CENTRAL ELECTRICITY AUTHORITY PERFORMA FOR UPRATING/DERATION/RETIREMENT OF COAL BASED THERMAL UNITS/STATION

1	Name of Power Station						
	Brief description of Plant, Address, Location						
	and Salient Feature						
	Detail of two contact persons						
	Mobile no., Email Address, Telephone No. Fax						
	No.						
2	Unit size and number						
	Derated/uprated Capacity (if applicable)						
3	Make & Efficiency (Design)						
	Boiler						
	Turbine						
	Unit heat rate (design)						
4	Date of commissioning						
5	No. of operating hours since commissioning.						
6	Energy generated since commissioning in MU						
7	a) Whether any R&M activity has been carried						
	out, if so when and result thereof.						
	b) Expenditure incurred in the above R&M						
	activities.						
8	Whether any major accident has occurred if so						
	details thereof along with details of reason &						
0	follow up action/ remedial measures taken.						
9	Monthly Peak Load in MW (sustained for one hour) for the last one year.						
10	Yearly average data for the following for the last						
10	five years (strike if not applicable)						
	ive years (strike it not applicable)			_			
11	LAST FIVE YEARS (when unit was operative)	Design value	2010-11	2011-12	2012-13	2013-14	2014-15
	a) Specific Primary FUEL Consumption in/kWh.	value					
	b) Specific Secondary FUEL Consumption in/kWh.						
	c) Auxiliary Power Consumption(MU)						
	d) Generation (MU)						
	e) Forced outage						
	f) Planned outage						
	g) Partial Loss						
	h) PLF						
	i) Peak Hours PLF						
	j) Turbine Heat Rate						
	k) Unit Heat Rate						
	l) Station Heat Rate						
	m) Availability						
	n) Linkage and Present Receipts (Name of						
	coalfield, Grade, GCV etc.)						
	o) Type of CW system (Open/Closed)						
	p) Auxiliary steam Pressure						
	g) Ejector pressure		1	1			

	r) Sealing header pressure			
	s) System of Firing in the Furnace (Conrner,			
	Front, Front Rear)			
	t) Details of Regenerative System describing			
	extractions, drips, condensate flow, feed			
	water flow and deaerator connections			
	u) Power Evacuation			
	v) Transmission voltage			
11	Cost of Generation(Rs/kWh)			
12	a) Number & dates of major maintenance			
	including annual and capital maintenance and			
	operating hrs between the overhauls hrs.			
	since commissioning.			
	b) details of major works done in each overhaul			
13	Details of the constraints causing restrictions on			
	the generating capability			
14	Detail reasons FOR UPRATION/ DERATION/		 	
	RETIREMENT OF COAL BASED THERMAL			
	UNITS/STATION			

		Design value	2010-11	2011-12	2012-13	2013-14	2014-15
ı	BOILER						
A)	Steam capacity (t/h)						
B)	Steam Parameters						
	Pressure kg/cm2						
	Temperature oC						
C)	Fuel input (t/h)						
D)	Efficiency (%)						
II	AUXILIARIES						
A)	No. of mills required for rated capacity						
В)	No. of mills stand by						
C)	Capacity of each mill (t/h)						
D)	Degree of fitness/fineness						
III	TURBINE					1	
A)	Stop value valve Steam						
	parameters						
	Pressure ata						
	Temperature oC						
В)	Control stage Pressure						
C)	Condenser vacuum kg/cm2						
D)	Exhaust- hood Temperature						
E)	Condition of Regenerating system (LP/HP heaters etc.)						
	system (Li / iii meaters etc.)						
IV	AUXILIARIES						
A)	Boiler Feed Pumps						
	Nos. Running						
	Nos. Stand by						
B)	Condensate Pump capacity (t/h)						
C)	Condensate Flow (t/h)						
D)	Make up Water (t/h)						
V	GENERATOR						
A)	Output (MW)						
В)	Stator Insulation Resistance						
C)	(Mohm)						
C)	Rotor Insulation Resistance (Mohm)						
D)	Stator Winding Temp.(*C)						

