SUPPLIER ◂ -- ▸ FRIENDLY ◂ -- ▸ CUSTOMER

DAIRY BUSINESS MANAGEMENT SYSTEMS

QUALITY SYSTEM DOCUMENTATION
(ISO – 9001: 2000)

MODULE-III

ENGINEERING MANUAL

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"WHITE REVOLUTION THROUGH QUIET EVOLUTION"

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2. LIST OF REVISIONS

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3. SCOPE

The procedures of the Engineering department cover activities pertaining to Preventive, Corrective, Annual Maintenance of plant and machinery. It also includes maintenance, inspection, measuring and test instruments.

4.0 OBJECTIVES

4.1 Implementation of Lubrication and Preventive Maintenance Schedules.

4.2 To monitor maintenance expenditure of different sections i.e. Dairy Machinery, Utilities & electrical equipment.

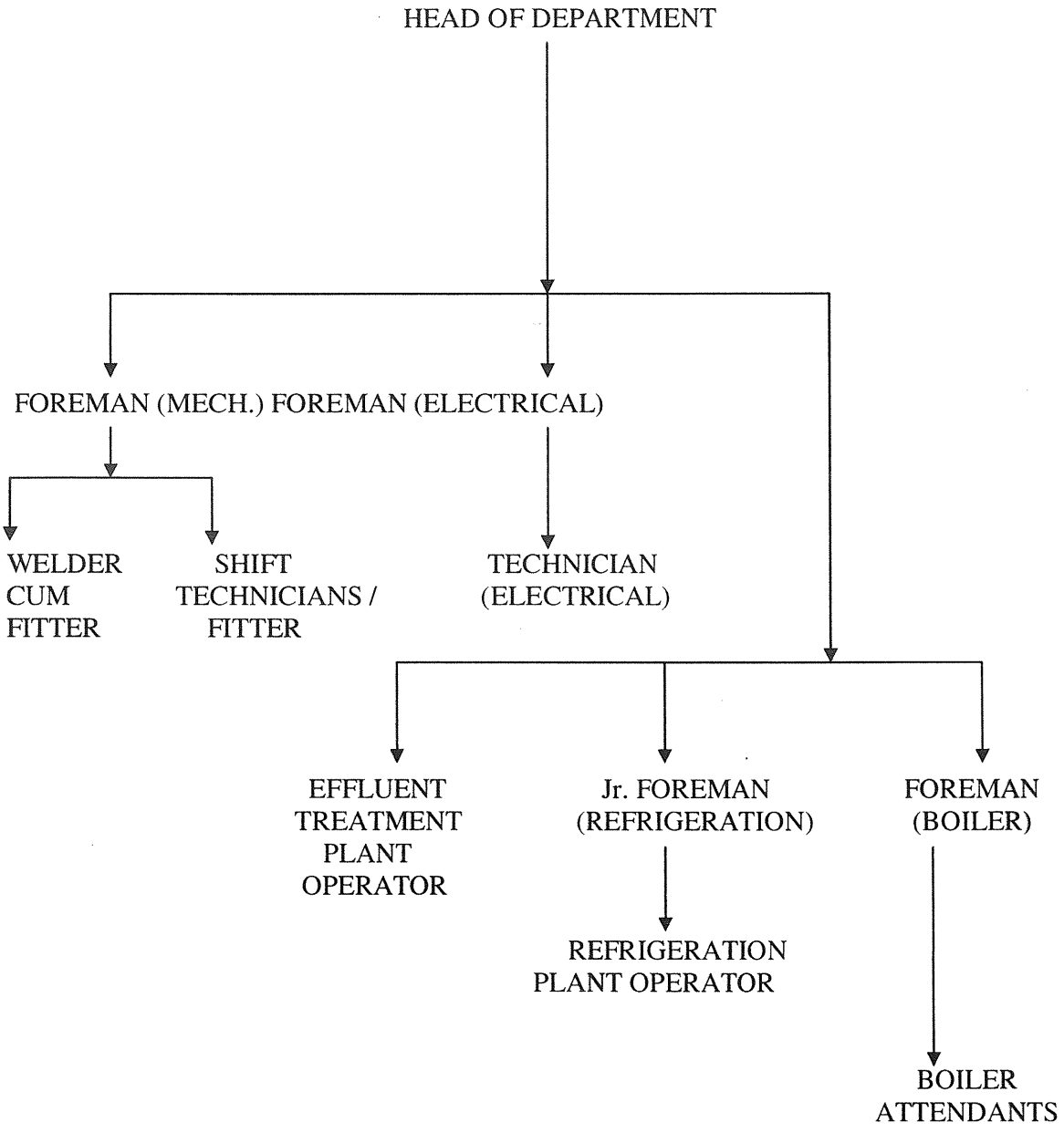
4.3 To minimize number of Breakdowns & Production Down time.

4.4 To improve the performance of machinery for optimizing productivity.

4.5 Calibration of Instruments as per specified schedules.

4.6 Ensure continuous improvement for optimizing fuel utilization, power consumption and to reduce maintenance expenditure.

5. DEPARTMENTAL STRUCTURE



6.1. DUTIES & RESPONSIBILITIES OF H.O.D. (ENGINEERING)

6.1.1 To ensure effective implementation of preventive maintenance schedules of Refrigeration, Boiler Section, Water Supply, Effluent Treatment Plant, Electrical & Dairy equipment.

6.1.2 To ensure that logbooks and other preventive maintenance records of Refrigeration, Boiler, Water Supply, Effluent Treatment Plant, Electrical & Mechanical Section are maintained for daily monitoring.

6.1.3 To ensure smooth working of boiler and its accessories, Refrigeration Plant, Water Supply, Effluent Treatment and dairy plant / equipment.

6.1.4 To ensure break down free performance of critical equipment.

6.1.5 To ensure smooth running of Effluent Treatment Plant as per statutory requirements of Punjab Pollution Control Board.

6.1.6 To plan and carry out annual maintenance schedule of Boiler, Refrigeration Plant, Water Supply, Effluent Treatment Plant, Dairy & Electrical equipment.

6.1.7 To ensure optimum utilization of Water / Steam / Lubricants & other consumables.

6.1.8 To coordinate and control the working of Engineering department in all the three shifts and ensure proper discipline among the staff.

6.1.9 Liaison with Govt. authorities like Pollution Control Board, Director of boilers & Chief electrical Inspector & also ensure payments of all statutory dues relating to Machinery, Electrical, Boiler, Cold store and Effluent Treatment Plant.

6.1.10 To forecast demands, coordinate and arrange for timely purchase of spare parts and maintenance materials so as to ensure smooth working of all the equipment.

6.1.11 To ensure maintenance of building pertaining to all civil works.

6.1.12 To arrange the installation of new equipment and modifications of dairy equipment in the plant / milk chilling centres.

6.1.13 Ensure timely renewal of licenses / certificates and annual maintenance contract.

6.1.14 Ensure that all pouch machines, weighbridge, bottle filler and dead weights are calibrated from Weights and Measurements department on due dates.

6.1.15 Ensure that all pressure vessels and lifting equipment are tested as per factory acts on due date.

6.1.16 Any other duty assigned by the management from time to time.

6.2 DUTIES AND RESPONSIBILITIES OF FOREMAN (MECHANICAL)

6.2.1. To carry out lubrication and preventive maintenance jobs with the help of shift technicians/ Helpers/ Trainees as per specified schedules.

6.2.2. To ensure that all Dairy Equipment and ancillary equipment are in working order all the time.

6.2.3. To ensure smooth operation, checking of all critical equipment with special attention.

6.2.4. To ensure maximum possible reduction in number of break downs and production downtime.

6.2.5. To maintain all prescribed sectional records.

6.2.6. To carry out installation of new equipment and modifications to existing equipment and pipelines as per directions of departmental head.

6.2.7. To ensure timely repair of leakages in utilities pipelines.

6.2.8. To maintain cleanliness in workshop.

6.2.9. To ensure the smooth running of Effluent Treatment Plant as per norms.

6.2.10. Ensure effective corrective maintenance of all equipment on day to day basis.

6.2.11. Ensure that history sheet of each machinery in respect of expenditure is maintained.

6.2.12. Ensure that implementation tasks for continuous improvement are carried out.

6.2.13. Any other duty assigned by the management from time to time.

6.3. DUTIES AND RESPONSIBILITIES OF FOREMAN (ELECTRICAL)

6.3.1. To carry out lubrication and preventive, corrective, annual maintenance jobs with the help of shift technician / helper / trainee as per the prescribed frequencies.

6.3.2. To inspect all electrical equipment / motors daily for any abnormality.

6.3.3. To check the working accuracy of all electrical testing/measuring instruments including Voltmeters, Ampere meters at regular intervals.

6.3.4. To minimize breakdowns and production downtime.

6.3.5. To take all possible steps for minimizing electrical losses.

6.3.6. To maintain all the records of engineering department as prescribed.

6.3.7. To ensure that all electrical equipment, controls and lights always remain in working order.

6.3.8. To carry out installation of new equipment and modification of other equipment as per directions of departmental head.

6.3.9. To maintain cleanliness in electrical section at all times

6.3.10. To ensure proper earthing of equipment and protection as per statutory requirements.

6.3.11. To achieve specified power factor as per statutory requirements of Punjab State Electrical Board (PSEB).

6.3.12. To ensure calibration of all the instruments of factory as per specified schedules.

6.3.13 To ensure that implementation tasks are carried out for continuous improvement.

6.3.14 To ensure that all preventive steps are taken to avoid electrical motors getting burnt.

6.3.15 Any other duty assigned by the management from time to time.

6.4 DUTIES AND RESPONSIBILITIES OF JUNIOR FOREMAN (REFRIGERATION)

6.4.1. To carry out lubrication and preventive, corrective, annual maintenance jobs effectively with the help of shift technicians as per the specified schedules.

6.4.2. To check all critical equipment daily with special attention for any abnormality.

6.4.3. To check and plug ammonia & air leakage if any as per specified schedules.

6.4.4. To ensure periodic cleaning of atmospheric condenser and its tank.

6.4.5. To maintain log books and relevant records of the section

6.4.6. To monitor performance of ammonia/air compressors, supply pumps and tubewell on daily basis to ensure maximum possible energy savings.

6.4.7. To check and ensure minimum wastages of chilled water, well water and compressed air.

6.4.8. To carry out installation of new equipment and modification of existing equipment and pipelines as per requirement.

6.4.9. To keep refrigeration section neat & clean at all the times.

6.4.10. To maintain the refrigeration equipment used for ice cream manufacturing section.

6.4.11. Any other duty assigned by the management from time to time.

6.5. DUTIES AND RESPONSIBILITIES OF FOREMAN (BOILER)

6.5.1. To carry out lubrication and preventive, corrective, annual maintenance jobs effectively with the help of shift attendants and foreman (Mech.) as per the prescribed schedules.

6.5.2. To check all critical equipment/motors daily with special attention for any abnormality.

6.5.3. To check and plug the steam leakages of pipelines on daily basis.

6.5.4. To plan and supervise husk feeding and ash disposal operations.

6.5.5. To plan and execute effective stacking / unloading of husk so that husk be fed with minimum labor and maintain husk yard for minimizing losses.

6.5.6. To check proper working of all steam traps on steam headers and feeder lines.

6.5.7. To monitor the quality of feed water / boiler water and dosing of the required boiler chemicals regularly.

6.5.8. To maintain all prescribed sectional records.

6.5.9. To make all necessary arrangements required for inspection by boiler inspector.

6.5.10. To carry out installation of new equipment and modifications of other equipment as per requirement.

6.5.11. To maintain boiler house neat and clean.

6.5.12. Any other duty assigned by the management from time to time.

6.6. DUTIES & RESPONSIBILITIES OF TECHNICIAN (MECHANICAL)/WELDER CUM FITTER/SHIFT TECHNICIAN FITTER

6.6.1. To complete allotted jobs within the specified time frame.

6.6.2. To attend to complaints of mechanical faults during the shift within the shortest possible time.

6.6.3. To make periodic visits to all sections of the plants for ensuring smooth working of plant and machinery.

6.6.4. To carry out preventive and annual maintenance of plant machinery as per specified schedule.

6.6.5. To ensure minimum possible production downtime during the shift.

6.6.6. To make entries in log books and other records related to the assignment.

6.6.7. To operate effluent treatment plant in absence of effluent treatment plant operator as per requirement.

6.6.8. Any other duty assigned by the management from time to time.

6. 7 DUTIES AND RESPONSIBILITIES OF OPERATOR/TECHNICIAN (REFRIGERATION)

6.7.1 To operate refrigeration plant as per specified procedure smoothly.

6.7.2 To operate air compressors smoothly and as per the requirements of production activities.

6.7.3 To maintain cold store temperatures as per the functional requirements.

6.7.4 To provide chilled water to different sections of the plant at required temperatures.

6.7.5 To monitor the working of all equipment and inform to the foreman if any abnormality is observed.

6.7.6 To ensure continuous supply of well water to the plant by operating submersible pump and water supply pumps as per requirement.

6.7.7 To minimize the wastage of chilled water, well water, ammonia gas & compressed air.

6.7.8 To complete other allotted maintenance jobs within the specified time frame.

6.7.9 To make entries of observations in the log book.

6.7.10 To assist the maintenance staff, in carrying out preventive and corrective maintenance of refrigeration and allied equipment.

6.7.11 Any other duty assigned by the management from time to time.

6.8 DUTIES AND RESPONSIBILITIES OF BOILER ATTENDANT (I CLASS & II CLASS)

6.8.1 To operate the boiler and the ancillaries smoothly as per specified procedure.

6.8.2 To ensure continuous supply of steam at required pressure to all sections of the plant.

6.8.3 To supervise husk feeding operation for ensuring continuous feeding of husk to the boiler as per requirement.

6.8.4 To drain / clean Boiler beds as and when required.

6.8.5 To carry out blow down as per specified instructions.

6.8.6 To ensure minimum possible wastage of husk, coal, sand, steam, water and power.

6.8.7 To make entry of observations in the log– books.

6.8.8 To assist the maintenance staff in carrying out preventive and corrective maintenance of steam raising equipment.

6.8.9 To check all the safety mountings and accessories of boiler as per specified schedules.

6.8.10 Any other duty assigned by the management from time to time.

6.9 DUTIES AND RESPONSIBILITIES OF TECHNICIAN/SHIFT TECHNICIAN (ELECTRICAL)

6.9.1 To complete allotted jobs within the specified time frame.

6.9.2 To attend the complaints of electrical faults during the shift within shortest possible time.

6.9.3 To carry out periodic maintenance of electrical equipment.

6.9.4 To note readings of all the energy meters during 'A' shift and to maintain log book in each shift.

6.9.5 Carry out inspection of running motors in each shift.

6.9.6 Ensure cleaning of diesel generator sets and all panel boards.

6.9.7 Ensure that diesel generator set is started during peak load hours as per requirement of production department.

6.9.8 Ensure that all the lights of plant are switched off early in the morning.

6.9.9 Any other duty assigned by the management from time to time.

6.10 DUTIES RESPONSIBILITIES OF OPERATOR (EFFLUENT TREATMENT PLANT)

6.10.1 To operate the effluent treatment plant as per specified procedure.

6.10.2 To ensure that all equipment of effluent treatment plant are always in running condition.

6.10.3 Carry out maintenance all the equipment of effluent treatment plant during break down with the help of foreman / fitter / electrician.

6.10.4 To ensure running of effluent treatment plant as per norms prescribed by Pollution Control Board.

6.10.5 To assist the electrician / technician in workshop to carry out day to day maintenance as per requirement.

6.10.6 To maintain logbook of effluent treatment plant on shiftwise basis.

6.10.7 Ensure consumption of chemicals as per specified norms.

6.10.8 Any other duty assigned by the management from time to time.

7. PROCEDURES

7.1 For smooth running of plant & machinery, preventive maintenance schedules for all sections of engineering department have been prepared.

7.1.1 The lubrication schedules of dairy machinery have been prepared which is given at annexure " A ".

7.1.2 Preventive & maintenance schedules for dairy machinery have been prepared which are given at annexure "B". Work is carried out as per schedules by the fitter / operator / mechanic and duly checked and signed by foreman and recorded in the register "Performance history of the dairy equipment" (QME-06).

7.1.3 Preventive maintenance schedules for electrical equipment have been prepared which are given at annexure " C ". Foreman electrical ensures that these schedules are strictly followed and recorded in the register "Performance history of the electrical equipment." (QME-07).

