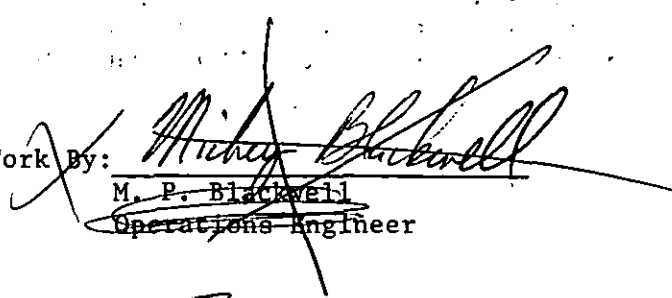
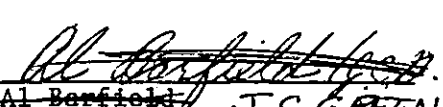


VCM UNLOADING OPERATING MANUALABERDEEN CHEMICAL PLANTABERDEEN, MISSISSIPPIMAY 31 1983
NOVEMBER 4, 1982

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VCM UNLOADING OPERATION MANUALABERDEEN PVC PLANTI. INTRODUCTIONA. Operator Responsibilities

The purpose of the VCM Tank Farm is to safely unload and store Vinyl Chloride Monomer (VCM). VCM is brought into the plant in tankcars.

It is the main raw material used in making the plant's major product, polyvinyl chloride (PVC). VCM is a colorless sweet-smelling gas at atmospheric pressure that is stored and transferred as a liquid at moderate pressure (30-70 psig).

The yard department is responsible for the offloading of VCM tankcars and the related transfer equipment. The yard operator helps fulfill the tankfarm's purpose by making sure that the VCM is safely unloaded without endangering his fellow workers or equipment. The operator is able to attain his goals in safety, job performance and efficient operation through a training period, on-the-job experience, and passing written and field examinations. The operator fulfills his responsibilities by:

1. Demonstrating understanding of how his equipment functions.
2. Being able to explain what role each piece of equipment plays in the process.
3. Keeping a close and regular check on equipment.
4. Being able to demonstrate troubleshooting and corrective measures.
5. Keeping his area of responsibility safe and clean.
6. Keeping complete and accurate records.
7. Reporting equipment problems promptly and writing maintenance work orders as needed.
8. Operating the equipment in an environmentally sound manner and promptly ~~correcting~~ taking corrective measures should process leaks occur
9. Wearing the proper respiratory protection

I. INTRODUCTION (Cont.)A. Operator Responsibilities (Cont.)

This operating manual will cover the normal responsibilities and duties of the yard operator when unloading VCM railcars. Each phase of the unloading procedure will be covered. In addition to normal operating procedures it will also discuss operations under abnormal conditions. The operator must be prepared to meet these situations with temporary measures until the abnormal condition is corrected or ceases to exist.

Safety takes second place to no plant activity. The safety of the plant personnel and equipment is to be carefully considered before any job is started. The Conoco safety slogan is "Our work is never so urgent or important that we cannot take time to do it safely". Safety on the job must be our first and most important consideration. When we do a good job of planning our work with safety in mind, we are less likely to suffer injury or cause an accident. This allows us to meet our plant goal of employees going home unhurt.

Indicate

VCM Overexposure

The goal for VCM overexposure ^{to employees} is "ZERO". This is accomplished by operating the equipment as designed, prompt attention given to leaks ~~and~~ per ~~Continuous monitor sensors~~ ~~and~~ follow up work orders for maintenance. As we meet our goals for overexposure, all governmental guidelines will also be kept.

I. INTRODUCTION (Cont.)B. General Process Description

INCLUDE Shell, PPG, Uniroyal, etc.

VCM tankcars are brought into the plant from various VCM plants throughout the United States. Most of the VCM that comes into this plant comes from Conoco's VCM Plant in Lake Charles, Louisiana. VCM also occasionally comes from PPG in Lake Charles, B. F. Goodrich in Calvert City, Kentucky, or from Uniroyal in Geismar, Louisiana. A VCM Tankcar typically holds 175,000 pounds of VCM (about 23,000 gallons of liquid).

