OPERATING INSTRUCTIONS.

TETRYL

No.1

TO PREPARE FILTERS IN NITRATING HOUSE.

1. Place the leaden cap over the outlet.

2. Place four of the lead quadrant plates on the supporting rings.

3. Spread two buckets of 1.1/2" x 1" quartz chips evenly on the quadrant plates.

4. Spread one bucket of 1/2" x 1/2" quartz chips evenly on the larger chips.

5. Place the other four lead quadrant plates over the chips.

OPERATING INSTRUCTIONS

TETRYL

No.2

TO CHARGE SULPHATOR AND NITRATOR.

1. Before going to the Charge House, check that the sulphator and nitrator are empty and that the outlet cocks are closed. Should there be any tetryl left in the nitrator a report should be made to the foreman.

2. At the Charge House, check that the outlet cocks of the nitric and sulphuric gauge tanks are closed.

3. Open the outlet cock on the appropriate nitric acid storage tank.

4. Open the inlet cock to the nitric acid gauge tank.

5. Open the inlet cock to the sulphuric acid gauge tank.

6. When the nitric acid reaches the correct level, close the inlet cock to the gauge tank and open the outlet cock to the egg. Close the outlet cock from the nitric acid storage tank.

7. When the sulphuric acid reaches the correct level, close the inlet cock to the gauge tank and open the outlet cock to the egg.

8. Open the nitric acid delivery cock to the house being worked and check that the other delivery cocks are closed.

9. Open the sulphuric acid delivery cock to the house being worked and check that the other delivery cocks are closed.

10. When both gauge tanks are empty close both the outlet cocks on them.

11. Close the exhaust cock on the sulphuric acid egg and open the air inlet cock until the pressure indicated on the gauge reaches 30 lbs./sq. inch. Close the air cock a little until the pressure is just maintained at 30 lbs./ sq. inch.

12. Close the exhaust cock on the nitric acid egg and open the air inlet cock until the pressure indicated on the gauge reaches 30 lbs./sq. inch. Close the air cock a little until the pressure is just maintained at 30 lbs./ sq. inch.

13. When the pressure on either gauge falls to 20 lbs./ sq. inch. open the exhaust cock on the respective egg.

14. Do not enter or allow anyone else to enter the Charge House while the eggs are under pressure.

15. When both exhausts have been opened, close both the sulphuric and nitric acid delivery cocks to the house being worked.

16. Dip the sulphuric acid in the sulphator.

17. Dip the nitric acid in the nitrator.

OPERATING INSTRUCTIONS.

TETRYL

No. 3.

TO CHARGE TAR OIL GAUGE TANK.

1. If a new tar oil drum is required, remove it from the ramp under the foreman's instructions. Remove the bung and insert the appropriate syphon. Connect up the delivery pipe to the gauge tank using an asbestos washer. Note the consignment number on the House board.

2. Check that the injector cock on the sulphator is closed.

3. Check that the Gauge Tank is empty.

4. Place the rubber tube from the low pressure compressed air supply on the syphon tube and turn on the compressed air.

5. Watch the gauge tank until the tar oil is seen in the show glass or in the neck of the tank.

6. Return to the drum and remove the rubber air tube.

7. Turn off the compressed air.

8. Check that a full charge of tar oil has been obtained.

9. If not obtain the assistance of a foreman or another C/H. to transfer a little more tar oil to the gauge tank by repeating instructions 4 to 7. If this is done there must be one man at the drum and one at the gauge tank.

OPERATING INSTRUCTIONS

TETRYL

No. 4.

TO TRANSFER MIXTURE TO MIXTURE TANK AND WASTE ACID TO WASTE ACID STORAGE TANK.

1. Check that outlet cock on sulphator is closed.

2. Close inlet cock to waste acid egg.

3. Check that mixture pot is empty. If this is not so, inform the foreman.

4. Note from the board at the waste acid tanks which tank is being filled and open the inlet cock to that tank.

5. Close the exhaust cocks on mixture egg and waste acid egg.

6. Open the air inlet cocks to both eggs until the pressure indicated on the gauge rises to 30 lbs./sq. inch.

7. When the pressure indicated on the gauge falls to 20 lbs./sq. inch showing that an egg is empty, open the exhaust cocks on the egg.

