

SAFETY CERTIFICATION

I have studied the safety rules and the shutdown systems in the safety certification material given me. I have a thorough knowledge of this material and have demonstrated this to my supervisor by discussion of the material in his office and by field check-out.

	<u>Date</u>	<u>Operator</u>	<u>Supervisor</u>
Vinyl Large Reactors	_____	_____	_____
Vinyl Dryers	_____	_____	_____
Yard	_____	_____	_____
Utility (General Helper)	_____	_____	_____
Compound	_____	_____	_____
Dry Blend	_____	_____	_____
Plasticizer	_____	_____	_____

Demonstrated sufficient knowledge of the following: *

A. Scott Air Packs	_____	_____	_____
B. Fresh Air Apparatus	_____	_____	_____
C. Air Purification Canister	_____	_____	_____
D. Fire Extinguishers	_____	_____	_____
E. Fire Monitors	_____	_____	_____
F. Fire Hose	_____	_____	_____
G. Underground Fire Piping and Valving Arrangement	_____	_____	_____
H. Sprinkler System	_____	_____	_____

* All Operations Personnel

DTH 000095604

LEAD AND REACTOR OPERATORS

VINYL LARGE REACTORS

VCM STORAGE AND TRANSFER

1. Who's responsibility is it to keep VCM storage tanks supplied with liquid VCM?
2. How many VCM storage tanks are located at the VCM tank farm?
3. What are the numbers of the VCM storage tanks?
4. What is the setting of the relief valves on each of the VCM storage tanks, at VCM tank farm?
5. Explain method in which VCM is transferred from storage tank 601 to receiver 401. (Number of pumps, line size, automatic valves, and how pumps and valves are opened/closed).
6. How many pounds of liquid VCM does receiver 401 hold?
7. What is the setting of the relief valve on receiver 401? A relief valve is a safety device designed to _____ internal pressure, if that pressure exceeds that of the pre-set relief valve pressure.
8. What should be done if a VCM release develops at the VCM transfer pump seal?
9. What four things should be done if a VCM release develops on the VCM transfer line?
10. Is it necessary to wear protective equipment during a VCM release, even though you intend to be in the area for only minutes?
11. Fill in the blanks for the proper respiratory equipment required when in areas with the following VC levels:
 - a. 1.0 to 10.0 ppm: Protection may be _____ face mask with canister, _____ face or _____ face mask with continuous flow fresh air or a Scott Air Pak.
 - b. 10.0 to 1,000.0 ppm: Protection may be _____ mask or _____ mask with continuous flow fresh air or a _____.
 - c. Above 1,000.0 ppm: Protection must be a _____.

DTH 000095605

CHARGING

1. What 2 pumps are used to transfer VC for charging?
2. List 3 ways VCM can be released in VCM storage receiver area while charging a reactor.
3. If a seal blows on the main VC charge pump while charging a reactor, what should you do? If a seal blows on the recovered VC transfer pump, what should you do?
4. If relief valves on filter pack lifts and won't reseal, what should you do?
5. List 2 ways VCM can be released from the reactor while charging. What should be done if either of these occurs?
6. Can agitator be cut off on a reactor to reduce VCM from coming out on a leaking or blown gasket on the bottom of reactor before catalyst addition? After catalyst addition?
7. How can VCM be released through the bottom manifold when breaking vacuum to charge a reactor? What should be done?
8. Can VCM be released at dump sweco from a reactor? If so, how?
9. What number should you dial in case of a VCM release?
10. List 3 ways reactors can be over pressured.
11. What two instruments can be used to determine when an area is safe to enter after a release?

