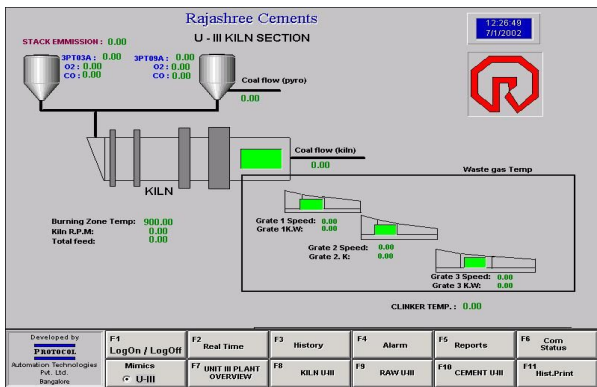


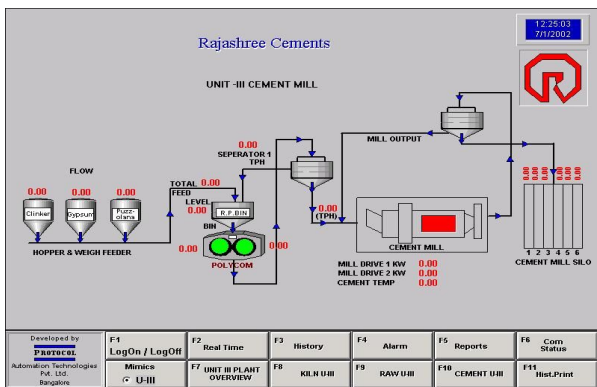
## MIS and Monitoring System for Rajashree Cement, Karnataka

Aditya Birla Group of companies manufactures cement under the name Rajashree cement at their plant in Gulbarga, Karnataka. It is a vertically integrated dry process plant, carrying out every production step from quarrying its own raw materials to assure quality and correct chemical content, to bulk and bag shipment to the consumer.



Cement manufacturing machinery requires labor-intensive, time-consuming, and difficult manual monitoring and adjustment from a roomful of complicated control panels that provided operators with decidedly non-visual screens of production data to interpret.

In the dry process, clay, limestone, and chalk are crushed and transported to the grinding mills, where they are carefully proportioned to achieve the proper chemical mix.



After a series of physical and chemical process that convert the raw materials to clinker, it is then mixed with controlled quantities of gypsum and ground into cement in the cement mills. The entire process entails keeping constant track of

differential pressures, temperatures, current and all kinds of other variables.

Before using our MIS and Monitoring software, all the Rajashree Cement works process loops had to be monitored and adjusted manually, requiring great skill on the part of operators. It was pretty empirical before, because one couldn't really verify what was going on in the machinery. Operators had to use trial and error to make adjustments in response to lab testing, and the adjustments they made were not very fine. But with our HMI now running, operators now can monitor all stages of the production process from a single control room. From the PC terminal, an operator can select a cement mill, adjust the critical proportions of clinker, gypsum, and limestone for proper blending, and then monitor alarms, temperatures, and pressures to control all operations at the click of a mouse.

### RAJASHREE CEMENT LTD.

Daily MIS Production report  
(Reports of 01/10/2001 Generated on 01/10/2001)

Date: 01/10/2001

Sl. No.	Parameter	Shift			Today	Monthly	Year
		A	B	C			
<b>Raw Mill</b>							
1	331WF1, tons	22843			22843	582200.72	
2	331WF2, tons	370			370	1088030.28	
3	331WF3, tons	0.08			0.08	224.85	
4	331WF4, tons	6			6	16788.83	
5	Mill Fan, kWh	2344.54			2344.54	139810.83	
6	Main Drive, kWh	2348.16			2348.16	135345.51	
7	Main Drive Run Hours, hrs	00.00			00.00	5.87	
8	Raw Meal Production, tph	605.34			605.34	1694492.9	
9	RMPower	7246.26			7246.26	15281618.83	
10	Mill Specific Power, kWh/ton-Raw Meal	0			0	0	
<b>KILN</b>							
1	431RM1, tons	502.48			502.48	2068822.18	
2	431RM2, tons	0			0	15	
3	KS Fan, kWh	-15			-15	0	
4	CS Fan, kWh	-8.2			-8.2	-8.2	
5	CV Fan, kWh	0			0	0	
6	BH Fan, kWh	320.97			320.97	20375.9	
7	Cooler Fans, kWh	137.41			137.41	9103.91	
8	Kiln Main Drive Run Hours, hrs	00.00			00.00	7983	
9	Clinker Production, tph	502.48			502.48	2068822.18	
10	KilnPower	4627.37			4627.37	15219884.16	
11	Kiln Specific Power, kWh/ton-Clinker	0			0	0	

The HMI translates the data into visually animated displays, so that the operator can see what is happening, make adjustments and see the result of those adjustments immediately.

A continual record of material flowing through the kiln and production processes is analyzed so that feeds are regulated and a cement of consistent quality is achieved.

Protocol has interfaced the MIS and monitoring system to ABB's Masterpiece DCS system via ABB's proprietary Ethernet gateway called GCOM. The MIS and Monitoring station is connected to

seven Masterpieces and thus gathering data from all the sections of the plant.

The data is represented in at least 25 detailed log data reports, run hour calculations done by the HMI, and production reports giving a comprehensive summary of the activities of each area of the plant. The run hour data provides the Maintenance and Instrumentation departments with updated information to take timely action for blowers, FD and ID Fans and motors.

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To find out more about our other installations write to us at

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