SPOTS

If for some reason an inbound VCM car's gross weight is less than 255,000 pounds, the car must be reweighed and spotted on the west track until *This insures we receive what has been billed to Aberdeen Plant.* billing weights are verified. The cars are shipped to Aberdeen and stored on the Monroe lead until they are brought into the plant. Only the Monroe lead or new VCM spur can be used to store VCM railcars. This is a safety precaution so that all the VCM cars are kept in one general area. The railroad crew is responsible for bringing the VCM cars into the plant and "spotting" them at the VCM transfer stations that are on the platform at the VCM tank farm. This is usually done once per day except on weekends or holidays. A maximum of ten tankcars can presently be brought into the tank farm. The tank farm has eight transfer (unloading)

SPOTS

SPOTS
stations. The platform is located between two sets of railroad tracks such that there are four transfer ~~stations~~ on each side. These are

referred to by name as Spot No. 1, Spot No. 2, Spot No. 3, and

Spot No. 4, from ~~north to south~~ *SOUTH NORTH (EAST SIDE); AND SPOT NO. 6, SPOT NO. 7, SPOT NO. 8, AND SPOT NO. 9. FROM SOUTH TO NORTH (WEST SIDE).* ~~A maximum of two tankcars can be hooked up at each spot.~~

SPOTS
SIDE OF PLATFORM) AND SPOT NO. 10 (WEST SIDE OF PLATFORM) ARE

THE TWO NORTH LOCATIONS FOR "SPOTTING" TANKCARS, BUT THERE
Once the railcars have been "spotted", it is the yard department's

ARE NO UNLOADING FACILITIES AT THESE TWO SPOTS?
responsibility to unload the VCM into T-601 which is commonly called the

I. INTRODUCTION (Cont.)B. General Process Description (Cont.)

"sphere". This is done using the five Corken compressors at the tank farm. They are commonly referred to as Compressor No. 1, Compressor No. 2, Compressor No. 3, Compressor No. 4, and Compressor No. 5, from north to south, respectively. Compressors No. 3 and No. 5 combined have about the same capacity as either Compressor No. 1, No. 2, or No. 4. The tankcars are connected to the compressor piping and the sphere piping with flexible hoses. The compressors pull vapor from the top of the sphere and compress it into the tankcars, forcing liquid out of the cars through a stand pipe, into the bottom of the sphere.

Each tankcar has three valved connections in the dome of the car (two liquid lines and one vapor line). The liquid lines are 2" lines and point toward each end of the tankcar. The vapor line is a 1½" line and points toward the side of the car. Refer to the photograph in the Appendix. Only one liquid line is usually hooked up on a car because the car does not unload significantly faster with two lines and it takes longer to hook up the car. Both liquid lines have to be hooked up on some type of cars (ACFX and PPGX cars) because the excess flow valves are set to close at lower rates than our normal unloading rate of 65-95 gpm.

The operator can tell when all the liquid has been unloaded from a car by watching the sight glass in the liquid transfer line. When the tankcar has been emptied, the 4-way valves on the compressor are reversed such that the compressor evacuates vapor from the car and discharges it into the top of the sphere. When the specified amount of vapor is removed from the tankcar, the compressors are shut down and the transfer lines

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I. INTRODUCTION (Cont.)

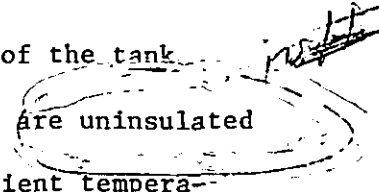
B. General Process Description (Cont.)

are evacuated. This must be done because of EPA (Environmental Protection Agency) regulations concerning the release of VCM vapor to the atmosphere. Then the transfer line can be unhooked and the cars are sent back to the respective VCM plant for reloading.



All outbound VCM cars are to be weighed. Cars containing a heel greater than 600 pounds should be set aside for additional unloading. The plant can lose considerable amounts of VCM on heavy outbound cars, which can drastically impact on our plant's cost effectiveness.

There is a big difference in winter and summer operation of the tank farm. The primary reason is probably because the vessels are uninsulated and the transfer lines are lengthy and are exposed to ambient temperatures along their entire run. The vapor pressure drops in the vessels and the tankcars as the temperature drops, making it harder to unload in cold weather because there is less VCM pressure to move the liquid through the pipes. Thus, unloading conditions can also vary from day to night and when rapid changes in weather occur.



During the summer, eight tankcars can be hooked up at one time and unloaded with four or five compressors. Also, the tankcars will usually start unloading as soon as the valves on the liquid lines are opened.

During winter conditions (ambient temperature approximately 40°F or less), it is harder to start the VCM liquid unloading and only four tankcars can be unloaded at a time, with four or five compressors.

If the weather gets extremely cold, it may take four compressors to unload only two or even one car, but this has not happened since the

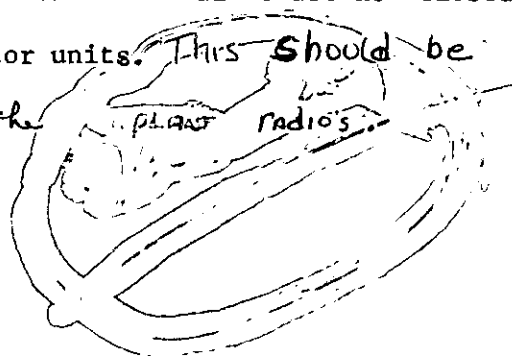
I. INTRODUCTION (Cont.)B. General Process Description (Cont.)