7.1.4 The preventive maintenance schedules for boiler section have been prepared which are given at annexure " D ". Foreman boiler carries out the preventive maintenance with the help of operator / fireman / technician as per specified frequencies and records in performance history of the boiler equipment register (QME-08). Boiler operations are carried out and maintained by the operator in different shifts. Operator ensures the smooth running of boiler as per specified work instructions mentioned at 8.10.

7.1.5 The preventive maintenance schedules for refrigeration plant have been prepared which are given at annexure "E". Foreman refrigeration ensures that preventive maintenance is carried out as per specified schedule with the help of operator / technician and same is recorded in QME-09. Operators ensure the smooth running of refrigeration plant and air compressors as per specified work instructions mentioned at 8.14 and 8.15.

7.1.6 The preventive maintenance and calibration schedule for the test, measuring, control & weighing instruments have been prepared which is given at annexure " F ". HOD engineering ensures that these schedules are strictly followed and recorded in "Preventive maintenance and calibration schedule" register QME-13 and QME-14.

7.1.7 To ensure smooth running of equipment, a list of recommended lubricants & the purpose for which these are to be used are given at the annexure " H ".

7.1.8 The preventive maintenance schedules for smooth running of diesel generator set have been prepared and given at annexure " J " and strictly followed. These schedules are implemented and recorded by the Foreman (Electrical) in QME-10.

7.1.9 The civil maintenance of all plant building is carried out as per the requirements and is recorded in QME-20.

7.1.10 Separate logbooks for boiler, diesel generating sets, electrical, effluent treatment plant and refrigeration sections are maintained in the respective sections (QME-01 to QME-05).

7.1.11 Log Books of refrigeration plant (QME-01 A) & (QME-01) , Electrical (QME-02 – 05), Diesel Generating sets (QME-03) (A and B), Boiler (QME-04) and Effluent Treatment Plant (QME-05) are maintained in the respective sections.

7.1.12 The lubrication and preventive maintenance schedules have been prepared for the maintenance of plant and machinery. These schedules are being followed as per the details specified in the formats and frequencies detailed therein.

7.1.13 These details are noted down from the format on separate register, maintained in the different sections such as refrigeration. boiler, effluent treatment plant, electrical & mechanical for the month and action taken by the respective operator / mechanics duly verified, checked and signed by the foreman and HOD.

These logbooks are the records maintained by the shift operators / foremen in their respective sections.

Work is carried out as per schedules by the fitters / operators / mechanics and duly checked and signed by foreman and recorded in the performance history of the equipment of respective sections.

7.1.14 The maintenance of the equipment installed at Milk Chilling Centres is also carried out as 'Milk Chilling Centre Maintenance Report (General) and maintenance report (Electrical) as per annexure " K & L " respectively and preserved in QME-11 & QME-12 respectively.

7.1.15 To maintain basic data of the each equipment,'Basic Equipment Data Sheet' has been prepared in 'Basic Equipment Data Sheet. (QME-15).

7.1.16 However, annual maintenance schedules are prepared in the month of April and carried out in the month of May, June and July every year. The annual maintenance is also carried out especially for the equipment, which were giving problems frequently as observed from the performance history of the equipment register. The annual maintenance schedule is specified at annexure " M " and recorded in annual maintenance schedules format (QME-16)

7.1.17 For routine corrective maintenance, a printed formats in duplicate namely 'Corrective Maintenance Record' (QME-17) is maintained.

Whenever any break down/defect takes place during the shift, it is recorded by the production shift incharge in QME-17 and a copy of that is handed over to respective shift technicians to attend the same. Reasons for the breakdown are also investigated and remedial measures are taken. This format is duly filled/ signed by the technician of respective section who attends the break down and is duly checked, verified and recorded in performance history of the equipment by respective Foreman.

7.1.18 Daily report of engineering department (QME-18) is prepared to monitor the breakdowns in the different sections, fuel, electricity, diesel, water consumption, unit generated by diesel generator set, running hours of refrigeration compressors etc. The consumption of utilities are computed and compared with the specified norms. If any deviation is observed, corrective measures are initiated by concerned officer to achieve the specified targets.

7.2 Inspection of Measuring, Control & Test Equipment.

7.2.1 Calibration / Check of standard instrument.

Test equipment used is mentioned below: -

1) Zeal Thermometer: - It is used for calibration of all dial type temps. Gauges.

Location :- IBI/ENGG/ALM-01/SL-03

2) R.T.D.Calibrator: - It is used for calibration of Digital temp. Indicators.

Location : - IBI/ENGG/ALM-01/SL-03

3) Pressure Gauge: - It is used to check & calibrate pressure measuring & control Comparator instruments.

Location: - Work Shop

4) Manometer: - The manometer is used for calibration of draught and the Vacuum gauges of the Powder plant.

Location : - Work Shop

5) Clampmeter :- To check the voltage / amperes.

6) Digital Multimeter :- The multimeter is used for checking of voltage / amperes and electronic components.

Location :- IBI/ENGG/ALM-01/SL-03

7.2.2 The standard instruments of engineering section are calibrated from approved authorised laboratory annually to ensure that instruments are perfect and certificate are obtain for each instrument and preserved in QME-19. The frequency of recheck/calibration of the inspection/-testing instrument is fixed once in a year for all the instruments.

7.2.3 CALIBRATION METHOD

All the measuring & control instruments are calibrated as per the fixed frequency schedule. The calibration procedures is mentioned in the work instructions at 8.0.0

Even if a minor deviation is found in the calibrated instrument, the effect of this on finished product is ascertained as per the parameters of final quality checks / inspection by the quality assurance department.

8. WORK INSTRUCTIONS

8.1 Calibration of Digital Temperature Indicator:

8.1.1 There are two pots inside the temperature indicator. The display side first pot is (103) for zero setting and second trimpot (102) for gain calibration.

8.1.2 Feed 100:00 ohms to the inputs terminal A,B,B' from a decade resistance box using first trimpot adjust 0.00.

8.1.3 Feed 138.50 ohms and adjust the second trimpot so that it indicates 100 degree C.

8.1.4 Repeat steps 8.1.2 and 8.1.3 till no further adjustment is required.

8.2 Calibration of Infra Balance for Moisture Testing

8.2.1 To calibrate the infra red balance initially, adjust the scale at 100 % on fix point (i.e. reference point with right hand side knob.

8.2.2 Adjust the pointer at reference point with left hand side knob

8.2.3 After setting of pointer, reference point and scale, place 5 gm standard weight on pan and rotate the scale upto zero percent with right hand side knob. If the pointer, reference point & zero percent scale concide, the balance is calibrated.

8.2.4 If all three (pointer, reference point & zero percent) not concide, take off the weight from pan then adjust the tension of torsion wire, also adjust length of arm as per requirement.

8.2.5 After adjustment follow 8.2.1 to 8.2.3 steps till final calibration is achieved.

8.3 Calibration of West & Chino Controller

8.3.1 The West & Chino make temperature controller are for steam pressure & temperature controls respectively. These are fitted in powder plant control panel. The control's softwares are calibrated as per the operation manual.

8.4 Checking of Volt Meter.

8.4.1 There is a screw in right bottom side of front glass of voltmeter for zero adjustment.

8.4.2 Put the phase selector switch at off position.

8.4.3 Now meter will show zero volts. If there is some deviation then adjust zero by zero adjustment mention in 8.4.1.

8.4.4 Put the selector switch on and cross check the voltage with multimeter, if found variation put a tag of corrective factor accordingly on meter.

8.5 Checking of Ampere Meters

8.5.1 Follow 8.4.1, 8.4.2 and 8.4.3.

8.5.2 Put the system on load and cross check the current by tong tester if variation is found then paste a corrective factor on meter or replace the meter.

8.6 Calibration of Temperature Gauges

8.6.1 Take three readings of temperature according to the range of gauge i.e. for 0-100° centigrade gauge; take reading at 0, 50 & 100 ° centigrade.

8.6.2 Check the exact temperature of media with testing instrument.

8.6.3 Dip the gauge sensor in a media maintained at 0° C and adjust 0°C with pointer adjustment on gauge.

8.6.4 Now dip the gauge sensor in media maintained at 100°C centigrade if variation observed adjust the range with angular adjustment (adjustment on sector).

8.6.5 Repeat 8.6.3 and 8.6.4 till nil variation on gauge is achieved.

8.6.6 Follow same procedure for different ranges of gauges with different media.

8.7 Calibration of Pressure Gauges

8.7.1 Fix the gauge on pressure gauge comparator.

8.7.2 Adjust zero on dial with pointer adjustment.

8.7.3 Apply pressure with pump upto the gauge range.

8.7.4 If there is variation, adjust the range with angular adjustment (adjustment on sector).

8.7.5 Repeat 8.7.2 to 8.7.4 till gauge shows accurate reading,

8.8 Calibration of Drought Gauges

8.8.1 Check the zero level on U tube manometer.

8.8.2 Tee off the gauge on one side of manometer.

8.8.3 Adjust zero with zero setting mentioned on backside of gauge.

8.8.4 Apply air pressure to the common airline of manometer and gauge, up to the gauge range. If found variation, adjust the range with span adjustment mentioned backside of gauge.

8.8.5 Repeat 8.8.3 and 8.8.4 till gauge shows accurate reading.

8.9 Calibration procedure of Weighing Scales: -

8.9.1 Calibration procedure for eagle/indosaw makes weighing scales.

8.9.1.1 Switch on the scale, check the zero on display.

8.9.1.2 If scales shows zero then put the standard weight on the platform of the weighing scale. (The standard weight should be minimum half of the capacity of the scale) If scale reading varies from actual weight than adjust the reading with span potentiometer.

8.9.1.3 Repeat the procedure 8.9.1.1 and 8.9.1.2 till scale shows accurate reading.

8.9.2 Calibration procedure for Samson makes weighing scale

8.9.2.1 Switch on the scale and press the mode button continuously during the count down. After count down, the scale will show 'Cal' and Y/N alternatively. Press mode button again, the scale will show 5 kg or 10 kg alternatively on display.

8.9.2.2 Put 5 kg or 10 kg calibrated weight on the platform of the scale. 'Cal done' will appear on the panel with sound of three beeps and display will show the weight.

8.10 WORK INSTRUCTIONS OF BOILER

8.10.1 Switch on the panel with main switch.

8.10.2 Open the isolation valves of feed water pump.

8.10.3 Start the feed water pump and maintain the water level in boiler drum up to the 3 / 4 of gauge glass.

8.10.4 Make the six inch thick silica sand bed in boiler furnace.

8.10.5 Open the induced draft and forced draft fan damper of respective bed that you are going to start.

8.10.6 Start the induced draft fan.

8.10.7 Adjust the induced draft fan & forced draft fan damper of respective bed for proper combustion.

8.10.8 Put the fire in boiler bed with help of charcoal and kerosene.

8.10.9 Raise the temperature of bed with the help of charcoal and by varying the force draft fan damper slowly.

8.10.10 Increase the bed temperature upto 400 ° C.

8.10.11 Start the husk feeder of respective bed and increase the husk feeding gradually by speed regulation knob of rpm controller of respective husk feeder.

8.10.12 Check the smoke at chimney out let and adjust the dampers, husk feed as per requirement of load and in such a manner that flue gases at chimney out let must transmit light brownish in color.

8.10.13 Carry out blow down to maintain TDS at 3500 max.

8.10.14 Blow off the soot every four hours.

8.10.15 Maintain the feed water hardness below 5 PPM by the testing of soft water, condensate from powder plant and feed tank from main lab.

8.11 WORKING INSTRUCTIONS FOR DIESEL GENERATOR SET

8.11.1 Inspect the diesel generator sets for engine lube / fuel oil/ water leakage.

8.11.2 Check the lube oil level / water level & fuel level in tank with the dipstick and make-up the levels if required.

8.11.3 Check the battery terminal / acid level of storage battery and make up the level if required.

8.11.4 Keep the engine speed governor lever at low speed.

8.11.5 Turn on the start switch installed at engine monitor panel.

8.11.6 Set the engine speed at 1500 RPM by governor lever.

8.11.7 Check the oil pressure (60 psi minimum), fuel pressure (25 psi minimum), alternator current and engine cooling water temperature (pointer should be at green area of temperature gauge) on engine monitor panel on hourly basis.

8.11.8 Check the voltage at the respective diesel generator panel voltmeter. The voltage should be 400.(+ / - 10 volt)

8.12 WORK INSTRUCTIONS FOR DIESEL GENERATOR CHANGE OVER WHEN LOAD IS LESS THAN 550 AMPERE (when powder plant is not running)

8.12.1 Switch off the main air circuit breaker on main distribution panel by pressing red button

8.12.2 Switch off the capacitor panel.

8.12.3 Follow work instructions for diesel generator set from no 8.11.1 to 8.11.8

8.12.4 Switch on the air circuit breaker at respective diesel generator monitor panel.

8.12.5 Switch on the air circuit breaker of respective diesel generator set at main low-tension distribution panel.

8.13 WORK INSTRUCTION FOR DIESEL GENERATOR CHANGE OVER (When powder plant is running)

8.13.1 Follow work instruction from 8.12.1 & 8.12.2.

8.13.2 Switch off the bus-coupler - II at main distribution panel.

8.13.3 Start both diesel generator set one by one, follow the work instructions 8.11 for each.

8.13.4 Follow from 8.12.1 & 8.12.2

8.13.5 Switch on the respective diesel generator incommer at main distribution panel.

8.14 WORKING INSTRUCTIONS OF AMMONIA COMPRESSOR

8.14.1 Check the oil level through gauge glass and make up the level if required.

8.14.2 Open the isolation valve of cooling water line to compressor head.

8.14.3 Open the isolation valve of cooling water line to oil seal.

8.14.4 Open the stop valve of compressor discharge line.

8.14.5 Open the suction valve & discharge valve of condenser water pump.

8.14.6 Start the compressor motor and observe the amperes drawn by motor. The motor current should be 70 amperes maximum.

8.14.7 Open the compressor suction line stop valve slowly.

8.14.8 Check the suction pressure(30 psi minimum), oil pressure (20 psi minimum) and discharge pressure(175 psi maximum) of compressor at monitor panel.

8.14.9 Check the motor current, it should not be more than 145 amperes.

8.15 WORKING INSTRUCTIONS OF AIR COMPRESSOR

8.15.1 Check the oil level through gauge glass.

8.15.2 Open the isolation valve of cooling water line to compressor head.

8.15.3 Open the suction and discharge valve of condenser water pump.

8.15.4 Start the condenser water pump.

8.15.5 Open the stop valve of auto loading & unloading auxiliary valve airline.

8.15.6 Unload the compressor through loading and unloading valve.

8.15.7 Start the compressor motor and monitor the motor current on ampere meter. Motor current must not exceed 45 amperes.

8.15.8 Check the oil pressure of compressor on dial gauge.

8.15.9 Put the compressor on load with auxiliary valve.

9 CONTINUAL IMPROVEMENT

9.1 The prime performance parameters of engineering department have been identified which are given at annexure " N ".

9.2 The performance of each parameter is evaluated by the management-comparing target versus achievement on monthly basis. In case, the performance is below the specified norms, then matter is investigated and corrective & preventive actions are taken to improve the performance.

9.3 The implementation tasks for each prime performance parameters have been prepared which are given at annexure " O ". These implementation tasks are implemented to optimise the performance of individual activities.

10 TRAINING PROGRAMME

10.1 Training needs of individual staff members are identified & training on shop floor is imparted to concerned staff by HOD (Engg) & foreman to improve their skill & knowledge which helps in over all efficiency of prime performance parameters. Personnel department also arranges training programme for staff members from time to time. Please refer to personnel department manual for details.

11 RENEWAL OF LICENCES

11.1 HOD (Engg.) ensures that all licenses are renewed on due dates. The details are given at annexure " P ".

13 ANNUAL MAINTENANCE CONTRACT

13.1 Maintenance contract for rewinding of motors, calibration of electronic weigh scale, / weighbridge and EPBAX are awarded on annual basis. The list is given at annexure " Q ". One month prior to expiry of contract, inquiry letters are sent to different parties inviting sealed quotations, committee members comprising of GM (Works), HOD(Engg.), HOD (Pur) & Mgr (Fin.) open the sealed quotations. Purchase department prepares the comparative statement. Committee members give recommendations to the CEO for awarding the contract to the deserving party.

14. CONTROL OF QUALITY RECORDS

14.1 Quality records in deptt. are kept as per common procedure issued by MR office.

14.2 List of Quality records is attached.

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.)LTD.