8. When both eggs have been exhausted inspect the waste acid tank into which the acid has been blown.

21. Open the outlet cock to the sulphator and turn off the air valve to the fume ejector.

22. When all the mixture is injected (indicated by a stream of bubbles moving upwards through the show glass) turn off the injector air valve and then close the injector cock.

23. If the cooling water is on, shut it off and allow the temperature of the nitrator to remain at about 70°C. for 15 minutes.

24. At the end of this time, turn the cooling water full on.

25. Check that the cocks from the filters to the waste and egg are closed.

26. When the Sulphator is empty close the outlet cock.

27. When the temperature of the nitrator reaches 25°C. turn off the cooling water and open both outlet cocks to the filters. The contents of the nitrator should be divided equally between the two filters.

28. Turn off the air agitation to the nitrator and close the valve in the fume run by pulling down the handle over the filters.

29. When the nitrator has drained, close both outlet cocks and inspect the nitrators to ensure that it is empty.

30. 30 minutes after running out the charge open the draining cock on the filter to allow the waste acid to drain into the egg.

13. When the temperature reaches 50°C. open the injector cock to the point on scale indicated by the foreman.

14. When the temperature reaches 65°C. close the hot water inlet valve to the coils and turn off the steam injector. Turn off the steam heating of the water tank.

15. Close the valve on the outlet from the coils which returns to the hot water tank and open that to the drain.

16. When the temperature rises above 70°C., turn on the cooling water to the coils. When temperature falls below 70°C. shut off the cooling water. By repeating this keep the temperature between 68°C. and 72°C. during the whole of the nitration.

17. If the temperature should at any time reach 80°C. with the cooling water full on, close the injector cock and re-open when the temperature falls below 70°C.

18. If the temperature should at any time reach 100°C. with the cooling water full on and the injector cock closed, leave the house and stand by the drencher handle. See that the foreman and chemist are informed.

19. During the course of the nitration open the control valve to the agitation at 10 minute intervals so that the pressure shown on the gauge increases by that 3 lbs. per square inch. At the end of the nitration this pressure should be 30 lbs. per square inch.

20. When all the tar oil has been ignected into the sulphator, close the injector cock, turn off the cooling water and turn off the air agitation.

OPERATING INSTRUCTIONS.

TETRYL

No.5.

TO OPERATE SULPHATOR AND NITRATOR.

1. Turn on steam heating to hot water tank.

2. Open valve controlling air jet on sulphator.

3. Open agitation valve on sulphator.

4. Open valve controlling cold water supply to sulphator.

5. Open injector cock to point on scale indicated by foreman.

6. At intervals during the nitration, inspect the sulphator temperature. If this rises above 25°C. close the cock slightly. If the temperature rises above 30°C. close the cock completely and re-open to a point on the scale slightly nearer the closed position when the temperature falls below 25°C.

7. Check that the outlet cock on the mixture feed tank is open.

8. Open the valve in the Nitrator fume run by lifting the handle over the filters.

9. Turn on agitation until the pressure gauge indicates 5 lbs. per square inch.

10. Close the valve on the outlet of the coils going to the drain and open that on the return to the hot water tank.

11. Turn on the hot water valve to the coils and the steam injector to circulate the hot water through the coils.

12. Turn on injector air valve to the amount indicated by the foreman.

OPERATING INSTRUCTIONS

TETRYL

No. 5.

TO SEND STRONG RECOVERED ACID FROM FUME COOLERS TO STORAGE TANK.

1. When 12 inches of acid has collected in the stainless steel collector, draw off a sample through the glass cock provided. If the S.G. of the sample at 15°C. is less than 1.480 a report should be made to the Foreman at once.

2. If the S.G. of the sample is greater than 1.480 open the outlet cock on the tank and allow the acid to flow into the egg.

3. Close the outlet cock on the tank.

4. Check that there is room for the acid in the Charge House Storage Tank.

5. Close the exhaust cock at the egg controls and open the air inlet valve so that the pressure shown on the gauge rises to 20 lbs. per sq. inch.

6. When the pressure on the gauge falls to 15 lbs./sq. inch open the exhaust cock and close the air inlet valve.

OPERATING INSTRUCTIONS

TETRYL

No. 6.

TO START 3 FT. ABSORPTION TOWERS.