Complete and accurate records must be kept on VCM unloading. These are necessary for accounting purposes and for communication between shifts. A VCM Unloading Card must be filled out and turned in to the accounting group for each car unloaded. Records are also kept in the yard scale-house on which cars were unloaded, when they started, when they were put on vapor, and when they were unhooked. A valve setup checklist also must be filled out by the yard operator when hooking up cars and starting unloading. Copies are to be kept on file by the yard supervisor. A copy of the checklist is included in the Appendix. *ALSO INCLUDED IS A COPY OF THE EMPTY OUTBOUND VCM TANK CAR INSPECTION REPORT.*

NEW
PARAGRAPH.

→ The automatic valves under the sphere are tested every Wednesday morning. The checklist used to record the results of this testing is shown in the Appendix. Copies of this checklist are to be kept on file by the yard supervisor. This testing must be coordinated with the vinyl panel operators so that the valves are not closed during VCM transfer to the reactor units. *This should be*

CO-ORDINATED By using the



II. OPERATING PROCEDURESA. Railcar Hookup

After VCM cars are brought into the plant, the yard operator "hooks up" each car by connecting transfer hoses to it. Vapor can then be transported into the car and the liquid VCM can be sent into the sphere. In the summer, two cars can be hooked up at each transfer station for unloading. During winter operation or when a rapid change in the weather is anticipated during unloading, only one car can be unloaded from each transfer station.

Fresh air masks must be worn under the compressor shed while opening or closing the railcar dome, or while connecting and disconnecting the transfer hoses. Gloves must be worn while handling the nipples and the transfer hoses. VCM cars are not to be hooked up during an electrical storm.

Equipment Required

1. Fresh Air Mask
2. 1 1/2" Teflon Tape
3. O-rings for camlock couplings and Weco fittings (if needed)
4. Gloves

Procedure

1. Get a fresh air mask and a roll of 1 1/2" Teflon tape, from the yard scale house. Also get "O" rings that are needed to replace the ones at the tank farm. (~~Note that there are two types of O-rings. The larger ones are for the Weco fittings, while the smaller ones are used with the camlock couplings.~~) Inspect the "O" rings individually for cracks and nicks. *Do not use*

DEFECTIVE "O" RINGS.

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II. OPERATING PROCEDURES (Cont.)

A. Railcar Hookup (Cont.)

Procedure (Cont.)

2. Raise the blue metal flag located on the railroad track south of the roadway. This flag states "Stop! Tankcar Connected." This procedure is necessary to isolate the eight unloading stations and notify railroad personnel that VCM unloading is taking place.
3. Engage the derailler located near the blue flag. This will prevent railcars from entering the tank farm area when unloading is taking place.

64. Check the railcar chocks and handbrake and ground the railcar. Make sure that the chocks are in good condition and are against the railcar wheels. Manually check the handbrake to make sure it is tight.

Inspect the grounding cables to ensure that they are intact and in good working condition. Bond each car to the ground rod by attaching the grounding clamp ~~from the north side of the ladder~~ to the SIDE OF THE north vertical siderail of the ladder. This prevents static accumulation during unloading and eliminates dangerous sparking which could ignite any VCM leaks. It also prevents loss of the ground clamp if it is left connected during switching.

Should one of the grounding clamps or cables be damaged, use the backup cable located on the south liquid boom arms at each spot

EXCEPT SPOTS NO. 4 AND NO. 9 HAVE
~~except Spot No. 1~~ which has no backup cables.

75. Drain the water from the breathing air filter if necessary. (The filter is located between the rail tracks).
48. Visually check the valves under the sphere to make sure they are set up for unloading. The 4" valve on the vapor line and the 6" valve

II. OPERATING PROCEDURES (Cont.)

A. Railcar Hookup (Cont.)

Procedure (Cont.)

under the sphere on the liquid line to the sphere must be open (both valves are actuated valves).

51. Record the sphere level on the checklist (see checklist in Appendix). Turn the handle on the gauge to move the tape, then take the reading. If the tape does not bounce, notify the yard supervisor. The maximum allowable sphere level is 38 feet. To unload 4 tankcars the level must be below 32 feet - 3 inches (27 feet - 0 inches for 8 tankcars).
8. Climb the stairs to the unloading platform. If the stairs are wet or icy, be especially careful. Always be sure to use the handrail.
9. Go to the station you want to unload from, loosen the locks on the walkramp, and use your foot to push the ramp onto the car dome. The ramp will not operate if it is not in the middle of the platform opening. Adjust the height and length of the ramp and lock the ramp into place. Watch for pinch points when positioning the ramp and do not put any unnecessary strain on your back.
10. Unlatch the vapor and liquid line(s) and swing each line over the railcar dome area. Be careful not to let the lines swing back and catch your arm or hands. (The vapor line is the 1½" line).
11. Remove the nipples from the holders and peel off the old Teflon tape. Inspect the threads and retape them with new tape up to 2" from the end of the threads. If the threads are worn, write a work order to replace the old nipples with new ones.