LUBRICATION SCHEDULE FOR DAIRY MACHINERY

Annexure - 'A'

SR NO.	JOB DISCRIPTION	LUBRICANT	FREQUENCY QUARTERLY	JOB CODE	GROUP CODE
1	Greasing of belt conveyer support	Grease AP3	Quarterly	CB-1	Q1
2	Greasing of can scrubber shaft,nipples,chain etc.	- do -	Monthly	SR-1	M1
3	Check & replace if required Gear box oil of can scrubber	SARVO 220	- DO -	SR - 2	M2
4	Oil level of homonizer	Servo 150	- DO -	HM - 1	M3
5	Check quality & level of oil of cream separators worm gear chamber change if required	SERVO 220	- DO -	CS1CS2+3	M4
6	Greasing of bowl spindle tapered end of cream separators	Grease AP3	- DO -	CS4-5-6	M5
7	Greasing of crate conveyer rollers	- DO -	Quarterly	PF1	Q2
8	Greasing of Butter churn brake and gear lever.	Grease AP3			
9	Check the conditions & level of gear oil of butter churn, change if required	SERVO - 220	Monthly	BC3BC4	M6
10	Greasing of Butter chrunner spporting	Grease AP3	- DO -	BC 5, BC6	M7
11	Check quality & level of oil of Ghee clarifier chamber. Change if required	SERVO-220	- DO -	GC1	M8
12	Greasing of Ghee/powder tin sealing machine	Grease AP3	Quarterly	TN1, TN2	Q3
13	Check Quality & level of Air compressor oil of E.T.P., Change if required	SERVO-150	Monthly	ETP-1	M9
14	Greasing of cap sealing M/c & lid embossing M/c	Grease AP3	Monthly	GP -1	M10
15	Greasing of vaccum pump & driers	- DO -	- DO -	VP 1,VP2	M11
16	Greasing of Rotary feed pump of dryer powder blender	- DO -	- DO -	RP1,PB1 PB2	M12
17	Greasing of Exhaust, supply, P.C., neck cooling fans	- DO -	- DO -	FAN -14	M13
18	Greasing of feed pump of drier.	- DO -	- DO -	PL	M14
19	Greasing of Pulveriser	- DO -	- DO -	PL	M14
	LUBRICATION OF GEAR BOXES				
20	Car washer	SERVO - 220	Quarterly	CW	Q18
21	Raw Milk Silo agitators	SERVO - 220	Quarterly	MSA1 - 2	Q4
22	Pasteurised Milk silo agitators	- DO -	- DO -	PMA1- 4	Q5
23	Cream Tank Agitators	- DO -	- DO -	CTA1- 4	Q6
24	Liquid milk tank Agitators	- DO -	- DO -	LMT1 - 2	Q7
25	Reconstitution tank agitators	- DO -	- DO -	RCTA- 1	Q8
26	Butter Melting vat Agitators	- DO -	- DO -	BMA1-2	Q9
27	Ghee Boiler agitators	- DO -	- DO -	GBA1-2	Q10
28	Ghee storage tank agitators	- DO -	- DO -	GSTAI-3	Q11
29	60 KL milk silo agitators	- DO -	- DO -	MSA3-5	Q12
30	Conc. Vat Agitators	- DO -	- DO -	CTA1-2	Q13
31	Main Dryer chamber rotary valve	- DO -	- DO -	RV-1	Q14
32	Main cyclones Rotary valve	- DO -	- DO -	RV2-2	Q15
33	Bagging cyclone Rotary valve	- DO -	- DO -	RV-4	Q16
34	Chemical dosing pump of E.T.P.	- DO -	- DO -	ETP-2	Q17

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TITLE:- DEPARTMENTAL PROCEDURES ENGINEERING			DATE : 01.04.04		
PREVENTIVE MAINTENANCE SCHEDULE FOR DAIRY MACHINERY					01 OF 02
			ANNEXURE - 'B'		
S.NO.	**PARTICULARS**	**FREQUENCY**	**JOB CODE**	**GROUP CODE**	**MONTH**
	INDIGENOUS SECTION				
1	Homonizer	Quarterly	IS 1	Q 1	
2	Bottle washer	Quarterly	IS 2	Q 28	
3	Pulverizer hammer checking	Quarterly	IS 3	Q 29	
4	Bottle Filler gasket checking and cleaning etc.	Weekly	IS4, IS5	W 3	
5	Belt conveyor checking of rollers bearings belt gearbox	Monthly	IS6	M 25	
6	Khoya kettle steam leakage checking	Monthly	IS7	M 26	
7	Checking sterilizer gasket, steam leakage etc.	Weekly	IS8, IS9,	W 4	
	STEAMING BLOCK				
8	Check for proper working of steaming block clean the nozzles if required	Quarterly	SB1	Q2	
	CAN SCRUBBER				
9	Check Smooth running of gear box	Monthly	SR1	M1	
10	Check Shaft, bearing, oil seal, chain socket repair if required.	Monthly	SR2	M2	
11	Replace worn out bushes if any		SR3	M1	
	MILK CHILLER				
12	Check the condition of plate gaskets, replace if damaged	- do -	MC1 MC2	M3	
13	Clean the thermometers, replace if required	- do -	MC3	M3	
	MILK CREAM PASTEURIZERS				
14	Check the condition of feed pumps, dismantle & service all parts	Quarterly	P1 P2 P3	Q3	
15	Check hot water pump impeller, bushes, gland etc., descale/repair /replace parts if required	Quarterly	P4 P5 P6	Q4	
16	Check the condition of filter gaskets & cover gaskets replace if required	Quarterly	P7 P8 P9	M4	
17	Check plate gaskets & replace if damaged	Monthly	P10P11P12	M5	
18	Check for proper working of steam control valve and hot water battery set up	Monthly	P13P14P15	M6	
19	Check for valve leakage	- do -	P16	M6	
	CREAM SEPARATORS				
20	Check worm housing & replace oil if necessary	Weekly	CS1CS2SC3	W1	
21	Dismantling of bowl & thorough cleaning of bowl inside parts, cleaning & lubrication of lock ring	Quarterly	CS4CS5CS6	Q5Q6Q7	
22	Thorough overhaul, cleaning & lubrication	Yearly	CS7CS8CS9	Y1Y2Y3	
	POUCH FILLING MACHINE				
23	Check the condition of roller suports of crates conveyer, replace worn out balls if required	Quarterly	PF1	Q8	
24	Carry out monthly maintenance of m/c along with m/c operator	Monthly	PF2PF3PF4	M7M8M9	
			PF5	M24	
25	Crate washer nozzle cleaning, pump checking	Weekly	PF6	W2	
	BUTTER CHURN				
26	Check the working of clutch assembly,main bearing brake, foundation bolts etc.	Fortnightly	BC1 BC2	FN1	
27	Check the manhole drain valve gaskets	Monthly	BC3	M10	
28	Check gears, bearings brake liner & seals, repair if required	Half Yearly	BC4BC5	HY1HY2	
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S.NO	PARTICULARS	FREQUENCY	JOB CODE	GROUP CODE	MONTH
	GHEE PROCESS SECTION				
29	Check Steam trap & safty valves of ghee boilers.	Monthly	GS1	M11	
30	Check for proper working of hot water pumps of butter melting vats	Monthly	GS2	M12	
31	Check gear housing of ghee clarifier & change/replace oil if necessary	Monthly	GS3	M13	
32	Dismantling of bowl & thorough cleaning of bowl, inside parts, lubrication of ghee clarifier.	Quarterly	GS4	Q9	
33	Thorough overhaul, cleaning & lubrication of ghee cleanifier.	Yearly	GS5	Y4	
	GHEE PACKING SECTION				
34	Check for proper alignment of ghee & powder tin seamer drive parts & units.				
35	Check for proper working of condensate pump & also descale & clean the impellers				
	POWDER PLANT				
36	Check for proper working of vacuum pumps, repair if required	- do -	EV1 EV2	M16	
37	Check for proper working of condensats pumps also descale and clean the impellers	- do -	EV3 EV4	M17	
38	Check for proper working of panel mounted instruments replace/ repair if required	- do -	EV5	M18	
39	Check for leakage in feed/product/utility lines rectify leaks if any	- do -	EV6	M19	
40	Check for the conditions of impellers seals etc. of the concentrate pumps, replace damaged parts	- do -	EV7 EV8	M20	
41	Check for the condition of V. belts of exhaust fan, delivery fans, cooling & conveying fan and neck cooling fan,vacuum pumps,replace damaged belts	- do -	SD1 SD2 SD3 SD4	M21	
42	Check for proper working of sifter & blender of powder plant, repair if required	- do -	SD6,PB1, PB2	M22	
	DISMANTLING AND SERVICING OF PRODUCT PUMPS :-				
43	Milk Pumps in Reception dock	Quarterly	MP1 M2	Q10	
44	Raw milk pumps of feed line	- do -	M3 M4	Q11	
45	Pasteurizer Milk feed Pumps	- do -	M5M6M7	Q12	
46	Cream Pumps in process hall	- do -	CP1CP2CP3	Q13	
47	C.I.P. Return Pumps of milk tanks	- do -	CIP1CIP2	Q14	
48	C.I.P. Return pumps of cream tanks	- do -	CIP3	Q15	
49	Milk return pumps of liquid milk section	- do -	MP8	Q16	
50	Butter milk transfer pumps	- do -	BM1	Q17	
51	Butter transfer pumps of butter melting vat.	- do -	BP1	Q18	
52	Ghee Pumps	- do -	GP1..GP4	Q19	
53	Milk Feed/Booster pumps of evaporator	- do -	MP9 MP10	Q20	
54	Milk Pumps of 60 KL silos	- do -	MP11 MP12	Q21	
55	Roto Pumps of dryer	- do -	RP1	Q22	
	DISMANTLING & SERVICING OF WATER PUMPS				
56	Water supply pumps of U.G. Tanks	Half Yearly	UPG1 UPG2 UPG 3	HY3	
57	Spray pond pumps	Half Yearly	SPP1 SPP2	HY4	
58	Submersible pump	Yearly	SBP1	Y5	
59	E.T.P. Feed pumps	- do -	EP1 EP2	Y6	
60	Chemical dozing pumps	- do -	EP3	Y7	
61	Car washer bearing and crank shaft, pipe nozzle checking	Quarterly	CW	Q 17	
	MISCELLANIOUS				
62	Check for proper working of ETP agitators	Quarterly	ETP1,2,3	Q23	
63	Cleaning of spray pond nozzles	Quarterly	SP1	Q24	

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PREVENTIVE MAINTENANCE SCHEDULE ELECTRICAL EQUIPMENT FOR MOTORS & STARTERS				01 OF 04 Annexure- 'C'
SR NO	**JOB DISCRIPTION**	**FREQUENCY**	**JOB CODE**	**GROOP CODE**
1	**TRANSFORMER :--**			
	i) Check the condition of jumpers and oil level	Weekly		
	ii) check silica jel, change if required	Monthly	TF2	M1
	iii) Check Oil Insulation	Half Yearly	TF3	HY1
2	**H.T. O.C.B. : -**			
	i) Check the working of following	Weekly	HTB1	W3
	- ON - Off Indication			
	- Selector Switch			
	- 24 V. Batteries & Battry Charger			
	ii) Check the level & quality of oil	Monthly	HTB2	M2
	iii) Check & reset all faulty relays	Monthly	HTB3	M3
3	**L.T. PANELS :-**			
	i) Cleaning and removing of dust from main L.T. Panel	Fortnightly	LT1	FN2
	Capacitor control panel, lighting panel,			
	Boiler & Refrigeration panel			
	ii) Clean the dust from all other Panels	Fortnightly	LT2	FN2
	iii) Check & replace faulty indicators, checking for loose	Monthly	LT3	M4
	contacts in control cables of all panels			
4	**MISC. EQUIPMENT :----**			
	i) Check & reset all servo stabilisers	Monthly	ME1	M5
	ii) Checking for proper working of all laboratory equipment	Monthly	ME2	M6
	iii) Checking & replacements of fused bulbs & tubes including	Monthly	ME3	M7
	street lights		ME4	M8
	iv) Checking of pesto flash (fly killer)	Monthly	ME5	M9
5	**PROCEDURES TO BE FOLLOWED DURING QUARTERLY & YEARLY**			
	INSPECTION OF MOTORS & STARTERS			
	1) Check clean & tight contacts of main switch			
	2) Check & correct size of fuses			
	3) Check relay range and adjust according to the rating of Motor			
	4) Cleck & tight all contacts terminals of startors			
	5) Check for proper earthing if loose, tight it			
	6) Check for abnormal sound of bearing if any			
	7) Clean & tight terminals of motor & junction box			
	8) Check whether motor is running abnormally hot or normal condition			
	9) Measure insulation resistance (during yearly inspection only			
	10)Over hauling of motors unduing replacement of wornout bearings (During yearly inspection only)			
	11)Check general condition of motors if found unsatisfactory then motor should be overhauled			
	12) Check & find other defects if any			

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SR NO	MOTOR DISCRIPTION	HORSE POWER	MOTOR CODE	GROUP YEAR	CODE QTLY
I	**Milk Reception :-**				
	1) Raw Milk Silo (30 kl) Agitator No. 1	2.00	MR1	Y1	Q1
	2) Raw Milk Silo (30Kl) Agitator No.2	2.00	MR2	Y2	Q1
	3) Dump Tank Pump	3.50	MR3	Y3	Q1
	4) Tanker unloading Pump	3.50	MR4	Y4	Q1
	5) Raw Milk Transfer Pump No.1	3.50	MR5	Y5	Q1
	6) Raw Milk Transfer Pump No.2	3.50	MR6	Y6	Q1
	7) Can Scrubber	1.00	MR7	Y7	Q1
II	**MILK PROCESSING :-**				
	8) Cream separator No.1	15.00	MP1	Y8	Q2
	9) Cream Separator No.2	15.00	MP2	Y9	Q2
	10) Cream Separator No.3	15.00	MP3	Y10	Q2
	11) Milk Pasteurizer No.1 Feed Pump	5.00	MP4	Y11	Q3
	12) Milk Pasteurizer No. 2 Feed Pump	5.00	MP6	Y13	Q3
	13) Milk pasteurizer No. 1 Hot water pump	3.50	MP5	Y12	Q3
	14) Milk pasteuriser No 2 hot water pump	3.50	MP8	Y14	Q3
	15) Cream Pasteurizer feed pump	3.50	MP9	Y15	Q3
	16) Cream pasteurizer Hot water pump	3.50	MP9	Y16	Q3
	17) Milk Storage Tank (15Kl)Agitator-1	2.00	MP10	Y17	Q4
	18) Milk Storage TAnk (15KL) Agitator - 2	2.00	MP11	Y18	Q4
	19) Milk Storage Tank (15KL) Agitator - 3	2.00	MP12	Y19	Q4
	20) Milk Storage Tank (15 kl) Agitator - 4	2.00	MP13	Y20	Q4
	21) Cream Storage Tank Agitator - 1	2.00	MP14	Y21	Q4
	22) Cream Storage Tank Agitator - 2	2.00	MP15	Y22	Q4
	23) Cream Storage Tank Agitator - 3	2.00	MP16	Y23	Q4
	24) Sugar Vat agitator	5.00	MP17	Y24	Q5
	25) Sugar Vat pump	3.50	MP18	Y25	Q5
	26) Milk Transfer pump No. 1	3.00	MP19	Y26	Q5
	27) Milk Transfer Pump No. 2	3.00	MP20	Y27	Q5
	28) C.I.P. Return (Milk Tank) pump	3.50	MP21	Y28	Q5
	29) C.I.P. Return (Cream) Pump	3.00	MP22	Y29	Q5
	30) Cream transfer pump	3.00	MP23	Y30	Q5
	31) C.I.P Pump - 1	3.50	MP24	Y31	Q6
	32) C.I.P Pump - 2	3.50	MP25	Y32	Q6
	33) Over Head Tank Agitator No. 1	2.00	MP26	Y33	Q6
	34) Over Head Tank Agitator No. 2	2.00	Mp27	Y34	Q6
III	**LIQUID MILK SECTION :-**				
	35) Milk Return Pump	3.00	LM1	Y35	Q7
	36) Diffuser Motor No. 1	1.00	LM2	Y36	Q7
	37) Diffuser Motor No. 2	1.00	LM3	Y37	Q7
	38) Diffuser Motor - 3	1.00	LM4	Y38	Q7
	39) Diffuser Motor No. - 4	1.00	LM5	Y39	Q7

