CHEMICALS LC INDUSTRIES

INTEROFFICE / LAKE CHARLES

TO J. M. Davis

DATE November 18, 1974

FROM G. A. Work

SUBJECT Detailed VCM Job Procedures

Attached are the revised VCM job procedures. The copies of these procedures you previously received should be destroyed.

GAW/cg

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NEUTRALIZER DRAIN POT

GENERAL

During the normal operation of the neutralizers, humidifier, and dehumidifier it is necessary to drain the aqueous phase in each of these pieces of equipment to the sewer. This material is saturated with vinyl. The purpose of the neutralizer drain pot is to prevent any vinyl from being released into the sewer or in the working area around the neutralizers. This is accomplished by draining the material from the neutralizer, etc., to the drain pot where the vinyl evaporates to the heavy still vent stack. Additional vinyl is removed by washing the contents of the pot with water which goes to the heavies still vent scrubber. The contents of the pot are then drained to the sewer with no resulting VCM releases in the work area.

SAFETY

Comfo Masks should be worn at all times when performing any of the tasks as described in the operation of the drain pot. If it is not possible to adhere to these procedures, it will be necessary to wear an air supplied mask. (Draining a piece of equipment directly to the sewer would be such a case.)

OPERATION

I. Draining Neutralizer, Dehumidifier, and Humidifier

A. Close outlet valves to sewer and stack. Be sure water inlet valve is closed.

B. Open inlet valve to pot.

C. Open drain valve on desired vessel. Be sure drains from other vessels are closed.

D. Drain material to the pot. Try to keep vinyl liquid sent to pot at a minimum. Do not overfill drain pot (1/2 to 3/4 full on sight glass).

E. When draining is complete, close valve on vessel which was drained.

II. Clearing Drain Pot of Vinyl

A. Slowly open valve to stack on the pot and allow the pot to depressurize. (Leave pot inlet valve open.)

B. Leave the pot in this status for several hours to allow the vinyl to evaporate. An N_2 sweep should be put in on the bottom of the pot to agitate the sludge and sweep the vinyl out of the pot.

The pot can be left in this status for as long as desired, however, it will be necessary to finish clearing it before it is time to drain into the pot again. It requires about one hour to finish the clearing procedures (steps 3 through 6). Note: It is important to get as much vinyl out of the pot as possible before washing it. This minimizes the amount of vinyl that might flash in the sewer at the heavy still scrubber. The longer the pot is left purging the more vinyl is removed.

<u>To Finish Clearing</u>:

C. Place a water hose on the Kelly connection to the drain header at the bottom of the vessel that was drained. (In the case of the dehumidifier, put the water hose on at the kelly near

the bottom of #3 neutralizer.) Run water in at this kelly, through the drain header, into the pot and out the vent line to the stack for 20-30 minutes.

D. Close off the water and open the drain to the sewer. Allow the pot to drain 10-15 minutes (when timed it took about 10 minutes to completely drain). This drains all the water from the vent stack back through the vent line and all the material in the drain pot.

E. When the pot is empty, close the valve to the sewer.

F. Purge the pot to the stack with N_2 to remove any air that may have entered drain pot and vent line during draining. (Purge for 5-10 minutes)

The pot is now ready to be drained into again.

PROCEDURES FOR SPECIFIC EQUIPMENT CONTAINING VC

The procedures given below are given in detail so that operator exposure to VCM may be avoided. A Comfo mask should be worn at all times a procedure is being followed unless there is visible leakage of VCM to the atmosphere. A Scott air pack or air line mask should be worn any time there is visible leakage.

I. Filters

A. Taking out of service

1. Block inlet line.
2. Push liquid out of filter.
3. Block outlet line.
4. Vent to vent header.
5. Put N_2 purge in at the top of the filter and out the bottom. Have the purge going to the vent header.

B. Putting into service

1. Nitrogen purge.
2. Pressure check with nitrogen.
3. Crack the outlet valve slightly and allow the nitrogen to vent out the top bleed valve. Have a hose connected from the bleed valve to the vent header.
4. When the filter is full of liquid, block the bleed. Allow the filter to float on the outlet line.
5. Purge the hose with nitrogen before disconnecting.

II. Neutralizers

A. Taking out of service

1. See the neutralizer SOP for details of procedures to follow immediately after removing a neutralizer from service.
2. Pad the VC out the neutralizer inlet line with 200 psi nitrogen.
3. Block off the inlet line and vent the neutralizer to the vent header until it depressurizes.
4. Nitrogen purge in the bottom and out the top of the neutralizer for at least four hours after there is no condensate or ice on the neutralizer bottom.
5. Wash the neutralizer.

