

VCM PLANT
JUNE 1984 SHUTDOWN

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"Think Safety and Apply It"

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INTRODUCTION

The plant will be partially shutdown to make maintenance repairs and clean R-201B. Our objective during the shutdown is to allow for a timely startup, while at the same time maximizing our maintenance effort. R-201A will continue to run and HCl produced will be transferred to MeCl and/or condensed to T-204. Oxy will be shutdown and purged to make repairs to BL-307. Block I will remain on line.

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SHUTDOWN TIMING

6/4	1800	Pick HCl rate up to MeCl to 100 T/D. Cut R-101 to 400 T/D.
	2100	Start cutting R-201B back, let vaporizers take up difference in HCl and lower T-204 level.
	2100	Take split HCl off line.
	2300	Start cutting oxy back and continue to cut R-201B back.
6/5	0100	Cut R-201B off with oxy @ 18,000-20,000 #/hr. HCl.
	0300	Clear liquid feed lines R-201B.
	0600	When instrument people are in position to check modicon, shut oxy down.
	0615	Shut BL-307 down.
	0630	Switch to maintenance N2 on oxy.
	0700	R-201B and BL-307 permits ready.
	0730	Lock out BL-307.
	0800	Wash BL-501.
	1100	Decoke R-201B.
	1200	Cleaning H-201B.
	1600	Backflush H-202's.
6/6	0700	Reinstall H-201B. Decoke complete.
	1200	Helium check H-201B.
	1500	Drying H-201B
6/7	0700	BL-307 ready and pull blinds H-201B.
	1000	Startup oxy unit.
	1200	Startup R201B.

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SHUTDOWN LIST
JUNE 1984

Oxy

1. BL-307 work
2. O₂ valve battery limits
3. CARC-301 revisions
4. C-103 level revisions
5. Bleed valve switch
6. Tune FIC-302
7. Upstream Block FIC-312
8. Changeout K2 relay
9. Clean motor starter
10. Change solenoids on coupling valves

Cracking

1. Decoke R-201B
2. Clean H-201B
3. Backflush H-202's

Other

1. BL-301
2. MeCl vent tie-in
3. Wash turbine (BL-501)

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Operations Department

Work Description

- 1) Back flush H-202's.
- 2) Decoke R-201B.
- 3) Condensate wash BL-501 on line. Engineers to conduct procedure, close working with the Block II operators required.
- 4) Assist in oxy shutdown to determine if there are any instrument or electrical problems in the shutdown system.
- 5) Clear vent line off of H-309 for MeCl unit vent tie-in.

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Maintenance Department

Work Description

- 1) Overhaul BL-307 compressor gearbox. Change out or check all bearings. Needs to be N₂ purged and rolled out.
- 2) Tune or pull FIC-302 to correct control problem.
- 3) Repair upstream block valve on FRC-320. Purge split HCl line out.
- 4) Tripalarm work:
 - a. Clean BL-307 motor starter.
 - b. Change the K-2 relay.
- 5) Modicon work:
 - a. Make revisions to C-103 bottoms level to run in automatic.
 - b. Changeout solenoids on oxy coupling valves.
 - c. Revise modicon bypass on oxygen valve @ the battery limits.
 - d. Revise modicon to allow CARC-301 block valve to open on XV-309 reset.
 - e. Change switch on bleed valve @ SM-301.
- 6) Make tie-in on 2" line off H-309 to the D.C. header. Purge line and double block. Bleed pressure off.
- 7) Wash BL-501 turbine.
 - a. Pull blind @ battery limits.
 - b. Disconnect condensate union @ BL-501.
 - c. Install temperature recorder.
- 8) Decoke R-201B.
- 9) Pull H-201B and install spare.

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EQUIPMENT STATUS

R-201B	Down and decoked
R-201A	Running
H-201B	Down to be cleaned
H-201A	On line
C-201	On line
C-202	On line
C-203	On line
R-101	On line (@ 400 T/D)
Wash System	On line
EDC Purification	On line (R-103 down)
Oxy	Down, depressured and N ₂ purged. Reactors need to be kept hot during the outage.
BL-301	On line for decoke
BL-302	Down as a spare
BL-501	On line and washed

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Notes for Operations and Maintenance

1. T-204 level will have to be watched closely and MeCl feed started Monday afternoon.
2. Watch for pH problems at effluent box.
3. Operation of P-502's will require attention due to oxy outage.
4. All jobs involved with EDC lines will require fresh air.