Prepared by **H O D**

Signature _____ Date 01.04.04

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Signature _____ Date 01.04.04

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.				PAGE NO. 6	
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PREVENTIVE MAINTENANCE SCHEDULE FOR MOTORS & STARTERS					03 OF 04 Annexure- 'C'
SR NO	MOTOR DISCRIPTION	HORSE POWER	MOTOR CODE	GROUP YEAR	CODE QTLY
IV	**BUTTER AND GHEE SECTION :-**				
	40) Butter Churn Drive No. 1	25.00	BG1	Y40	Q8
	41) Butter Churn Drive No. 2	25.00	BG2	Y41	Q8
	42) Butter Milk Pump	2.00	BG3	Y42	Q9
	43) Butter Melting vat Agitator No. 1	1.50	BG4	Y43	Q9
	44) Butter Melting vat Agitator No. 2	1.50	BG5	Y44	Q9
	45) Butter transfer (BMV) Pump	2.00	BG6	Y45	Q9
	46) BMV Hot water Pump - 1	2.00	BG7	Y46	Q9
	47) BMV Hot water Pump - 2	2.00	BG8	Y47	Q9
	48) Butter conveyor	5.00	BG9	Y48	Q9
	49) Prestratification Tank Pump	2.00	BG10	Y49	Q9
	50) Ghee Boiler Agitator No. 1	2.00	BG12	Y51	Q10
	51) Ghee Boiler Agitator No. 2	2.00	BG14	Y53	Q10
	52) Ghee transfer pump	2.00	BG13	Y52	Q10
	53) Ghee Tranfer pump (filling Tank)	2.00	BG14	Y53	Q10
	54) Ghee Transfer Pump (Clarifier)	2.00	BG15	Y54	Q10
	55) Ghee Clarifier	1.00	BG16	Y55	Q10
	56) Ghee Storage Tank Agitator No. 1	1.50	BG17	Y56	Q11
	57) Ghee Storage Tank Agitator No. 2	2.00	BG18	Y57	Q11
	58) Ghee Storage tank agitator - 3	2.00	BG19	Y58	Q11
	59) Ghee Pump (packing)	2.00	BG20	Y59	Q11
	60) Ghee Tin Seamer No. 1	2.00	BG21	Y60	Q11
	61) Ghee Tin Seamer No. 2	2.00	BG22	Y61	Q11
	62) Cap Sealing M/c	1.00	BG23	Y62	Q11
	63) Butter Cold Store Diffuser	1.00	BG24	Y63	Q11
	64) Butter Packing Store Diffuser	1.00	BG25	Y64	Q11
	65) Ghee Cold Store Diffuser	1.00	BG26	Y65	Q11
V	**EVAPORATOR : -**				
	66) Vacuum Pump No. 1	30.00	E1	Y66	Q12
	67) Vacuum Pump No. 2	30.00	E2	Y67	Q12
	68) Feed Pump	7.50	E3	Y68	Q12
	69) Booster Pump	10.00	E4	Y68	Q12
	70) Condensate extraction pump No -1	2.00	E5	Y70	Q12
	71) Condensate extraction pump No - 2	2.00	E6	Y71	Q12
	72) Spray pond pump . - 1	20.00	E7	Y72	Q13
	73) Spray pond pump . - 2	20.00	E8	Y73	Q13
	74) Concentrate Pump No. 1	3.00	E9	Y74	Q13
	75) Concentrate Pump No. 2	3.00	E10	Y75	Q13
	76) Concentrate Pump No. 3	3.00	E11	Y76	Q13
	77) Concentrate Pump No. 4	3.00	E12	Y77	Q13
	78) Concentrate Pump No. 5	3.00	E13	Y78	Q13
	79) Concentrate Pump No. 6	3.00	E14	Y79	Q14
	80) Concentrate Pump No. 7	3.00	E15	Y80	Q14
	81) Concentrate Pump No. 8	3.00	E16	Y81	Q14
	82) Concentrate Pump No. 9	3.00	E17	Y82	Q14
	83) Concentrate Pump No. 10	3.00	E18	Y83	Q14
	84) Concentrate Pump No. 11	3.00	E19	Y84	Q14
	85) Condensate return Pump	3.00	E20	Y85	Q15
	86) Milk Silo (60Kl) Agitator No. 1	2.00	E21	Y86	Q15

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PREVENTIVE MAINTENANCE SCHEDULE FOR MOTORS & STARTERS

SR NO	MOTOR DISCRIPTION	HORSE POWER	MOTOR CODE	GROUP YEAR	CODE QTLY
	87) Milk Silo (60Kl) Agitator No. 2	2.00	E22	Y87	Q15
	88) Milk Silo (60Kl) Agitator No.3	2.00	E23	Y88	Q15
	89) Milk Spray Pump	3.50	E24	Y89	Q15
	90) CIP return pump	3.50	e25	Y90	Q15
VI	91) Exhaust fan	215.00	SD1	Y91	Q16
	92) Delivery Fan	75.00	SD2	Y92	Q16
	93) Cooling & conveying fan	25.00	SD3	Y93	Q16
	94) Atomizer	40.00	SD4	Y94	Q16
	95) Neck Cooling fan	2.00	SD5	Y95	Q16
	96) Feed Pump	7.50	SD6	Y96	Q16
	97) Rotary Valve No.1 (chamber)	1.50	SD7	Y97	Q16
	98) Rotary Valve No.2(cylone)	0.50	SD8	Y98	Q17
	99) Rotary Valve No.3(Cyclone)	0.50	SD9	Y99	Q17
	99-A) Rotary Valve No. 4 (Bagging cyclone)				
	100) Concentrate tank agitator No. 1	1.00	SD10	Y100	Q18
	101)Concentrate Tank Agitator No.2	1.00	SD11	Y101	Q18
	102) Vibrating sifter No. 1	1.25	SD12	Y102	Q18
	103) Vibrating Sifter No.2	1.25	SD13	Y103	Q18
	104) Fire Extinguishing Pump	5.00	SD14	Y104	Q18
	105) High pressure pump	15.00	SD15	Y105	Q18
	106) Vacuum Pump for packing	5.00	SD16	Y106	Q18
	107) Tin Seamer	2.00	SD17	Y107	Q18
VII	**REFRIGERATION : -**				
	108) Ammonia Comp. Motor No. 1	125.00	R1	Y108	Q19
	109) Ammonia Comp. Motor No. 2	125.00	R2	Y109	Q19
	110) Ammonia Comp. Motor No. 3	125.00	R3	Y110	Q19
	111) Air Comp. Motor No. 1	30.00	R4	Y111	Q20
	112) Air Comp. Motor No. 2	30.00	R5	Y112	Q20
	113) IBT Agitator No.1	7.50	R6	Y113	Q20
	114) IBT Agitator No.2	7.50	R7	Y114	Q20
	115) IBT Agitator No.3	7.50	R8	Y115	Q20
	116) Chilled Water pump No.1	10.00	R9	Y116	Q21
	117) Chilled Water Pump No. 2	10.00	R10	Y117	Q21
	118) Chilled Water Pump No. 3	10.00	R11	Y118	Q21
	119) Chilled Water Pump No. 4	10.00	R12	Y119	Q21
	120) Chilled Water Pump No. 5	10.00	R13	Y120	Q21
	121) Condensor Water Pump No. 1	10.00	R14	Y121	Q21
	122) Condensor Water Pump No. 2	10.00	R15	Y122	Q21
	123) Condensor Water Pump No. 3	10.00	R16	Y123	Q21
VIII	**BOILER :-**				
	124) I.D. Fan	50.00	B1	Y124	Q22
	125) F.D.Fan Motor No. 1	30.00	B2	Y125	Q22
	126) F.D. Fan Motor No. 2	30.00	B3	Y126	Q22
	127) Rotary valve for A.P.H.	1.20	B4	Y127	Q23
	128) Rotary Valve for MDC	1.20	B5	Y128	Q23
	129) Husk Feeder No. 1	1.00	B6	Y129	Q23
	130) Husk Feeder No. 2	1.00	B7	Y130	Q23
	131) Feed Water pump No. 1	20.00	B8	Y131	Q23
	132) Feed Water Pump No. 2	20.00	B9	Y132	Q23
	133) Husk Conveyor	5.00	B10	Y133	Q23
	134) Vibrating Screen	2.00	B11	Y134	Q23
IX	**E.T.P. :-**				
	135) Equilization Tank Agitator	10.00	ETP1	Y135	Q24
	136) Aeration Tank Agitator No. 1	20.00	ETP2	Y136	Q24
	137) Aeration TAnk Agitator No. 2	20.00	ETP3	Y137	Q24
	138) Feed Pump No.1	3.00	ETP4	Y138	Q25
	139) Feed Pump No. 2	3.00	Y140	Y139	Q25
	140) Chemical Dozing pump	1.00	ETP6	Y140	Q25
	141) Air Compressor	1.00	ETP7	Y141	Q25
X	**MISSELLANIOUS :-**				
	142) Submersible Pump	30.00	MIS1	Y142	Q26
	143) Water Supply Pump No. 1	10.00	MIS2	Y143	Q26
	144) Water suply Pump No. 2	10.00	MIS3	Y144	Q26
	145) Water supply pump No. 3	5.00	MIS4	Y146	Q26

Prepared by **H O D**

Signature _____ Date 01.04.04

Approved by CEO

Signature _____ Date 01.04.04

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.			PAGE NO. 8	
TITLE:- DEPARTMENTAL PROCEDURES ENGINEERING			DATE :01.04.04	
INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LT PREVENTIVE MAINTENANCE SCHEDULE FOR STEAM GENERATION			ANNEXURE -'D'	
SR NO	**JOB DISCRIPTION**	**FREQUENCY**	**JOB CODE**	**GROUP CODE**
1	Check hardness of feed water and alkalinity of boiler water as and when required	Daily	B1	D
2	Blow down boiler water at least once in each Shift	- DO -	B2	D
3	Blow down mobrey level switch gauge glass	- DO -	B3	D
4	Blow off soot from the water tubes	- DO -	B4	D
5	Check and regenerate water softner if required	- DO -	B5	D
6	Clean the gauge glass in side & out side	Weekly	B6	W1
7	Check the working of mobery level Switch to ensure that minimum & maximum level are properlly controlled	- DO -	B7	W2
8	Check the working of low water cut off /alarm.	- DO -	B8	W2
9	Check the working of safety valves	- DO -	B9	W3
10	Check & ensure that the feed water injector is workign properly	Monthly	B10	M1
11	Check & tighten all foundation bolts, also check tension aligenment of I.D. &F.D. fans	- DO -	B11	M2
12	Check the steam leakages in all steam lines	- DO -	B12	M3
13	Check feed water storage tank & strainers	- DO -	B13	M4
14	Tight stuffing box of water pump	- DO -	B14	M5
15	Take out soot blower pipes & check the holes for blockage,clean holes & refit in position	- DO -	B15	M6
16	Ease steam safty valve & reset	- DO -	B16	M7
17	Check the conditon of air nozzles	- DO -	B17	M8
18	Check & reset the pressure reducing station	- DO -	B18	M9
19	Clean the I.D. & F.D. fans Blades	- DO -	B19	BM1
20	Open the main hole fixed on top of boiler & clean the tubes from out side with help of compressed air.	- DO -	B20	BM2
21	Check the conditon of refractory wall of combution chamber.	Half Yearly	B21	HY1
22	Check the valves for leakage& lap if necessary	- DO -	B22	HY2
23	Check the quantity of resin inside water softner	- DO -	B23	HY3
24	Lubricate the bearings of Pumps,Fans and husk conveyor rollers	- DO -	B24	HY4
25	Check during overhauling of boiler for 1) Repairing of refractory & insulation 2) Cleaning of boiler tubes 3) Descaling of boiler tubes, drum & header 4) Clean in side of flue gas out let 5) Greasing of motors & bearings	Yearly	B25	Y1
Prepared By **H O D**		Approved by CEO		
Signature _____ Date 01.04.04 Issue No. 01 Date 01.04.04		Signature _____ Date 01.04.04 Revision No. 0 Date 01.04.04		

[QMMRP - 03]

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

PREVENTIVE MAINTENANCE SCHEDULE FOR REFRIGRATION PLANT

ANNEXURE - 'E'

SR. NO.	JOB DISCRIPTION	FREQUENCY	JOB CODE	GROUP CODE
1	Drain condensate from air receiver & moisture separator	Daily	AC1	D1
2	Check oil & cylinder lubrication oil level of air compressor, change oil if required	Weekly	AC2	W1
3	Check & adjust Lubricator feed rate if required for both the compressors	Weekly	AC3	W1
4	Check safety valve of air compressor for proper functioning	Weekly	AC4	W1
5	Clean suction filter of both the air compressors	Weekly	AC5	W1
6	Keep oil sample in a clean glass over night to settle down the sediment. Change oil if required for all NH3 compressors.	Weekly	RP1,RP2,RP3	W2
7	Drain oil from all oil separators	Weekly	RP4	W3
8	Check for proper working of cold storage diffusers & also Leakage in ammonia valves & pipe lines	Weekly	RP5	W4
9	Clean oil pump strainer of all ammonia compressors	Monthly	RP6,RP7,RP	M1
10	Cleaning of oil filter,suction filter & change if required for all ammonia compressor	Monthly	RP8,RP10,RP	M2
11	Check tightening of all ammonia compressor's V belts	Monthly	RP12	M3
12	Cleaning of condensor coils	Bimonthly	RP14	BM1
13	Oil purging of duffusers & evaporator coils	Bimonthly	RP15	BM2
14	Inspection & maintenance of refrigeration controls	Quarterly	RP16	Q 1
15	Cleaning of oil separators	Quarterly	RP17,RP18	Q 2
16	Greasing of agitators, motor & pumps	Quarterly	RP20	Q 3
17	Dismentling & assembling of after cooler & moisture separator of both air compressors	Half Year	AC6,AC7	HY1
18	Clean out water jacket of NH3 & Air compressors	Half Year	RP20	HY2
19	Air purging of refrigeration plant	Monthly	RP21	M4
20	Cleaning of condensor water tank	Quarterly	RP22	Q4
21	Complete overhauling of Air compressor	Yearly	AC8,AC9	Y1
22	Complete overhauling of Ammonia compressors	Yearly	AC23,AC24,25	Y2
23	Overhauling and painting of agitators	Yearly	RP26	Y3
24	Overhauling of chilled water pumps	Yearly	RP27,28,29	Y4
25	Overhauling of condensor water pumps	Yearly	RP30,31,32	Y5
26	Overhauling of diffusers	Yearly	RP33 TO 37	Y6
27	Overhauling of under ground water tanks pump	Yearly	RP38 to 40	Y7

Prepared by **H O D** Signature _____ Date 01.04.04	Approved by CEO Signature_____ Date 01.04.04
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INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.			PAGE NO. 10
TITLE :- DEPARTMENTAL PROCEDURES ENGINEERING			DATE :- 01.04.04
INSTRUMENTS CHECKS / CALIBRATION SCHEDULE FOR MONITORING THE ACCURACY OF INSTRUMENTS			ANNEXURE - F
SR. NO.	**JOB DESCRIPTION**	**JOB CODE**	**FREQUENCY**
1	**STANDARD / TEST INSTRUMENTS**		
	TO counter check the calibration of standard / testing instruments from approved laboratory e.g. N.P.L etc.	Y	YEARLY
2	**PROCESS CONTROLS : ---->**		
a	Calibration of temperature gauges	M1	MONTHLY
b	Calibration of pressure gauges	M2	MONTHLY
c	Calibration of PID controller	M3	MONTHLY
d	Calibration of FDV controller	M4	MONTHLY
e	Calibration of thermographs	M5	MONTHLY
II	**POWDER PLANT CONTROLS :-**		
a	Calibration of temperature gauges	M6	MONTHLY
b	Calibration of pressure gauges	M7	MONTHLY
c	Calibration of PID controller	M8	MONTHLY
d	Calibration of vaccum guages	M9	MONTHLY
e	Calibration of thermographs	M10	MONTHLY
f	Calibration of drought gauges	M11	MONTHLY
g	Calibration of pressure transmitter	M12	MONTHLY
h	Calibration of digital temp. indicators	M13	MONTHLY
III	**QUALITY ASSURANCE (MAIN LAB.)**		
a	Calibration of pressure gauges	M14	MONTHLY
b	Calibration of digital temp. indicators	M15	MONTHLY
c	Calibration of IR balance	M16	MONTHLY
	SERVICES		
IV	**BOILER CONTROLS :--->**		
a	Calibration of digital indicators	M17	MONTHLY
b	Calibration of pressure gauges	M18	MONTHLY
c	Calibration of drought gauges	M19	MONTHLY
V	**REFRIGRATION**		
a	Calibration of compound gauges	M20	MONTHLY
b	Calibration of pressure gauges	M21	MONTHLY
c	Calibration of temp. gauges	M22	MONTHLY
VI	**D.G.SET CONTROLS**		
a	Speed indicator	D	DAILY
b	Lub. oil pressure gauges	D	DAILY
c	Fuel oil pressure gauges	D	DAILY
d	Water temp. indicator	D	DAILY
e	Bettery charging indication	D	DAILY
f	Air filter indicators	D	DAILY
VII	**WEIGHTING SCALES**		
a	Calibration of electronic / mechanical weighting scales	W1	WEEKLY
b	Calibration of weigh bridge	W23	MONTHLY
Prepared by **H O D** Signature _____Date 01.04.04		Approved by CEO Signature _____Date 01.04.04	
Issue No. 01 Date 01.04.04		Revision No. 0 Date 01.04.04	

