



Dow U.S.A.

The Dow Chemical Company
P O Box 150
Plaquemine, Louisiana 70765 0150

May 19, 1994

Plant Superintendents
Safety Superintendents
Safety Coordinators

BRIAN DONATTO
SAFETY COORDINATOR
BLDG. 4601

Use of Red Tags for Minor Servicing Activities

Background	Both OSHA and Dow have written in an exception to their Lockout/Tagout Standards for: <i>"minor servicing activities which take place during normal operation ... if the activity is routine, repetitive, and integral to the use of the equipment for production."</i> In these cases, the equipment need not be locked or tagged as long as alternative procedures are applied to ensure a safe operation.
Applicable Activities	Examples of the types of activities that this exception might be applied to include: • shutting down a bagging line or conveyor to unplug it • changing filter elements • etc.
Procedures to Ensure Safety	If you wish to apply this exception to an operation within your plant, the following two items are required: 1. A written Safe Operating Procedure 2. An alternative measure to prevent inadvertent activation of the device by the worker or others Samples of the alternative measures mentioned in item 2 include interlocks, key-locked switches, push buttons, etc.

DO A 034060
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**Red Tag as
Alternative
Measure**

Some plants have activities to which the above exception applies but for which there is either no alternative measure such as the ones mentioned above, or the plant would like to have the additional protection and communication provided by the hanging of a red tag on the interlock or other device.

If this is done however without completing an associated red tag master and location listing and without a job representative's review, there is not strict adherence to USA-3.

**Approved
Variance**

A variance to USA-3 has been approved which would allow the use of a red tag as either the alternative measure required above or in addition to the alternative measure. The use of the tag must be written in to the job procedure and a red tag master, location listing, and review by job representative are not required.

This applies only to those minor servicing activities which:

1. Have a written Safe Operating Procedure
2. Are short in duration, of low risk, and require action from only one person
3. Are constantly attended by the person hanging the tag

The tag may be hung by either Dow or Contractor personnel.

**Audit
Requirement**

Supervision should ensure compliance with this procedure through periodic job site audits.

In addition, this type of procedure is one which should be certified annually as part of our compliance with OSHA's Process Safety Management (PSM) regulation.

Questions

Any questions concerning the above information should be referred to your safety superintendent for clarification.

LAD Safety Department

CDN / 5/17/94

DO A 034061
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CHLORINATED METHANE PRODUCTS COMMUNIQUE'

Review & Initial

DATE: 1-Jun, 1994

FROM: Gary Rizzo

SUBJECT: Changes have been made to the attached procedure. Please review

This form is used to insure the attached information is communicated to the appropriate plant personnel.

INITIATOR: Place a check mark by the group(s) needing to review.

EMPLOYEE: Please initial once review is complete.

GROUP	PERSONS NEEDING TO REVIEW									
Staff	☐ Haney	☐ Miles	☐ Bourne	☒ Kelley	☒ Ledoux	☐ Patterson				
	☐ Witt	☒ Young								
Supervisors	☒ Clebert, J.	☒ Cook, J.	☒ Dugas	☒ Michel	☒ Trice	☐ Rizzo				
X										
SOS's	☒ Breau	☒ Beiler	☒ Bickham	☒ Cook, F.	☒ Davis	☒ Grant				
X	☒ Gravouilla	☒ Jackson	☒ Millender							
OS's	☒ Armand	☒ Bishop	☒ Bourg	☒ Cavalier	☐ Doucet	☒ Ekey				
X	☒ Harrison	☒ Jack	☒ Looney	☒ Metrejean	☒ Wolfe					
Day Operators	☐ Donatto	☐ Grace	☐ Johnson	☐ Simonson	☐ Vavasseur					
Instruments	☐ Bourg	☐ Burris	☐ Eunice	☐ Shanklin						

CMP PROCEDURE
C-1540 Bottoms Filter Recharge
PROCEDURE # 460209

PURPOSE	To safely recharge the C-1540 bottoms cuno filter.
SCOPE	This procedure covers the safe methods and practices needed to recharge the C-1540 bottoms filter.
RELATED PROCEDURES	None.
DEFINITIONS	None.
SAFETY CONCERNS & EQUIPMENT	This is a potentially hazardous job. The washing of the filter elements so that they may be removed must be done wearing proper safety equipment. Line opening: Monogoggles Filter washing: paper suit, rubber gloves
ENVIRONMENTAL CONCERNS	Care must be taken to ensure all wash water is properly contained.
SPECIAL CONCERNS	None.

C-1540 BOTTOMS FILTER RECHARGE

PROCEDURE Isolating, washing, and recharging C-1540 Cuno

Step	Action
1	Monitor the inlet and outlet pressures on the filter routinely. When the differential between the two reaches 20-25 PSI, recharge the elements.
2	Isolate the inlet from the pump and the outlet to the bottom of the south reboiler.
3	Connect nitrogen to the inlet line and blow all liquid possible into the reboiler through the outlet line.
4	Purge filter to the Dry Vent Header to remove more residual liquid and vapors. Depressure to the THROX.
5	Wearing monogoggles depressure remaining N2 to atmosphere. Red tag the inlet and outlet block valves of the filter as per the US area red tag master standard.
6	Disconnect flanges or unions on inlet and outlet of filter. Using a forklift, move the entire filter skid to the Decontamination Area.
7	Remove the head from the vessel, wearing proper safety equipment if an impact wrench is used. Also, a Scott-O-Vista and a paper suit, rubber gloves are required while the head is being pulled.
8	<i>If the elements can be removed by hand at this point, do so using the same protective equipment as above. Place the used elements in a 45 gallon Dak-Pak and label the drum "Filter Elements" with waste type #2564. Wash the filter, steam, and blow dry with air or nitrogen.</i>
9	<i>If the elements cannot be readily removed at this point, the vessel will need to be washed with a fire hose. Consider turning the filter head off to one side, securing it with two bolts, and using the fork lift and choker to turn the filter on its side. Make sure no personnel are in the immediate area and stand far enough away from the filter so none of the spray reaches you. Once you have washed the filter enough to remove the elements, do so. Then continue washing until the filter is clean, steam it, and dry it by blowing it with air or nitrogen</i>
10	Obtain 18 new filter elements for the recharge. The current filters being used are Dow Code number 6501918. They are 10 micro cotton wound elements with a 316 SS core with an open ended on one end, extended core on the other. They are stocked at Cellulose and are coded under C-1540 for automatic reorder. (Filterite part number C10AW30S-EC1S) Install the new elements in the vessel.
11	Reinstall the head, and reinstall the filter in the process. Pressure check all breaks with nitrogen. Clear all masters once filter pressure checks good. Notify board man and then slowly line up the process to put back on line.

CHLORINATED METHANE PRODUCTS COMMUNIQUE'

Review & Initial

DATE: 5/27, 199 4

FROM: S. LEDOUX

SUBJECT: NSPS Training

This form is used to insure the attached information is communicated to the appropriate plant personnel.

INITIATOR: Place a check mark by the group(s) needing to review.

EMPLOYEE: Please initial once review is complete.

GROUP	PERSONS NEEDING TO REVIEW	
Staff ✓	<u> </u> Haney <u>RM</u> Miles <u> </u> Bourne <u>KL</u> Kelley <u>EL</u> Ledoux <u> </u> Patterson <u> </u> Witt	
Supervisors ✓	<u> </u> Clebert <u>JRC</u> Cook, J. <u>SRB</u> Dugas <u>EL</u> Michel <u>RM</u> Rizzo <u> </u> Sauls <u>LT</u> Trice <u> </u> Witzmann <u>MM</u> Young	
SOS's ✓	<u> </u> Breaux <u>SB</u> Beiler <u>CB</u> Bickham <u>FC</u> Cook, F. <u>CD</u> Davis <u> </u> Grant <u> </u> Gravouilla <u>RY</u> Jackson <u>RM</u> Millender	
OS's ✓	<u> </u> Armand <u>VEY</u> Bishop <u> </u> Bourg <u> </u> Cavalier <u> </u> Doucet <u> </u> Ekey <u> </u> Harrison <u>OS</u> Jack <u> </u> Looney <u> </u> Metrejean <u>DW</u> Wolfe	
Day Operators ✓	<u> </u> Donatto <u>HG</u> Grace <u> </u> Johnson <u> </u> Simonson <u> </u> Vavasseur	
Instruments	<u> </u> Bourg <u> </u> Burris <u> </u> Eunice <u> </u> Shanklin	

DO A 034065
CONFIDENTIAL

To: CMP Personnel
From: Steve Ledoux
Subject: NSPS Training

5/27/94

On May 26, 1994 Brandon Choate completed a program which will require a first pass temperature permissive to burn dry vents and D-1525 vents. This program will also alarm whenever the NSPS temperature limit on the first pass temperature is near the low limit. The new programming does not trip the vents. It will be the responsibility of the operator to take steps to increase the first pass temperature or send the vents to Vinyl II.

We have three temperature limits on the first pass temperature. The correct limit depends on whether we are burning only our dry vents or D-1525 vents with vent recovery operating, burning Vinyl II's vents, or burning dry vents or D-1525 vents with vent recovery off. This sounds complicated, but it really isn't.

Condition	Limit
Burning our dry vent or D-1525 with vent recovery working	665 C
Burning Vinyl II's vents	675 C
Burning dry vents or D-1525 with vent recovery bypassed or down	715 C

The program information on NSPS is found on the Picsvax under the flowsheet labeled 'D-750 D-751'. Click on the 'NSPS' box once the flowsheet is called up. The limit is decided by which of the three conditions is occurring. The condition with the 'ON' indication to the left is the current limit. When reviewing the screen ensure the proper condition is indicated. The next column shows a three hour average which the NSPS temperature we need to maintain over the limit. The last column indicates the current reading from the TDC of the first pass temperature. The average is a three hour average using fifteen minute snapshots of the instantaneous temperature. The instantaneous temperature doesn't alarm the limit, only the three hour average does.

When the Throx shuts down, the three hour average freezes from the last time the Throx was running. Once the boiler is started, the first pass temperature begins averaging into the last frozen average. This reduce the time required to bring the average over the limit. The instantaneous first pass temperature is used as a permissive to burn dry vents and D-1525 to minimize the time to burn vents after a shutdown.

