

F35.41

OLD REACTOR MODULE SHUTDOWNNovember 17, 1983

On Thursday, November 17, 1983, we will shutdown the Old Reactor Module. The shutdown provide the opportunity to decrease existing resin inventories to permit continuous operation during the winter months. It will last into December. During the shutdown, necessary maintenance and project work will be performed. As with all shutdowns, safety, preventing VCM overexposure and maintaining control of the unit are our most important goals.

SAFETY

The most important aspect shutdown is safety. Since we seldom perform shutdown activities, we are exposed a greater chance of an accident than during normal operation. Performing shutdown work without deliberate planning and following of established safety guidelines will lead to an incident in which one of us could be hurt. The Key to a safe accident free shutdown is to plan ahead, take your time and maintain control of all activities.

THE KEY IS PLAN THE WORK AND WORK THE PLAN

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Any spark producing tool or piece of equipment will require a hot work permit. Although the unit is down and equipment is blanked, never assume that VCM is completely removed from that area. Check it out! Firewatch personnel are to be given supervisory guidance on their responsibilities.

★ ALL VINYL PERSONNEL - If there is any question to the safety of a Hot Job, shut the job down and inform the supervisor.

All blinds installed during the shutdown by anyone are to be tagged and logged onto the Master Blind list to be posted in the Shift Supervisor's Office. No exceptions will exceptions will be tolerated. A blind in the wrong place or left in after start-up can result in very serious safety or operational problems.

Overexposure to VCM can be a serious safety problem in our unit and is an ever present risk.

During a shutdown the chances of exposure are multiplied many times. The key to minimizing VCM overexposure is very thorough recovery of lines and equipment along with steaming or water flushing. When breaking flanges or opening vessels, respiratory protection must be worn. In addition, bystanders are to leave the immediate area where flanges are being broken.

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This includes operations personnel.

OUR GOAL IS NO VCM OVEREXPOSURES.

Between 7:00 and 7:30 on each shift, a brief meeting will be held to discuss what has taken place on the previous shift, what is to take place during the current shift, and to discuss any problems or safety hazards that have come up. No permits will be issued between 7:00 and 7:30 both day and night.

Maintenance and contract personnel will not be allowed in the control building during these hours.

(4)

SHUTDOWN SCOPE

Preparation will begin on day shift, Thursday 11/17/83, with the final reactor being charged by 12:00 midnight. This will provide more than adequate time to prepare the unit for blanking on Monday 11/21/83.

VCM will be limited to the following areas in the Old Module.

1. Emissions Recovery System.
2. RVCm condensers
3. RVCm collect tank
4. North RVCm receiver
5. Batch Water Strippers.

VCM will be removed and isolated from the following areas.

1. All old module reactors
2. Fresh VCM receiver
3. South RVCm receiver
4. Chem wash tank
5. VCM Filter Packs
6. Old Module Recovery System
7. VCM Charge Header.

(5)

The attached checklist provides a listing of activities that must be performed to shutdown and secure the unit for maintenance work. Any changes to the checklist should be written down, initialed, and communicated to the Operations Supervisor or Operations Superintendent. Failure to complete all items on the checklist or failure to communicate changes could easily create a hazardous situation. One copy of the checklist is to be labelled "Master Copy" and it is to be filled out by the shift supervisor and kept in his office.

Any vessel that will be entered during the shutdown will require an individual checksheet as required by the Vessel Entry Procedure. The checksheet and entry permit is to be posted at the job site.

Hot work will be occurring from time to time during this shutdown. It presents the greatest chance for a major catastrophe and therefore there is no room for assumptions, guesswork, or taking chances.

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They'll be a lot of people working in congested areas at times and this will create higher than normal risk to personnel. Frequent tours looking for safety problems can reduce these risks considerably. We need to be visible in the field and assert good control of the safety aspects of this shutdown.

KEEP SAFETY ON THE FRONT BURNER!

We've had problems on previous shutdowns by hydrostatically blocking in vessels, subsequently blowing o-rings due to thermal expansion, and by allowing RUCM receiver to fill with RUCM. VCM has also backed into steam headers unexpectedly. HNU availability has also bottlenecked shutdown progress. Plan ahead on HNUs.

As the unit is shutdown it will be necessary to conserve energy by shutting down idle equipment in a timely manner. As the production goes down with a shutdown the plant's energy costs can skyrocket if we don't get energy consumers shut off as they are no longer needed. We did well on this during the last shutdown, need to keep up the good energy conservation efforts.

⑦

SHUTDOWN CHECKLISTI. VCM CHARGE SYSTEM

The objective is to have a minimum amount of RVCm in the north RVCm receiver after the last reactor is recovered and shutdown. The Fresh VCM receiver and south RVCm receiver are to be empty.

- A. As time permits, recover and isolate the South RVCm receiver. When a good vacuum is obtained, inject steam into the receiver by a hose to remove any residual VCM remaining. Then fill receiver full with water.
- B. Beginning at 2:00 P.M. on day shift, 11- -83, charge 50% RVCm batches to minimize cm levels in the North receiver
- C. After 4:00 P.M. hold the first 2 reactors to dump down. Shut down the agitators as soon as these reactors are dumped.
- D. Charge the third reactor down after 4:00 P.M. back with 50% RVCm. Allow it to pressure drop - PSI before killing it.