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II. OPERATING PROCEDURES (Cont.)

A. Railcar Hookup (Cont.)

Procedure (Cont.)

12. Remove the pipewrench from the holder and fasten it on one nipple. Then carry the pipewrench and nipples to the dome area of the car. Be careful not to drop the nipple and damage the threads.
13. Put on the fresh air mask and tighten it. Test the face seal by blocking the hose with one hand while trying to breathe in. If it leaks, adjust the straps or facepiece. Make sure you have a good face seal.
14. Purge the air line of any water that may be in the line. Connect the fresh air mask to the fresh air hose that is on the transfer line booms.
15. Break the domelid seal with the pipewrench and slide the latching bar so that the lid can be raised. Open the domelid and push it all the way back so that it cannot close. Be careful to use proper lifting procedures when raising the lid.
16. Visually check inside the dome area for leaks. Leaks will be indicated by condensation or icing around the valves and fittings.
17. Test the valves to make sure they are closed by pushing the valve handles against the closed stop. *CHECK THE PLUGS AND CAPS AND ATTACHED CHAINS - IF ANY ARE MISSING, NOTE ON THE CHECKLIST,*
18. *SELECT THE CORRECT SIZE WRENCH,* Adjust the ~~wrench~~ to fit the railcar valve plugs and remove the plugs. Be alert to the fact that the wrench could slip and trap your hand or fingers against the dome. Also do not stand in the direction of the valve opening in case a valve is leaking and VCM spews out.

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II. OPERATING PROCEDURES (Cont.)

A. Railcar Hookup (Cont.)

Procedure (Cont.)

19. Push the port hole covers aside and screw the nipples into the valve opening until they are hand tight. Then tighten the nipples with the pipewrench. Be careful not to let the wrench slip. The nipples must be very tight or they will leak. Double check them after installing.
20. Close the ~~bleed-off~~ ^{VACUUM BREAKING} valves on the end of the transfer line booms. Make sure they are fully closed so that VCM will not leak to the atmosphere.
21. Unhook the flexlines and ~~camlock couplings~~ or Weco fittings from the holders on the booms. Be careful to minimize bending and twisting the flexlines during hookup. Excessive bending of the flexlines causes early failure of the lines. Visually inspect the flexlines for small holes or extremely worn areas of the armored weave. If a flexline is punctured, badly twisted or damaged, or in your judgment has a likely potential for failure during operation, contact maintenance and have the hose replaced.
22. Inspect the "O" rings individually and install them in the ^{NIPPLE} ~~coupling~~ slots, ~~(for the camlock couplings)~~. ~~For stations with the Weco fittings, the "O" rings fit in a slot on the nipple.~~ The "O" ring must be evenly seated to prevent leaks. "O" rings with cuts or nicks should be discarded.
23. ~~For stations with camlock couplings, press the coupling against the nipple flange and tighten the bolts hand tight.~~ Check the

II. OPERATING PROCEDURES (Cont.)A. Railcar Hookup (Cont.)Procedure (Cont.)

~~alignment of the "O" ring against the flange and the coupling to make sure there is a good seal. "O" rings that are pinched or crooked will cause leaks. When the "O" ring is seated properly, evenly tighten the bolts with the pipewrench. (Note: Do not beat on the flanges with the pipewrench.)~~

~~For stations with Weco fittings,~~ Press the Weco union attached to the flex hose against the nipple inserted in the railcar. Check the

alignment of the "O" ring to make sure there is a good seal. ~~Com-~~
"O" RINGS THAT ARE PINCHED OR CROOKED WILL CAUSE LEAKS.
 Completely tighten the Weco hammerlock to prevent leakage.

24. Check to make sure that the valve on the transfer line closest to the railcar dome is closed (it should be closed from the previous unhooking). Slowly pull the handle of each railcar valve ~~down~~ ^{UP} to open it. Opening the valves too fast can cause an undesirable surge of pressure. Check for leaks around each coupling ~~or bleed off valve~~ **AND VACUUM BREAKING** as the railcar valves are opened.
25. Slowly open the liquid valve(s) on the end of the booms. Then open the vapor valve at the end of the boom. Make sure that the valves are fully opened or flow will be restricted.
26. Recheck the valves on each transfer line to make sure they are open. The railcar dome valve and both transfer line valves must be open. **VACUUM BREAKING**
~~The bleed~~ valve must be closed. Initial the checklist to show that the valves are open.
27. Inspect the flex hose for leaks. Contact maintenance to replace any leaking flex hoses. (Note: The line must be disconnected using

II. OPERATING PROCEDURES (Cont.)A. Railcar Hookup (Cont.)Procedure (Cont.)

proper procedures prior to replacing. The procedure is on page 24 - "Unhooking Railcars").

