

**Year: 2004-2005**

**1. Optimising the re-circulation pump with a mono-block**



Alfa bleacher barometric circulation pump

Change the coupled pump with a mono-block pump.

Electrical Energy saved: 0.43 lac kWhr/ annum

Investment: Rs0.20 lac

Savings: Rs 1.65 lac/ annum

**2. Installation of VFD on Variable flow requirement pumps.**



VFD for BOT pump (801)

Replaced the normal started with VFDs on two pumps

Electrical Energy saved: 1.27 lac kWhr/ annum

Investment: Rs 2.40 lac

Savings: Rs 4.86 lac/ annum



VFD for fatty acid pump (804)

### 3. Flash steam recovery



Flash steam header with NRV arrangement

Recovered flash steam from the condensate, used in the feed water heating.

|                       |                     |
|-----------------------|---------------------|
| Thermal Energy saved: | 3519 MkCal/ annum   |
| Husk Saved:           | 1462 T/ Annum       |
| Investment:           | Rs 0.75 lacs        |
| Savings:              | Rs 18.88 lac/ annum |

**Year 2005-2006**

**1. Elimination of cold water circulation pump by using the cooling tower water:**



Eliminated PHE & sump pump completely.  
Electrical Energy saved: 2.98 lac kWhr/ annum  
Investment: Nil  
Savings: Rs 10.91 lacs / annum

**2. Condensate recovery form terminal section:**



Condensate recovered from terminal section

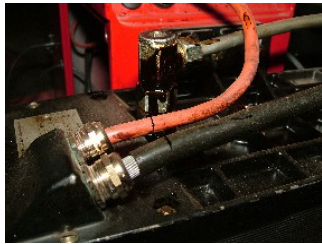
Condensate recovered from terminal section increased condensate from 27T to 45TPD  
Thermal Energy saved: 524 M Kcal/ year  
Husk saved: 210 T/ annum  
Water saved: 14040 T/annum  
Investment: Rs 2.00lacs/ annum  
Savings: Rs 3.61lacs/ annum

**Year 2006-2007**

**1. Installation of FO burner in place of diesel fired burner in heating system:**



FO burner



FO heater for burner

Replaced diesel fired burner with FO fired burner.

Investment: Rs 10 lacs

Savings: Rs 85 lacs/ annum

**2. Installation of VFD on Alfa DEO final oil pump:**



VFD for DEO pump (803)



Replaced the normal started with VFD pump with variable flow requirement.

Electrical Energy saved: 0.65 lac kWhr/ annum


Investment: Rs 1.50 lac

Savings: Rs 2.31 lac/ annum

### 3. Optimisation of pumps as per requirement FW1 & FW3

|   |   |
|---|---|
|  <p>Fw1</p>  | <p>Optimisation of the pump with suitable one.</p> <p>Electrical Energy saved: 1.92 lac kWhr/ annum</p> <p>Investment: Rs 1.00 lac</p> <p>Savings: Rs 6.88 lac/ annum</p> |
|  <p>Fw3</p> |   |

### 4. Replaced the Aluminium cooling tower fan blades with Energy Efficient FRP blades:

|   |  |
|---|--|
|  <p>Barometric cooling tower with FRP blades</p> | <p>By using FRP fan blades in place of Aluminium blades.</p> <p>Electrical Energy saved: 0.68lac kWhr/ annum</p> <p>Investment: Rs 1.32 lac</p> <p>Savings: Rs 2.46 lac/ annum</p> |
|---|--|