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To: R. W. Seymour

From: C. J. McDonald
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VISTA

Interoffice Communication

Subject: Fiscal 1989 VCM Efficiency

It is recommended that the VCM efficiency budget be increased to 1.014 for fiscal 1989 as compared to 1.00756 budgeted in fiscal 1988. The YTD F1988 efficiency is 1.014 and is the result of the measurement capability of the system.

The rationales for the increase in VCM efficiency are:

- Continuous monitors measure all areas of the plant to ppm levels. There has been no increase in VCM emission.
- Resin usage in compound/dryblend is estimated, not measured. Compound/dryblend production is increasing.
- VCM railcar weights account for a 0.006 efficiency penalty.

The Aberdeen vinyl unit is absorbing all the VCM/PVC measurement system deviations and should therefore be budgeted accordingly.

Vinyl Area VCM Losses

VCM emissions are not the cause of rising VCM efficiencies. Major sources of VCM loss in the Vinyl Unit are:

1. Leaks
2. Reactor opening losses
3. Slurry residual VCM

Leaks are monitored by continuous gas chromatograph monitors and an annual leak survey. Any leaks the monitors pick up are immediately located and corrected. The annual leak survey has shown reduced emissions each year since 1985.

Reactor opening losses and slurry residual VCM have also been reduced. 1

Compound/Dryblend (C/D) Production

The Vinyl Unit VCM efficiency has deteriorated since 1985 because of an increase in C/D production. Table I shows the relationship of VCM efficiency and C/D production; as C/D production has steadily increased the VCM comsumption has shown the same pattern.

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Figure I shows monthly VCM efficiencies over the same period.

Resin consumption in the C/D units is a calculated number. The resin transferred to C/D is not measured because there is no direct measurement system/device to do so. Silo outages cannot be used because the transfers to/from the resin silos are continuous. The resin comsumption charged to C/D is based on finished C/D production and is a calculated number. This situation is unique to the Aberdeen Vinyl Unit.

Railcar Weights

The Vinyl Unit incurs a 0.006 efficiency penalty from weighing VCM and PVC resin railcars. This is a real cost to Vista in either VCM freight costs or undercharging customers for PVC shipped in railcars.

Figure 2 compares VCM railcar weights as we are billed (KCS freight weight) to the weights obtained from the Aberdeen scales.

The graph shows that the scale differences are consistent and that the KCS weight is always higher. The Aberdeen railcar scales are certified quarterly by an outside scale calibration company to be within 0.1% of actual weight. The KCS weights are certified to be ±1%.

Until the railcar weight system is improved the best possible efficiency is 1.006 pounds VCM per pound PVC resin. The data shows the KCS freight weights are over stated, but within the allowance for the railroad.

For details on railcar weights see the attached memo, Appendix II.

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In summary, the Aberdeen Vinyl Plant carries the load of losses throughout the system. Until capital is spent to improve the measurement systems, the budget VCM efficiency should be raised to reflect this.

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cc: PJK, VEM, JEL, DF

1) IOC, "VCM Efficiencies", D. A. Doherty to P. J. Kober, May 9, 1988. Attached as appendix II.

Fiscal 1989 VCM Efficiency - continued

8/18/88

TABLE 1 Compound/Dryblend Production vs. VCM Efficiency

Fiscal Yr	Total (MM Pounds)	Compound (MM Pounds)	Dryblend (MM Pounds)	VCM Efficiency
1985	108.1	55.9	52.2	1.00311
1986	119.5	65.1	54.4	1.00367
1987	136.4	80.3	56.1	1.00933
1988 through June	117.2	67.2	50.0	
1988 Annualized	156.3	89.6	66.6	1.01425