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INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

ANNEXURE - 'G'

LIST OF CRITICAL EQUIPMENTS

SR.NO.	SECTION	EQUIPMENT
A	EVAPORATOR	I VACCUM PUMP NO-1
		II VACCUM PUMP NO-2
B	DRIER	I ROTO PUMP
		II EXHAUST FAN
		III SUPPLY FAN
		IV P.C. FAN
		V ATOMISER
C	PROCESSING	I CREAM SEPRATOR NO-1
		II CREAM SEPRATOR NO-2
		III CREAM SEPRATOR NO-3
D	BUTTER & GHEE	I BUTTER CHURN NO-1
		II BUTTER CHURN NO-2
		III POUCH FILLING MACHINE
E	LIQUID MILK	I POUCH FILLING MACHINE NO-1
		II POUCH FILLING MACHINE NO-2
		III POUCH FILLING MACHINE NO-3
F	BOILER	I I.D. FAN
		II F.D. FAN NO-1
		III F.D. FAN NO-2
		IV FEED WATER PUMP NO-1
		V FEED WATER PUMP NO-2
G	REFRIGERATION	I NH3. COMPRESSOR NO-1
		II NH3. COMPRESSOR NO-2
		III NH3. COMPRESSOR NO-3
		IV AIR COMPRESSOR NO-1
		V AIR COMPRESSOR NO-2
		VI SUBMERSIBLE PUMP
H	ELECTRICAL	I D.G. NO-1
		II D.G. NO-2
		III TRANSFORMER 2000KVA

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ANNEXURE - 'H'

LIST OF LUBRICANTS TO BE USED

S.NO.	DESCRIPTION	USING MACHINE
	SERVO SYSTEM - 32	LUBRICATION OF ATOMIZER BEARINGS
	SERVO MESH - 150	AIR COMPRESSORS
	SERVO MESH - 220	CREAM SEPARATORS, BUTTER CHURNS GHEE CLEARIFIER, GEAR BOXES
	SERVO FREEZE - 68	AMMONIA COMPRESSORS
	CASTROL ENGINE OIL - 15 W/40	DIESEL GENERATOR SETS
	GREASE -AP-3	BEARINGS OF OTHER PLANT & MACHINERY (NOT SPECIFICALLY MENTIONED BY MANUFACTURER (SUPPLIER)

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[QMMRP - 03]

ANNEXURE - ' I '

SPECIFICATIONS FOR ETP'S WATER

S.NO.	PARTICULARS	DESIRED NORMS
I	PH	7 - 9
II	Suspended solid	Not more than 100 PPM
III	COD	Not more than 250 PPM
IV	BOD	Not more than 30 PPM
V	Oil & Grease	Not more than 10 PPM

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[QMMRP - 03]

" ANNEXURE J "

INNOVATIVE BUSINESS OMPROVEMENTS (PVT.) LTD.
PREVENTIVE MAINTENANCE SCHEDULE OF D.G. SET

SR NO.	SERVICE ITEMS	SERVICE METER UNITS (RUNNING HRS.) [SMU]	UNITS GENERATED	ATTENDED BY	SECTION INCHARGE
01	DAILY CHECKS :- & AFTER EVERY 50 HRS. i) Check that fuel tank is filled up ii)Drain sediments and water from fuel tank and water separator iii) Check the engine oil level from dipstick iv) Check the Engine coolant level v) Check air cleaner service Indicator vi) Check the loose or broken fittings guard's and components vii) Inspect for worn/broken and loose belts viii) Check the battery connections and maintain electrolyte level ix) Check the condition of all gauges,repair or replace any broken gauge x) Check the exaust manifold or air piping leakage	50 HRS.			
02	CHANGE THE FOLLOWING PARTS AT EVERY 250 HRS i) Change the lubrication oil. lubricating oil (Rx super plus) 15w/40 of castrol make) ii) Change the lubrication oil filters iii) Change the fuel filters iv) Change/wash the fuel separator filter v) Wash the primary fuel filter vi) Check the vibration mounting vii) Clean the radiator exernally viii) Add the 2.500ltr. of intac liquid coolant in the radiator ix) Check all hoses of the engine	250 HRS.			
03	Check and adjust the tappet clearance	2000 HRS			

Prepared by **H O D**	Approved by CEO
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INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

INSTRUMENTS CHECK / CALIBERATION SCHEDULE
FOR MONITORING THE ACCURACY OF INSTRUMENTS

ANNEXURE - J

SR.NO	JOB DESCRIPTION	CODE	FREQUENCY
I	**PROCESS CONTROLS : --->**		
a	Checking of temp. gauges	D	DAILY
b	Cleaning of gauges glass inside and out side	D	DAILY
c	Calibration of temp gauges in case of deviation it should be rechecked & displayed	F1	FORTNIGHTLY
d	To counter check the calibration of standard temp gauge instrument from approved laboratory e.g. NPL etc	Y	YEARLY
II	**PASTEURISER CONTROLLER :-**		
a	Checking of controls working	D	DAILY
b	Checking of thermographs & ink pens	D	DAILY
c	Checking of air pressure gauges	D	DAILY
d	Checking of air pressure reagulator	D	DAILY
	and the sensor	D	DAILY
e	Check the sensor when not in use	D	DAILY
f	Calibration of PID controller	F2	FORTNIGHTLY
III	**POWDER PLANT CONTROLS :-**		
a	checking of all digital indicators	D	DAILY
b	Checking of vacuum gauges	D	DAILY
c	Check & Tighten the Simplex and Duplex Sensors	D	DAILY
d	Caliberation of all digital indicators	F3	FORTNIGHTLY
	SERVICES		
IV	**BOILER CONTROLS :--->**		
	Check		
a	Temp.controller of Bed No I	D	DAILY
b	Temp.Indicator of Bed No I	D	DAILY
c	Temp.controller of Bed No II	D	DAILY
d	Temp.Indicator of Bed No II	D	DAILY
e	Main Steam Pressure ofBoiler	D	DAILY
f	Steam Pressure at Main Header	D	DAILY
g	Draught gauge of FD Fan No I	D	DAILY
h	Draught gauge of FD Fan No II	D	DAILY
i	Steam Pressure of PRV Station	D	DAILY
j	Caliberation of temperature controllers of boiler	F4	FORTNIGHTLY
V	**D.G.Set CONTROLS D.G. SET - 1**		
	Check		
a	Speedometer gauge	D	DAILY
b	Lub.Oil pressure	D	DAILY
c	Fuel pressure	D	DAILY
d	Water Temp. Indicator	D	DAILY
e	Battery charging indication	D	DAILY
VI	**D.G.Set-2**		
a	Speedometer gauge	D	DAILY
b	Lub.Oil pressure	D	DAILY
c	Fuel pressure	D	DAILY
d	Water Temp. Indicator	D	DAILY
e	Battery charging indication	D	DAILY
VI	**WEIGHING SCALES**		
a	Checking of Electronic Weighing Scales	W1	WEEKLY
	Checking of Weighing Scales Bridge	W2	WEEKLY

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" ANNEXURE K "

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.
MAINTENANCE REPORT (GENERAL)

MILK CHILLING CENTRE : ----------

VISIT NO. _____

DATED _____ DATE OF LAST VISIT _____

S.NO	JOB DESCRIPTION	STATUS
1	MILK PIPE LINES AND FITTINGS	O.K./LEAKING
2	WATER PIPE LINE AND FITTINGS	O.K./LEAKING
3	MILK PUMP (....NOS)	O.K. /DEFECTIVE
4	MILK STORAGE TANK ACCESSORIES	O.K. /DEFECTIVE
5	WATER PUMPS (.....NOS)	O.K. /DEFECTIVE
6	CONDITION OF BUILDINGS	
	A) MACHINERY WORK	O.K./NEEDS REPAIRS
	B) SANITARY PIPE FITTINGS	O.K./NEEDS REPAIRS
	C) CARPENTARY/JOINERY WORKS	O.K./DEFECTIVE
	D) PAINTING / WHITEWASHING	O.K./DEFECTIVE
07	CONDITION OF DISPOSAL WORK	O.K. /NEED PAINTAING
08	REPAIRS CARRIED OUT	
09	MATERIAL REQUIRED FOR REPAIRS	

TECHNICIAN **ZONE INCHARGE** **H O D (Engineering)**

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

MAINTENANCE REPORT (ELECTRICAL) **" ANNEXURE - L "**

MILK CHILLING CENTRE : ----------

VISIT NO. _____

DATE:_____ DATE OF LAST VISIT: _____

SR. NO.	JOB DESCRIPTION		CHILLED WATER PUMP	MILK PUMP	MILK STORAGE TANK AGITATOR	GENER-ATING SET	DOMESTIC FITTINGS/ APPLIANCES
1	Voltage	Volts					
2	Current	Amps.					
3	Insulation Resistance	O.K. / WEEK					
4	Condition of Bearings	O.K./ Defective					
5	Running temperature	Normal/ abnormal					
6	Running sound	Normal/ abnormal					
7	Capacity of fuses	Amps.					
8	Relay setting	Amps.					
9	Earthing	O.K. /Done					
10	Clean & tighten all terminals/ contracts	O.K. /Done					
11	General Conditions	Satisfactory/ Unsatisfactory					

TECHNICIAN **ZONE INCHARGE** **H. O. D. (ENGINEERING)**

Prepared By **H O D**	Approved by CEO
Signature _____ Date 01.04.04	Signature _____ Date 01.04.04
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INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.	PAGE NO. 17
TITLE:- DEPARTMENTAL PROCEDURES ENGINEERING	DATE :01.04.04

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

ANNUAL MAINTENACE SCHEDULE

ANNEXURE - 'M'

DATE OF ACTION	SECTION	EQUIPMENTS	PARTS DESCRIPTION	PART POSITION	PART REPLACED	M/C OPENED BY	M/C FITTED BY	SIGN.OF EXE. TECH.	SIGN.OF PRODUCTION INCHARGE	REMARKS

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[QMMRP - 03]

Norms for Prime Performance Parameters

ANNEXURE - 'N'

SR. NO.	DESCRIPTION	SUMMER	WINTER
i)	Fuel utilisation efficiency	80%	90%
ii)	Power utilisation efficincy	80%	90 %
iii)	Maintenance cost / litre of Milk	0.0288	0.02
iv)	Product down time	Nil	Nil
v)	Expenditure on printing (Stationary)	Rs. 300/-	Rs. 300 /-
vi)	Expenditure on staff welfare	Rs. 300/-	Rs. 300 /-
vii)	Expenditure on civil work	Rs.2000/-	Rs. 2000 /-
viii)	Expenditure on Liveries	Rs.1000/-	Rs. 1000 /-
ix)	Expenditure on testing fee etc.	Rs. 500/-	Rs. 500 /-
x)	Expenses on travelling	Rs.1000/-	Rs. 1000 /-

STATUTORY COMPLIANCES ANNEXURE - 'P'

SR. NO	ACT/RULES	SEC/RULE	ACTIVITY	COMPLIANCE	PERIO-DICITY	TIME LIMIT	RESPON-SIBILITY	CONSEQUENCIES IN FAILURE	ORIGINAL DOCUMENTS IN WHOSE CUSTODY	FILE NAME WITH LOCATION
1	WEIGHT & MEASURES ACT-1985	Rule - 22 (	RE-VERIFICAT-ION & STAMPING OF WEIGHTS/ SCALES STAMP-ING & CALIBR-TION	Calibration of all weigh scales Filling M/cs, Bottle filler weigh bridge, dead weights bullion weight, fractional weights	ANNUAL	FEB / MAR	HOD ENGG	Compounding before the Asisst. controller of Legal Metrology Patiala division and further complaint before juris-dictional magistrate.	ENGG.DEPTT	MSL/ENGG/F/W&M-10 MSL/ENGG/FC-01/C-02
2	CHIEF ELECTRICAL INSPECTOR	RULE 46 IER - 1956	INSPECTION OF DG SETS & TRANSFORMERS	Safety and Earthing of all equipment to be carried out.	ANNUAL	JULY	- DO -	STOPPING OF ELECTRICITY	ENGG.DEPTT	MSL/ENGG/F/CEI-18 MSL/ENGG/FC-01/C-02
3	INDIAN FACTORY ACT	SEC -31	EXAMINATION & TESTING OF PRESSURE VESSELS	1. Ultrasonic test of all pressure vessels / repair of lifting machines 2. Hydraulic testing of pressure vessels	ANNUAL 4 years.	BEFORE 16 JULY	- DO -	PROSECUTION	PNL & HRD	MSL/ENGG/F/PD-03 MSL/ENGG/FC-01/C-02
4	INDIAN BOILER ACT-1923 (ACT-V OF 1923)	SEC-7 & 8	EXAMINATION OF BOILER	Hydraulic testing, safety valves working	ANNUAL	SEPT	- DO -	STOPPING OF BOILER	ENGG.DEPTT	MSL/ENGG/F/BCI-01 MSL/ENGG/FC-01/C-01
5	PREVENTION & CONTROL OF POLLUTION 1977		WATER CESS RETURN	Water consumption send to enviormental engineer PPCB through duly filled form 1-A	MONTHLY	1ST WEEK OF EVERY MONTH	- DO -	SUB SEC-1(A) OF SECTION 60	ENGG.DEPTT	MSL/ENGG/F/WC-04A MSL/ENGG/FC-01/C-01
6	U/S 25/26 OF WATER ACT-1974		WATER CONSENT	To maintain ETP effluent water as per PPCB norms	15 YEARS TILL 31.03.2011	01.04.2011	- DO -	STOPPING OF PLANT	HEAD OFFICE	MSL/ENGG/F/PPCB-04 MSL/ENGG/FC-01/C-01
7	U/S 21 OF AIR ACT 1981		AIR CONSENT	To control air pollution (Flue gases from boiler chimney) as per PPCB norms	- DO -	01.04.2011	- DO -	- DO -	HEAD OFFICE	-- DO --

Prepared by **H O D** Approved by CEO

Signature _____ Date 01.04.04 Signature _____ Date 01.04.04

ANNEXURE - 'Q'

ANNUAL MAINTENANCE CONTRACT

SR NO	DESCRIPTION	DATE OF EXPIRY	ACTON TO BE INITIATED	RESPONSIBLE PERSON
1	Weigh bridge / Mechnical balance	31.12.2003	1st December	H. O. D. (Engg)
2	Electronic Balance	30.04.2004	1st April	-- d o --
3	Motor rewinding	14.07.2004	1st May	-- d o --
4	EPABX	23.03.2004	1st March	-- d o --

Prepared by H O D	Approved by CEO
Signature _____ Date : 01.04.04	Signature _____ Date : 01.04.04
Issue No. 01 Date : 01.04.04	Revison No. 0 Date : 01.04.04

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

Engineering Department
Implementation Tasks

Annexure – 'N'

Objective: Reducing production breakdowns, downtime and maintenance expenditure.