S.No	Name of Parameter Design Value at							TUAL cu	irrent '	Value a	at
		BMCR	TMCR	80%	60%	40%	BMCR	TMCR	80%	60%	40%
1	Main steam at Boiler outlet										
	Flow (Tonnes/Hour)										
	Pressure (Kg/Cm2)										
	Temperature (C)										
2	Feed water at Eco Inlet										
	Flow (Tonnes/Hour)										
	Pressure (Kg/Cm2)										
	Temperature (C)										
3	M.S. at Turbine Inlet										+
<u> </u>	Flow (Tonnes/Hour)										+
	Pressure (Kg/Cm2)										+
	Temperature (C)										1
	romporature (O)										+
4	LP Turbine Inlet										
	Flow (Tonnes/Hour)										1
	Pressure (Kg/Cm2)										1
	Temperature (C)										
	(0)										
5	C.W. Temperature C										
	Inlet										
	Outlet										
6	Condenser Vacuum										
	Inlet										
	Outlet										
											<u> </u>
7	Cold Reheat steam										<u> </u>
	D (K. /Q Q.)										
	Pressure (Kg/Cm2)										
	Temperature (C)										
8	Hot Reheat Steam										+
	Flow (Tonnes/Hour)										
	Pressure (Kg/Cm2)										1
	Temperature (C)										†
											1
9	Spray water flow										1
	Super-heater (Tonnes/Hour)										
	Reheater (Tonnes/Hour)										
	Pressure (Kg/Cm2)										
	Temperature (C)										
10	Curtiswheel Pressure										
	(1st stage Pr.) - Kg/Cm2										

S.No	Name of Parameter		Desig	n Value	at		AC	TUAL cu	irrent \	/alue	at
		BMCR	TMCR	80%	60%	40%	BMCR	TMCR	80%	60%	40%
11	Condensate Temperature (C)										
	Hotwell										
	Inlet of LPH I										1
	LPH II										
	LPH III										
	LPH IV										
	LPH V										
12	Feed water Temperature										
	Outlet of deaerator										
	HPH I										
	HPH II										
	HPH III										
10	Extraction Pressure, Temp.										+
13	Flow No.1: Flow (Tonnes/Hr)										-
	Pressure (Kg/Cm2)								 		+
	Temp. (C)										+
	No.2: Flow (Tonnes/Hr)										+
	Pressure (Kg/Cm2)								1		1
	Temp. (C)										+
	No.3: Flow (Tonnes/Hr)										1
	Pressure (Kg/Cm2)										+
	Temp. (C)										1
	No.4: Flow (Tonnes/Hr)										1
	Pressure (Kg/Cm2)										1
	Temp. (C)										1
	No.5: Flow (Tonnes/Hr)										
	Pressure (Kg/Cm2)										
	Temp. (C)										
	No.6: Flow (Tonnes/Hr)										
	Pressure (Kg/Cm2)										
	Temp. (C)										
	No.7: Flow (Tonnes/Hr)										
	Pressure (Kg/Cm2)										
	Temp. (C)										
	No.8: Flow (Tonnes/Hr)								<u> </u>		
	Pressure (Kg/Cm2)								<u> </u>		
	Temp. (C)										
14	Drip Temperature (C)										
	HPH 3										
	HPH 2										
	HPH 1										
	HPH 5										
	HPH 4										
	HPH 3								<u> </u>		
	HPH 2										
	HPH 1	1									