DTH 000095606

RECOVERY

1. How can VC be released from compressors and vacuum pumps? What must be done if a seal is blown?
2. What can cause seals to leak or blow on compressors and vacuum pumps? List 3.
3. Can VC be released from condensor?
4. How is recovered VC transferred to the North receiver?
5. List the relief valve settings for the following:
 - a. North and south KO tanks _____.
 - b. North and south seal water separators _____.
 - c. North and south cooling condensers _____.
 - d. Small recovered VC receiver _____.
6. What protective equipment must be worn in the following VC levels?
10 ppm to 1000.0 ppm _____
Above 1000.00 ppm or unknown _____

SLURRY TRANSFER

1. Who does the lead operator contact before transferring a batch of slurry?
2. Who's responsibility is it to set-up slurry transfer line to proper blend tank?
3. Why must operator pay particular attention to dumping and transferring of slurry?
4. Why is it necessary to rinse reactor condensor and shell until clear water is flowing at sweco?
5. Generally, slurry being transferred is at least _____°F.
6. Explain slurry transfer line set-up. Which valve on the discharge of the slurry transfer pumps goes to 407? to the small blend tanks?
7. Why does panel operator notify dryer lead operator before transferring a batch of slurry?

DTH 000095608

POWER FAILURE

1. What is the purpose of the NO system?
2. How many bottles of NO does it take to kill a reactor that has been reacting but that has not pressure dropped?
3. What must panel operator do to kill reactor with NO?
4. What must be done to operate valves manually on NO system?
5. What is the purpose of putting nitrogen pressure on reactor seals?
6. What is the minimum air pressure required to operate reactor valves?
7. When power is back and you have air pressure, where is the valve located that has to be opened to get air pressure back to reactor?
8. What is the first thing the panel operator does when power is back on?
9. How many Scott Air Paks are located in reactor area?
10. What is the location of Scott Air Paks in reactor area?
11. How many relief valves are on each reactor?
12. At what pressure is each relief valve set to lift on each reactor?
13. Why is main breaker to reactor turned off if massive VCM release occurs during power failure?
14. Where is breaker turned back on?
15. Where is the primary evacuation point for vinyl reactor personnel?
16. Where is the secondary evacuation point for vinyl reactor personnel?
17. How many NO bottles are to be used to kill a reactor if it has pressure dropped?
18. What must be done to seal oil and seal water systems when a power failure occurs?
19. The instrument air lines are pressurized with nitrogen in a power failure so that the auto valves on each reactor can be operated if needed? Where are the nitrogen bottles stored? Who must open the nitrogen to the instrument air system?
20. What are the rupture disc settings under the relief valves on D-300, D-400, D-500 and D-600? What are the double disc settings?

DTH 000095609

CATALYST HANDLING AND STORAGE

1. At what temperature does Lupersol 223-M75 decompose rapidly?
2. What safety equipment is required when handling catalyst?
3. At what temperature should 223-M75 or EHP-C75 be safely stored? LUP-11?
4. Why should catalyst be stored on shelves and not just set on the floor and stacked on top of other cartons?
5. Why have relief valves on catalyst addition bombs on the reactors?
6. At what pressure rating is relief valves on catalyst addition bombs set?
7. In the event of a freezer goes out and will be out for a day or two, what would you do to maintain safe temperature until it can be repaired?
8. Will Lupersol 223-M75 ignite without a spark from another source? Why?
9. Why remove the lid and split the bottles on all empty catalyst containers before discarding?
10. What should be done with catalyst when there is no way to keep it refrigerated?
11. If you accidentally spill catalyst on your clothes and yourself, what should you do?
12. When dry ice is in freezer, why should you let freezer air out for a few minutes before entering.
13. In case of a catalyst spill, what do you get it up with?
14. What happens to Lupersol 11' if stored below 15°F?
15. What should you do if you get catalyst in your eyes?
16. What protective equipment is required when adding the catalyst at the reactor?

DTH 000095610

VESSEL ENTRY AND CLEANING

1. Why do we take the precautionary steps prior to and during entering and cleaning a tank or vessel?
2. What steps must be taken prior to entry of a tank or vessel that has contained VCM?

Each vessel must be _____, flushed with _____, O₂ content greater than _____, VCM content less than _____ ppm, all lines _____, agitator motor breaker _____ (if agitator existing on vessel), breaker _____, agitator switch _____, and manway (s) _____.

3. What are the special precautions and protective equipment for entry and cleaning of a tank or vessel that has contained VCM?

1. Wear _____ suit.
2. Bottom of vessels may be _____.
3. Wear _____ fresh air mask.
4. Wear _____ gloves.
5. Use scaffolding, work platform, or ladder to work above _____.
6. Use _____ communication plus _____ watch.
7. Use safety _____ and _____.