③

- E. Allow just enough fresh VCM to enter the fresh VCM receiver for one more charge. Then isolate the air supply to the FVCM receiver-make-up valve while the valve is closed.
- F. Allow the fourth reactor coming down after 4:00 P.M. to pressure drop 35 PSI before killing. Do not charge this reactor back. Turn off the agitator after dumping.
- G. Allow the fifth reactor coming down after 4:00 P.M. to pressure drop 35 PSI before killing. Charge it back with any remaining VCM. This will be the final charge.
- H. Following the final charge, close the water drain and equalization lines on the fresh VCM receiver so that nothing re-enters the receiver.
- I. Choose an empty reactor, evacuate it and use it for the following items.
1. Pump any remaining fresh VCM in the fresh receiver to the reactor.
 2. Fill the fresh receiver to 20% level with water and then pump it to the reactor.

(9)

3. Flush the recovered VCM line with water to the reactor via the main charge line _____
4. Flush the main charge header to the reactor _____

Recover and steam strip the material in this reactor as normal. _____

J. Recover the following equipments thru an empty evacuated reactor. Do not use steam to avoid damage to the VCM meters. Pull this equipment down to a good vacuum.

1. VCM Charge Header _____
2. Fresh VCM Receiver _____
3. East Fresh VCM Pump _____
4. West Fresh VCM Pump _____
5. North Fresh VCM Filter _____
6. South Fresh VCM Filter _____
7. Fresh VCM Receiver Sight Glasses _____
8. Recovered VCM Filter Pack _____
9. Recovered VCM Pump _____
10. Piping from the bottom of the recovered VCM receivers _____

K. After a good vacuum is obtained on the above systems, block in the 8" VCM charge valve on the bottom of the Fresh VCM receiver _____

(10)

L. Hook up a steam hose to the bottom of the Fresh VCM receiver and recover/steam strip the receiver thru a Fresh VCM filterpack to the batch water strippers. Steam and recover the receiver till it is warm to the touch. Be sure the charge valves on the in'let and outlet of the filter pack are closed.

M. Recover and steam strip the VCM filter packs and remove the dirty filters from the unit.

1. South Fresh Filter Pack _____

2. North Fresh Filter Pack: _____

3. RVCM Filter Pack _____

N. After all reactors are empty, evacuate each one and then recover any VCM from between the VCM charge valves.

1. D-300 Evacuated _____ Recovered _____

2. D-400 Evacuated _____ Recovered _____

3. D-500 Evacuated _____ Recovered _____

4. D-600 Evacuated _____ Recovered _____

5. D-700 Evacuated _____ Recovered _____

O. The VCM charge system is ready to blank. using the attached blanking list.

(11)

- P. Pinch down on the inert vent line from the new module to the North RVCm receiver to prevent it from filling too fast. _____
- Q. Monitor the North RVCm receiver levels using the attached form. _____
- R. Check the seal water flows on the following pumps. Also, open pump case bleeders to prevent overpressuring them if the seal leaks.
1. Recovered VCM Pump _____
 2. East Fresh VCM Pump _____
 3. West Fresh VCM Pump _____

(12)

NORTH RVCM RECIEVER LEVELS

DATE _____

TIME	LEVEL	TIME	LEVEL
0700		1900	
0800		2000	
0900		2100	
1000		2200	
1100		2300	
1200		2400	
1300		100	
1400		200	
1500		300	
1600		400	
1700		500	
1800		600	

⑬

II RECOVERY SYSTEM

The objective is to clear VCM out of the recovery header, the knock out tanks, vacuum pumps, compressors, knock out tank circulation system, seal water separators and seal water circulation system. The emission recovery system or the new module recovery system will be used to pull down the old module recovery system. Loss of charges in the new module is acceptable.

A. Check the 4" line from the emission recovery system to the new unit blowdown tank to be sure it is clear and will permit recovery from the new module.

B. Strip and drain both batch water strippers with the old module recovery system.

North BWS _____

South BWS _____

C. Shutdown the old module recovery system and block in the following water flushes.

1. Water to Knock out tank level wells _____

2. Water to seal water pumps _____

3. Water to Knock out tank pumps _____

4. Make-up water to seal water separators

North Separator _____

South Separator _____

(14)

D. Block in the vapor outlet valves on top of the seal water separators _____

E. Override the Vacuum pump and Compressor suction and discharge valves open.

1. "A" Vacuum Pump Suction _____
Discharge _____
2. "B" Vacuum Pump Suction _____
Discharge _____
3. "A" Compressor Suction _____
Discharge _____
4. "B" Compressor Suction _____
Discharge _____

F. Block in the relief valves on the discharge of the compressors.

1. "A" Compressor _____
2. "B" compressor _____

G. Open the 2" vessel purge line connections to the knock out tanks. _____

H. Open the 2" vessel purge line connections to the seal water separators. _____

I. Block in the 3" valve, just below the spectacle blind and west of the recovery deck TV camera, in the vessel purge line _____

(15)

J. Open the manual 2" valve above "A" compressor on the bypass line to the collect tank to be able to recover up to the automatic valve in this line.

K. Block in the manual 2" valve on the vent back line just west of the automatic vent back control valve

L. Pump all seal water in the system to the batch water strippers.

M. Pump all knock out tank circulation water to the batch water strippers.

N. Recover the system using line from the Batch water strippers to the Knock out tanks. Recover the following equipment to a good vacuum — K₁ & out tanks, seal water separators, vacuum pumps, compressors, seal water exchangers, seal water pumps, circulating water exchangers, and circulating water pumps

O. Open the recovery valve to each reactor and recover the header. Do not open the condenser valves.

D-300 _____

D-600 _____

D-400 _____

D-700 _____

D-500 _____

(16)

P. While recovering still and flush the system with process water to the batch water strippers. Do not overpressure the recovery system.

Q. When the system is liquid full and has been flushed, block in the water and pump the water from the recovery system using the seal water pumps and knock out tank pumps. When as much water as possible has been removed, block in the lines to the batch water strippers and stop recovering.

R. Disconnect and plug the hydroquinone line going to the main recovery system seal water pumps. Shut down the hydroquinone pump.