S.No	Name of Parameter		Design	n Value	at		AC	TUAL cu	ırrent \	/alue	at .
0.110	Ivalle of Farameter		Desigi	i value	aı		The same of the sa				
		BMCR	TMCR	80%	60%	40%	BMCR	TMCR	80%	60%	40%
	Flue gas Exit Temperature										
15	(C)										
	(After ADLI)										
	(After APH) After Econimizer										
16	Auxiliary steam flow (T/Hr.)										-
10	Auxiliary steam flow (1/11)										
17	Deaerator/Pressure										
17	(Kg/Cm2)										
18	Design turbine heat rate (Kcal/kwh)										
19	Boiler efficiency (design) (%)										
											<u> </u>
20	Design Coal Analysis										
	GCV (Kcal/kg)										
	Ash (%)										
	Moisture (%)										
	VM (%)										<u> </u>
	H2 (%)										
	O2 (%)										<u> </u>
	N2 (%)										
	C (%)										
	S (%)										
	HGI										<u> </u>
21	Total Air Flow (Tonnes/Hr.)										
Z I	a) Primary Air Flow										-
	b) Secondary Air Flow										
	c) Air temp. at inlet and										
	outlet of each APH block										
	d) Flue gas temp. at inlet										
	and outlet of each APH										
	block										
22	Flue gas analysis										+
	CO2										
	02										†
	CO										†
23	Fuel Flow										
24	Drum Pressure										1

(strike if not applicable and add wherever applicable)

COAL DATA

RAW COAL STOCK AND UNLOADING AND FEEDING PROBLEMS, NECESSITATING OIL SUPPORT

OIL GOLL OIKT					
	2010-11	2011-12	2012-13	2013-14	2014-15
OIL CONSUMPTION/Year					
-) TVDE OF MEDIA	T	T	I	I	1
a) TYPE OF MEDIA ATOMISATION					
b) SIZE OF OIL TIPS-START-UP BURNERS - LOAD CARRYING BURNERS					
ATOMISATION PRESSURE					
OIL PRESSURE MAINTAINED					
IGNITERS					
a) TYPE					
b) KEPT IN SERVICE CONTINUOUSLY					
L					
MILLS					,
a) TYPE AND NO. OF MILLS					
b) NO. OF MILLS REQUIRED FOR MCR					
c) LOAD REDUCTION IF TWO MILLS ARE OUT					
d) NO. OF HRS. TWO MILLS					
WERE OUT. YEARWISE					
e) OIL CONSUMPTION DUE TO OUTAGE OF MILLS-YEAR WISE					
AVERAGE TIME TO SYNCHRONISI	E/FULLY LOAD		NIT WISE)		
TYPE OF START	AS PER	ACTUAL	REASON		
	MANUFACTU		S FOR		
	RER		VARIATI ONS		
HOT - SYNCH. LOADING			00		
WARM - SYNCH. LOADING					
COLD - SYNCH LOADING					

NO. OF HRS. FOLLOWING AUXILIARIES WERE OUT (UNIT WISE)

YEAR	2010-11	2011-12	2012-13	2013-14	2014-15
1 CW PUMP					
1 BF PUMP					
1 CE PUMP					
1 ID FAN					
1 FD FAN					
1 PA FAN					

ANY PERMANENT	RESTRICTION ON	LOAD AND	REASONS	THEREOF	(e.g.SHAVING	OFF OF
TURBINE,						

SALT DEPOSITION, POOR VACUUM)

2010-11	2011-12	2012-13	2013-14	2014-15

UPTO WHAT LOAD OIL BURNER IS KEPT IN SERVICE

2010-11	2011-12	2012-13	2013-14	2014-15
			·	

IN CASE OIL CONSUMPTION IS ATTRIBUTED TO POOR COMBUSTION IN THE FURNACE, PLEASE ELABORATE KEEPING IN VIEW COAL BURNER NOZZLES; WIND BOX PRESSURE, TILTING MECHANISM

FREQUENCY AND DURATION OF SOOT BLOWING PER DAY IN THIS UNIT

DESIGN		
ACTUAL		

	Diagrams/PPD
1	Heat Balance Diagram (All Load Cases)
	Boiler Predicted Performance Data (All Load
2	Cases)
3	Boiler Arrangement Diagram
4	Boiler Pressure Part Details(SH,RH,LTSH & ECON)
	Area
	Number of tubes
	Outer Diameter
	Thickness