When the alarm comes true, a message is given on the Picsvax to guide you to take action. Don't burn dry vents or D-1525 if the low temperature alarm is active. If the temperature average is below 665C, divert dry vents to Vinyl II as soon as possible. If we are burning Vinyl's vents and we can't keep the temperature above 675 C, call Vinyl II and let them know the situation. If we continue to burn Vinyl's vents under those conditions, Vinyl II will be out of compliance. I have communicated with Vinyl so they can get the same temperature points in their control room so they can monitor the situation as well.

Thanks,



DO A 034066
(CONFIDENTIAL

CHLORINATED METHANE PRODUCTS COMMUNIQUE'

Review & Initial

DATE: May 24, 199 4

FROM: Brian Donatto

SUBJECT: OSHA recordable injury caused by aluminum fitting disintegration

This form is used to insure the attached information is communicated to the appropriate plant personnel.

INITIATOR: Place a check mark by the group(s) needing to review.

EMPLOYEE: Please initial once review is complete.

GROUP	PERSONS NEEDING TO REVIEW	
Staff ✓	<u>Witt</u> Haney <u>BE</u> Miles Bourne <u>KJ</u> Kelley <u>LE</u> Ledoux Patterson	
Supervisors ✓	<u>CT</u> Clebert <u>JRC</u> Cook, J. <u>DD</u> Dugas <u>A.M.</u> Michel <u>LD</u> Rizzo <u>SS</u> Sauls <u>K.T.</u> Trice <u>W</u> Wittmann <u>MY</u> Young	
SOS's ✓	<u>LB</u> Breaux <u>BS</u> Beiler <u>CB</u> Bickham <u>FC</u> Cook, F. <u>CD</u> Davis <u>GR</u> Grant <u>DD</u> Gravouilla <u>RJ</u> Jackson <u>BM</u> Millender	
OS's ✓	<u>MA</u> Armand <u>BE</u> Bishop <u>B</u> Bourg <u>CV</u> Cavalier <u>D</u> Doucet <u>EK</u> Ekey <u>DD</u> Harrison <u>OJ</u> Jack <u>RL</u> Looney <u>DM</u> Metrejean <u>DW</u> Wolfe	
Day Operators ✓	<u>HD</u> Donatto <u>HG</u> Grace <u>JJ</u> Johnson <u>JS</u> Simonson <u>V</u> Vavasseur	
Instruments ✓	<u>B</u> Bourg <u>B</u> Burris <u>EE</u> Eunice <u>AS</u> Shanklin	

DO A 034067
CONFIDENTIAL

SOURCE : FILED R L (DOWELL)

U432195 FILED

DONATIO B D (BRIAN)

U434031 (PLAQM)

From: NAME: U432195 (U432195@LARNDC@HKGATE@USMV02)
TO: U434031@IRHQ

From: LARNDC: TOWNSEND "GLENN TOWNSEND, SAFETY SUPT - OXIDIS/LEAKS IV,
(504)389-1594" 17-MAY-1994 07 34 56.41

To: QSSUP1

CC:

Subj: Injury at LGTI on 5/13

D -

A bow operator was assisting Dowell in removing slurry from one of the vessels when an aluminum fitting on the 3" vacuum hose disintegrated at the throat due to prior corrosion on the fitting, striking the operator on the forehead. The cut required 3 stitches.

Dowell has a policy against use of aluminum fittings, but this one had been in service for some time and has obviously been used in carrying out the removal of slurry from time to time. To use inspection would not have helped to prevent the problem unless you were verifying materials of the fittings were not aluminum. Since Dowell does not purchase aluminum fittings, the aluminum fitting was picked up at a customer's shop. There was possibly inadequate fitting on the truck to do a better job.

From:

TO: TOWNSEND

"GLENN TOWNSEND, SAFETY SUPT - OXIDIS/LEAKS IV"

TO: DOWELL

FROM: TOWNSEND

U432195 FILED

This incident resulted in an OSHA recordable injury. This is something we need to be aware of and watch for not only with Dowell but also any time we get any kind of rental equipment for a job.

RECEIVED

F404

1842

5/17/94

11:27

DO A 034068

U434031

89

5/17/94

11:23

CONFIDENTIAL

TO

DONATIO

U434031 008

CHLORINATED METHANE PRODUCTS COMMUNIQUE'

Review & Initial

DATE: 5/23, 199 4

FROM: M. Bourne

SUBJECT: Mod 5 Code Changes to Distillation

This form is used to insure the attached information is communicated to the appropriate plant personnel.

INITIATOR: Place a check mark by the group(s) needing to review.

EMPLOYEE: Please initial once review is complete.

GROUP	PERSONS NEEDING TO REVIEW	
Staff	<u> </u> Haney <u>DEM</u> Miles <u> </u> Bourne <u>KV</u> Kelley <u> </u> Ledoux <u> </u> Patterson <u> </u> Witt	
Supervisors	<u>JK</u> Clebert <u>JRC</u> Cook, J. <u>DRD</u> Dugas <u> </u> Michel <u>JD</u> Rizzo <u> </u> Sauls <u>KT</u> Trice <u> </u> Wittmann <u>MM</u> Young	
SOS's	<u> </u> Breaux <u>GB</u> Beiler <u> </u> Bickham <u>FC</u> Cook, F. <u>CD</u> Davis <u> </u> Grant <u> </u> Gravouilla <u> </u> Jackson <u> </u> Millender	
OS's	<u> </u> Armand <u> </u> Bishop <u> </u> Bourg <u> </u> Cavalier <u> </u> Doucet <u> </u> Ekey <u> </u> Harrison <u> </u> Jack <u> </u> Looney <u> </u> Metrejean <u> </u> Wolfe	
Day Operators	<u> </u> Donatto <u> </u> Grace <u> </u> Johnson <u> </u> Simonson <u> </u> Vavasseur	
Instruments	<u> </u> Bourg <u> </u> Burris <u> </u> Eunice <u> </u> Shanklin	

The following list comprises the added logic to the distillation area which will be incorporated into the next upload scheduled for Tuesday, May the 24th. Please look over the list.

1. Logic has been written which will detect upsets in D-1450's level such as a heavy rainstorm. The logic is contained in WARN(119) - 1450 UPSET - DISABLE D-1450 LIC -. The intent is to catch a level deviation from the normal average level, alarm and set C-1500's feed flow setpoint at an average feed flow from over the last ten minutes. The logic used to trigger the alarm is built with a latch set to go false given the level is back at some deviation from the original level before the upset. Once the latch clears, the operator will be able to clear the alarm by setting DM(106) true. WARNING: clearing the alarm with the DM() AUTOMATICALLY puts D-1450 back on level control at whatever level is present. THE LEVEL SETPOINT AK(801) SHOULD BE REALIGNED TO THE ACTUAL BEFORE SETTING DM(106) TRUE.
2. The old REQ(119) - C-1500 HIGH/LOW OVERHEAD TEMPERATURE alarm will be deleted to make room for the above alarm.
3. T-1500's LIC has been deleted since the controller is never used and because of potential flow problems with the P-1510's.
4. A new flow AK() setpoint has been written for the P-1500's whenever R-130 trips and product is routed to T-1500. Also, another AK() was added to engage whenever the operator requests to start one of the pumps.
5. C-1530, C-1540 and C-1550 will now have low tray temperature alarms associated with the existing high tray temperature alarms.
6. A low steam flow limit is built to be active when C-1540 enters the n STEP(304). The limit will be engaged until the steam flow climbs above the limit and then tries to fall less than.
7. Code has been added which will remove D-1450 from LIC given a network communication failure between System B and D. The flow setpoint will default to the last flow measurement until communications has been reestablished. Communication failure is based on WARN(195) on system D becoming true.

mrh
5/23/94

005570
DO A 034070
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CHLORINATED METHANE PRODUCTS COMMUNIQUE'

Review & Initial

DATE: 20-May, 1994

FROM: Gary Rizzo

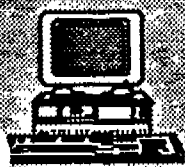
SUBJECT: Please review the attached MOD V code changes

This form is used to insure the attached information is communicated to the appropriate plant personnel.

INITIATOR: Place a check mark by the group(s) needing to review.

EMPLOYEE: Please initial once review is complete.

GROUP	PERSONS NEEDING TO REVIEW							
Staff	☐ Haney	☐ Miles	☐ Bourne	☐ Kelley	☒ Ledoux	☐ Patterson		
	☐ Witt	☒ Young						
Supervisors	☒ Clebert, J.	☒ Cook, J.	☒ Dugas	☐ Michel	☒ Trice	☐ Rizzo		
X								
SOS's	☒ Breaux	☒ Beiler	☒ Bickham	☒ Cook, F.	☒ Davis	☒ Grant		
X	☒ Gravouilla	☒ Jackson	☒ Millender					
OS's	☒ Armand	☒ Bishop	☒ Bourg	☒ Cavalier	☐ Doucet	☒ Ekey		
X	☒ Harrison	☒ Jack	☒ Looney	☒ Metrejean	☒ Wolfe			
Day Operators	☐ Donatto	☐ Grace	☐ Johnson	☐ Simonson	☐ Vavasseur			
Instruments	☐ Bourg	☐ Burris	☒ Eunice	☐ Shanklin				



CHLORINATED METHANES MOD V DESCRIPTION OF CHANGE



C

System

PSA'S

Equipment Number

300

Can

Made an (AC) that will choose control between the inlet / outlet transmitters on the filters beds during regeneration. In this way if one of the transmitters isn't functioning properly the operator will have the option of choosing the good one by setting an AK. Or, if one of the transmitters failure DC comes true, control will automatically switch to the other.

Wrote 6 LDO light codes that indicate which transmitter is being used for control.

The AK's element number is the same as the AC. The AK's will AUTOZERO if it is being used to select a transmitter and that transmitters failure DC becomes true, or if a value is given to the AK that is not equal to either transmitter number.

See AC(372) for transmitter selection on PSA-1770A

See AC(373) for transmitter selection on PSA-1770B

See AC(374) for transmitter selection on PSA-1760A

See AC(375) for transmitter selection on PSA-1760B

See LDO(384), (385), (386), (387), (388) & (389)

See AC(1008) & AC(364) to see how it is used in the control code for PSA's

Added two alarms (328) & (354) Which are high bed differential pressure during recycle

CHLORINATED METHANES MOD V
DESCRIPTION OF CHANGE

B

System

R-1300 / CT-1020

Equipment Number

100/200/500

Can

Corrected the problem that P-1020's were having with the Hi/Lo amps alarm when the pump wasn't running. Took the DO out of the alarm code and we are strickly using the DI code.