S. Drain any water remaining in the recovery system to the sewer through hoses.

T. The recovery system is ready for blanking.

(17)

(II SUPPORT EQUIPMENT SHUTDOWN

A. Following the last charge, advise the Utility operator to run only 2 wells. _____

B. Following the last charge complete the steps below effecting the methocel system. _____

1. Drain the make-up tank to the sewer. _____

2. Rinse the make-up tank with hot water to the sewer. _____

3. Drain the charge tank to the sewer. _____

4. Rinse the charge tank with hot water to the sewer. _____

C. Following the last recovery complete the steps below effecting the methocel system. _____

1. Fill the methocel charge tank with hot water and charge each reactor with 200 counts through the methocel header. _____

D-300 _____

D-400 _____

D-500 _____

D-600 _____

D-700 _____

(18)

2. Drain the methocel pumps and piping.
 3. Close and tag the 2" cooling water supply valve to the make-up tank. Drain the make up tank jacket.
- D. Following the last recovery, shutdown the 500/600/700 cooling tower fans and pumps. Drain the headers to a process sewer.
- E. Following the last recovery, shutdown No. 2 cooling tower by first lining up the return header to only the east tower, using both east tower pumps, partially opening the cooling water supply valve from these pumps to the old module and then shutting down the west tower pumps and fans. Monitor the basin level in the east cooling tower for 20 minutes after these actions have been taken to insure the level is not lost.
- F. Check with the Utility operator to see if he can shut down a small boiler.

(19)

G. Chem wash system

1. Drain the chemwash tank to the sewer
2. Rinse the tank out with water.
Be sure all the resin is removed.
3. Fill the chem wash tank with water and purge all chemwash supply lines to each reactor. Be sure both reactor and condenser lines are flushed. Drain this water from the reactors to the sewer.

D-300 _____

D-400 _____

D-500 _____

D-600 _____

D-700 _____

4. Pump 100 counts of water to each reactor and return the water to the chemwash tank to purge each chemwash return line. Drain the water from the tank to the sewer.

D-300 _____

D-400 _____

D-500 _____

D-600 _____

D-700 _____

(20)

5. Circulate water from the chemwash tank, through the heater, through the bypass line back to the tank

6. Rinse the chemwash tank again

7. Drain the chemwash lines at all low points.

8. Block in the steam supply to the chemwash preheater

H. Hot water charge system.

1. Block in the steam valve to the pic water heater

2. Close the suction valves on the hot water charge pumps and rinse pump.

3. Drain the water from the rinse pump discharge line.

4. Drain water from the ch 2 water pump discharge line

5. Drain water from the hot water tank.

I. Reactor Seals.

1. All agitators should have been shut off after their final dumps — check again.

2. Keep the duraseal units operating on all reactors.

(21)

R

3. Keep the lip seal flush going on
all reactors. _____

J. Emergency AMS Kill System

1. Drain all AMS pots to empty
AMS drums and remove to the
drum storage area in the New
module.

D-300 _____

D-400 _____

D-500 _____

D-600 _____

D-700 _____

K. Open all reactor Lanapex. _____

D-300 _____

D-400 _____

D-500 _____

D-600 _____

D-700 _____

L. Move all drummed material to
the new module drum storage area

M. Move any remaining bags of methocel
to the new module. _____

N. Return any unused initiator in the
old module to the big freezers. Then
shut off the old module & its freezer.



O. Change out the following filters.

1. Cold water make-up

2. Cold water rinse

3. Recovery System Seal Water

4. Service Water Filter

P. Block in the air to any unused blend tanks.

Q. Shut down any unneeded silo aeration

R. Check to be sure that the incinerator and the lucidol freezers are on process water

1. Incinerator

2. Lucidol Freezer

(23)

OLD MODULE BLANKING LIST

I. Charge System

A. Fresh VCM Receiver Blanks

1. 3" Inlet line IN _____ TAG# _____ OUT _____
2. 2" Water Drain IN _____ TAG# _____ OUT _____
3. 3" Equalization line IN _____ TAG# _____ OUT _____
4. 1½" line from top of receiver to Fresh
Filter packs IN _____ TAG# _____ OUT _____
5. 8" Charge line IN _____ TAG# _____ OUT _____

B. RVCM system Blanks.

1. 3" Valve at suction of the
RVCM Pump IN _____ TAG# _____ OUT _____

C. Filter Pack Blanks

1. 2" line for recovery of all vcm filter
packs and vcm charge pumps. Blank
located in pipe rack north and above
the recovered filter pack on 1, 2 going
to the Batch Water Strippers
IN _____ TAG# _____ OUT _____
2. 1" safety disc on the RVCM
Filter Pack IN _____ TAG# _____ OUT _____
3. 1" safety disc on the North Fresh
VCM Filter Pack IN _____ TAG# _____ OUT _____
4. 1" safety disc on the South Fresh
VCM Filter Pack IN _____ TAG# _____ OUT _____

(24)

II RECOVERY SYSTEM

A. Knock Out Tanks

1. 6" Line from Knock out tanks to the batch water strippers at the 4'X6" reducer. IN _____ TAG# _____ OUT _____
2. 6" Reactor recovery line downstream of the pressure control valve before entering bullseye. IN _____ TAG# _____ OUT _____

B. Compressors and Vacuum Pumps

1. 2" collect tank feedback line at manual valve located above 'A' compressor IN _____ TAG# _____ OUT _____
2. 1" safety disc on "A" compressor IN _____ TAG# _____ OUT _____
3. 1" safety disc on "B" Compressor IN _____ TAG# _____ OUT _____

C. SEAL Water Separators

1. 6" vapor outlet line on north seal water separator IN _____ TAG# _____ Out _____
2. 6" Vapor outlet line on south seal water separator IN _____ TAG# _____ OUT _____
3. Compressor side of old 6" equalization valve located above "C" compressor IN _____ TAG# _____ OUT _____

D. Others

1. 3" vessel purge line above bullseye and valve located between "B" compressor and the seal water separators on the west rail of the recovery deck

IN _____ TAG# _____ OUT _____

2. 3" Vessel purge line at valve and bullseye located north west of + north seal water separator on the west rail of the recovery deck.