SR NO	IMPLEMENTATION TASK	IMPLEMENTATION BY	MONITORING BY
	ELECTRICAL SECTION		
1.	Ensure proper lubrication and preventive maintenance of equipment as per schedules.	Sr. Electrician	H O D
2.	Use lubricants of good quality / correct specifications.	Sr. Electrician	H O D
3.	Components causing frequent breakdowns to machinery should be replaced with better quality.	Sr. Electrician	H O D
4.	Use better quality spares.	Sr. Electrician	H O D
5.	Always use proper tools for maintenance of dairy equipment.	Sr. Electrician	H O D
6.	Carry out preventive maintenance of elect. motors on periodic basis to reduce motors getting brunt.	Sr. Electrician	H O D
7.	Install electric motors as per load conditions.	Sr. Electrician	H O D
8.	Proper capacity fuses / over load protection units should be provided with all electrical installations.	Sr. Electrician	H O D
9.	Power factor must be maintained at the appropriate level to avoid damage to machinery and reduce power bill.	Sr. Electrician	H O D
10.	Motors should be periodically cleaned to remove dust by using blower / brush.	Sr. Electrician	H O D
11.	Install best quality electrical appliances and controls.	Sr. Electrician	H O D
12.	Switch of electrical appliances when not in use.	Sr. Electrician	H O D
13.	Avoid using poor quality of light fixtures that consume more electricity.	Sr. Electrician	H O D
14.	Ensure cleaning of light fixtures weekly.	Sr. Electrician	H O D

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

Engineering Department
Implementation Tasks

Annexure – 'N'

Objective: Reducing production breakdowns, downtime and maintenance expenditure.

SR NO	IMPLEMENTATION TASK	IMPLEMENTATION BY	MONITORING BY
15.	Ensure that fluorescent tubes are used in place of bulbs.	Sr. Electrician	H O D
16.	Use generators only when absolutely necessary.	Shift Electrician	H O D
17.	Install auto on / off control switch for campus lighting.	Sr. Electrician	H O D
18.	Launch awareness campaign to save electricity by all possible means.	Sr. Electrician	H O D
19.	Maintain separate circuit switches for essential and not so important illumination points.	Sr. Electrician	H O D
20.	Explore innovate energy conservation techniques using collective wisdom of available manpower.	Sr. Electrician	H O D
21.	Carry out servicing of DG set after every 250 running hours.	Sr. Electrician	H O D
22.	Reduce the peak hours load from 400 K.W to 150 KW during summer season or as and when required.	Sr. Electrician	H O D
23.	Carry out proper maintenance of HT lines.	Sr. Electrician	H O D
24.	Check amperes of each motor periodically for assessing actual being drawn.	Sr. Electrician	H O D
25.	To monitor power utilisation / consumption pattern on daily basis.	Sr. Electrician	H O D
26.	Keep the connected load of factory as low as possible.	Sr. Electrician	H O D
27.	Keep automatic controls of pasteurizer & other machines in working order to reduce electricity consumption.	Sr. Electrician	H O D
28.	Allot specific duties to specific staff so as to switch off the lights and fixtures when not in use.	Sr. Electrician	H O D

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

Engineering Department
Implementation Tasks

Annexure – 'N'

Objective: Reducing production breakdowns, downtime and maintenance expenditure.

SR NO	IMPLEMENTATION TASK	IMPLEMENTATION BY	MONITORING BY
29.	Run exhaust fans only when required.	Plant Operators	Mgr. (P)
30.	Switch off pesto-flash units during night hours.	SI / Exec. / AM	Mgr. (P)
31.	Exhaust fan for sweeping powder from the chamber be run only for ten to fifteen minutes after stoppage of powder plant.	P. Plant Operator	Mgr. (P)
32.	Use only one spray pond pump for running of powder plant.	SI / Exec. / AM	HOD
33.	Avoid reprocessing of milk and milk products to save power.	P. Plant Operator	Mgr. (P)

Engineering Department
Implementation Tasks

Objective: Reducing production breakdowns, downtime and maintenance expenditure.

SR NO	IMPLEMENTATION TASK	IMPLEMENTATION BY	MONITORING BY
	REFRIGERATION SECTION		
34.	Ensure proper lubrication and preventive maintenance of equipment as per specified.	Jr. Foreman	H O D
35.	Components causing frequent breakdowns to machinery should be replaced with better quality parts.	Jr. Foreman	H O D
36.	Use better quality spares.	Jr. Foreman	H O D
37.	Use always proper tools for proper fitting of equipment.	Jr. Foreman	H O D
38.	Check that oil is drained from oil separators in each shift.	Operator / Jr. Foreman	H O D
39.	Leak test of refrigeration equipment must be carried out on daily basis to ensure that pipelines are not leaking.	Operator / Jr. Foreman	H O D
40.	Ensure proper insulation of heat transfer surfaces to save power.	Jr. Foreman	H O D
41.	Avoid reprocessing of milk and milk products to save power.	Jr. Foreman	H O D
42.	Keep the operational hours of refrigeration / compressors as low as possible.	Jr. Foreman	H O D
43.	Closely monitor the temperature of cold store. Ensure defrosting of ice cream cold store regularly.	Jr. Foreman	H O D
44.	Check that ammonia compressors are being operated as per specified parameters.	Operator / Jr. Foreman	H O D
45.	Ensure that condenser coils are cleaned on periodic basis.	Jr. Foreman	H O D

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

Engineering Department
Implementation Tasks

Annexure – 'N'

Objective: Reducing production breakdowns, downtime and maintenance expenditure.

SR NO	IMPLEMENTATION TASK	IMPLEMENTATION BY	MONITORING BY
	BOILER SECTION		
46.	Ensure proper lubrication and preventative maintenance of equipment as per schedule.	Foreman	H O D
47.	Components causing frequent breakdowns to machinery should be replaced with better quality parts.	Foreman	H O D
48.	Use better quality spares.	Foreman	H O D
49.	Use always proper tools for proper fitting of equipment.	Tech.	Foreman
50.	Ensure that good quality valves are used in boiler department to avoid loss of steam due to leakages.	Foreman	H O D
51.	Optimise efficiency of the steam raising equipment and utilization of steam.	Foreman	H O D
52.	Explore innovate energy conservation techniques using collective wisdom available manpower.	Foreman	H O D
53.	Ensure correct weightment and accurate testing of husk when received in plant.	Boiler Attendant	H O D
54.	Monitor daily consumption and efficiency of fuel utilisation.	H O D (Engg)	GM (W)
55.	Employ competent boiler operators and maintenance techniques.	H O D (Engg)	GM (W)
56.	Always keep fire and water side of boiler perfectly clean and feed only soft water to boiler.	Boiler Attendant	Foreman
57.	Regulate draught and monitor temperature of out going gases to maintain efficiency of steam generation.	Boiler Attendant	Foreman
58.	Ensure proper heating temperature of feed water.	Boiler Attendant	Foreman

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

Engineering Department
Implementation Tasks

Annexure – 'N'

Objective: Reducing production breakdowns, downtime and maintenance expenditure.

SR NO	IMPLEMENTATION TASK	IMPLEMENTATION BY	MONITORING BY
59.	Utilize condensate of evaporating plant as feed water taking precautions to avoid mixing of milk with feed water.	Foreman	H O D
60.	Reduce operational hours of boiler by proper scheduling of processing operations.	Manager (Prod.)	GM (W)
61.	Ensure that moisture free and good quality charcoal in used.	Boiler Attendant	Foreman
62.	Do not operate boiler at pressures less than 6 kg / cm^2 and more than working pressure.	Boiler Attendant	Foreman
63.	Ensure that steam pipelines & fittings are well insulated and remain free from leakage.	Boiler Attendant	H O D
64.	Ensure that steam traps are working properly.	Boiler Attendant	Foreman
65.	Ensure that steam valves are not leaking.	Boiler Attendant	Foreman
66.	Ensure that desired steam pressure is maintained at different operational parameters to save fuel.	Boiler Attendant	Foreman
67.	Utilization of steam condensate water of different equipment namely pasteurizer, ghee kettle & sterilizer etc. for different purposes in the factory.	Foreman	H O D
68.	Ensure that live steam is not wasted / misused.	Boiler Attendant	Foreman

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

Engineering Department
Implementation Tasks

Annexure – 'N'

Objective: Reducing production breakdowns, downtime and maintenance expenditure.

SR NO	IMPLEMENTATION TASK	IMPLEMENTATION BY	MONITORING BY
	MAINTENANCE SECTION		
69.	Ensure proper lubrication and preventive maintenance of equipment as per schedule.	Foreman	H O D
70.	Impart proper training to plant operators.	Foreman	H O D
71.	Allot specific machines to specific plant operators to avoid chances mishandling / breakdowns.	Manager (Prod.)	GM (W)
72.	Use good quality / correct specifications lubricants.	Foreman	H O D
73.	Allot daily lubrication work to specific operators / technicians.	Foreman	H O D
74.	Take preventive measures to avoid corrosion of metal parts.	Foreman	H O D
75.	Components causing frequent breakdowns to machinery should be replaced with better quality parts.	H O D	H O D
76.	Use better quality spares.	Foreman	H O D
77.	Use always proper tools for proper tools for proper fitting of equipment.	Tech.	Foreman
78.	Get daily certificate from foreman / senior technician that machinery installed in their section is in perfect working condition.	Foreman	H O D
79.	Upgrade processes, systems and technology to save energy consumption.	Foreman	H O D
80.	Keep automatic controls of pasteurizers & other machines in working order.	Foreman	H O D
81.	Organise and implement concept of MBO and develop effective system for monitoring.	Foreman	H O D
82.	Provide steam only on limited numbers of wash points.	Foreman	H O D
83.	Ensure that pasteurizers are run on full capacity.	Foreman	H O D

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.	PAGE NO. 01
TITLE:- DEPARTMENTAL PROCEDURES QUALITY ASSURANCE	DATE :01.04.04

LOG SHEET FOR REFRIGERATION PLANT

DATE :----------

HOURS	COMPRESSOR NO. 1				COMPRESSOR NO. 2				COMPRESSOR NO. 3				AIR COMPRESSOR				IBT NO	IBT NO	IBT NO	CHILLED WATER PUMP RUNNING			CONDENSOR WATER PUMP RUNNING			WATER SUPPLY PUMP				OPERATOR'S SIGNATURE	REMARKS/ OBSERVATIONS
	LP	HP	OP	AMP	LP	HP	OP	AMP	LP	HP	OP	AMP	AMP	OP	AMP	OP	TEMP C"	TEMP C"	TEMP C"	NO. 1	NO. 2	NO. 3	NO. 1	NO. 2	NO. 3	TUBE WELL	R.W 1	R.W 2	R.W 2		
6 AM																															
7 AM																															
8 AM																															
9 AM																															
10 AM																															
11 AM																															
12 AM																															
1 PM																															
2 PM																															
3 PM																															
4 PM																															
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12 PM																															
1 AM																															
2 AM																															
3 AM																															
4 AM																															
5 AM																															

LEGEND : LP - LOW SUCTION PRESSURE
HP - HIGH DISCHARGE PRESSURE
OP - OIL PRESSURE
AMP - AMPERES
TEMP. - TEMPERATURE
R.W. - RAW WATER
IBT - ICE BANK TANK

JUNIOR FORMAN
SIGNATURE :_____

H.O.D.(Engineering)
SIGNATURE :_____

Prepared By **H O D**	Approved by CEO
Signature _____ Date 01.04.04	Signature _____ Date 01.04.04
Issue No. 01 Date 01.04.04	Revision No. 0 Date 01.04.04

{QME-01}

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.	PAGE NO. 02
TITLE:- DEPARTMENTAL PROCEDURES ENGINEERING	DATE :01.04.04

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

LOG SHEET FOR ICE CREAM REFRIGERATION PLANT

DATE :----------

HOURS	BOOSTER NO. 1			BOOSTER NO. 2			COMPRESSOR NO. 1		COMPRESSOR NO. 2		ICE CREAM COLD STORE TEMP.	BRINE TANK TEMP.		COND. WATER PUMPS.		OPERATOR'S SIGNATURE	REMARKS/ OBSERVATIONS
	LP	HP	OP	LP	HP	OP	LP	HP	LP	HP		I	II	I	II		
6 AM																	
7 AM																	
8 AM																	
9 AM																	
10 AM																	
11 AM																	
12 AM																	
1 PM																	
2 PM																	
3 PM																	
4 PM																	
5 PM																	
6 PM																	
7 PM																	
8 PM																	
9 PM																	
10 PM																	
11 PM																	
12 PM																	
1 AM																	
2 AM																	
3 AM																	
4 AM																	
5 AM																	
TOTAL HRS.																	

COMU HRS. ------- --------- ---------

HP - HIGH DISCHARGE PRESSURE
OP - OIL PRESSURE
LP - LOW SUCTION PRESSURE

JR. FOREMAN SIG:_____

H.O.D. (ENGG.) SIG._____

Prepared By **H O D**	Approved by CEO
Signature _____ Date 01.04.04	Signature _____ Date 01.04.04
Issue No. 01 Date 01.04.04	Revision No. 0 Date 01.04.04

{QME-01-A)

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.										PAGE NO. 03	
TITLE:- DEPARTMENTAL PROCEDURES ENGINEERING										DATE :01.04.04	
DAILY LOG SHEET (ELECTRICAL)											
DATE :----------											
TIME HOURS	HT AMPS	LT AMPS	LT AMPS	P.F.		ENERGY METER READING AT 6.00 A.M.				SHIFT DETAIL	REMARKS
						SECTION	TODAY'S READING	PREVIOUS DAY READING	CONSUMPTION IN 24 HRS.	A SHIFT	
7 AM					(A)	L.T. PANELS				1. Name of Technician_____	
										POWER FAILURE/ DG RUN	
8 AM					1	MILK RECEPTION				FROM____TO____ FROM_____TO_____	
										FROM____TO____ FROM_____TO_____	
9 AM					2	MILK PROCESSING				FROM____TO____ FROM_____TO_____	
10 AM					3	LIQUID MILK					
										Sign. of Technician_____	
11 AM					4	BUTTER & GHEE					
12 AM					5	EVAPORATOR				B SHIFT	
										1. Name of Technician_____	
1 PM					6	SPRAY DRYER				POWER FAILURE/ DG RUN	
2 PM					7	BOILER				FROM____TO____ FROM_____TO_____	
										FROM____TO____ FROM_____TO_____	
3 PM					8	REFRIGERATION				FROM____TO____ FROM_____TO_____	
4 PM					9	ETP					
5 PM					10	LIGHTING PANEL				Sign. of Technician_____	
					11	WATER SUPPLY					
6 PM										C SHIFT	
										1. Name of Technician_____	
					12	SUBMERSIBLE PUMP				POWER FAILURE/ DG RUN	
6 AM											
										FROM____TO____ FROM_____TO_____	
7 PM					13	MAIN L.T PANEL				FROM____TO____ FROM_____TO_____	
										FROM____TO____ FROM_____TO_____	
8 PM					B	Trivector Meter Reading					
9 PM					1	KWH READING					
										Sign. of Technician_____	
10 PM					2	KVAH READING					
11 PM					3	MDI READING					
								SHIFT			
12 PM					4	DIESEL TANK READING	A	B	C	CONSUMPTION	
1 AM					a	INITIAL TANK-I				A. KWH CONSUMPTION TODAY	
2 AM					b	FINAL TANK				C. POWER FACTOR	
										D. KWH CONSUMPTION UPTO DATE	
3 AM					5	FILLING TANK				E. KVAH CONSUMPTION UPTO DATE	
										F. DIESEL CONSUMPTION TODAY	
4 AM					a	INITIAL TANK-II				G. DIESEL CONSUMPTION UPTO DATE	
5 AM					b	FINAL TANK					
6 AM					6	DG -I (KWH)					
					7	DG - II (KWH)					

EXECUTIVE TECHNICL ELECTRICAL

Prepared By **H O D**	Approved by CEO
Signature _____ Date 01.04.04	Signature _____ Date 01.04.04
Issue No. 01 Date 01.04.04	Revision No. 0 Date 01.04.04

{QME-02}

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.	PAGE NO. 04
TITLE:- DEPARTMENTAL PROCEDURES ENGINEERING	DATE :01.04.04

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.
DIESEL GENSET LOG SHEET

DATE	START			VOLTS	AMPS	KW	P.F.	RPM	DIESEL OIL PRESSURE PSI	WATER TEMP ° C	ENGINE OIL PRESSURE PSI	STOP			RUNNING HOURS	UNITS GENERATED	DIESEL CONSUMMED	REPAIRS & REMARKS	OPERATOR,S SIGN.
	TIME	SMU	KWH									TIME	SMU	KWH					

A :-DG-I LOG SHEET
B :-DG-II LOG SHEET

H. O. D. (ENGG.)

Prepared By **H O D**	Approved by CEO
Signature _____ Date 01.04.04	Signature _____ Date 01.04.04
Issue No. 01 Date 01.04.04	Revision No. 0 Date 01.04.04

