

NOTESVINYL CHLORIDE SAFETY ASSOCIATION MEETINGMARCH 29, 1979NEW ORLEANS, LA.I. MORNING SESSION - FINAL CONTROL DEVICESDave Loll - Diamond Shamrock

Diamond Shamrock uses carbon adsorption, with an incinerator as a backup, for control of VCM emissions. The carbon beds are 4' OD x 18' high and contain 5,000 pounds of carbon. Breakthrough is monitored using three thermocouples to track the heat front generated by the heat of adsorption. The bed is regenerated to 300°F with 150 psi steam. The bed is then dried with hot nitrogen to 340°F. This step is required to prevent the significant activity loss experienced with wet carbon. The bed is cooled to less than 100°F with cool nitrogen and is ready for re-use.

Other problems they have encountered include:

1. Hot spots due to liquid carryover. One one occasion they suspect the bed actually caught fire.
2. Corrosion, especially of the bottom support grid in vertical units.
3. Carbon carryover as a result of (2).
4. Cross-contamination of the beds due to Operator error and valve leaks.

Their solutions were:

1. Deluge the hot spots internally and eliminate feed cooling to eliminate liquid.
2. Provide nitrogen purge to assure positive flow at all times. This also helped rid the system of inerts.
3. Provide Hastelloy support grids.

Capital costs for the Unit were estimated to be \$2 MM.

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Marcus Smith - Georgia Pacific

Georgia Pacific has horizontal carbon beds with the bed effluent going to a boiler. They report channeling problems in the horizontal bed.

Breakthrough is monitored with an on-line gas chromatograph. They also regenerate with steam. Drying, however, is done with the bed under a vacuum with an external heater. A nitrogen purge precedes vacuum breaking and re-use.

Dave Becker - Diamond Shamrock

Diamond receives wet and dry streams from various plant units and incinerates them with the VCM streams following liquid knockout. Most of the equipment is protected with 15 psi carbon rupture discs and flame arrestors. It was pointed out that Conoco and Amoco research indicated that conventional flame arrestors (Shand and Jurs, Varac) have been found to pass flame when tested. The biggest problem to date has been flame arrestors in process lines.

Dick Holiday - PPG

PPG uses incineration for final control. The common vendor seems to be Trane. Dick reported that PPG asked EPA what they should do if their final control device failed. They have been told to shutdown within 40 minutes. No other company has such a limit of any of those attending. No fines or serious citations have been reported by anyone to date.

Al Godfried - Borden

Borden spent \$1 - \$1.5 MM to install a Trane Subex Unit which has run well.

W. C. Holbrook - B. F. Goodrich

Goodrich has recently installed six solvent absorbers, five of which work well. Their emissions compare well with SVR's. They declined, however, to disclose what solvent they use.

Control Device Breakdown

Carbon Bed - 6 plants
Incinerators - 9 VCM plants
15 PVC plants
Solvent
Absorbtion - 3 plants

II. AFTERNOON SESSION

Q & A - Bob Inlander - Georgia Pacific

Bob took an oral survey on several points. The responses of interest follow:

1. Everyone is reporting massive releases, but few, if any, companies report suspected exposures if the person was not being monitored at the time.
2. The 3M badges for monitoring VCM were reported to have OSHA approval. Both Conoco and Dow are using them with good acceptance. Cost is approximately \$5 per badge.
3. Of the companies present at this meeting, we were the only ones allowing women in the Regulated Area. This poses a problem for the other companies based on one statement that half the OSHA inspectors are women.
4. It is becoming more common for government agencies to employ contractors to perform inspections. The vast majority of companies required the contractor to sign a secrecy agreement concerning their process before admitting him to the plant.
5. Items mentioned in EPA inspections --
 - a. Leak detection procedures.
 - b. Frequency of emergency releases (only problem has been with a plant averaging one release per month).
 - c. Residual VCM levels after stripping.
 - d. Definition of "leak", e.g. 25 ppm - 3 feet from the source or 1,000 ppm in contact with the source. Experience at other companies suggests this is a good place to fight for a reasonable limit.
6. All but one or two companies had been inspected at least once since October 21, 1978.

III. TRUE CONFESSIONS

The only incident reported was the failure of a safety valve due to stress cracking of the spring. At the time the plant had no PM or RM program. They have gone to a lower tensile strength steel for the spring and will also evaluate coatings.

IV. NEXT MEETING

UCC 093554

POW → The Annual Meeting will be held in San Francisco on Sept. 13-14, 1979
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