1. Turn on the right hand switch in fan controls near the weak acid storage tank.

2. Turn on the switch at the right hand side of the starter and move the starter handle slowly towards the right.

3. Adjust the speed control until the arrow points vertically.

4. Open the acid cocks to the air lifts.

5. Turn on the air supply to the air lifts on all the towers until the acid can be seen flowing into the top tower through the show glass.

6. When brown fumes become visible at the fume exit turn on a little water at the end tower and open the acid exit cock on the first tower, so that acid is flowing out at the same rate as the water is flowing in provided that the specific gravity is not below 1.350. If the S.G. is below this figure the cock should remain closed until the strength of the exit acid rises to the desired level.

OPERATING INSTRUCTIONS

TETRYL

No. 7.

TO OPERATE 3 FT. ABSORPTION TOWERS.

1. Working S.G. of exit acid should be 1.375 as nearly as possible. It must be between 1.350 and 1.400. When running the towers should be inspected at 30 minute intervals to check that the S.G. of the exit acid is correct, that the exit fume is not deeper in colour than it should be and that the acid level in the towers is correct.

2. If the fume is normal the S.G. of the acid is low, the outlet cock should be closed a little and the water inlet checked. If the S.G. of the acid is high, the outlet cock should be opened a little and the water inlet increased by about the same amount.

3. If the acid level is low and the S.G. of the exit acid normal, close the outlet cock a little until the correct level is reached. If the acid level is high and the S.G. of the exit acid normal, open the outlet cock a little until the correct level is reached.

4. If the exit fume is deep in colour and the S.G. of the exit acid normal, slow down the fan by the speed control and increase the water inlet a little when the S.G. rises. If the exit fume is deep in colour and the S.G. of the exit acid high, increase the water inlet by a small amount immediately and reduce the speed of the fan temporarily until the colour of the exit is back to normal.

5. If the electric power should fail or the fan cease to operate from other causes, IMMEDIATELY open the butterfly valve on the air jet exit, close that on the exit to the fan and open the valve to the air jet.

OPERATING INSTRUCTIONS

TETRYL

No. 8.

TO SHUT DOWN 3 FT. ABSORPTION TOWERS.

1. Turn off air supply to the air lifts on all the towers.

2. Close outlet cocks from each tower to its air lift.

3. Close the acid outlet cock to the storage tank.

4. Shut of the water inlet to the end tower.

5. Switch off both switches controlling the fan and see that the starting handle returns to the extreme left hand position.

OPERATING INSTRUCTIONS

TETRYL

No. 9.

TO SEND WEAK ACID FROM TOWERS TO ACID FACTORY.

1. Check with Acid Factory C/H that acid can be received.

2. Open cock from weak acid storage tank to egg. Allow ten minutes for the egg to fill.

3. Close the cock from the storage tank to the egg.

4. Close the exhaust cock on the egg and open the air inlet valve so that the pressure shown on the gauge rises to just 30 lbs.

5. When the pressure on the gauge falls to 20 lbs. open the exhaust valve and close the air inlet valve.

OPERATING INSTRUCTIONS

TETRYL

No. 10.

TO PUMP WASTE ACID.

1. Check with the Acid Factory C/H. that the waste acid can be received.

2. Open the outlet cock from the tank which is to be pumped away and check that cocks on all the other tanks are shut.

3. Move the pump switch to the on position and start the pump by moving the starting handle over slowly.

4. Watch the Acid Factory tank while pumping is in progress.

5. When the acid in this tank is about 12 inches from the top return to the pump controls and switch off. See that the starting handle returns to the off position.

OPERATING INSTRUCTIONS

TETRYL

No. 11.

TO OPERATE STAINLESS STEEL STIRRER IN VATS.

1. Lift up the switch on the right of the starter for the appropriate vat. The starters are located under the hot water tank.

2. Move the starting wheel round slowly as far as it will go so that the current shown on the meter above the starter does not exceed 25 amps at any time.

3. Allow the stirrer to run at full speed for 3 minutes.

4. Press the stop button, switch off and return the starting wheel to the off position.

OPERATING INSTRUCTIONS

TETRYL

No. 12.

TO FILL WASHING VATS.

