



Improvement of Asset Reliability & Change Management

A large Integrated Cement Plant in India – Asset & Change Management

Number of Plants under Reliability Improvement Program = 3

% of equipment covered under Reliability Improvement Plan = 62% (most critical + critical)

Important result: On implementation of our reliability improvement plant this plant was recognized as the best maintained cement plant in the world considering all 8 parameters of maintenance (Source: World Cement Association). The plant has sustained this special recognition for the last 9 years in a row. The program was implemented during '98 – '2000'

Results:

No.	Parameters	Previous	1 year after Implementation	Remarks (present situation after 2 years)
1	No of breakdowns/year	57	19	3 (no mechanical breakdown), work is now to be undertaken to eliminate electrical failures too.
2	% Of Breakdown hours	25	12	5
3	Design out maintenance cases	Nil	28	Further done
4	% Increase in Monitoring activities	18	42	Change in maintenance plan
5	Capacity	< 100%	> 100%	More production at lesser cost with same equipment
6	Leadership Position (Cost)	3	1	

Other benefits from the program:

- » Bearing failure analysis = Consumption reduced from 519 bearings a year to 09
- » Seal failure analysis = presently no seal failure takes place
- » Lubrication/WDA/Tribology = Lubricant cost brought down by 67%
- » Gear failure analysis = presently no undesirable gear failure takes place
- » Heat exchanger study = No heat build up for any of the critical machines
- » Vibration analysis = Accuracy of analysis increased to 98%
- » Spare parts management = Reduction in the cost of spares thru lesser use
- » Identification of training needs and SOP (Standard Operating Procedure)= Implemented for better operability and maintenance

Methodology:

1. Plant wide Reliability measurements were made
2. Plant wide groups were formed and trained extensively
3. Failures were analyzed in details & New maintenance strategy was in place
4. Data fed into maintenance management software for sustainability