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KOSHRC DOCKET
NO. 1533-87

COMMONWEALTH OF KENTUCKY
OCCUPATIONAL SAFETY AND HEALTH
REVIEW COMMISSION

SECRETARY OF LABOR
COMMONWEALTH OF KENTUCKY

COMPLAINANT

VS.

ANSWERS TO INTERROGATORIES

B. F. GOODRICH CHEMICAL GROUP

RESPONDENT

1. Citation No. 1, Item 1a does not refer to actual vinyl chloride exposures, but refers instead to informing employees, "whenever a new hazard is introduced into their work area", and more specifically, 29 CFR 1910.1200(h)(1)(ii) refers to "Any operations in their work area where hazardous chemicals are present." Regardless of whether or not employees are presently being exposed it is the employer's responsibility to inform employees whenever new hazards are introduced into their work area and of the operations associated with these new hazards. The employer was aware of the vinyl chloride release to atmosphere due to pond closure activities based on Bechtal monitoring inside the pond closure area. B.F. Goodrich personnel were aware that vinyl chloride generated by pond closure activities could affect B.F. Goodrich work areas downwind of closure activities. B.F. Goodrich personnel monitored adjacent B.F. Goodrich work areas downwind on April 10, 1986 during centrifuging phase of pond closure. The company failed, however, to repeat this

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monitoring procedure at start of next phase of pond closure activity, until after start of this inspection. In addition B.F. Goodrich vinyl chloride monitoring system (gas chromatograph) located throughout the incinerator areas were reporting high vinyl chloride levels (1 ppm to 20 ppm) whenever winds were blowing from a northly direction. Since the Maintenance Shop and Carbapol facilities are downwind of these vinyl chloride monitoring stations it becomes evident that a new hazard was introduced into their work area.

A copy of area monitoring data for the incinerator area was obtained for July 19, 1986 or three (3) days prior to the start of this inspection. These records show vinyl chloride levels frequently above the PEL between 00:00 hrs. and 03.52 hrs. on July, 19, 1986 at all locations of the incinerator area, even inside the incinerator control room. Other actual dates prior to my investigation can be obtained through correlation of weather conditions at the B.F. Goodrich Plant in Calvert City and vinyl chloride area monitoring data from the incinerator area. Pursuant to 29 CFR 1910.1017(m) and 29 CFR 1910.20(d), these records are to be maintained by the company for not less than thirty (30) years.

In a letter from Wayne D. Morse, Plant Manager of B.F. Goodrich directed to Michael Salyers, Director of Compliance, Kentucky Occupational Safety and Health Program, dated July 31, 1986, the employer states, "VCL concentrations above the PEL emanating from the closure area exist in these areas subject to wind direction and closure activity being performed by Bechtel,

Inc. and their sub-contractors." Regarding personnel monitoring results the letter continues, "These do not remain static, but change with different phases of closure activities." In conferences with Wayne Morse, Plant Manager and Mike Fox, Safety Director, both assured me recognition of the hazards had been accomplished on July 18, 1986, prior to the beginning of my investigation, and were already in the process of regulating these two (2) areas. Based on these assurances, no citation was issued concerning regulation of these two (2) areas, pond closure and incinerator area.

In addition employees of the Maintenance Shop and Carbapol stated on the first day of my inspection that they were concerned with what vapors were coming from the pond closure/incinerator areas, and had brought it to the company's attention numerous times within the last month. Even employees in Carbapol and Maintenance Areas were aware of the excessive number of vinyl chloride alarms around the incinerator, but most assumed the vinyl chloride monitoring system was malfunctioning, since alarms were so numerous.

2. Mike Fox, Safety Director

Gale Brewer, Environmental Engineer

Jerry Farmer, General Manager of EDC and VCL

Wayne Morse, Plant Manager

3. Miran 1 B Portable Ambient Air Analyzer, Infrared Spectrophotometer.

Activated Charcoal Tubes, 2 in series - placed on dry ice immediately - low flow pumps sipin #21088 and sipin #21085, SKC

07-1155, Dupont 7282, Alpha 1 #02636 and #03360. Again with respect to Citation No. 1, Item 1a the standard 29 CFR 1910.1200(h)(1)(ii) is not concerned with ethylene oxide exposure concentrations in the workplace, but with informing employees "of any operations in their work area where hazardous chemicals are present."

