

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

TO: W. T. Gunning

FROM: J. R. Shellenberger

LOCATION: Avon Lake General Chemical Plant

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DEPARTMENT: 5650

DEPARTMENT: 5661

DATE: March 8, 1972

SUBJECT: Near Miss - Repetitive Accident Type #10 - Fill Building or Area with Explosive Mixture

On March 6, 1972 at 0030 hours, vinyl chloride escaped from a poly into Building 461 through an improperly seated bottom valve. A Board of Review was held on March 7. The summary of the Board of Review is provided in this letter. Those in attendance:

J. J. Jaworski

Foreman

G. L. Rodgers

Blowdown Operator

W. T. Gunning

Day Supervisor

R. N. Rylands

Sr. Safety Engineer

J. R. Shellenberger

Plant Manager

General Foreman - Geon Area

Prior to shift change at 2400 hours, the 4-12 shift blowdown operator had started to drop polys #135 and #136 into blowdown tank #109. the 12-8 shift blowdown operator, when checking the material transfer from the two polys, found that Poly #135 had been recovered whereas Poly #136 had not recovered (in fact the poly pressure was 80 psig). This indicated a plugging situation in Poly #136 or in the blowdown line.

The attached sketch is used to explain what occurred. (B/461 Blowdown Operator stated that he closed the valve on the blowdown line and the bottom Powell valve on the Poly. He opened the wash line to bleed off any pressure and then removed the inspection plate on the Powell valve. As he removed the inspection plate he found that the bottom valve was completely plugged with polymer. He hooked up a steam hose to the block and bleed system and blew out the plug. After the plug was blown out, slurry (102-F5) and vinyl chloride started coming out the inspection plate opening. Garofolo and another man tried to close the bottom valve on Poly #136 more tightly, but they could not stop the VCl flow. The gas alarm was then sounded and the area was subsequently under an alarm condition for 40 minutes. The poly was quickly put on recovery from the top and the unreacted vinyl chloride monomer was removed from the poly, although slurry continued to run out of the inspection plate and onto the second floor.

Until the poly was recovered the VCl concentration on the second floor was high in the immediate area of Poly #136. The rest of the building contained a very low VCl concentration. The emergency fans were running and the vinyl chloride was removed quickly from the building.

CONCLUSION:

As the steam was used to remove the visible plug in the bottom valve, apparently a plugged condition in the bottom Powell valve inside the poly also broke loose. The valve was improperly seated when the poly was charged. This permitted polymer to form in the bottom valve during reaction and prohibited closing the valve completely after monomer started leaking out of the inspection plate opening.

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RECOMMENDATIONS:

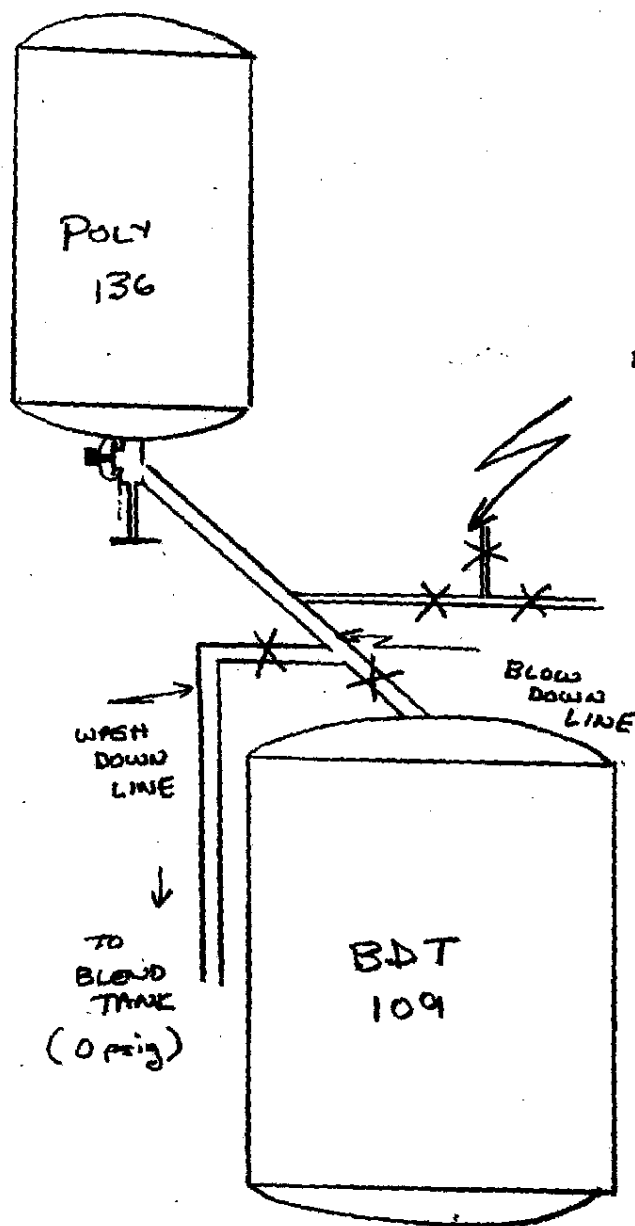
- ① The steaming method is felt to be a safe approach to unplugging blowdown lines. However when unplugging lines in the future, the poly will be recovered prior to removal of the inspection plate to prevent gas escape.
- ② The bottom valves and blowdown lines will be pressured with water prior to charging the poly. The water will be left in the lines during reaction. This procedure will detect leaky valves ahead of time and the leaky valves will be changed.
- ③ A long term aspect of this problem involves conversion of the bottom valves to ball valves. This is necessary to enable HRC cleaning of the Polys.

J. R. Shellenberger
General Foreman

JRS/alm

cc: D. L. Dowell
H. Waltemate
O. F. Beckmeyer
J. L. Nelson - R. D. Scott
E. W. Harrington - P. H. Lawrence
G. Pow
W. E. Brodine
W. L. Cato
E. E. Mitchell - P. D. Terry
R. N. Rylands

H. Waltemate
3-13-72



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