28. Disconnect the fresh air mask and check the pressure gauges at the platform on the vapor and liquid lines and make sure that they are showing pressure. Lack of pressure may indicate a leak, a plug or a closed valve.
29. Hookup additional railcars using steps 9 - 27.

II. OPERATING PROCEDURES (Cont.)B. Unloading Railcars

After the VCM cars at the tank farm are hooked up, the cars are unloaded using the Corken compressors. The compressors take vapor from the top of the sphere and compress it into the tank cars, forcing the liquid in the cars to flow into the bottom of the sphere. It usually takes 4-6 hours to unload the liquid VCM from a tankcar.

It is very important for the valves on the compressors to be set up correctly or the compressor will dead-head. Running the compressors in a dead-headed condition will raise the compressors' relief valves and force VCM into the emission recovery knockout pot T-201. A pressure switch on T-201 will shut down all compressors if the pressure in the pot reaches ⁷⁰~~100~~ psig.

Equipment Required

1. Fresh Air Mask.

Procedure

1. After hooking up the cars, carefully come down the stairs from the unloading platform, using the handrails. Check the valves that are between the railroad tracks going to each unloading station, which is to be used for unloading cars. All the valves should normally be open. Initial the checklist if the valves are open. If any of the valves are closed, do not startup any compressors going to that unloading station.

2. Go to the compressor shed and ~~connect the fresh air mask to the fresh air hose. Put on the mask. Use the proper procedure for the fresh air mask as described earlier.~~

*PUT ON THE FRESH AIR MASK, CHECK FOR FACE SEAL,
AND CONNECT IT TO THE FRESH AIR HOSE.*

II. OPERATING PROCEDURES (Cont.)B. Unloading Railcars (Cont.)Procedure (Cont.)

Initial the checklist after checking the vapor valve for each compressor.

8. Check the level of the VCM in the vapor line knockout pot by observing the sight glass located on the east side of the pot. The level should be below the pot's ~~low~~ ^{HIGH} level switch before unloading is started. The level in the pot is automatically controlled by high and low level switches. Should the instruments malfunction and the level be above the ~~low~~ ^{HIGH} level switch, notify the yard supervisor and proceed to drain the pot manually. Do this by placing the VCM recycle pump switch in the "hand" position. This switch is located on a panel on the south side of the knockout pot. The recycle pump will pump the contents of the pot to the sphere. When the level in the pot has lowered to the low level switch, place the pump switch back in the "auto" position.
9. Turn the handle of each 4-way valve so that the handle is in the vertical position. This sets up the compressor to pull from the sphere and discharge into the tank cars. (NOTE: The handles can be installed in the opposite direction. If maintenance works on a 4-way valve, check the arrows on the valve and make sure the flow is from the sphere to the tankcars when the valve handle is vertical. This must be checked before signing off the work order.)
10. Check the suction pressure of each compressor. It should read the same as the sphere pressure. If the pressure is 0 psig, the liquid trap may be full of liquid which closes the high level shutoff valve in the trap and will not allow any flow to the compressor. The trap can be drained

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II. OPERATING PROCEDURES (Cont.)

B. Unloading Railcars (Con.t)

Procedure (Cont.)

- by opening the Jamesbury valve that goes to the emission recovery knockout pot by the compressor shed. When the liquid is drained off, the pressure will rise on the suction (as the shutoff valve opens).
11. *WHEN THIS OCCURS, CLOSE THE JAMESBURY VALVE*
When the suction of each compressor is set up correctly, visually trace the vapor discharge lines for each compressor. When all of the compressors are to be run, Compressors No. 3 and No. 5 should discharge to the No. 3 transfer station, Compressor No. 2 should discharge to No. 2 transfer station, Compressor No. 4 should discharge to the No. 4 transfer station, and Compressor No. 1 should discharge to the No. 1 transfer station. When one or more compressors are not to be run, or if fewer than four railcars are to be unloaded, it is best to setup the compressors on common discharge by opening the four valves on the No. 5 compressor header. This allows all the compressors to be set up on one common header. Check the valves on the line from the No. 5 compressor to make sure they are set up correctly and be sure to check the jumper lines that connect the lines going to the four spots. Finally, check the four vapor valves near the ground going to the four transfer stations. The valve to each transfer station that is to be unloaded from must be open. Initial the checklist after making sure the appropriate valves are open.
12. When all the lines have been traced for each compressor, push the start buttons for the compressors to be run.
13. Check the oil pressure on each compressor. It must read between 10-20 psig.

