

Date February 5, 1974

INTEROFFICE
MEMORANDUM

Subject Monomer Exposure, Your Memo
of 4 February 1974

To E. A. Ray

Pensacola

(Location, Organization, or Department)

From J. T. Barr

Valley Forge

(Location, Organization, or Department)

cc: T. L. Carey
J. D. Kramer
D. Lowe
A. K. McMillan

E. Prineau ✓
W. M. Smith
G. B. H. Speed

It is encouraging to see that your general levels of VCM are as low as you report, and that the major sources are the ones that we generally expected to find, and have relatively simple methods of containing. Please see my memo of 1 February to D. V. Lowe for general comments. I cannot overemphasize the concern that Management has expressed on desiring an immediate reduction to the lowest possible level of this exposure.

In regard to the problem seen in both plants of a background level of 5-15 ppm of "something" on the Century instrument, I have talked to David Scott of Specialty Gases at Hometown. He tells me that our regional gas distributors stock a "zero air", at Louisville, Tampa, Jacksonville, etc., which contains a maximum analyzed level of hydrocarbon of 0.2 ppm. This could be used to get a zero calibration on the instrument. In addition, they can prepare on very short notice a cylinder of known amounts of vinyl chloride in zero air in the range of 50-100 ppm for a nominal cost of about \$30, plus shipping. Orders should be placed through regular order channels to their division.

This should give you a long range solution to the problem. In the meantime the laboratory should be able to tell you from VPC analyses if your background is VCM or other combustibles.

Your stripping results are very promising, and should substantially reduce exposure as well as improve efficiency. Please send me, Research, and Calvert any firm data you have on these tests, and the results of your new program.

Vapor from opening reactors is the major source in both plants. Calculations show that sparging steam in the bottom while under vacuum should be more effective, and safer, than a series of evacuations and purging with air. Note my suggestion in the other memo on a separate recovery system for monomer in the reactor. The reactor contents are well into the explosive range when opened normally. Evacuation to less than 1 inch of mercury, or double evacuation to 4.5 in. is needed to avoid this.

(320)

AP00035641

It may be possible to reduce losses at the reciprocating compressor seals by applying an inert gas pressure between the shaft seal glands. This would push nitrogen into the system in case of a leak, and has been reported to be used by some members of the VC Safety Association.

As you know, Calvert has been successful in reusing untreated recovered monomer in copolymer. There is a question as to its effect on homopolymer. A very tight system is needed to prevent oxygen entrance during stripping, and a fast turnover is needed.

We look forward to your data on runaway reactors for the proposal that D. Evers and I are preparing. We want to do everything possible to eliminate these.

I would suggest that you add the Nash Seal water and centrifuge effluent to your surveillance points. The leak rate at the storage tanks and on some reactors are large enough to cause concern.



J. T. Barr

JTB:mmm

P. S. The attached was just received and should give us some good indication of the direction in which NIOSH is moving. We should be prepared to implement or have good reason for not following each of the points made in this transmittal.

AP00035642

The following was dictated to me over the telephone today by Dr. W. Smith's secretary, Mrs. Connie Wieder, for distribution to:

R. Fleming
A. R. Adams
T. L. Carey
J. T. Barr ✓
E. M. Spurlock

To: Dr. W. M. Smith

Via telephone from R. N. Wheeler, Technical Superintendent - Vinyl Resin Production, Union Carbide Corporation, South Charleston, West Virginia:

NIOSH recommended the following work practice to B. F. Goodrich at their Louisville Plant:

1. Maintain good housekeeping.
2. No spills of chemicals or vinyl chloride leaks.
3. Measure vinyl chloride in the air and total effluent.
4. Employees should have a daily change of clothing.
5. Employees should wear foot covering (Mr. Wheeler indicated he believes this might mean rubbers.)
6. Determine vinyl chloride material balances.
7. Employees should wear head coverings.
8. Reactor workers in reactor should wear impervious suits and hose-supplied fresh air mask.
9. Workers should have mandatory showers at the end of their work shift.
10. The contents of the polymerizer should be monitored when first opened, when ready for entry, and while working in it.
11. The work space air should contain no more than 50 ppm.
12. All reclaimed waste should be stored in closed containers.
13. No food or eating in the work area.
14. Personnel should be provided with some form of VC monitoring device.
15. Employees in dusty areas, such as bagging, should wear dust respirators.
16. Personnel loading and unloading tank cars of vinyl chloride should wear Scot Air Paks in the event of a sudden discharge.

RECEIVED

FEB. 5 1974

J. T. BARR

5 February 1974

AP00035643