IN _____ TAG# _____ OUT _____

3. 2" drain line to the batch water strippers from the K.O. tanks, the RVCm condensers and the seal water separators.

IN _____ TAG# _____ OUT _____

4. 2" drain line to the batch water strippers from the RVCm condensers at the condensers

IN _____ TAG# _____ OUT _____

III SUPPORT EQUIPMENT

1. 6" blank at D-300 sewer bullseye

IN _____ TAG# _____ OUT _____

2. 6" blank at D-400 sewer bullseye

IN _____ TAG# _____ OUT _____

3. 6" blank at D-500/600/700 sewer bullseye

IN _____ TAG# _____ OUT _____

4. 6" blank under chemwash tank drain valve

IN _____ TAG# _____ OUT _____

(26)^R

5. 3" blank in the caustic make up
line to chemwash tank IN ~~TANK~~ OUT

EQUIPMENT ENTRY PROCEDURE

PVC PLANT

ABERDEEN, MS

EQUIPMENT: LARGE REACTORSNUMBER: D-700 745SERVICE: VCM Polymerization

CONOCO NO.: _____

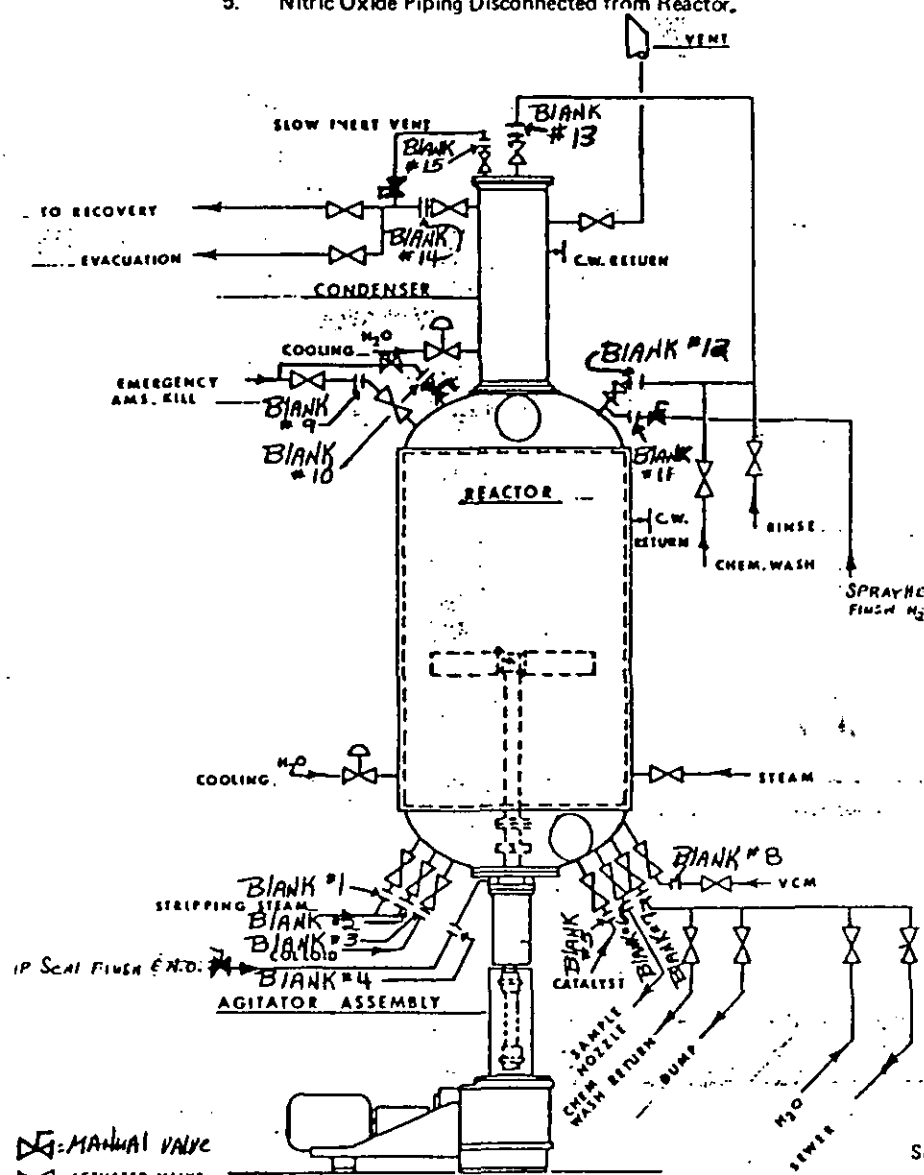
LOCATION: SOUTH OF THE V-11 REACTOR Bldg. Outside and south of Third StreetENTRY PERMIT APPROVAL: Vinyl Shift Supervisor

CHECK LIST

1. Reactor empty and steam stripped and recovered to a vacuum.
2. O₂ Content (greater than 20%) _____ %
3. VCM Content _____ ppm
4. Top and Bottom Manways Open
5. Nitric Oxide Piping Disconnected from Reactor.

