Birla Super Cement Solapur

(I) BALL MILL GRINDING CIRCUIT MODIFICATION TO IMPROVE PROCESS OUTPUT.

i) Back Ground of the project -

The Cement Grinding process is consisting of Ball mill circuit. The pregrinding circuit was installed at our plant to reduce the ball mill power consumption. The output of pregrinding process is feed to ball mill. The ball mill output is separated in to finished product and course product. The course product was recirculated to ball mill and finish product is sent for packing.

ii) Observation Made -

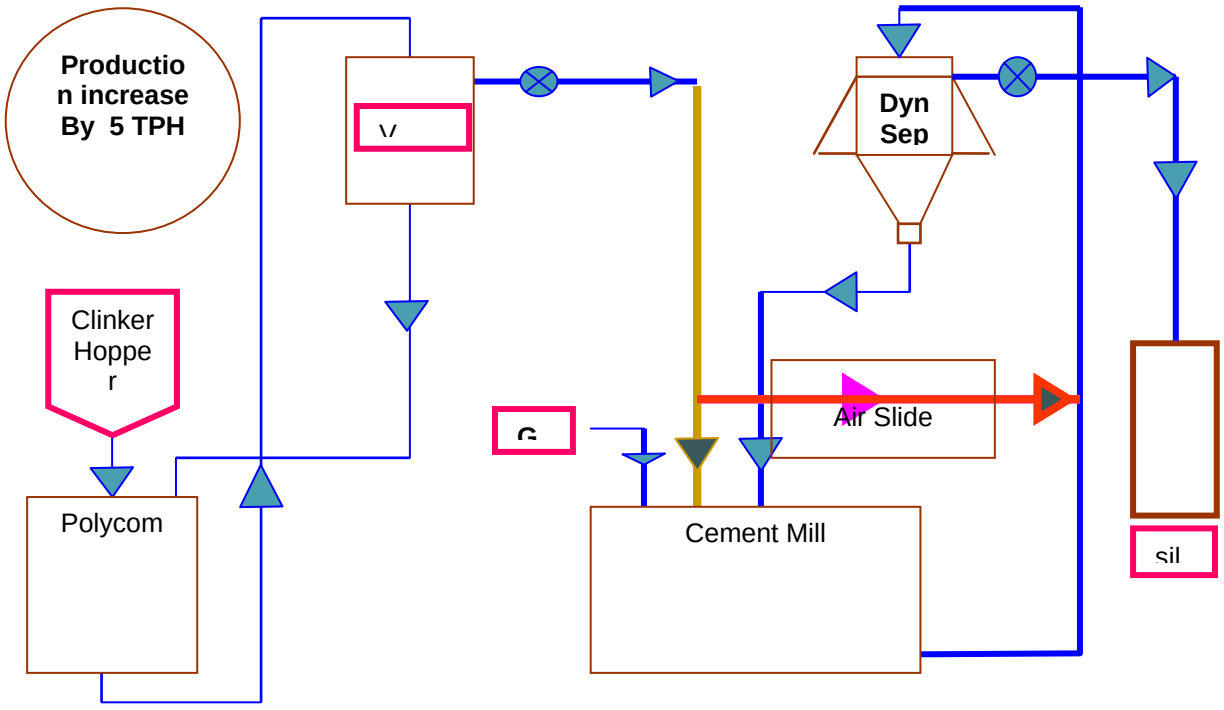
It was observed during routine analysis that output from pregrinding circuit contains 30% finish product contains. The properties of finish product are matching with pregrinding circuit output. The matter was discussed in Daily production review meeting and thinking process begins to tap up this finished product. The valuable suggestion in this regard was came from teams to by pass the ball mill and sent the products to separator.

iii) Technical & Financial Analysis Made -

The by passing of ball mill will having reduction in load on the ball mill and will results into increase in TPH. The cost of modification includes installation of air slide, which cost Rs. 1.00 Lacs.

iv) Implementation -

Implementation made departmentally in July'04.



(II) INSTALLATION OF THREE VARIABLE FREQUENCY DRIVES FOR SEVEN DUST COLLECTOR DRIVES.

j) Back Ground of the project -

The Dust Collectors are provided in the Cement Plant to control the dust emission to atmosphere to minimize the air pollution. The fan was utilized to collect the dust from the process. Due to optimisation in the plant & dedusting lines, the system dust emission has drastically reduced & the damper of fan was not opened above 80%.

ii) Observation Made -

It was observed during normal checking of drive parameters that the motor was loading below 50%. The damper opening also varies according to environmental conditions. The matter was discussed further in energy forum and came out with suggestion of installation of variable speed drive.

iii) Technical & Financial Analysis Made -

The reduction in motor speed will be possible with increase in the damper opening to maintain the same performance of the dust collector. A new thinking was adopted to run tow dust collector drives with one variable frequency drive, as the speed requirement of both the dust collector was same. The cost impact of Rs. 8 Lacs for procurement and installation of VFD.

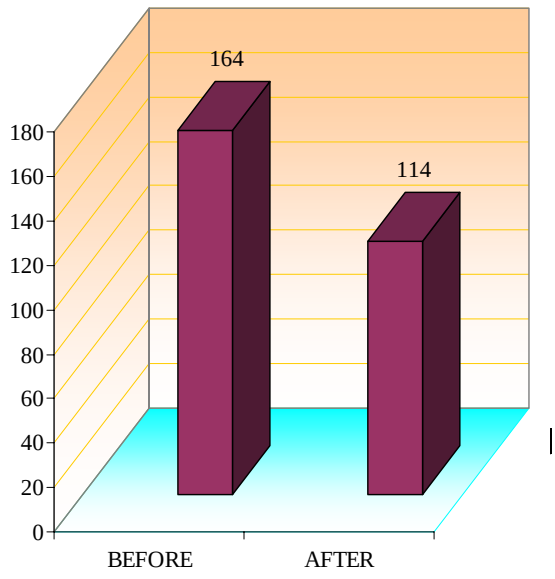
iv) Implementation -

Implementation made departmentally in April' 04 & Dec'04.

DUST COLLECTOR FAN

Sno.	Perticulars	Before Modification	After Modification	Saving
1	**Motor**	**15-45KW** Induction Motor	**15-45 KW** Induction Motor	
2	Operational Speed	1440 RPM	1250 RPM	
3	Damper Open	60 - 80 %	100%	
4	Power Intake /Hr.			
	a) Load Current	290 AMPs	192AMPs	
	b) Power Factor	0.80	0.85	
	c) Voltage	409 Volts	402 Volts	
	d) Power (1.73 xVxIxP.F)	164 KW	114 KW	
5	Net Saving			**50 KW**
6	Saving in Amount		**9.1 Lacs / Annum**	

KW SAVING



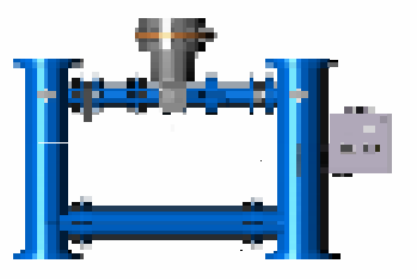
(III) INSTALLATION OF AIR CONTROL SYSTEM.

i) Back Ground of the project -
The compressor air was used in cement plant mainly for Instrument operation and process requirement like cleaning of Dust Collector bags. The operation of instruments equipments are very sensitive to change in air characteristics ie pressure and volume. The packing operation was getting disturbed frequently due to variation in air pressure, which resulted into operation of stand by compressor to maintain required air at consumption point.

ii) Observation Made -
It was observed during normal checking that main & stand by compressors are getting unload frequently. The setting of the Load and unload of the compressors are also on higher side to stand the system in case of sudden increase in air requirement. This matter of idle running of compressors was discussed in the energy forum and suggested to install a system, which will cater the process requirement with only one compressor. The installation of air control system was suggested by one of the member, which he came across during his visit to Energy seminar.

iii) Technical & Financial Analysis Made -
The reduction in stand by operation of the system will definitely reduce the power consumption of system and will be beneficial.
The financial implication was Rs. 1.5 Lacs for procurement and installation of air control system in line with present compressor air distribution system.

iv) Implementation -
Implementation made in May'04.



(IV) REDUCTION OF PLANT START UP LOSSES

i) Back Ground of the project -
The Cement manufacturing plant is a continuous process plant in which one operation is link with another operation. The output of one operation is input to another operation. The start up of the plant is done with starting of last operation to first operation to avoid the jamming of equipments. The plant shutdown is carried out in reverse order.

ii) Observation Made -
It was observed that the plant startup and shutdown process high energy was consumed as drives are running without any production. The suggestion received in this matter from one of the employee to change the plant startup and shutdown sequences to reduce the overall startup and shutdown time required to reduce the energy losses.

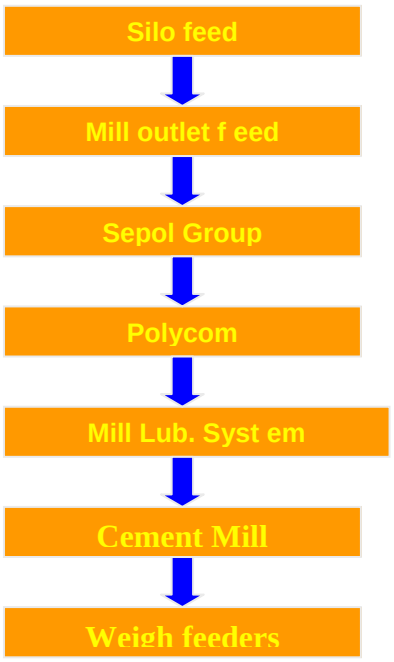
iii) Technical & Financial Analysis Made -
The reduction in startup and shutdown times will reduce the idle running of the equipment, which ultimately reduces the energy loss.

The financial implications are nil, as no capital investment needed.

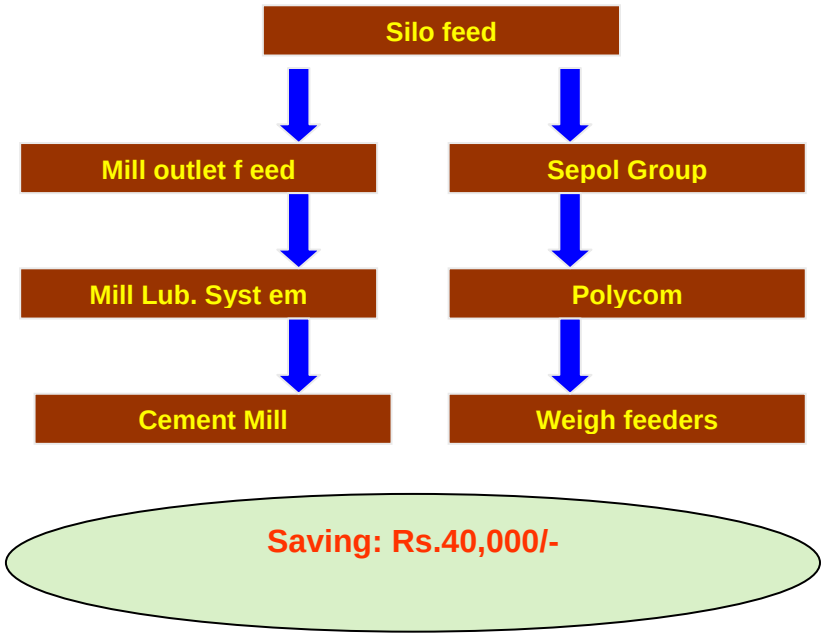
iv) Implementation -
Implementation made in April-04.

PLANT STARTUP TIME REDUCED FROM 12 Min. TO 06 Min.

EARLIER SEQ.



CHANGED SEQ.



Saving: Rs.40,000/-

(V) INSTALLATION OF CYCLONES TO IMPROVE OUTPUT

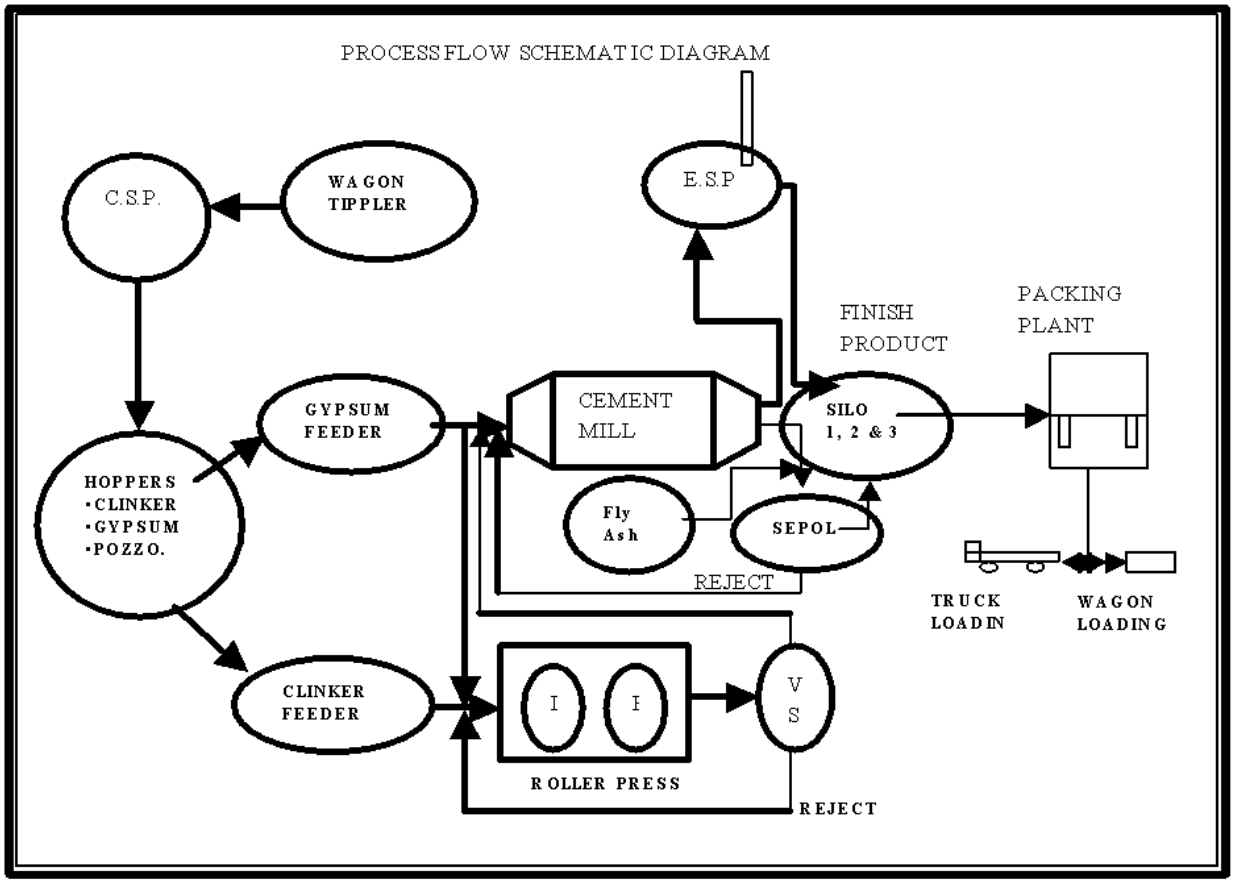
i) Back Ground of the project -
The Cement Grinding process is consisting of Ball mill circuit. The pregrinding circuit was installed at our plant to reduce the ball mill power consumption. The output of pregrinding process is feed to ball mill. The Pregrinding circuit having V separator to separate the fines and course material. The course product was recycled to pregrinding circuit and fines sent to ball mill.

ii) Observation Made -
It was observed during routine analysis that course material was also containing 20-25%fines. The matter was discussed in Daily production review meeting and thinking process begins to tap up this fine product. The suggestion of installation of cyclones was come forward, which was taken for implementation after approval from management.

iii) Technical & Financial Analysis Made -
The installation of cyclones will definitely help in improving efficiency of pregrinding circuit, which result into reduction in power consumption.

The financial impact of Rs. 40 lacks on procurement and installation of Cyclones.

iv) Implementation -
Implementation made departmentally in Sept'04.


PROCESS FLOW SCHEMATIC DIAGRAM
C.S.P.
WAGON TIPPLER
E.S.P
FINISH PRODUCT
PACKING PLANT
GYPSUM FEEDER
CEMENT MILL
SILO 1, 2 & 3
HOPPERS
•CLINKER
•GYPSUM
•POZZO.
Fly Ash
SEPOL
REJECT
TRUCK LOADIN
WAGON LOADING
CLINKER FEEDER
I
I
V S
ROLLER PRESS
REJECT

ENERGY CONSRVATION FORUM

Our Organisation is bench marked in our entire "A.V. Birla Group" of units as "Best Team Work-Unit" (as per Group - OHS in 1999 & 2001). The Energy Conservation activities are the result of all Employees & implemented through Team works.

Energy conservation cell initiated from 2001.However the activities are started right from commissioning of our plant ie 1995. The cell consist of bottom and middle level employees from cross functional areas such as process, mechanical , Etc. The cell is headed by Head of Operation & Maintenance who inturn report to plant head.

The Energy Conservation Plans are discussed / Reviewed in shop floor meetings, Daily Production meeting, EMS plans, and WCM (World Class Manufacturing forums).

The potentials input for Energy Conservation from employees are the result of "Employee Suggestions Scheme", "Employee Goodwork Award", "Mgt. Appreciation Letter". The efforts are linked with Employee's "Appraisal System".

The list of present & future energy conservation activities of our plant are displayed in the annual report.

GRASIM
ADITYA BIRLA GROUP

The Forum will meet once in a month (tentatively on 25th of every month) and focus the discussions on following points:

- Checks & measures for the Specific Energy consumption.
- Optimisation of Plant running hour with Targeted Production & Energy Tariff Zones.
- Evaluation of energy conservation activities.
- Initiation of energy conservation activities.
- Monitoring checks for plant & equipment switchings.
- Review of Suggestions Scheme's 'Energy Conservation activities'
- Out line the Scope of Forum in energy conservation.
- Formation of guide lines for processing of suggestions.
- Formation of Suggestion Scheme Committee for suggestions.
- Review of present energy conservation schemes effectiveness
- Scheme identification for Launching of Energy Cons.Activities.

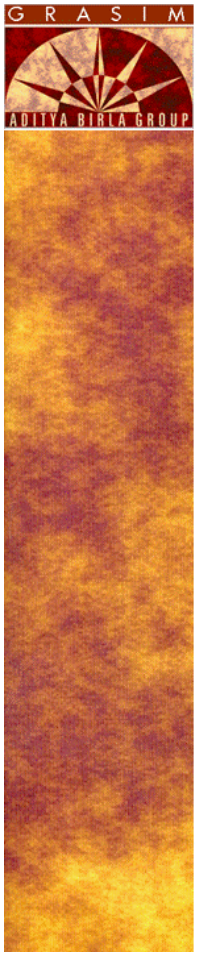
ENERGY ACCONTING & MONITORING SYSTEM

1 MONITORING OF SPECIFIC ENERGY CONSUMPTION PER TON OF OUTPUT

a) DAILY	-	(DPR) DAILY PRODUCTION REPORT DAILY POWER REPORT
b) MONTHLY	-	MPR (MONTHLY PRODUCTION REPORT) EXCEPTIONAL REPORT MIS-REPORT
c) HALF YEARLY	-	MIS-REPORT REPORT TO CTC
d) ANNUALLY	-	ANNUAL MIS-REPORT ANNUAL BALANCE SHEAT

2 REVIEW OF TARGETS

a) ANNUAL	-	ANNUAL PURTA (BUDGET) MEETING ANNUAL MAINTENANCE CONFERENCE



ENERGY MANAGEMENT POLICY

Birla Super Cement is committed to reduce its Energy cost by

- **Optimising Process.**
- **Implementing Energy Conservation Activities.**
- **Adopting Technology Innovations.**
- **Identifying potentials Areas through audits**
- **Maintaining Highest System Power Factor.**

Birla Super Cement in its endeavour to fulfill above tasks, also commits to meet safety and environmental needs by awareness and effective involvement of all employees.