

Monsanto

FROM (NAME & LOCATION) R. W. Peterson - General Offices

DATE August 9, 1968

SUBJECT CEA 1430 - Expand Aroclors - Anniston
Porocell Columns - Design Premises
#1

REFERENCE

TO : W. F. Taffee
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In order to be sure that we understand the suggestions by the Plant for the Porocell Column Variance, and that you understand CED proposals for executing this work, I am setting forth some premises for your approval. Attached are copies of Flow Diagrams D30 and D32 compatible with these premises. Please submit the plant's consolidated comments and we will alter the drawings for your signature.

1. Three new Porocell columns (901, 902, 903) will be added north of Bldg. 27. One will be used for each of the three production trains.
2. The existing column (691) will be used as a swing column while changing products.
3. A Porocell column will be added in the tank farm generally north of tank 734 for Trichlorobenzene and Tri-tetrachlorobenzene.
4. Tanks 700 and 702 will remain in Day Tank Service for 1254 and 1242 normally, although tank 700 can also be used for 1242 if all three production trains are on 1242.
5. Aroclors 1221, 1248, 1260, 1262 will go directly from the new columns to the new tank farm storage without day tanks.
6. After installation of the Porocell columns the plate filter on the second floor of Bldg. 27 will be dismantled. The filtrate receivers (#1 and #3) will be retained to hold bad batches or material used to break in new Porocell column beds.
7. The Porocell column feed rates are to be 6 GPM by positive displacement pumps. The pumps will have pressure relief to the pump suction set at 80 psig. The Porocell column design pressure will be 100 psig (as at WGK) as will any selector hoses.

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8. One of the existing Peerless Pumps (Items 739, 740, 741 on CEA 1430 Dwgs.) will be retained for speedy disposal of rework material. The other two will be dismantled in lieu of the gear pumps in 7 above.
9. Gear pumps to feed the Columns will be located at a level low enough not to need priming by the Peerless Pumps.
10. The existing power factor analytical instrument at the existing Porocell column will be used for all four columns by timed rotation of the sample lines.
11. We are looking for some clever place to dispose of undifferentiated sample effluent from the analytical instrument. How about #1 or #3 filtrate receiver?
12. Samples to the analytical instrument will be taken at a point to monitor column effluent during break-in as well as routine production. This will be ahead of the polishing filters. A sample filter may be required.
13. Filters following the Porocell columns can be Cuno cartridge polishing filters like those in the new tank farm. (Only one unit per new column.) The existing Sparkler filter at the existing column will remain in place.
14. The desired temperature of the feed to the Porocell columns for the various products is:
- | | |
|-------------|-------------|
| 1242 - 65°C | 1221 - 50°C |
| 1254 -100°C | 1248 - 85°C |
| 1260 -135°C | 1262 -150°C |
- Tri or tri-tetra chlorobenzene - 100°C
15. Indirect heating of Tri-tetra chlorobenzene^{Column 907} with 100 psig steam is suitable for processing and drying of the Porocell charge.
16. In designing heating and cooling systems for feed temperature control, we will outfit only one chlorinator production train for 1260 and 1262 due to the high desired temperature, and their relatively low production demand. The corresponding Porocell column piping will be double traced (2P).
17. We need the following information to design the feed temperature control system:
- Description of coils in the blend tanks.
 - Initial temperature of the blend tanks for various products assuming no cooling or heating applied.

See 1266
new name

- c. Blend tank batch cycles and transfer information from vacuum receivers.
 - d. Average and maximum GPM of tower cooling water now being used at the tower serving Aroclor.
 - e. Temperature of water in and out for above tower.
 - f. Design basis of cooling tower - GPM, approach, wet bulb, allowable rise.
18. Normal treating of TCB or Tri-tetra is not plug flow, but rather recirculation in and out of the same tank. At 6 GPM, and 8,000 gal. inventory the time for one turnover is 16.7 hours. It is assumed that 24-36 hours is available between receiving raw materials and use in a blending batch. When switching from tri-tetra, the bed is flushed with tri chlor into the tri-tetra tank and does not need to be dumped. (Per VRH)
19. Pump 735 for Tri and Tri-tetra transfers has a dead head TDH of 75 ft. fluid (approx. 48 psig). We will try using this as a Porocell column feed pump. If higher heads prove necessary, we will later install a gear pump as in the Aroclor Porocell Columns.
20. Since Tri and Tri-tetra storage tanks are steel, a steel Porocell column is acceptable.
21. No filter is required following the TCB, Porocell Column since all blends from 725 and 727 are filtered in sparkler filters 731-732.
22. The Aroclor Porocell columns (901-902-903) will be jacketed for Therminol heating. This is required for drying the Porocell Charge, and possibly for Aroclors 1260-62.
23. The present Therminol system (Items 694-5) is adequate for use with the new Porocell columns 901, 902, 903 drying beds one at a time.
24. Flow control is not necessary with positive displacement pumps set at 6 GPM. The pump capacity will be adjustable by RPM change.

Please comment on Drawings D30 and D32.

R. W. Peterson

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