SUPERVISOR'S INITIALS

SI VISOR'S INITIALS



- | | IN | OUT |
|---|--------|-----|
| 1-BLANK EAST STEAM STRIP | - 300" | |
| 2-BLANK WEST STEAM STRIP | - 300" | |
| 3-BLANK COIL ID 3" - 300" | | |
| 4-BLANK OR DISCONNECT PIPING
LIP SEAL FLUSH NITRIC OXIDE | | |
| 5-BLANK CATALYST LINE 3" - 300" | | |
| 6-BLANK C.T.A. or SAMPLE line 3" - 300" | | |
| 7-BLANK MAIN DUMP line - 8" - 300" | | |
| 8-BLANK V.C.M. line - 6" - 300" | | |
| 9-BLANK EMERGENCY A.M.S. KILL
AUTO - 1" - 300" | | |
| 10-BLANK EMERGENCY A.M.S. KILL
MANUAL - 1" - 300" | | |
| 11-BLANK OR DISCONNECT SPRAY HEAD
FLUSH H ₂ O - 1" - 300" | | |
| 12-BLANK SPRAY HEAD line - 4" - 300" | | |
| 13-BLANK RINSE C.W. TOP OF COND - 4" - 300" | | |
| 14-BLANK COND ASER line - 6" - 300" | | |
| 15-BLANK SLOW INERTS VENT - 1" - 300" | | |

LOCKOUT AGITATOR
 TAG BREAKER.
 TEST AGITATOR SWITCH.

* When preparing to blank or remove blank in chem wash line, lock-out chem wash pump, open chem wash line to reactor and bleed line at discharge of pump before breaking chem wash flange.

* Nitric Oxide piping reconnected after entry work completed

SPECIAL PRECAUTIONS AND PROTECTIVE EQUIPMENT

1. WEAR SCOTT AIR PACK when disconnect / connect N.O. line
2. Wear impervious suit.
3. Use plastic mats on the bottom dish of the reactor to prevent slipping.
4. Wear continuous flow fresh air mask.
5. Wear rubber gloves.
6. Use scaffolding, ladder or climbing belt depending on the size of the buildup for work above bottom level.
7. MANWAY WATCH

OLD UNIT = D-700NEW UNIT = 745

28

R

EQUIPMENT ENTRY PROCEDURE

PVC PLANT

ABERDEEN, MS

EQUIPMENT: LARGE REACTORSNUMBER: D-300SERVICE: VCM Polymerization

CONOCO NO.: _____

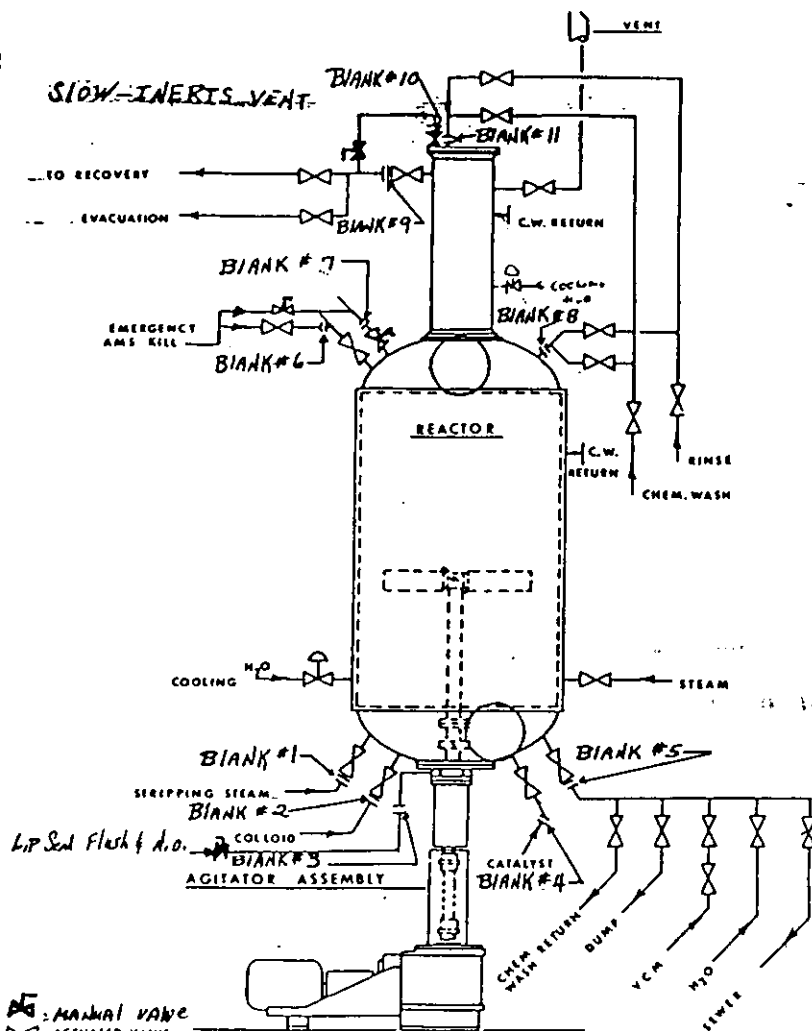
LOCATION: SOUTH OF THE V-11 Reactor Bldg.ENTRY PERMIT APPROVAL: Vinyl Shift Supervisor

CHECK LIST

1. Reactor empty and steam stripped and recovered to a vacuum.
2. O₂ Content (greater than 20%) _____ %
3. VCM Content _____ ppm
4. Top and Bottom Manways Open
5. Nitric Oxide Piping Disconnected from Reactor.

