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Summary of case study is as follows.

Annual Coal saving :- 22457.29 T
Annual Rs. saving :- 4.04 Rs. Crore
Simple Pay Back :- 0.99 ~ 1 Year

Please consider my solution for publishing if found correct.

Thanks & Regards,
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ISSUE#1: JUNE 2008 IGEN-THERMAL POWER PLANT CORNER
ESTIMATION OF SAVING DUE TO CONTROL OF DESUPERHEATER WATER SPRAY

	STEP	PARAMETER	UNIT	VALUE
GIVEN INFORMATION	A	PLANT CAPACITY	MW	140
	B	CURRENT GENERATION	MW	110
	C	OPERATING MS PR.	KGS	120
	D	MS FLOW	TPH	390
	E	OPERATING MS TEMP.	0C	536
	F	MS ENTHALPY	KCAL/KG	822.9
	G	DESUPERHEATER SPRAY	TPH	30
	H	DESUPERHEATER SPRAY PR.	KGS	128
	I	DESUPERHEATER SPRAY TEMP	0C	170
	J	DESUPERHEATER SPRAY ENTHALPY	KCAL/KG	173.4
	K	MS TO MW RATIO AT OPERATING CONDITION	TPH/MW	3.5
	L	SP.COAL CONSUMPTION	KG/KWH	0.65
	M	COAL GCV	KCAL/KG	4600
	N	LANDED COAL COST	RS/TON	1800
	O	STEAM CONSUMPTION IN SOOT BLOWER	T/DAY	110
	P	SELLING PRICE PER KWH	RS/KWH	2
	Q	SOOT BLOWER REPAIRING COST	RS CRORE	4
	U	BOILER EFFICIENCY	%	80
	S	ANNUAL PLANT OPERATING HRS	HR	7000
	T	REDUCTION IN SPRAY AFTER CORRECTING SOOT BLOWER	TPH	7
CALCULATION	V=(D(F-J)+G(F-J))/(B*U)	** EXISTING PLANT HEAT RATE	KCAL/KWH	3099.89
	W=(D(F-J)+T(F-J))/(B*U)	NEW HEAT RATE AFTER IMPLEMENTING PROPOSAL	KCAL/KWH	2930.13
	X=V-W	REDUCTION IN HEAT RATE	KCAL/KWH	169.76
	Y=(X*B*S)/M	ANNUAL COAL SAVING DUE TO IMPROVED HR	T/YEAR	28415.63
	Z=Y*N	SAVING OF COAL CONSUMPTION IN RS	RS/ANUM	51148125.00
	AA=P-(L*N/1000)	OPERATING PROFIT CONSIDERING COAL COST	RS/KWH	0.83
	AB=(O/K)*(S/24)	LOSS OF GENERATION DUE TO SOOT BLOWING STEAM CONSUMPTION	MW/ANNUM	9166.67
	AC=AB*AA	GENERATION LOSS IN RS DUE TO SOOT BLOWING STEAM CONSUMPTION	RS/ANNUM	7608.33
	AD=K/L	EVAPORATION RATIO OF BOILER		5.38
	AE=(S*(O/AD)/24	ADDITIONAL COAL REQUIRED FOR SOOT BLOWING STEAM	TON/ANNUM	5958.33
	AF=AE*N	ADDITIONAL COAL REQUIRED IN RS FOR SOOT BLOWING STEAM	RS/TON	10725000.00
	AG=Y-AE	**NET COAL SAVING**	**TON/ANNUM**	**22457.29**
	AH=(Z-AC-AF)/10000000	**NET RS. SAVING**	**RS.CRORE/ANNUM**	**4.04**
	AI=Q/AH	**SIMPLE PAYBACK PERIOD**	**YEAR**	**0.99**
**	FEEDWATER ENTHALPY IS TAKEN SAME AS DESUPERHEATER SPRAY ENTHALPY			