The problem with the DI/DO mismatch for P-1020 has been corrected in the code. It will only alarm if the pump trips.

Added (step 104) to DC(1498) code for master distillation, allowing C-1500 to return to level control when the reactor moves to step (104) during start up. This should help with lining out C-1500 during this time period.

Alarm (288) E-1450 high outlet temperature was modified to be a Hi outlet temperature alarm only.

Added Warn (582) to the code. This alarm will activate if and when one of the Gun Barrel, Bed or Nozzle temperature transmitters fail. It is a digsum alarm and will rering if a new occurance occurs.

Modified Warn(128) to look at the temperature transmitter failures of the feeds streams to R-1300

CHLORINATED METHANE PRODUCTS COMMUNIQUE'

view & Initial

DATE: 25-Apr _____, 1994

FROM: Gary Rizzo

SUBJECT: Please read the attached procedure " Pulling P-510 Suction Strainers"

This form is used to insure the attached information is communicated to the appropriate plant personnel.

INITIATOR: Place a check mark by the group(s) needing to review:

EMPLOYEE: Please initial once review is complete.

GROUP	PERSONS NEEDING TO REVIEW							
Staff	<u> </u> Haney	<u> </u> Miles	<u>MLB</u> Bourne	<u> </u> Kelley	<u> </u> Ledoux	<u> </u> Patterson		
	<u> </u> Witt	<u>Ing</u> Young						
Supervisors	<u> </u> Clebert, J.	<u> </u> Cook, J.	<u> </u> Dugas	<u> </u> Michel	<u> </u> Trice	<u> </u> Rizzo		
X								
SOS's	<u> </u> Breaux	<u> </u> Beiler	<u> </u> Bickham	<u> </u> Cook, F.	<u> </u> Davis	<u> </u> Grant		
X								
OS's	<u> </u> Gravouilla	<u> </u> Jackson	<u> </u> Millender					
	<u> </u> Armand	<u> </u> Bishop	<u> </u> Bourg	<u>MSC</u> Cavalier	<u> </u> Doucet	<u> </u> Ekey		
X								
	<u> </u> Harrison	<u> </u> Jack	<u> </u> Looney	<u> </u> Metrejean	<u>DCW</u> Wolfe			
Day	<u> </u> Donatto	<u> </u> Grace	<u> </u> Johnson	<u> </u> Simonson	<u> </u> Vavasseur			
Operators								
Instruments	<u> </u> Bourg	<u> </u> Burris	<u> </u> Eunice	<u> </u> Shanklin				

DO A 034074
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DOW CONFIDENTIAL

**CMP PROCEDURE
PULLING P-510 SUCTION STRAINERS
PROCEDURE #**

PURPOSE	To provide the operator with a document which will assist them in properly performing a given task
SCOPE	To list the steps to safely and properly pull the suction strainers on the P-510 pumps
RELATED PROCEDURES	Na
DEFINITIONS	Na
SAFETY CONCERNS & EQUIPMENT	Rubber Boots, Slicker Suits, Rubber Gloves & Monogoggles.
ENVIRONMENTAL CONCERNS	NA
SPECIAL CONCERNS	Pump may contain <u>Caustic</u> and other <u>organics</u> <u>This is a 2 person job.</u> Precautions must be taken when lifting the spool piece

PULLING P-510 STRAINERS**PROCEDURE**

Step	Action
1	Inform the board operator of the job you are going to perform
2	Tag out the pump. * Suction valve * Discharge Valve * Flush H2O * Recirculation * Field Switch * MCC switch * Bleed
3	Bleed the pump down
4	Carefully pull the spool piece out and remove the strainer
5	Clean the strainer
6	Replace the strainer back in the spool and re-install
7	Close all bleeds
8	Pull tags
9	Line up the pump

CHLORINATED METHANE PRODUCTS COMMUNIQUE'

iew & Initial

DATE: 5/17, 199 4

FROM: Jedi

SUBJECT: New ordering procedure for safety glasses, safety shoes & coats

This form is used to insure the attached information is communicated to the appropriate plant personnel.

INITIATOR: Place a check mark by the group(s) needing to review.

EMPLOYEE: Please initial once review is complete.

GROUP	PERSONS NEEDING TO REVIEW						
Staff ✓	<u>Witt</u>	<u>Haney</u>	<u>B.M.</u> Miles	<u>MRB</u> Bourne	<u>bp</u> Kelley	<u>Ledoux</u>	<u>Patterson</u>
Supervisors ✓	<u>Clebert</u>	<u>J.C.</u> Cook, J.	<u>DD</u> Dugas	<u>A.M.</u> Michel	<u>D</u> Rizzo	<u>Sauls</u>	
SOS's ✓	<u>Breaux</u>	<u>Beiler</u>	<u>CB</u> Bickham	<u>FC</u> Cook, F.	<u>CD</u> Davis	<u>Grant</u>	
OS's ✓	<u>Gravouilla</u>	<u>Jackson</u>	<u>Millender</u>	<u>Armand</u>	<u>Bishop</u>	<u>Bourg</u>	<u>Cavalier</u>
Day Operators ✓	<u>Donatto</u>	<u>Grace</u>	<u>Johnson</u>	<u>Simonson</u>	<u>Vavasseur</u>	<u>Wolfe</u>	<u>Ekey</u>
Instruments ✓	<u>Bourg</u>	<u>Burris</u>	<u>MAS</u> Eunice	<u>Shanklin</u>			



Dow U.S.A.

Bldg. 3301P
May 12, 1994

The Dow Chemical Company
P.O. Box 150
Plaquemine Louisiana 70765-0150

Bulletin Boards
Major Managers
Superintendents
Department Heads

Purchase of Books, Safety Shoes and Prescription Safety Glasses

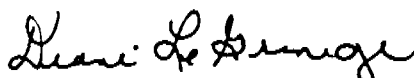
- OBJECTIVE** To improve efficiency by reducing small dollar invoices 25% by the end of 1994 and 70% by the end of 1995. (As part of the Dow North American effort to improve efficiency)
- BACKGROUND** Current methods for purchasing books, safety shoes and prescription safety glasses require employees to fill out Dow forms, obtain signed authorization and in the case of books utilize the services of the LAD Library and Information Center for additional processing.
- NEW PROCESS** Beginning June 1, 1994, employees will be required to purchase books, safety shoes and prescription safety glasses using MSMS. Invoices for these items will be eliminated by going through MSMS.

Safety Shoes and Prescription Safety Glasses - A requisition will be created by the employee or the person in their department responsible for creating requisitions using the appropriate generic code number. A purchase release will then be created from the requisition and this release number will be given to the supplier by the employee buying the items. There are no changes to the current process after this point.

Books - This process will be the same as above except, employee will use the generic code number which requires a complete description of the book. When the purchase release is created, it will be electronically transmitted to a Dow North American supplier who has been contracted with to supply all books to Dow.

- SUMMARY** A process flow sheet for each of the above transactions along with the appropriate generic code numbers will be provided to all material controllers and office professionals before June 1, 1994.

Questions concerning this process change should be directed to the undersigned at extension 8095.


Diane LeGrange
Purchasing Department

DO A 034078
CONFIDENTIAL



Dow U.S.A.

The Dow Chemical Company
P O Box 150
Plaquemine Louisiana 70765-0150

Prescription Safety Eyeglasses Guidelines

for

All Dow Employees and Retirees as of June 1, 1994

1. Only one pair of prescription eyeglasses per employee per year is recommended under our Dow Prescription Eyeglasses Program. At the discretion of the superintendent or department head, a second pair (sunglasses) may be approved for those persons whose work environment require it.
2. Dow shall assume costs of all options except progressive bi-focal, computer tint and anti-reflective coatings.
3. All prescriptions shall be current within 2 years to be included in the Dow program.
4. Employees should replace or repair only necessary parts of prescription glasses to return to serviceable conditions, i.e., scratched lenses, temples, etc.
5. A Dow purchase order number is required prior to dispensing glasses through this program.
6. Payroll deduction is available for costs not assumed by Dow, or direct payment to supplier. Payroll deductions may be withheld from one or two pay periods as per employee instructions.

DO A 034079
CONFIDENTIAL

**Dow U.S.A.
Louisiana Division
Prescription Safety Eyeglasses**

Order Form

Employee Name: _____

Date: _____

Master Number: _____

Phone No: _____

Department: _____

Building No: _____

Active _____ Retired _____

Qty _____

Description _____

Received By:
(Employee Signature): _____ Received Date: _____

Itemized Charges

<u>Dow</u>	<u>Clear / Shaded</u>	<u>Employee</u>	<u>Clear / Shaded</u>
Single Vision	_____	Progressive	
Conventional Bi-focal	_____	Bi-focal	_____
Tri-focal	_____	Anti-Reflective	
Safety Frame	_____	Coating	_____
RLX/UV400	_____	Computer Tint	_____
Tints (For Shades)	_____		
Over-Size (56 and above)	_____		
Over-Power	_____		
Roll-Polish	_____	Total Employee Costs \$	_____
Heat Treat	_____		
High Index	_____	Payroll Deductions: Y N	
Polycarbonate	_____	Pay Period Deduction: 1 2	
Side Shields	_____		
Case	_____	Authorization for	
Temples	_____	Payroll Deductions	

