71 cmg

To: J.L.Nelson
E.W.Harrington
H.Waltemate ← COPY FOR ←
E.Katzenmeyer
R.L.Cross
W.T.Gunning
R.W.McKay
R.S.Mather
R.M.Sandfry

Date: March 11, 1974

Subject: Visit of NIOSH Personnel at the Avon Lake General Chemical Plant on March 6 and March 7, 1974

On Wednesday, March 6, 1974 members of the NIOSH organization out of Cincinnati, the Center for Disease Control out of Atlanta, and the Ohio Department of Health visited our plant.

We assembled in the conference room at 9:15 a.m. Included in this meeting were some twelve members of the Avon Lake staff who would be involved in the two day activities; including members of the Safety, Production and Professional Service Departments. In addition, Herm Waltemate, from our divisional headquarters; Bud Lane, Ed Katzenmeyer, Dr. Guyton, and R. Kelley from the corporate headquarters attended.

After initial introductions the meeting began about 9:30 a.m. I presented a booklet that we had put together to give them a general idea of our plant and what we have been doing in the area of monitoring and fulfilling the preliminary NIOSH recommendations.

At 10:00 a.m. the medical people toured the plant with Bill Gunning and Dick McKay. The hygienists and statistician were escorted through the plant by the writer and various area personnel.

At 12:15 p.m. the entire group assembled for lunch at the Aquamarine and Dr. Newman joined us at that time.

In the afternoon two separate groups assembled, one being the medical people and the other being the hygienists. The statistician, William Springer from NIOSH, met with Ron Cross and Ken Hardman in our Personnel Department to review the records during these meetings. The meetings broke up at 4:00 p.m. when several of the gentlemen had to leave to catch a plane.

The two NIOSH hygienists returned at 8:30 a.m. the next morning.

The attached reports from Bill Gunning and Dick McKay summarize the meetings.

R. N. Rylands
R. N. Rylands
Plant Manager

RNR/ecw

cc: File

Attachments

NGC 15238

NIOSH VISIT TO AVON LAKE GENERAL CHEMICAL PLANT - 3/6/74

James Jones	NIOSH	Industrial Hygienist
Kenneth Kronoveter	NIOSH	Industrial Hygienist
William Stringer	NIOSH	Statistician
Richard McKay	B.F.Goodrich Gen. Chem. Plant	Professional Services Mgr.
Cleveland Lane	BFG - Akron	Ex. Communications Mgr.
Paul Shore	B.F.Goodrich Gen. Chem. Plant	Gen. Foreman-Latex
Bob Sandfry	B.F.Goodrich Gen. Chem. Plant	Gen. Foreman-Compound
Ron Mather	B.F.Goodrich Gen. Chem. Plant	Manager, Resins
Bill Ross	B.F.Goodrich Gen. Chem. Plant	Mgr. Purchasing, Distributio
John R. Shellenberger	B.F.Goodrich Gen. Chem. Plant	Gen. Foreman-Geon West
Richard Guyton	BFG - Akron	Staff Physician
William Hoychuk	Ohio Dept. of Health	Industrial Hygienist
Donald J. Billmaier	Ohio Dept. of Health	Physician, Occ. Health Div.
A. Scott Grivas, Jr., M.D.	Center for Disease Control	Physician
Henry Falk, M.D.	Center for Disease Control	Physician
Joseph Mallov, M.D.	NIOSH	Physician
E. B. Katzenmeyer, Jr.	BFG - Akron	Sr. Industrial Hygienist
Robert A. Kelley	BFG - Akron	Manager, Safety
Herman Waltemate	BFG Chem. Co. - Cleveland	Manager, Safety Adminis.
Thomas Neff	B.F.Goodrich Gen. Chem. Plant	Mfg. Statistics Specialist
Nick Aquino	B.F.Goodrich Gen. Chem. Plant	Gen. Foreman - Geon East
R. N. Rylands	B.F.Goodrich Gen. Chem. Plant	Plant Manager
Ron Cross	B.F.Goodrich Gen. Chem. Plant	Industrial Relations Mgr.
Bill Gunning	B.F.Goodrich Gen. Chem. Plant	Sr. Safety Engineer
Doug Rider	B.F.Goodrich Gen. Chem. Plant	Environmental Control

ecw

NGC 15239

To: R. N. Rylands

Date: March 11, 1974

Location: Avon Lake General Chemical

From: W. T. Gunning

Subject: Wednesday, March 6, 1974, Afternoon Meeting with NIOSH Medical Personnel