SUPERVISOR'S INITIALS

SUPERVISOR'S INITIALS



OLD UNIT REACTOR - (D-300)

1-BLANK	STEAM STR	1" - 300"	IN	OUT
2-BLANK	CONDID 2" - 150			
3-BLANK	OR DISCONNECT EPI- LIP SEAL FLUSH NITRIC OXIDE			
4-BLANK	CATALYST line 1" - 300"			
5-BLANK	MAIN DUMP line - 6" - 300"			
6-BLANK	EMERGENCY A.M.S. KILL AUTO - 1" - 300"			
7-BLANK	EMERGENCY A.M.S. KILL MANUAL - 1" - 300"			
8-BLANK	SPRAY HEAD - 6" - 300"			
9-BLANK	Condenser line - 6" - 300"			
10-BLANK	SLOW INERTS VENT - 1" - 300"			
11-BLANK	CHEM WASH A. M. S. SUPPLY TOP OF CONDENSER - 1"			
	LOCKOUT AGITATOR TAG BREAKER.			
	TEST AGITATOR SWITCH.			

* When preparing to blank or remove blank in chem wash line, lock-out chem wash pump, open chem wash line to reactor and bleed line at discharge of pump before breaking chem wash flange.

** Nitric Oxide piping reconnected after entry work completed

SPECIAL PRECAUTIONS AND PROTECTIVE EQUIPMENT

1. WEAR SCOTT AIR PACK WHEN DISCONNECT & CONNECT N.O. LID.
2. Wear impervious suit.
3. Use plastic mats on the bottom dish of the reactor to prevent slipping.
4. Wear continuous flow fresh air mask.
5. Wear rubber gloves
6. Use scaffolding, ladder or climbing belt depending on the size of the building for work above bottom level.
7. MANWAY WATCH
8. Use scaffolding, ladder or climbing belt depending on the size of the building for work above bottom level.

EQUIPMENT ENTRY PROCEDURE

PVC PLANT

ABERDEEN, MS

EQUIPMENT: LARGE REACTORSNUMBER: D-400-500-600SERVICE: VCM Polymerization

CONOCO NO.: _____

LOCATION: SOUTH OF THE V-II REACTOR Bldg.ENTRY PERMIT APPROVAL: Vinyl Shift Supervisor

CHECK LIST

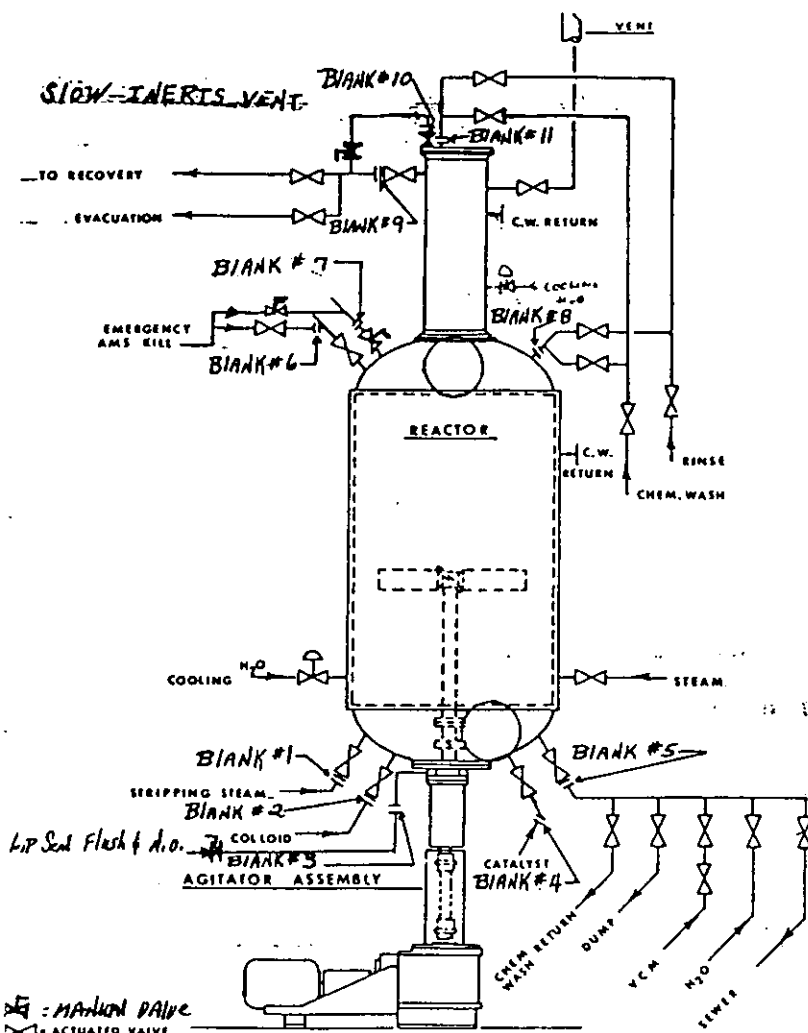
1. Reactor empty and steam stripped and recovered to a vacuum.
2. O₂ Content (greater than 20%) _____ %
3. VCM Content _____ ppm
4. Top and Bottom Manways Open
5. Nitric Oxide Piping Disconnected from Reactor.

SUPERVISOR'S INITIALS

SUPERVISOR'S INITIALS

IN CUT

1-BLANK	STEAM STRIP	1" - 300'		
2-BLANK	COLLOID 2" - 150'			
3-BLANK	OR DISCONNECT EPI			
4-BLANK	CATALYST LINE 1" - 300'			
5-BLANK	MAIN DUMP LINE - 8" - 300'			
6-BLANK	EMERGENCY A.M.S. KILL			
7-BLANK	EMERGENCY A.M.S. KILL			
8-BLANK	SPRAY HEAD - 6" - 300'			
9-BLANK	CONDENSER LINE - 6" - 300'			
10-BLANK	SLOW INERTS VENT - 1" - 300'			
11-BLANK	CHEM WASH AND SUPPLY			
	TOP OF CONDENSER - 8"			
	LOCK OUT AGITATOR			
	TAG BREAKER			
	TEST AGITATOR SWITCH			



OLD UNIT REACTOR - (D-400-500-600)

SPECIAL PRECAUTIONS AND PROTECTIVE EQUIPMENT

1. WEAR SCOTT AIR PACK WHEN DISCONNECT & CONNECT H.O. LINE
2. Wear impervious suit.
3. Use plastic mats on the bottom dish of the reactor to prevent slipping.
4. Wear continuous flow fresh air mask.
5. Wear rubber gloves.
6. Use scaffolding, ladder or climbing belt depending on the size of the buildup for work above bottom level.
7. MANWAY WATCH
8. Use Safety Harness and rope while on scaffold or ladder.

