

APPLICATION CASE STUDY



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HOST ORGANISATION : SHELAVI PULP & PAPER MILLS LTD., KALOL
PERFORMED ON : DECEMBER 1997.
INDUSTRY : PULP & PAPER
APPLICATION : MAIN PAPER MACHINE
PREVIOUS SYSTEM : EDDY CURRENT DRIVE

The main motor was connected to mains & mechanically coupled with Eddy Current Drive connected to main machine shaft through pulley arrangement.

PROBLEMS OBSERVED :

1. Old technological Eddy Current system was inefficient & consuming excessive energy.
2. Frequent mechanical & electrical break down of the system results into production loss, energy loss.
3. GSM variation in paper & hence affects quality of paper due to input supply fluctuation.

PRESENT SYSTEM : 75 HP AC Drive is directly connected to 60 HP AC Induction motor & motor is driving main machine through pulley arrangement.

MERITS OF NEW SYSTEM :

1. Efficiency of the system improved by 35-40%
2. Reduces mechanical and electrical maintainance of the system.
3. Improvement in quality i.e.no GSM variation & production.
4. Smooth and precise speed control leads to accurate setting of meter/minute of paper.
5. Automation of system is possible.

ECONOMICAL ANALYSIS :

The plant area is operational all times of the year and thus it's electricity consumption forms part of the base demand of the infirmary. In considering financial savings,the higher cost components of the electricity tarrif are therefore applicable.

Finally conversion of new system with replacement of old Eddy current drive system leads improvement in efficiency approximately 35-40% & results into electrical energy savings of US \$ 4761.90 per year.

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