

VI. TENTATIVE OPERATING INSTRUCTIONS

C. LIME SLURRY TANK

1. Synopsis

This tank is used to mix and store a slurry of lime in crude 1142 Aroclor. Crude 1142 is pumped batchwise from #1 intermediate storage to the lime slurry tank. Lime is added from bags batchwise and the slurry mixed with the agitator. The contents of the tank is circulated and pulse fed with a timing device into the line feeding #1 intermediate storage from the continuous blow tank.

2. Equipment

- a. Lime Slurry Tank (Item 320)
- b. Lime Slurry Pump (Item 352)

3. Equipment Function

- a. The function of the lime slurry tank is to mix and store a slurry of lime in crude Aroclor 1142.
- b. The function of the lime slurry pump is to circulate the contents of the lime slurry tank and pulse feed slurry into the feed line to the #1 intermediate storage tank from the continuous blow tank.

4. Control Loops, Interlocks and Alarms

a. Control Loops

Flow (KIC-352-1) The function of this loop is to control the flow of lime slurry into the crude 1142 line between the continuous blow tank and the #1 intermediate storage tank. Control is accomplished by a timing mechanism which opens a valve in the feed line for a preset length of time, then closes the valve and holds it closed for another preset length of time. A switch on the panel board is used to activate the timing device and there are two dials on the panel which are used to set the lengths of time the valve is open or closed.

b. Interlocks - None

c. Alarms - None

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5. Start-Up Instructions

a. When Tank is Empty

- 1) Close the valves on bottom of tank and the top of the tank in the line used to charge crude.
- 2) If it is not already running, start the #1 intermediate storage pump. Make sure the valve in the line to the still pot is closed unless you want crude charged to the still pot.
- 3) Open the valve in the feed line and charge the slurry tank to 90% on the level indicator on the tank. Close the valve in the charge line to stop feed.
- 4) If it is not being used for anything else, stop the #1 intermediate storage pump. If there is material in #1 intermediate storage tank, leave the pump running to circulate.
- 5) Open the valve at the bottom of the lime slurry tank and start the lime slurry circulating pump. Make sure the manual valves in the slurry charge lines are closed.
- 6) Start the agitator.
- 7) Open the valve in the water line to the Venturi to suck off the fumes. Check the pressure gauge to see that there is no pressure on the tank.
- 8) Open the lime charging port and charge 9 bags (450 pounds) of lime to the tank.
- 9) The lime slurry is now ready and when you want to charge slurry, set the timers to the correct settings, open the manual valves in the 1/2" charging line and activate the timer.

b. When the Tank Has a Heel

- 1) Do not stop the agitator or pump.
- 2) Note the level in the lime slurry tank.
- 3) Recharge the tank with crude to 90% as covered above in paragraphs 5. a. 2), 3), 4), & 7).

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b. When the Tank has a Heel (contd.)

- 4) For each 10% of tank level charged, add one bag of lime to the tank.
- 5) Continue to operate normally.

Note: 1) Unless there is an equipment failure or an emergency, do not stop the agitator or circulation of this tank.

2) Always check the pressure gauge on top the tank before opening the port for adding lime.

6. Normal Operations

During normal operations the following conditions should exist:

- a. Agitator running
- b. Pump should be circulating
- c. Timer should be activated
- d. Level should be between 30 and 90%
- e. Level should decrease about 10-15% per shift if chlorinators are running at 60%.

7. Shut Down Instructions

a. Emergency

- 1) Shut off the timer switch on control board.
- 2) If necessary, shut off:
 - a) Agitator
 - b) Circulating pump
 - c) Valve on bottom of tank

b. Normal - Short Time (Less than 30 Min.)

Shut off timer switch.

c. Normal - Long Time (More than 30 Min.)

- 1) Shut off timer switch
- 2) Notify premium operator to shut down chlorinators.

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d. Electrical Power Failure

- 1) Shut off timer switch on panel board when power goes off.
- 2) When power is restored:
 - a) Start the agitator
 - b) Start the circulating pump
 - c) When the crude is flowing to #1 intermediate storage, activate the timer to start the lime slurry feed.

8. General Information

- a. Keep circulating and the agitator on unless there is an emergency or the tank is empty.
- b. This tank should fill in a few minutes when charging. Watch it closely.
- c. Level should fall about 10-15% per shift if operating normally.
- d. Add one bag of lime for each 10% recharged.
- e. For a full sized column run it will be necessary to recharge the tank once during the run and again at the end of the run.
- f. Before charging lime, open the valve in the water line to the Venturi; then check the pressure gauge to see if you have atmospheric pressure or less.
- g. If water or steam is used to clear plugged lines they must be blown dry.

9. Critical Control Points

<u>Control Points</u>	<u>Expected Readings</u>	<u>Deviation Limit and Effect</u>	<u>Correction</u>
Level	30-90%	20% Minimum. Must maintain circulation and agitation to insure against line pluggage.	Charge tank and lime as usual.

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9. Critical Control Points (contd.)

<u>Control Points</u>	<u>Expected Readings</u>	<u>Deviation Limit and Effect</u>	<u>Correction</u>
Level Change	10-15% per Shift	10% per shift minimum. Must be sure lime is added to crude to protect against high chlorides and column corrosion.	Set timer to open valve for longer period of time.

10. Other Control Points

Pressure	Some Vacuum	Atmospheric pressure or less before charging to minimize fuming when opening lime charging port.	Make sure you have water supply. If you have and still have pressure, open tank carefully since it may be full of water. Check tracer.
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11. Trouble Shooting

<u>Symptom</u>	<u>Problem</u>	<u>Cause</u>	<u>Possible Solutions</u>
1. Level not dropping on Indicator	1. Circulating line plugged.	1. Lime settled in line.	1. Will have to clean line.
	2. False reading on level indicator.	2. Displacer stuck.	2. Shut off agitator and stick tank. If level indicator is wrong, recharge and try again. If still bad call instrument man.
	3. Tank is empty.	3. Level indicator wrong.	3. Stop agitator and stick tank. If empty recharge and start up. If it doesn't work call instrument man.