1. Fill the vat to the top faucet with water and leave the water inlet half a turn open.

2. Open the clip on the rubber tube from the top faucet and open the clip on the bottom tube five complete turns.

3. Place the shute in position.

4. Tip the tetryl from the buckets dug from the filters or Settling Tanks down the shute into the vat so as to avoid splashing. Keep a check of the number of buckets tipped. Avoid any fumes given off.

5. After 50 buckets have been tipped, close the water inlet and both faucets.

6. Run the stainless steel stirrer for 3 minutes.

7. Allow two minutes for the tetryl to settle, then clear the bottom faucet by turning on the water inlet above the faucet for about thirty seconds.

8. Open bottom faucet until a stream of clear water flows after flushing the tetryl from the rubber tube. Open the top faucet.

9. Open the water inlet half a turn and continue tipping the tetryl.

10. Repeat the stirring process after 100 and 150 buckets of tetryl have been tipped.

11. Do not put more than 150 buckets into any one vat unless authority to do so is given by the Foreman.

12. Report to the Foreman immediately if affected by acid fumes.

OPERATING INSTRUCTIONS

TETRYL

No.13.

TO WASH TETRYL IN WASHING VATS.

1. When the vat has been stirred on the completion of filling, allow 2 minutes for the tetryl to settle and then clear the bottom faucet by turning on the water inlet above it for about 30 seconds.

2. Open the bottom faucet until a stream of clear liquid flows out after the rubber tube has been flushed. Open the top faucet.

3. Open the water inlet half a turn.

4. Inspect the labyrinth to make sure that the water flow from the vat is not sufficient to cause the labyrinth to overflow. Dig out any tetryl which may have accumulated and return it to a vat which is filling.

5. When the water has been flowing into and out of the vat being washed for 30 minutes, close the water inlet and both faucets.

6. Run the stirrer for 3 minutes.

7. Repeat instructions 1, 2, 3, 4, 5 and 6 twice so that the vat has three half hour washings.

8. Clear the bottom faucet by turning on the water inlet above it for about 30 seconds.

9. Open the bottom faucet until a stream of clear liquid flows out after the flushing of the rubber tube.

10. Allow all the liquid to leave the vat. Care must be taken in the last stages of emptying to ensure that tetryl does not leave the vat with the wash waters. It can be stopped by checking the rate at which the liquid flows out.

11. Close the bottom faucet and turn on the water inlet to fill up the vat again. Spray the surface with water from a hose pipe to break up the tetryl scum which rises on stirring.

12. Repeat instructions 1, 2, 3, 4, 5, 6 and 7.

13. Remove a little of the wash water in a sample bottle and hand to the Foreman for an acidity test. He will indicate if further

P.T.O.

washings/are necessary. If any are necessary they will be carried out by repeating instructions 1, 2, 3, 4, 5 and 6 the required number of times.

14. When the vat has passed the acidity test, repeat instructions 8, 9 and 10. The vat is then ready for wringing.

OPERATING INSTRUCTIONS.

TETRYL.

NO. 14.

ACIDITY TEST FOR VAT WASHWATERS.

(1) Measure out 100 ccs. of the sample of vat water in the measuring cylinder provided. Pour this into a six ounce sample bottle.

(2) Measure out in the cylinder 10 ccs. of the solution of soda provided.

(3) Add the soda to the wash water and shake. The colour should turn to a bright red.

(4) If the test fails i.e. if the contents of the sample bottle are still yellow after the addition of the soda, another wash must be given to the tetryl in the vat and the test repeated.

OPERATING INSTRUCTIONS.

TETRYL.

No.15.

TO OPERATE ELECTRIC WRINGERS.

TO START

(1) Lift up switch

(2) Move starting handle over to right, slowly.

TO STOP

(1) Switch off.

(2) See that starting handle returns to off position.

TO OPERATE WRINGER WITH STRAT AND STOP BUTTON.

(1) Switch on at the south side of the house.

(2) Press start button to start and stop button to stop.

TO OPERATE BROADBENT WRINGER.

START

(1) Open drain cock on steam chest.

(2) Open steam valve and start basket moving if necessary.

(3) Open oil valve on side of machine.

(4) Open oil valve to cylinder.

(5) Close oil valve to cylinder and drain cock when no more liquid drains.

STOP

(1) Shut steam valve.

(2) Shut oil valve on side of machine.

OPERATING INSTRUCTIONS

TETRYL

No. 16.

TO WRING TETRYL.

