VI. TENTATIVE OPERATING INSTRUCTIONS

G. Porocel Treatment

1. Synopsis

Distilled Aroclor 1016 will be collected in the column receiver (542) tank and pumped through a polishing filter, porocel columns and into two of six product storage tanks. Porocel removes impurities (chlorides) from Aroclor and improves electrical properties (power factor and resistivity).

A power factor analyzer is piped to No. 2 and No. 3 absorber discharge lines.

2. Equipment

a)	Column Receiver Tank	Item 542
b)	#3 Column Receiver Tank Pump	Item 544
c)	#2 Polishing Filter	Item 541
d)	#2 Absorber	Item 539
e)	#3 Absorber	Item 540
f)	#1 Power Factor Analyzer	ARA-44

3. Equipment Function

a) The function of column receiver tank (542) is to collect Aroclor 1016 for the purpose of feeding it through a polishing filter, #2 and #3 absorbers and into two of six storage tanks.

b) The function of the column receiver tank pump (544) is to move the 1016 through the polishing filter, #2 and #3 absorbers and out to two of six storage tanks.

c) The function of the polishing filter is to remove any particles.

d) The function of the absorbers is to hold a bed of porocel while Aroclor 1016 is pumped through, removing impurities (chlorides) from the Aroclor and improving electrical properties.

e) The function of the power factor in-line analyzer is to measure the power factor of Aroclor 1016 as it flows through a cell. Power factor is an important measure of the quality of the Aroclor as it leaves #2 and #3 absorbers.

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VI. TENTATIVE OPERATING INSTRUCTIONS (contd.)

G. Porocel Treatment (contd.)

4. Control Loops, Interlocks and Alarms

a) Control Loops

1. Column receiver tank level indicator (#4 LIA-43)
The function of this loop is to give an indication of the level and activate an alarm at high level (90%) only. Two 0-100% dial gauges indicate the level; one is on the panel board, the other is on the 2nd floor by the tank.

2. Absorber Feed Flow Controller (FICA-541-1)
The function of this loop is to control the flow of Aroclor into #2 and #3 absorbers from the column receiver.

3. Absorber Flow Indicators (Rotometers) (FI-539-1 and FI-540-1)
The function of these rotometers is to allow adjustments to be made to the flow to each absorber, making them about equal. When running the column on a 3.0:1 ratio, 542 is receiving about 14 gal./min; when on a 5.0:1 ratio, 542 will receive about 9 gals./min.

4. Absorber Steam Tracing Temperature Control. (#2 and #3 Tic-33)
The function of this loop is to compensate for heat loss from the absorbers. This is accomplished by sensing the temperature of 1016 at the outlet on the bottom of the absorbers and controlling the steam to the tracers around the absorbers by throttling the automatic steam control valve.

5. Power Factor Analyzer (ARA-44)
As listed in equipment function.

b) Interlocks - None

c) Alarms

1. Column Receiver (542) Tank High Level
If the column receiver level (542) reaches 90% an alarm will sound and the telealarm window "high level" will light for that tank.

2. Absorbers Low Flow
If the flow in the feed line to the absorbers drops to _____ GPM, the alarm will sound and the telealarm window "low flow absorber" will light for the appropriate absorber.

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VI. TENTATIVE OPERATING INSTRUCTIONS (contd.)

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5. Start-up Instructions

a) Before the column receiver receives any material from the column, it is imperative that the feed line dip pipe be submerged. On initial start-up the column receiver will be filled with Aroclor 1242 to a point which submerges the end of the barometric leg (about 125 gals.).

b) When the liquid level in the column receiver raises to the desired point (about 20% on level gauge), check that the absorber feed flow controller (FICA-541-1) setpoint essentially coincides with the 1016 flow rate on Fic-3034 (to maintain level in receiver) and get ready to cut forward through the absorbers and into the desired storage tank. At this point, advise the No. 2 operator, so he can line up the flow to two of the six storage tanks.

c) #2 and #3 absorbers have rupture discs with lines returning to the column receiver.

d) Check the vents on top of #2 and #3 absorbers to be sure they are closed.

e) Set the temperature controller for the steam tracing on absorbers at 65°C.

f) Align the valves from the bottom of the column receiver through the polishing filter and into #2 and #3 absorbers (check the top of the polishing filter to be sure it is handtight and the vent valve is closed.

g) Start the column receiver tank pump (544).

h) Check the individual flow indicators (Rotometers - FI-539-1 and FI-540-1) on the inlets to the two absorbers and make any adjustments necessary to equalize the flow through both units as stated in No. 3 of "Control Loops Interlocks and Alarms".

6. Normal Operations

a) #2 and #3 Absorbers

1. Column receiver tank temperature is 65°C. for Aroclor 1016.

2. Column receiver tank level is 20%.

3. Feed rate to the column receiver: 3.0:1 reflux ratio = 14 gals./min.

5.0:1 reflux ratio = 9 gals./min.

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VI. TENTATIVE OPERATING INSTRUCTIONS (contd.)

G. Porocel Treatment (contd.)

6. Normal Operations (contd.)

4. Feed rate to each absorber to be about equal for each ratio to the column receiver.

5. Pressure on column receiver pump _____.

6. Pressure on feed line at top of absorbers_____.

7. Pressure on absorber bottom outlets _____.

7. Shutdown Instructions

a) Emergency

1. Shut off feed to the absorbers.

b) Normal - Short Time (1/2 hour)

1. Shut off the feed to the absorbers.

c) Normal - Long Time (Over 1/2 hour or in Freezing Weather)

1. Circulate from the bottom of absorbers back to column receiver.

2. Put column on total reflux.

d) Electrical Failure

1. Column receiver pump will shut down. (No problem will develop.)
2. When electric power is restored, start up pump.

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