Air Products and Chemicals INC.

ESCAMBIA PLANT

INTEROFFICE MEMORANDUM

To: Mr. R. E. Davis

Date: March 6, 1972

Copies:

From: R. W. Beech

Re: PVC Monthly Report - February, 1972

SUMMARY

Production for the month was 4769M pounds versus a budget of 4765 M pounds and a forecast on February 18 of 4800 M pounds. Off-grade, tails and sweeps totaled 414 M pounds, 8.0% versus a budget of 5.2%. Contamination, fisheyes and bulk density were causes of off-grade. A total of 602 charges were made, an average of 20.7 per day.

The total variance for PVC is $6300 favorable broken down as follows:

1.	PVC Bulk	(800)
2.	PVC Bagging	5,900
3.	PVC L&S	1,200

The forecast for PVC bulk on January 20 was $4800 favorable. Major factors affecting PVC bulk variance are listed below:

Raw Materials	
Vinyl Chloride	(9,900)
Vinyl Acetate	1,400
Process Chemicals	-
By-Product Credit	8,160
Royalties	-
Process Costs	
Volume	(8,150)
Process Spending	14,280
Machine Hours	(7,300)

PVC-2185 was $5140 unfavorable on volume caused by 175M pounds of off-grade and PVC-1200 was $1020 unfavorable on volume caused by production slowdowns for contamination checks and cleanouts to assure Phillips grade production.

SUMMARY (continued)

Production for March is forecast at 4925 M pounds with a variance of $9240 favorable.

Production in February was 4769M pounds versus a budget of 4760 M pounds. This production was achieved mainly through production of fast cycle resin types as indicated by the unfavorable volume variance above. Total hours budgeted for those resins produced was 7253 versus an actual of 7656. We averaged 20.7 batches per day.

An electric motor agitator drive was installed on the stainless steel reactor to drive the agitator at a constant 125 rpm. Performance on Pearls^{R} has improved markedly. Dr. Wiley Daniels of R&D was down to supervise a series of runs in the stainless reactor on PVC-2200. The results of this run and latest data is summarized in a report to R. W. Beech from W. C. Wilde, "PVC-2200 Production in the Stainless Steel Reactor", dated February 25, 1972.

The solvent recovery and dehydration units did not operate this month. Mechanical revisions should be complete March 3 with startup on March 6. Reactors 1, 10, and 11 continue to be the only ones chemically cleaned.

We are encountering considerable difficulty in producing PVC-1200 and 1250 to meet the wet contamination test of Phillips Film. This is causing delays and lost production time. For example, PVC 1200 was $1020 unfavorable on volume in February. The writer made a visit to Calvert City concering this problem. The purpose was to study their operation and exchange information which might lead to improved performance on Phillips grade material.

PVC - BAGGING

A total of 3077 M pounds were bagged at a cost of $14,410. Variance is $5,900 favorable as follows:

Volume	$7,968
Spending	(2,065)

Greater than budget bagging was caused by the types produced in February.

STATISTICS

	February		Year to Date	
	Actual	Budget	Actual	Budget
Prime Production				
Homopolymer	4,029	4,128	21,637	21,609
Copolymer	740	637	3,472	3,299
Total	4,769	4,765	25,109	24,908
Off-Grade				
Homopolymer	229		500	
Copolymer	36		288	
Tails	123		585	
Sweeps	10		44	
Total	414	261	1,417	1,364
Total Production	5,201	5,026	26,526	26,272
Off-Grade, % Total Prod.	8.0	5.2	5.3	5.2
Bulk Prod., % Prime	43.7	-	54.1	-
VCM Efficiency	94.6	94.8	94.6	94.8
Reactor Availability	84.5	88.5	85.1	88.5
Production, #/gal.yr.	1263	1258	1264	1258

Off-Grade Analysis

Type	Lot No.	Pounds	Reasons
2225	8655	22,550	Fisheyes.
2160	8665	6,000	Screens.
2185	8667	36,000	Contamination.
2185	8669	18,000	Contamination.
2185	8670	52,600	Bulk Density.
2185	8672	40,000	Bulk Density.
2185	8674	28,650	Fisheyes.
1225	8727	32,000	Contamination.
6180	8755	36,000	Contamination.

Production Sequence

North Line	Batches	South Line	Batches
1225	30	6180	88
1200	25	2185	29
2225	4	8217	4
2250	30	1225	39
2200	20	1230P	53

Production Sequence (cont'd)

North Line	Batches	South Line	Batches
1200	45	1225	48
2200	44	2160	9
2250	20	6180	14
2200	69		
2225	5		
1200	20		

Downtime Analysis

	February		Year to Date	
	Hours	%	Hours	%
Enter and Clean Reactors	371	4.8	1937	4.8
H.P. Water Cleaning	165	2.2	720	1.8
Plugged Drop Valves	23	0.3	168	0.4
Changing Types	128	1.7	449	1.1
Low Drying Rates	26	0.3	108	0.3
Mixing Solutions	7	0.1	81	0.2
Behind on Recovery	48	0.6	503	1.3
Hyd. Motor Maint.	13	0.2	78	0.2
Scheduling Charges	205	2.7	985	2.4
Miscellaneous	198	2.6	978	2.4
	1184	15.5	6007	14.9

Production Summary (Prime Only)

Type	February	January	Year to Date
1185	-	-	48
1200	674	246	1,330
1225	1,028	774	4,371
1230P	597	895	4,908
1250	-	646	1,061
2160	96	159	661
2185	71	-	668
2200	1,094	1,075	5,510
2225	48	291	668
2250	385	377	1,955
3185	-	-	339
6180	740	689	3,472
8217	36	-	120

MAINTENANCE

1. Compressors
   (a) Replaced second stage valves in north recovery compressor.

   (b) Adjusted cross-head on north compressor to stop knock.

   (c) Repacked shaft seal on south compressor.

   (d) Adjusted piston rod nut on south compressor to stop knock.

   (e) Changed out valves in south compressor.

   (f) Repaired loose nut on end of piston rod on south compressor.

2. Repaired overspeed trip on hydraulic oil pump steam turbine.

3. Installed electric motor agitator drive on #10 reactor.

4. Replaced automatic steam valve on the north stripper.

5. Replaced steam sparger on #11 reactor.

6. Changed out motor and some parts in the starting gear on the north centrifuge.

DISCUSSION

The RFE for the 40 psig steam line has been approved. This RFE was revised and economics calculated on the difference of high pressure steam at standard cost and 40 psig steam at fuel value. On this basis the project shows an ROI of 30.3% and a payout of 1.64 years. Completion is expected by April 1, 1972.

A check on noise levels in the PVC Area indicated real improvements have been made in the area north of the reactor building. Previous readings of 113 - 115 decibels have dropped to 91 decibels. We have rerouted the jet exhaust through the roof on two jets and installed a muffler on the third jet.

SHORT-RANGE OPERATIONAL PLANS

1. Send out inquiry for resin post blending.
2. Submit request to engineering for estimate to recycle off-grade.
3. Prepare plans and sketches for addition of one reactor and submit to Engineering for an estimate.
4. Prepare RFE to recycle effluent of Foxtrot pond to cooling tower at nitric acid.

LONG-RANGE OPERATIONAL PLANS

1. Submit RFE for an additional reactor at Pace.
2. Work with the PCC to reach a point where general purpose resins at Pace and Calvert are produced using the same recipe within mechanical limitations.
3. Submit RFE for hot water charging of reactors.

R W. Beech

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Personnel