4. Yes.

5. B.F. Goodrich is a major chemical manufacturer of organic compounds many of which involve complex chemical reactions. The employer has on-site personnel and equipment sufficient to predict and verify the presence of ethylene oxide in the workplace. The ability of the employer to understand and accurately predict products of chemical reactions is essential since this is an integral function of any chemical manufacturer. Chemical manufactures typically utilize hazard evaluation procedures to reduce the risk of chemical process accidents and identify potential safety and health hazards in the workplace. The employer utilizing reasonable diligence as demonstrated by the identification of the hazard during the course of this inspection by the Labor Cabinet and considering the degree of expertise in both personnel and equipment available to the company, the potential formation of ethylene oxide in the waste water handling system should have been predicted and the hazard eliminated by the company prior to this inspection. A summary of hazard evaluation procedures currently being used by many chemical companies to reduce the risk of chemical process accidents can be found in the following publications: "Guidelines for

Hazard Evaluation Procedures", prepared by Battelle Columbus Division for The Center for Chemical Plant Safety of the American Institute of Chemical Engineers, 1985; and "Process Safety Management (Control of Acute Hazards) Chemical Manufacturer's Association".

6. The employer, B.F. Goodrich, had vinyl chloride monitoring data available to reasonably suspect that an employee may be exposed to vinyl chloride in excess of the action level (0.5 ppm) at locations downwind of pond closure activities prior to July 24, 1986. (See Answer #1). Monitoring conducted by B.F. Goodrich downwind of pond closure activities on August 18, 1986, indicates a vinyl chloride level of 1.03 ppm for thirty-two (32) minutes at railroad tracks across from East Cracking which is a considerable distance downwind of the maintenance shop. Company maintains on-site technical personnel and equipment sufficient to do any vinyl chloride monitoring necessary. As for including the dates of all monitorings evidencing employee exposure levels exceeding the action level in the maintenance shop prior to July 24, 1986, this is not possible since a current program of initial monitoring and measurement had not been instituted by the company for the maintenance shop area pursuant to 29 CFR 1910.1017(d)(3).

7. See Answers #1 and #6.

8. Had the employer instituted a program of initial monitoring and measurement as required by the standard (29 CFR 1910.1017) for the areas downwind of the pond closure, the employer would have known the extent of the hazard. Sampling on August 18, 1986 by the company shows employee exposure to vinyl

chloride on Third Floor of Carbapol to be between 1 and 2 ppm. The employer was aware prior to my investigation of the specific nature of the pond closure activity releasing vinyl chloride into the work environment, and should have provided information and training on necessary protective steps the employees can take to minimize the hazard. (See Answers #1 and #6).

9. See Answer #5.

10. At the start of the inspection, B.F. Goodrich's Safety Director and Environmental Engineer was unaware of any current programs which provide this information to employees upon first entering into employment and at least annually. Also employees and union officials were unaware of all their rights to access these records. Employees were provided with the results of personnel monitoring when they were actually sampled, however employees interviewed were not aware they could see all monitoring results pertaining to their job duties. Later the Safety Department released two (2) memos concerning access to medical and exposure records dated August 25, 1986 and September 11, 1986, but even these do not fulfill all requirements.

11(a). Inform employees of the existence of all medical records, employee exposure records, and of each analysis using exposure or medical records pertaining to the employees' past or present job duties.

See definitions of the following: 29 CFR 1910.20(c)(6)(i) (ii) - "Employee Medical Record" 29 CFR 1910.20(c)(5)(i)-(iv) - "Employee Exposure Record" 29 CFR 1910.20(c)(2) - "Analysis using exposure or medical records" 29 CFR 1910.20(b) - Scope and

application

As can be seen from definitions, each category may contain a wide variety of records pertaining to any one chemical exposure and the employee must be informed of the existence of an available record so that a reasonable request may be made to the company for access.

11(b). Inform employees of the location or locations where these records are kept since it may be possible due to the wide variety of records which must be maintained that they are not all kept at one location. If all of the records listed in definitions referenced in Answer 11(a) are kept at one location, simply inform employees of that location.

11(c) Inform employees as to the availability of medical records, employee exposure records and of each analysis using exposure or medical records. Some records may be readily available to employees such as medical records which are maintained in their personnel file. However, employee exposure records for a job performed in 1980 of a chemical no longer used may require the employer to utilize the entire fifteen (15) day time frame pursuant to 29 CFR 1910.20(e)(1)(i).

12. Inform employees of the person or persons responsible for maintaining and providing access to Employee Medical Records, Employee Exposure Records, and each analysis using exposure or medical records, as defined in 29 CFR 1910.20(b) and (c).

13. Inform employees of their rights to access Employee Medical Records, Employee Exposure Records, and each analysis using exposure or medical records, as defined in 29 CFR 1910.20(b)

and (c), and pursuant to 29 CFR 1910.20(d),(e),(f),(g) and (h).

14. 29 CFR 1910.1017(d)(3) - Citation No. 2, Item 5 not only requires a program of initial monitoring and measurement be undertaken whenever there has been a production process or control change which may increase the release of vinyl chloride into the work area, but more importantly in this instance whenever the employer had reason to suspect that any employee may be exposed in excess of the action level.

