

Unit Profile



VASUDHARA DAIRY, NAGPUR

(A unit of Valsad District Co-operative Milk Producer union Ltd Alipur -Gujarat)

Vasudhara Dairy, Nagpur is unit of AMUL and manufactures/processes liquid Milk, Ice-cream, Sterilized Flavored Milk and Curd. It is a milk producers' cooperative organization having its head office at Alipur dist. Valsad (Gujarat) and through it affiliated to Gujarat Cooperative Milk marketing federation Ltd, Anand, Which is the apex marketing body of AMUL. More than 2 Lacs milk producers are the members of the Vasudhara Dairy, Alipur.

This dairy at Nagpur started in April 2002 when it acquired the sick and closed unit of M/s Frozen Food Pvt. Ltd. The unit had the capacity of 2000 L ice-cream per day. Soon after acquisition, expansion, modernization and addition of new product lines was taken up. Ice-cream capacity has been enhanced to now 10000 Liters per day per shift basis.

1. Replacement of 7.5 Hp Chilled water Pump with 3 Hp Pump.

Previous condition : We were using 7.5 Hp pump for IBT return chilled water tank Circulation purpose.

Observation : Frequent on-off of pump.

Status : Replaced 7.5 Hp pump with 3 Hp after flow rate calculation.

Vision : **To Reduce power consumption**

Date Of Installation : **Year 2007-2008**

Investment : **Rs. 25000**

Saving : 1. Saving of 2.27 Kwh & Pump running Hrs 16
Hence savings in Rs. $2.27 \times 16 \times 365 \times 4.41$
i.e. Rs 58462 per Annum.



3 Hp Chilled Water Pump

2. Dry Nut Roasting oven Hot Air Blower shaft frequent bent and noise problem

Previous condition : We were using 1.2 meters long pedestal mounted shaft blower for hot air circulation.

Observation : Due to inadequate balancing and induced draft, there was problem of frequent breakdown and improper hot air circulation.

Status : Replaced induced draft Blower (750 watt) with forced draft fan (370 watt)

Vision : To reduce power consumption & Maintenance cost

Date Of Installation : Year 2007-2008

Investment : Rs. 5000 /-

Saving : 1. Saving of 0.38 Kwh & Running Hrs 16
2. Hence savings in Rs. $0.38 \times 16 \times 365 \times 4.41$
i.e. Rs 9786 per Annum.

Other Benefits : * Reduction in Maintenance cost

Process time saved 30 mints per batch

Previous Condition



Present Condition



3. Installation of Advance New Technology Ammonia KC-Compressor replacing old Compressor

We replaced all old technology compressors with most efficient advanced compressor for refrigerant plant. We put all kirloskar compressors instead of freeze 5/5.

Vision : To Reduce power consumption

Date Of Installation : Year 2006-2007

Investment : 3.7 Lacs

Calculation :

- Old comp. Gives 15 TR with 30 Hp power consumption
- New Comp. Giving 60 TR with 75 Hp power consumption
- Hence we get 540 Kwh saving per day.

Saving : $540 * 30 * 12 * 4.41 = 857304$

Therefore saving Rs. 8.57 per Annum

Previous Condition Photograph



Present Condition



4. Replacement of Al-Fan by FRP fan of cooling tower

Previous condition : We were using Al- fan air circulation.

Status : Replaced Al-fan with FRP fan

Vision : To reduce power consumption & Maintenance cost

Date Of Installation : Year 2006-2007

Investment : **Rs. 54000/-**

Saving : 1. Saving of 1.5 Kwh & Running Hrs 22
2. Hence savings in Rs. $1.51 \times 22 \times 365 \times 4.41$
i.e. **Rs 53600 per Annum.**

Other Benefits : * Reduction in Maintenance cost



FRP Fan 4 blades 2 Nos Cooling Tower

Air Management

5. Use of Elgi Compressor for PID Valve operation In night shift

Previous condition : We were running Atlas Copco Air Compressoer (30 Hp) for fulfilling the air requirement in night shift only managing the PID valve operation.

Status : In lack season now we are running Elgi Air Compressor (10 Hp) in place of 30 Hp Air compressor.

Vision : To reduce power consumption & Maintenance cost

Date Of Installation : Year 2006-2007

Investment : **Rs. 35000 /-**

Saving : 1. Saving of 15 Kwh & Running Hrs 8
2. Hence savings in Rs. $15 \times 8 \times 240 \times 4.41$
i.e. **Rs 127008 per Annum.**

Other Benefits : * Reduction in Maintenance cost



Elgi Make Air Compressor

6. Installation of Automatic Power Factor Controller

Our aim is to maintain the power factor unity and get the benefits of the same. Automatic power factor controller installed in APFC panel so that according to load it will on capacitor bank and maintain Power factor unity.

Date Of Installation - Year 2005-2006

Investment - 2.4 Lacs

Savings - 7.16 Lacs per Annum



CAPACITOR BANK No. 1



APFC Panel No.2

8. Voltage Management : To maintain the consistency in the Voltage

Previous condition : We were using 500 KVA Power Transformer for the managing entire plant load. Its tap setting was on 3 point.

Observation : Due to voltage fluctuation in higher side we were facing the problem to delectated electronic component damages.

Status : Change the tap setting from 3 to 2 set point, now we have getting the appropriate voltage i.e. range 420-447 volts.

Vision : To ensure longer service life of equipment & Maintenance cost

Date Of Installation : Year 2007-2008

Investment : Nil

Benefits : * Reduction in Maintenance cost
2005 Reduction in breakdown time.
2005 Smooth operation of equipment, this enhance the productivity



500 KVA Transformer