4. What steps must be taken prior to entry of a tank or vessel that has not contained VCM?

Each vessel, tank must be _____, flushed with _____ O₂ content greater than _____, all lines _____, agitator motor breaker _____ (if agitator exists on tank), breaker agitator switch _____, agitator switch _____, manway(s) _____. Then chem wash tank drain valve is to be left _____. PH of flush water must be less than _____.

5. What are the special precautions and protective equipment for entry and cleaning of a tank or vessel that has not contained VCM?

Special precautions and protective equipment for entry and cleaning of above tanks.

1. Be sure tank is _____.
2. Use proper ladder.
3. Tank may be _____.
4. Use _____ communication plus manway _____.
5. Use safety _____ and _____.

Note: In addition to the above items, when entering of chem wash tank is made, additional protective equipment must be used: 1.

Wear _____ suit. 2. Wear _____ gloves.

DTH 000095611

When checking steam coils in hot water charge tank for leaks, additional precautions are: 1. Do not blank the _____ line. 2. Observe by looking through _____.

VINYL LARGE
REACTOR AREA

DTH 000095612

LEAD AND REACTOR OPERATOR

VINYL LARGE REACTORS

VCM STORAGE AND TRANSFER

Liquid VCM is stored at the VCM tank farm in three separate tanks, vessels. The yard operator is responsible for transfer of the liquid VCM from the railcars to the storage tanks. Transfer is made to tanks 201, 202, 601. He is also responsible for transferring VCM from 201 and 202, to 601.

Each of these tanks have two relief valves atop of them:

201 relief valves are set to lift at 150#
202 relief valves are set to lift at 150#
601 relief valves are set to lift at 100#

Liquid VCM is transferred from tank 601 to the Large Reactor areas into tank 401. Transfer is accomplished by two Dean Brothers pumps which are located just south of 601. These pumps are designed to deliver 200 GPM with 150# head pressure at 1750 RPM. The liquid VCM is supplied to inlet of transfer pumps through a six inch line coming out of bottom of 601. Connected to outlet of pumps is a three inch line which is connected to bottom of tank 401, located at Large Reactor area. The three inch transfer line has two automatic valves on it; one is located across road, north of Large Reactor area, the other is located at bottom of 401.

The VCM transfer pumps and automatic valves can be operated automatically or manually. Tank 401 is equipped with a level control which automatically sends a signal to start/stop pumps, and to open/close valves.

401 is also equipped with a relief valve which is pre-set to lift at 150#. 401 is designed to hold 60,000 lbs. liquid VCM.

A relief valve is a safety device designed to relieve internal pressure of a tank, vessel, when pressure reaches that of pre-set pressure of relief valve.

Should a VCM leak develop at the VCM transfer pumps or on the three inch transfer line, there are some immediate actions to be taken.

Example: If a pump seal blows: 1. The pumps must be shutdown
2. Inlet and outlet valves must be closed to pump 3. Vapor release number dialed, and announced over P.A. system location of release 4. Prepare pump for maintenance to replace seal.

Example: If a leak develops in a VCM transfer line: 1. If liquid is being transferred, stop pumps. 2. Close nearest valve on each side of leak. 3. Vapor release number dialed and announced over P.A. system location of release. 4. Prepare line for maintenance to repair same.

NOTE: Always wear the proper protective equipment anytime there is a VCM exposure problem.

- a. 1.0 to 10.0 ppm: Protection may be full face mask with canister, full face or half face mask with continuous flow fresh air or a Scott Air Pak.
- b. 10.0 to 1,000.0 ppm: Protection may be half mask or full mask with continuous flow fresh air or a Scott Air Pak.
- c. Above 1,000.0 ppm: Protection must be a Scott Air Pak.

NOTE: Traffic and other operations are to stop when the vapor release has been sounded. But, always be alert and stop all violators of this rule, should there be any.