* When preparing to blank or remove blank in chem wash line, lock-out chem wash pump, open chem wash line to reactor and bleed line at discharge of pump before breaking chem wash flange.

** Nitric Oxide piping reconnected after entry work completed

EQUIPMENT ENTRY PROCEDURE

PVC PLANT

ABERDEEN, MS

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EQUIPMENT: LARGE REACTORSNUMBER: D-400-500-600SERVICE: VCM Polymerization

CONOCO NO.: _____

LOCATION: SOUTH OF THE V-11 REACTOR Bldg.ENTRY PERMIT APPROVAL: Vinyl Shift Supervisor

CHECK LIST

1. Reactor empty and steam stripped and recovered to a vacuum.
2. O₂ Content (greater than 20%) _____ %
3. VCM Content _____ ppm
4. Top and Bottom Manways Open
5. Nitric Oxide Piping Disconnected from Reactor.

SUPERVISOR'S INITIALS

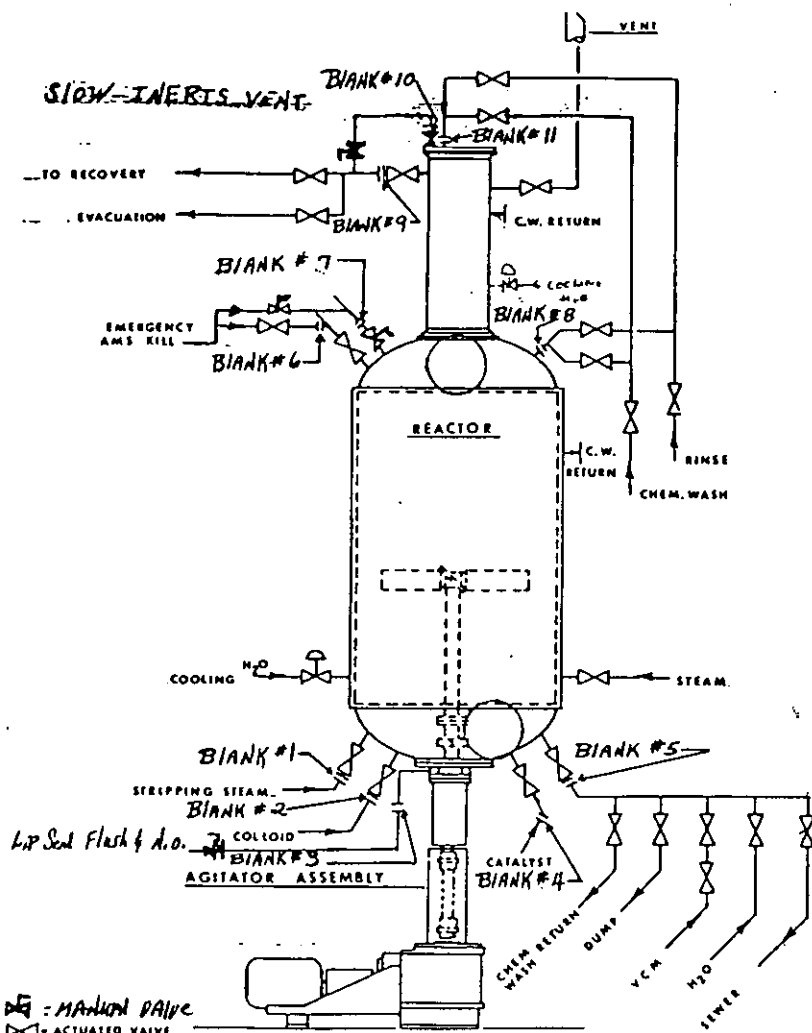
SUPERVISOR'S INITIALS

IN CUT

1-BLANK	STEAM STRIP	1" - 300"		
2-BLANK	COLLOID 2" - 150"			
3-BLANK OR DISCONNECT EPIN	LIP SEAL FLUSH ENITRIC OX.			
4-BLANK	CATALYST LINE 1" - 300"			
5-BLANK	MAIN DUMP line - 8" - 300"			
6-BLANK	EMERGENCY A.M.S. KILL			
	ANTC - 1" - 300"			
7-BLANK	EMERGENCY A.M.S. KILL			
	MANWAY - 1" - 300"			
8-BLANK	SPRAY HEAD - 6" - 300"			
9-BLANK	Condenser line - 6" - 300"			
10-BLANK	SLOW INERTS VENT - 1" - 300"			
11-BLANK	CHEM WASH AND RINSE SUPPLY			
	TOP OF CONDENSER - 8" - 300"			
	LOCKOUT AGITATOR			
	TAG BREAKER			
	TEST AGITATOR SWITCH			

* When preparing to blank or remove blank in chem wash line, lock-out chem wash pump, open chem wash line to reactor and bleed line at discharge of pump before breaking chem wash flange.