[QME-03][A & B]

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.	PAGE NO. 05
TITLE:- DEPARTMENTAL PROCEDURES ENGINEERING	DATE :01.04.04

DATE :----------

DAILY LOG SHEET BOILER

TIME HOURS	STEAM PRESSURE (KGS/cm2)	TEMPERATURE ° C		HUSK FEEDER R.P.M.		DRAUGHTS MM WC		DRUM WATER LEVEL	BLOW DOWN OPERATED AT (TIME)	FEED WATER		TYPE OF WATER	WATER ANALYSIS			TEMPERATURE		SHIFT REPORT	REMARKS IF ANY
		BED NO.1	BED NO.2	BED NO. 1	BED NO. 2	FD FAN-01	FD FAN-02			PH	HARDNESS		PH	HARDNESS PPM	TDS	FLU GAS	FEED WATER		
6 AM												FEED TANK							
7 AM																		**A Shift : --**	
8 AM												SOFTNER						Rice Husk Consumption Coal Consumption	
9 AM												CONDESATE						Total Run Hrs. Boiler Taken over in	
10 AM												BOILER						normal condition	
11 AM																		Attendent's Signature	
12 AM																		**B Shift : --**	
1 PM												FEED TANK						Rice Husk Consumption Coal Consumption	
2 PM												SOFTNER						Total Run Hrs. Boiler Taken over in	
3 PM												CONDESATE						normal condition	
4 PM												BOILER						Attendent's Signature	
5 PM																		**C Shift : --**	
6 PM																		Rice Husk Consumption	
7 PM												FEED TANK						Coal Consumption Total Run Hrs.	
8 PM												SOFTNER						Boiler Taken over in	
9 PM												CONDESATE						normal condition	
10 PM												BOILER						Attendent's Signature	
11 PM																			
12 PM																		Total Rice husk Consumption	
1 AM																		Total Coal Consumption Total Run Hrs.	
2 AM																		Steam Generated	
3 PM																			
4 AM																		SIGN OF FOREMAN BOILER	SIGN OF EXECUTIVE (TECH.)
5 AM																			

Prepared By **H O D**

Signature _____ Date 01.04.04

Issue No. 01 Date 01.04.04

Approved by CEO

Signature _____ Date 01.04.04

Revision No. 0 Date 01.04.04

(QME-04)

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.	PAGE NO 06
TITLE:- DEPARTMENTAL PROCEDURES ENGINEERING	DATE :01.04.04

HOURS	EQUALISATION TANK				AERATION TANK					SLUDGE RECIRCULATION CLARIFIER - II		SLUDGE DISCHARGE CLARIFIER - I		SLUDGE DISCHARGE CLARIFIER - II	
	Aerator	Sludge Pump		PH	Aerator		Sludge Pump		PH						
	No. 1	No 1	No 2		No 1	No 2	No 1	No 2		Start	Stop	Start	Stop	Start	Stop
0600															
0700															
0800															
0900															
1000															
1100															
1200															
1300															
1400															
1500															
1600															
1700															
1800															
1900															
2000															
2100															
2200															
2300															
2400															
0100															
0200															
0300															
0400															
0500															
0600															

CHEMICAL CONSUMPTION				
PARTICULARS	ALUM Kg	CR - I Kg	DAP Kg	UREA Kg
OPENING BALANCE				
RECEIPT				
CONSUMPTION				
CLOSING BALANCE				

REMARKS : -

OPERATOR'S SIGNATURE A - B - C

EXECUTIVES SIGNATURE _____

Prepared By **H O D**

Approvrd by CEO

Signature _____ Date 01.04.04

Issue No. 01 Date 01.04.04

[QME-05]

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

PERFORMANCE HISTORY OF DAIRY EQUIPMENT

EQUIPMENT :- SECTION :-

PREVENTIVE MAINTENANCE SCHEDULE

FREQUENCY :- LUBRICATION SCHEDULE FREQUENCY :-

S.NO.	ACTION TAKEN AGAINST	JOB DESCRIPTION	JOB CODE	GROUP CODE	DUE DATE	ATTENDED DATE	ATTENDED BY	SIG. OF FOREMAN /SEC. INCHARGE	REMARKS

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

PERFORMANCE HISTORY OF ELECTRICAL EQUIPMENT

EQUIPMENT :- SECTION :-

PREVENTIVE MAINTENANCE SCHEDULE FREQUENCY :- LUBRICATION SCHEDULE FREQUENCY :-

S.NO.	ACTION TAKEN AGAINST	JOB DESCRIPTION	FREQUENCY	JOB CODE	GROUP CODE	DUE DATE	ATTENDED DATE	ATTENDED BY	SIG. OF FOREMAN /SEC. INCHARGE	REMARKS

Prepared By **H O D** Approved by CEO

Signature _____ Date 01.04.04 Signature _____ Date 01.04.04

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.	PAGE NO. 09
TITLE:- DEPARTMENTAL PROCEDURES ENGINEERING	DATE :01.04.04

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

PERFORMANCE HISTORY OF STEAM GENERATION EQUIPMENTS (BOILER)

EQUIPMENT : SECTION :

PREVENTIVE MAINTENACE FREQUENCY : LUBRICATION SCHEDULE FREQUENCY :

S.NO.	ACTION TAKEN AGAINST	JOB DESCRIPTION	JOB CODE	GROUP CODE	DUE DATE	ATTENDED DATE	ATTENDED BY	SIG. OF FOREMAN /SEC. INCHARGE	REMARKS

Prepared By **H O D**	Approved by CEO
Signature _____ Date 01.04.04	Signature _____ Date 01.04.04
Issue No. 01 Date 01.04.04	Revision No. 0 Date 01.08.2003

[QME-08]

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.	PAGE NO. 10
TITLE:- DEPARTMENTAL PROCEDURES ENGINEERING	DATE :01.04.04

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

PERFORMANCE HISTORY OF REFRIGERATION PLANT EQUIPMENT

EQUIPMENT : SECTION :

PREVENTIVE MAINTENANCE FREQUENCY : LUBRICATION SCHEDULE FREQUENCY :

S.NO.	ACTION TAKEN AGAINST	JOB DESCRIPTION	JOB CODE	GROUP CODE	DUE DATE	ATTENDED DATE	ATTENDED BY	SIG. OF FOREMAN /SEC. INCHARGE	REMARKS

Prepared By **H O D**	Approved by CEO
Signature _____ Date 01.04.04	Signature _____ Date 01.04.04
Issue No. 01 Date 01.04.04	Revision No. 0 Date 01.08.2003

[QME-09]

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.	PAGE NO. 11
TITLE :- DEPARTMENTAL PROCEDURES ENGINEERING	DATE :- 01.04.04

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

PREVENTIVE MAINTENANCE SCHEDULE OF D.G. SET

R.NO NO.	SERVICE ITEMS	SERVICE METER UNITS (RUNNING HRS.) [SMU]	UNITS GENERATED	ATTENDED BY	SECTION INCHARGE	DATE 01 31
01	**DAILY CHECKS :-**					
	& AFTER EVERY 50 HRS.					
	i) Check that fuel tank is filled up	50 HRS.				
	ii)Drain sediments and water from fuel tank and water separator					
	iii) Check the engine oil level from dipstick					
	iv) Check the Engine coolant level					
	v) Check air cleaner service Indicator					
	vi) Check the loose or broken fittings guard's (MR6) and components					
	(MR6) and components					
	vii) Inspect for worn/broken and loose belts					
	viii) Check the battery connections and maintain electroyte level					
	ix) Check the condition of all gauges,repair or replace any broken gauge					
	x) Check the exaust manifold or air piping leakage					
02	**CHANGE THE FOLLOWING PARTS AT EVERY 250 HRS**	250 HRS.				
	i) Change the lubrication oil fill fresh lubrication oil (RX super plus) 15w/40 of castrol make					
	ii) Change the lubrication of filters					
	iii) Change the fuel filters					
	iv) Change/wash the fuel separator filter					
	v) Wash the primary fuel filter					
	vi) Check the vibration mounting					
	vii) Clean the radiator exernally					
	viii) Add the 2.500ltr. of intac liquid coolant in the radiator					
	ix) Check all hoses of the engine					
03	**Check and adjust the tappet clearance**	2000 HRS				

Prepared by **H O D**	Approved by CEO
Signature_____Date 01.04.04	Signature_____Date 01.04.04
Issue No. 01 Date 01.04.04	Revision No. 0 Date 01.04.04

[QME-10]

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

MAINTENANCE REPORT (GENERAL)

MILK CHILLING CENTRE : ----------

VISIT NO. _____

DATED _____ DATE OF LAST VISIT _____

SR NO	JOB DESCRIPTION	STATUS	ACTION TAKEN
1	MILK PIPE LINES AND FITTINGS	O.K./LEAKING	
2	WATER PIPE LINE AND FITTINGS	O.K./LEAKING	
3	MILK PUMP (....NOS)	O.K. /DEFECTIVE	
4	MILK STORAGE TANK ACCESSORIES	O.K. /DEFECTIVE	
5	WATER PUMPS (.....NOS)	O.K. /DEFECTIVE	
6	CONDITION OF BUILDINGS		
	A) MACHINERY WORK	O.K./NEEDS REPAIRS	
	B) SANITARY PIPE FITTINGS	O.K./NEEDS REPAIRS	
	C) CARPENTARY/JOINERY WORKS	O.K./DEFECTIVE	
	D) PAINTING / WHITEWASHING	O.K./DEFECTIVE	
07	CONDITION OF DISPOSAL WORK	O.K/NEED PAINTAING	
08	REPAIRS CARRIED OUT		
09	MATERIAL REQUIRED FOR REPAIRS		

TECHNICIAN **ZONE INCHARGE** **H. O. D. (ENGG.)**

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.
MAINTENANCE REPORT (ELECTRICAL)

VISIT NO. _____ MILK CHILLING CENTRE : _____
DATE:_____ DATE OF VISIT : _

SR. NO.	JOB DESCRIPTION		CHILLED WATER PUMP	MILK PUMP	MILK STORAGE TANK AGITATOR	GENER-ATING SET	DOMESTIC FITTINGS/ APPLIANCES
1	Voltage	Volts					
2	Current	Amps.					
3	Insulation Resistance	O.K. / WEEK					
4	Condition of Barings	O.K./ Defective					
5	Running temperature	Normal/ abnormal					
6	Running sound	Normal/ abnormal					
7	Capacity of fuses	Amps.					
8	Relay setting	Amps.					
9	Earthing	O.K. /Done					
10	Clean & tighten all terminals/ contracts	O.K. /Done					
11	General Conditions	Satisfactory/ Unsatisfactory					
12	Action taken						

TECHNICIAN ZONE INCHARGE H. O. D. (ENGG.)

Prepared By **H O D**	Approved by CEO
Signature _____ Date 01.04.04	Signature _____ Date 01.04.04
Issue No. 01 Date 01.04.04	Revision No. 0 Date 01.04.04

[QME-12]

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.	PAGE NO. 14
TITLE:- DEPARTMENTAL PROCEDURES ENGINEERING	DATE :01.04.04

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

MAINTENANCE SCHEDULE FOR CHECKING THE CALIBRATION OF INSTRUMENTS

INSTRUMENT ---------- FREQUENCY ----------

RANGE ----------

SERVICE ----------

DATE	SIMULATED VALUE			VARIATION	CALIBRATED BY	CHECKED BY	REMARKS
	UNIT	UNIT	UNIT				
	DISPLAYED VALUE						

Prepared By **H O D**	Approved by CEO
Signature _____ Date 01.04.04	Signature _____ Date 01.04.04
Issue No. 01 Date 01.04.04	Revision No. 0 Date 01.04.04

(QME-13)

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

PREVENTIVE MAINTENANCE/CALIBRATION OF WEIGHING SCALES

LOCATION - FREQUENCY -

CAPACITY -

MAKE -

SR.NO. -

DATE	STANDARD WEIGHT				CALIBRATED BY	CHECKED BY	REMARKS
	Kg	Kg	Kg	Kg			
	DISPLAYED WEIGHT						

Prepared By **HOD** Signature _____ Date 01.04.04	Approved by CEO Signature _____ Date 01.04.04
Issue No 01 Date 01.04.04	Revision No 0 Date 01.04.04

[QME-14]

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

BASIC EQUIPMENT DATA SHEET

S.NO	PARTICULARS	
1	NAME	
2	SUPPLIER	
3	PURCHASE ORDER NO	
4	DATES A) RECEIVED B) INSTALLED C) COMMISSIONED	
6	COST OF MACHINE	
7	EXPECTED LIFE	
8	MODEL & STYLE NO.	
9	CAPACITY	
10	IDENTIFICATION OF MANUFACTURER'S INSTRUCTION MANNUAL	
11	IDENTIFICATION OF MANUFACTURER'S DRAWING.	
12	A) LUBRICANT TO BE USED B) COOLENT TO BE USED	
13	BASIC MECHANICAL DETAILS e.g. A) BEARING NO. B) BELT NO.	
14	ELECTRICAL DETAILS : MOTOR HP MAKE LIMIT SWITCHES STARTER MOTOR BEARINGS	
15	UTILITIES	
16	LUBRICATION DETAILS	

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

ANNUAL MAINTENANCE SCHEDULE

01 of 05

DATE	SCTION	EQUIPMENTS	PARTS DESCRIPTION	PART POSITION	PART CHANGE	M/C OPENED BY	M/C FITTED BY	SIGN.OF EXE. TECH.	SIGN.OF PRODUCTION INCHARGE	REMARKS
	DRYER	ROTO PUMP	1) Bearing of motor 2) Bearing of Roto Pump 3) Varnish of Motor 4) Checking of Stator 5) Checking of Belts 6) Cleaning of S.S.Parts							
		DEHUMIDIFIER	1) Checking & Cleaning of Fins. 2) Checking of valves. 3) Cleanining of coils.							
		NECKCOOLING FAN	1) Bearing of motor 3) Varnish of Motor 3) Bearing of Fan 4) Belts position 5) Fan shaft position 6) Impeller 7) Distance piece canvas cloth position							
		AIR SUPPLY FAN	1) Bearing of Motor 3) Varnish of Motor 3) Beraing of Fan 4) Belts Position 5) Fan Shaft Position 6) Impeller Position & Cleaning 7) Distance piece canvas cloth position							
		P.C.FAN	1) Bearing of Motor 3) Varnish of Motor 3) Bearing of Fan 4) Shaft position 5) Impeller position 6) Belts Checking 7) Distance piece canvas cloth position 8) Supports checking of pipe ducts.							

Prepared By **H O D** Signature _____ Date 01.04.04	Approved by CEO Signature _____ Date 01.04.04
Issue No. 01 Date 01.04.04	Revision No. 0 Date 01.04.04

(QME-16)

DATE	SCTION	EQUIPMENTS	PARTS DESCRIPTION	PART POSITION	PART CHANGE	M/C OPENED BY	M/C FITTED BY	SIGN.OF EXE. TECH.	SIGN.OF PRODUCTION INCHARGE	REMARKS
		EXHAST FAN	1) Bearing of motor. 3) Varnish of Motor 3) Bearing of Fan 4) Shaft position 5) Impeller checking & Cleaning 6) Belts checking 7) Distance piece canvas cloth Position 8) Supports of Ducts.							
		ATOMIZER	1) Shaft Alignment. 2) Checking of oil pipe lines. 3) Checking of Ball Bearing 4) Checking of G.M. Bush 5) Checking of Shaft thread 6) Checking of Distribution Plate - tightening Nut. 7) Checking of G.M. Bush Tightening Nut 8) Varnish of Motor 9) Ball bearing of Motors. 10)Checking of Belts							
		ATOMIZER CONE,FIRE DOORS,MAIN GATE CHAM-BER,CYCLONE MANHOLE GASKETS,AND ROTARY VALVES	1) Silicon gasket strip 1) Silicon gasket cord 3) Ball bearing of R.V. 4) Bush of R.V. 5) Position of Rotor 6) Belts Position 7) Motor Bearing 3) Varnish of Motor							
		HAMMERS OF CHAMBER, AIRLINE CLEANING & AIR FILTER CHECKING	1) Aluminium piston 2) 'O Rings 3) Solenoid Valves 4) Air filter's O Ring 5) Airfilter Glass 6) Airfilter Gauge 7) Air line Valve leakage							

Prepared By **H O D**

Signature _____ Date 01.04.04

Approved by CEO

Signature _____ Date 01.04.04

Issue No. 01 Date 01.04.04

Revision No. 0 Date 01.04.04

(QME-16)

DATE	SCTION	EQUIPMENTS	PARTS DESCRIPTION	PART POSITION	PART CHANGE	M/C OPENED BY	M/C FITTED BY	SIGN.OF EXE. TECH.	SIGN.OF PRODUCTION INCHARGE	REMARKS
		SILOS - 03 NOS.	1) Silo manhole gasket 2) Sampling valve 3) Main S.S. Valve 65 mm 4) Main pipe line valves 5) 2 Nos. milk feed pump. a) Motor Bearing b) Impeller c) Carbon seal d) Varnish of Motor e) Lip seal f) Stationary Seal g) O Ring for houseing & others.							
		PRESSURE REGULATING VALVES STATION IN EVAPORATOR & DRYER	1) Pneumatic valve position 2) Pneumatic valve gauge 3) C.S.Valves position 4) Flange end gaskets position							
		WATERLINE VALVES	1) Valves position 2) Flanged gasket position							
		MILK VALVE S S TYPE	1) Valves Position 2) O Rings position							
	EVAPO-RATOR	CALANDERIA NO.1 FEED PUMP MODEL LKH-10 ONE PUMP	1) Bearing of motor 2) Carbon Seal 3) Lip Seal 4) Impeller 5) Stationary Seal 6) O Rings & other Housekeeping. 7) Motor Varnish							
		CALANDERIA NO.2 FEED PUMP MODEL LKH-10 TWO PUMP	1) Bearing of motor 2) Carbon seal 3) Lip seal 4) Impeller 5) Stationary seal 6) O Rings & other Housekeeping. 7) Motor Varnish.							

