



TAMILNADU ELECTRICITY BOARD

Tuticorin Thermal Power Station-Tuticorin,



Thermact Trial conducted by - Abhitech Energycon Limited

Pre & Post Thermact Efficiency Calculation

Unit No 1

Parameters			Date	Pre Average	Post Average	
Load			MW	186.60	185.24	
Total Units Generated			Mu's	4.546	4.412	
Proximate Analysis as fired	Inherent Moisture (ADB)	IM	%	6.48	6.30	
	Moisture	TM	%	10.62	10.42	
	Ash	A	%	43.08	45.75	
	Volatile matter	VM	%	18.52	18.09	
	Fixed Carbon	FC	%	27.78	25.55	
	Gross Calorific Value	Q	kcal/kg	3222	2997	
	Ultimate Analysis	Sulphur	S	%	0.41	0.41
Total Carbon deducing sulphur		Tc	%	38.21	36.09	
Hydrogen		H2	%	2.72	2.59	
Nitrogen		N2	%	0.75	0.70	
Oxygen		O2	%	4.22	4.04	
Boiler Parameters	Avg Flue Gas O/L Temp	T	°C	160.2	159.4	
	Ambient Temp	t	°C	31.03	31.78	
	O ₂ in flue gas at APH I/L	O ₂	%	5.78	4.68	
	CO ₂ in flue gas at APH I/L	CO ₂	%	13.22	14.32	
	N ₂ in flue gas at APH I/L	N ₂	%	81.00	81.00	
Ash Analysis						
I	Unburnts in bottom ash	UBA	%	7.50	4.30	
II	Unburnts in Fly ash	UFA	%	2.45	1.02	
Boiler Efficiency By Heat Losses Method	Loss Due to Unburnt Carbon		%	3.66	1.91	
	Loss due to Dry Flue Gas		%	6.85	6.45	
	Loss due to Moisture & H ₂ in Fuel		%	6.95	7.17	
	Loss due to Moisture in Air		%	0.26	0.24	
	Total Loss due to sensible heat of ash		%	0.65	0.73	
	Loss due to Radiation & Convection		Fixed	%	0.26	0.26
	Manufacture's Margin		%	1.50	1.50	
	Total Losses		%	20.13	18.26	
	Boiler Efficiency		%	79.87	81.74	
Turbine Heat Rate		THR	kcal/kwh	2294	2315	
Unit Heat Rate		UHR	kcal/kwh	2873	2832	
Condenser vacuum			mmHg	-670	-673	
Total Air flow			TPH	869	790	
SPM			mg/Nm ³	1258	1106	
Oil Support			ml/kwh	2.432	2.639	

For Tuticorin Thermal Power Station

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For Abhitech Energycon Limited

Rajini
C. R. P. ANANDASAN
 ASST. ENGR.
ASSISTANT EXECUTIVE ENGINEER
 Technical Services,
 Tuticorin Thermal Power Station,
TUTICORIN - 628 004.

Vikram Bhandari
ABHITECH ENERGYCON LIMITED
 MUMBAI-72