In Attendance: Henry Falk, M.D. - Center for Disease Control
A. Scott Grivas, Jr., M.D. - Center for Disease Control
Joseph Mallov, M.D. - NIOSH
Donald J. Billmaier, M.D. - Ohio Department of Health
Richard Guyton, M.D. - BFG Corporate Medical Department
John W. Newman, M.D. - Avon Lake Plants' Physician
Alma McClelland, R.N. - Avon Lake Plants' Nurse
Bud Lane - BFG Akron - Exec. Communications Manager
W. T. Gunning - Sr. Safety Eng., Avon Lake Gen. Chem.

Discussion Points:

There is little medical knowledge to date concerning the relationship of vinyl chloride or polyvinyl chloride to angiosarcoma.

NIOSH is a branch of the Center for Disease Control. The CDC has made available to NIOSH a number of their medical personnel to help with the present liver cancer studies. A nationwide study is being conducted through medical facilities to determine the number of cases of angiosarcoma in the country since 1972. An in-depth study will be conducted using four or five plants in the vinyl chloride and polyvinyl chloride industry. Criteria to determine which plants will be included in the study will be: a) How long the plant has worked with vinyl chloride b) Size of plant and number of employees c) Availability of records d) Activities for monitoring and control of ambient vinyl chloride e) Attitude of plant management toward being of assistance.

There is no specific test to determine cancer of the liver, but there are several being evaluated. e.g., GGTP (Gamma Glutamiel Trans Peptidase). It may be worthwhile to substitute the GGTP test to replace one of the SMA-12 profile tests.

Dr. Guyton stated that the Corporate Medical Department has mailed to plant physicians direction in handling of persons who have shown abnormal results from the liver function tests.

Dr. Newman was asked if he is aware of any BFG employee who has a liver problem or if he knows of an employee who may have died of liver cancer. Dr. Newman's answer was negative to both portions of the question.

Dr. Newman was questioned concerning routine tests and physical examinations. He stated that there are routine tests for persons on specific jobs. We take direction from the Corporate Medical Department. We do hand X-rays, lead tests, audiograms, chest X-rays, CBC's and liver function tests. There are no routine across-the-board tests conducted.

The question was raised concerning availability of death certificates of persons who had worked at the plant. Avon Lake General Chemical Plant has some of these death certificates but not all. We have none of the certificates of persons who died after resigning their jobs. We asked the doctors if they had been in contact with Tabershaw-Cooper Associates who have been locating the death certificates. We were informed by Dr. Falk that they have been in contact with Dr. Tabershaw but unfortunately will probably have to make their own inquiries to satisfy all parties who may be concerned with the accuracy of the data.

The doctors were informed by Alma McClelland that we have been conducting liver function tests as part of screening of new direct work employees. We do not hire unless the person can pass the test.

Dr. Billmaier, State Dept. of Health, asked how long BFG had used vinyl chloride in an industrial process. Bud Lane gave a brief review of BFG's increasing use of vinyl chloride from Akron to Niagara Falls and Louisville to our present Chemical Company facilities.

The doctors stated they were impressed with the ALGCP facilities and the housekeeping efforts. They were pleased with the activities toward monitoring and control of ambient vinyl chloride concentrations. They were also complimentary concerning the attitude and cooperation of management personnel.

W. T. Gunning
Sr. Safety Engineer

WTG/ecw

B.F.GOODRICH CHEMICAL COMPANY
Avon Lake General Chemical Plant

Meetings with Industrial Hygienists
NIOSH Visit, March 6 & 7, 1974

RESUME

Meeting of Wednesday, March 6, 1974

The paragraphs to follow will constitute a resume of the meeting with the Industrial Hygienist group following the tours of the plant of Wednesday morning and the subsequent luncheon. Those present at this session included the following:

James Jones	NIOSH	Industrial Hygienist
Kenneth Kronoveter	NIOSH	Industrial Hygienist
William Hoychuk	Ohio Dept of Health	Industrial Hygienist
Herman Waltemate	BFG Chemical Co. Cleve.	Mgr. Safety Administration
Robert A. Kelley	BFG Corp.-Akron	Manager, Safety
E. B. Katzenmeyer, Jr.	BFG Corp.-Akron	Sr. Industrial Hygienist
R. S. Mather	BFG - ALGC	Manager, Resins
J. R. Shellenberger	BFG - ALGC	Gen. Fore.-Geon West
R. M. Sandfry	BFG - ALGC	Acting Mgr.-Geon Compound
M. D. Rider	BFG - ALGC	Sr. Engr., Environ.Control
R. W. McKay	BFG - ALGC	Professional Serv. Manager

