

Successful Implementation – Energy Conservation Measure

Measure
Monitoring of air consumption using hour meter installed at compressor motor, and reduction of air leakages.
Equipment
Hour Meter (Time Tantalizer)
Industry / Sector
Pulp & Paper
Year of Implementation
1999
Cost Benefit Analysis
<input type="checkbox"/> Type of Measure : Installation of hour meter.
<input type="checkbox"/> Annual energy Savings : 60,000 KWH/Year
<input type="checkbox"/> Actual cost savings : Rs.3,00,000/- per year.
<input type="checkbox"/> Actual investment : Rs. 2,000/-
<input type="checkbox"/> Payback : Two Days.
Implementation Highlights
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Summary

The running hours of compressors were monitored with the help of hour meters, and leakage was reduced, which resulted in reduced run hours. Overall, a saving of around 90% in run hours (and hence power consumption) was achieved.

Background

For supplying instrument air, two compressors working at 10 Kg/cm² gauge pressure and 1m³ per minute air were running. Pressure switch were provided on both compressors, and arrangement was made to stop compressor while pressure was high and restart the same while pressure reduced. In absence of proper air leakage detection and compressor monitoring system, leakage increased, and daily running hours exceeded 20 hrs, for each compressor.

Installation of hour meter and daily monitoring of hours of operation gave initial estimation of air consumption for instruments as well as leakage. After leakage checking and arresting the same, the plant maintenance personnel got result of activity in form of reduced run hours, which gave them a mental satisfaction of achieving a target.

Principle

Direct result in form of a definite and numerical value encourages people work better and yields good results. If concerned person know about air consumption, leakage management becomes easy.

Details of techno-economics:

Particulars	Actual energy savings
Contract Demand	11KW
Earlier MD	10KW
MD after installation of controller	1KW
Demand savings per month @ Rs. 150/ kVA	Rs.1500/
Annual Cost savings, Rs. lakh	Rs.300000/
Cost of implementation, Rs. lakh	Rs.2000/
Simple payback period, Year	0.01

Implementation issues

Additionally, as run hours of compressors reduced, maintenance and overhauling downtime as well as bill reduced drastically. Frequent leakage checking was discontinued, and decision was taken to inspect pipelines and instruments for leakages only if run hours increased beyond a decided value.

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