"GOOD ATTITUDES ARE A KEY TO SAFETY"

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Oxy Shutdown and R-201 Shutdown

1. Start HCl to MeCl Monday evening.
2. Take split HCl out of service.
3. Trim rates on R-201B and hold R-201A up at rates.
4. Drop R-201B off line as oxy rates are trimmed back.
5. When oxy rates are between 18,000-21,000 #/hr. (using vaporizers as needed) pull the emergency stop on oxy. Increase cooling C-202 to condense all HCl produced.
6. Pull shutdown switch, BL-307.
7. Shutdown the BL-305 compressor that's on line.
8. Let oxy N2 purge to C-500. Note: Switch mixers over to maintenance nitrogen as soon as possible.
9. Complete post shutdown checklist (i.e. block in feeds, etc.).
10. Purge gas system should be depressured to 20-25# and blocked in.
11. Start injection steam in to hold reactors at 200°C.
12. Secure all oxy heaters. Leave water on all karbates.
13. Empty all process vessels in oxy of liquid to S-309→T-103.*
14. Cut R-201A rates to 3-4 units @ 480°C.
15. Purge and empty H-201B.
16. Purge and empty R-201B.
17. Empty lines which require maintenance work.

*Will need instrumentman to cheat HIC-311 closed to pressure up S-316 to 20# in order to empty it.

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BL-501 TURBINE ONSTREAM
WASH PROCEDURE

Refer to Drawing No. VCM-180-1

- * according to turbine should be able to wash our now cause suggest isn't bad if turbine up*
Exxo
- 1) Remove the blind on the downstream side of the 1½" Globe valve and open the 1½" block valve to line up Boiler Feed Water (BFW) from the LCCP Steam Plant to the 1½" Globe valve on line 1½"-CH-1-P-D2-6.
 - 2) Keeping the 1½" Globe valve closed, fully open the 1" block valve on line 1"-CH-2-P-D2-6.
 - 3) Monitor the temperature of the steam at the inlet of the BL-501 turbine with the local temperature recorder used with the off-line wash system. The temperature recorder will be connected to the thermocouple on the turbine's inlet steam line.
 - 4) Have the Steam Plant raise the BFW pressure to 875 psig.
 - 5) Slowly begin to open the 1½" Globe valve. This should be done such that there is no more than a 25°F (14°C) drop in steam temperature every 15 minutes. As the flow is increased open one at a time the 1" block valves on lines 1"-CH-3-P-D2-6 and 1"-CH-4-P-D2-6. Do not allow the steam temperature to drop below 515°F (268°C) which is 190°F of superheat. The radial vibration and axial movement should be monitored at all times during the wash. The appropriate monitors are located in the control room.
 - 6) Upon reaching the minimum steam temperature (515°F or 268°C) the conductivity of the outlet steam is checked. In order to check the conductivity a sample cooler will be connected to the drain valve on the outlet 150 psig steam line. The steam samples will be condensed and the conductivity checked by the lab. This is to be done repeatedly until the conductivity is minimal and has shown no change, the wash is then complete.
 - 7) Carefully open the condensate drain lines attached to the turbine's casing to dump any condensate that has accumulated.
 - 8) Close the condensate drain lines and increase the steam temperature by no more than 25°F every 15 minutes by gradually closing the globe valve.
 - 9) Following the complete closing of the globe valve close the 1½" block valve on 1½"-CH-1-P-D2-6 and the 1" block valves on 1"-CH-2-P-D2-6, 1"-CH-3-P-D2-6 and 1"-CH-4-P-D2-6.
 - 10) Have the Steam Plant lower the BFW pressure back to normal.
 - 11) Slowly drain the wash line of BFW upstream and downstream of the globe valve and install the blind on the downstream side of the 1½" globe valve. When draining the wash line care must be taken due to the high temperature and pressure of the BFW.