielded cutting of stainless steel shall be done using mechanical ventilation. It is apparent that local exhaust ventilation systems at each welding bay are needed. Wall mounted local exhaust units are commercially available that meet the OSHA requirements. Information regarding sources of welding exhaust units have been supplied to Gaye Brewer, Calvert City Safety Department.		
2. Carbopol: Local exhaust ventilation system for dust control at dryers and hoppers is nearly plugged with dust. Exhaust branches at dryer top were open at all times, reducing capture velocity in other parts of the system.	2. Clean out the local exhaust system's ducts and hoods. Conduct maintenance on fans and belts to ensure peak efficiency of operation. Establish a preventive maintenance program to ensure ventilation systems continue to operate effectively. Increase capture velocity at hopper hoods by providing some way to close off the open ducts at the top of the dryer. Blast gates or duct covers could be used.		
3. EDC/VCM areas: Long-term EDC monitoring results less than TLV of 10 ppm. Respirators not being required during tasks which may result in short-term high EDC exposures. No monitoring results to document EDC task exposures. Short-term EDC limit is 15 ppm for 15 minute period.	3. Selectively monitor for EDC during tasks which are considered to result in highest EDC exposures to employees. If results indicate exposures above 15 ppm for period of the task, then a requirement for wearing of airline respirators must be established. Monitoring data could then be used to inform the operators of the need for wearing of respirators during EDC tasks.		

Current Findings	Recommendations	Responsibility	Exp.Date Compl.
4. Chlorine Cell Building A central vacuum system is being installed which will eliminate the need for using water to wash the cell floor. Any mercury spilled will be vacuumed up, reducing the amount of Hg contaminated water needing treatment. Exhaust from vacuum system will be passed through a scrubber, including a charcoal bed, to remove Hg vapor. The vacuum exhaust will then be recirculated back into the cell building.	4. (a) Exhaust vacuum system outside the building. (b) If exhaust must be recirculated back into the cell room duct, exhaust opening to high part of ceiling near building exhaust ventilation. (c) When cell room becomes "dry", increase frequency of area and personnel monitoring. (d) Monitor exhaust of vacuum system to establish frequency of charcoal bed changes.		
5. Physical examinations for respirators not being given to Carbopol, ethylene dichloride and API workers required to wear organic vapor cartridge respirators for benzene exposure.	5. A physical examination per BFG occupational health policy 1.17 "Use of Respirators" must be provided to listed employees.		
6. Industrial hygiene summary report the plant issues does not contain status of engineering projects.	6. Include in the IH report the status of engineering projects designed specifically to address health concerns.		
7. Last respirator fit testing onducted in 1981.	7. Yearly training and fitting of all employees who have to wear a respirator is a requirement of OSHA 1910.134. Calvert City SA-56 "Respirator Protection Guidelines" needs to be rewritten to include requirements for annual testing of the fit by challenging the wearer with irritant smoke per BFG Chemical Group SA-128.		

Current Findings	Recommendations	Responsibility	Exp.Date Compl.
8. Personnel Monitoring			
(a) VCM - all VCM exposed employees monitored quarterly.	(a) The amount of VCM personnel monitorings can be reduced by following OSHA VCM standard monitoring requirements. These are: (1) 0 to 5 ppm - OSHA does not require routine monitoring. Obtaining one sample per year on exposed employees is a BFG recommendation. (2) 0.5 to 1.0 ppm - each employee to be monitored quarterly. (3) Over 1 ppm - monitor monthly. A complete program is available which will issue preprinted cards according to the above schedule.		
(b) Benzene exposed employees monitored quarterly.	(b) Benzene personnel monitoring frequency for ethylene plant can be reduced to one sample per employee per year. The recovery operation should be monitored on a quarterly basis.		

Discussion:

The control of mercury (Hg) levels and exposures in the cell building continues to be excellent. No chlorine building employees' urine mercury levels continuously exceed the BFG limit. Personnel exposures to Hg are good with occasional values exceeding the TLV's. As expressed in the "Findings", the conversion of the cell building to "dry" operations is of concern. The importance of personnel and area mercury monitoring after the conversion occurs cannot be overly emphasized. Any increase in ambient Hg levels in the cell room will require immediate action to reduce mercury to existing levels, i.e. prior to going "dry". Please keep the Environmental Health Department informed on the status of this project.

In general, the housekeeping in the south synthesis, south cracking, and Carbopol operations was disappointing. Each area was cluttered with removed pipe insulation, used pipe and hoses, used respirators, and used safety tape.