REACTOR CHARGING

VCM for charging is stored in 3 receivers: north, south and 401. VCM is pumped 2 ways for charging. VCM is prepumped from the south receiver to 401 by the recovered VC transfer pump. VCM is pumped from 401 to reactor through the main VC charge pump. During either transfer, VCM can be released as follows:

1. Main seal can blow on VC charge pump.
2. Seal can blow on recovered VC transfer pump.
3. O ring can blow or filter pack being used.
4. Relief valve can lift on filter pack being used.
5. VC valve on reactor can close before charge pump is shut off which will lift relief valve on filter pack.

If a seal blows on main VC charge pump, stop the charge, shut the pump down at once. Close all the valves as follows:

1. Close the bottom valve on 401 VC receiver.
2. Close the discharge valve on VC charge pump.
3. Close the VC valve on reactor manifold.
4. Close main dump valve on reactor. This can be done from the panel. If the seal blows on a small recovered VC transfer pump, shut the pump off. This pump will have to be valved off manually. If an O ring blows on filter pack, shutdown the pump, isolate the pack and vent to blowdown tank and recover the blowdown tank. If the relief valve is lifted on the filter pack and does not reseat, isolate the pack then blowdown to blowdown tank and recover.

On any VCM release caused by pump seal failures, O rings blowing out and relief valve lifting, do the following:

1. Sound the vapor release number 62. Then announce over P.A. system what is wrong. Radios can be used to clear the release area.
2. Fresh air mask or Scott Air Pak must be used to isolate pumps with a blown seal. Which type of respirator to use depends on how bad the release is.
3. If an O ring blows on the lid of a VC filter pack, shut the pump down. Then close all valves. Sound the vapor release number 62. The pack should be isolated then blown to the blowdown tank, if the leak is a small one. If a large leak, MSA water should be set off at once. Fresh air respirator or Scott Air Pak must be used if area is entered on either type of release.
4. If the relief valve on the filter pack is lifted and won't reseat, switch packs and then recover the leaking pack. A fresh air mask must be worn to isolate the filter pack.

DTH 000095615

VCM can be released while charging if an O ring blows out on a reactor lenape lid. If this occurs, stop charge, place reactor on recovery at once, sound the vapor release and announce the release over the P.A. system. The wind direction should also be checked. Keep people out of the area until the reactor is recovered. If you have to check the top area of the reactors, a Scott Air Pak must be worn. If a gasket should blow on the bottom of a reactor while charging, stop the charge, then start recovering. The agitator can also be cut off as this will let water go to the bottom of reactor and VC to the top. More water can be added as needed. Do not cut the agitator off after catalyst addition. Set off the deluge system, then dial vapor release number 62. Announce what the problem is over the P.A. system. If there is an empty reactor, evacuate then blow leaking reactor down to the evacuated reactor. The reactor should be vented to the air as a last resort.

VCM can be released if the reactor is over pressured and blows a safety disc or lifts a relief valve. The reactor can be over pressured as follows:

1. Poor evacuation - the reactor should always be evacuated to 28.5 inches vacuum as measured on the manometer at the reactors.
2. Over charge of catalyst.
3. Loss of cooling water.
4. Agitator kicks off.
5. Run aways due to a plugging condensor.
6. Mischarge
7. Instrument locked out on heatup.
8. Lack of attention to panel, particularly during heatup.

VCM can be released when breaking vacuum if the sewer valve is cracked open due to a buildup being caught in the valve or if a coupling between valve and operator gets twisted. If release occurs due to this, shut all valves and sound the vapor release. Keep people out of area until area is clear. The Honeywell unit can be watched to see when an area clears or an operator can use Scott Air Pak and a Century unit.

VCM can be released at sweco when dump is started if the water charge is finished before VC charge. This leaves the reactor manifold full of VCM. You should always have 50 counts of water left on the water meter when VC charge is completed. Water charge should be stopped if VC is slow to obtain this. When VC charge is completed, then complete water charge.

REACTOR RECOVERING

VCM can be released if seal blows on compressors or vacuum pumps. If seal failure occurs, the unit must be shutdown so that all valves will shut. Then air supply to all valves must be shut off to keep valves in closed position until seal is repaired.