		Master Number	_____

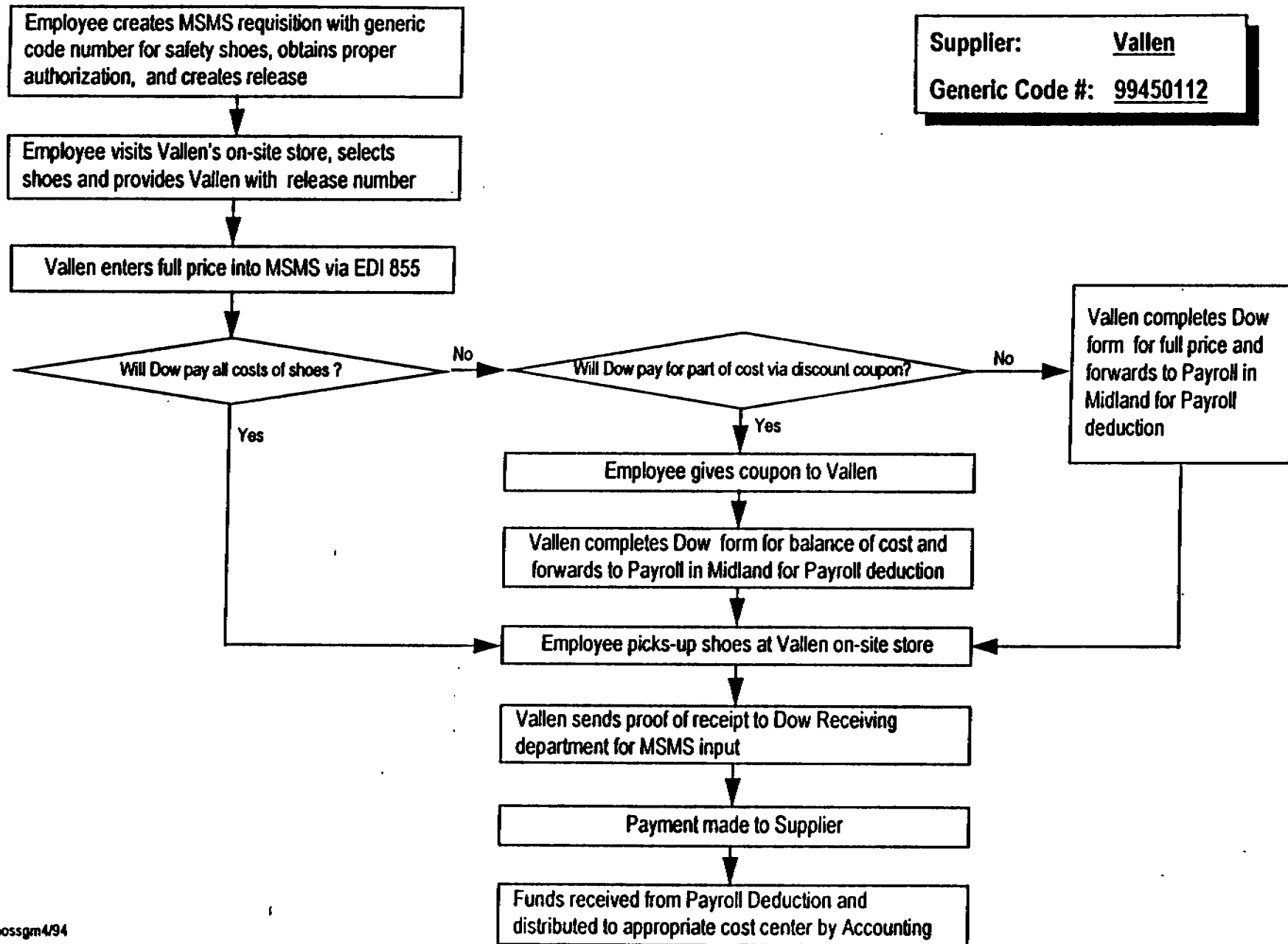
Total Dow Costs \$ _____

dl - 4/26/94

DO A 034080
CONFIDENTIAL

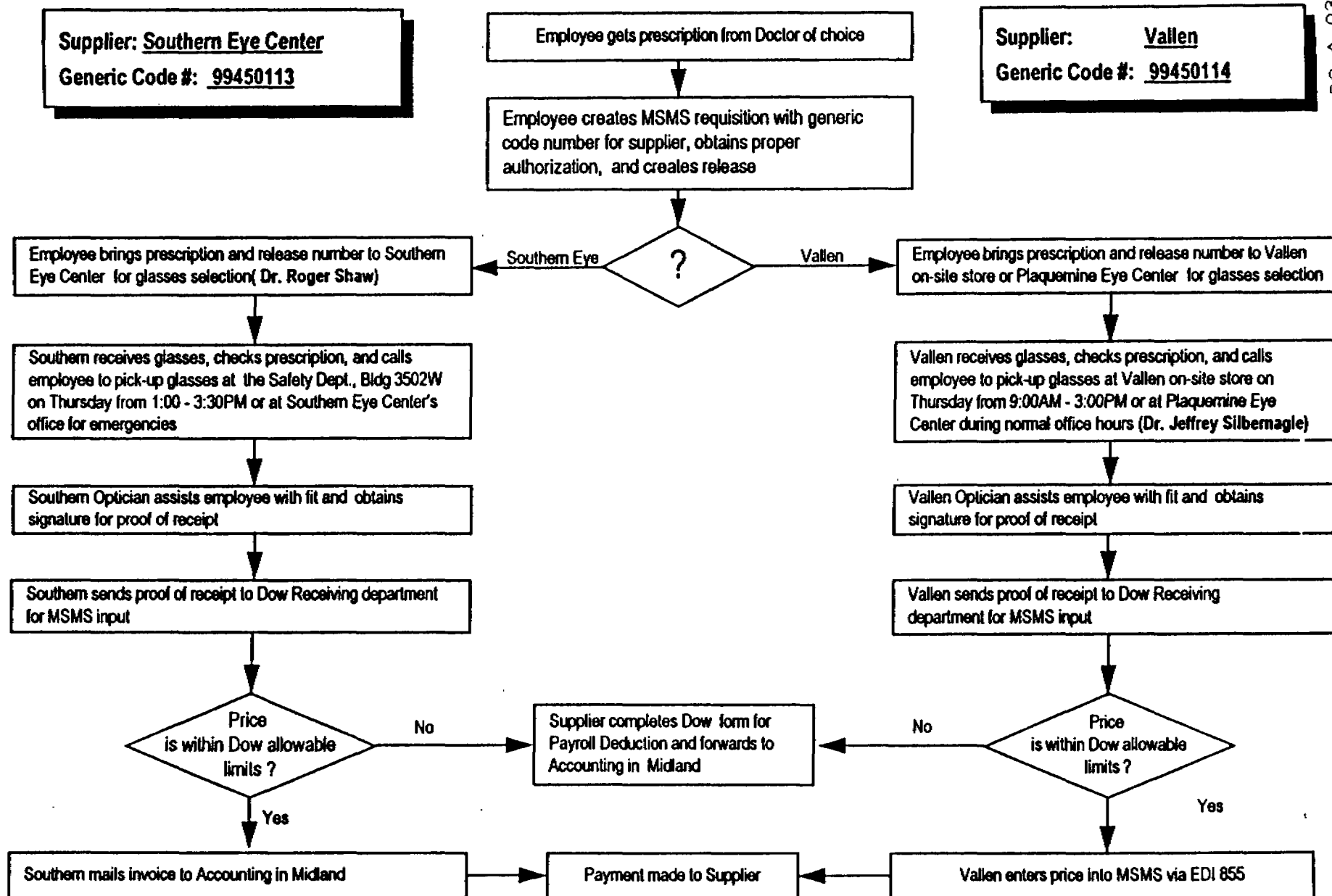
Process For Acquiring Safety Shoes

DO A 034081
CONFIDENTIAL



Process For Acquiring Prescription Safety Glasses

DO A 034082
CONFIDENTIAL

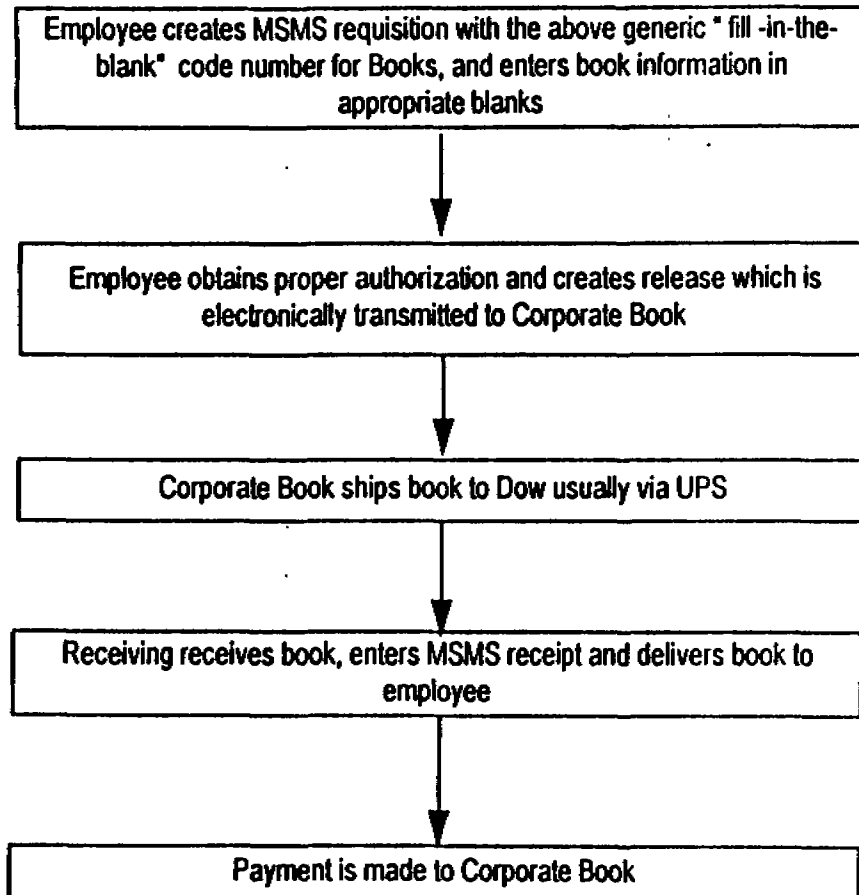


Process For Acquiring Books

Supplier: Corporate Book Resources

Generic Code #: 99450813

035583
DO A 034083
CONFIDENTIAL



QUANTITY	UNIT	CAT CODE
1	EACH	99450813
DESCRIPTION		
BOOKS, AS SPECIFIED BELOW:		
TITLE: _____		
AUTHOR: _____		
PUBLISHER: _____		
DATE OF PUBLICATION: _____		
ISBN: _____		
HARDCOVER: _____		SOFTCOVER: _____
DOW CONTACT: _____		
DOW PHONE: _____		

CHLORINATED METHANE PRODUCTS COMMUNIQUE'

Review & Initial

DATE: 5/12, 199 4

FROM: K. KELLEY

SUBJECT: NEW DISTILLATION CONTROL SCHEMES

This form is used to insure the attached information is communicated to the appropriate plant personnel.