1. Check that the cloth in the wringer is in the correct position and in good condition.

2. Dig from the vat being wrung, the number of buckets of wet tetryl to load one wringer. The correct number will be obtained by the Foreman. Wash the tetryl into the wringer.

3. Start up the wringer.

4. Run in hot water while the wringer is speeding up, and while it is running.

5. Place a piece of blue litmus paper in the wash waters running from the wringer. If the paper turns red continue to run in hot water until a piece of litmus paper will remain blue in the water coming from the wringer.

6. Shut off the hot water and allow the wringer to run for 20 minutes at least and until no more water comes from the outlet of the wringer.

7. Stop the wringer.

8. Dig out the tetryl when the wringer comes to rest and rub it through the 1/4" mesh sieve placed on the hopper table into a rubber bag tied on the hopper.

9. Weigh the bags of tetryl to 110 lbs.

OPERATING INSTRUCTIONS.

TETRYL

No. 17.

TO DISSOLVE TETRYL AT No. 1 PURIFICATION HOUSE.

1. Place the wooden plug in position in the dissolving vessel and clip the outlet tube firmly.

2. Carry two bags of crude tetryl to the top platform of the house and put the tetryl in one of the dissolving vessels.

3. Open the cock on the acetone delivery pipe to the dissolving vessel.

4. Signal to the man at the acetone pump to start pumping.

5. Place the measuring stick so that the top of the T rests on the dissolving vessel.

6. When the acetone reaches the mark on the stick, signal to the man at the pump to stop pumping.

7. Take the temperature of the acetone. If this is less than 20°C. the steam to the jacket may be turned on.

8. Stir the contents of the pot with the wooden paddle, lifting the tetryl and allowing it to fall back through the acetone.

9. Continue to take the temperature at intervals of about 1 minute until the temperature reaches 20°C., then shut off the steam.

10. Continue to stir until no more tetryl can be felt at the bottom of the vessel.

11. Check that the top cloth on the solution filter is clean and that the other two cloths do not require changing.

12. Check that the precipitating vessel is ready to receive the solution. If not clip the outlet of the solution filter.

13. Remove the wooden plug from the dissolving vessel.

14. Remove the clip from the outlet tube and run the solution into the filter.

OPERATING INSTRUCTIONS

TETRYL

No. 18.

TO PUMP ACETONE TO THE DISSOLVING VESSEL

AT No. 1 PURIFICATION HOUSE.

1. Roll the drum of acetone, which is to be pumped from the ramp to the dip pipe.

3. Insert the dip pipe into the drum and screw up the coupling.

2. Fill the sample cylinder with acetone from the drum and check that the Specific Gravity is less than .820.

4. Pour the acetone from the cylinder into the priming funnel.

5. On receiving the signal to start pumping from the top platform, pull over the striking gear to move the belt from the free pulley to the driving pulley.

6. Open the cock on the priming funnel for a few seconds to allow the acetone to flow into the pump and then close the cock again.

7. On receiving the signal to stop pumping, immediately push the striking gear to move the belt back to the free pulley.

OPERATING INSTRUCTIONS

TETRYL

No. 19.

TO OPERATE PRECIPITATING POTS.

1. Insert the aluminium plug in the outlet tube, clip and tie up the outlet tube.

2. Start the stirrer.

3. Allow the solution to drain ~~completely~~ from the filters.

4. When draining is completed, examine the sprays to see that the rubber is in position and then turn on the cocks to each spray two full turns.

5. Inspect the precipitating vessel at 20 minute intervals. If the level is rising too quickly, turn off the water a little. If the level is not rising quickly enough, increase the flow a little. The precipitating vessel is to be filled to within 2 inches of the top in 2.1/2 hours.

6. When precipitation is completed, turn off the water at the sprays.

7. Check that the tetryl filters are empty and that the outlet tubes are delivering into liquor vats.

8. Untie the outlet tube remove the clip and remove the aluminium plug and divide the contents of the precipitating vessel equally between the two filters.

OPERATING INSTRUCTIONS

TETRYL

No. 20.

TO WASH PURIFIED TETRYL.

1. After the acetone liquor has drained from the filters, press down the tetryl with the aluminium rammer to remove as much of the remaining liquor as possible.

2. Add water from the hose pipe to a depth of 2 inches above the level of the tetryl and allow these washings to go into the liquor vat.