* Nitric Oxide piping reconnected after entry work completed



OLD UNIT REACTOR - (D-400-500-600)

SPECIAL PRECAUTIONS AND PROTECTIVE EQUIPMENT

1. WEAR SCOTT AIR PACK when disconnect & connect N.O. line
2. Wear impervious suit.
3. Use plastic mats on the bottom dish of the reactor to prevent slipping.
4. Wear continuous flow fresh air mask.
5. Wear rubber gloves.
6. Use scaffolding, ladder or climbing belt depending on the size of the buildup for work above bottom level.
7. MANWAY WATCH
8. Use Safety Harness and rope while on scaffold or ladder.

EQUIPMENT ENTRY PROCEDURE

PVC PLANT

ABERDEEN, MS

EQUIPMENT: LARGE REACTORSNUMBER: D-400-500-600SERVICE: VCM Polymerization

CONOCO NO.: _____

LOCATION: South of the V-II Reactor Bldg.ENTRY PERMIT APPROVAL: Vinyl Shift Supervisor

CHECK LIST

1. Reactor empty and steam stripped and recovered to a vacuum.
2. O₂ Content (greater than 20%) _____ %
3. VCM Content _____ ppm
4. Top and Bottom Manways Open
5. Nitric Oxide Piping Disconnected from Reactor.

SUPERVISOR'S INITIALS

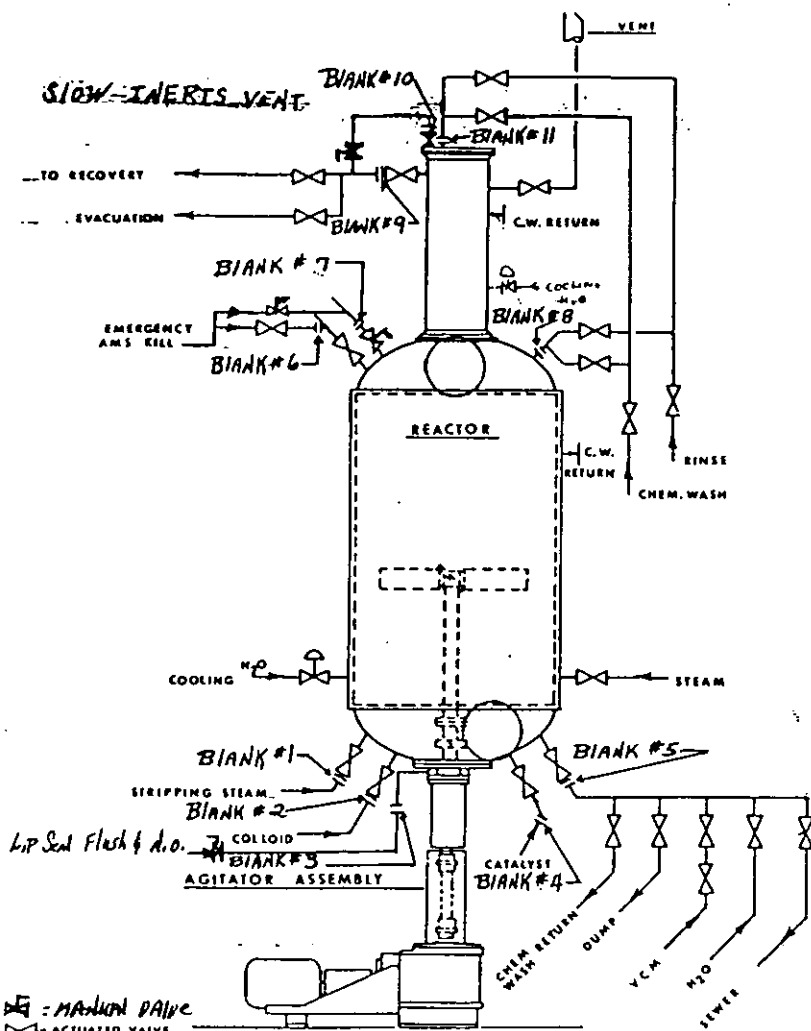
SUPERVISOR'S INITIALS

IN OUT

1-BLANK	STEAM STR.	1" - 300'		
2-BLANK	COLLOID 2" - 150'			
3-BLANK OR DISCONNECT EPA	LIP SEAL FLUSH & NITRIC OX.			
4-BLANK	CATALYST LINE 1" - 300'			
5-BLANK	MAIN DUMP LINE - 8" - 300'			
6-BLANK	EMERGENCY A.M.S. KILL, AUTO - 1" - 300'			
7-BLANK	EMERGENCY A.M.S. KILL, MANUAL - 1" - 300'			
8-BLANK	SPRAY HEAD - 6" - 300'			
9-BLANK	CONDENSER LINE - 6" - 300'			
10-BLANK	SLOW INERTS VENT - 1" - 300'			
11-BLANK	CHEM WASH AND R. TOP OF CONDENSER - 8" -	SUPPLY		
	LOCKOUT AGITATOR B.			
	TAG BREAKER.			
	TEST AGITATOR SWITCH.			

* When preparing to blank or remove blank in chem wash line, lock-out chem wash pump, open chem wash line to reactor and bleed line at discharge of pump before breaking chem wash flange.

** Nitric Oxide piping reconnected after entry work completed



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SPECIAL PRECAUTIONS AND PROTECTIVE EQUIPMENT

1. WEAR SCOTT AIR PACK WHEN DISCONNECT & CONNECT N.O. LINE
2. Wear impervious suit.
3. Use plastic mats on the bottom dish of the reactor - prevent slipping.
4. Wear continuous flow fresh air mask.
5. Wear rubber gloves.
6. Use scaffolding, ladder or climbing belt depending on the size of the buildup for work above bottom level.
7. MANWAY WATCH
8. Use Safety Harness and rope while on scaffold or ladder.
9. 12 V. test for gas at 1' intervals in and on before entry