INITIATOR: Place a check mark by the group(s) needing to review.

EMPLOYEE: Please initial once review is complete.

GROUP	PERSONS NEEDING TO REVIEW
Staff ✓	Haney <u>B.M.</u> Miles <u>MRC</u> Bourne <u>KK</u> Kelley <u>K</u> Ledoux Patterson Witt
Supervisors ✓	<u>CF</u> Etchen <u>JRC</u> Cook, J. <u>SD</u> Dugas <u>A.M.</u> Michel <u>SD</u> Rizzo Sauts <u>W</u> Trice <u>W</u> Wilmann <u>my</u> Young
SOS's ✓	<u>LB</u> Breaux <u>123</u> Beicler <u>CF</u> Bickham <u>FC</u> Cook, F. <u>CD</u> Davis <u>—</u> Grant <u>SD</u> Gravouilla <u>SD</u> Jackson <u>RM</u> Millender
OS's ✓	<u>SK</u> Armand <u>CF</u> Bishop <u>B</u> Bourg <u>—</u> Cavalier Doucet <u>—</u> Ekey <u>SD</u> Harrison <u>OS</u> Jack <u>—</u> Looney <u>DM</u> Metrejean <u>DW</u> Wolfe
Day Operators	<u>—</u> Donatto <u>—</u> Grace <u>—</u> Johnson <u>—</u> Simonson <u>—</u> Vavasseur
Instruments	<u>—</u> Bourg <u>—</u> Burris <u>—</u> Eunice <u>—</u> Shanklin

NEW DISTILLATION CONTROL SCHEMES

5/12/94

K. Kelley

As most of you are now aware, the effort has begun to make Distillation a much more energy efficient area. The C-1540 program was uploaded 5/11/94. The control scheme (analyzer -> temperature -> reflux/feed) is a little different from what we are used to here. I wanted to give you some information on where the schemes came from and what they should do for us.

A team of staff members met about 3 months ago to set control programming priorities based on potential energy savings. The highest identified potentials were E-1410/E-1300 improvements, C-1510, C-1540, K-1100, C-1520, and C-1500. Since that time Mike has been extremely busy. We met with the Division Distillation emphasis team. That team is analyzing every plant in the division for distillation control improvements. Their goal is to have systems in place that optimize columns and are most importantly, operator friendly! We have taken each column back to square one to pick a control scheme. There are only a few basic schemes that are implemented. C-1540 is an example of one such scheme. The scheme uses feed forward control to anticipate changes (steam/feed and reflux/feed ratios) and will eventually use analyzer data for fine tune feed back controlling. We have a definite advantage at CMP, in the fact that we have all of the hardware present to implement any scheme we want. That's a luxury not many plants have.

The next pages have some graphs that highlight the potential savings these control improvement hold. As reliable control of the ppm in the overhead streams increases toward spec, the savings increase tremendously.

We need the commitment from everyone to help these new schemes work. Give us feedback on what you see during nights, plant swings, etc. I'm one of the first to be pessimistic when it comes to totally changing a control scheme, but I'm going into this with an open mind. So far, I believe all of you are too.

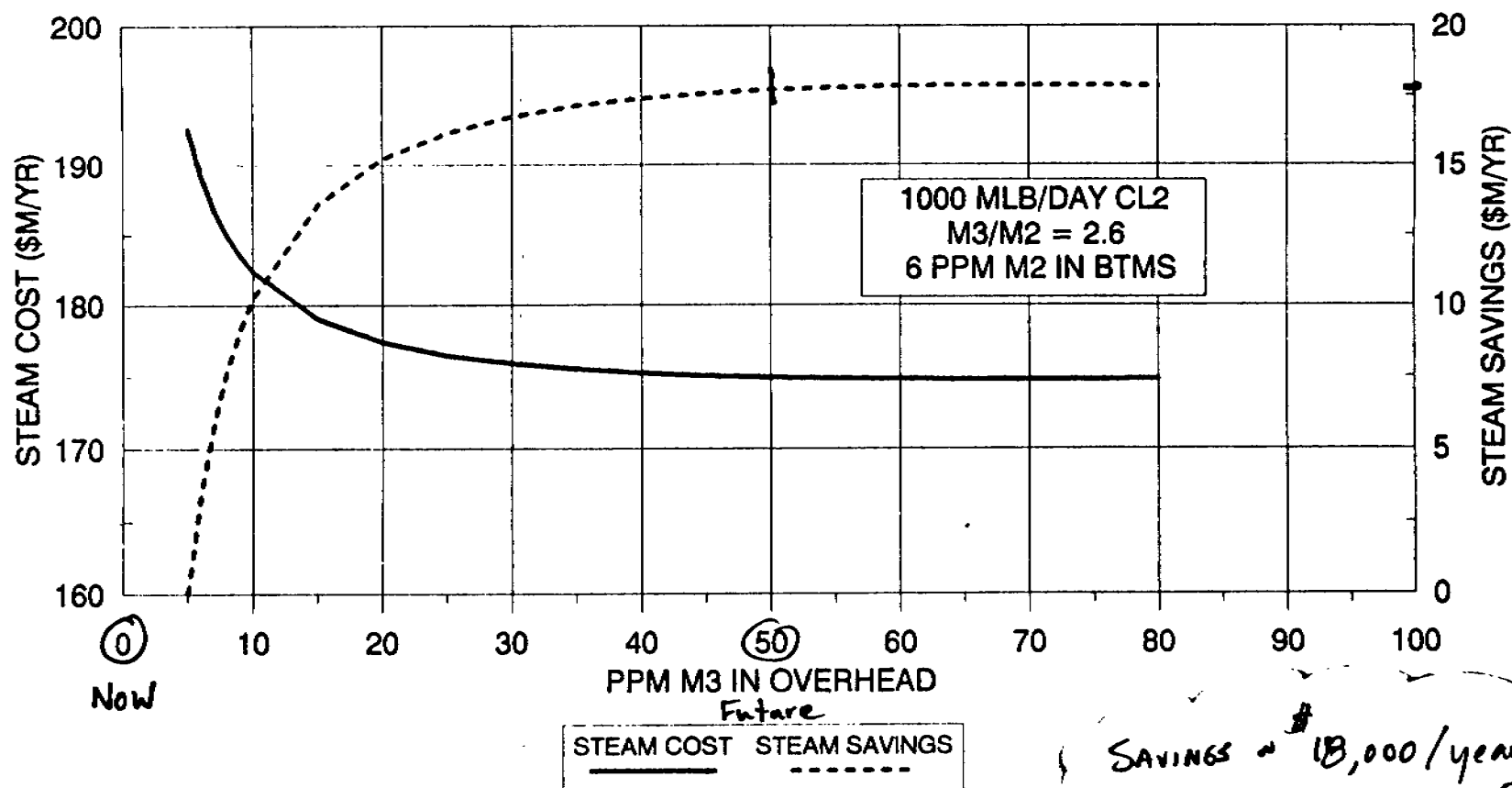
Thanks for your help.

Kevin K



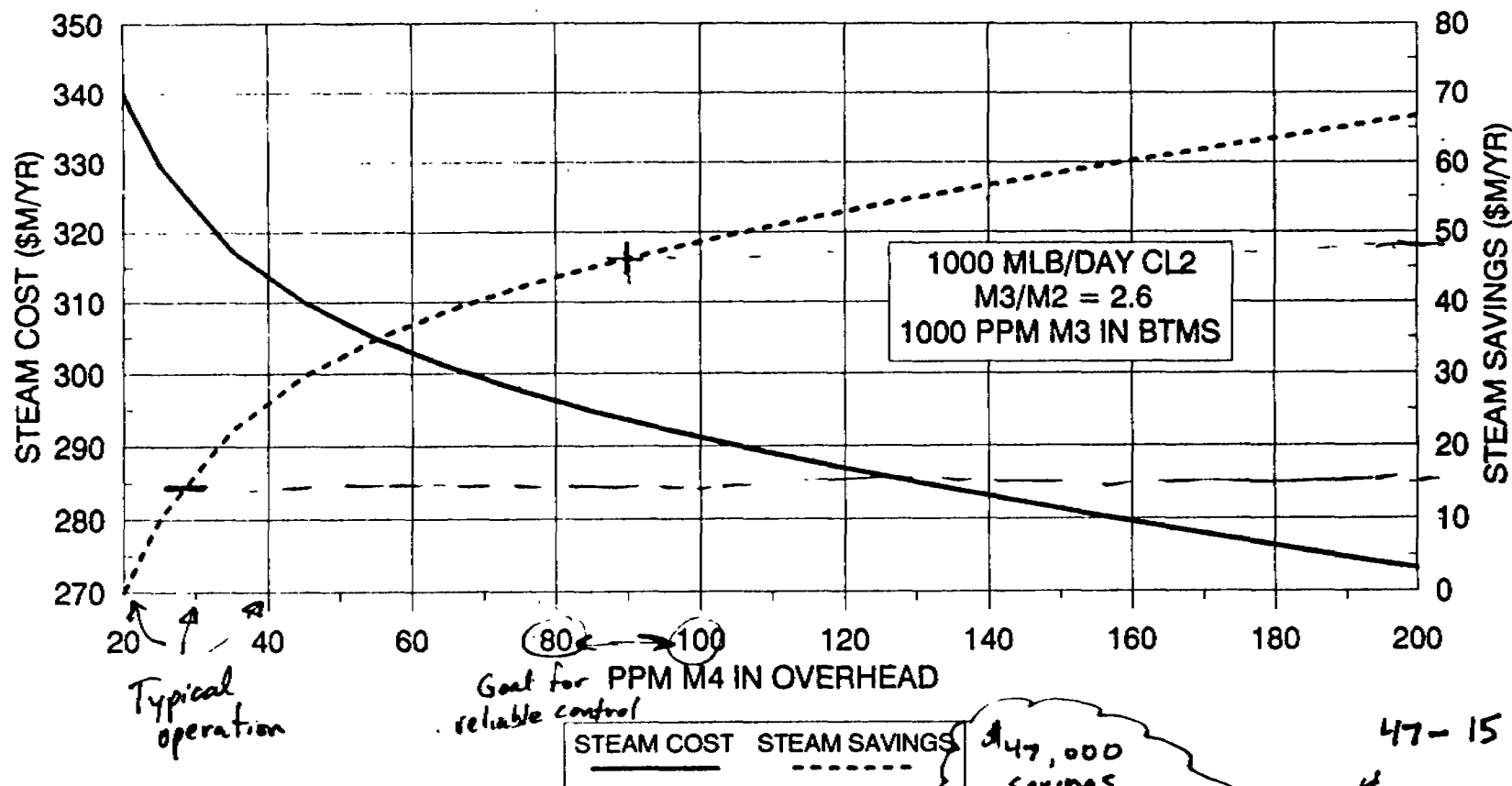
DO A 034085
(CONFIDENTIAL

LOUISIANA CMP EXPANSION ENERGY STUDY
C-1520 STEAM USAGE
SAS MODEL PREDICTIONS OF ASPEN GENERATED DATA



S. MISTRETTA DOW CONFIDENTIAL 5/94

LOUISIANA CMP EXPANSION ENERGY STUDY
C-1540 STEAM USAGE
SAS MODEL PREDICTIONS OF ASPEN GENERATED DATA



S. MISTRETTA DOW CONFIDENTIAL 5/94

47,000 savings increase from 20 ppm → 90 ppm

47-15
\$32,000 savings/year
increase from 30 → 90 ppm

CHLORINATED METHANE PRODUCTS COMMUNIQUE'