OPERATING INSTRUCTIONS.

TETRYL.

No. 21.

TO WRING PURIFIED TETRYL -

1. Check that the filter cloth in the wringer to be filled, is in the correct position.

2. Place the aluminium cover on the wringer and support the ~~stainless steel~~ AC. gutter with its outlet over the hole in the cover.

3. Start up the wringer.

4. Place the hose on the ~~stainless steel~~ AL pipe on the gutter and turn on the water.

5. Dig out the tetryl from the filter into the gutter.

6. When the tetryl from one filter has been transferred to the wringer, remove the gutter from over the wringer and run hot water into the wringer for ten minutes.

7. Turn off the hot water and continue wringing for 20 minutes.

8. Turn off the steam supply to the wringer and allow it to come to rest.

9. Dig out the tetryl into the rubber bags for purified material and weigh up to 108 lbs. gross weight.

10. Take one sample from each batch.

OPERATING INSTRUCTIONS.

TETRYL.

NO. 22.

TO OPERATE PRIMARY STILLS.

1. Remove the rubber outlet tubes of the liquor vats from the dummy faucets and connect them to the feed pipe of the stills.

2. Check that the outlet tubes of the stills to be filled are closed and open the clips on the inlet tubes.

3. As the liquor in the stills reaches the working level, close the inlet clips. When the stills are filled, replace the vat outlet tubes on the dummy faucets.

4. Add two gallons of soda solution to each still from a stainless steel bucket and replace the screw cap on the still.

5. Turn on the steam valves to the stills and check that the feed cocks to the secondary stills are open.

6. As distillation starts turn back the steam inlets until the valves are open about ½ a turn and distillation is proceeding smoothly.

7. As distillation proceeds and the specific gravity of the distillate rises, increase the steam inlet very slowly.

8. When the specific gravity of the distillate reaches 0.980 turn off the steam inlet.

9. Open the clip on the outlet tube from the still and allow the waste to flow to the drain.

OPERATING INSTRUCTIONS.

TETRYL.

No. 23.

TO PREPARE SODA SOLUTION FOR PRIMARY STILLS.

1. Open a 1 cwt. drum of soda and weigh off 22 lbs. into a bucket. Place the 22 lbs. in the spare drum.

2. Put the rest of the soda into the 60 gallon lead vessel.

3. Fill up to the mark with water.

4. Stir with a wooden paddle until dissolved.

5. When the spare drum contains the excess from four other drums, the contents should be used for one batch of solution.

OPERATING INSTRUCTIONS.

TETRYL.

No. 24.

TO OPERATE SECONDARY STILLS

AT NO. 1 PURIFICATION HOUSE.

1. Place an empty drum in position and place the rubber outlet tube from the still-watch into the drum.

2. If the level of liquid in the still is more than two inches from the bottom of the show-glass and less than the working level, turn on the steam.

3. When distillation starts turn back the steam to between ¼ and ½ a turn so that distillation proceeds smoothly with a specific gravity of about 0.810 in the still-watch. If the specific gravity should rise to more than 0.820 cut back the steam inlet.

4. If the liquid level in the show glass falls to within two inches of the bottom, turn off the steam and and allow the still to fill up from the primaries. When the level is more than two inches from the bottom of the show glass, turn on the steam again.

5. If the liquid rises above the working level, shut the inlet to the still from the primary stills and continue distillation until an empty primary still is available.

6. Fill the empty primary still from the secondary by connecting the rubber outlet tube of the secondary to the lead outlet tube of the primary. Keep the clip of the primary inlet tube closed and close that on the outlet tube, when the still is full. Replace the clip on the outlet tube of the secondary tube and then continue distillation.

7. When the dip of acetone in the drum being filled reaches 24 inches kink the outlet tube of the still-watch, remove the drum and replace it by an empty drum.

OPERATING INSTRUCTIONS.

TETRYL.

NO. 25.

TO START STEAM ENGINE

AT PURIFICATION HOUSE NO. 1.

1. Open the two draining cocks.

2. Close the top oil cock and open the lower two cocks near it.

3. Open the steam valve.

4. Close the draining cocks when all the water has drained.

TO STOP THE ENGINE.

1. Close the steam valve.

2. Close the oil cocks.

OPERATING INSTRUCTIONS.