II. OPERATING PROCEDURES (Cont.)C. Recovering Vapor From Railcars (Cont.)Procedure (Cont.)

on the same transfer station and that the sight glass for that transfer station shows vapor flow).

- A. Go to the dome of railcar A and close the liquid valve(s). This allows you to check the sight glass and see if the liquid has blown out of railcar B.
- B. Go to the sight glass and check for liquid blowing through the line. If liquid flow shows in the sight glass, railcar B has not blown out. Finish unloading it by closing the vapor valve on railcar A. ~~and setting up the compressors on a common header as mentioned in the first part of this procedure.~~ *NO NEED FOR THIS*

- C. When the sight glass shows that railcar B has blown out, go back to the platform and open the liquid ^{AND VAPOR} valve(s) on railcar A. ~~VAPOR VALVE~~
- D. Next, close the liquid valve(s) on railcar B to make sure that railcar A has blown out.
- E. Check the sight glass as in step B (Above). If liquid flow shows in the sight glass, railcar A was not blown out and must be unloaded. Close the vapor valve on railcar B, ~~and set up the compressors on a common header to unload railcar A.~~ *NO NEED FOR THIS*
- F. When the sight glass shows that railcar A has blown out, re-open the ^{AND VAPOR} liquid valve(s) on railcar B.
- G. After all the cars have blown out, reopen any valve that you closed to check or unload the railcars.

2. Put on the fresh air mask, check for face seal, and connect it to the fresh air hose.

II. OPERATING PROCEDURES (Cont.)

C. Recovering Vapor from Railcars (Cont.)

Procedure (Cont.)

3. Open the four valves on the No. 5 compressor header so that all the compressors are on one common header.

4. Reverse all the 4-way valves so that the handles are in the horizontal position.

5. CLOSE ALL LIQUID LINE VALVES AT THE GROUND LEVEL. ^{LOCATED BENEATH THE SIGHT GLASSES.}

6. Check the compressor discharge pressures to make sure the compressors are not dead headed (pressure should be 70-100 psig).

7. Take off the fresh air mask, disconnect it and roll up the hose.

8. Record in the logbook the time that the cars were put on vapor.

D. Unhooking Railcars

When the VCM railcars at the tank farm have been unloaded and evacuated to the specified pressure, the compressors will be automatically shut off by the low pressure switches. Before the cars can be unhooked, the amount of VCM vapor in the transfer hose must be reduced to 0.13 cubic feet of VCM vapor (at 20° C and 29.92 in. Hg) to comply with EPA regulations. To meet this requirement, the lines must be evacuated to a 10" Hg vacuum. Then the lines can be unhooked and the cars can be sent out of the plant.

AND

Fresh air masks must be worn under the compressor shed ~~or~~ while connecting the transfer hoses. Gloves must be worn while handling the nipples and the transfer hoses. VCM cars are not to be unhooked during an electrical storm.

Equipment Required

1. Fresh Air Mask
2. Gloves

II. OPERATING PROCEDURES (Cont.)D. Unhooking Railcars (Cont.)Procedure

1. Go to the tank farm and climb the platform stairs. Be especially careful if the stairs are wet or icy and be sure to use the hand-rail.
2. Check the pressure on each transfer station according to the gauges on the platform. Make sure that the car(s) at each transfer station have been pulled down to 6-8 psig.

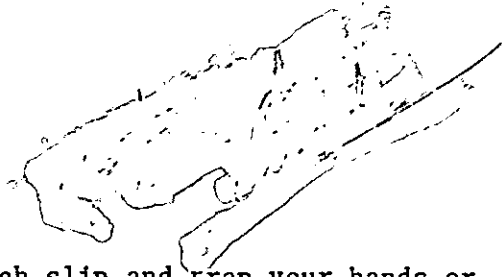
NOTE: If one of the transfer stations has reached the proper evacuation pressure before the others, close the valves at the platform for that transfer station. Since the compressors are on one common header, this will allow the other transfer station(s) to evacuate faster. When all the transfer stations have been properly evacuated, reopen the valves on the transfer lines which you closed.

3. Climb down from the platform (carefully). ~~hook up the air mask to the hose at the compressor shed, and put on the mask.~~ *Do to the compressor shed and put on the fresh air mask, check for face seal, and then connect it to the fresh air hose.*
4. Turn off the compressors.
5. Close the 4" main vapor valve from the sphere and the 6" main liquid valve to the sphere that are on the west side of the compressor shed.
6. Check the pressure gauge on the line to the emission recovery system. (Gauge is at the southwest corner of compressor shed.) It must read at least 10" Hg vacuum. Open the four manual valves that evacuate the transfer lines to the emission recovery system.

NOTE: If there is not at least 10" Hg vacuum on the line, notify the vinyl control room. It is the vinyl department's responsibility to maintain at least 10" Hg vacuum on the line.