Seal failure can be caused on compressors and vacuum pumps as follows:

1. Over pressuring compressors and vacuum pumps.
2. Normal wear.
3. Foaming resin into seal water.
4. Water level too high in cyclone separators when units are started up.
5. Letting compressors pull vacuum with vacuum pumps kicked out.

VCM can be released in the recovery area if systems are over pressured. Over pressuring systems can lift relief valves on north and south knock out tanks, seal water tanks, condensers, and the small recovered VC receiver.

Relief valve settings are as follows:

1. North and south K.O. tanks 150 psi.
2. North and south seal water separators 150 psi.
3. North and south cooling condensers 200 psi.
4. Small recovered VC receiver 150 psi.

Recovered VC is transferred from the small recovered VC receiver with 2 VC recovered transfer pumps, to the north and south VC receivers. Seals can fail on either of these pumps causing a VCM release. These pumps have to be manually isolated if a seal leaks wearing either fresh air masks if the VC concentration is between 10 ppm and 1000 ppm or a Scott Air Pak if the VC levels are above 1000 ppm or unknown.

DTH 000095617

SLURRY TRANSFER

When the reactor polymerization cycle is complete and the batch recovered, the slurry must then be transferred from the reactor to a slurry blend tank. The lead operator must check with dryer lead operator to find out which tank the slurry is to be transferred to. The lead operator then instructs the vinyl reactor operator to set the slurry transfer line up to specific blend tank. In order to set the transfer line up, the reactor operator must check and/or change positioning of valves on the transfer lines. There are two separate transfer lines from the reactor area to the dryer area. At the reactor area, there are two slurry transfer pumps (A & B). These two pumps are connected to each of the two transfer lines by means of a valve. The south valve connects one header to 407 blend tank, and the north valve connects one header to small blend tanks.

If the slurry is to be transferred into a small blend tank, the panel operator must tell the reactor operator which tank transfer will be made into. The reactor operator must then close one valve on south transfer line (if open) and open valve on north transfer line (if closed). The north line is connected to small blend tanks by means of a common header, or manifold, located on top of V-11 dryer room roof. After setting up valves at slurry pumps, the reactor operator must then proceed to V-11 dryer room roof and setup header, manifold, valves to desired tank and check remainder of valves on header. If any are open, close them.

If the slurry is to be transferred to 407 blend tank, the panel operator will instruct the reactor operator to set the transfer line up to 407 blend tank. The reactor operator must close valve on north line (if open) and open valve on south line (if closed). The transfer line is now set up to 407 blend tank.

These valves, lines, must be set up to the correct blend tank prior to transfer of each batch of slurry, to prevent a cross-dump/cross-contamination of material or to prevent overflowing a full tank with hot slurry.

Before slurry transfer is started, the lead operator contacts dryer lead operator to inform him that transfer of slurry will start within minutes. The reason for this action is two fold: 1. Slurry to be transferred is heated to 200°F + prior to transfer. 2. This will allow the dryer department to begin air purge to blend tank at correct time. Then panel operator tells one reactor operator that transfer of batch is ready to start. The reactor operator is then to go to dump station to insure dump starts ok. Panel operator will then turn on the sweco, the sweco exhauster if off (exhauster is to be left on continuously), start A and B slurry transfer pumps, switch Mode selector to dump, open slurry valve, open main dump valve.

DTH 000095618

NOTE: If D-300/D-400 are being dumped, reactor operator must check manual valve on dump line and open, if closed. The reactor operator then monitors dump and sets dump box level-trol to maintain constant level in dump box.

Since the slurry being transferred is generally 200°F+, it is very important that operators pay close attention to slurry transfer operation. After slurry has been being transferred for 3-5 minutes, the panel operator opens 3" dump vent on top of reactor to allow air to be drawn into reactor so slurry will flow freely. Normal dump time is 20-25 minutes. The reactor operator monitoring the dump will instruct the panel operator to rinse the reactor condensor and shell when slurry flow stops at sweco sight-glass. The panel operator will then flush reactor for approximately 60 seconds with only one charge water pump. When flow again stops at sweco sight-glass, the reactor operator will again instruct panel operator to flush reactor. This time, the flush on condensor and shell is continued until flow at sight-glass is clear or free of slurry. The reactor is now empty and slurry transfer line is flushed in order to prevent plugging. The reactor operator then tells panel operator to switch reactor rinsing to sewer. Panel operator then closes slurry valve, opens sewer valve, stops sweco, stops slurry transfer pumps. The reactor operator inspects sweco and cleans if needed. Transfer of slurry is now complete.