Prepared By **H O D**

Signature _____ Date 01.04.04

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Signature _____ Date 01.04.04

Issue No. 01 Date 01.04.04

Revision No. 0 Date 01.04.04

(QME-16)

DATE	SCTION	EQUIPMENTS	PARTS DESCRIPTION	PART POSITION	PART CHANGE	M/C OPENED BY	M/C FITTED BY	SIGN.OF EXE. TECH.	SIGN.OF PRODUCTION INCHARGE	REMARKS
		CALANDERIA NO.3 FEED PUMP MODEL LKH-10 FOUR PUMPS	1) Bearing of motor 2) Carbon seal 3) Lip seal 4) Impeller 5) Stationary seal 6) O Rings & other Housekeeping. 7) Motor Varnish.							
		CALANDERIA NO.4 FEED PUMP MODEL LKH-10 TWO PUMPS	1) Bearing of motor 2) Carbon seal 3) Lip seal 4) Impeller 5) Stationary seal 6) O Rings & other Housekeeping. 7) Motor Varnish.							
		CALANDERIA FINISHER & DST UNIT	1) I Bolts 2) Top cover Gasket 3) Man hole cover gasket 4) Orifices gaskets 5) Non return valve Balls							
		EVAPORATOR CONDENSER CLEANING,SPRAY POND, PUMPS	1) Bearing of Motor 7) Motor Varnish. 3) Gland packing 4) G.M. Bush 5) Impeller 6) O Rings packing 7) Non return valves.							
		MILK FEED PUMP MODEL ALC-2 TWO NO. PUMPS	1) Bearing of Motor 2) Motor Varnish. 3) Carbon Seal 4) Stationary seal 5) Lip seal 6) Impeller 7) O Rings & other Housekeeping.							
		SELF PRIMING PUMP FOR CONDENSATE LIFTING	1) Bearing of Motor 2) Motor Varnish 3) Gland packing 4) G.M. Bush 5) Impeller							

DATE	SCTION	EQUIPMENTS	PARTS DESCRIPTION	PART POSITION	PART CHANGE	M/C OPENED BY	M/C FITTED BY	SIGN.OF EXE. TECH.	SIGN.OF PRODUCTION INCHARGE	REMARKS
		FINISHER FEED PUMP MODEL LKH-10	1) Bearing of Motor 2) Motor Varnish. 3) Carbon Seal 4) Stationary seal 5) Lip seal 6) Impeller 7) O Rings & other Housekeeping.							
		DSI UNIT FEED PUMP TWO NOS	1) Bearing of Motor 2) Motor Varnish. 3) Carbon Seal 4) Stationary seal 5) Lip seal 6) Impeller 7) O Rings & other Housekeeping.							
		CONDENSATE WATER PUMP MODEL AKAY TWO NOS	1) Bearing of Motors 2) Motor Varnish 3) Carbon Seal 4) Lip Seal 5) Stationary Seal 6) O Rings Housekeeping & Others. 7) Impeller							
		VACUUM PUMP TWO NOS	1) Bearing of Motors 2) Motor Varnish 3) Carbon Seal 4) Lip Seal 5) Stationary Seal 6) O Rings Housekeeping & Others. 7) Impeller							
	PROCE- -SSING	CREAM SEPARATOR 3 NOS	1) Bearing of Motor 2) Motor Varnish 3) Gear Assembly 4) G.M. Bush 5) Impeller 6) Bearing of Separator							
	GHEE SEC.	BUTTER CHURN 2 NOS	1) Bearing of Motor 2) Motor Varnish. 3) Neoprene Bush							

Prepared By **H O D** Signature _____ Date 01.04.04	Approved by CEO Signature _____ Date 01.04.04
Issue No. 01 Date 01.04.04	Revision No. 0 Date 01.04.04

(QME-16)

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

CORRECTIVE MAINTENANCE RECORD

SL. NO.	DATE/ TIME	DETAILS OF BREAKDOWN	INFORMED BY	ATTENDED BY		REASONS OF BREAKDOWN	TIME TAKEN RECTIFY B/D	SIGNATURES		
				DATE/ TIME	FITTER			S/I	FITTER	FM/EX

Prepared By **H O D**	Approved by CEO
Signature _____ Date 01.04.04	Signature _____ Date 01.04.04
Issue No. 01 Date 01.04.04	Revision No. 0 Date 01.04.04

{QME-17}

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.	PAGE NO. 23
TITLE:- DEPARTMENTAL PROCEDURES ENGINEERING	DATE :01.04.04

DAILY REPORT ENGINEERING

DATE : _____

BREAK DOWN & PRODUCTION DOWN TIME			IMPLEMENTATION OF LUBRICATION P. M. PROGRAMME	MACHINES OUT OF ORDER UNDER REPAIR
SECTION	NUMBER OF BREAK DOWNS	PRODUCTION DOWN TIME HRS. MIN.		
MECHANICAL			YES / NO	
ELECTRICAL			YES / NO	
REFRIGERATION			YES / NO	
BOILER			YES / NO	
WATER SUPPLY			YES / NO	
E.T.P			YES / NO	
WEIGHING MACHINES			YES / NO	
MILK CHILLING CENTRES			YES / NO	
MISC.			YES / NO	

CONSUMPTION OF UTILITIES

1. MILK RECEIPT KG
2. MILK HANDLING KG
3. SMP MFD. KG

UTILITY	CONSUMPTION	NORMS PER 1000 L MILK HANDLING	ACTUAL PER 1000 L MILK HANDLING	VARIATION PER 1000 KG	REMARKS
WATER					
ELECTRICITY (Unit)					
FUEL					
DIESEL (Uint Per Lt)					
REFRIGERATION (Running Hrs. of Cmpressors)					
E.T.P					
FERRIC ALUM POLY ELECTROLITE					
PERFORMANCE OF BOILER AS PER ACT REGULATIONS.			YES/NO		
PERFORMANCE OF E.T.P. AS PER ACT REGULATIONS.			YES/NO		

Water Meter Reading	Submersible	E.T.P.
Opening		
Closing		
Consumption		

FOREMAN INCHARGE. (ENGG.)

Prepared By **H O D**	Approved by CEO
Signature _____ Date 01.04.04	Signature _____ Date 01.04.04
Issue No. 01 Date 01.04.04	Revision No. 0 Date 01.04.04

[QME-18]

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

CALIBRATION/RE-CHECK OF STANDARDS MEASURING INSTRUMENTS

SL. NO.	NAME OF EQUIPMENT	DATE OF CALIBRATION	CALIBRATION DUE ON	SIGNATURE OF INST. ENGG./ EXEC.(ENGG.)	REMARKS

Prepared By **H O D**	Approved by CEO
Signature _____ Date 01.04.04	Signature _____ Date 01.04.04
Iss ue No. 01 Date 01.04.04	Revision No. 0 Date 01.04.04

{QMQ-19}

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

CIVIL WORK RECORD

DATE	SR.NO.	CIVIL MAINT.	COMPLETED DATE	CHECKED BY	REMARKS

Prepared By **H O D**	Approved by CEO
Signature _____ Date 01.04.04	Signature _____ Date 01.04.04
Issue No. 01 Date 01.04.04	Revision No. 0 Date 01.04.04

[QME-20]

INNOVATIVE BUSINESS IMPROVEMENTS (PVT.) LTD.

LIST OF QUALITY RECORDS

DEPARTMENT ENGINEERING

QR-ENG- 05 OF 05

S.NO.	PARTICULARS	FORMAT/ FILE NO.	ITEM CODE	LOCATION	RETENTION PERIOD
1	LOG BOOK FOR REFRIGERATION PLANT	QME-01	IBI/ENGG/R/DLS/01	IBI/ENGG/REF/FR-01	1 YEAR
2	LOG BOOK FOR REFRIGERATION PLANT (ICE CREAM)	QME-01A	IBI/ENGG/R/DLS/01A	IBI/ENGG/REF/FR-01	1 YEAR
3	DAILY LOG SHEET FOR ELECTRICAL	QME-02	IBI/ENGG/R/DLS/02	IBI/ENGG/ELECT/FR-01	1 YEAR
4	GENSET LOG SHEET NO.I	QME-03A	IBI/ENGG/R/DLS/03A	IBI/ENGG/ELECT/FR-01	1 YEAR
5	GENSET LOG SHEET NO.II	QME-03B	IBI/ENGG/R/DLS/03B	IBI/ENGG/ELECT/FR-01	1 YEAR
6	DAILY LOGBOOK STEET BOILER	QME-04	IBI/ENGG/R/DLS/04	IBI/ENGG/BOILER/FR-01	1 YEAR
7	DAILY LOG SHEET EFFLUENT TREATMENT PLANT	QME-05	IBI/ENGG/R/DLS/05	IBI/ENGG/ETP/FR-01	1 YEAR
8	PERFORMANCE HISTORY OF DAIRY EQUIPMENT	QME-06	IBI/ENGG/R/PHD/06	IBI/ENGG/WS/FR-03	1 YEAR
9	PERFORMANCE HISTORY OF ELECTRICAL EQUIPMENT	QME-07	IBI/ENGG/R/PHE/07	IBI/ENGG/ELECT/FR-01	1 YEAR
10	PERFORMANCE HISTORY OF STEAM GENERATION EQUIPMENT (BOILER)	QME-08	IBI/ENGG/R/PHB/08	IBI/ENGG/BOILER/FR-01	1 YEAR
11	PERFORMANCE HISTORY OF REFRIGERATION PLANT	QME-09	IBI/ENGG/R/PMR/09	IBI/ENGG/REF/FR-01	1 YEAR
12	PREVENTIVE MAINT. SCHEDULE FOR DG SETS	QME-10	IBI/ENGG/R/PMDG/10	IBI/ENGG/ELECT/FR-01	1 YEAR
13	MAINTENANCE REPORT MCC (GENERAL)	QME-11	IBI/ENGG/F/MR/11	IBI/ENGG/FC-01/C-01	1 YEAR
14	MAINTENANCE REPORT ELECTRICAL MCC (GENERAL)	QME-12	IBI/ENGG/F/MR/12	IBI/ENGG/FC-01/C-01	1 YEAR
15	PREVENTIVE MAINTENANCE AND CALIBRATION OF INSTRUMENTS	QME-13	IBI/ENGG/R/IC/13	IBI/ENGG/FC-01/C-01	1 YEAR
16	PREVENTIVE MAINTENANCE AND CALIBRATION SCHEDULES OF WEIGHING SCALES	QME-14	IBI/ENGG/R/MCWS/14	IBI/ENGG/FC-01/C-01	1 YEAR
17	BASIC EQUIPMENT DATA SHEET	QME-15	IBI/ENGG/F/BEDS/15	IBI/ENGG/FC-01/C-02	1 YEAR
18	ANNUAL MAINTANACE SCHDULE	QME-16	IBI/ENGG/R/AM/16	IBI/ENGG/FC-01/C-03	1 YEAR
19	CORRECTIVE MAINTANANCE RECORDS	QME-17	IBI/ENGG/R/CMR/17	IBI/ENGG/WS/FR-03	1 YEAR
20	DAILY REPORT ENGINEERING	QME-18	IBI/ENGG/R/DR/18	IBI/ENGG/FC-01/C-03	1 YEAR
21	TESTING CERTIFICATES OF STANDARD INSTRUMENTS	QME-19	IBI/ENGG/F/TRS/19	IBI/ENGG/FC-01/C-03	1 YEAR
22	CIVIL WORK RECORD	QME-20	IBI/ENGG/R/CWR/20	IBI/ENGG/FC-01/C-03	1 YEAR

LIST OF QUALITY RECORDS

DEPARTMENT: ENGINEERING

ADMINISTRATIVE FILES

SRNO	PARTICULARS	FORMAT/ FILE NO.	ITEM CODE	LOCATION	SUB.LOC	RETENTION PERIOD
01	SANCTIONS	F - 1	IBI/ENGG/F/S-01	IBI/ENGG/FC-01/C-02		1 YEAR
02	ISO 9002 QUALITY MANNUAL	F - 2	IBI/ENGG/F/ISO-02	IBI/ENGG/FC-01/C-02		1 YEAR
03	CORRESPONDENCE WITH PNL & HRD	F - 3	IBI/ENGG/F/PD-03	IBI/ENGG/FC-01/C-02		1 YEAR
04	MINUTES OF MEETING	F - 4	IBI/ENGG/F/MM-04	IBI/ENGG/FC-01/C-02		1 YEAR
05	CORRESPONDENCE WITH PRESIDENT	F - 5	IBI/ENGG/F/P-05	IBI/ENGG/FC-01/C-02		1 YEAR
06	CORRESPENDENCE WITH ESTATE & SECURITY	F - 6	IBI/ENGG/F/E&S-06	IBI/ENGG/FC-01/C-02		1 YEAR
07	CORRESPONDENCE WITH FINANCE DEPTT.	F - 7	IBI/ENGG/F/A-07	IBI/ENGG/FC-01/C-02		1 YEAR
08	CORRESPONDENCE WITH GM(W)	F - 8	IBI/ENGG/F/GM-08	IBI/ENGG/FC-01/C-02		1 YEAR
09	ENGINEERING DEPARTMENT FILE	F - 9	IBI/ENGG/F/ED-09	IBI/ENGG/FC-01/C-02		1 YEAR
10	BASIC EQUIPMENT DATA SHEET	F - 10	IBI/ENGG/F/BDES-10	IBI/ENGG/FC-01/C-02		1 YEAR
11	CORRESPONDANCE WITH QA	F - 11	IBI/ENGG/F/QA-11	IBI/ENGG/FC-01/C-02		1 YEAR
12	DUTY ROSTER	F - 12	IBI/ENGG/F/DR-12	IBI/ENGG/FC-01/C-02		1 YEAR
13	NCR	F - 13	IBI/ENGG/F/NCR-13	IBI/ENGG/FC-01/C-02		1 YEAR
14	CORRESPONDANCE WITH PRODUCTION	F - 14	IBI/ENGG/F/P-14	IBI/ENGG/FC-01/C-02		1 YEAR
15	CORRESPONDANCE WITH STORE	F - 15	IBI/ENGG/F/S-15	IBI/ENGG/FC-01/C-02		1 YEAR
16	EXTRA DUTY	F - 16	IBI/ENGG/F/ED-16	IBI/ENGG/FC-01/C-02		1 YEAR
17	CORRESPONDANCE WITH PURCHASE	F - 17	IBI/ENGG/F/P-17	IBI/ENGG/FC-01/C-02		1 YEAR
18	CORRESPONDANCE WITH H.O	F - 18	IBI/ENGG/F/HO-18	IBI/ENGG/FC-01/C-02		1 YEAR
19	CORRESPONDANCE WITH TRANSPORT	F - 19	IBI/ENGG/F/TPT-19	IBI/ENGG/FC-01/C-02		1 YEAR