Review & Initial

DATE: 12-May, 1994

FROM: Gary Rizzo

SUBJECT: Please review the attached procedure for the lab

This form is used to insure the attached information is communicated to the appropriate plant personnel.

INITIATOR: Place a check mark by the group(s) needing to review.

EMPLOYEE: Please initial once review is complete

GROUP	PERSONS NEEDING TO REVIEW							
Staff	☐ Haney	☐ Miles	☐ Bourne	☐ Kelley	☒ Ledoux	☐ Patterson		
	☐ Witt	☒ Young						
Supervisors	☒ Clebert, J.	☒ Cook, J.	☒ Dugas	☒ Michel	☒ Trice	☐ Rizzo		
SOS's	☒ Breaux	☒ Beiler	☒ Bickham	☒ Cook, F.	☒ Davis	☒ Grant		
X	☒ Gravouilla	☒ Jackson	☒ Millender					
OS's	☒ Armand	☒ Bishop	☒ Bourg	☒ Cavalier	☒ Doucet	☒ Ekey		
X	☒ Harrison	☒ Jack	☒ Looney	☒ Metrejean	☒ Wolfe			
Day Operators	☐ Donatto	☐ Grace	☐ Johnson	☐ Simonson	☐ Vavasseur			
Instruments	☐ Bourg	☐ Burris	☐ Eunice	☐ Shanklin				

CMP PROCEDURE
ACIDITY AS ACETIC ACID IN METHANOL
PROCEDURE # 460348

PURPOSE	PROCEDURE FOR ACIDITY AS ACETIC ACID IN METHANOL
SCOPE	This procedure will instruct you on the correct way to analyze Methanol for Acidity as Acetic Acid. The analysis is a simple titration method but it must be followed correctly in order to produce accurate and reliable results.
RELATED PROCEDURES	SAM00008.DOC Waste disposal of solvents.
DEFINITIONS	None
SAFETY CONCERNS & EQUIPMENT	<u>THERMAL</u> : NONE <u>CHEMICAL</u> : Remember you are working with chemicals that may cause skin and eye irritation. Safety glasses should be adequate for eye protection. <u>MECHANICAL</u> : Use caution when working with glass. <u>EQUIPMENT</u> : 1) Liquid sample to be analyzed 2) 0.05 N NaOH (ASTM E-200; sec 12 - 17) 3) Phenolphthalein Indicator Solution (ASTM D- 1613-85 SEC. 7.0) 4) 50ML Graduated Cylinder 5) 250ml Erlenmeyer Flask 6) Stirring Bar and Stirrer 7) Distilled H2O
ENVIRONMENTAL CONCERNS	None

Revision #: 1

Dow Confidential

Revision Date: 7/15/93

This procedure is only valid for 24 hours of date viewed, May 12, 1994, 9:10 AM

DO A 034089
CONFIDENTIAL

**CMP PROCEDURE
ACIDITY AS ACETIC ACID IN METHANOL
PROCEDURE #LAB00028**

SPECIAL CONCERNS

Calculations: (for 50 mls of sample)

Acidity as Acetic Acid, weight % = $(VN \times 0.12)/D$

V = Mls of NaOH for titration of sample

N = Normality of the NaOH solution used.

D = Specific Gravity of the sample. (use .780)

(To convert wt% to ppm multiply by 10,000)

CMP PROCEDURE
ACIDITY AS ACETIC ACID IN METHANOL
PROCEDURE #LAB00028

PROCEDURE

Step	Action
1	Measure into the 250-ml Erlenmeyer flask 50ml of distilled water.
2	Add 8-10 drops of Phenolphthalein indicator to the distilled water.
3	Titrate the water with 0.05N NaOH until the first perceptible pink color. Don't worry about the MLS used to titrate this water.
4	Add 50 mls of sample to be analyzed to the Erlenmeyer Flask.
5	Titrate the sample with the 0.05N NaOH.
6	End point is reached when the color of the sample is changed from clear to pink. At this point stop adding the 0.05N NaOH.
7	Note the MLS of 0.05 N NaOH used for the titration of the Methanol sample.
8	Record the MLS used in the titration and use the calculations listed in the special concerns of this procedure to calculate the weight % acidity as acetic acid.

CHLORINATED METHANE PRODUCTS COMMUNIQUE'

Review & Initial

DATE: May 11, 199 4

FROM: Brian Donatto

SUBJECT: Good House Keeping

This form is used to insure the attached information is communicated to the appropriate plant personnel.

INITIATOR: Place a check mark by the group(s) needing to review.

EMPLOYEE: Please initial once review is complete.

GROUP	PERSONS NEEDING TO REVIEW	
Staff ✓	<u>Witt</u> Haney <u>RAM</u> Miles <u>ML</u> Bourne <u>BK</u> Kelley <u>BL</u> Ledoux <u>/</u> Patterson	
Supervisors	<u>Q</u> Clebert <u>JRC</u> Cook, J. <u>DRD</u> Dugas <u>AM</u> Michel <u>/</u> Rizzo <u>/</u> Sauls <u>LT</u> Trice <u>W</u> Wittmann <u>MM</u> Young	
SOS's ✓	<u>WB</u> Breaux <u>DB</u> Beiler <u>EG</u> Bickham <u>R</u> Cook, F. <u>/</u> Davis <u>/</u> Grant <u>GA</u> Gravouilla <u>A</u> Jackson <u>FM</u> Millender	
OS's ✓	<u>SEA</u> Armand <u>CE</u> Bishop <u>AB</u> Bourg <u>LL</u> Cavalier <u>/</u> Doucet <u>/</u> Ekey <u>DEH</u> Harrison <u>OZ</u> Jack <u>LL</u> Looney <u>DM</u> Metrejean <u>DW</u> Wolfe	
Day Operators ✓	<u>DD</u> Donatto <u>HG</u> Grace <u>JA</u> Johnson <u>XS</u> Simonson <u>TV</u> Vavasseur	
Instruments ✓	<u>/</u> Bourg <u>/</u> Burris <u>MS</u> Eunice <u>AS</u> Shanklin	

GOOD HOUSEKEEPING

Better Homes and Gardens

1. WHAT DOES ON-THE-JOB HOUSEKEEPING MEAN?
TAKING CARE OF YOUR WORK AREA, KEEPING EVERYTHING YOU NEED TO DO YOUR JOB CLOSE AT HAND AND IN GOOD CONDITION
2. WHY IS GOOD ON-THE-JOB HOUSEKEEPING AN IMPORTANT PART OF EVERYONE'S JOB?
BECAUSE IT PROMOTES THE SAFETY AND WELL BEING OF THE INDIVIDUAL AND HIS CO-WORKERS
3. WHAT ARE SOME OF THE BENEFITS OF GOOD HOUSEKEEPING?
MAKES YOUR JOB SAFER, EASIER, BETTER QUALITY, MORE FUN, WORK IS LESS TIRING, YOU HAVE MORE SPACE, IT'S MORE PROFESSIONAL, AND LESS AGGRAVATING
4. WHAT ARE SOME OF THE WAYS WE CAN ALL MAINTAIN GOOD HOUSEKEEPING IN OUR WORK AREAS?
PICKING UP, ORGANIZING AND CLEANING UP AS YOU DO YOUR JOB, DISPOSE OF SCRAP AND WASTE IN PROPER RECEPTACLES, KEEP FLOORS FREE FROM SPILLS AND LOOSE OBJECTS, KEEP AISLES, STAIRS, AND WALKWAYS CLEAR AT ALL TIMES, DON'T OVERFILL RACKS, BINS OR STORAGE AREAS, PUT THINGS AWAY WHEN YOU ARE THROUGH WITH THEM, IF YOU SMOKE, DO SO IN DESIGNATED AREAS ONLY AND USE ASHTRAYS. *you can't*
5. WHAT ARE SOME OF THE HOUSEKEEPING PROCEDURES NECESSARY IN A PLANT ENVIRONMENT?
What Tools? — CLEAN AND STORE TOOLS PROPERLY, FIX OR REPORT BROKEN TOOLS, STORE MATERIALS PROPERLY, CLEAN AND MAINTAIN MACHINES PROPERLY, KEEP YOUR WORK AREA CLEAN, MAINTAIN LIGHTING
6. BESIDES CREATING A SAFER WORK ENVIRONMENT FOR THE INDIVIDUAL, WHAT DOES GOOD HOUSEKEEPING SAY ABOUT THE COMPANY YOU WORK FOR?
IT REFLECTS QUALITY. IF YOUR WORKPLACE LOOKS SLOPPY PEOPLE WILL ASSUME THE WORK YOU DO IS SLOPPY ALSO.
7. WHAT ARE SOME SPECIFIC HOUSEKEEPING RELATED ITEMS TO BE CONSIDERED WHEN PLANNING A JOB?
INSPECT TOOLS TO MAKE SURE THEY ARE IN GOOD CONDITION, MAKE SURE YOUR WORK AREA IS CLEAN IF NOT DON'T BE ASHAMED TO PICK UP SOMETHING, DUMPSTERS (KEEP ORGANIZED, HELPS PRODUCTION DO NOT NEED TO SEPERATE) TRASH CANS- HAVE AVAILABLE AND KEEP THEM CLEAN, DON'T OVERFILL, HAVE TOOL BOXES, KEEP MATERIAL STORAGE AREA NEAT, THERE ARE EXTREME TRIPPING HAZARDS IN THESE AREAS