II. OPERATING PROCEDURES (Cont.)D. Unhooking Railcars (Cont.)Procedure (Cont.)

7. Immediately after opening the four manual evacuation valves, carefully climb the stairs to the unloading platform, ~~hook up and put on~~ *and connect it to the fresh air hose.* the fresh air mask, check for face seal, ~~and~~ close the valves in the railcar dome on each car that was unloaded (you will have to unhook and reconnect the fresh air mask at each station).
8. Open the actuated valves that evacuate the transfer lines to the emission recovery system by opening the switch at each transfer station. (Write work orders for any valves that do not open or close correctly.)
9. When the pressure gauge at the transfer station reads 10" Hg vacuum or less, put on the fresh air mask and close the valve on the transfer line that is closest to the railcar dome. The pressure gauges should be maintained in good working condition or be replaced. The stainless steel flex hose is now valved off at 10" Hg vacuum or less, which complies with EPA regulations.
10. Open the $\frac{1}{2}$ " vacuum ~~breaker bleed~~ *BREAKING* valve at the end of the transfer line boom.
11. ~~Loosen the bolts on the coupling with the pipe wrench and disconnect the coupling.~~ *DISCONNECT THE WECO HAMMERLOCK COUPLING.*
12. ~~Take the "O" ring out of the coupling and inspect it. Discard it if it has any nicks or cracks on it. Close the vacuum breaker bleed valve, and hang the "O" ring around it.~~ *INSPECT THE "O" RING ON THE WECO COUPLING NIPPLE, DISCARD IT IF IT HAS ANY NICKS OR CRACKS ON IT. CLOSE THE VACUUM BREAKING VALVE.*
13. Connect the transfer line to the boom and swing it out of the way.
14. Unscrew the nipples from the railcar valve opening with the pipe wrench. Remove them from the dome and cover the portholes.

II. OPERATING PROCEDURES (Cont.)D. Unhooking Railcars (Cont.)Procedure (Cont.)

Be careful not to let the pipewrench slip and trap your hands or fingers against the railcar.

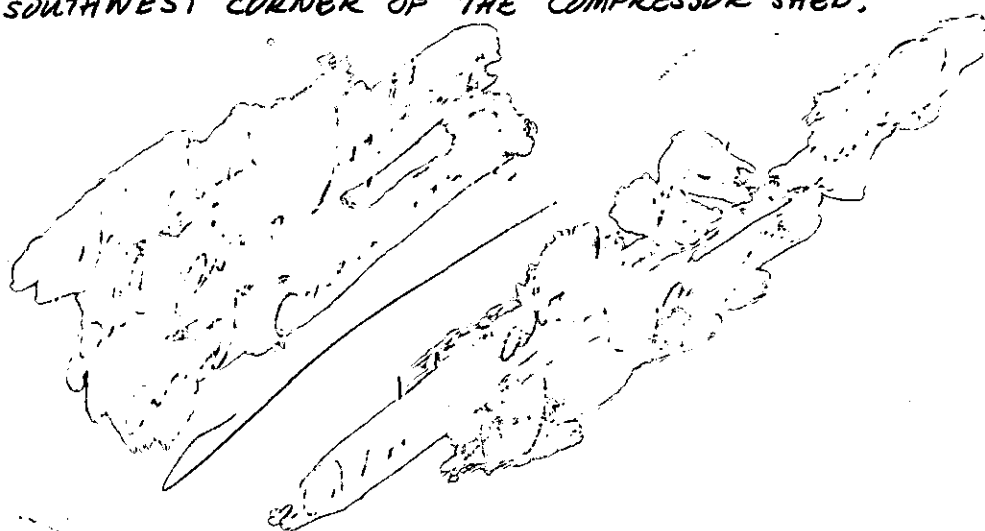
SELECT THE CORRECT SIZE WRENCH TO

15. ~~Adjust the pipewrench to~~ fit the railcar valve plugs and screw them tightly into the valve opening. Once again, do not let the wrench slip while tightening the plugs. *All the plugs must be in place tight and have chain attached.*
16. Put the nipples ~~and~~ pipewrench *and WRENCH* on the transfer station walk ramp and close the railcar dome lid. Be careful not to let the lid trap your hands or fingers. Slide the latching bar shut to hold the lid closed. *SEAL LID AND RECORD THE LID SEAL NUMBER ON THE CHECKLIST.*
17. Unhook the fresh air mask and take the pipewrench ~~and~~ nipples, back to the main platform. Place them in the racks provided for them. *and WRENCH*
Be careful not to drop the nipples or damage the threads.
18. Turn off the switch to close the actuated valves that evacuate the transfer lines to the emission recovery system.
19. Latch the transfer line booms to the platform. Be careful not to let them pinch your arms or hands. Do not bend or twist the flexlines excessively. This can cause early failure of the flexlines.
20. Loosen the locks on the walk ramp and pull it away from the tank car. Lock it after raising it into the vertical position.
21. Repeat steps 9-20 to unhook the other railcars.
22. After unhooking all the railcars, climb down the steps from the platform. Do Not leave the fresh air mask on the platform. Take it back to the yard scale house with you and place it in the proper receptacle for cleaning at the end of your shift.
23. Unhook the ground cable from the unloading station.

