



TO D. L. Duncan

DATE May 9, 1974

FROM R. P. Lynch

SUBJECT VDCM

When we started monitoring VCM for employee exposure, we also set up a schedule for monitoring VDCM. Some data was accumulated, and some corrective steps were taken. Recently, J. Clapperton requested that all our equipment be devoted to VCM monitoring, so I thought I would bring you up to date on VDCM exposure. We still have more work to do and whenever some equipment is idle, Mark runs some VDCM exposures.

VDCM is a much harder material to control than is VCM because it is much less volatile. This means it can be used to wash, equipment is harder to purge, it is always in our effluent, and samples can be left around to contaminate a room.

The control lab samples showed ranges of 5 to 20 ppm (four hour TWA). This was corrected by putting all VDCM work into the lab hood area. This lowered the level to 2 ppm (10 minute TWA).

Levels in the plant area are nil except when the phase separator is blown down, the VDC reactor is upset, and the VDCM or VDC vaporizer filters are cleaned. Sampling is also a problem as VDC is caught in an open bottle, as well as each sample point is well purged.

Sampling was minimized as a first step. From this point on the problem becomes acute. Extensive repiping is required for the area. The two phase separators need a new blowdown area. Three filters need a new system. (Two of the filters utilize throw away cartridges, while the third is rinsed clean with VDC (MC is used now.) The VDC still bottoms cooler and its piping frequently plug. This is unplugged by blowing to the sewer. The next major contaminate is the VDCM dryers. These dryers are emptied, water washed, steam stripped, and N₂ purged. The VDCM HQMME is added to VDC, so exposure is possible here also. The VDCM still bottoms are visually checked every hour. Last, but not least, is clearing equipment for maintenance.

The VDCM still, when ready for maintenance, still had 344 ppm of VDCM in it even after eight hours of steaming. Some of this was held by the polymer in pockets so airline masks were used.

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As soon as the VCM samples are slowed down enough to run the 10 minute TWA VDCM samples, further work may be planned for the area. As may be seen from the listed problems, the solution will be quite extensive and will involve a large amount of money and equipment.

A review of the operating manual will be required as we modify procedures with each equipment change. At the present time, the operating manual is fairly neutral. Expressed concern over the breathing of VDCM is not in the manual, but expressed concern over breathing any organic vapor is.

RPL/cg

cc: G. F. Bedenbaugh

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