GOOD HOUSEKEEPING

8. WHAT HOUSEKEEPING HAZARDS SHOULD EVERYONE BE AWARE OF AFTER THE JOB IS IN PROGRESS?
TRIPPING HAZARD--LEADS, HOSES, EXTENSION CORDS, STAIRWAYS AND ACCESS WAYS. (TIE UP, RUN CLOSE TO STATIONARY OBJECTS, USE YOUR EXPERTISE)
TOOLS AND MATERIALS--PICK UP AND PUT IN THE RIGHT PLACE. DON'T LEAVE THINGS LYING AROUND.
DAMAGED TOOLS--HARNESSES, CHECK THESE VERY CLOSE
9. WHO'S RESPONSIBILITY IS IT TO MAKE SURE GOOD HOUSEKEEPING IS KEPT UP?
EVERYONE'S! DON'T PASS THE BUCK. IF YOU SEE SOMETHING OUT OF PLACE, PICK IT UP.
10. WHO SUFFERS IF GOOD HOUSEKEEPING IS NOT KEPT UP?
EVERYONE DOES. WORKERS AND COMPANY
11. WHAT ARE SOME BENEFITS YOUR COMPANY GAINS BY GOOD HOUSEKEEPING?
IMPROVES MORALE, INCREASES PRODUCTIVITY, AND REDUCES COST
12. WHAT HAPPENS WHEN EVERYONE MAKES A CONSCIENCE EFFORT TO MAINTAIN GOOD HOUSEKEEPING?
IT BECOMES HABIT-FORMING. ONCE IT'S CLEAN IT'S EASY TO KEEP CLEAN AND LOOKS DIRTY WHEN SOMETHING IS OUT OF PLACE.
13. DO YOU HAVE ANY SUGGESTIONS ABOUT HOW TO IMPROVE THE SAFETY PROCEDURES FOR YOUR JOB THROUGH GOOD HOUSEKEEPING?
NO INCORRECT ANSWER

CHLORINATED METHANE PRODUCTS COMMUNIQUE'

Review & Initial

DATE: 11-May, 1994

FROM: Gary Rizzo

SUBJECT: Its time to start working on the module review and updates for the second quarter.
I Placed a box on the book shelf in the control room with the modules and the names of the Responsible Parties. Module revision includes IPT Module, Test, Test Answers, Resources and Procedures. The information should be reviewed for accuracy with the Engineer or supervisor who is responsible for that particular area of the plant. Once the material has been reviewed and both you and the area engineer/supervisor agree with the changes, hand them back in and I will have the changes made.

This form is used to insure the attached information is communicated to the appropriate plant personnel.

INITIATOR: Place a check mark by the group(s) needing to review.

EMPLOYEE: Please initial once review is complete.

GROUP	PERSONS NEEDING TO REVIEW
Staff	☐ Haney ☐ Miles ☐ Bourne ☐ Kelley ☒ Ledoux ☐ Patterson ☒ Witt ☒ Young
Supervisors	☒ Clebert, J. ☒ Cook, J. ☒ Dugas ☒ Michel ☒ Trice ☐ Rizzo
SOS's	☒ Breaux ☒ Beiler ☒ Bickham ☒ Cook, F. ☐ Davis ☐ Grant ☒ Gravouilla ☒ Jackson ☒ Millender
OS's	☒ Armand ☒ Bishop ☒ Bourg ☒ Cavalier ☐ Doucet ☒ Ekey ☒ Harrison ☒ Jack ☒ Looney ☒ Metrejean ☒ Wolfe
Day Operators	☒ Donatto ☒ Grace ☐ Johnson ☐ Simonson ☒ Vavasseur
Instruments	☐ Bourg ☐ Burris ☐ Eunice ☐ Shanklin

CHLORINATED METHANE PRODUCTS COMMUNIQUE'

Review & Initial

DATE: 6-May, 1994

FROM: Gary Rizzo

SUBJECT: Please read the revised attached procedure, E-455 Start up and Liquid N2

This form is used to insure the attached information is communicated to the appropriate plant personnel.

INITIATOR: Place a check mark by the group(s) needing to review.

EMPLOYEE: Please initial once review is complete

GROUP	PERSONS NEEDING TO REVIEW	
Staff	☐ Haney <i>Bill</i> Miles ☐ Bourne <i>Ja</i> Kelley <i>L</i> Ledoux ☐ Patterson ☒ Witt <i>my</i> Young	
Supervisors	☒ Clebert, J. <i>JRC</i> Cook, J. <i>DEB</i> Dugas <i>A.M.</i> Michel <i>K.T.</i> Trice ☐ Rizzo ☒	
SOS's	☒ Breau <i>21</i> Beiler <i>CA</i> Bickham <i>FC</i> Cook, F. <i>CD</i> Davis <i>ca</i> Grant ☒ Gravouilla <i>RJ</i> Jackson <i>RM</i> Millender	
OS's	☒ Armand <i>198</i> Bishop <i>113</i> Bourg <i>113</i> Cavalier ☐ Doucet <i>113</i> Ekey ☒ Harrison <i>03</i> Jack <i>113</i> Looney <i>DM</i> Metrejean <i>DCW</i> Wolfe <i>113</i>	
Day Operators	☐ Donatto ☐ Grace ☐ Johnson ☐ Simonson ☐ Vavas seur	
Instruments	☐ Bourg ☐ Burris ☐ Eunice ☐ Shanklin	

CMP PROCEDURE
E-455 START UP PROCEDURE (E455SU.DOC)
PROCEDURE # 460489

PURPOSE	To ensure the safe start up of the DV-455 vent recovery system.
SCOPE	This procedure covers the line up of equipment and routine valving associated with a normal start up of the E-455 vent recovery system.
RELATED PROCEDURES	N2TRUCK.DOC -Liquid N2 tank truck offload procedure E455SD.DOC - E-455 system shutdown
DEFINITIONS	Air Liquide- Liquid nitrogen tank vendor.
SAFETY CONCERNS & EQUIPMENT	Frostbite : Line openings on any liquid nitrogen system are very hazardous because of the threat of frostbite. Additional safety items required for a liquid nitrogen line opening are: long sleeves, heavy gloves, face shield.
ENVIRONMENTAL CONCERNS	The system must be started up properly to ensure the vent recovery system will operate correctly. This system is required in order to control methanol emissions to the atmosphere.
SPECIAL CONCERNS	None.

E-455 START UP PROCEDURE (E455SU.DOC)**PROCEDURE E-455 Start Up Procedure**

The Following Items Must Be Checked (Yes) Prior To E-455 Being Started Up.

NOTE: The Only Time This Check Sheet Needs To Be Filled Out, Is If We Are Down For An Extended Period Of Time. (Supervision Approval)

Step	Action	Check
1	Have all red tag masters been cleared and tags pulled. (Outside OS/SOS)	_____
2	Does T-455 have at least 35% level in it?	_____
3	NOTE: Communicate with the Mod V Boardman to make sure control valves, instrument air, and transmitters are ready to be lined up. When the OK is given, line up the <i>items listed below. Leave the liquid N2 at T-455 manually blocked for the time being.</i>	_____
	T-455 GROUND LEVEL:	
	A. T-455 LEVEL TRANSMITTER AI(504)	_____
	B. T-455 N2 TO AO(514) MAN. B/V ON BOTTOM OF TANK	_____
	C. PAD N2 LINED UP FROM HEADER TO AO(515)	_____
	E-455 ON TOP OF DV-455	
	A. NITROGEN PAD C/V AO(515) LINED UP	_____
	B. VENT CONTROL VALVE AO(503) LINED UP	_____
	C. AI(503) E455 OUTLET PRESSURE	_____
	D. AI(514) E455 OUTLET TEMP OK?	_____
	E. AI(513) DV 455 PRESSURE (INLET TO E455)	_____
	F. AI(515) E455 INLET TEMP OK?	_____
	G. AI(512) N2 VENT TO ATMOSPHERE TEMP OK?	_____
	H. AO(514) LIQUID N2 CONTROL VALVE TO E-455	_____
	I. AIR VENT VAPOR TRAP AT LIQ N2 VALVE LINED UP	_____
	J. ENTIRE SYSTEM LINED UP AND READY TO COOL DOWN?	_____

E-455 START UP PROCEDURE (E455SU.DOC)

4 *Cool down the liquid N2 line to E-455 as per following page.*

5 All bleed valves are closed and blinded or plugged

Checklist complete: _____

Approved by: _____
(supervisor or boardman)

Date/Time: _____

Date/Time: _____

E-455 START UP PROCEDURE (E455SU.DOC)

SOS Pre-Start Up Check Sheet

The Following Items Must Be Checked Prior To Start Up.