The first portion of this meeting was devoted to a description of the Geon polymerization operations. The participants of this discussion were in the main part between Messrs. Jones and Kronoveter of NIOSH and our resins manager, Mr. Mather, who was later joined by Mr. Shellenberger when the discussion involved Geon West. Supplemental information was provided from others in the group. This discussion will be described in the paragraphs to follow.

Discussion of Geon East

At the request of the NIOSH industrial hygienist, Mr. Mather described the equipment, the personnel and the procedures in the Geon East operation. Stressed were the following points.

1. Equipment - In Building 464, Geon East, there are sixteen 4300 gallon reactors making approximately 36 charges per day. As a consequence, twelve reactors per shift are cleaned, generally with the HRC units. It was further developed that it is necessary for a person to enter each poly after it has completed 22 charges. With this arrangement, the polys are entered one and one-half times per day. Each entry involves approximately one-half hour of cleaning.
   The NIOSH officials wanted to know the ventilation on each floor and this information was given by Mr. Mather.

2. Personnel - In response to the NIOSH question, Mr. Mather described the manning of this building. This manning includes the following persons per shift.

   2 Charge Operators
   1 HRC Operator
   1 Blowdown Tank Operator
   1 Recovery Operator
   ½ Foreman (splits time between B/455 and B/464)

3. Procedures - The following points were brought out concerning the poly cleaning procedures.

   a. After reaction is conpleted, charge is dropped.
   b. 20" mercury vacuum is pulled on empty vessel.
   c. Vacuum is broken by opening line to atmosphere.
   d. Manhead is opened, evacuation hose inserted instantaneously.
   e. Poly walls washed down to blend tank.
   f. Evacuation hose left in poly for 20 minutes (it was shown that 20 minutes are more than adequate to bring concentration below 50 ppm VCl)
   g. Hose removed; HRC inserted.
   h. HRC operates for 15 to 20 minutes.
   i. HRC removed.
   j. Either evacuation hose is reinstalled or manhead is closed.

4. Other Items -

   a. Mr. Mather described the OVA monitoring and, in response to the question, it was estimated that the normal 8 hour concentration average is approximately 25 ppm of VCl.

   b. The NIOSH officials asked about breakdown of the 8 hour shift. It was pointed out that employees generally take a 30 minute lunch break and that, overall, their exposure to VCl in the area constitutes about 7 hours out of the 8 hours spent on the shift.

   c. The question was asked concerning the cleaning of the blowdown tank. It was pointed out that this is a non-routine operation which takes place approximately once per month.

   d. Stress was made of the fact that when the man enters the poly he uses an air line respirator, protective head covering, gloves and also impervious footwear. It was further pointed out that suits are in the evaluation stage. We have always encouraged the employees to take showers on a voluntary basis in addition to wearing a clean uniform each day. This has been practiced by most. Of course, recently this has become arbitrary.

   e. Brief mention was made of the dryer operation. One question was posed but not answered - what is the ventilation situation in the Dryer Building?

NIOSH Visit, March 6 & 7, 1974

Discussion of Geon West

In the discussion of Geon West, J. R. Shellenberger joined the group. The type of questions were similar to those directed toward the activities of Geon East. A brief summary is as follows.

1. Equipment Building 461 - 36 - 1100 gallon stainless steel polys
   20 - 3300 gallon glass lined polys

2. Frequency of cleaning B/461 1100 gallon polys - 1 out of each 5 charges. 3300 gallon polys - 7% of the time on one product line and 25 to 30% of the time on another product line.

3. Personnel - B/461 per shift -

   3 Charge Operators
   5 HRC Operators
   2 Blowdown Tank and Recovery Operators
   1 Foreman

4. Procedure - It is pointed out that the procedure for poly cleaning is just about the same as described for Geon East. One difference is that when the 20" vacuum is broken in Geon East, the line is opened to the atmosphere, where in Geon West, the vacuum is broken from air coming from the room.

5. Manpower Survey B/461 - Mr. Shellenberger related the results of a manpower audit taken some time back by Mr. Katzenmeyer. Taking 720 hrs. per month as a base, the following is a breakdown of the various operators in this area.