DTH 000095619

POWER FAILURE

The large reactors are equipped with an NO system that is used to stop reaction in the event of a power failure or any emergency that could result in a massive VCM release. There are three (3) yellow NO cylinders set up for each reactor. It takes three (3) bottles of NO to stop reaction on any reactor that has not pressure dropped. Only one (1) bottle is to be used if the reactor has pressure dropped. In the event of a power failure, the seal water line is to be pressurized with nitrogen. Then the valves on required NO bottles are opened by the reactor operator and valves on seal water line is opened. Each reactor is equipped with an emergency kill switch. The switches are located on the reactor panel board over each reactor. The panel operator turns the switch on to activate the auto valves located on each reactor. The auto valves can be operated manually by disconnecting the instrument air and manually opening the valves. For best results, the reactor should be killed with NO before the temp. and pressure start to rise.

When power is lost, the reactor operator puts nitrogen pressure on reactor seal oil system. The purpose of this is to keep VCM from blowing back through the seals. The instrument air lines are also pressurized with nitrogen so that auto valves on each reactor can be operated if needed. The nitrogen for this system are located in a bottle rack just south of the dump sweco. The nitrogen system must be opened manually if a power failure occurs by the reactor operator. Auto valves on reactor will operate with a minimum of 40 lbs. air pressure. There is an auto valve at inlet to air surge that closes when power is lost. When power has been restored and air pressure is back, the auto valve on surge tank must be opened to get air pressure back to reactor. The valve is opened by raising up the small arm located on the solenoid at the valve.

If a reactor has to be vented manually during a power failure, each person having to be in contaminated area must wear a Scott Air Pak. There are eight (8) Scott Air Paks located in the reactor area. There are four (4) Scott Air Paks located at north door of reactor control room. One (1) at new cooling tower, one (1) on walkway from dryer room to V-11, one (1) at southwest door to dryer room and one (1) on walkway from dryer room to V-12.

Each reactor is set up with two (2) relief valves to relieve pressure if reactor over pressurizes. These relief valves are located on the shell and condensor of each reactor. D-300 relief valve on shell is set to lift at 150# psi, cond. at 175# psi. D-400, D-500 and D-600 shell at 175#psi, cond. at 185# psi.

Each relief valve has a safety rupture disc under them to prevent fouling of relief valve. The safety disc under D-300 relief valves are set to rupture at 215# psi at 72° and 188# psi at 180°. D-400, 500 and 600 are set to rupture at 212# psi at 72° and 205# psi at 180°. D-300 has two (2) 6" stacks that have two (2) rupture disc under each stack. This disc is set to rupture at 236# psi at 72° and 205# psi at 180°. D-400, 500 and 600 have a single 8" stack with two (2) rupture discs under them. These are set to rupture at 225# psi at 72° and 209# psi at 180°.

In the event a massive VCM release occurs during a power failure, the main breaker to reactor switch gear is turned off. This is done to prevent any sparks from occurring when power is turned back on. The main breaker is left off until area has been checked with OVA meter and determined that no VCM vapor is left in area. All unnecessary personnel are to evacuate the area if a massive VCM release occurs. The primary evacuation point for vinyl reactor is outside dryer control room. The secondary area is pad north of V-10.

If no VCM release has occurred during a power failure, the panel operator is to immediately start the agitator on each reactor.

LUCIDOL HANDLING AND STORAGE

The catalyst we use in the reactors to polymerize the vinyl monomer is called "Lucydol" or Trigonox EHP-C75". The technical name is peroxydicarbonates. It is brought into the plant in a refrigerated truck at about three weeks intervals.

These Lucidol 223M75 or Trigonox EHP-C75 must be stored at a safe temperature below 20°F to prevent rapid decomposition of the material which occurs at approximately 50°F.