II. OPERATING PROCEDURES (Cont.)D. Unhooking Railcars (Cont.)Procedure (Cont.)

24. Turn the placards on the railcar over so that they read "Empty."
These placards must be present on both sides and both ends of each car. A sample of the railcar placards is attached in this manual.
25. Close the manual valves on the 1" lines from the VCM transfer lines to the emission recovery header (under northeast corner of compressor shed). These must be manually blocked in to prevent air or VCM leaks into the emission recovery system and to prevent VCM leakage through the automatic valves during railcar unloading.
26. Lower the blue flag to show that tank cars are no longer connected.
27. Disengage the derailler located south of the roadway.
28. Go to the sphere and record the level. Record this level and other information about unhooking the car in the logbooks in the yard scalehouse.

ALSO CLOSE THE 2" EMISSION RECOVERY VALVE LOCATED OVERHEAD AT THE SOUTHWEST CORNER OF THE COMPRESSOR SHED.



PLACARDS
THESE MUST BE
Part of side up and off
all placards
must be in
place before
cars leave
plant.

II. OPERATING PROCEDURE (Cont.)E. Troubleshooting and Miscellaneous Operating Procedures (Cont.)5. Tank Car Excess Flow Valve Closing (Cont.)


combination of the following procedures:

- a. Partially close the liquid valves on the dome of the car. This will slow down the flow and should reseal the valve. *IF THIS RESEATS VALVE, REOPEN ALL PARTIALLY CLOSED VALVES.*
- b. Turn off the compressor and let the car unload itself for a period. *THEN RE OPEN ALL VALVES PARTIALLY CLOSED AND* restart the compressors. This can usually be done only in summer conditions. NOTE: If the excess flow valves shut in a car that has both liquid lines hooked up, this indicates that the valve is probably faulty. The car number should be noted so that it can be shopped after unloading. On ACFX and PPGX cars, the excess flow rates are set at a lower flow rate than on most UTLX, RTMX, and NATX cars. For the ACFX and PPGX cars, the liquid lines should always be hooked up to each car.

6. Evacuating The VCM Vapor Line Knockout Pot and Recycle Pump For Maintenance

Before taking the knockout pot and recycle pump down for maintenance; the pot, pump, and related piping must be isolated and the VCM vapors removed (down to below 0 psig). This will be done by using the emission recovery system.

- a. Close the 4" inlet and outlet valves to the knockout pot.
Tag these valves with "Do Not Operate" tags.
- b. Close and tag the recycle pumps' 1½" discharge and recirculation valves.

VALVES THAT MUST BE CLOSED FOR UNLOADING:

1. 4-1" ~~valves~~ manual valves on evacuation line EAST side of the compressor shed
2. Main 2" overhead manual valves on evacuation line South

A. VALVE SETUP CHECKLIST FOR UNLOADING VCM West corner of compressor shed.

VALVES THAT MUST BE OPENED FOR UNLOADING:

1. Main liquid valve to sphere
(located under sphere) } LOCATED UNDER SPHERE
2. Main vapor valve from sphere }
3. Check sphere level _____ Feet _____ Inches.
4. Both valves on liquid and vapor lines hooked to car.
5. Valves inside car dome for vapor and liquid.
6. Vapor and liquid going to stations between railroad track.
7. Vapor and liquid valves under sight glasses on each station being unloaded from.
8. Sphere liquid and vapor valve on main headers on west side of compressor shed.
9. 4-way valves on each compressor being used must be in vertical position (handle).
10. Vapor line knockout pot inlet and outlet valves on west side of compressor shed.

VALVES THAT MUST BE OPENED FOR RECOVERING VAPOR FROM RAILCAR:

11. Same as above except 4-way valves on compressor being used in horizontal position (handle).

WHAT TO CHECK FOR UNLOADING:

1. Pressure gauges on compressors:
 - a. Inlet Side - 20 to 50 pounds. If 0, compressor is full of liquid.
 - b. Outlet Side - 60 to 110 pounds. If over 120, compressor is dead headed.
2. Sight glasses on liquid lines (flow of liquid).
3. Jamesbury valves on knockout pots closed to evacuation system.
4. No valve mentioned above partially closed.
5. Liquid VCM above the low level switch in the vapor line knockout pot.

CAR NUMBERS BEING UNLOADED:

