

# **RASHTRIYA CHEMICALS AND FERTILISERS LIMITED**

## **THAL UNIT**

### **Unit Profile :**

Rashtriya Chemicals & Fertilizers Ltd. (RCF Thal) is located about 100 KM south of Mumbai on the western coast of Raigad district. The Giant Fertilizer complex at Thal is engaged in manufacturing prilled Urea having the revised capacity of 17.06 Lakhs MT per year. The annual capacity of ammonia plant is 9.90 Lakhs MT. The capacity utilization of more than 100% has been achieved for the last three years in row.

*The unit has received ISO14001 certification in June 2001. We are certified with OHSAS 18001 (Occupational Health & Safety Assessment Series) from September 04.*

A wide range of diversified valued chemical products like Dimethyl Formamide (2500 T/year), Methylamine (11,400T/year), Dimethyl Acetamide (5000 T/Year) and a Formic acid plant (10000 T/year capacity) are manufactured at Thal.

*We have received ISO-9001 in the year 1997 for our industrial chemicals manufacturing and despatches.*

Argon Recovery Project from purge gas in Ammonia plant is also in progress and the production of Argon is expected by November 2007.

Various awards received in the year 2007 are listed below:

- 1. National Safety Award –2006 for RCF, Thal from Ministry of Labour, Government of India.**
- 2. National Safety Award –2006 for HWP, Thal from Ministry of Labour, Government of India.**
- 3. RCF,Thal unit awarded Good Green Governance award from Srishti Foundation for 2006 for Environment Protection & Pollution Control.**
- 4. RCF,Thal received NSC National Safety Appreciation Award 2006.**
- 5. MoU Excellence Award for the year 2005-06 declared on 08.03.07.**
- 6. MoU Excellence Certificate for the year 2004-05 declared on 08.03.07.**
- 7. Award from National safety council for Maharashtra chapter for ‘Lowest accident frequency rate for the year 2006’ in the group of Above one million manhours working.**
- 8. Award from National Safety Council for Maharashtra chapter for ‘Longest accident free period for the year 2006’ in the group of Above one million manhours working.**

**9. Certificate of Merit for HWP, Thal plants for Zero accident frequency rate for the year 2006 from National Safety Council for Maharashtra chapter in the group of below one million manhours working.**

The company's performance has rising trend and RCF Thal has won appreciation in the form of these prestigious awards .

Specific energy consumption for Ammonia and Urea plants is shown below:

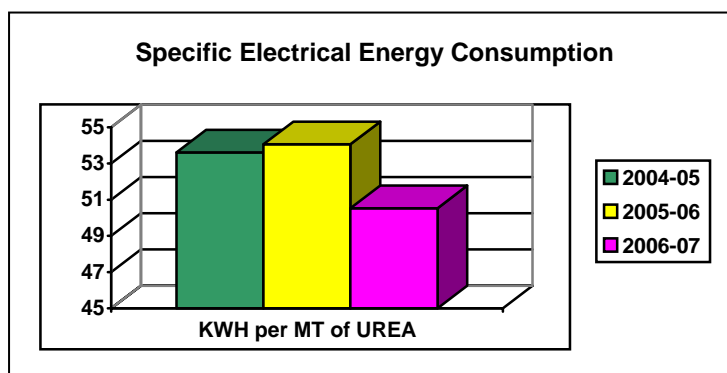
Plant	2004-05	2005-06	2006-07
Ammonia production (MTPY)	1058720	981650	1079050
Ammonia (Mkcal/MT)	9.132	9.148	9.22
Urea production (MTPY)	1833750	1718350	1878200
Urea (Mkcal/MT)	6.477	6.505	6.506

*ENERGY CONSERVATION ACHIEVEMENTS*

**Sustained operations of all the plants i.e process and utilities with minimum downtime resulted into :**

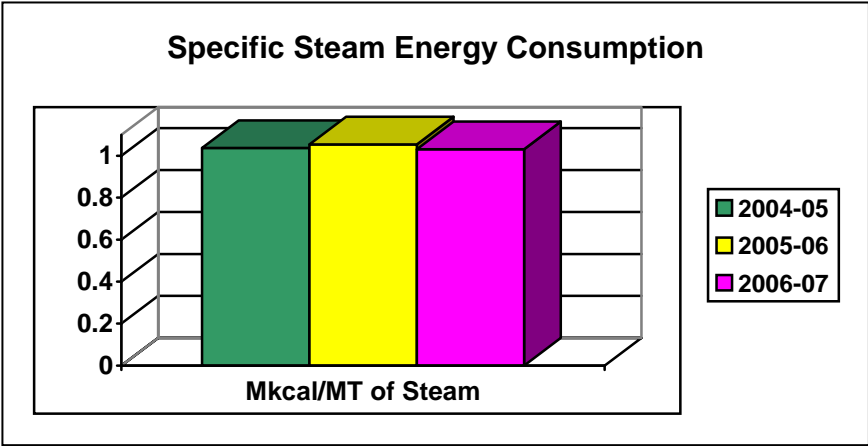
**1. Electrical Energy Consumption reduction in Urea Plant**

Year	KWH/MT of Urea
2004-2005	53.61
2005-2006	54.06
2006-2007	50.53



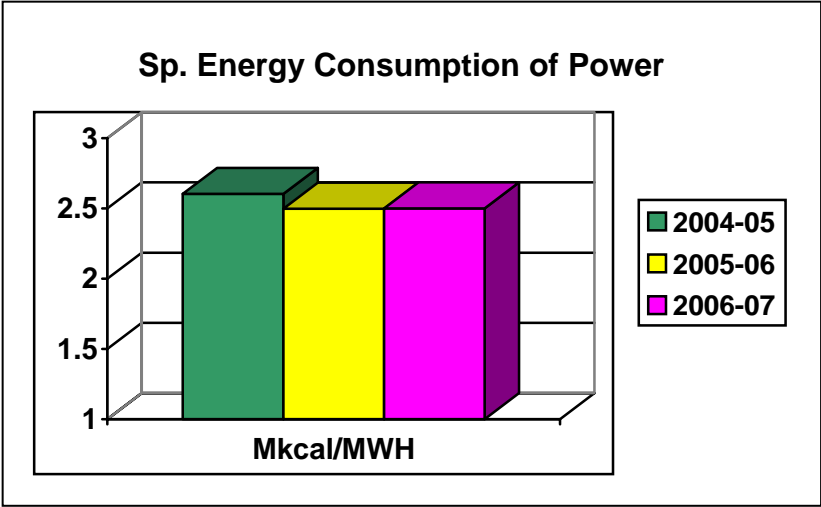
**2. Thermal Energy Consumption reduction in Urea Plant**

Year	MKcal/MT of Steam
2004-2005	1.037
2005-2006	1.054
2006-2007	1.031

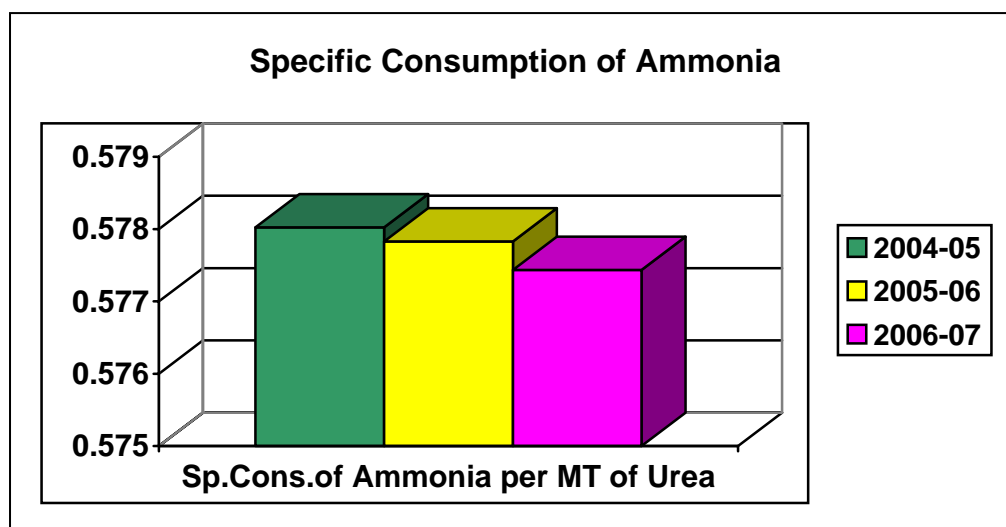


**3. Power Energy Consumption reduction in Turbo generator set**

Year	MKcal/MWH
2004-2005	2.603
2005-2006	2.498
2006-2007	2.500



#### 4. Reduction in Ammonia Specific consumption



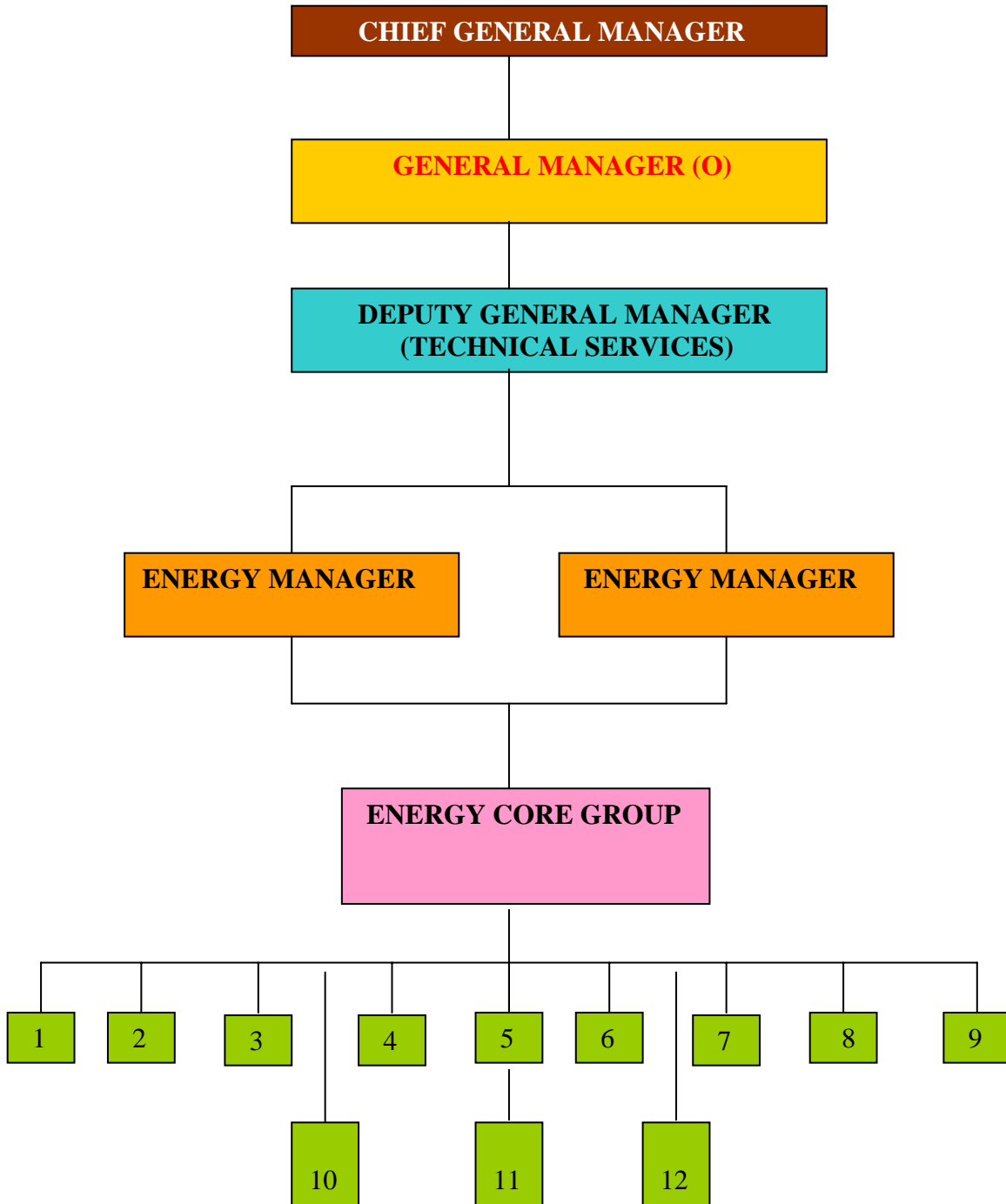
#### **Energy Conservation Commitment, Policy & Organizational Set up.**

Plants at Thal have performed well largely due to the proactive and painstaking efforts taken in the field of energy conservation and capacity enhancement through technical foresight. The energy level maintained by 22 years old RCF, Thal plants itself shows our commitment & outlook towards Energy conservation.

Our organization has an exclusive **Energy Conservation Cell**. The cell is headed by Executive Director of the Unit. As per the EC Act-2001 our unit has two designated '**Energy Managers**'. These two Energy Managers are reporting to General Manager. There are TWELVE certified **Energy Auditors** who have passed exam conducted by BEE in 2004-05. We have taken various energy conservation measures which has resulted into huge energy savings and awards at National & State level .RCF Thal is committed to reduce energy consumption of its products to match with the best at national & international level.

Year	No. of measures implemented	Investment in Rs. Crores	Savings accrued in Rs. Crore.
2004-05	45	4.62	14.96
2005-06	31	2.44	10.87
2006-07	21	1.0	3.20

# ENERGY CONSERVATION CELL STRUCTURE



## ***Energy Conservation Plans and Targets***

1. End-to-End to survey of Ammonia plant including proposal for additional coil in waste heat section.
2. Use of low grade waste heat for refrigeration/Cooling for PAC in ammonia plant, CO<sub>2</sub> in Urea plant etc.
3. Installations of variable frequency drive (VFD) for Ammonia, Urea & SGP plants.
4. Replacement of reciprocating compressor by Screw compressor for one unit of air conditioning in administration building.
5. Installation of Variable Frequency Drive:
  - 3414 A/B and Kurul water pump.
  - T.G condensate extraction pump two no.
  - Steam Generation Plant Cooling Tower Fan.
6. Energy efficient lighting in Ammonia Plant.
7. High emissivity Zirconium coating of refractory in primary reformer in ammonia plant line II..
8. Calcium silicate insulation for SH lines in Ammonia plant and for SGP to Ammonia plant.
9. Provision of Geared Motor in place of Motor+Gear box in Urea.
10. Interconnection of P-10 pumps so as to stop one pump.
11. Removal of mill air heater for all three boilers in SGP.
12. Replacement of Split A/C with energy efficient machines

## **ENVIRONMENT & SAFETY**

### **ENVIRONMENT MANAGEMENT AT RCF THAL**

The ambient air quality in factory is continuously monitored at four stations and results are well within stipulated units. Ambient air quality monitoring and noise monitoring is done in 7 surrounding villages. In plant control systems for pollution control are kept working continuously. Stack monitoring is conducted regularly for non-flaring stacks.

The environment management of RCF Thal does not stop at merely by meeting all the stipulated requirements laid down by the statutory authorities. Our aim is to better our own performance & excel in this field. The environment management system has been certified for ISO 14001 since June-2001. Internal audits and management reviews are undertaken regularly to identify the areas of improvement.

Measure taken to conserve water has yielded fruitful results. Our effluent generation has reduced from 400 M3/Hr to 250 M3/Hr. Because of recycle, reuse and recovery our factory water consumption has also come down over the years.

Year	Water consumption M3/MT
2002-03	9.1
2003-04	8.4
2004-05	7.6
2005-06	7.7
2006-07	7.57

### **SAFETY**

RCF, Thal has achieved a lowest accident frequency rate and longest accident free period. We had ZERO No. of reportable accidents in the year 2003-2004, 2004-2005 and one reportable accident 2005-06. We had received:

1. **'National Safety Award'** for 2005 from Ministry of Labour.
2. Award from National safety council for Maharashtra chapter for **'Lowest accident frequency rate for the year 2005'**.
3. Award from National Safety Council for **'Longest accident free period for the year 2005'**.

*We are certified with OHSAS 18001 (Occupational Health & Safety Assessment Series) from September 04.*

### *WELFARE, SPORTS & EMPLOYMENT TO WEAKER SECTIONS*

The SC/ST employees are provided Training in order to upkeep their skills and knowledge. Our company follows the guideline in respect of reservation in recruitment and promotion of SC/ST, OBC, Ex-servicemen and physically handicapped persons. Welfare facilities, particularly to SC/ST employees have also been taken care of. The SC/ST students in nearby vicinity were provided with Annual scholarships.

RCF,Thal undertakes several welfare schemes like education, medical, transport, housing etc. Our company is prominent patron and sponsors for various sports.

Energy conservation campaign at Domestic front, National Energy conservation week celebration and Essay competition for school children are the awareness programs conducted periodically at Thal.