TETRYL.

NO. 26.

TO WASH PURIFICATION HOUSE FILTER CLOTHS.

1. The bottom two cloths of the solution filters and the cloths from the wringers and the tetryl filters are to be immersed in cold water in the washing vessel and rubbed by hand.

2. The top cloth of the solution filter is to be washed in the same way unless it is very stiff and dirty.

3. In this case it should be boiled for one hour in the filter boiling vessel and then washed by hand in the washing vessel.

4. All the solution filters must be dried before being used again.

5. The mud which accumulates in the washing vessel must be taken out and bagged for burning when it reaches a quarter of the depth of the vessel.

OPERATING INSTRUCTIONS.

TETRYL.

NO. 27.

TO OPERATE HOT WATER SYSTEM.

1. Turn on steam heating to hot water tanks.

2. Open water valve from water tanks to pump.

3. Open delivery valve to filter.

4. Open steam valve to pump.

5. Open draining valves.

6. Open oil valves to pump.

7. Close draining valves when dry steam issues.

8. Control steam inlet so that the inlet pressure of the water is 10 to 15 lbs.

OPERATING INSTRUCTIONS.

TETRYL.

NO. 28.

TO WASH CLOTH FROM PRESSURE FILTER

AT PURIFICATION HOUSE NO. 1.

1. Stop pump and drain water from filter, close inlet valve to filter.
2. Remove nuts holding clamps.
3. Remove clamps.
4. Remove lid by raising lead balance weight and then removing lid sideways.
5. Remove the distance pieces.
6. Lift the iron ring and remove the felt filter.
7. Wash in cold water.
8. Replace the felt under the iron ring.
9. Replace the distance pieces.
10. Replace the lid, clamp and nuts. The nuts must be as tight as possible.
11. Restart pump.

OPERATING INSTRUCTIONS.

TETRYL.

NO. 41.

TO START MOTORS IN CORNING HOUSE AND SIEVING HOUSE.

1. Switch on by lifting handle of mains switch.

2. Move over starting handle slowly to right so that the current shown on the meter remains at about 20 amps and does not exceed 30 amps.

TO STOP.

1. Switch off and return starting handle to the left.

OPERATING INSTRUCTIONS.

TETRYL.

NO. 42.

TO MAKE UP GUM ARABIC SOLUTION.

1. Dip the liquid remaining in the Boiling vessel and add 16 inches of distilled water.

2. Add 30 lbs. of Gum Arabic.

3. Turn on the steam until the liquid boils and then turn the steam back until it boils gently. Continue to boil for four hours.

4. Take a sample and cool to 15°C. If the Specific gravity is not between 1.032 and 1.038 add more water or gum to bring it within this limit. 1 gallon of water will reduce the specific gravity by 2 points, 1 lb. of gum will increase it by about the same amount.

5. Allow to settle for two hours.

6. Run from the top faucet into one of the storage vessels through the 170 mesh gauze.

OPERATING INSTRUCTIONS.

TETRYL.

NO. 43.

TO LOAD CORNING MACHINE.

1. If purified tetryl is to be loaded fill the gallon measure with gum solution. If dust is to be loaded place two pints of gum solution and fill up with distilled water.

2. When dust is being loaded thoroughly wet the inside of the machine with about half the gum-water mixture.

3. Place the ¼ inch mesh square sieve over the top of the machine.

4. Start the machine by pulling the clutch wheel in a clockwise direction.

5. Pour the purified tetryl or dust on to the seive, about 10 or 15 lbs. at a time and rub through into the machine.

6. When all the tetryl has been added remove the square seive from the top of the machine.

7. In the case of purified tetryl, add the gallon of gum solution. In the case of dust, add the remainder of the gum-water mixture.

8. Add a quarter of a pint of water.

9. The hand or any other part of the body must not be placed in the machine until it has been stopped and the safety catch put on.

10. With four men in the house one machine is to be loaded and one unloaded every 15 minutes. The Charge-hand will note the time of loading and unloading on the board provided.

OPERATING INSTRUCTIONS.

TETRYL.

NO. 44.

TO UNLOAD CORNING MACHINE.

