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Dear Sir,

With reference to your technical paper ISSUE # 12, I am sending herewith list of hardware's with ' R' values. It is observed that some of the equipments with high R the energy can be saved with minor adjustments / modification. For example in air compressor it is observed that the saving can be done by small change of loading and unloading range. At present the range is 6.5 kg/cm<sup>2</sup> to 7.5 kg/cm<sup>2</sup>. Requirement of pressure at operation end is 5.5kg/cm<sup>2</sup>. So the range can be set as 6 kg/cm<sup>2</sup> to 7 kg/cm<sup>2</sup>.

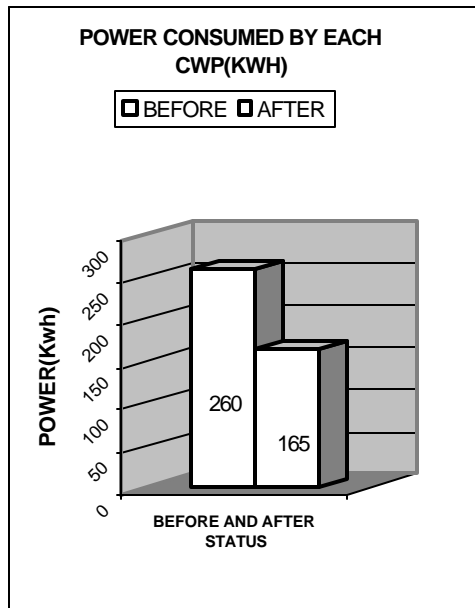
Also we are planning to provide energy conserver for saving of power.

MODIFICATIONS CARRIED OUT IN OUR PLANT TO REDUCE AUXILIARY POWER OF POWER PLANT IS AS FOLLOWS.

CPP		
<p><u>Problem/Present status:</u></p> <p>a)flow of each pump 2100m<sup>3</sup>/Hr.  b) Head: 37 mwc  c) Current drawn by each pump : 30 Amps  d) Power consumed by each motor: 260kw-270kw.  e) Discharge v/v of common header in throttled condition.(only 25% open).</p>	<p><u>Counter Measure:</u></p> <p>a) Vane angle of Impeller reduced from 30 Deg. To 20 Deg.  b) Suction column pipe length reduced by 1.7 mtr length.</p>	<p><u>Benefits :</u></p> <p>1. Aux. Power saved per pump: 95 – 100 units / hr  2. Savings per Month / pump: 95 x 24 x 30 = 68400 units  3. Savings per Year / pump: 68400 x 11 = 752400 units</p>

**Analysis:**  
Pump was operated at 37mwc head against the required head of 25 mwc (During winter and rainy season) by throttling the discharge header valve.

**Result:**  
a) Flow of each pump – 1800m<sup>3</sup>/hr  
b) Head : 25 mwc (c) current drawn by each CWP-1 and CWP – 3 : 165kwh-170kwh  
d) Header valve is kept in fully open condition (reducing the head loss due to throttling of valve).



Some minor modifications with available resources is carried out in coal handling system to reduce the auxiliary power. But saving is very less i.e, around 0.06%

In the same way to reduce our power consumption we have replaced our cooling tower fan blades from aluminium blades to FRP blades.

The value of 'R' for the modified equipments are :  
Cooling Water Pumps :

Equipment Name	Details	Department Installed	Annual energy Costs Rs.	Present book value of the equipment Rs.	Estimated procurement cost for the new one Rs.	Age of the equipment (Years)	Remaining useful life (Years)	Annual Depreciation (%)	R old	R new
			A	B	C	D	E	F	G	H
CWP - 1	246kw (310 kw Motor 1500 rpm ) for 7930 hrs	Power Plant	7937930 (before modification)	68405		7	12	5.28	1160	
CWP - 2	246kw (310 kw Motor 1500 rpm ) for 7930 hrs	Power Plant	4884880 (after modification)		306000	7	12	5.28		159

Equipment Name	Details	Department Installed	Annual energy Costs Rs.	Present book value of the equipment Rs.	Estimated procurement cost for the new one Rs.	Age of the equipment (Years)	Remaining useful life (Years)	Annual Depreciation (%)	R old	R new
			A	B	C	D	E	F	G	H
BFP	242 KW (270KW Motor 3000 rpm)for 7930hrs	Power Plant	7632625	684065		7	12	5.28	112	
BFP Motor	270 kw for 7930 hrs	Power Plant	7632625	410433		7	12	5.28	186	
CWP	246kw (310 kw Motor 1500 rpm ) for 7930 hrs	Power Plant	7937930	410434		7	12	5.28	193	
CWP Motor	310 kw for 7930 hrs	Power Plant	7937930	273623			12	5.28	290	
ID Fan	37 kw (45kw Motor) for 7770 hrs	Power Plant	1106836	171014		7	12	5.28	65	
ID Fan Motor	45 kw motor for 7770 hrs	Power Plant	1106836	68405		7	12	5.28	162	
FD fan	125 kw ( 160kw Motor) for 7770hrs	Power Plant	3739312	171014		7	12	5.28	218	
FD fan Motor	160 kw motor for 7770hrs	Power Plant	3739312	171014		7	12	5.28	218	
PA fan	57kw (75 kw Motot) for 7770hrs	Power Plant	1376067	205217		7	12	5.28	67	
PA fan Motor	75 kw for 7770hrs	Power Plant	1376067	102608		7	12	5.28	134	
CT Fan	26 kw ( 45kw Motor ) for 7930 hrs	Power Plant	763263	136811		7	12	5.28	56	
CT Fan Motor	45 kw motor for 7930 hrs	Power Plant	763263	68405		7	12	5.28	111	
Air Compressor	1500 RPM for 7930 hrs	Power Plant	4503922	307825		7	12	5.28	146	
Air Compressor Motor	180 kw Motor for 7930 hrs	Power Plant	4503922	205217		7	12	5.28	219	

Off course the energy saving plan and implementation only can be done with team work only. In this in our power plant we are very strong in team work. We are trying reduce our auxiliary power consumption of 12 % to 11% in this year –2004. Definitely we are getting help from your case studies and energy lessons to do more to save energy savings.