Luper II catalyst must be stored at a temperature not below 15°F because it freezes if stored below 15°F for extended period of time.

When handling the material in carton, plastic gloves must be worn to protect hands. The cartons must be stacked in the freezer shelves in such a way that cool air can circulate freely around cartons to maintain temperature.

These types of catalyst are not self ignited because they contain 75% product and 25% OMS, odorless mineral spirits. But in case of freezer break downs and the material cannot be transferred to another freezer, you should notify the supervisor. He is to get dry ice from "Mid-South Packers" in Tupelo (842-1411) and send an available man such as the yard operator to get the ice.

If dry ice is used in a freezer, you should open door and let freezer air out for a couple of minutes to let the carbon dioxide, which is very irritating to the throat and lungs, and is given off by the dry ice to disipate. Before entering the freezer, it should be checked for at least a 20% oxygen content. But in the case of an emergency and catalyst cannot be kept at a safe temp. below 30°F you should take catalyst to an isolated area and pour it out thinly on the ground so it can decompose.

When catalyst is added to a reactor, it is poured into a 10 gallon catalyst bomb which is equipped with a relief valve to relieve excess pressure in case the catalyst should decompose rapidly. This relief valve is set at 275 psi. When adding the catalyst from the seven pounds gallon container or the 30 pounds 5 gallon container a face shield and impervious gloves must be worn. If you should splash catalyst on you, wash off immediately with plenty of water. If it should splash in your eye, wash eye with water for 15 minutes, then notify your supervisor. After catalyst has been added to the catalyst bomb, the tops should not be put back on the bottle and the bottle should be split with a knife to prevent pressure from building up and bursting the bottle from the remaining catalyst left in the container.

If catalyst is spilled around freezer area, it should be absorbed with vermiculite and disposed of properly by burying or burning.

VESSEL ENTRY AND CLEANING

In the large reactor department, there are several tanks or vessels that must be entered and cleaned on an irregular basis. Each of these vessels has one or more things in common. The most important of these being safety preparation of equipment. All vessels that have contained VCM are to be treated in like manner.

Step to be taken prior to entry of the of the following vessels are detailed below:

1. Large Reactors.
2. VCM Receivers - included are 401, south, middle, north, horizontal recovered
3. Blowdown Tank.
4. Recovery Knock Out Tanks.

Each vessel must be empty, flushed with water, O₂ content greater than 20%, VCM content less than 25 ppm, all lines blanked, agitator motor breaker locked out (if agitator exists on vessel), breaker tagged, agitator switch tested, and manway(s) opened.

Special precautions and protective equipment for entry and cleaning of above vessels are:

1. Wear impervious suit.
2. Bottom of vessels may be slippery.
3. Wear continuous flow fresh air mask.
4. Wear rubber gloves.
5. Use scaffolding, work platform, or ladder, to work above bottom level.
6. Use two-way radio communication plus manway watch.
7. Use safety harness and rope.

Vessels that have not contained VCM are treated in like manner.

Steps to be taken prior to entry of the following tanks, vessels are listed below:

1. Chem Wash Tank.
2. Colloid Makeup Tank.
3. Colloid Charge Tanks.
4. Hot Water Charge Tank.

DTH 000095623

Each vessel, tank must be empty, flushed with water, O₂ content greater than 20%, all lines blanked, agitator motor breaker locked out (if agitator exists on tank), breaker tagged, agitator switch tagged, agitator switch tested, manway (s) opened. The chem wash tank drain valve is to be left open, PH of flush the water must be less than 8.0.

Special precautions and protective equipment for entry and cleaning of above tanks.

1. Be sure tank is cool.
2. Use proper ladder.
3. Tank may be slippery.
4. Use two-way radio communication plus manway watch.
5. Use safety harness and rope.

NOTE: In addition to the above items, when entry of chem wash tank is made, additional protective equipment must be used.

1. Wear impervious suit.
2. Wear rubber gloves.

NOTE: When checking steam coils in hot water charge tank for leaks, additional precautions are:

1. Do not blank the steam line.
2. Observe by looking through manway.