Where Spent	Charge Oper.	Blowdown Oper.	HRC Oper.
Off the job	513	513	513
Lunch room	20	20	20
Locker room	20	20	20
Third Floor	116	40	26
Second Floor	45	38	12
Control Room	6	17	8

Discussion of B/451

A similar discussion was held concerning B/451 Paste polymerization area. Here it was pointed out that the situation is somewhat more severe since there are 40 charges per day and of these 40% must be entered. The equipment in this building consists of 50 - 1100 gallon polys and one - 2500 gallon polymerizer. This is the building where the Bendix is presently located and which is regarded as the most vulnerable area for VCl leakage.

NIOSH Visit, March 6 & 7, 1974

Personnel Breakdown of B/451 includes:

2 Charge Operators on third floor
1 Blowdown Operator who spends his time on first, second and third floors.
3 Poly Cleaners - third floor
1 Recovery Operator - second floor
1 Water Treatment Operator
1 Foreman.

As was true in the other poly areas, the procedure was described. One difference between this building and the others is the fact that the washdown of the polys is to the second floor rather than the blend tank.

Discussion of concentrators and dryer areas:

1. Although it had not been included in the tour, description of the operation of the concentrator building was made. It was pointed out that in this building they are concentrating paste slurry from 35% to 50% solids and overall readings indicate an average concentration of 10 to 15 ppm of VCl.

2. Questions were answered concerning the functions of the operators in the dryer building. It was pointed out that in the Venturi area there are two operators - one who follows the drying operation while the other is concerned with the transfer of resin or slurry. In addition, it was pointed out that there are Pearl resin baggers and that we bag approximately 10 to 25% of the resin while the remainder is handled in bulk form. It was further pointed out that there are two operators in the spray dryer area - one of whom follows the actual spray drying while the other is operating the concentrator building. Since the output of the spray dryers must be bagged, there is a bagger at the end of each spray dryer line while it is in operation.

3. With respect to questions regarding dust loading in the dryer building, it is pointed out that work is just getting underway and it is probably premature to report any results of this work at this time. Results so far indicate that, for the most part, values are well under the 5 mg/m^3 criteria that we are following which in itself may not be an accurate base point.

Discussion of Compound Area

Mr. Sandfry joined the group to answer detailed questions concerning the compounding operation. For the most part, the NIOSH officials wanted a description of the operators and their function as well as clarification of the flow chart which was included in the pass out. Mr. Sandfry provided the answers.

Mr. Jones asked if the plasticizer plant shown in the pass-out was a part of the compound operation. He was told that is was not and that it was completely isolated from compounding. He then asked what it was and he was told it was an operation where we manufacture di(2-ethylhexyl) phthalate. He expressed interest in this with the thought that he might wish to investigate this operation at a later time. (This was not brought up again in subsequent discussions with Mr. Jones).

NIOSH officials also wished to know the manning of the tank farm. It was pointed out to them that this included 7 operators and that their work was confined to the normal day shift and was not an around the clock operation.

Meeting of Thursday, March 7, 1974

The following personnel were present at this meeting:

James Jones	NIOSH	Industrial Hygienist
Kenneth Kronoveter	NIOSH	Industrial Hygienist
R. N. Rylands	BFG - ALGC	Plant Manager
R. W. McKay	BFG - ALGC	Professional Services Mgr.
W. T. Gunning	BFG - ALGC	Sr. Safety Engineer
T. E. Neff	BFG - ALGC	Mfg. Statistic Specialist
B. A. Prusinoski	BFG - ALGC	Statistician
M. D. Rider	BFG - ALGC	Sr. Engr.-Environmental Control
P. W. Shore	BFG - ALGC	Gen. Foreman - Latex
E. B. Katzenmeyer, Jr.	BFG Corp.-Akron	Sr. Industrial Hygienist

VCl Monitoring Particulars

The meeting started with T. E. Neff and B. A. Prusinoski describing the steps that were involved in arriving at our present monitoring program. It started with the initial sampling activities in August and several special statistical sampling programs were described including smoke screen tests and use of portable air blowers. It was reported that from the analysis of extensive OVA data they could determine the average VCl concentrations in B/451 with six strategically placed probes for the Bendix. At the request of Messrs. Jones and Kronoveter, all of the sampling reports from the various buildings were discussed in some detail with Mr. Neff and Miss Prusinoski and, in addition, the weekly average VCl concentration per building is submitted to divisional headquarters.

