

MONSANTO COMPANY

Texas City, Texas

Date : February 27, 1967

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To : W. R. Nisbet (2)

Subject: Acetylene - AN - VCM - VAM - Methanol Monthly Summary
February, 1967

O P E R A T I N G C O M M E N T S

Oxygen production was 18,780 tons (102% of rated capacity and 99% of schedule) with the plant forward 100% of the time. Production was limited primarily by capacity of the low pressure tower. Oxygen recovery averaged 86%.

The 17B3 supercharger has continued in operation all month without incident. An evaluation of the air compression system, with 17B3 in operation, is presently being carried out by the P. T. Department. The blower will take a short shutdown for minor corrections and inspection about March 1.

Carbide oxygen purchase was 3,670 tons (163% of schedule). The high February purchase rate virtually eliminated the deficit that accrued in January.

Carbide nitrogen receipts were 16,160 MCF in February.

Acetylene production was 8.53 M pounds (102% of rated capacity and 104% of schedule). Production was limited by users demand with demand set to optimize conditions in the West Plant Complex. The plant was forward 100% of the time and there was no off gas synthesis of Department 31.

CBY 1113218

RSV0032944
RSV0032044

The current cokeless burner block, which is installed in 18H3-6, has now been in service for ten weeks and continues to give satisfactory performance. No coke knocking has been done since February 15 and there has been no deterioration of performance to date. Another cokeless burner block, of slightly modified design, has been fabricated and is scheduled to be installed on February 28. The current model will be removed from service at that time. The new burner block is designed to improve performance even further and it is being designated as the first production model cokeless burner block.

The evaluation of Chocolate Bayou's resin oil, as a substitute for diesel oil in the bag filters, has been dropped by P. T. Department. The entire supply of the material has recently been sold at a value that makes it unattractive for our purposes.

No Carbide acetylene was purchased in February.

Waste disposal operations were satisfactory all month. The natural gas jumpover line was placed in service this month. The pressure controllers have operated satisfactorily in Department 24 but the resulting low back pressure on the Department 20 vent gas line has caused unstable operation of the jet compressor which results in excessive use of natural gas and frequent flaring in Department 20. Thus, there has been no net saving of natural gas yet. We hope to correct this situation in the near future.

The burning of Chocolate Bayou residual fuel mixture in the 24H1 incinerator continues on a temporary basis.

HCN production was 4.4 $\bar{M}$ pounds (70% of rated capacity and 105% of schedule). Rates were controlled by HCN usage. All requirements were met with only two reactors on stream.

There were no tripouts, flaring of reactors, or shutdowns during the month.

Obtaining an accurate measure of performance (yield tests) for the individual reactors continues to be the major problem in the HCN plant. No cause for the trouble has been found to date.

The performance of the 12-layer gauze in the 19R1-2 appears to be good, but unreliable yield tests prevent an accurate evaluation.

CBY 1113219

RSV0032945

Finely divided solids in pipeline ammonia continue to cause problems. Efforts by both Monsanto and Amoco have not pinpointed the source as yet.

Pure AN production was 7.6 $\bar{M}$ pounds (70% of design and 102% of schedule). Rates were set to balance crude production throughout the month. No serious equipment or process limitation existed. AN product quality was excellent for the most part except for short periods of high HCN caused by erratic pH control. A special investigation team was formed to concentrate on the MVK removal pH control system. Installation of the new floor in the pure storage tank (20T46-2) was completed and the tank returned to service.

Crude AN production was 7.3 $\bar{M}$ pounds (68% of rated capacity and 97% of schedule). Approximately 520,000 pounds of unused C_2H_2 capacity occurred during the month. All five reactors were kept on stream during the month with C_2H_2 concentration in the cycle gas system being controlled (to some extent) by catalyst level in the reactors. This method of operation was started about mid-month in January, has greater stabilized reactor control, and appears to be improving yields of raw materials. Materials handling problems around the catalyst system were significantly reduced again this month with the special day operator for catalyst handling. On January 30, the crude unit was shut down for approximately one hour when the C_2H_2 supply shut-off button was inadvertently pressed in VAM during a flash fire in that unit. The installation of the new speed controls on the cycle gas compressors was completed.

Acetaldehyde production was 510 M pounds, which was slightly below standard. This resulted from a deliberate attempt to improve reactor yields on C_2H_2 and HCN by decreasing catalyst acidity. Five tank car shipments were made to Carbide during the month.

