

Monsanto

FROM (NAME & LOCATION) R. M. McCutchan, Krummrich

DATE February 4, 1971

SUBJECT CEA 2417 - Aroclor Column
Objectives and Key Premises

REFERENCE Memo on Same Subject, 12/10/70

TO

cc P. B. Benignus
V. Brawley/T. Carrico
C. Buckley
B. W. Corlew
W. C. Engman/W. Krull
R. M. Kountz
W. B. Papageorge
E. M. Potter/W. E. Gordon
A. L. Rasmussen
W. R. Richard

Messrs.

R. H. Munch/D. R. Cova - So. 2nd
A. J. Heinze - G.O.
J. R. Savage - G.O.
N. B. Wolk - G.O.

Attached are three lists of objectives and premises.
These have been revised following their review on
12/21/70.

- I. CEA 2417 (Aroclor column) Objectives to be demonstrated.
- II. Key Design Premises.
- III. Operational Premises (Dept. 246 - W.G.K.).

RM McCutchan

R. M. McCutchan

/gjs

attachments

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Messrs. R. H. Munch/D. R. Cova, et al
CEA 2417 - Aroclor Column
Objectives and Key Premises

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W.G.K.

I. CEA 2417 OBJECTIVES

The following objectives will be demonstrated:

1. Meet the CEA 2417 time schedule, start-up on 6/15/71.
2. Stay within tentative budgets on construction and start-up costs:

CEA 2417 Capital	\$820M
CEA 2417 Expense	75M
Start-Up Expense	100M
3. Demonstrate design capacity for MCS-1016:

50M lbs./year - 10% forecut
55M lbs./year - no forecut
4. Meet specification qualities on all products.
Those affected by CEA 2417 are:
 - a. MCS-1016
 - b. Aroclor 1254
 - c. Aroclor 1260
 - d. Aroclor 1221
5. No increase in PCB's leaving Dept. 246 via sewers, and no more than 1.0 lbs./day additional to atmosphere.
6. No significant change in department biphenyl yield.

II. KEY DESIGN PREMISES

1. Any remaining phthalic anhydride in column can be flushed out in initial start-up.
2. Volumetric control is adequate for determining:
 - a. end of forecut
 - b. change in reflux ratio
 - c. end of forward flow

Volume control within 250 gal. is necessary on the above determinations and can be achieved.
3. Still pot pressure can be controlled such that the furnace outlet temperature will be a maximum of 300°C, and the temperature differential on the furnace a maximum of 10°C.
4. Still pot bottoms will be 50% Cl₂ or less.
5. The C. B. 5+ level will not exceed 0.4% in the finished MCS-1016.
6. The forecut will re-enter the continuous chlorination system at a point for maximum operational stability.
7. PCB discharge to the atmosphere will be an estimated 1.0#/day or less from the vacuum jet. There will be no significant PCB loss to the sewer from this project, and none from the vacuum jet. All sewers will pass through a settling basin.
8. The severity of potential hazards in Dept. 246 will not be increased by CEA 2417.
9. Stainless steel is a suitable material of construction for the Aroclor fractionating column.
10. W.G.K. will be the only MCS-1016 supplier and will be reliable.

III. OPERATIONAL PREMISES

1. Chlorine and biphenyl will be available in adequate quantities and proper quality.
2. W.G.K. will produce MCS-1016; Aroclors 1232, 1242, 1248, 1254, 1260, and 1221; blends Inerteen PFO, Inerteen 70/30, Inerteen 54201 CM, Pyranol A13B3B, Therminol FR-O, and FR-Low Temp. (or their equivalent by other names); Therminol FR-1, and MCS-1023.
3. W.G.K. will not produce Aroclor 1262, Therminol FR-I or FR-3, or Pydrauls after Antwerp is in Pydraul operation.
4. W.G.K. will rework reclaimable scrap Aroclors or blends.
5. Therminol FR-1 will utilize MCS-1016 and Inerteen 54201 CM will use Aroclor 1242.
6. The capacity for MCS-1016 will be 50M #/yr., assuming a 10% forecut. This provides a surge capacity of about 30% over expected 1971 demand.
7. The capacity for continuously chlorinated Aroclor 1142 (crude) will be approximately 54M #/yr. This provides a surge capacity of 6-8% over expected 1971 demand.
8. The sales and use forecast used in designing this project is:

	1971	
Aroclor 1221	2.3	M
1232	0.1	(approx.)
1242/MCS	40.3	(about 5.0M
1016		of 1242)
1248	1.4	
1254	8.4	
1260	2.7	

III. OPERATIONAL PREMISES (cont'd.)

9. Dept. 246 will have the following delivery capability (Bulk):

Necessary Lead Time

MCS-1016 & FR-1	Anytime
Aroclor 1254	1 day
Aroclor 1260	2 days
Aroclor 1232	10 days
Inerteen 70/30	Anytime (assuming installation of 70/30 tank)
All other blends	3 days - 80% confidence 5 days - 95% confidence

Aroclor 1221 and 1242 2 days

When possible cars will be loaded prior to the receipt of an order.

10. All products will be available in drums and tank cars. Commercial trailers can be loaded with non-electrical grade products. Electrical grade products can be loaded into trailers reserved for this service.
11. MCS-1016 column bottoms will be distilled and further chlorinated to Aroclor 1254 or 1260. If there is an excess of still bottoms; it will be incinerated. If more 1254 or 1260 is needed, it will be batch chlorinated from biphenyl.
12. Off-gas condensate will be further chlorinated to Aroclor 1254.
13. The operation of the Aroclor incinerator will not be an integral part of the Aroclor production department.
14. There can be blending of finished lots of MCS-1016 as long as each lot is a complete batch distillation.
15. Construction and tie-in of this project will not interrupt normal production, other than brief shut-downs for piping tie-ins (8-24 hrs.).
16. Customer acceptance of MCS-1016 will be such that there will not be parallel production of MCS-1016 and Aroclor 1242 for capacitor use.