15. The employer had on record sufficient documentation to conclude that employees were exposed above the PEL for vinyl chloride at the locations and dates indicated in Citation No. 2, Item 6, and further documentation was not deemed necessary.

16. 3/17/86 .25 L D 382 min sample code 56

3/18/86 1.48 ppm VCL 370 min. sample
Location: VCL Tank Farm Loading Area #117
Operator Code: 056 B-shift
No respirator worn RP Code 0
Task 000 - Specific task number 000
Represents a 6-hour sample period where several tasks were performed.

6/13/86 1.36 ppm VCL 366 min sample
Location: VCL Tank Farm Loading Area #117
Operator Code: 056 Tank Farm Operator C-shift
RP Code: 0 No respirator worn
Task Code: 000 Represents a 6-hour sample period where several tasks were performed.

6/13/86 0.29 ppm 380 min sample
Location: VCL Tank Farm Loading Area #117
Operator Code: 056 Tank Farm Operator C-shift
RP Code: 0 No respirator worn
Task Code: 000 Represents a 6-hour sample period where several tasks were performed.

6/13/86 1.84 ppm vch 378 min sample
Location: VCL Tank Farm Storage Area #118
Operator Code: 056 Tank Farm Operator B-shift
RP Code: 0 No respirator worn

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Tank Code: 000 Represents a 6-hour sample period where several tasks were performed

8/11/86 4.61 ppm Shows a minimum detectable limit action level 0.50 ppm

8/15/86 2.25 ppm VCL

Additional information for samples taken 8/11 and 8/15 was not not available from company at time requested since these exposure levels had just been called in from B.F. Goodrich's Lab.

17. Minimum feasible engineering controls and work practice controls for the B.F. Goodrich Plant located at Calvert City, Kentucky would be whatever controls the company has utilized in the past to reduce exposure levels below limits as provided in paragraphs (c)(1), (c)(2) or (c)(3) of this section. The employer has demonstrated by past performance when the area was deregulated that feasible controls are available to reduce employee exposure to levels below the PEL.

18 and 19. Citation No. 2, Item 8 is not concerned with the employer not implementing all feasible engineering, work, or active controls since this was addressed earlier by Citation No. 2, Item 7. Instead Citation No. 2, Item 8 is concerned with the employer's failure to develop or furnish upon request written plans for a program utilizing to the greatest extent feasible, engineering and work practice controls capable of reducing exposures to at or below the PEL. Since all areas of the plant were deregulated in June of 1979, feasible controls are available for all operations.

Even if feasible controls were not available to reduce exposure below the PEL, the employer would need to develop a

written plan which must be updated every six (6) months.

20. None of the employer's existing written plans for emergency situations provided during the inspection deal with the specific hazards associated with ethylene oxide.

21. An emergency situation need not be associated with a sudden release of ethylene oxide from a closed system as may occur during maintenance and repair of waste water stripper equipment and piping, but may only involve requiring an employee to work in an area exposed to unknown concentrations of ethylene oxide. Special precautions must be taken prior to entering or working in low lying areas adjacent to or inside areas where ethylene oxide is being released since ethylene oxide has a density greater than air (air = 1; E+O = 1.49). Sampling conducted in the Waste Water Stripper Area by B.F. Goodrich reported employee exposure to 2.6 - 3.1 ppm of E+O and area samples indicating levels up to 20 ppm.

22. At the present time the Complainant plans to call no expert witnesses in addition to Mr. Sparrow. The Complainant, however, reserves the right to call an expert depending upon what discovery of Respondent's documents and depositions may reveal.

23. In the event another expert is deemed necessary, Complainant will supply the Respondent with the requested information.

Steven Sparrow
STEVEN SPARROW

Sworn, subscribed and acknowledged before me by Steven Sparrow, this the 25th day of September, 1987.

Susan Greenfield
NOTARY PUBLIC, STATE AT LARGE, KY.

My Commission expires: 11-7-89

Rose Ashcraft
ROSE ASHCRAFT

Sworn, subscribed and acknowledged before me by Rose Ashcraft, this the 18th day of September, 1987.

Shelton K. Lynch
NOTARY PUBLIC, STATE AT LARGE, KY.

My Commission expires: August 31, 1990.

CERTIFICATE OF SERVICE

This is to certify that a true and correct copy of the foregoing ANSWERS TO INTERROGATORIES was this 19th day of October, 1987, served by mail upon the following: Hon. Stephen F. Schuster, Hon. Walter L. Sales, OGDEN & ROBERTSON, 1200 One Riverfront Plaza, Louisville, KY 40202; and KOSH Review Commission, #4 Millcreek Park, Rt. 3, Millville Road, Frankfort, KY 40601.

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