B. Putting into service

1. Nitrogen purge.
2. Pressure check with nitrogen.
3. Crack the inlet valve to allow the neutralizer to fill with VC.
4. Allow the nitrogen to vent out the top bleed valve. Have a hose connected from the bleed valve to the vent header.

5. When the neutralizer is full of liquid, block the bleed. Block the inlet valve and open the outlet valve to allow the neutralizer to float.
6. Purge the hose with nitrogen before disconnecting.

III. Pumps (seal leaks)

1. Put on air line mask or Scott air pack.
2. Put spare pump in service.
3. Follow normal procedure for shutting down the pump with the leaking seal.
4. Vent the pump through the drain valve to the vent header to clear.
5. Nitrogen purge the pump to the vent header in preparation for maintenance work.

IV. Dryers (U.I., L.I. and Stripper Feed)

A. Taking out of service

1. Bypass dryer and isolate.
2. Pad the liquid from the dryer into the system with 200 psi nitrogen.
3. Vent the dryer to the vent header.
4. Nitrogen purge the dryer from the top, out the bottom, and to the vent header.

B. Putting into service

1. Follow steps #1 through #5 as given for putting a filter into service.
2. Put flow through the dryer and close the bypass.

SAMPLE COLLECTION PROCEDURE

Sample points have been revised so that personnel exposure to VC has been eliminated or reduced significantly. Samples taken that contain VC are:

A. VC crude
B. VC product
C. Quench liquor
D. Stripper bottoms
E. Upper intercooler
F. Lower intercooler
G. Day tank
H. Sphere

The sample points for each of these locations have been equipped with a bleed line so that the VC liquid that has filled the tubing (connecting to the bombs) can be purged to a remote location before a bomb is removed. A Comfo Mask should be worn while samples are being collected.

The sample collection procedure is as follows:

1. Connect the bomb to the tubing connections very securely. Connection leaks because of faulty fittings should be reported promptly.

2. Start circulation through the bombs for at least 20 minutes. Day tank and sphere samples should be circulated for at least one hour.

3. The ball valves (at pump suction and discharge lines) for the sample lines should be blocked and the needle valves on the sample bombs should then be closed.

4. The bleed valves for the sections of tubing (between the ball valves and needle valves) should then be opened to allow the trapped VC to evacuate.

5. These sections should then be nitrogen purged.

6. Remove the bomb. If the bomb needle valves or SRV leaks through, the bomb should not be reused. Follow the procedure given below for emptying bomb.

7. After samples have been run, the bombs should be either put back into service or stored in the cabinet outside the lab. No bombs left in the lab should be outside the hood.

8. If you get bad lab results and feel that it was because of a dirty bomb, clean the bomb by purging it to the vent header and nitrogen purging before the bomb is washed with acetone.

When sample bombs are to be taken to the main lab for analyses, caps must be tightly screwed on each end of the bombs. When the bombs are delivered to the main lab, they must be put under the hood where VC samples are analyzed.

CLEARING PROCEDURES FOR VESSELS AND LINES CONTAINING VINYL CHLORIDE

The general procedures for clearing equipment or lines which contain some or all VCM are given below. Specific instructions for clearing of some vessels are given in the following pages. Respiratory protection should be used to prevent any exposure to VCM.

Hazards of Vinyl Chloride:

1. Very highly flammable.
2. Irritant to skin or eyes.
3. Vinyl chloride is a cancer suspect agent.
4. May cause frost bite if liquid comes into contact.

Treatment if Contact with Body:

1. Wash thoroughly and remove contaminated clothing.
2. Apply skin cream to the affected area.
3. Report the incident promptly to your supervisor.

Protective Clothing Required:

Normally none required. Special clothing may be specified by supervision. Special clothing may be required for vessel entry.

Other Safety Precautions:

1. Clearing should not be done when maintenance workers are in the area.
2. Hoses and connections should be checked thoroughly.
3. Purging should be to the vent header only.

Clearing Procedure:

1. Isolate vessels or line.
2. Push (with N_2) all possible liquid out and into other vessels or pipe.
3. Vent (through a Teflon-lined hose) the line or equipment at a slow rate (to a stack if possible). Frost on the outside of piping or equipment indicates organics is still present.
4. Nitrogen purge the equipment after venting has stopped.
5. Check all bleeds and drains to make sure they are not plugged.
6. Tag out.

Special Maintenance Worker Precautions:

1. Respiratory protection should be worn when the first break is made.
2. Double check drains (for pumps especially) and vents by sticking a wire through an open valve.
3. Break loose bolts of a flange first on the side away from the worker.