TBA production was 295,000 pounds (77% of rated capacity and 137% of schedule).

The plant was shut down the first 9-1/2 days of the month for inventory adjustment, but has operated at maximum rates since startup.

CBY 1113220

RSV0032946

The hydrolyzer waste surge system is now in service and is operating satisfactorily except for minor problems.

Lactonitrile production was 850,000 pounds (102% of design for synthesis and recovery operation). LN inventory was increased from 55,000 gallons to 62,000 gallons during the month. Poor yields in the LN stripper column (20D28) and excessive salting in the product column (20D29) resulted in overall poor LN recoveries.

VCM production was 14.2 M pounds (117.5% of rated capacity and 106.3% of schedule). (This set a new daily average production record for a month of 507 M lbs./day. The previous record of 484 M lbs./day was set in December, 1966.) Rates were limited by demand.

Quality control was excellent. One VCM rundown (200 M lbs.) showed 1.26 ppm HCl on one sample and <.1 ppm on 5 resamples. This was loaded directly to a tank car.

Department 23 EDC production was 13.7 M pounds (109.6% of rated capacity and 100.9% of schedule). Rates were adjusted as required by Department 22 requirements.

Department 26 EDC production was 1.3 M pounds (52.0% of rated capacity and 94.2% of schedule).

VAM production was approximately 5.5 M pounds (101% of rated capacity and 101% of schedule). The unit operated at maximum rates (210+ M pounds VAM/day) for only 18 days during the month. The light ends column and reboiler continued to foul rapidly (after a reboiler switch on 1-31-67) the first week of February; no fouling has been detected since cleaning on 2-9 and 2-10-67. Primary rate limitations were: (1) a three day cutback (including 34 hours of one reactor operation) to clean 34D3-E16, and (2) a five day cutback during the 22R3 catalyst change (no C₂H₂ from VCM). The unit operated for 27 hours at one-reactor conditions during the latter period in order to replace the 34C2-1 motor bearings.

The catalyst in 34R1-2 is plugging rapidly and is scheduled to be replaced in March. Quality continues good, with UV transmission excellent the first half of the month.

CBY 1113221

RSV0032947

Methanol production was approximately 2.3 M gallons (106% of rated capacity and 104% of schedule). The department operated continuously during the month. The 31R1-1 was down 16-1/3 hours on February 2 to repair some leaks on the 31S4-1 methanol separator.

The Linde regenerator pressure differentials remained fairly constant during the month. Linde yield averaged 75.7% during February. The raw gas end point temperatures averaged 147°C. The 31E31 Δt increased steadily during the month from about 9°C to 13°C. The 31E25 Δp has increased to 6 psig. At the present rate of increase, the 31E25 will be fouled sufficiently to necessitate a defrost during early March.

Uncoordinated downtime on the synthesis gas compressors amounted to 23 hours during February. All of this downtime was due to miscellaneous valve repairs on all three compressors, except for 4-2/3 hours of downtime which was due to replacing scavenger on strips on the 31C5-1.

On February 2, leaks on the 31S4-1 increased sufficiently to necessitate repairs. The 31R1-1 was shut down 15-1/3 hours for the repairs.

S A F E T Y & H O U S E K E E P I N G

Department 17-18-24 safety meeting for February was presented by J. B. Jackson on the subject of "Acetylene Safety." There was 78% attendance of operating personnel.

The monthly safety meeting for Department 19-20-25-27 was held by J. E. Cooper. The subject of the meeting was "Fire Hazards in Area." Approximately 95% of the operators were covered.

The VCM safety meeting was a review of 1966 safety performance, presented by Ray Rosenberg.

Department 34 safety meetings are being given by Ray Rosenberg and consists of a review of 1966 safety and production performance.

There was one serious injury in VAM in February. During the hot condensate flush of 34D3, a pipefitter's goggles fogged up, causing him to step in front of the condensate drain, scalding his ankle.

Department 31 safety meeting was a talk on the hazards of liquid nitrogen and oxygen. It was conducted by T. A. Harper and attended by 90% of the operating personnel.

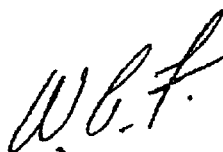
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P E R S O N N E L

All supervisors in Department 20, and T. E. Harper and Mike Hughes in Department 31, attended the National AIChE convention in Houston.

P. E. Brubaker attended a Texas Society of Professional Engineering function in Houston.



W. C. Fuller

lw

2-27-67

CBY 1113223

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