Mr. Kronoveter expressed interest in the statistical approaches used here to determine sampling points. He referred to a piece of work done by a Mr. Roach, London, England, who has issued an interesting report titled "Sampling Techniques." He promised to send a copy of this work to us.

In the next portion of the meeting, M. D. Rider led a discussion concerning how we arrived at the use of the OVA and Bendix monitors. He described the early days of our program when we evaluated infra-red and gas chromatography techniques as well as the OVA and Bendix. The point was made that with the use of the OVA we have a portable instrument which has almost literally opened new doors in determining VCl leakage and without which the precise determination of leak sources, etc., was virtually impossible. Both the OVA and Bendix involve flame ionization techniques and are especially adaptable to our particular use and are not beset with the high degree of operational maintenance that would be required of either the infra-red or gas chromatograph. The point was made that the Bendix monitor has been in use for several months without any problems or maintenance being required whatsoever. It is, therefore, a very durable and practical instrument.

It was pointed out that the expanded use of the Bendix is almost imminent in that in another week we will have a Bendix for B/461 and by the end of the month another for B/464 with one for the Latex building to follow later. All of these Bendix monitors will supply input to a mini-computer which will be equipped with magnetic tape such that a permanent record will be made of the monitoring program.

Latex Operation

At this point Mr. Shore was brought in to the meeting to discuss the situation surrounding the Latex operation. In answer to the questions from the NIOSH personnel, a review of the Latex process flow was made. It was pointed out that the premix tanks are cleaned approximately once per quarter and about two hours are required per cleaning. It was stated that in the Latex Building the vessel cleaning has involved the use of air line respirators since 1965. With respect to the five 4,000 gallon polys, cleaning is required once per 24 hours per poly. Mr. Shore outlined a program to chemically clean polys, the evaluation of which should commence sometime during March. Mr. Shore went on to relate that the percent of Latex manufacturing containing VCl was 47% and that 25% of the 47% contained vinylidene chloride. The other principal monomers in use are the various esters of acrylic acid, mainly ethyl and n-butyl esters. Polys are generally cleaned once per day.

At the request of the NIOSH people, Paul Shore outlined his organizational setup which includes 25 direct workers of which six man each of the four shifts and one warehousemen who works days Monday through Friday. Of the six men per shift, four are First Class Operators and two are Helpers. The Helpers clean the polys and load drums, etc. In response to a question it was pointed out that the 17 blend tanks are each cleaned quarterly.

Old Information - E. B. Katzenmeyer, Jr.

Mr. Katzenmeyer described work that had been done in 1968 which involved taking encapsulated samples of poly air which were subsequently checked for VCl on the gas chromatograph. Some of this data was reported, however, none

of it was presented in written form. After some discussion, it was the conclusion of the group (NIOSH personnel included) that through the years the poly cleaners were exposed to less than 500 ppm VCl and most probably less than 250 ppm VCl. Anything above 250 ppm the operators would smell the VCl and probably would not enter.

It was emphasized very strongly that past data is very sketchy and subject to gross errors and in all probability it would be unwise to draw any conclusions therefrom. Mr. Jones replied that the past data, sketchy as it was, still was the only data they had received from any source.

Lunchtime Conversation

The NIOSH personnel made the following comments.

1. On Friday, March 8, 1974, they would visit Uniroyal at Painesville.
2. The thought was expressed that the PVC plants would get their polymerization areas under good control but increasing concern will be directed toward PVC dust loads. In this light it was pointed out that the Avon Lake plant was relatively more free of dust than the Louisville plant.

Afternoon Picture Taking

The two NIOSH men were accompanied by W. T. Gunning and the writer on a tour of the plant. A total of 35 photographs were taken at the locations already given to you. These pictures will be developed by B.F.Goodrich and all or part will be sent to the NIOSH offices pending approval by Mr. Nelson.

Final Wrap Up - Mr. Rylands' Office

Mr. Jones indicated that recommendations from NIOSH to OSHA concerning work practices would be made probably at a meeting which was taking place on March 8, 1974. He further stated that there probably would not be a maximum VCl level spelled out until much more work has been done relative to the whole problem. In those plants selected for an in depth study, all medical records will be studied in great depth and emphasis will be directed toward further definition of the angiosarcoma problem from a medical standpoint.

R. W. McKay

RWM/bp