1. After loading the machine allow it to run for one hour.

2. After 20 minutes incorporation, stop the machine and put on the safety catch. Take out a little tetryl and press it in the clenched hand. The tetryl should hold together in a lump which can be broken easily by rubbing with the thumb. If the tetryl will not hold together add ¼ of a pint of water. If it does not break up add about 10 lbs. of dust. Restart the machine and test again after 10 minutes if any addition has been made.

3. At the end of this time reverse the direction of rotation of the blades by pulling the clutch wheel round in an anti-clockwise direction.

4. Place an empty tray on the tray supports.

5. Tip the machine by turning the tipping handle.

6. Allow about a third of the tetryl to fall out on to the tray. Place another empty tray on the full one.

7. When no more tetryl is displaced by the rotation of the blades, stop the blades by putting the clutch into neutral and put on the safety catch.

8. Remove as much as possible of the remaining tetryl by hand so that a third of the contents of the machine is on each of three trays.

9. Rub the contents of each tray through the ¼ mesh sieve on to an empty tray.

10. Chalk the batch number of the tetryl on each side of the ends of each tray.

OPERATING INSTRUCTIONS.

TETRYL.

NO. ___.

TO STOVE TETRYL.

1. Take the trays by truck to the stove to be loaded. The number will be given by the Foreman.

2. Hace the trays in the cupboards or on the racks of the stove.

3. Note the batch numbers of the tetryl in the trays on the cards provided.

4. Tie down the curtains in Nos. 5 and 6 stoves and lock the doors of each stove when full.

5. Start the motor and fan by lifting the handle of the mains switch and moving the starting handle slowly to the right.

6. Turn on the steam to the heater. Sufficient steam should be used to keep the air inlet temperature to between 90 and 100°C.

7. Take the temperature of the air inlet to the stove at least twice a shift.

8. After the stove has been running for 72 hours turn off the steam to the heater and switch off the motor.

9. Withdraw trays from the stove as instructed by the foreman and take them by truck to the Sieving House.

OPERATING INSTRUCTIONS.

TETRYL.

NO. 46.

TO SIFT TETRYL THROUGH THE VIBRO SIEVE.

1. Turn all bags inside out before tying on hoppers.

2. Tie process bags on to the dust and chucks hoppers and a finished bag on the corned hopper.

3. Break up any crust on the trays of stoved tetryl with a scupper.

4. Pull the rope of the striking gear to engage the belt on the driving pulley.

5. Empty trays into the hopper at the rate of one every three or four minutes.

6. Stop the machine and change the bags as they are filled.

7. Rub the chucks through the 10 mesh seive with wooden blocks into a process bag tied on the hopper table. Put the tetryl in the bag through the vibro sieve again.

OPERATING INSTRUCTIONS.

TETRYL.

NO. 47.

TO SIFT VIBRO DUST

THROUGH THE ROTARY SIEVE.

1. Turn all bags inside out before tying on hoppers.

2. Tie a process bag on to the fine dust hopper and a finished bag on the small corned tetryl hopper.

3. Move over striking gear to engage belt with driving wheel.

4. Feed the vibro dust into the hopper of the rotary sieve.

5. Stop the seive and change the bags as they become full.

6. Tie the bags of dust securely before sending to Corning House.

OPERATING INSTRUCTIONS.

TETRYL.

NO. 48.

TO BLEND LARGE AND SMALL CORNED TETRYL.

1. Tie a finished tetryl bag on the hopper table.

2. Pour large and small corned tetryl into the hopper at about the rate of three parts of large corned to one of small.

3. When the bags on the table are filled, remove and tie them securely before sending to Packing House.

OPERATING INSTRUCTIONS.

TETRYL.

NO. 49.

TO PACK AND SAMPLE TETRYL.

1. Weigh up the seived tetryl in bags to 46½ or 92 lbs. gross weight, depending on whether small or large cases are to be packed.

2. Tie the bags securely and place them in the stencilled cases.

3. Under the supervision of a representative of the Chemical Inspection Department, withdraw a thief-full of tetryl from the bag in each case. When 90 lb. cases are in use fill a sample bottle from each case. When 46 lb. cases are in use half fill the bottle from one case and fill the other half from the next case. The Chemical Inspection Department representative will label the bottles.

4. Add an amount of tetryl equal to that removed to each case from the make-up case.

5. Re-tie the bags securely and screw down the cases.

6. Cases of tetryl must be lifted from the floor when being moved and never dragged.