Step	Action	Check
1	E455-Sequence 52 in Step 520. All red tag masters been cleared, control valves and instruments are in auto. System is ready for start up.	_____
2	T-455 level greater than 35%	_____
3	<i>Have OS cool down liquid N2 line and E-455</i>	_____
4	Mod V start up checklist items complete.	_____
5	E-455 Sequence 52 terminated to Step 521.	_____
6	Make sure that the following AK's and AP's have the correct setpoints. Use Dynamic Data Display (GPI option 18). Choose (9) Vent Recovery/E-455 System, then choose (4) E-455 start up set points.	
	AK's	Value/chk
	1. AK(550) - DV-455 pressure set point	2.5
	2. AK(552)- E-455 nitrogen outlet temp setpoint	-50
	3. AK(553)- E-455 process outlet temp setpoint	-25
	AP's	Value/chk
	4. AP(1200) T-455 low level alarm	25
	5. AP(1202) High E-455 DP alarm	2.5
	6. AP(1204) - high process outlet temperature	-40
	7. AP(1262) - H/H pressure	3.8
	8. AP(1212) - AP - L/L pressure	0.75
	9. AP(1217) - HLA	95

Checklist complete: _____

Approved by: _____
(supervisor)

Date/Time: _____

Date/Time: _____

E-455 START UP PROCEDURE (E455SU.DOC)**PROCEDURE****E-455 Vent System Start-Up**

Step	Action
1	Move E-455 sequence 52 to Step 520. Ensure all red tags are cleared and the system is ready for start up. T-455, liquid nitrogen tank should have an adequate level in it for start up. All control valves <i>except the liquid N2 C/V</i> should be in auto, all instruments should be in normal mode.
2	Terminate to Step 521. The OS should begin lining up the system as per the outside OS checklist.
3	<i>System cooldown. Ensure the liquid N2 b/v at T-455 is closed. Open the liquid N2 C/V in manual to 100%. The OS should then open the manual B/V at T-455 1/4 to 1/2 turn. A steady, heavy vent should be coming out of the PRV near E-455 on top of DV-455. Watch E-455 outlet temperature. When it becomes less than 0 C, manually close the liquid N2 C/V. The OS will open the manual B/V at the tank all the way. Complete the line cooldown by opening the liquid N2 C/V to 60-70% until the E-455 outlet temperature is less than -40 C.</i>
4	Complete the E-455 Start Up Check Sheet & Mod V Check Sheet. Review the AK's and AP's through the Dynamic Data Display (GPI option 18). (NOTE: The check sheets only need to be filled out if we are starting up after being down for a long duration)
5	Terminate step 521 to step 522.
6	Once the MOD enters step 522, ensure that all controllers are enabled for normal operation. AO(515) and AO(504) should control DV-455 pressure, while AO(514) works to control the temperatures around E-455 based on the pressure in DV-455

**CMP PROCEDURE
ORDERING LIQUID NITROGEN FOR T-455
PROCEDURE # 460490**

PURPOSE	To provide operator with the correct information needed to order liquid nitrogen for T-455.
SCOPE	This procedure covers the things needed to be done in order to order and receive liquid nitrogen for T-455.
RELATED PROCEDURES	E-455 start up procedure.
DEFINITIONS	Air Liquide- Vendor that supplies liquid nitrogen for CMP.
SAFETY CONCERNS & EQUIPMENT	Truck driver will use gloves and arm protection when dealing with the liquid nitrogen. The refrigerated liquid is a serious frostbite hazard.
ENVIRONMENTAL CONCERNS	Not ordering liquid in time could cause a shutdown of the system. This would be a control device out of service.
SPECIAL CONCERNS	none.

Revision # 1 .

Dow Confidential

Revision Date- 5/5/94

This procedure is valid for 24 hours from the date viewed, 5/6/94 09:44 AM

DO A 034102
(CONFIDENTIAL

ORDERING LIQUID NITROGEN FOR T-455

PROCEDURE Ordering liquid nitrogen.

Step	Action
1	When the low level alarm is recieved on T-455, a shipment of liquid nitrogen needs to be scheduled. If the tank would happen to go empty, CMP would have a control device out of service non-compliance.
2	Contact the area engineer to place an order of liquid nitrogen.
3	The engineer will contact Air Liquide. <i>For emergency contact, the local rep is Vic Crystal, phone # 685-4200. The normal contact number is 1-800-324-2855.</i>
4	48 hours notice is preferred, although emergency delivery may be made in 4-6 hours.
5	Set up a time for the arrival of the shipment. Complete purchase requisition. Air Liquide rep will be able to estimate amount (should need about <i>373 standard</i> cubic ft of N2 per % of tank increase is needed). Dow code # 1308020 is for 1 cf of liquid nitrogen from Air Liquide.
6	-ARRIVAL OF THE NITROGEN- The driver will stop at CMP to inform him of the shipment. Make a copy of the shipping order papers, they serve as the Certificate of Analysis for the N2.
7	Write a permit for the driver to offload the liquid nitrogen. <i>The permit should be co-signed by Glycol I.</i> The potential of frostbite due to expose to liquid nitrogen should be considered. Issue a radio to him (so contact may be made in the event of an emergency). Inform him that permit must returned when his work is completed. The site should be visited prior to permit issue. The driver should be accompanied by a Dow Operator.
8	Inform the ModV SOS that a truck will be offloading into T-455.
9	Truck driver will have all necessary off-loading equipment.
10	Monitor level during transfer until transfer is complete.

CHLORINATED METHANE PRODUCTS COMMUNIQUE'

Review & Initial

DATE: 5/4, 199 4

FROM: Mike Bourne

SUBJECT: Mod 5 changes to Distillation

This form is used to insure the attached information is communicated to the appropriate plant personnel.

INITIATOR: Place a check mark by the group(s) needing to review.

EMPLOYEE: Please initial once review is complete.

GROUP	PERSONS NEEDING TO REVIEW					
Staff ☒	<u>Haney</u>	<u>DCM</u> Miles	<u>MRB</u> Bourne	<u>JK</u> Kelley	<u>le</u> Ledoux	<u>Patterson</u>
	<u>Witt</u>					
Supervisors ☒	<u>Clebert</u>	<u>JRC</u> Cook, J.	<u>DRD</u> Dugas	<u>Michel</u>	<u>Rizzo</u>	<u>Sauls</u>
	<u>Trice</u>	<u>Wittmann</u>	<u>MM</u> Young			
SOS's ☒	<u>Breaux</u>	<u>Beiler</u>	<u>eg</u> Bickham	<u>FL</u> Cook, F.	<u>CD</u> Davis	<u>CR</u> Grant
	<u>Gravouilla</u>	<u>Ry</u> Jackson	<u>AM</u> Millender	<u>CARLIER</u>		
OS's ☒	<u>Armand</u>	<u>Bishop</u>	<u>Bourg</u>	<u>Cavalier</u>	<u>Doucet</u>	<u>Ekey</u>
	<u>Harrison</u>	<u>Jack</u>	<u>Looney</u>	<u>Metrejean</u>	<u>Wolfe</u>	
Day Operators ☒	<u>Donatto</u>	<u>Grace</u>	<u>Johnson</u>	<u>Simonson</u>	<u>Vavasseur</u>	
Instruments ☒	<u>Bourg</u>	<u>Burris</u>	<u>Eunice</u>	<u>Shanklin</u>		

The following list comprises the added logic to the distillation area which will be incorporated into the next Mod 5 upload scheduled for May 5th . Please look over the list and familiarize yourself with the coding if necessary.

1. **REQ(406) - T1555A LOW LEVEL.** The operator will be able to clear the alarm with DM(156). Alarm integrity is still maintained using DC()'s. The alarm graphics will reflect the DM() addition.
2. **REQ(414) - T1555B LOW LEVEL.** The operator will be able to clear the alarm with DM(187). Alarm integrity is still maintained using DC()'s. The alarm graphics will reflect the DM() addition.
3. Coding was added to EC-1540 C&D finfans which allows the fans to drop out if the master controller is running at a low value. The code has been modified to ramp down the outputs to C&D once they are de energized.
4. The enable for C-1500's feed control valve was rewritten to look at one of the P-1450's running. The valve will become disabled and closed given both pumps are down.
5. C-1500's overhead HCL AOV selection AK(881) will now be zeroed by a one second blip given the Master Distillation sequence enters STEP(263) R-1300 DOWN. This feature will allow operations' to send product forward while in STEP(263) without having to place DO's in manual.
6. C-1510 will now have an overheads M3 analyzer controller capable of resetting a reflux to feed ratio. In addition, a function generator will also produce a ratio to be used in conjunction with the AIC. The fxn generator calculates a R/F (reflux-to-feed) ratio as a dependent on column pressure and the desired M2/M1 ratio. The fxn generator and AIC work in unison to produce a summed ratio which is used to calculate the needed reflux flow. Flexibility exists such that the fxn generator or AIC can be enabled or disabled by setting the appropriate DK's. For a further explanation see the expanded glossary for AO(136). In order for the fxn generator to produce correct R/F numbers, operations' will need to start using the M2/M1 controller for C-1510's overhead temperature controller. AK(846) is the M2/M1 setpoint for this controller.

The analyzer control scheme resides on the PICSVAX. The control overview diagram has been modified to suite the new controller. One point needs to be emphasized, the AIC setpoint is entered on the Mod as AK(100). No set points

will be entered on the PICSVAX machine except ones set by an engineer or designee.

GPI screens have been built to emphasize both the control block diagram and the column ratios.

REQ(164) - C-1510 HIGH M3 IN THE OH's will be added to the alarm list.

REQ(193) - C-1510 OH M3 ANALYZER SIGNAL FAILURE - STOP ANAL CONTROL - will be added and will stop the analyzer contribution to the controller and retain the last good setpoint.

7. All column DP alarms have been modified to suite low pressure situations. Alarm grids will be updated to reflect these changes.

8. C-1540's tray temperature will be controlled by a new scheme which uses the reflux as the manipulated variable in conjunction with a reflux-to-feed ratio. The overheads' M4 analyzer will be capable of setting the temperature setpoint by which to control the selected tray temperature. Given a change in temperature setpoint, the TIC will alter a reflux-to-feed ratio, which uses a lag function to characterize the feed flow, and thus the reflux flow.

The steam is going to be manipulated by a steam-to-feed ratio set by operations'. The feed is also characterized with a lag module.

The analyzer control scheme resides on the PICSVAX. The control overview diagram has been modified to suite the new controller. The AIC setpoint is entered on the Mod as AK(312). No set points will be entered on the PICSVAX machine except ones set by an engineer or designee.

The old DK(500) functionality still exists and follows as:

	DK(500)=0	DK(500)=1
column tray temp manipulates	bottoms' valve	reflux setpoint
column level manipulates	steam setpoint	bottoms' valve

GPI screens have been built to emphasize both the control block diagram and the column ratios.

9. PSA1750 will have a high DP alarm written for the beds whenever the regen pressure on a given bed is different from the suction pressure on the vacuum pump. This correction is a follow up item to complete due to the PSA air permit exceedance experienced.

10. A variable ramp rate has been added to C-1500's feed flow setpoint. The variable differs given WARN(111) - C-1500 HI-HI LEVEL or WARN(143) - C-1510 HI-HI LEVEL become true or STEP(263) - R-1300 SHUTDOWN step is entered in the Master Distillation sequence. The two alarms will use AP(80) as the constant and AP(1584) for STEP(263).