

UNION CARBIDE CORPORATION
CHEMICALS AND PLASTICS
ENGINEERING
SOUTH CHARLESTON, WEST VIRGINIA

MEMORANDUM

November 5, 1976

To: Mr. R. N. Wheeler

From: S. J. Bustabad
J. M. Smith

Subject: Vent Revisions Per the EPA VCL Standard at the
Vinyls Complex, South Charleston Plant

The review of the process vents at the South Charleston Vinyls Complex to meet the new EPA venting requirements has resulted in four different cases that were investigated to obtain design basis, economic cost evaluation, and Maintenance and field installation schedules. All of the four cases were prepared on the basis of getting one reaction system (autoclave) completed in the units.

The first case involved was the autoclaves in which existing safety valves are adequate, but new rupture disks have to be installed under them. New, larger vent piping must be installed, and a new line installed in the space between the rupture disk and the safety valve to vent to a station where the portable vinyl chloride monitor can be used. The total cost per system is \$16,000. The time to specify, order, obtain and install the rupture disks and piping required is eight months. This case assumes that the existing safety valves are oversized.

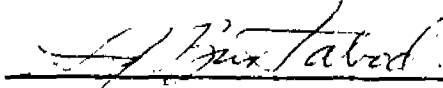
The second case consists of replacing the existing safety valves with new, larger safety valves, installing rupture disks, installing new vent piping, adding a vent line between the rupture disk and the safety valve to a vent station, and installing a new nozzle in the autoclave. To install the new nozzle, the autoclave must be stripped of all piping and auxiliary equipment, removed from its location, turned upside down to get good lead bonding to the new nozzle, tested and reinstalled. This involves renting a crane, as UCC does not have a crane big enough to pick up the autoclave. In order to remove the autoclave, part of the piperack and side of the building (walkways, etc.) must be completely stripped, and then put back up. The total cost per system will be \$70,000. The time needed to specify, order, obtain and install the new safety valves, rupture disks, piping and nozzles is twelve months. This case covers both the EPA requirements and the forthcoming changes in the ASME code.

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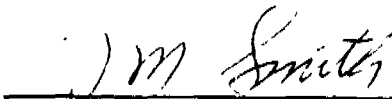
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The third case involves buying and installing new "O" ring seat safety valves. These valves have a double seal and will be the best available. No rupture disks would be needed and only minor piping modifications need be made. The cost per system is \$6,400 and the time required would be eight months.

The fourth case investigated involves changing the regular, conventional valves into "O" ring-seated safety valves (metal to metal and "O" ring seats). The cost of the conversion kits, available from several manufacturers, and converting the valves will be \$2,600 per autoclave. The time required for making the conversion would be seven to eight months.



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